ARMOR

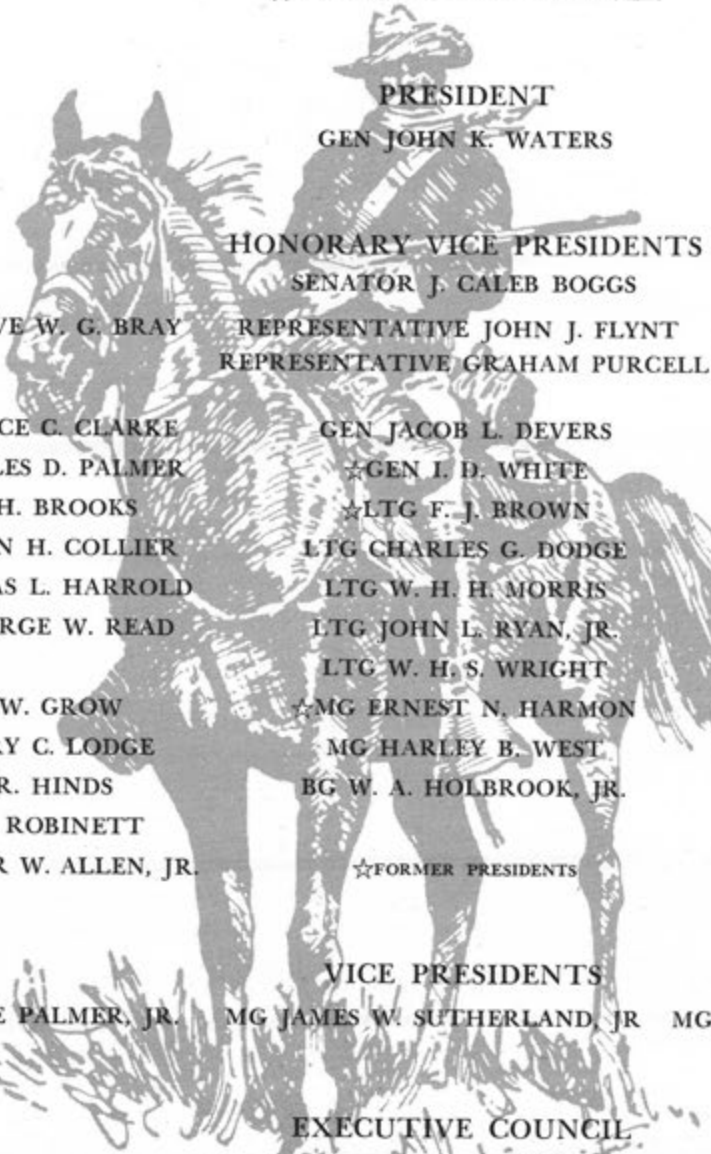
JANUARY-FEBRUARY 1969

"...SOBERING FACTS, NOT PHANTOMS"

THE UNITED STATES ARMOR ASSOCIATION

Established 1885 as The United States Cavalry Association

"To disseminate knowledge of the military arts and sciences, with special attention to mobility in ground warfare; to promote the professional improvement of its members; and to preserve and foster the spirit, the traditions and the solidarity of Armor in the Army of the United States"—Constitution.



ARMOR

The Magazine of Mobile Warfare

Volume LXXVIII **January-February 1969** **No. 1**

ARTICLES

FEATURES

DEPARTMENTS

COVER

AN ORIGINAL PAINTING FOR ARMOR BY MARY BURNEY. THE QUOTE IS FROM GENERAL LYMAN L. LEMNITZER'S "REPORT ON EUROPE" DELIVERED TO THE AUSA ANNUAL MEETING. SPEAKING OF THE SOVIET THREAT, GENERAL LEMNITZER NOTED, "THE CAPABILITIES THAT EXIST ARE QUITE CLEAR, BUT WHAT IS EQUALLY CLEAR IS THE WILL OF THE SOVIET UNION TO USE HER MILITARY POWER TO ACHIEVE HER AIMS."

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LETTERS TO THE EDITOR

Some Challenging Thoughts

Dear Sir:

Congratulations and thanks are due to the staff of *ARMOR* for the quality of recent issues. *ARMOR* has presented material which has been invaluable to me as I prepare for an advisor's assignment with ARVN armor.

The September-October issue of *ARMOR* gathered together several articles which, by design or by accident, highlight a central responsibility of the professional journal of mobile warfare. With the Army's attention concentrated on Vietnam, Armor cannot afford to ignore developments which may affect warfare in Europe—Armor's special arena for possible combat. General Burba has outlined the capabilities of the *MBT70* including a cross-country speed nearly three times that of present tanks. Major Shackleton asks if weapons, organization and tactics have been developed to meet antitank missile defenses or to win in rapid meeting engagements with Soviet armor. Colonel Wood's description of a brilliant German mobile defense causes American tankers to think about how their own units would accomplish that difficult mission. Are the set-piece ATTs in a crowded Grafenwöhr training area a meaningful measure of our tank battalion's capability to react swiftly in an Armored melée?

As new weapons systems such as the *Sheridan*, the *MBT70* and a family of antitank missiles become available, Armor has to take a hard look at its organization and tactics which have not changed much for 25 years. Our tank crews will be fighting in tanks which are many times more sophisticated than the *M48*. They will have a real 24-hour a day fighting ability. Will the input of these $500,000-a-copy tanks result in a corresponding increase of fighting output? (The price tag is an uninformed guess.) Will habit, unimaginative thinking or timidity limit Armor's growth? I don't think so.

The pages of *ARMOR* are due to become a bulletin board on which Armor professionals can report on the changes, from individual tank to divisional tactics, which the next few years will bring. Armor's role in developing combat Army aviation is proof that the imagination is available. In fact, the high standards of maintenance and training of aviation are needed to insure that the expensive and sophisticated new tanks are 100 percent combat ready with highly skilled crews.

Can someone from Combat Developments Command report in *ARMOR* on Major Shackleton's proposal to use SP howitzers in an antitank screen? What training techniques can *ARMOR* readers suggest to increase the responsiveness of tank crews in fast moving tank-to-tank actions?

Recent events in Europe remind us that Armor cannot ignore its mission of mobile continental warfare in a changing technological environment.

F. WHITNEY HALL, JR.
MAJOR, ARMOR
APO San Francisco

Future Issues Available

Dear Sir:

Just a note to tell you how much I enjoy our magazine.

Here in Vietnam I have found a most appreciative attitude by all toward the capabilities of Armor. The employment of Armor and lessons learned have been accurately presented in our professional journal.

One more point. I rarely see my copy of *ARMOR* once I finish reading it. Everyone wants to read it so I'll probably have to order replacements for the issues which have been "read to death" by my comrades.

GARY E. LAYTON
MAJ, Armor
Hq, 2d Bde, 25th Inf Div
APO San Francisco 96225

While we are out of stock on many recent issues due to holding printing orders to a no-waste level, we can always order as many copies of future issues as we can find paying customers for. You forgot to mention how many application blanks you wanted for distribution to your avid reader cohorts. THE EDITOR.

Justified Complaint

Dear Sir:

Inclosed is a membership application. This letter is to bring to your attention an injustice of some years ago which has not been corrected.

While in the Armor Officer Basic Course (February 1960 graduate), I applied and paid for membership. I never received my membership card or *ARMOR* magazines. I wrote twice without getting a reply. Accordingly, I did not renew thereafter.

It has been a privilege and a pleasure to serve in Armor for 10 years as an enlisted man and eight so far as an officer. I enjoy *ARMOR* magazine tremendously (other peoples' copies that is.)

My commander is doing his best to encourage support of the Armor Association and *ARMOR*. When I told him of my case he explained that another letter would probably bring results. So here is one last chance to right a wrong. This is being sent primarily to support my commander.

The inclosed check is for one year's dues. I expect a card showing two year's paid membership. That is if the Association will correct a wrong even if it is only a $5.00 wrong.

ARMOR MAJOR

Needless to say, this letter ruined the whole day and then some for the entire ARMOR *Staff. Despite the fact that none of us were present in 1960, we know that our predecessors were fine people and dedicated to serving Armor and* ARMOR. *The files indicate that they were more than responsive to reader requests. We only wish Armor Major had written again sooner, by registered mail if necessary or to the Association President or anything to get a satisfactory resolution of his problem. Eight-plus years is too long to go around being proud of one's branch but disgruntled with its Association and professional journal. Especially when one has just cause. Armor Major's payment was shown in our books. Within one hour his card showing two years paid-up membership was mailed to him.* ARMOR *does not classify rights and wrongs according to dollar amounts nor rank or status.* THE EDITOR.

Mounted Combat in Vietnam

Dear Sir:

I thoroughly enjoyed and profited from the series of presentations on mounted combat in Vietnam in the July-August *ARMOR*. However, for the sake of accuracy (our reporting must be accurate,) allow me to modify

the third from the last, and part of the second from the last, paragraph of Colonel Howell's presentation, "The Armored Cavalry—A Quick Reaction Force." In the action described, I commanded Troop C until shot out of the saddle.

The paragraphs should read:

"On the morning of 31 January 1968, the squadron was spread over 35 kilometers providing security for the scheduled Tet Ceasefire. Troop C (-) was positioned in the 25th Division base camp near Cu Chi as a reaction force. One platoon secured the critical Hoc Mon Bridge between Cu Chi and Saigon, which the VC failed to destroy. The hostilities in and around Saigon became intense. Heavy enemy pressure was exerted on the Tan Son Nhut security force. At about 0500, the squadron was ordered to move Troop C (-) toward Tan Son Nhut. Reacting instantaneously, the squadron commander moved Troop C (-) out of Cu Chi to be followed by its one platoon at the Hoc Mon Bridge and by Troop B.

"At 0630, Troop C (-) was ambushed as it cut through the base of a 300-man VC penetration of the Tan Son Nhut perimeter. The Troop C platoon following maneuvered into the airbase from the northwest and attacked the nose of the VC penetration. Troop B maneuvered around to the west of the ambush running into elements of three VC battalions. This marked the beginning of a fierce battle. . . . See sketch map."

As a note of interest, the squadron is being considered for the Presidential Unit Citation for this engagement. Its commander at the time, LTC Glenn K. Otis, received the Distinguished Service Cross. A scout section leader who assumed command of Troop C, SSG Gary D. Brewer, has been recommended for the Medal of Honor.

LEO B. VIRANT II
CPT, Armor

S4, 3d Squadron, 4th Cavalry
APO San Francisco 96225

Needs Pickles

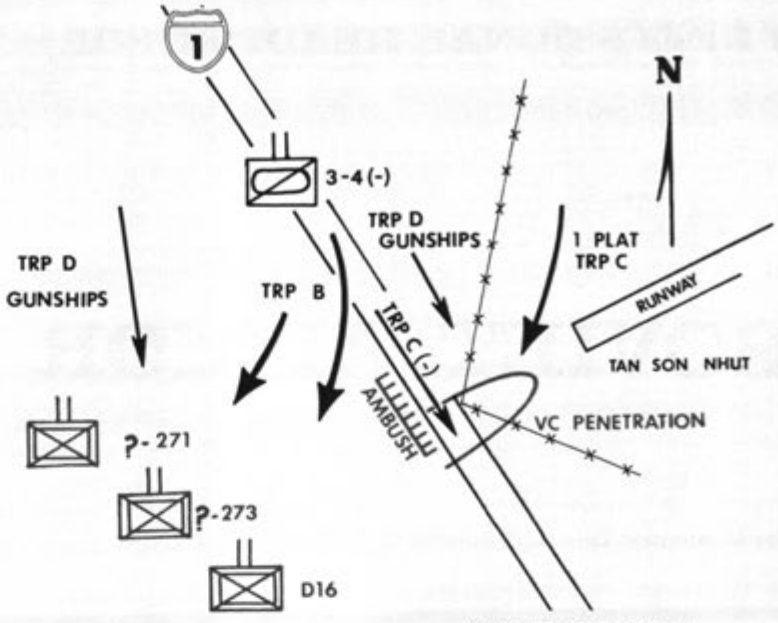
Dear Sir:

Fruitlessly, I have been seeking a set of the officer's branch insignia worn by tankers during World War II and until 1950 when the current Armor insignia became regulation.

I would appreciate any leads you or your readers could give.

DAVID W. RYAN
1LT, Armor

32d DPU
Ft. Hood, Texas 76544



Note: The area along Route 1 is built up for 10 kilometers northwest of Tan Son Nhut

INITIAL STAGES OF THE
BATTLE OF TAN SON NHUT
31 JANUARY 1968

"A True Mobile Defense"

Dear Sir:

I would like to compliment LTC Thomas G. Woods and *ARMOR* on the fine article, "A True Mobile Defense" (September-October.) It was an excellent example of a resumé of a battle and the lessons to be learned from it.

Probably the article impressed me so favorably because I have just returned from Vietnam and have become greatly interested in the parallels between combat in Russia during World War II and in the DMZ area of Vietnam today.

I remember vividly jumping off in the attack and crossing the line of departure just south of Danang only to be told to hold up and move out for an airlift sixty or seventy miles north to the DMZ. You don't appreciate it when you are on the ground but actually your commanders were doing the same things that the Germans were described in the article as doing. You can't see the NVA massing across the Ben Hai River. And you can't see the chaos you create when an American battalion comes charging into an area the enemy had called their own only a few hours before. Only history can give one this perspective.

After all, aren't we fighting what is essentially a mobile defense in Vietnam? Aren't we using airplanes and helicopters instead of tanks? I don't know how it was with the Army down south. But I do know from the way my battalion moved around up north that we were fighting a campaign with many tactical similarities to that of General Balck in Russia.

The only criticism that one might have of Colonel Woods' article is that he passed over the mobile aspects of the Vietnam War when he intimated that we had few American examples of the mobile defense to study. He could rectify this with an article on mobility in Vietnam which I feel sure would be most welcome.

DAVID L. YOUNG
Major, USMC
Manchester, New Hampshire

ARMOR *asked the author of "A True Mobile Defense" for his comments on this letter. LTC Woods replied promptly: "For one who advocates fast reaction, it was gratifying to see such a quick response to my article. I willingly concede Major Young's point that I disregarded the mobile aspects of the war in Vietnam. When writing the article, WWII and Korea were in mind. To one who observed the actions of II Field Force, Vietnam (especially the 1st Division) from July 1966 through June 1967, Major Young's analogy of the classical mobile defense and the type of mobile warfare in Vietnam appears valid to an appreciable degree. Certainly, his remarks will stimulate creative thinking (and writing!) on this subject. He and the rest of us who are readers of* ARMOR *will look forward to future contributions on mobile warfare as conducted by American forces.* T.G.W." *We certainly shall.* THE EDITOR.

PROFESSIONAL READING FOR—

THE SOVIET ARMOR LEADER

by Lieutenant Colonel Frederick C. Turner

The Soviet armor leader is expected to do considerable reading.

This article is based on a survey of some 80 armor-pertinent articles which have appeared in the Soviet military press in the course of the past three years. Its purpose is to examine the type of professional publications to which the Soviet armor leader has access and to give the American reader an idea of the type of information being presented to the Soviet tanker. This information should be interesting to the American military reader both for his own professional development and to assist his appraisal and understanding of the Soviet armor leader and his training.

LIEUTENANT COLONEL FREDERICK C. TURNER, Armor, presently stationed at Headquarters Allied Forces Central Europe (AFCENT), is a Russian Area Specialist who has served with the US Military Liaison Mission to the Commander-in-Chief, Soviet Forces in Germany.

A graduate of the Citadel, Command and General Staff College and the Army War College, LTC Turner has commanded a tank battalion and served with various tank and reconnaissance units in CONUS, Europe and the Far East.

This is not intended to be an anthology of various translated Soviet articles, but rather a compendium of the repetitive points and observations. The author has not attempted to distinguish between fact and fiction or between pride and propaganda. However, much of the more strident propaganda has been screened to make possible a more objective analysis of the Soviet armor leader's exposure to professional reading.

PUBLICATIONS

The principal offerings for the Soviet military reader consist of the daily newspaper *Red Star,* the monthly combat forces journal *The Military Herald,* and a monthly magazine for noncommissioned officers *Starshina-Sergeant.*

Red Star (*Krasnaya zvesda*), an organ of the Soviet Defense Ministry, is the daily army newspaper. However, it can not be compared easily with either *The Stars and Stripes* or the *Army Times.* Consisting usually of a four page spread, it costs two kopecks (about two cents—and probably more than it's worth) and carries, in addition to the front page speeches by leading military and Communist party figures, about half a page of carefully screened and edited world news (usually on the third page) and a liberal dose of military articles dealing with history, tactics and theory. Announcements to the effect that the military delegation of Afghanistan has arrived, that a meeting is taking place between

Soviet and Hungarian party members, and that the Cuban ambassador has been received by the General Secretary of the Communist Party are typical of the events covered. This widely distributed publication also provides limited sports coverage and radio and television schedules for the following day. The radio programming, incidentally, is from the period 0845 until midnight. The two television channels commence programs at noon and 1900 respectively.

Red Star has an average of six or seven photographs daily, most of them dealing with Soviet military training. Occasionally there is a cartoon. By American standards this is very limited and extremely dull fare. However, it does serve to keep the party line in full view, give thrust to priority programs, and ensure the rapid dissemination of military and political decisions. In addition to *Red Star,* the various military districts have their own newspapers with names such as *The Red Fighting Man* (*Krasni voin*) and *The Red Fighter* (*Krasni boyets*).

The Military Herald (*Voyenni vestnick*) is a monthly magazine published by the Ministry of Defense for the Soviet ground forces and primarily for combat and combat support officers. Until 1958, the Soviet armor officer had his own branch journal *The Soviet Tanker* (*Sovetski tankist*). The decision was then made to abolish the branch journals and consolidate their subject matter in *The Military Herald,* one of the oldest Soviet journals. With its green, red and white cover, and about 125 pages of printed matter (no advertisements), this magazine sells for thirty kopecks (about thirty cents) and is organized into sections devoted to editorials; historical accounts; tactics, training and indoctrination; missiles, artillery and air defense troops; special troops (engineer and signal); gunnery and weapons; book reviews; physical training and sports; and chess. It is a creditable magazine which keeps propaganda to a minimum by Soviet standards (which is still an "overkill" to most Western readers) and it deals professionally with the subject matter. Authors of most articles are field and general officers. This publication is organized to present articles in phase with the Soviet annual training cycle. There are a limited number of pictures and sketches.

Starshina-Sergeant (the word *starshina* being accented on the last syllable and meaning first sergeant or master sergeant) is a monthly magazine with an attractive cover and forty pages of printed material which is aimed at the enlisted reader in general and at the Soviet noncommissioned officer in particular. The publication, which costs fifteen kopecks (about fifteen cents), consists of articles by both officer and enlisted authors. Recent issues have included articles on technical subjects such as overheating of engines and amphibious vehicle engines; amphibious and river crossing techniques covered in articles such as "Tanks Move Out Underwater" and "If Tanks Attack from the Sea"; an educational article on the Kharkov Guards Tank School (Armor

OCS) and a historical article "How the *T34* was Created." The magazine has something for each reader with its color features, numerous pictures, crossword puzzles, jokes, cartoons and chess coverage.

In addition, the Soviet military leader is encouraged to read other monthly magazines such as *Rear Area and Supply of the Soviet Armed Forces* (*Tyl i snabzheniye Sovetskikh Vooruzhenykh Sil*), *Technology and Armament* (*Tekhnika i vooryzheniye*), *The Soviet Fighting Man* (*Sovetski voin*), *The Military History Journal* (*Voyenno-istoricheski zhurnal*), and *Communist of the Armed Forces* (*Kommunist Vooryzhenykh Sil*), a biweekly political organ of the Main Political Administration of the Soviet Armed Forces.

Each year numerous books and pamphlets are published for the armor leader. In 1966 these included such branch-pertinent titles as *Automotive Carburetors, Fuel Pumps and Filters, Gunnery Training of the Tanker, Breakdown and Damage to Track Vehicles, Amphibious Track and Wheel Vehicles,* and *Textbook for Military Drivers First Class;* general military subjects such as *Military Doctrine, Tactics, Military Psychology, Officers Handbook, Military Correspondence, Military Art in a Nuclear Missile War, Contemporary Combat—Its Characteristic Peculiarities, Contemporary Combat and the Psychology of the Soldier, A Scientific Approach to Troop Control* (written by the Chief of the General Staff of the Soviet Armed Forces, Marshal Zakharov), and *The History of Military Art.*

To these must be added a number of blatant propaganda and political efforts including *Whom the Officer Corps of the USA Serves, The Rebirth of Militarism in Japan, The Communist Party of the Soviet Union in the Building of the Soviet Armed Forces,* and *The Problems of War and Peace in Bourgeoise Sociology.* Then there is the unending flood of books on Soviet achievements in World War II. The well-read Soviet armor leader has an imposing amount of reading matter available, and most books are priced at two rubles or less (not over two dollars).

What then does the Soviet tanker learn from the armor-oriented articles appearing in open Soviet military periodicals? It is obvious that certain subjects are stressed and a myriad of statistics and considerable information is made available to the Soviet reader. A brief glimpse at the contents of some of these articles should be of interest to the US armor professional.

HISTORY

The Soviet military reader receives a generous portion of history, since most publications continue to get the maximum mileage out of past military operations and particularly out of World War II—which the Soviets term the *Great Patriotic* or *Fatherland War.* Although the plethora of articles on the 1941-1945 conflict has somewhat abated, there are still many works being published on the war. These included Marshal Chuikov's recent books on *The Battle of Stalingrad* and *The Fall of Berlin* and Marshal Zhukov's soon-to-be-published memoirs. Numerous articles on current subjects refer to episodes that took place some twenty-three or more years ago.

The Soviet armor reader is reminded that the first Soviet tank was tested in the autumn of 1920 and that in 1929 the 12th Armored Car Battalion was organized. A tank school was later created, and "the potential of Soviet industry in prewar years" was said to be 11,000 tanks.

Prior to the Second World War, Soviet tank troops were in action in the late 1930s in Spain and on the Finnish and Manchurian borders. In Spain at Guadalajara and in the defense of Toledo and Madrid, the Soviets claim to have had 107 "tankmen volunteers." Some 352 Soviet tanks took part in a border operation to seize a hill from the Japanese in Manchuria and more than 800 tanks assisted in stopping a Japanese attack at a river line on the Manchurian border prior to World War II. The Soviet tank operation in the forests of Finland is hardly mentioned (perhaps for good reason), although it is noteworthy that the first two test model *T34s* arrived at the Mannerheim Line in March 1940 to find the Russo-Finnish War over. They had moved from the Kharkov Diesel Plant by way of the Kremlin to the Karelian Front.

The development of the World War II family of Soviet tanks is more than adequately covered by articles entitled "How the *T34* was Created," "The Heroic Achievement of Tank Production" and "The History of Soviet Tank Development," which appeared in 1965, 1966 and 1967 respectively. All paid tribute to the engineer named Koshkin who from 1937 to 1940 worked to develop the *T34* medium tank. Appearing in 1940 as a 26-ton, 500 HP tank with a speed of 54 kph (33 mph) and a cruising range of 250 kilometers (about 150 miles), the *T34* mounted a 76mm long barrelled gun which could penetrate fairly thick armor. It was simple to produce and was reliable in operation. The large


ЦЕНТРАЛЬНЫЙ ОРГАН МИНИСТЕРСТВА ОБОРОНЫ СОЮЗА ССР

абря 1967 г., воскресенье | Цена 2 коп.

Надо было закрепить успех, которого достигли танкисты, прорвав оборону «противника». Не отрываясь от танков, идущих на большой скорости, бегут солдаты на лыжах. Они отрабатывают один из обязательных элементов наступательного боя – взаимодействие мотострелков с танками.

Зимняя учеба в разгаре. Впереди у молодых воинов еще много занятий в поле, но первое учение им запомнится надолго.

Фото Р. Рязанова.

Soviet publications such as Red Star (above) stress winter operation skills.

angle of slope on the armor caused many ricochet rounds, and the diesel engine provided greater cruising range and reduced danger of fire at a time when most tanks were operated on gasoline. One hundred fifteen of these *T34s* were produced in 1940 after the defeat of France and 1110 more in 1941 before the Germans attacked. The Russian reader is told that in the fall of 1941 the German High Command "raised the question of manufacturing the *T34* in Germany, but discarded the idea."

In 1941 as the Germans advanced east in the USSR, tank plants were evacuated to the Urals. The Leningrad Kirov Plant and the Kharkov Diesel Plant moved to Chelyabinsk and other places in the Urals. In October 1941 the Kharkov plant moved and 55 days later, with 12-16 hour shifts and some workers as young as fourteen years old, the first tank was produced in the new location. Tank units came to the factory to pick up their tanks, load them with ammunition and leave by platoons and companies for the front.

In 1942 a total of 24,668 tanks were produced, more than half of them being *T34s*. The other Soviet tank was the heavy *KV* tank, 508 of which were produced in 1941. In 1943 the *T34* was upgunned from a 76mm to an 85mm, and at the end of the year the first of the Joseph Stalin series heavy tanks appeared. This was the 44 ton *JS1* with an 85mm gun. By 1944 the *JSII* apeared, weighing one ton more and mounting a 122mm gun. The *JSIII* made its debut shortly after the end of the war.

According to Soviet articles, tank production for the last three years of the war reached 30,000 per year—which they claim was twice the number produced by Germany, one and a half times that of the US and six times that of England. The article on "How the *T34* was Created," which appeared in 1967, makes the statement: "In World War II the Soviet Union was in first place in tank construction . . . and doesn't intend to abdicate first place."

Armor offensive operations, which started with tank regiments, brigades and divisions, incorporated tank armies in 1943. The Soviet armor reader is proud to learn that some 250,000 tankers were decorated with medals and orders for their actions in combat and 1140 (according to one article or 1142 if one is to believe two other sources) received the title of Hero of the Soviet Union. Included in this august group were seven tank army commanders, the present Chief Marshal of Armored Troops P.A. Rotmistrov and First Deputy Defense Minister Marshal I. I. Yakubovsky. Sixteen tankers were twice awarded this honor, to include three armored troop marshals, two generals and eleven line officers.

Statistically minded, the Soviets have figures to prove everything from the average number of Soviet tanks per kilometer of front on the main axes of offensive operations (20-40) to the percentage of the time in World War II that their tanks were fighting (30-35%), moving (40%) or resting, reorganizing and resupplying (20-25%).

SPECIAL EMPHASIS

The Soviets have for the past several years been writing extensively about four types of specialized warfare: operations in a nuclear and/or chemical environment; amphibious and underwater operations; night operations; and, winter operations.

NUCLEAR AND CHEMICAL

Although the Soviets claim to be able to conduct a nuclear or non-nuclear war, the vast majority of articles involving armor tactics deal with a nuclear environment. In addition, there are innumerable articles on nuclear warfare not directed specifically to armor readers.

The Soviet tanker is expected to learn the actions to be taken on the flash of a nuclear burst. An enemy nuclear strike in one exercise was announced by the command "atom." Chemical and radiological instruments were put into operation and contamination markers were put out where indicated. Reconnaissance was conducted for necessary detours and a partial decontamination of vehicles and crew was performed. A junior officer was sharply criticized for dismounting from the vehicle to monitor with the chemical and radiological devices; he should have remained in his vehicle.

In another exercise in which tanks were moving with open hatches when subjected to a nuclear strike, the command was given by radio: "Burst in the rear." The crew was to "immediately close their eyes, drop down in the tank and turn away from the burst." The driver was told to apply the brakes smoothly and stop the tank. After five to ten seconds the hatches were closed as protection against the shock wave. Movement was resumed after the sound of the burst was heard.

In the case of a friendly nuclear strike, a signal was given on reaching the nuclear safety line. The driver stopped the tank, and the crew closed the hatches, secured eight shutters and donned gas masks. At the sound of the burst, movement was resumed.

In a *Red Star* article entitled "The Advance Maneuver in Nuclear Warfare," Soviet officers are criticized for making such errors during a nuclear attack on the enemy as "frontal action, shallowness of maneuver and being late in initiating maneuver." Another article in *Red Star* criticized tactical exercises with simulated nuclear weapons as being "no different than exercises that involved the use of conventional weapons." The advancing tanks are expected to attack in "prebattle formations" (column) without deploying into line. After the strike "troops in helicopters would be transported deep in the enemy defenses to help the tanks press their advantage." There must be a "rapid penetration into the nuclear blast zone to link up with troops landed by helicopter." The training of small units for nuclear warfare "must change." The defender will have a reserve and must "deploy at full speed toward the point of the nuclear explosion in an attempt to fill the gap." The commander of the reserve is ordered to "act independently without instructions."

Major General Yakovlev in an article entitled "The Combat Skill of Tankers" in a 1966 issue of *The Military Herald* expounded what Soviet armor leaders wanted to hear: "Tanks can operate in extensive areas of radioactive contamination and destruction, quickly penetrate into the depth of enemy defenses, destroy his means of mass destruction (tactical nuclear weapons) and his reserves, . . . and disrupt control of troops." He warns the Soviet reader that command and control elements will be put out of action by nuclear strikes. Tank units and commanders are told that they "must penetrate resolutely into the depth of enemy defenses and conduct decisive independent operations while cut off from adjacent units and rear services."

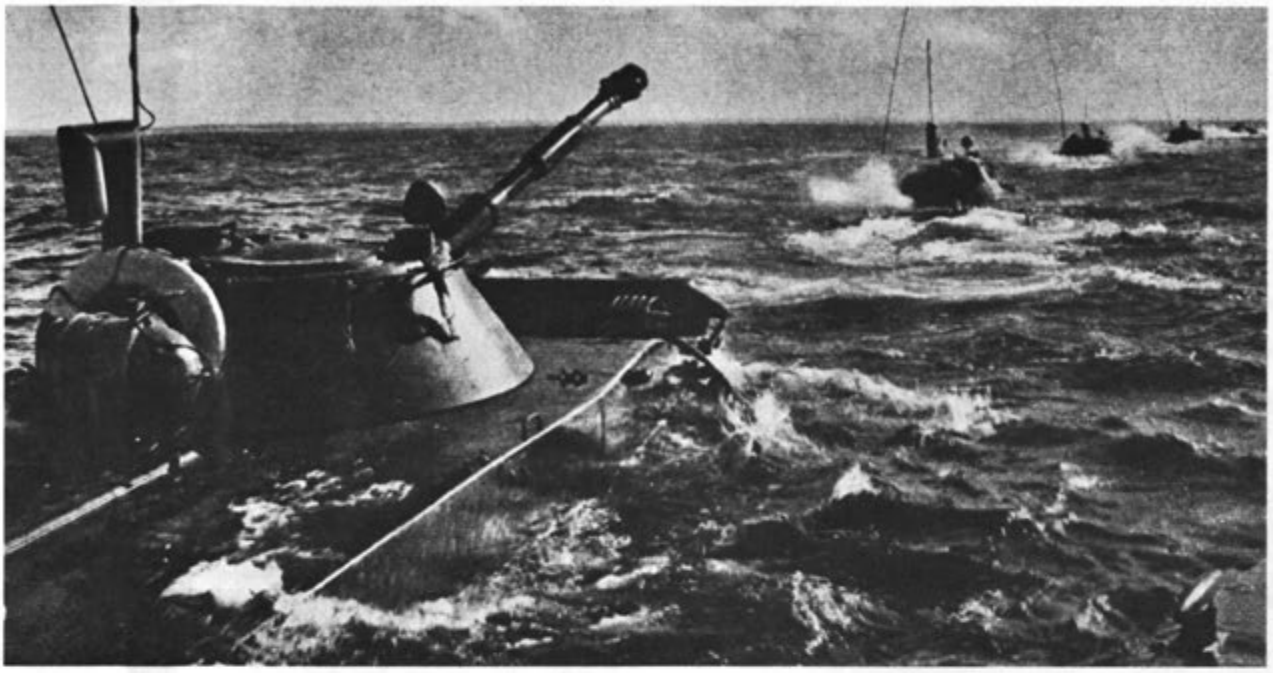
AMPHIBIOUS AND UNDERWATER

A Colonel Khomenko wrote in September 1967 in a *Red Star* article entitled "Attack—Forcing a River Barrier:" "Tanks in the leading elements force rivers by fords, on self-propelled ferries and underwater." This was merely one more article of the many stressing the importance of amphibious and underwater operations to the Soviet Armed Forces.

According to a 1967 article by two Soviet colonels on "Movement of Tanks Underwater," the Soviets were working on underwater snorkel crossings in the 1930s. In the offensive phase of World War II, Soviet tank regiments crossed the Dnester River underwater by having "crews plug up the slits with old clothes and rags soaked in oil." In 1944 Soviet *T34* and *T44* tanks crossed the three-meter-deep Bug River and later the Vistula. The *T34* tanks crossing the Vistula used floating sleeves on the exhaust and the *T44* used two snorkel tubes (one for the crew and one for the exhaust).

Since World War II, the Soviets have increased emphasis on river crossing and amphibious operations. Articles with titles such as "Tanks Move Out Underwater," "Tanks Attack from the Sea," "Amphibious Vehicle Engines," and "Regarding Control of Tanks in a River Crossing" have recently dealt extensively with the subject.

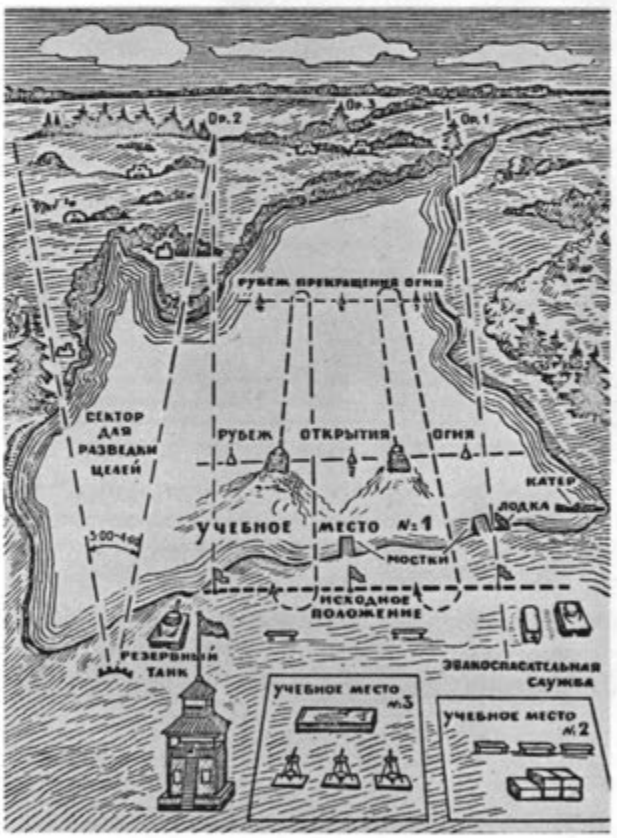
There have been various articles on amphibious equipment, advising the reader as to the care of brakes, lubrication, tire pressure, proper steering, and operation of the drainage plugs on the BRDM—a four wheel amphibious reconnaissance vehicle.



Other articles have described engines for amphibious vehicles, explaining the difference between propeller-driven and hydrojet propulsion and covering the amphibious *PT76* tank, the track amphibious APC (*BTR50P*) and the *BRDM*. All of these vehicles are said to having crossing speeds of 8-19 kilometers per hour. Incidentally, the letter *P* in connection with equipment nomenclature usually means amphibious (*plavuchi* in Russian).

On the subject of debarking tanks from landing craft, the reader is warned to secure the tank with chains and angle bars, and to raise the gun to maximum elevation when entering the water. Regarding the technique of firing from the water, the tank commander is instructed to determine the range to the target, aim the gun, and open fire, since the gunner may be unable to observe.

An unusual article is a recent one entitled "Firing from Amphibious Tanks." The physical layout of an amphibious tank firing range is presented. This includes a lake. In this article the Soviet reader learns that operating the *PT76* is like handling a moving tank on land, with several exceptions. The waves obstruct vision, the driver's periscope is useless, and it is difficult to keep on course and to estimate range while crossing water. The tube must be raised when entering the water, and because of the waves it is necessary to pick the right moment to fire. On firing it is hard to observe the burst and correct since the fog or spray hits the optical devices and an oil film clouds the vision devices. It has been necessary to have a shield made which is



Above, **PT76** tanks similar to those seen and destroyed by Americans in Vietnam practice amphibious operations. Since WW II, the Soviets have increased emphasis on river crossing and amphibious operations. The **PT76**, mounting a 76mm gun and one machinegun, saw the Soviet's first use of water turbine propulsion. This tank has a crew of three. Above, a drawing of the physical layout of an amphibious tank firing range appeared in a recent Soviet article entitled "Firing from Amphibious Tanks." Due to the waves, the Soviet reader is told, it is necessary to pick the right moment to fire.

electrically connected to the gun firing switch. This covers the vision and optical devices when the round goes off but uncovers in time to permit spotting the strike of the round. On the firing range described, amphibious tanks run the course two at a time, in designated lanes. For safety the crew wear life jackets and there is a doctor present as well as a launch, an engineer rescue section and an amphibious recovery vehicle.

The underwater snorkel operation is dealt with in several articles. This operation includes underwater reconnaissance by divers to determine "depth of river, type of soil, and approaches." Decreased tank capability underwater is discussed, and the effect on driving power, the overheating of the engine, and the speed of movement are all analyzed. For example, "at the five meter depth there is a 20 percent loss of power due to exhaust." Underwater the tank proceeds in first gear at a speed of 6-7 kph and moves best on a sandy bottom. Slippage on a mud bottom cuts down considerably on track effectiveness.

The psychological problem involved in snorkeling is treated in several articles. In one a tanker is said to be afraid to cross underwater in a tank. His first sergeant demonstrates "how the driver acts in case of breakdown underwater" and shows "how communications are maintained with the recovery section and senior officers." An officer then drives the tank across and has the frightened tanker "test the communications underwater." According to another article, "if the tank stalls, you can start the engine again." The need for strict discipline in this operation is stressed, as is the fact that it takes "only an instant for the crew to get the tank combat ready after emerging from the river."

Regarding control of a tank battalion in a river crossing, two articles suggest that the battalion executive officer (called the chief of staff in the Soviet tank battalion) in his APC take charge of and supervise the river crossing operation. This frees the battalion commander to cross the river and move ahead with the offensive operations on the far bank. Supervision of communications, safety and lifesaving, traffic flow, and so on is then turned over to the second-in-command.

The Soviet reader is told that the United States is also working on snorkel operations and for this purpose uses an "aluminum four-section snorkel good for depths up to 4.6 meters."

NIGHT OPERATIONS

Starting with "eighteen hours on night activities in basic training," the Soviet soldier is expected to continue to develop his night operational capability. The Soviets feels that "night and other conditions of limited visibility help to achieve surprise, favor concealed preparation for the attack and make possible completion of the mission with minimum losses."

A 1967 *Military Herald* article entitled "A Tank in a Night Attack" holds that "success in night combat is by careful and thorough preparation prior

to the onset of darkness." The night attack is conducted "using means of illumination and night sights" and by "conduct of fire from flashes of rounds and silhouettes of targets." Another article in the same issue deals with "The Tank Platoon on Reconnaissance," a large part of which is devoted to night operations. In the exercise described, a reconnaissance group composed of the 1st Tank Platoon of the 6th Tank Company, with a rifle squad and a chemical and radiological reconnaissance squad attached, moves out on a reconnaissance mission. Equipment includes: flashlights and colored lenses, flares, and night vision instruments. The platoon commander prescribes the signals to be used, the password, his location in the column; designates the second-in-command; and specifies that night-vision devices will be used only up to the edge of the enemy area. After that he must give specific permission for their use. The night sight and infra-red projectors are to be used for twenty seconds at ten second intervals. In case of a meeting engagement with the enemy, they may be turned on.

An article on "Tank Patrol Actions" prescribes training in "sound monitoring," that is learning to determine the type of vehicles and the range to them by listening to engine noise at night. In "Tanker's Training for Night Firing" the reader is warned that "tankers make errors in determining distances to the target at night through optical devices." The tendency is to underestimate the distance. A day and night exercise in the same area is recommended to help overcome this tendency.

Night gunnery involves practice to detect enemy infra-red equipment and projectors as well as using night-sighting devices to lay fire on targets detected by burst flashes and flares. Tankers are reminded to correlate the optical axis of the sight with the light beam of the projector. Practice is also conducted on firing at lights in windows and buildings.

Extensive night driving exercises include night movement in simulated gas and nuclear warfare. The danger of a nuclear flash at night is such that a tanker "may be blinded within a radius of eight kilometers of the burst, although not looking at the flash." There is also the possibility of "temporary loss of vision at distances 12-15 kilometers from the detonation."

Night exercises are often conducted at "maximum speed." This does not, however, imply a complete disregard for safety measures. Every road, fork and turn is to be marked with luminous signs. Mounting and dismounting of tanks or standing near them while engines are operating is prohibited. The distances between moving tanks in column must be not less than 500 meters, and while crossing obstacles the crew must be at station and resting against the seat back. The driver must be holding the controls; the gunner is to have his hand on the machine gun control; and the tank commander and loader are to have their hands on the observation device.

In one article on "The Tank Battalion as the Rear Guard" the enemy makes a night tank attack which has to be stopped by Soviet tanks. That night operations have something to offer both the attacker and the defender is suggested by the author of "The Tank in a Night Attack." In his words "night battle has a greater effect on the mental attitude of the defenders than on the attackers, since tanks which appear swiftly from the darkness have a stunning effect on the state of morale of the personnel." However, he also points out that effectiveness of aimed fire is reduced, coordination with infantry is difficult, maintenance of direction and orientation is complex, and the noise of engines gives away surprise.

WINTER OPERATIONS

The simple fact of geography dictates that the Soviets emphasize cold weather operations. Articles such as "Preparing a Tank Motor in Winter" which appeared in *Starshina-Sergeant* in 1967, are to teach enlisted leaders about their equipment. It is emphasized that the "time for warming up the tank engine should be at least five minutes." An article on over- and underheated engines tells the reader that the minimum temperature of the liquid-cooling system in an operating medium tank is 55° Centigrade (131° Fahrenheit), the optimum is 70-90°C (158-194°F), and the maximum is 105°C (222°F). In freezing weather (0°C or below) the Soviet driver is instructed to use a preheater for the engine, since diesel fuel doesn't fully burn if the engine is too cold. Still another *Starshina-Sergeant* article entitled "Alert in the Tank Park" provides tips for drivers and crews on maintenance, cold weather starts and yearly inspections.

An excellent *Military Herald* article on "Tank Battalion Operations in Winter" warns that in more the 60-70 centimeters (a little more than two feet) of snow a tank can not move. The article covers maintenance, marches and tactics in extreme cold and heavy snow. The article also advocates the use of ski troop patrols in conjunction with armored vehicles.

AVIATION, AIRBORNE AND HELICOPTERS

There is evident in Soviet writings a lack of concern for enemy air. The subject of the effect or danger of enemy tactical air over the battlefield is conspicuous by its absence, and there is only limited reference to friendly air support. There are, however, considerable references to parachute and helicopter-borne troops landing behind enemy lines in an offensive operation and joining tank forces which have broken through the defenses. Only four articles out of 80 mentioned enemy air. One was a *Military Herald* article on "The Tank Battalion as the Rear Guard." Another was an article in *Starshina-Sergeant* about tank crews in the attack, stating that "the tank zigzags during air attack." A third article, involving rail transport of tank units, did mention in passing the need to camouflage tanks from air observation while waiting to load and a subsequent requirement for air security while on the move. And there was an exercise in tank patrol actions in which an aerial chemical attack with bombs took place. Nevertheless, the Soviet tanker is not confronted in his professional reading with any significant threat from air-delivered rockets, napalm or bombs.

An interesting article on "The Tank Platoon in the Attack" in the *Military Herald* in 1966 speaks of the platoon fighting helicopters. The reader learns that the secret is to "determine the range to the point over which the helicopter is flying and add 100 meters." Fire is then conducted with machine guns using tracers and tank cannon.

TANK SCHOOLS

The Soviet Army has a number of armor officer academies where the graduate is commissioned as a junior lieutenant *(mladchi leytenant)*. There have been recent articles on both the Kharkov Guards and Ulyanov Guards Tank Schools. Those who want to be Soviet armor officers and to attend the tank schools come from the enlisted ranks, from civilian life by making application through the city commissar and meeting the necessary requirements for political reliability, and from Suvorov School graduates. The Suvorov School is a state military school established originally in World War II for service orphans about ten years of age or older. The present Suvorov Schools are no longer restricted to service orphans and the entrance age now makes them somewhat equivalent to American high schools except for their being Communist military preparatory schools.

Cadets (*kursanti*) at the tank schools wear distinctive insignia. During the three year course they study tank driving, tactics, mathematics, maintenance and motors, and are expected to serve in a cadet crew as loader, gunner driver and tank commander.

The Kharkov Guards Tank School was established at the end of 1944 by an advancing Soviet tank unit which remained to set up and operate the school. In addition to scholarship and performance as a member of the crew, leadership and sports are also considered of paramount importance.

The Malinovski Armored Troops Academy recently announced in *Red Star* graduate study in scientific fields for selected army and navy officers not over forty who are higher education graduates, have

at least two years of experience in a science field, and have demonstrated ability in scientific research and teaching. The officer applicant must be able to speak a foreign language. His course of study will consist of instruction in the science discipline, in the history of the Communist Party, and in a foreign language.

FOREIGN ARMIES

The Soviet tanker is expected to "study the tactics and organization of foreign armies in order to know how many vehicles to expect." The tank officer must know "the organization and tactics of foreign armies to a level two to three times higher than those they are commanding."

In *The Military Herald* there is usually a section devoted to foreign armies. During the course of the past few years articles have apeared on "The Armored Cavalry Regiment" (US), "Tank Units in the US Army," "A Tank Battalion of the Bundeswehr in Basic Tactics," and "Development of Nuclear Weapons in the USA."

Most information on other than Soviet equipment, organization or tactics is usually introduced with the phrase "according to reports in the foreign press." The article on the organization and tactics of the US Armored Cavalry Regiment, however, referred specifically to the Jan-Feb 1965 issue of *ARMOR*.

The article on US tank units covered the TOE, weapons, combat formations and cross attachment. Regarding the German tank battalion, the Soviet reader learned of the similarity of US and German organization (same number of tanks but 75 less German personnel) as well as about the 39-ton *Leopard* tank and the *MBT70* with the Shillelagh.

The Russians have never been hesitant to emulate, copy or take advantage of the best they could find already in existence—even when it was in someone else's "repertoire." Several of their postwar weapons and vehicles were close copies or refinements of American and German equipment which they received through lend-lease or by capture during World War II. In addition, they successfully adopted various German tactics to their advantage during the war. This is not, however, to suggest that the Russians lack originality. Soviet tanks and planes are finite evidence of their capability for design as well as manufacture.

The current and continuing interest in foreign armies shows that this traditional "over-the-shoulder"

stance has not been abandoned and that they do not intend to overlook promising equipment, tactics or methods of operation of other military forces.

No single state or people has a monopoly on useful ideas and their implementation. Understanding the equipment and doctrine of others can serve either to assist in defense against it or to permit timely adoption of desirable aspects. In either case it is useful.

As professional armor leaders we must leave no stone unturned to keep abreast of what others are doing, lest one day we awake to find ourselves behind the times. A good professional reading program is the best way to keep abreast of foreign as well as American thought, doctrine and equipment. It is also an excellent way to ensure that we are prepared not only for today but for tomorrow as well.

Part II will cover observations regarding Soviet tactics, gunnery, equipment, training, security, and discipline.

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INVASION

by SP4 Samuel B. Pierson

For millions of people around the world, Wednesday, August 21, 1968, was not a normal day. For American troops stationed in Europe, it was no less than an extraordinary day. It was a day that began early and lasted far into the night. It was a day of excitement and sadness, a day of wrath and a day of panic and a day of precision. Most of all, it was a day to remember.

At 0530 in the pre-reveille dawn bleary-eyed troops were awakened with the news that the Soviet Union had invaded Czechoslovakia. Many soldiers greeted this announcement with a bland matter-of-factness. After all, what did one expect of the Russians. And anyway, Czechoslovakia was just another Communist country, wasn't it?

But for the men and officers of the 3d Squadron of the 2d Armored Cavalry, such a blasé attitude was both impossible and unwise. They knew that they were stationed less than 50 miles from the West German-Czechoslovakian border, a border that it was their duty to guard. They knew it was their duty to be the Free World's first line of defense if Russia chose to widen the Iron Curtain. They knew that their mission could now be one of awesome responsibility. So for this Armor outfit, 21 August was most certainly not a normal day.

Wednesday, 21 August 1968 was for them a day filled with the actions, sights, and sounds of war.

It was a day when the Armed Forces Network calmly reassured its audience that "USAREUR Forces are on no special alert status" since these forces "are always in a high state of readiness."

It was a day when word came down that the ban on the cannibalization of tracked vehicles was temporarily lifted. And well-trained mechanics worked into the night to make sure that the maximum number of vehicles were combat-ready in the minimum amount of time.

A GI said, "Hey man, AFN says Russia's now got 275,000 troops in Czechoslovakia. How many do we have?" When told USAREUR had somewhere

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around 200,000, the GI shook his head and said, "We may be outnumbered, but let them come. We're ready." And wise heads nodded in agreement.

A sage first sergeant who had seen both Korea and Vietnam looked out on the bustling activity and commented, "More excitement around here than Vietnam." And no one thought to disagree.

Sounds: The constant roar of tanks and APCs that were being tested again for the millionth time "just to make sure." The whine of trucks and jeeps as they moved into position "just in case." Now and then the flutter of chopper blades as big brass came and went. And always the crunch of footsteps on gravel paths as soldiers moved quickly and briskly to assigned tasks.

Sights: Boxes of C-Rations packed onto trucks, ready to feed the expected stream of refugees. Cartons of milk ready to be given the thirsty. Field gear neatly stowed on vehicles, ready to go when needed. Weapons lined up in the arms room, alert for action. And row on row of armored might, ready to roll if called upon.

And the unexpected: KP's asking "Is there anything else we can do?" Men in the commo pit volunteering to work an extra shift. Soldiers returning early from leaves and passes "in case you need my help." Tank crews talking strategy beside their tanks, each making sure the other knew his job and knew it well. German workers looking at the GIs with new respect, knowing their lives might just depend upon these young men. And wives looking at their husbands with awe, willing to tell all the world "My husband is a soldier."

And a whole new aura of pride, professionalism, and precision. No longer was all that tank gunnery practice just a game—now it was a possibly critical combat skill. No longer was there the feeling that the time spent in marching practice was unnecessary —now everyone realized the importance of that discipline. No longer did naive privates look at their officers with tinges of scorn and envy—for these officers quickly revealed they were skilled professionals who knew their job. For now the specter of war was but 50 miles away.

Not a few would have agreed with the military man in Bonn who was later quoted as saying: "There's a big difference between having fourteen Czech divisions on ice in garrisons . . . and having battle-ready Russian troops hiding in the trees just across the Bavarian border."

And thus, for the members of this Armor outfit, 21 August 1968 was a day that began in surprise and ended in a feeling of professional confidence. A sense of pride had been reborn. Pride in knowing that a man was part of a sharp team, a team that was ready and able to take on any challenges thrown its way, a team that knew it was well-led, well-trained, well-equipped.

Most of all, it was a day that would be remembered long after the Russians left Czech soil. Long after other memories had faded like yesterday's headlines. Long, long after.

A CHALLENGE TO ARMOR

1969

Resolved: ARMOR will not go backward; it can not stand still; it must move forward.

If one accepts that the term *profession* implies occupational endeavor marked by a special body of learning, distinguished by shared ethical standards, and characterized by a growing common bond of tradition, one's thoughts turn to how this identity is achieved.

The means are many. But none is so important as some medium of mutual communication where knowledge can be accumulated, exchanged, and preserved beyond the transitory devices of fleeting thought and perishable speech. This we of Armor have in our 80 years old, yet ever new, professional journal—*ARMOR*.

However, what are we doing to conserve, nourish and improve this very real mark of our status as true professionals?

A number are giving freely of their time, talent, and substance—by writing for *ARMOR*, by volunteering to participate in the affairs of our Armor Association which publishes the journal, by unstintingly and consistently paying their dues in good times and bad, and by doing their best to inspire others to do all these too.

Unfortunately, there is substantial evidence that among us who proudly wear the insignia of Armor are those who must be uninformed, or unconcerned, or uncommitted, or, most probably, just unthinking.

There remain Armor battalions and squadrons wherein only two Armor officers are Armor Association members, where no senior NCOs are members, and where few or no unit funds subscribe to *ARMOR*.

There are potential authors, having unique professional knowledge of importance to all, who respond that they are "too busy" to prepare a much-needed article.

And these things exist despite exhortations, entreaties, and, hopefully, rational explanations to those who could do much to create a greatly enhanced professional environment.

Where does the solution lie? How shall we go forward despite the seeming lack of universal dedication to professional improvement and solidarity?

Let us keep both our animating spirit and our thirst for broader and deeper knowledge undiminished. Let us dare to speak and write boldly of these things. Let us resolve to brook no compromise of the standards of our profession which were set by illustrious predecessors and sustained by us to be passed to future leaders.

Let us neither accept from, nor make for, our wayward brethren excuses for less than a lively and full interest in supporting what rightfully should be the proud possessions of us all—our branch association and journal. Let us make it abundantly clear that we are counting on, and expect, them to offer their thinking, their writing, their share in deliberations, and their dues. In sum, we look for their loyal support to assist in advancing the standing of Armor as a leading specialty within the profession of arms.

For any to do less is to diminish all.

the Editor

3d PLACE

ARMOR OFFICER ADVANCED COURSE 3

1968

THE COMPANY COMMANDER

AND THE NEW LIEUTENANT

by Major Walter M. Smith

If you have ever had to ask directions on the way to your newly assigned company because no one was available to escort you; if you have ever had to wait in an orderly room for an hour because no company officer could be located to welcome you; if you have ever been greeted by a commanding officer with indifference and skepticism and informed that he had not been expecting you, that the assignment was probably a mistake but that he could most likely find a place for you to sleep—then you can appreciate the importance of an efficient, well thought out, complete plan for introducing an officer to his new assignment.

A plan for orienting newly assigned lieutenants should be developed by a company commander soon after he assumes command and not left until arrivals walk through the doorway. There is seldom sufficient time available to do this after a new officer has been assigned.

Moreover, a lieutenant joining a unit already on a combat operation has very few hours in which to adjust to his new responsibilities and develop confidence in himself and in his platoon. The commander who has formulated beforehand a plan designed to develop the new officer's confidence and acquaint him with his responsibilities will increase the immediate effectiveness of a new platoon leader many-fold.

Although lieutenants arriving in a combat zone have completed the officer candidate and/or basic course and also have benefited from a few months experience in their first assignments, most will not have developed confidence in their own ability to perform well in combat.

The newly joined officer needs reassurance. The method of welcoming him to his unit should give him that reassurance. He should be greeted in a way which indicates that the commander has confidence in the lieutenant.

One technique, used by one of my former commanding officers, consists of a direct approach to reassure the officer. Select something which concerned you when you were a new platoon leader and let him know that any misgivings he may have about

the subject will be short-lived. If you believe that he may be troubled because of his limited amount of Army experience, then inform him that in a very short time he will realize that he is the best man qualified to lead the platoon because of his training and education, and make it clear that this is true even though some of his platoon members may have many years of military experience. Any similar positive approach will be beneficial in getting the lieutenant off to a good start.

On the other hand, a commander who greets a new lieutenant with a pessimistic attitude and with such instructions as "follow your platoon sergeant around for a while, he knows more about the job than you do," will lose a potentially effective leader on his first day of duty. The lieutenant most likely will be more concerned about his efficiency report after such an introduction than with accomplishing his mission.

After deciding on his initial greeting, the commander should consider various plans for introducing a new officer to his new duties. While a few officers may be capable of leading a platoon after receiving a few words of encouragement from the commanding officer, most will probably require time for observing the actions of other experienced leaders before taking charge of a platoon.

Some captains, who have recently commanded units in Vietnam, have told me that in their battalions the new lieutenant observed experienced platoon leaders in various units before he was even assigned to a company. In an infantry unit where this was not done, one rifle company commander permitted a new officer to observe the other two rifle platoon leaders for a few days before assigning him to lead a platoon. The officers reported to the commander that many of their questions on such subjects as their relationship with their platoon sergeant, ambush patrol techniques, and radio-telephone procedures, were answered during this period. In addition, their confidence in their own ability to do the job was increased by observing other leaders.

Various methods for observing have been used with success. A troop commander in the 11th Armored Cavalry Regiment assigned missions during search and destroy operations to platoons in such a way that a new platoon leader could benefit from the experience of observing the officer leading the platoon to his front. Regardless of the type of unit he is commanding, a captain should be able to develop a plan which will instill confidence in the new lieutenant.

The plan must be complete. It should include administrative processing, an orientation on the local surroundings and a thorough briefing on unit administrative and tactical procedures. After outlining on paper what must be accomplished, the company commander should review battalion regulations and operating procedures to insure that all administrative requirements have been satisfied and that the plan is complete. For example, it may be embarrassing to discover later that it was your responsibility, and not the responsibility of the Personnel Services Division, to insure that the new officer's record of emergency data was complete before he moved out on a combat operation.

The orientation about the local area will vary, of course, from unit to unit. Certainly, however, the officer should be escorted through the base camp to familiarize him with the available personnel and logistical services and with other American and Allied units in the area. He should also be made aware of recent unit accomplishments and achievements, and their effect on the war effort. The relationship between the United States Army and foreign military and civilian people and activities should be discussed in great detail, particularly if the new officer is being introduced to a counterinsurgency situation for the first time.

Finally, the commander's plan should include a briefing on company administrative and tactical procedures, many of which will be set forth in standing operating procedures which the new officer will read. However, the published guidelines soon become outdated. The commander may find it helpful to review coordinating instructions in past operation orders for specific changes in procedures. I found that another place to look was in a notebook, always kept in my jacket pocket, which contained orders and directives issued during oral command briefings. I discovered during a six-month period that many changes in procedure were recorded only there. In any event, the new officer must be aware of everything that all the other company officers take for granted.

After the commander has decided what the officer must know, he should determine who will present the briefings. He may decide that the executive officer and the other platoon leaders can accomplish many of the requirements. In some situations, the executive officer will be the only officer in base camp when the lieutenant arrives and, therefore, will be responsible for most of the orientation.

However, the commander should normally reserve the briefing on tactical procedures for himself.

Only the commander can insure that the new officer understands the unit procedures for eagle flight operations, that he understands instructions to be issued over the radio during combat, and that he understands exactly what his responsibilities are in the event his platoon makes contact with the enemy. The commander should also discuss those administrative requirements which pertain only to the two of them. For example, he might include in this category discussions on officer efficiency report requirements, and unit discipline and promotion policies.

With an orderly plan established, the company commander can devote his time to studying the new lieutenant's past experience and training in order to estimate for himself the officer's leadership potential. This should be done in relation to the company's current mission. If the company is conducting a clear and hold operation in Vietnam, will the new platoon leader's past civilian and military experience assist him in accomplishing his mission? Has he had prior experience in an internal development program?

If his platoon will be conducting night operations frequently, will his past military training be adequate? Has he received special training in Ranger School, in the Canal Zone, or in an in-country school which will assist him during night operations? What additional training does he need? Should he observe a reconnaissance in force operation with another platoon leader before he is assigned a similar mission?

The commander should constantly ask himself pertinent questions, accumulate information by reviewing records and talking with the officer, and then relate this information to the lieutenant's responsibilities. The commander, because he has considered information from all available sources and used this as a basis to overcome possible weaknesses should be confident that his subordinate has enough experience and training to successfully complete his mission.

The lieutenant's first combat operation should further increase his own confidence in his ability to do the job in the future. A commander can influence this by determining before the operation that the new officer is ready for the mission. The platoon leader should be able to demonstrate that he understands the operation order and the operating procedures not included in the order. He should know what is expected of him. He should also be convinced in his own mind that he and his platoon are ready for the mission. This can sometimes be determined by observing a platoon rehearsal of one aspect of the operation or by simply talking with the new officer before he issues his platoon order.

In addition, he must feel that his mission is just as important as the mission assigned to the other platoon leaders. To advise the lieutenant that he will be in reserve may not be adequate to satisfy this requirement. If he is to be in reserve, assigning him contingency missions so that he can at least issue some tentative plans, may increase the importance of the mission. In any event, if the lieutenant is properly prepared for combat, and if he is successful in accomplishing the mission, then the benefit derived from the first operation should be an increase in his confidence and in his effectiveness as a platoon leader.

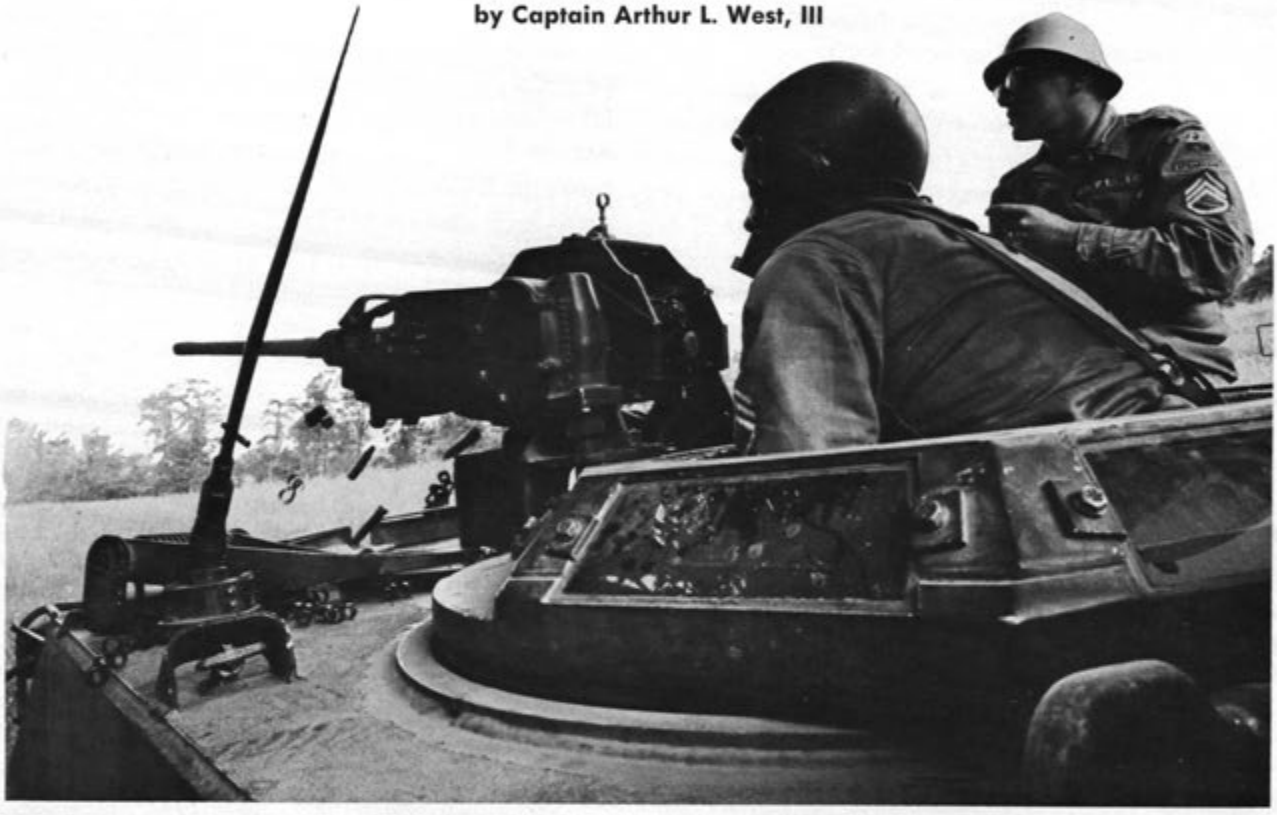
A company commander should develop his orientation plan with just as much forethought as he would use when considering any other contingency plan. The plan should represent a logical sequence for introducing a new lieutenant to his combat duties. It should be designed to assist the lieutenant by acquainting him with his responsibilities, and developing his confidence. Properly carried out, it will benefit the company commander, and the entire unit, by increasing the immediate effectiveness of the newly assigned officer leader.

MAJOR WALTER M. SMITH, Infantry, was graduated from the Infantry Officer Candidate School and the Ranger Course in 1961. He was then assigned to the 1st Battalion (Mechanized), 30th Infantry, 3d Infantry Division in Germany, where he served as a rifle platoon leader, weapons platoon leader, company executive officer, and battalion S1. In 1964 he returned to CONUS and held positions as an administrative officer and as the Assistant Inspector General in the Office of the Assistant Chief of Staff for Intelligence, Department of the Army. He next completed a tour in Vietnam as a rifle company commander in the 1st Battalion, 27th Infantry and as Assistant S3, 2d Brigade, 25th Infantry Division. In 1967 he returned to CONUS and attended the Armor Officer Advanced Course. He is currently attending the University of Omaha (Nebraska).

FIRING COURSE for the M114

4th PLACE
ARMOR OFFICER ADVANCED COURSE 3
1968

by Captain Arthur L. West, III



The armored division found in Europe has twelve combat units, including the tank and infantry battalions and an armored cavalry squadron. The basic combat element of each of these combat battalions is an armored vehicle, a tank, an armored presonnel carrier *(M113),* or an armored command and reconnaissance vehicle *(M114),* and its crew or squad.

Throughout the Seventh Army there is a standardized qualification course for the main battle tank, the firing of which is an annual requirement. The course is located on Range 42 at Grafenwoehr. A similar requirement was established for the mechanized infantry squad, but this course is not standardized due to the large number of courses located at training areas throughout Germany, among them Baumholder, Wildflecken, Hohenfels, Grafenwoehr, and Tennenlohe. In contrast, there was no requirement, annual or otherwise, nor course for the qualification of the *M114* crew.

Major General Welborn G. Dolvin, then commanding the 3d Armored Division, found that although his 351 tank crews and 135 infantry squads were tested annually, the 186 *M114* crews in the division were not formally tested in any way. In order to round out the training of combat units, the 3d Squadron, 12th Cavalry, commanded by Lieutenant Colonel Joseph J. Yeats, was given the mission of establishing a test course and testing the *M114* crews in the division. Since the *M114*s fall into two general categories, scout vehicles, and command and control vehicles for companies and larger units, it was decided to establish a qualification course for only those vehicles which perform primarily scouting missions, a total of 144 in the armored division. The purposes of this course were to provide uniform training for division scout crews, to generate guidance for future training, and to give the crews realistic training.

In order to afford a comprehensive test of the scout crew, the 3d Squadron, 12th Cavalry established a three-phase course at Wildflecken during July 1967. The phases were mortar adjustment, military stakes and live fire. The course was based on initial data and recommendations resulting from a similar course run by the squadron in April 1965.

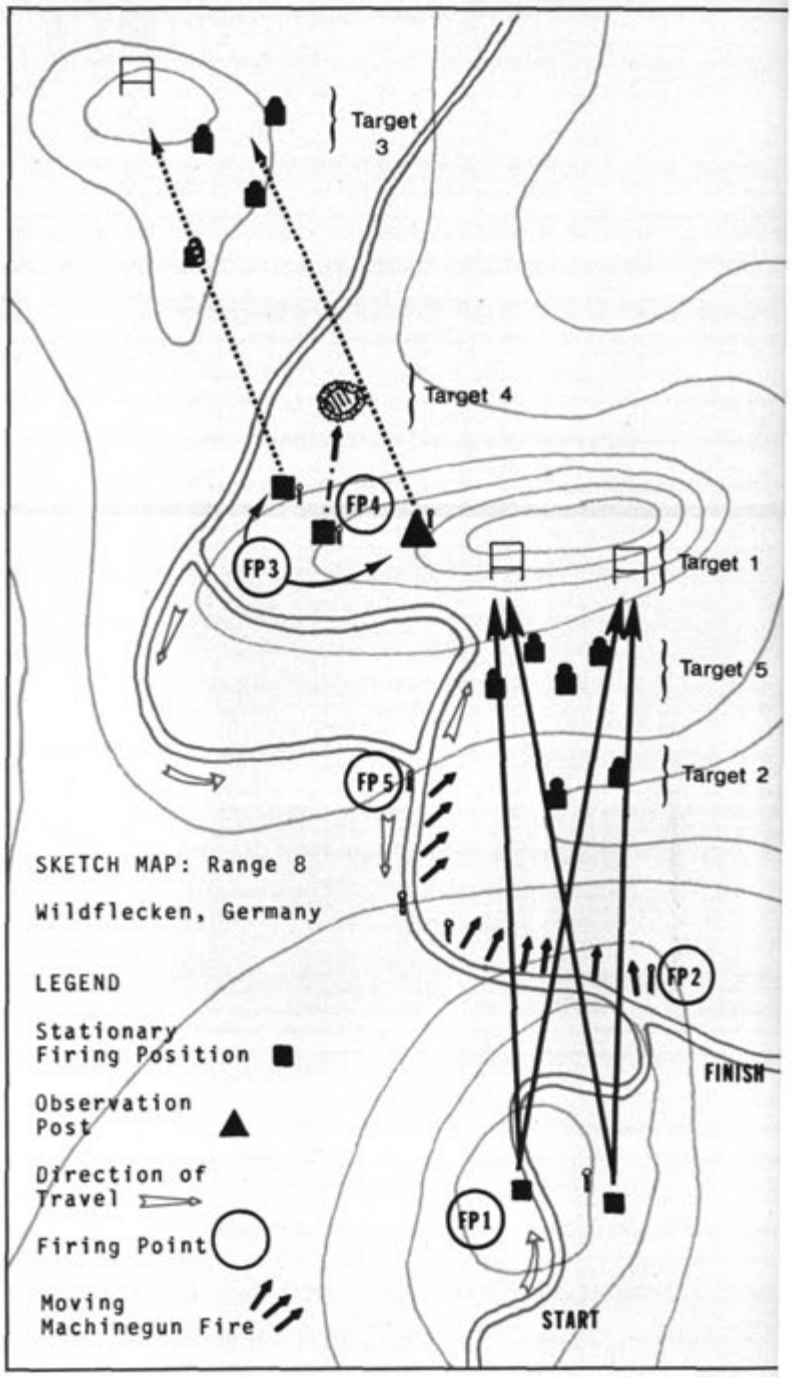
DEVELOPING THE COURSE

I was given the responsibility for the organization, construction, and operation of the live fire portion of the scout test. My troop was required to construct the range and an appropriate administrative area. This article discusses the live fire course with emphasis on the experience gained and the mistakes made in setting it up. It also examines the rationale behind the decisions made, some quite arbitrarily, concerning the course and the standards of performance desired. The results will be analyzed with a view to providing training indicators and guidance for future training.

It should be pointed out that most of the times and desired target effects, along with target arrays, were chosen tentatively and then checked out with a few composite crews. There was an overall tendency to be generous whenever there was an unknown factor. This was based on the feeling that it was better to maintain interest and high morale by taking a chance on making the course "easy" as opposed to establishing what might have been impossible standards on a virtually unknown course. Information compiled from the course was to be used to readjust the standards of performance.

It is obvious that the physical layout of the range will vary with terrain and safety requirements. Hence, the information presented here will be general in nature. However, the influence of the range used at Wildflecken cannot be completely removed from the analysis of the course. Range 8 at Wildflecken ran along a ridge line, crossing two saddles. This meant that the .50-caliber machinegun had to be fired in generally the same direction and at a minus elevation. The course was approximately two miles long from the start to the turn-around point.

The areas of the simulated enemy situation, the reporting procedures used during the test, and the desired security measures employed by the crew are matters which must generally be determined by the command sponsoring the training. These factors depend on the terrain of the range, the training situation, and the standard operating procedures of the sponsoring unit. Nonetheless, a directed effort toward standardized training would help eliminate unwarranted differences in these areas.



Since the course was only a training vehicle, something was needed to give the tested crew a sense of the urgency approaching that they would experience during combat. The technique chosen by the 3d Squadron, 12th Cavalry was the use of the time factor during the engagements. Because of a dearth of information regarding the length of time needed to make the course challenging but still possible, times were chosen arbitrarily, then tested with composite crews from the squadron.

CONDUCTING THE COURSE

For safety reasons the loading of the weapons was not begun until the crew was specifically instructed. The opening fire time for the .50-caliber machinegun did not start until the vehicle came to a complete stop at the firing position. To give the crew some freedom of action, firing positions could be set up anywhere within large areas, wherever a crew could stop to fire. However, the crew was penalized for an error in choice. If the vehicle stopped too far back it could not hit the target, and the crew had to waste time and ammunition searching for a better position. If the vehicle exposed itself unnecessarily, it was penalized for failing to be in defilade. When an alternate firing position was used, the opening time began when the vehicle left the primary position. Opening times for the .50-caliber engagements were established at 10 seconds for the vehicles equipped with power cupolas and 25 seconds for those with manual cupolas. Forty seconds were allowed for firing. The number of tracers observed determined the length of the burst of automatic fire. The proper bursts for the .50-caliber were set at 1-2 tracers while adjusting fire, and 2-3 tracers when firing for effect; the proper burst for the *M60* machinegun was established at 2-3 tracers.

The following were the five engagements and their respective values:

Engagement #1	.50 caliber	280
Engagement #2	M60	120
Engagement #3	.50 cal. and M60	210
Engagement #4	M79	90
Engagement #5	M60	115
	Total	815
	Minimum passing score	400

The first engagement on the record course was fired with the .50-caliber machinegun at a range of 800 meters. The target array consisted of two 6×6 panels spread approximately 100 meters laterally and 25 meters horizontally on the far side of a valley. The crew fired this engagement from two positions which were pointed out to them during an orientation ride prior to firing the course. In order to give the crew some freedom of action, it was not specified which position they would go to first. The remaining position was used as an alternate position. Fifty rounds were fired from each position, and, in order to receive full credit, the tested crew had to engage both targets from each position. The panels were physically scored, and seven hits on each panel was established as the desired target effect. The crew received no credit for any hits in excess of seven on each target. The times for the second position were continued from the first position.

The crew drove down the course to the second engagement which was fired at five radio-controlled pop-up targets located at an initial range of 150 meters from the moving vehicle. The targets did not appear until after a demolition charge was exploded close to the test vehicle to stimulate a near-miss by the enemy. The time for the engagement began on the blast, and the *M60* machinegun opened up with 100 rounds. The crew was graded on area coverage and was not required to knock down the targets. If the scout observer managed to hit all five targets, the crew received credit for full area coverage.

Engagement three began with the requirement to move the vehicle into a defilade position and to establish an observation post (OP) on a hill. From this OP the track commander and scout observer saw a target array consisting of one 6×6 panel and a number of silhouette targets covering an open field at a range of 450-500 meters. The observer remained at the OP with the *M60* machinegun and 100 rounds while the track commander maneuvered the vehicle into a firing position at the base of the hill in order to engage the target array with 50 rounds of .50-caliber ammunition. The *M60* machinegun opened fire within two seconds of the .50-caliber. For full credit, the panel had to show at least 10 hits with either weapon, and all of the area target had to be covered with fire.

On the next target engagement the scout observer fired the *M79* grenade launcher. This crewman had to select a firing position and engage, with two rounds, a target located 150 meters downhill. The target consisted of a 10-meter circle of sandbags filled with rocks and placed on a gravel base. Six 55-gallon barrels filled with rock were placed within the circle, one being at dead center. In order to be considered a target hit, a round had to impact on a barrel, on the circle of sandbags, or anywhere within the circle.

After completion of engagement four, the crew received a change of mission and was told to return to friendly lines because the enemy had been observed attempting to cut off the test vehicle. The fifth, and final, engagement was fired with 100 rounds by the *M60* machinegun pointed over the

rear deck while the vehicle withdrew toward the starting point. The target array here consisted of 10 radio-controlled pop-up targets which were engaged at an initial range of 100 meters as the vehicle moved away from the array. The engagement began after an "enemy" demolition blast near the vehicle. The targets were then raised remotely. The crew was graded on area coverage only with no requirement for knocking down the targets as was the case in engagement two. This engagement terminated the course. All weapons were cleared and the crew then left the course for a critique.

EVALUATION

For purposes of evaluation, the results of the maneuver battalion scout platoons and the cavalry scout sections are separated. Their organization and employment vary greatly.

TABLE 1—ANALYSIS OF FIRING COURSE RESULTS

GRADING AREAS	PERCENTAGE OF POINTS SCORED	
	MANEUVER BN SCOUT CREWS	CAV SQDN SCOUT CREWS
1. CREW DUTIES	86.7	88.1
2. REPORTS	78.7	86.9
3. LOADING OF WEAPONS	91.0	91.5
4. OPENING TIMES	80.6	95.8
5. CLOSING TIMES	78.7	84.6
6. TECHNIQUE OF FIRE	76.3	78.0
7. TARGET HITS (.50-CAL. AND M79)	45.1	55.5
8. AREA COVERAGE	88.6	90.5

Although the tested crews of the 3d Squadron, 12th Cavalry were not allowed on the record range, there was the inevitable feedback from the members of the squadron who worked on the range. This gave these crews an advantage over those of the maneuver battalions.

In addition, since the battalion scout platoon is the only organization of this type in the battalion, the scout platoons generally were affected more by personnel shortages than were the armored cavalry scout sections. These factors combined to produce two groups with different training backgrounds in the division: the 99 crews in the scout platoons and the 45 crews in the cavalry squadron.

In order to give better information for analysis, the live fire course was subdivided into eight grading areas. Each of the eight areas emerged in almost every engagement.

Crew duties. The most common failures in the area of crew duties involved security and maintaining combat speed during the moving engagements. Security measures were poor because the confusion generated by the firing led to forgetfulness. The tendency of the driver to slow down during a moving engagement is not uncommon on a mobile range because the driver attempts to provide the firer with a smoother firing platform and a longer period for firing the engagement.

Reports. The confusion of firing and the pressure of time limits led to careless errors and omissions. This is an area in which constant practice during all tactical training is a must.

Loading weapons. Loading times of 20 seconds for the .50-caliber and 15 seconds for the *M60* had been established for the course. Those crews which satisfactorily met the prescribed loading times did so without difficulty, while those who failed to do so would not have succeeded in twice the allotted time. The loading times could therefore be reduced to 12 and 8 seconds for the .50-caliber and *M60* respectively, thus adding a greater sense of urgency without unduly lowering the scores.

Opening and closing fire times. The difference in scores for opening times between the maneuver battalion scouts and the armored cavalry scouts stemmed from the varying emphasis placed upon attaining opening times by the units. Analyzing the comparison between the results achieved by the power and the manual cupolas in the maneuver battalions (the cavalry squadron had *no* power cupolas at the time of firing) (Table II), it can be seen that the arbitrarily chosen opening times of 10 seconds for power and 25 seconds for manual cupolas were in the correct ratio. Actual crew opening times indicate that the times could be lowered to 20 seconds for the manual cupolas and 8 seconds for the power cupolas without substantially increasing the number of failures. Actual times also indicate that five seconds is a more realistic opening time for the *M60* machine-gun for the moving engagements. The crews which

TABLE II—POWER CUPOLA VERSUS MANUAL CUPOLA

TYPE	% CREWS MEETING OPENING TIMES	AVERAGE SCORE	CAL. 50 AVERAGE HITS
POWER (21 CREWS)	78.5	574	11.7
MANUAL (78 CREWS)	78.3	603	12.8

A demolition charge signals the beginning of the second engagement. (Above right) Machinegunner attempts to adjust fire on target. *M114A1* Course uncovered important deficiencies in machinegun fire adjustment and in the *M114A1* machinegun mount.

failed to make closing times did so primarily because of weapon stoppages.

Technique of fire. Here it was found that most crews had difficulty with the length of bursts for the automatic weapons. There was a dominant tendency to fire very short bursts (one to three rounds) with the .50-caliber machinegun. This tendency led to an inability to adjust the .50-caliber fire at long range.

Target hits. As Table III shows, the number of .50-caliber hits was extremely low. This was the primary cause for the low scores in the course as a whole since a large proportion of possible points were allocated to target hits.

Commanders at all levels concentrated on this problem area. The reasons for the low scores fell in three categories. First, the crews were not able to adjust their fire to the vicinity of the targets. The adjustment was made more difficult by the general tendency to fire very short bursts which were difficult to sense and led to wasting ammunition. As can be seen in some of the photographs, many vehicle commanders tended to get directly behind the weapon while firing, and the muzzle blast made it almost impossible to sense the tracers. This pointed up a need for greatly increased training in the method of firing the .50-caliber. In addition, the great range of the point targets (800 meters) and the open sights were factors in the low scores.

By far the most important single factor was the looseness of the machinegun in the mount found on the *M114A1*. The mounting pins allowed the machinegun to bounce around as it fired while the mount itself remained stationary. In order to determine the extent of the dispersion, a test panel was erected at a range of 100 meters and 30-round bursts were fired at it. The test patterns had an average horizontal dispersion of 24 inches and an average vertical dispersion of 60 inches. At 800 meters

TABLE III—TARGET HITS

	AVERAGE SCORE	AVERAGE CAL. 50 HITS PER VEHICLE
MANEUVER BNS	596	12.6
CAVALRY SQDN	673	15.6

this would be a pattern 16 feet across and 40 feet tall. When this is compared to the size of the target (6×6), it can be seen that the bouncing of the gun in the mount would severely limit the accuracy of the weapon at extended ranges. To alleviate this problem, a large wooden wedge was driven between the barrel jacket and the mount to steady the gun. The test patterns at 100 meters reflected the improvement, averaging 11 inches horizontally and 28 inches vertically (or seven by 19 feet at 800 meters). To increase the number of target hits this wedge should be used consistently, or the range should be significantly reduced.

As shown in Table II, the power cupola made little difference in the number of target hits. This table, however, does not show accurately the full potential of the *M114* with the power cupola because the scout platoons tended to use these vehicles as crutches and gave them to their weakest crews. This accounts for the lower average scores fired by the 21 vehicles equipped with power cupolas when compared to the 78 with manual cupolas.

The percentage of target hits with the *M79* grenade launcher was little better than with the .50-caliber because the difference in elevation between the target and the firing position was a unique experience for the crews. The usual *M79* range is located on level ground so the average soldier has little or no experience in firing a high trajectory round such as the *M79* at differing elevations.

Area coverage. The results of the area coverage portion were excellent, but the test did not utilize the full potential of the pop-up targets. There should be bonus points awarded for actually knocking down the targets.

Throughout the course, emphasis was placed on developing a sense of urgency during the actual engagements by the use of required times. This sense of urgency, however, was totally lacking between engagements, with the result that some crews took as long as two hours rather than the usual one hour to complete the course. In most cases, the crews were overly cautious and wanted to be thoroughly set before beginning any engagement. One possible solution to this problem might be the use of bonus points for crews completing the course under a specified time. The time should depend on the physical layout of the course, but it definitely should be used to emphasize speed and to eliminate the scheduling problems caused by a slow crew.

An analysis of the final scores shows that 2.1 percent of the tested crews failed to achieve the minimum of 400 points. A total of 5.6 percent of the division scout crews failed to obtain 500 points. It was recommended that the minimum passing score be raised to the 500-point level in order to avoid the error of simultaneously making a bold adjustment in the standards and increasing the difficulty of the course. To do the latter could lead to a course that is too difficult with a resulting lack of motivation on the part of the crews to attempt an impossible goal.

The purpose of this course, as we noted earlier, was threefold: to provide uniform training of division scout crews, to provide guidance for future training, and, most important, to give the crews badly-needed, realistic training. At the same time, the efficiency of each crew could be compared with that of every other crew.

By uniformly testing each type of combat vehicle he has, the commander can better determine the proficiency with which his fighting vehicles will be handled in combat. At the same time his crews are given excellent training. The 3d Squadron, 12th Cavalry's live fire course described here accomplished all the assigned missions. But it is only through continual revision and improvement that a truly valid test course will be developed. The information contained in this article should serve as a basis for other units to develop even better combat vehicle test courses.

CAPTAIN ARTHUR L. WEST III, Armor, was commissioned in 1964 from the United States Military Academy. He has attended the Airborne, Ranger, and Pathfinder Courses. He was initially assigned to the 2d Squadron (Airborne), 17th Cavalry, 101st Airborne Division where he served as a cavalry platoon leader. He was then assigned to the 1st Battalion (Airborne), 12th Cavalry, 1st Cavalry Division (Airmobile) where he served as a reconnaissance platoon leader, rifle platoon leader, and mortar platoon leader. He was then assigned to the 3d Squadron, 12th Cavalry, 3d Armored Division where he served as S3 Air, troop commander, and S3. In 1968 he returned to CONUS and attended the Armor Officer Advanced Course. He is currently assigned to the 11th Armored Cavalry Regiment in Vietnam.

Distinguished Military Graduates Receive Armor Association Awards

Annually, the United States Armor Association awards a presentation saber to each of the two top Distinguished Military Graduates of the Reserve Officers Training Corps who receive Regular Army commissions in Armor. The recipients are selected by Headquarters, Department of the Army using the same criteria as for the Mershon Award. This year, as once before, the top Armor winner also won the Mershon Prize for which all ROTC Distinguished Military Graduates commissioned in the Regular Army are in competition.

Receiving Armor Association sabers this year were 1LT Robert E. Saxby, Company C, 1st Battalion, 81st Armor, 1st Armored Division, Fort Hood, Texas, and 1LT Larry R. Branch, Commanding Officer, Company A, 1st Battalion, 63d Armor, Fort Riley, Kansas.

Lieutenant Saxby is a 1967 graduate of California State Polytechnic College. Lieutenant Branch is a 1966 graduate of Arkansas Polytechnic College.

MG John K. Boles, Jr., Commanding General of the 1st Armored Division presents an Armor Association award saber to 1LT Robert E. Saxby who is holding the Dr. Ralph G. Mershon Memorial Award to the top Distinguished Military Graduate in the Nation.

MG (then BG) Linton S. Boatright, Commanding General, 24th Infantry Division and Fort Riley presents an Armor Association award saber to 1LT Larry R. Branch. General Boatright formerly commanded the 1st Armored Division Artillery.

2d PLACE

ARMOR OFFICER ADVANCED COURSE 3

1968

NEW PROBLEMS FROM SUBTERRANEAN DISCOVERY

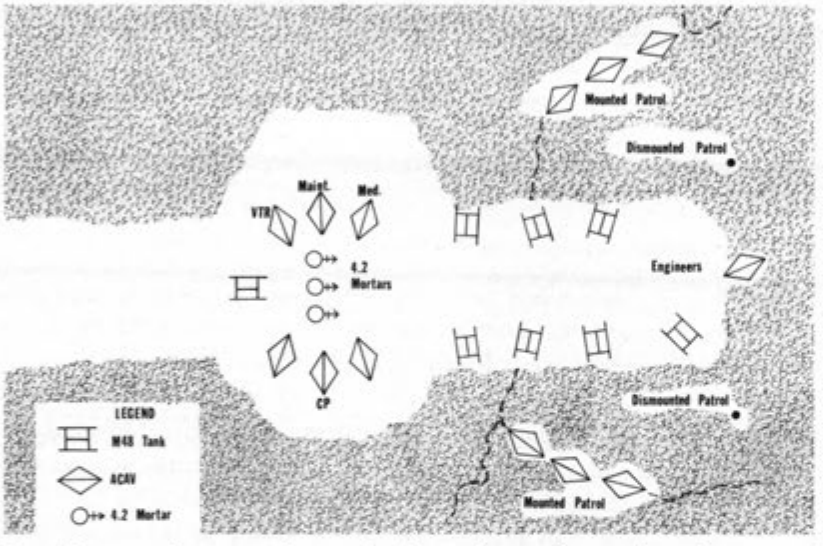
by Captain Michael D. Hughes

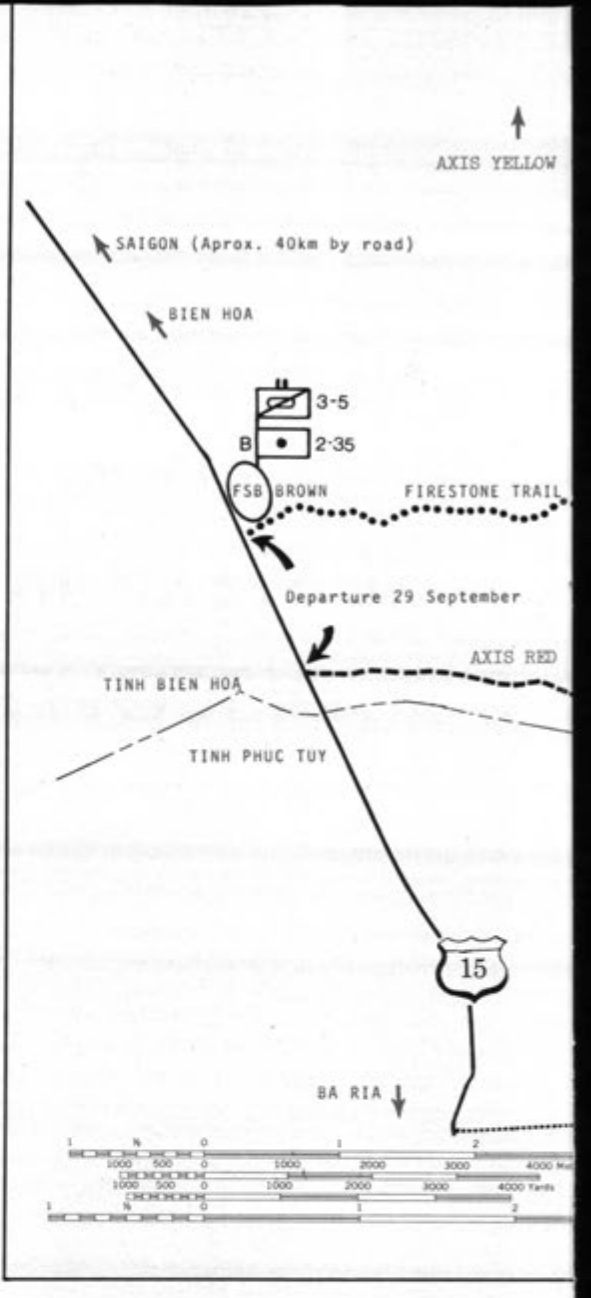
During the period 26 September to 23 October 1967, the 3d Squadron, 5th Cavalry, 9th Infantry Division participated in AKRON III during which operation one of the largest arms caches of the Vietnam Conflict was discovered. For this operation the squadron was attached to the 1st Brigade, 9th Infantry Division and was given a three-fold mission: to protect Rome plow operations; to secure Highway 15 from Long Binh to Ba Ria and to prevent lateral movement of Viet Cong across Highway 15; and, to conduct search and destroy operations within the AKRON III area of operations.

CAPTAIN MICHAEL D. HUGHES, Armor, was commissioned in 1962 from the ROTC at East Tennessee State University. He graduated from the Armor Officer Basic Course in 1963 and was then assigned to the 1st Squadron, 11th Armored Cavalry Regiment, Germany, where he served as a platoon leader and troop executive officer. He was transferred to the 2d Squadron, 3d Armored Cavalry Regiment and served as S3(Air). In 1966 he returned to CONUS and was assigned to the 3d Squadron, 5th Cavalry, 9th Infantry Division. He moved to Vietnam with this unit where he served as S4 and commanding officer of Troop B. In 1968 he returned to CONUS and attended the Armor Officer Career Course. He is currently assigned to Jacksonville State University, Jacksonville, Alabama as an ROTC instructor.

The primary mission was that of securing Rome plow operations. The Rome plows were to cut three traces known as Axes BLUE and RED in the south and Axis YELLOW in the north. This trailblazing began with two trails running east from Highway 15 and then proceeded north with one trace going into the Firestone Trail. Trace YELLOW in the north was to be started at a later date. It would cut east and then south to join the Firestone Trail.

The purpose of these operations is to "checkerboard" the jungle with roads in a way that will hinder the enemy and facilitate friendly mobility. Each trace has a single lane road through the jungle with a one hundred meter clearing on each side hedgerowed with the fallen debris. Every three to five thousand meters the trace is cut into two lanes and an area large enough for a troop size laager position is cleared. This two-lane clearing allows landing space for reaction forces and resupply in airmobile operations and provides a base of operations for the cavalry troops or fire support elements if these become necessary.





Rome plow operations—every three to five thousand meters the trace is cut large enough for a troop size laager position allowing landing space for reaction forces and resupply, as well as a base of operations for cavalry troops or a fire support element.

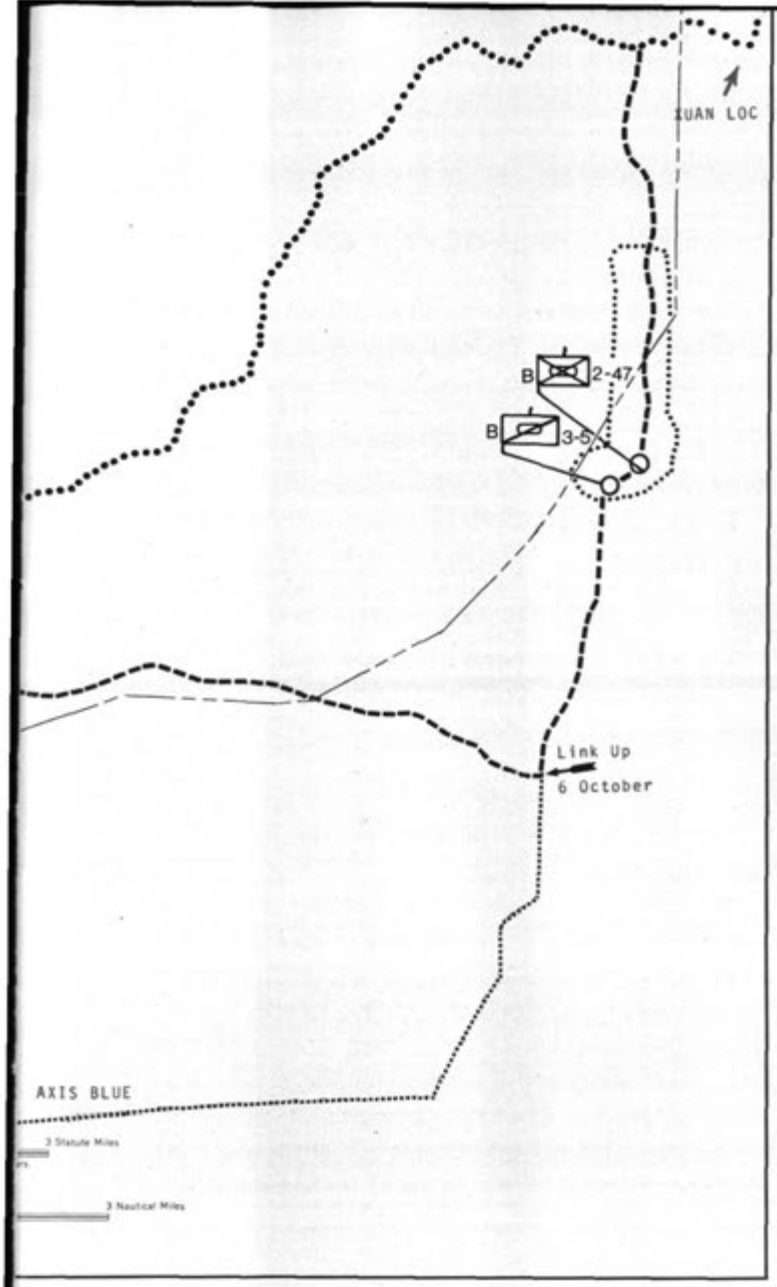
The squadron had Company B, 86th Engineers plus a land clearing platoon from II Field Force placed under operational control (OPCON). The primary means to be utilized by the Engineers was the Rome plow, a heavy duty bulldozer with a protective cage for the operator and a cutting blade on the front. To assist further, the squadron also had Company B, 2d Battalion, 47th Infantry (Mechanized) attached and Battery B, 2d Battalion, 35th Artillery in direct support.

TASK ORGANIZATION

The squadron commander, Lieutenant Colonel Howard R. Fuller Jr., was now faced with task organization. Several problems were encountered here, the greatest being to find available armored cavalry assault vehicles (ACAVs) for the engineer land clearing effort. It was necessary for the engineers to have ACAVs because they could not take their wheeled vehicles into the jungles and communications and control vehicles were essential. The squadron commander's decision was to take ACAVs and drivers from the infantry and attach them to the engineer land clearing teams. The basis for this was that the infantry company was understrength and the cavalry troops were already short vehicles due to mine damage. Next, the squadron itself was task organized for the mission. Team Bravo consisted of one mechanized infantry platoon and two cavalry platoons. Troops Alpha and Charlie would remain pure for the present.

TRAIL BLAZING

On 29 September, clearing operations began on Traces RED and BLUE. Team Bravo with 13 Rome plows and Team Echo with 14 Rome plows began



The area of operations southeast of Saigon.

cutting operations.

The security of trailblazing operations is new to, but well-suited for, the cavalry. This mission requires local patrolling, both mounted and dismounted, to give the necessary all-around security. Because the Rome plows are moving constantly and the point of the engineer cutting team advances rapidly, the security force must be flexible and move with the main engineer effort while avoiding the engineer work area. Maximum use of patrolling to the front and flanks of the work area allows early warning and discourages enemy ambush and *RPG* rocket teams.

By keeping the troop command post elements and mortars between 500 and 1000 meters to the rear, on-call fire support is made available to all patrols in the area. The mortars are also utilized by all patrols to confirm their locations and to place harassing and interdiction fires to the front of the advancing elements.

Each patrol must check all trails, footpaths and streams along the route of advance for anything suspicious. During this operation the patrols used combat tracker teams to the fullest since the trace always provided a landing zone near any suspected area. It being the rainy season, any footprints or campfires located could be considered new because showers at night and during the early afternoon would normally wash them away.

Team Bravo and Team Echo continued their trailblazing operations, penetrating deep into the jungle and conducting extensive mounted and dismounted patrols. By 8 October 1967, units along both team traces had encountered light resistance in the form of sporadic sniper and automatic weapons fire. They had found several both old and new bunker systems and destroyed these as the trace progressed. The use of the bulldozer and small amounts of demolitions for destroying these systems had proven satisfactory thus far.

Team Echo completed the link-up of Traces RED and BLUE with Team Bravo on 6 October. By now, Team Bravo comprised three cavalry platoons and one mechanized infantry platoon. Team Echo(-) moved back to conduct search and destroy operations along Highway 15. Team Bravo continued the trailblazing operations on a single axis north to link up with the Firestone Trail.

THE DISCOVERY

On the morning of 8 October 1967, Colonel Fuller was making an aerial reconnaissance of the area between the Firestone Trail and the lead elements when he spotted a spider hole and a suspected enemy base camp. He landed and took the Bravo Team commander up to show him the location. The aircraft was then used to direct patrols into the area. A dismounted element of 20 men began moving toward the area, followed by ACAVs of the advance guard. At 0845, the patrols discovered the first of what was to total six enemy base camp and bunker systems.

The patrols first discovered eight squad size bunkers and a fresh trail. Documents, weapons, medicines, and a vast cache of ammunition along with two tons of rice were found. The situation began to develop rapidly. Two Rome plows were diverted to knock a trail into the area and began making a landing zone to get a combat tracker team, which had been requested, into the area. As the situation de-

veloped, the haul began to be more than Team Bravo could handle and still continue their mission. The cache had to be cleared prior to nightfall or occupied.

Colonel Fuller directed the team commander to enlarge the landing zone and to be prepared to receive Company B, 2/47 Infantry to aid in the extraction of captured enemy materiel as Team Bravo continued the mission. Team Bravo patrols moved forward and discovered another complex 400 meters away. This complex yielded 37 weapons, a switchboard, recoilless rifles, mortars and another ton of rice.

Security was established in the bunker areas of both enemy base camps. Moreover, the trace was still being pushed forward with patrols in front to keep the Rome plows from going over the tunnels and caving them in. Guides were standing by at the landing zone as the first elements of the infantry company landed. By this time, the discovered areas of both complexes were growing more extensive.

The engineers continued to move, and some were diverted to make another landing zone to aid in evacuating the supplies. The infantry moved into the area alongside Team Bravo and began to extract supplies and to make a wide search. Rome plows had to be diverted to make trails into the area so that captured weapons, medical supplies and documents could be loaded into ACAVs and then taken to the landing zones.

As night approached, it became necessary for both units to establish positions close to the base camp areas to secure the remainder of the supplies. This seemed the more imperative because neither unit had encountered any resistance in taking the area and the tracker team had not been able to locate any Viet Cong. A thorough search of the tunnels had not yet been completed. It was believed, based on the great amount of communications equipment and good-sized stores of large caliber ammunition turned up, that the bulk of the complexes and more weapons were yet to be discovered. Significantly, the weapons for the ammunition had not yet been located.

The following day, a hospital and extensions to the previously overtaken complexes were found. The hospital was on three levels. Its main tunnel was 1000 to 1500 meters long. An operating room with plastic doors branched off the main tunnel and was equipped with a crude loudspeaker system, telephones and even artificial flowers.

Team Bravo and Company B continued to extract weapons and supplies and to discover new levels of the tunnel systems for the next five days. The intricacy of the subterranean system, spanning a 2000 meter area, suggested that it had been an enemy stronghold for several years.

The tunnel systems were 30 to 35 feet deep with three to five levels. Ceilings were four to six feet high, and rooms varied in size. Most were cubicles about four by five feet, but many containing beds, large weapons and crates of supplies ranged from 12 to 15 feet long.

Recent occupancy of the tunnels was indicated by the discovery of a burning candle in one chamber, a dish of hot rice, a coal fire and a calendar with the top page dated only the day before.

The engineers continued to assist by uncovering the subterranean structures and knocking the trace through to the Firestone Trail.

RESULTS

The following is a breakdown of items discovered and evacuated:

- 1140 weapons, to include machine guns, antiaircraft guns, rocket launchers, mortars and howitzers.
- 95,000 rounds of assorted ammunition to include small arms, mortar, 75mm recoilless rifle, 70mm howitzer and 3634 grenades. In addition, there were mines and Bangalore torpedoes. The majority of this had to be left underground because of its quantity and the weight involved. Much was used in the destruction of the captured underground systems.
- Medical and surgical supplies sufficient to support approximately twelve hundred patients for one month.
- 4650 pounds of rice.
- 211 pounds of documents.

Facilities destroyed during the operations included 2880 meters of tunnel, 179 bunkers and foxholes, 10 underground rooms (one of which was a cement reinforced command post) and 8 buildings.

PROBLEMS—SOLUTIONS

The problems encountered were many. A discussion of each and recommended solutions follow:

PROBLEM ONE—Timely development of the situation.

Discussion—discovered enemy facilities grew rapidly from two small but fairly new bunker systems into a mammoth underground complex containing extensive booty. Initially the S2 did not imagine this to be one of the largest arms caches upturned

during the war. As a result, preparations for processing such vast quantities of captured materiel were inadequate.

Solution—Think big. Be imaginative. Plan ahead and prepare contingency plans. Anticipate problems that might arise because, as Murphy's law dictates, they will.

PROBLEM TWO—Continuation of mission versus tagging of war trophies.

Discussion—In their zeal to obtain a suitable war trophy, some tended to forget the mission, that is —local security and organized search.

Solution—The task force commander ordered the immediate cessation of such nonsense and gave his word that every effort would be made to secure the trophy weapons for later distribution as commanders saw fit.

PROBLEM THREE—Security of captured weapons.

Discussion—Immediate evacuation of the weapons from the jungle to the relative security of the fire support base (FSB) was necessary. But there is reason to suspect that from the tunnel to the FSB, and even at the FSB, weapons were "misplaced" or misappropriated.

Solution—Close supervision during extraction would discourage loss. Security during airlift could be enhanced by radioing ahead the time of lift-off and number weapons by type. CONEX containers should be brought to the collection point to secure weapons.

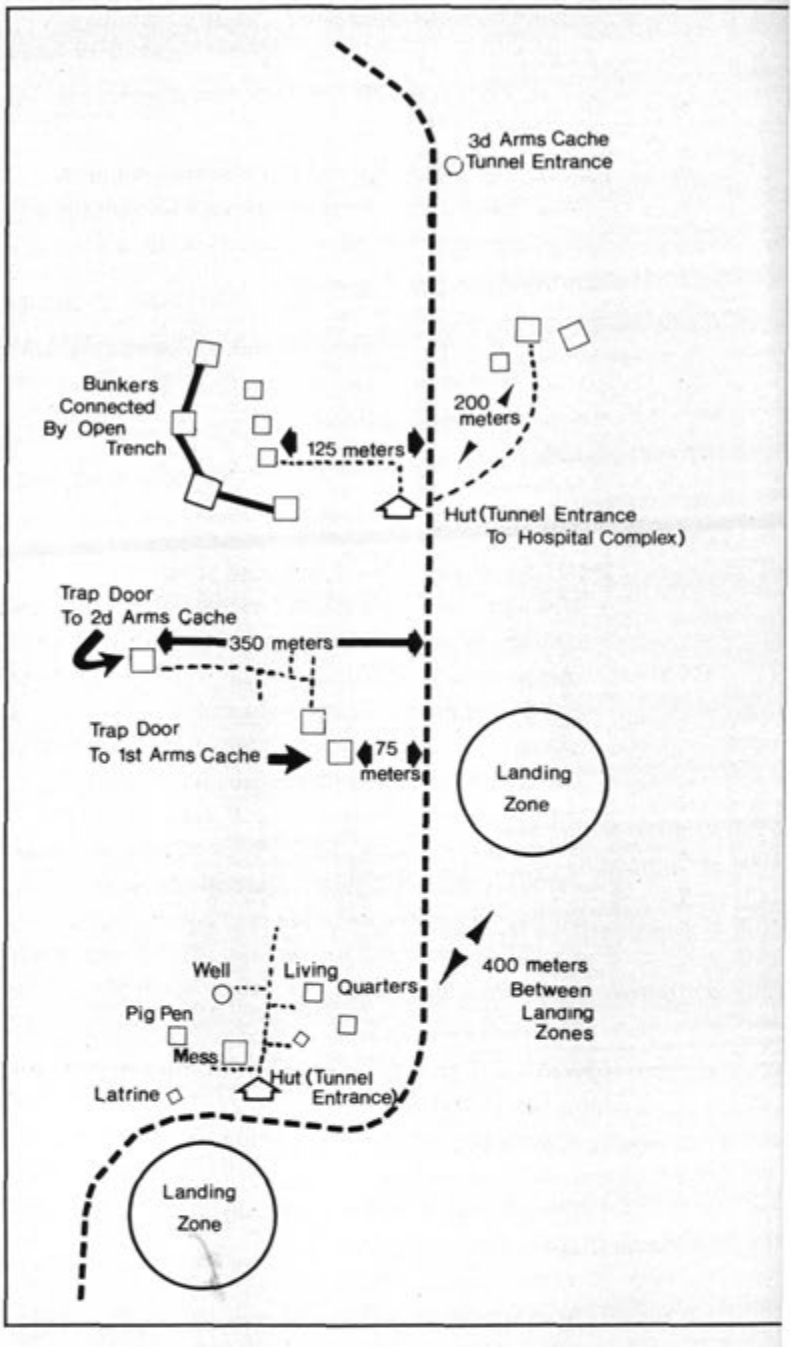
PROBLEM FOUR—Identification of foreign materiel.

Discussion—Precise identification of foreign weapons and ammunition by those who are not experts in this field is at best a slow process even with adequate reference material. Obviously the larger the weapons cache, the greater the problem. Technical intelligence people did arrive on 9 October. They answered many questions and were generally helpful. However, the assistance they could give was limited.

Solution—When a large weapons and/or ammunition cache is discovered, experts, in sufficient numbers, should be attached from the outset to identify seized materiel for the capturing unit.

PROBLEM FIVE—Accurate reporting.

Discussion—The S2 was dependent upon information received from the site. Initially there was the danger of duplicated reports, especially concerning ammunition being blown in place. In addition, search teams reported ammunition as they discovered it underground. Further investigation above ground sometimes revealed the ammunition to be a different type from that reported. Another problem was "tunnel vision" of a new sort. Apparently weapons in an underground room appear more plentiful than when brought above ground, especially after the report is passed back through the tunnel from man to man.



Solution—On-site unity of command must be established quickly in order to process reports to the S2. The use of wire and field phones would aid in rapid, accurate reporting. Critical items,

such as serially numbered weapons, should not be reported to a higher command until they have been identified, inventoried and secured at the collection point.

PROBLEM SIX—Specialist personnel support.

Discussion—The need for experts to identify foreign material has been mentioned. In addition, a prisoner of war interrogation team to process documents was requested and received. Engineer and chemical support was required for proper destruction. It was necessary to augment the S2 section with additional people in order to complete the task.

Solution—Support must be obtained before the situation gets out of hand.

PROBLEM SEVEN—Document read-out.

Discussion—A battalion or squadron S2 has neither the background nor, in the sort of circumstances described here, the time to analyze captured documents. Some evaluated documents were returned to the S2 and a number of these turned out to be highly significant. However, many other translations were returned without evaluation.

Solution—It should be SOP for the G2 to evaluate, as well as translate, captured documents since he has the order of battle specialists. Documents should be returned to the unit with a meaningful analysis which takes all other available intelligence into account.

PROBLEM EIGHT—Support for tunnel exploitation and destruction efforts.

Discussion—during this period, inadequate aerial support further slowed the exploitation phase since special gear available elsewhere could not be supplied rapidly to the "tunnel rats." Because more infantry forces were not made available quickly to augment the original search teams, the "tunnel rats" became extremely fatigued, and therefore, inefficient. Since adequate breathing and destruction devices were not made available rapidly the process of investigation and destruction was slowed considerably.

Solution—Aerial resupply support for discoveries equalling the magnitude of the one described in this article should be made readily available by the division. In a sense, operations which encompass discovery and exploitation of huge enemy caches are tactical emergencies which must be met rapidly and which must be given a high priority for available assets in order to insure maximum yields. Large infantry units are needed so that search shifts may be established to minimize individual fatique.

The following equipment should be provided to search units as soon as possible after discovery of a vast complex:

► Lights.

► Adequate breathing devices—Mighty Mites are not satisfactory in large tunnels. Large air compressors with proper filters are needed to give sufficient quantities of fresh air.

► SCUBA gear or other breathing apparatus may prove useful.

► Rope ladders.

► One inch ropes and portable block and tackle to remove heavy equipment.

► Mine detectors and probing devices to facilitate discovery of equipment hidden by false walls and secret rooms.

► Military dynamite—TNT leaves a poisonous gas after detonation.

PROBLEM NINE—Visits by VIPs and the press.

Discussion—Quite understandably, the location of a weapons cache of any magnitude receives considerable publicity and attracts the attention of many military officials from throughout the chain of command. Continual visits by dignitaries and the press take up considerable time of the various commanders and their staffs during critical points in the operation.

Solution—All visitors should be encouraged, as much as is possible, to delay their visits until the operation is well under control. Briefing locations and times can then be specified to handle the bulk of the visitors who are not directly in the chain of command. Escort officers can be designated by squadron, brigade or division, as necessary, to assist in this task.

EVALUATION

The complex captured during this operation was believed to have belonged to the 274th Viet Cong Regiment. Situated as it was only 28 miles from Saigon and between Bearcat, the base camp of the 9th Infantry Division and Xuan Loc, the base camp of the 1st Australian Task Force, it might be said that the elimination of this enemy stronghold prevented any large scale attempt to assault one or more of these areas during the Tet Offensive.

Moreover, the lessons learned and techniques developed in this combined action by cavalry, infantry and engineers should stand in good stead those confronted with similar situations in the future.

CAVALRY OPERATIONS

III — MARCHES AND BIVOUACS

by Lieutenant Colonel Raymond R. Battreall, Jr.

We know what the Cavalry is all about. Right! We've got all this mobility and flexibility waiting down there in the motor pool just waiting to be moved and flexed. So we get our chance, we're alerted, and what happens? The mass confusion at the Motor Pool gate eliminates the commander's biggest problem, CONTROL! He no longer has any to worry about.

Where do we go from here? Everyone gets out of the motor pool and hightails it to the field alert position and immediately sets up a crew readiness position at his selected site. And we do it this way because it offers us several advantages:

Allows for competition on the Autobahn.

Increases the individual leadership opportunities by letting each vehicle crew act independently.

Gives the commander and executive officer more time for coffee and donuts at the snack bar before leaving garrison.

Eliminates unscheduled column bottlenecks while moving.

You can't beat that for flexibility and mobility now can you? Is that the way you move out to your ORT position? ABSOLUTELY NOT!!

Just as with everything else the Cavalry does, there *is* a recommended way for executing marches and bivouacs in an organized manner. This expedites the operation and allows the commander maximum control.

This article gives some pointers which may go far to bring your marches and bivouacs to a high state of polish.

MARCHES

After a unit moves from the motor pool, the first requirement is to reach and cross the start point (SP) with the entire unit in its march formation at the required time and with the prescribed speed and interval. So the SP should be beyond city limits on the march route.

Don't Stop! Once you are moving, unless otherwise instructed, keep moving and report crossing SP, release point (RP), designated check points and phase lines. Always keep one radio in the command net of the next higher unit.

Observe your unit frequently to see that:

► Proper speed and interval is maintained.

► All vehicles are present or properly accounted for.

► Air, ground, and CBR security measures are being taken. Air sentinels are on all cal .50 MGs, covering the air from the flanks, front and rear. Tank guns are searching assigned surveillance areas. This means the gunner and tank commander must be working together. All drivers and vehicle commanders are ALERT!

► Arm and hand signals are being used and properly relayed from the first vehicle in the column to the very last.

► Tracked vehicle crews are in proper positions and not too far out of hatches. A guide to follow is belt-line level. The commander is observing route of march and assigned security surveillance area. Loader (or APC crew member) is facing rearward to signal vehicles doubling column when it is safe to pass. This is mandatory.

At Halts:

► Halt all vehicles off the road, at normal march interval, under available concealment. It is highly recommended that you coil up by platoons if the space is available. But whatever you do, *clear the road.*

► Post air, ground, and CBR security. Keep an air sentinel on the cal. 50 MG and dismount all other personnel.

► Supervise aggressive maintenance.

► Insure that everyone gets sufficient exercise to restore circulation and sharpen perception. A short PT period is a good idea. A tanker's toes can get mighty cold.

► Refuel, if possible, even though fuel tanks may not be particularly low. Get "Fuel Happy!" You never can tell when you will get another chance. Be aggressive and persistent in requesting fuel. Commanders must know the number of miles remaining in the fuel tanks of their vehicles.

► Prevent smoking during refueling. Have a fire extinguisher right over your work. It doesn't take much time to be safe. Insure that the man holding the hose has grounded it with the clip which is attached to the fuel truck.

► Report status of unit to next higher commander.

► Issue a warning order two minutes prior to the time the march is to be resumed. This gives the vehicle crews ample time to prepare to move.

► Always have one man from each vehicle go forward to the next vehicle to insure that word is passed back when the column moves. This is especially important at night.

► If the halt is unscheduled, commanding officers turn the unit over to the second in command who follows the procedures outlined above. The commander then proceeds immediately to the head of the next unit to determine the reasons for the halt. If the commander reaches the bottleneck, he takes necessary action to get the column moving.

At Destination:

► Clear the road at march speed. Don't sandwich. Don't delay following units.

► Report your closing time to the next higher commander.

And a reminder for black-out marches—when looking at the "cat eyes" of the vehicle ahead, if there are:

► 4 lights visible—put on the brake!

► 2 lights visible—distance is correct.

► 1 light visible—step on it!

ASSEMBLY AREAS

Quartering Party—always use a quartering party for moves into new areas. The party:

► Consists of one officer or NCO per troop and one guide per platoon who is competent to lay out the platoon area.

► Meets unit at RP, 1-5 kilometers from assembly area, guides the unit to designated area, and posts individual vehicles in selected positions in such a way that the road is cleared at march speed and following units are not delayed.

Security

► Coordinate (make physical contact) with adjacent units.

► Establish necessary OPs (LPs), outposts, and/or road blocks.

► Establish perimeter. As a bare minimum prepare range cards and assign areas of responsibility.

This is not a defensive position, but an assembly area is by no means a safe area.

► Again, require all cal .50 MGs to be continuously manned by air sentinels.

► Require at least one man to be continuously awake on each vehicle and one on each crew-served weapon.

► Establish necessary communications. Use local wire if possible. There must be wire or radio to the next higher commander.

► And this is an important one, a liaison agent from each troop to squadron headquarters. This man should be a qualified NCO who can be responsible for advising squadron on the troop situation and keeping his troop commander posted on all anticipated moves at squadron.

► Establish camouflage, light, and noise discipline. Use natural cover to the maximum (mud, trees, etc.). Light discipline at night must be maintained. Never, no never, allow use of an unshielded flashlight. Use the covers issued. If covers are not available, improvise with carbon paper or grease pencil to shield the light. For safety reasons, field ranges must be dismounted for lighting. Do it during daylight if fuel is in sufficient supply. Cook on the mess truck to cover the flicker of the stove. CP tracks that throw up hootches must insure that seams are closed and that the shield is fastened to prevent light from shining underneath the track. Make a shield from scrap canvas if you don't have one. Enemy patrols can locate radio noise as far away as a mile. Chit-chat can also be easily heard. Use earphones on radios, that's what they are for. Use low ring on telephones. Do not run vehicles and heaters, day or night, solely for the purpose of keeping the crew warm. A warm corpse is no good to anyone but the undertaker. Battery charging for vehicles that require it should be done for all vehicles at the same time. All lights and windshields for tracks and wheels should be covered to prevent glare.

► Select primary and alternate routes of evacuation.

► Have work started on foxholes for all wheeled vehicle crews and dismounted weapons.

Administration and Logistics

► At every stop, automatically receive and consolidate reports from subordinates and personnel losses, POL, ammunition and other supply requirements. Send a consolidated report to the next higher commander.

► SAFETY FIRST—establish a dismount point. Allow no vehicle to move in the assembly area without a dismounted guide. Designate guides for supply vehicles. There is no excuse for the old story of the sleeping-bag casualty.

► Start work on maintenance and *supervise* it or it won't get done. The hood on every wheeled vehicle should be up each time it stops.

► Designate mess, sump and latrine facilities. Whenever the unit commander anticipates a halt of two hours or more, he should have a latrine dug. Drill it into your men that whenever they move out to the field they are there to stay. Then coming home will be a pleasant surprise. *Dispersal* on the mess lines is very important. There is a definite need for two distinct, non-parallel lines, one for chow and one for wash. Men in the line must be five meters apart. Separate when eating as well. It's a good idea for the men to return to their own vehicles when eating.

Orientation

► Assemble your subordinates and brief them on the situation. Tell the troop what you do or don't know. Don't leave anyone uninformed. Who knows when a squad leader may suddenly become a platoon leader!

► Issue the challenge and password, and the instruction in case of attack.

► CHECK your directives, test your chain of command. Require subordinate leaders to inspect and actively supervise all activities in the assembly area.

Supervise and Plan

► Continuously inspect and supervise activities.

► Continue to improve positions and reconnoiter for *likely* future employment.

► Encourage men to get maximum rest consistent with security after their work is done. Something is wrong if the men aren't getting their rest. Being awake is not a source of eyewash for anyone.

► Be prepared at all times to move without notice. Keep in mind that a 10-minute notice is mighty generous. Less than ten minutes is more common.

► Whenever a commander—be it crew, squad, or troop—is called to his next higher headquarters, his second-in-command should assemble his subordinates, and prepare the unit for movement. This will shave minutes off reaction time and result in better control for the commander.

Simple as they may seem, efficient road marches and proper, meaningful activities in assembly area depend—just as everything else that we do—on careful planning, well-understood SOPs, and constant supervision. People are not born knowing the right things to do. They must be taught.

A SPECIAL COMBAT REPORT

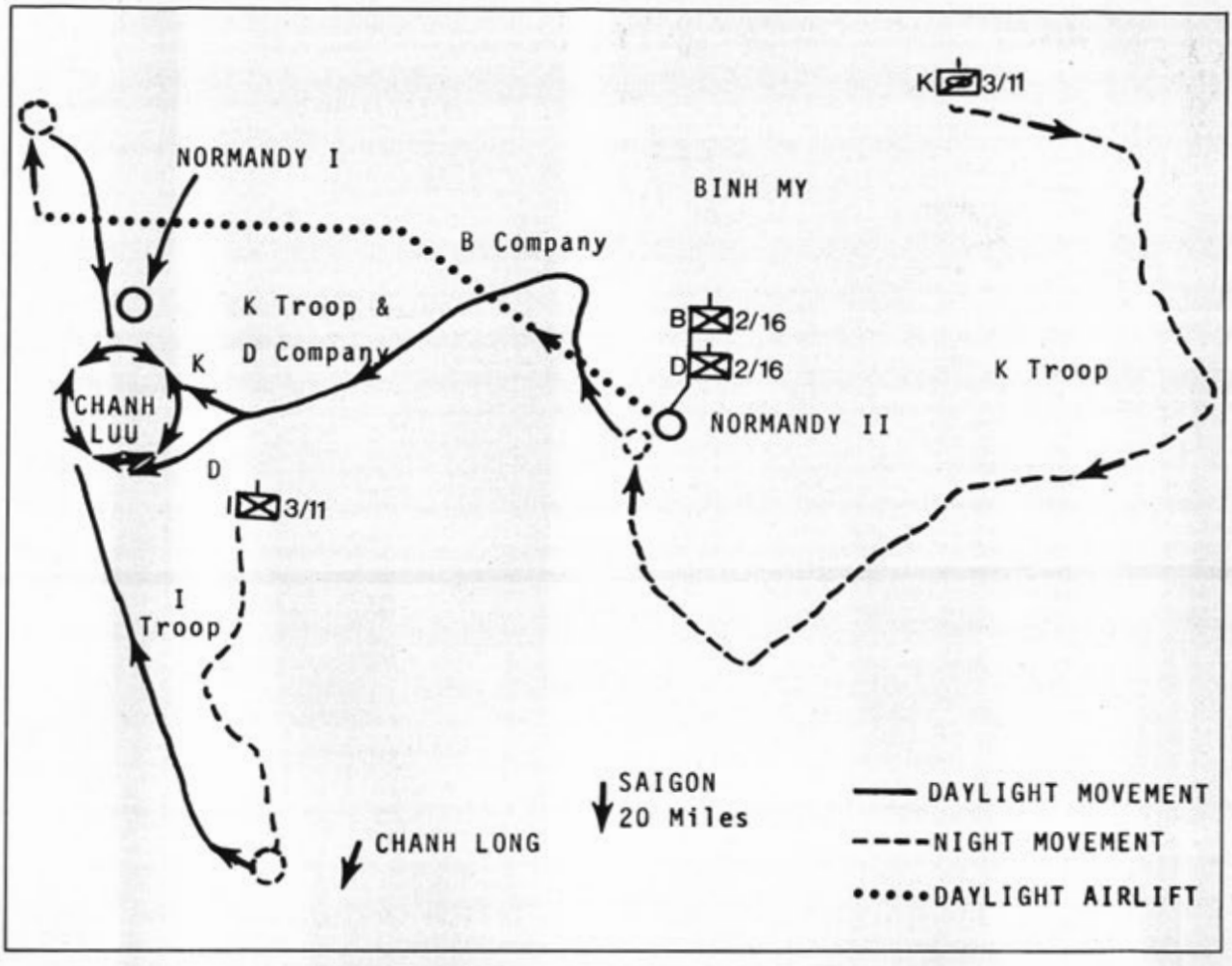
"MAINSTREET"

A successful cordon and search

LTC JOHN W. McENERY

On 8 August 1968 one of the most successful cordon and search operations that has been conducted in the III Corps Tactical Zone in South Vietnam was set in motion. This operation was more fruitful than many similar previous ones due to a number of factors. First, a careful and comprehensive plan was prepared to cover all aspects of the operation. Starting about seven days before, the 11th Armored Cavalry Regiment (OPCON to 1st Inf Div) and the advisors and staff of the 5th ARVN Division began serious consideration of the CHANH LUU Operation.

CHANH LUU was one of many villages suspected of being VC supply bases. It and many other such villages had been cordoned and searched before—often with negligible results. This time the Commander of the 11th Armored Cavalry Regiment, Col George S. Patton, decided to do the job right. He directed that adequate U.S. forces be made available for the cordon, that the 5th ARVN Division be included early in the planning, and that a comprehensive cover and deception plan be be made and executed.

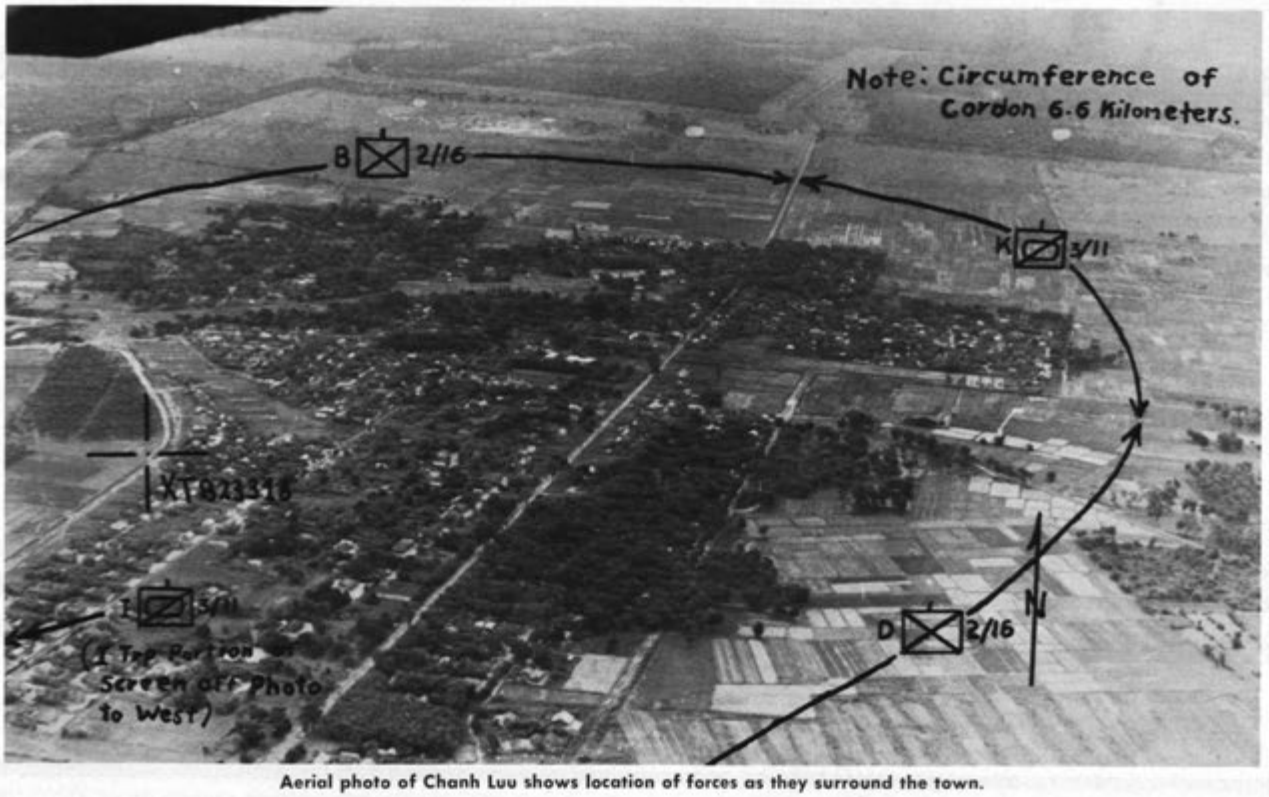


The cover and deception plan was designed to indicate that the village of BINH MY, some nine kilometers to the east, was to be the target of the cordon and search. To this end, a series of false messages was issued by regiment, the squadrons, and troops. These messages included requests for aerial photo coverage of the supposed target area. In addition, a false map was dropped from a helicopter in the jungle to the east of BINH MY. Later reconnaissance showed that the map was picked up.

The 3d Squadron, 11th Armored Cavalry Regiment was assigned the mission of planning and conducting operations by U.S. forces. Available to the 3d Squadron were its I and K Troops, two tank platoons of M Company, and B and D Companies of the 2d Battalion, 16th Infantry. On the morning of D-Day, 8 August 1968, these forces were disposed as shown on the map. K Troop was deep in the jungle some 25 kilometers away from CHANH LUU and because of difficult terrain would be on the move constantly from 0600 to 2300, 8 August in order to accomplish its part in the operation. I Troop had arrived in the vicinity of the 3d Squadron CP, 1.5 kilometers to the north of CHANH LUU on 7 August. On the 8th, I Troop began a typical reconnaisance in force operation to the south and away from CHANH LUU.

The CP location of the 3d Squadron was called NORMANDY I. This fire support base had been occupied continuously by a succession of units for at least a year. Securing NORMANDY I since arrival of the 3d squadron on 3 August was M (Tank) Company. The two other U.S. companies that were to participate were B and D of the 2/16 Infantry. These companies were located at fire support base NORMANDY II some eight kilometers to the east. Companies B and D were being employed almost exclusively as night ambush forces against the VC to their east.

Originally the 3d Squadron planned to airmobile B and D Companies into the cordon area at H hour, 082300H August. A shortage of airlift and possible bad weather cancelled this plan. Instead, B Company was airlifted to the northwest of NORMANDY I at about 1430 and immediately began a foot reconnaissance in force operation to the north and away from CHANH LUU. About



Aerial photo of Chanh Luu shows location of forces as they surround the town.

1600, K Troop arrived at NORMANDY II and married up with D Company. At 2000, D Company mounted the K Troop ACAVs and the combined force moved north in the direction of the deception target, the village of BINH MY.

Then, at varying times, each of the four troop elements turned towards the real objective, the village of CHANH LUU. B Company moved south on foot. I Troop moved north. K Troop and D Company moved west. All movement was blackout and cross-country. This was made all the more difficult by being in midmonsoon season. But the ACAVs again proved their capability to cross flooded rice paddies, fords, and marshy ground.

The first elements of all four troops hit the cordon line promptly at 2300. Small units rapidly fanned out to complete the seal. On the east, difficult terrain forced I Troop to approach in column formation along an abandoned rail line. Swampy ground slowed its juncture with B Company, to the north. 4.2" mortar fire was used to fill this gap until I Troop could complete the encirclement.

Once the seal was complete, the two tank platoons in the CP area north of CHANH LUU were ordered to start engines and move south to fill in the K Troop and B Company sectors. Also at this time, the illumination program began. 3d Squadron 4.2" mortars suplemented by 81mm mortars of D Company kept constant illumination over the battlefield throughout the remainder of the night. The VC made only one serious attempt to escape. About 0240 hours, some 10 VC attempted to slip out through a draw in the I Troop sector. They were repulsed by ACAVs on both sides of the draw.

At precisely 0700, the first UH1D lift of the 1st Battalion, 8th Regiment, 5th ARVN Division, landed on the LZ marked and secured by the 3d Squadron. The 1st of the 8th rapidly deployed and advanced on the village. Successive flights brought the remainder of the battalion. An airborne loudspeaker had told all the young men of CHANH LUU to gather in the center of the village. A sweep by the 1st of the 8th rounded up the remainder of the above ground young men for a check of identification. They had come with a list of some 29 local VC and an informant who was to lead them to a tunnel containing a few VC. These captured VC were to lead the ARVN Battalion to yet another tunnel. Around noon, several VC popped out of a hole and commenced to throw grenades. In the ensuing fight, the 1/8 Battalion Commander, Captain Kien, and one of his soldiers distinguished themselves. Despite the fact that U.S. awards for ARVN soldiers were virtually impossible to get and required months of delay, Colonel Patton made arrangements to have Captain Kien and the young soldier awarded the Bronze Star for Valor that same afternoon.

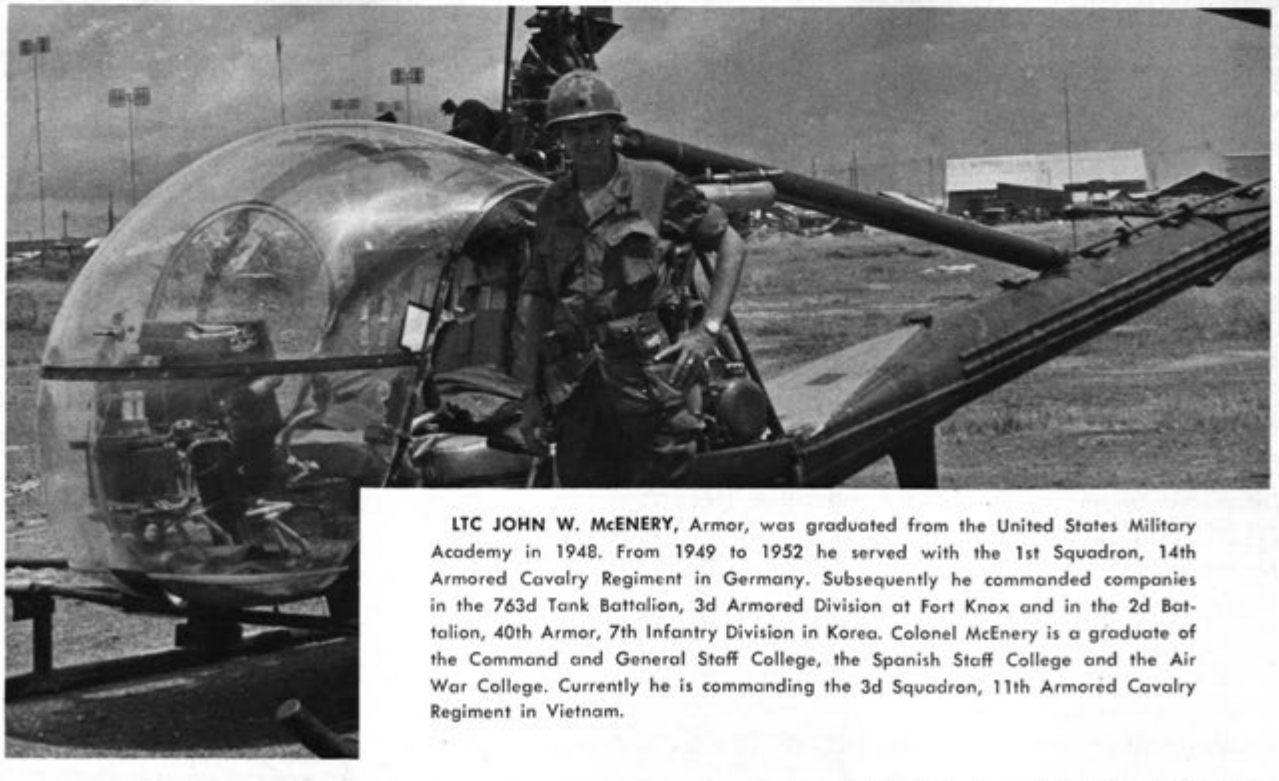
The original plan was for the ARVN 1/8 Battalion to extract at around 1500 hours. It became apparent, though, that much remained to be done. Fortunately, unlike many ARVN units, the 1/8 did not have a fixed night defense mission and could, therefore, remain. The seal was maintained by U.S. forces throughout the night of 9-10 August 68. The ARVN 1/8 Battalion took up a position in the northern portion of the village. That night there was action in each of the four sectors of the U.S. seal as four groups of VC attempted to exfiltrate and one group tried to infiltrate. None were successful.

On the 10th, the ARVN 4/8 Battalion was flown in to augment the 1/8 and the search continued. That evening, it was determined that the seal could be lifted. The 4/8 Battalion withdrew and the 1/8 Battalion remained for another day of clean up.

A partial listing of the haul at CHANH LUU was:

22 VC KIA (including one NVA general officer)
122 VC POW
10 Civil Defendants
21 individual weapons
50 pounds medicine
350 gallons cooking oil
45 pounds documents
2 tons rice
1½ tons salt
½ ton sugar
50 gallons kerosene
50 bolts cloth
7 motorcycles
Assorted munitions, including three large command-detonated mines

As the seal was broken at 1630 on 10 August 1968, orders were received to cordon the village of CHANH LONG to the southeast. Following a hasty aerial reconnaissance by the squadron and troop commanders after dark, the four troops began a difficult approach march. K Troop, with D Company aboard, had the toughest going. Heavy rains continued all night. The swollen waters of the last ford came up to the tops of the heavily loaded ACAVs. Nonetheless, a coordinated cordon was effected at 0300, setting the stage for yet another successful search by ARVN troops of the 5th Division.



LTC JOHN W. McENERY, Armor, was graduated from the United States Military Academy in 1948. From 1949 to 1952 he served with the 1st Squadron, 14th Armored Cavalry Regiment in Germany. Subsequently he commanded companies in the 763d Tank Battalion, 3d Armored Division at Fort Knox and in the 2d Battalion, 40th Armor, 7th Infantry Division in Korea. Colonel McEnery is a graduate of the Command and General Staff College, the Spanish Staff College and the Air War College. Currently he is commanding the 3d Squadron, 11th Armored Cavalry Regiment in Vietnam.

MISSILES FOR ARMOR

by Richard M. Ogorkiewicz

Even a cursory glance at the development of armor during recent years cannot fail to reveal the rapid progress made in the application of guided missiles to armored vehicles. In 1957, when the writer presented on the pages of *ARMOR* an article on "Guided Missile Tanks," this was still a matter of conjecture. Now, only eleven years later, missile-armed tanks such as the *Sheridan* and the *MBT70* are an accomplished fact. And so are several other armored vehicles armed with guided missiles.

Much of the progress which has been made in this field is due to the pioneering efforts of the Société Nationale de Constructions Aéronautiques Nord-Aviation. Moreover, this French company continues to occupy a leading position in the field of antitank guided missiles. Its developments are, therefore, of particular interest.

FIRST-GENERATION MISSILES

The leading position of Nord-Aviation stems from work initiated in 1946, in France, from the basis of the *X7* antitank rocket developed in Germany toward the end of World War II. The first major result of this work was the *SS10*. This, like its German forerunner, is an antitank missile with visual, line-of-sight command guidance and a trailing wire link. Its successful development led to quantity production not only for the French Army but also for the U. S. Army, which first acquired it for evaluation in 1952, and other armies. In consequence, the *SS10* became, during the mid-fifties, the first operational antitank guided missile in the world. By the time its production came to an end in 1963, no less than 29,850 had been made.

The *SS10* has been followed by the *ENTAC* (an acronym for *Engin Téléguidé Antichar*) which is similar in principle but superior in performance. The *ENTAC* was designed by the government armament directorate (originally DEFA and now DTAT). However, it has been produced by Nord-Aviation, which has now delivered almost all of the 180,000 missiles ordered from it by the French, United States and other armies.

Large as they are, orders for the *ENTAC* have been surpassed by those for the *SS11*, of which 122,000 have been ordered by the armed forces of twenty different countries. Like the *ENTAC*, the *SS11* is similar in principle to the *SS10* but it is heavier and has a higher speed and range. As a result, the *SS10* and the *ENTAC* have been used primarily as jeep or ground-mounted infantry antitank weapons. However, the *ENTAC* has also been mounted on some armored vehicles, such as the Panhard *AML*.

The *SS11*, on the other hand, has been used principally as an antitank weapon of the armored units. As such, the *SS11* has been mounted on *AMX 13* light tanks. Each French armored regiment (equivalent to the U. S. Armor battalion) has been assigned a company of these missile-armed tanks which are intended to act as long-range tank destroyers. The *SS11* has also been mounted in other armored vehicles, including the German Army's tank destroyer, the *Jagdpanzer (Rakete)* and experimentally on the Panhard *AML* armored car.

A German *Jagdpanzer (Rakete)* tank fires an SS11.

AUTOMATIC GUIDANCE

Since it became operational in 1956, the *SS11* has been developed further. Its latest version is the *SS11B1,* which has come into use since 1962. It differs from the earlier *SS11A1* in having a heavier shaped charge warhead, an improved solid propellant, removable tracers permitting changes both of the flare and of the infrared radiation filter, transistorized decoders, and long storage capability batteries operating at extremely low temperatures. There are other improvements as well.

What is more, the development of the *SS11B1* has been accompanied by the development of an automatic guidance system, the *TCA (Télécommande Automatique).* This uses an infrared tracker in conjunction with a command computer to guide the missile within less than one meter of the tracker axis, that is, within an imaginary two-meter diameter "tube" which is parallel to the optical line of sight aimed at the target. As a result, the missile no longer has to be "piloted" on to its target. Thus it has been made largely independent of those reflexes of its human controller which bedevil the operation of all first-generation missiles with manual command giudance. In fact, the missile controller of the *SS11B1* with *TCA* only has to aim at the target using an optical sight. One major result of this is that the amount of time required to train missile operators is greatly reduced. In addition, the introduction of the *TCA* with its much reduced reaction time has made it possible to decrease the minimum practical range to 400 meters.

Above, *ENTAC* missiles mounted on the Panhard *AML* armored car. Turret gun is a 60mm breechloaded mortar. Below, an early installation of *SS11s* on the *AMX 13* tank.

The first major installation of the *SS11B1* with *TCA*, and indeed its first application, has been on the *AMX13* tank where it has replaced the *TCM*, or *SS11*, installed earlier. The newer *SS11B1* has been given the name *Harpon*. An *AMX13* tank with the *Harpon* system is illustrated herewith. The infrared missile tracker may be observed at the top of the turret.

THE BASIS OF SUCCESS

The progressive development of the *SS11* to the stage where it became part of the first operational antitank guided missile system with automatic guidance characterizes the methods of Nord-Aviation and reveals the secret of their success.

It is evident that this firm has chosen wisely to start with simple but workable systems and to advance from them by steady development. Coupled with the early recognition of the potentialities of antitank guided missiles, these methods gave Nord-Aviation a clear lead over others. It has also been wise in making its missile systems versatile. This has helped to make these systems successful in a variety of different installations from armored vehicles through helicopters to naval craft. Furthermore, Nord-Aviation has made its missile systems relatively simple. This has increased their dependability to the point where it can guarantee, by contract, that the *SS11* is 93 percent reliable.

In many ways what Nord-Aviation has done is only sound ordnance engineering. However, its policy of steady, progressive development in manageable steps and emphasis on versatility and simplicity of equipment is worth emphasizing as it is not too common. What one sees all too often, instead, are development histories consisting of alternate periods of relative inactivity followed by frantic searches for "breakthroughs" involving over-ambitious projects where are wasteful of resources and whose outcome seldom comes up to the over-optimistic expectations.

The world-wide success of Nord-Aviation in the missile field has led to a considerable expansion of its activities. These center on the Tactical Missiles Division, which is located at the company's headquarters at Châtillon-sous-Bagneux, a southern suburb of Paris, and the missile production plant at Bourges in central France. The missile assembly and loading facilities at Bourges have been specially built to meet stringent requirements for air conditioning and dust filtration, as well as safety. As a result, these offer a unique combination of high rates of output, quality, and low manufacturing costs.

FRANCO-GERMAN COLLABORATION

Impressive as they are, the experience and facilities of Nord-Aviation have been strengthened still further in recent years by collaboration with the German company of Boelkow Gmbh of Ottobrunn, near Munich. Boelkow is a much more recent entrant into the field of guided missiles. But, it has at least one major success to its credit, namely the *Cobra*, a missile comparable in general terms to the *ENTAC*. The *Cobra* has been adopted by the German, Italian, Turkish, Danish and Pakistani Armies. The Boelkow-produced *Cobra* also has the distinction of being the very first antitank guided missile to be used against armor in battle. This historic event took place in 1965, during the fighting between India and Pakistan, when Pakistani units used *Cobras* against Indian tanks.

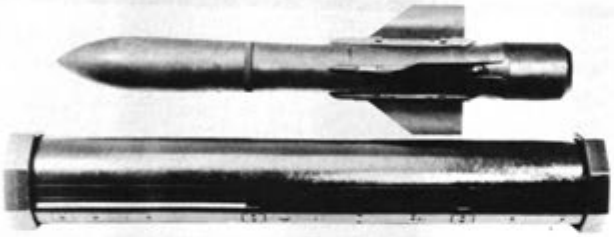
It had been thought that Nord-Aviation's *SS10* was used first, nine years earlier in fact than the *Cobra*, during the victorious campaign of the Israeli Defence Forces in the Sinai Desert in 1956. But, contrary to contemporary reports, the *SS10* missiles were not used in action at that time even though they were in the Israeli inventory.

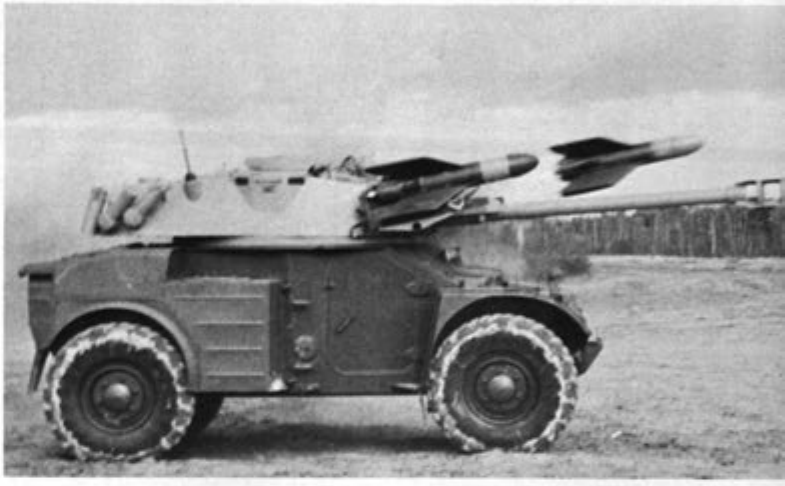
The collaboration between Nord-Aviation and Boelkow is taking place within the framework of agreements reached between the French and German governments and covers the *MILAN* and *HOT* antitank missile systems as well as the *ROLAND* surface-to-air, mobile, antiaircraft weapons system.

NEW MISSILES

The *MILAN* is a portable infantry system intended to replace the *ENTAC* and the *Cobra*. The *HOT*, which is similar in principle, is a much more powerful system intended to replace the *SS11*. Of the two new antitank guided missile systems, the *MILAN* will in all probability come into service first. In fact, within the next year or two. However, *HOT* is likely to be the more significant and is of far greater interest from the armor viewpoint.

The name *HOT* is an acronym for *Haut subsonique-Optique-Télécommandé*. This missile has a high subsonic speed(almost twice that of the *SS11*) and optical command guidance. Its guidance system is automatic and similar in principle to the *TCA* of the *Harpon*. Like the latter, it involves infrared tracking of the missile and automatic guidance along an axis parallel to the operator's line of sight. The guid-





Above, *SS11B1* missiles with automatic guidance mounted on an *AMX13* tank. Right, an *SS11* is launched from a Panhard *AML* armored car. Turret is fitted with a 90mm smoothbore gun. Left, the *HOT* missile with fins fully extended and, beneath, the missile launch tube. Tube is made of reinforced plastic.

ance command signals are transmitted from the computer to the missile by a two-strand trailing wire link.

The *HOT* missile represents a major advance on the *SS11B1* of the *Harpon* as well as on other first-generation missiles. In particular, it is more compact and flies faster. Moreover, it is launched from a reinforced plastic tube which also acts as a sealed container for storage and transport. The sealed tube eliminates the need to check the missile prior to firing. The high initial velocity of the missile and automatic guidance make it possible to reduce the minimum practical range to as little as 75 meters.

The *HOT* system is intended chiefly for installation in armored vehicles although it is no less suitable for mounting in helicopters. In the case of armored vehicles, the *HOT* missile represents a very major advance on the first-generation missiles because it is so much more compact, due mainly to its folding fins. Thus it is much more competitive with tank gun ammunition. The *HOT* missile is, in fact, comparable in size to a round of 105mm high-velocity ammunition.

Therefore, the *HOT* system can be installed effectively as the main armament of special, limited-purpose, antitank vehicles comparable in general terms to the current German *Jagdpanzer (Rakete)* but with much superior characteristics. Alternatively, it can be used in combination with relatively small-caliber conventional guns as the armament of more versatile combat vehicles such as light tanks whose capabilities would be comparable to those of the *M551 Sheridan* but which would be simpler and less costly.

Conversely, the installation of the *HOT* system in suitably designed armored vehicles will make it more effective by making it more mobile. Thus, the development of the new generation of antitank guided missiles will not, contrary to occasional ill-informed statements, make tanks obsolete.

The more powerful, longer-ranged missile systems will not make tanks obsolete because they must be mounted in armored cross-country vehicles to make them fully effective. The resulting missile-armed vehicles might well look very different from today's heavy battle tanks. But, in principle, they will be tanks.

From The Armor Branch Chief....

TO KEEP THE BEST

The retention rate of Junior Non-RA Officers in Armor Branch is not as high as it should be. Though Armor compares favorably with the total Army average, there is need for improvement. Comparing FY 67 to FY 68, Armor is up from 20.5% to 20.9% retention of junior non-RA officers. The trend is correct, but the rate needs improving.

World-wide requirements have increased to the point that Armor now has a significant shortage of captains and majors. This shortage is being off-set by commissioning more lieutenants in Armor. However, if this continues, over 50 percent of all active duty Armor officers will be lieutenants who, with less than two years experience, must fill positions calling for captains and majors. If we are to correct this grade imbalance as well as increase the experience level of our officers, it is essential that Armor retain more of the better qualified two year obligated officers.

What can you do about this problem? Just as we in Armor Branch are doing—**emphasize retention.**

If you are a junior non-RA officer, give some serious thought to committing yourself to an Army career in Armor. If you decide on Armor, submit your application.

If you are already RA or a career Reservist, sell our branch and an Army career to those qualified junior officers serving under or with you. In selling our career, use the methods best suited to yourself and the junior officer concerned to point out the advantages of our product—a career as an Armor officer. Be factual, exaggeration is not needed. The product you sell need take a back seat to none. It's a career that provides variety, responsibility, satisfaction, service to country and mankind, and it certainly is not lacking in action. It's a man's profession, working with men, and very few other professions can measure up to it.

When you have sold our profession to a worthy officer (or been sold) the question often arises as to how to stay on active duty. Basically, there are two approaches: a Regular Army career or a Reserve career on active duty. Regular Army application procedures and requirements will be covered in our notes in the next *ARMOR*.

To apply for extension as a Reserve Component officer, either for a career or for shorter periods deferring career decision, there are four approaches which can be taken.

Voluntary Indefinite: The indefinite service agreement is for those officers who desire to make the Army a career, but who are not eligible for, or do not desire, a Regular Army commission. Officers who are granted this type of extension are selected for special training, schooling and assignments in the same manner as their Regular Army contemporaries.

Normally, an officer is required to serve a minimum of one year in the voluntary indefinite status before attaining eligibility to request release from active duty. Service obligations resulting from training, schooling or assignment must also be completed before an officer is eligible for release unless unusual circumstances warrant exception to policy.

Short Term Extension of Service: The short term extension is appropriate for those officers who desire more time to consider a military career or who prefer, for personal reasons, to remain in the service for a definite period beyond their current release date. This extension is also used by officers who desire a particular overseas assignment and must extend their service agreement to be eligible (e.g. an OBV officer who, after serving 16 months of his obligated tour, decides that he would like a tour in Vietnam before he is released. The normal tour for Vietnam is 12 months. Therefore, he must extend his current service agreement for four months before he is eligible for assignment to Vietnam.)

Officers may request a short term extension one time only, for any period from one month to 24 months. Extensions for periods in excess of 24 months must be in a voluntary indefinite status.

Definite Term Agreement: An officer who has applied for appointment in the Regular Army, and who has insufficient time remaining to serve on active duty to permit Department of the Army to process his application, may apply for further active duty until completion of the action by means of a definite term agreement. If he is not accepted for appointment, he is allowed 30 days after notification in which to apply for immediate release from active duty. If he does not apply for release within 30 days, he is retained in a voluntary indefinite status.

Extension for the Purpose of Promotion to Captain: Beginning 2 May 1968, non-Regular Army first lieutenants who become eligible for promotion to captain, AUS, are required to submit a request for extension for the purpose of promotion to captain in order to fulfill a service obligation of 36 months active Federal commissioned service computed from the date of entry on active duty as a second lieutenant or 12 months active service in grade of captain, whichever occurs first. This extension is approved in the field by the promoting authority. The original and two copies are forwarded to the career branch.

Extensions granted under this program will not constitute a bar to a further short term extension. In addition, officers already serving on a short term extension may, if appropriate, be granted an additional service extension to satisfy the service obligation incurred by promotion to captain. It is not necessary to extend an officer for promotion when he is already serving in an indefinite status or on a short term extension that covers the obligated period.

Obligated officers who desire to remain on active duty in a Reserve career status may request an extension, either voluntary indefinite or short term, anytime during their initial tour. However, to allow time for processing, an application should be submitted not later than two months prior to their scheduled date of release. Those who extend for the purpose of promotion to captain should be contacted by the promotion authority approximately three months before they are eligible for promotion.

In submitting applications for indefinite service agreements or extensions, proper format is important. This format is prescribed in paragraph 5b, AR 135-215 and DA Message 851760. Any personnel officer should have the references and be able to assist in preparation.

All extensions, except those for the purpose of promotion to captain, must be forwarded to Armor Branch for approval and must be indorsed with the personal recommendation of the commanding officer of the regiment, brigade, battalion, or similar administrative unit.

It is important that a request for a short term or voluntary indefinite extension not vary from the prescribed format nor contain a statement of purpose for the extension. Either of these unauthorized deviations may cause the application to be returned, without action, for resubmission.

The provisions for extension are not complicated, though they are often unknown or misunderstood. Junior officers interested in taking advantage of extending and perhaps making a career in Armor are encouraged to apply. All others in Armor in a position to sell Armor careers to worthy junior officers are encouraged to inspire and to assist these potential professionals in any way possible. Whatever your status, if more information or help is needed, your local personnel officer can assist. Or, we in Armor Branch stand ready to lend a hand in any way possible.

ATTENTION TO ORDERS ! ! !
OFFICER MEMBERS OF THE UNITED STATES ARMOR ASSOCIATION
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The United States Army recognizes the importance of membership in professional and educational societies and of professional publication. Be sure your membership in the United States Armor Association is made a matter of record on your DA Form 66B. See paragraph 79, AR 611-103 for details.

Paragraph 80, AR 611-103 prescribes that professional publication of books and *articles* by Army officers will be recorded on DA Form 66B.

Get credit for your professional activities. See your personnel officer today.

THE WORLD WAR I EXPERIENCE

TIMOTHY K. NENNINGER

Walter Millis, in his book Arms and Men, declares, "The one great, determining factor which shaped the course of the Second World War was not, as is so often said and generally believed, independent air power. It was the mechanization of the ground battlefield with automotive transport, with the 'tactical' airplane and above all with the tank." Panzer divisions spearheaded the German attacks into Poland, France, and Russia. The Germans, Italians, and British employed tanks widely in the North African campaigns of 1940, 1941 and 1942. Armor played an important role in the Russian counteroffensive which began after the German defeats at Stalingrad, Moscow, and Leningrad. And American armored divisions led the way to the Rhine and the Elbe following the Normandy landing. But American armor did not just emerge in 1944. The United States Army had been developing tanks and doctrine for mechanized warfare since World War I.

Throughout the period examined in this series of articles, American armor developed in three interrelated areas: equipment, organization, and doctrine. Slow moving tanks could not perform the mobile missions envisaged by the mechanized cavalry leaders in the late thirties. On the other hand, slow tanks were acceptable for supporting infantry assaults. Tanks organized into companies for supporting infantry battalions were not capable of accomplishing the same missions as a mechanized force composed of tanks and supported by other arms. Obviously then, armor doctrine depended upon, and was a result of, the type of tanks available and the organization of the tank units. To determine how and why American armor developed in the manner it did, it is necessary to focus on each of three elements: equipment, organization, and doctrine.

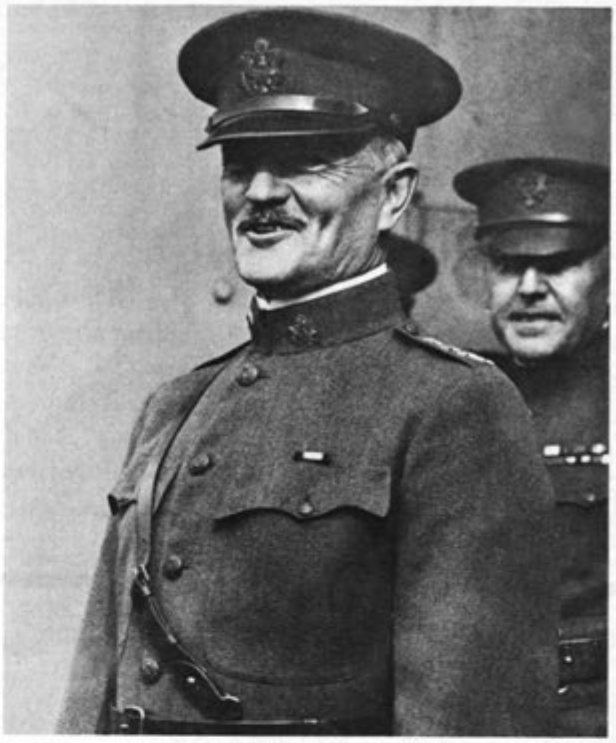
When the United States entered World War I, in April 1917, tanks had yet to prove their capabilities. Following the Battle of the Somme in 1916, the Allies had employed tanks with disappointing results. Because of their poor performance, the American Military Mission in Paris declared tanks a failure. In view of this, the General Organization Project for the American Army in France ignored organizing a tank service. But upon arrriving in France in June 1917, General John J. Pershing detailed a number of committees to study the tactics and organization of the French and British armies.

Reporting to the Infantry Operations Section of Colonel C. B. Baker's commission, Lieutenant Colonel Hugh A. Parker discussed the employment of large numbers of light and medium tanks in conjunction with tactical air power and motorized infantry. Unfortunately, World War I tanks proved incapable of fulfilling the mobile role envisaged by Parker.

Another board appointed by Pershing, which considered the use of tanks, consisted of Colonel Fox Conner, Colonel Frank Parker, and Lieutenant Colonel Clarence C. Williams. The salient point of their report contrasted sharply with the Military Mission's report. It concluded, "The tank is considered a factor which is destined to become an important element in this war." This board considered the French *Renault* and the British *Mark VI* satisfactory models for use by American troops. Finally, they recommended the organization of a separate tank service under the command of a single chief who reported directly to General Pershing. During the war American tank development generally followed their recommendations.

Despite these preliminary studies much preparation remained before an American tank unit would enter combat. Procurement of tanks proved to be the most difficult task. Based on the early studies and approved by Pershing on 23 September 1917, the Project for the Overseas Tank Corps outlined the organization of five heavy tank battalions of 375 British *Mark VIs* and twenty light tank battalions composed of 1500 *Renaults*. As we shall see, this program proved too ambitious and the stress and strain of war prevented its completion.

In late November AEF headquarters (GHQ) deemed additional information necessary before the formation of a Tank Corps. Therefore, Pershing ordered Majors Alden and Drain of the Ordnance Department, Captain George S. Patton, the commander designate of the light tank service, and Lieutenant



Despite a military mission's declaration that tanks were a failure, GEN John J. Pershing, Commander-in-Chief, Allied Expeditionary Force, appointed a board to consider further their employment.

Elgin Braine, Patton's assistant, to study the design, construction, and use of tanks. After observing French tank training and production these officers submitted their reports to GHQ in early December. Based on the reports and on Pershing's recommendations, the Chief of Staff ordered the organization of the American Tank Corps in December 1917. A Quartermaster officer with over twenty years service in the Cavalry, Samuel D. Rockenbach, whom Pershing described as having "special qualifications," became Brigadier General and Chief of the Tank Corps in France.

As Chief of the Corps Rockenbach was responsible for training, organizing, and equipping AEF tank units. A number of problems relative to desirable tank types, organization, and tactics confronted Rockenbach when he reported to GHQ on 23 December 1917.

Procurement of tanks was particularly important and proved most difficult. Throughout 1917 and early 1918 American officials in France expected that the AEF would be largely equipped with tanks produced in the United States. On 22 January 1918 the Americans and British agreed to produce jointly 1500 *Mark VIII* heavy tanks. Component parts were to be manufactured in the United States and in England. The tanks themselves would be assembled at

a factory in France. But the German 1918 offensive and the competition of the American aviation program for *Liberty* engines disrupted the successful completion of this agreement; both drained resources destined for tank production. Because the Anglo-American agreement provided only for heavy tanks, light tanks had to be built in the United States.

In February the War Department cabled GHQ that 100 American-built *Renault* light tanks would arrive in France by April; three hundred would be delivered in May and six hundred per month thereafter. During the spring of 1918 the War Department remained optimistic about shipments of American-built tanks to France. But lack of coordination and difficulties in procuring parts plagued production. By June 1918 it became apparent that no useful number of tanks would arrive from American factories until 1919—too late for the expected Allied offensive. But the American Tank Corps did get its tanks. The French agreed to equip fully two American battalions with *Renaults*. Under the proviso that it be attached to the British Expeditionary Force, Great Britain equipped one battalion with heavy tanks.

The training of tank personnel presented nearly as many problems as procurement. Training procedures for the American Tank Corps followed British policy. Commanders of the tank brigades had responsibility for training all officers, non-coms, and enlisted men in their commands. Instructors trained at French and British schools would assist the commanders with unit training. To insure uniformity of doctrine the unit commanders would lead in combat the troops they trained. GHQ established schools on a permenant basis for training instructors and reinforcements. For training unit personnel each brigade set up temporary courses of instruction.

An officer whose name became synonymous with tanks during World War II deserves much credit for training and organizing the AEF Tank Corps. On 3 October 1917, George S. Patton requested transfer to the tank service. Within three weeks Pershing's Chief of Staff, James G. Harbord, detailed Patton to duty with tanks, directed him to organize the light tank service, and ordered him to establish a light tank school. Following detached duty with the French, Patton proceeded to the AEF schools at Langres in December 1917 and began preparations for a suitable school, training area, and tank park.

On 9 January 1918, twenty-two second lieutenants transferred from the Coast Artillery to the Tank Corps. They formed the foundation of the American tank service in France; they were the cadre. Under Patton's direction this group of officers immediately began training with the French. Instruction concentrated on basic military subjects: weapons, camouflage and map reading. Mechanical instruction followed shortly. In early February Patton went to St. Aignan to recruit enlisted men for two tank companies and a headquarters unit. He looked for men with special qualifications, such as chauffeurs, mechanics, and caterpillar tractor drivers. With the arrival of the first troops at Langres on 17 February training began in earnest. Because of the isolated environment in which tankers operated their training stressed the necessity for hard discipline, devotion to duty, and *esprit de corps*.

General Rockenbach had secured 10 Renaults from the French for training purposes. The tanks arrived at Langres on 23 March 1918. Patton, the only American at the schools who had even seen a tank, taught 10 men with marked ability as instructors to drive the tanks. These 10 then instructed small details from each of the companies. Unit exercises began as soon as the troops learned to drive the machines. In these exercises Patton stressed reconnaissance, gunnery, repair work, and tank-infantry cooperation. As more personnel became available the tank units at Langres expanded. By 15 August 900 men and 50 officers had been trained. They formed the 344th and 345th Light Tank Battalions of the 304th Brigade (Tank Corps).

While the light tank units trained in France, the 301st Heavy Tank Center was organized at Bovington Camp, England. In February this unit, commanded by Lieutenant Colonel Conrad S. Babcock, consisted of 58 unassigned Engineer Reserve officers, and 38 enlisted men. Early in March three companies of the 65th Engineers, trained at Camp Colt, Pennsylvania, arrived to fill out the 301st Light Tank Battalion. Training of this heavy battalion progressed along lines followed by the units in France. The original officers instructed the newly arrived engineers using borrowed British heavy tanks. On 23 August 1918, the 301st departed for the front in France. Its commander was Major Roger B. Harrison.

During the war the tactical doctrine for employment of tanks changed very little. From the time of Ernest D. Swinton's pronouncements on the use of tanks in 1915 until the Armistice tanks remained infantry close support weapons. Several factors contributed to this continuity. Mechanically, tanks remained primitive. They were slow; they were me-

These National Archives photos of 1918 portray the infant World War I light tank element as it trains for combat. Directed to organize the light tank service and establish a light tank school, LTC George S. Patton began with 10 Renaults and 10 men with marked ability as instructors. Above, LTC Patton, with MAJ Sereno Brett, inspects his tankers. MAJ Brett later took command of the 304th Brigade (Tank Corps) when Patton was wounded. Below left, pioneer tankers perform maintenance. Below right, ready for the CMMI of yesteryear.

chanically unreliable; they were easily put out of action. If tanks had difficulty accomplishing their primary mission of infantry support, it was difficult to envisage them fulfilling a more independent role as they did in later years. However, tanks carried out a valuable function in the system of trench warfare. Infantry needed a close support weapon to neutralize hostile machine guns and to break through the barbed wire. Perhaps the most important reason that tank doctrine changed very little was because it evolved in a static warfare situation.

American tanks in battle, while not a failure, were something less than spectacular. Only three battalions, the 301st Heavy Tank Battalion and the 344th and 345th Light Tank Battalions, saw action. Mechanical breakdowns, heavy casualties, insufficient numbers of machines, poor liaison with the infantry, and use over difficult terrain hindered the performance of the American Tank Corps in France.

On 5 September 1918, Lieutenant Colonel Patton received orders attaching the 304th Brigade to the IVth Army Corps for operations against the St. Mihiel Salient. Assigned to the 1st and 42nd Divisions, the tanks' mission was to assist the infantry in attacking the southern edge of the salient. Because of the difficult terrain, the operations order called for the 345th to follow the 42nd Division until it passed the Tranchee d' Houblons. From this point

the tanks would lead the foot troops in an attack on the towns of Essey and Pannes. Despite heavy shell fire and deep mud the battalion carried out the plan. The tanks of the 345th overcame several machinegun positions, destroyed a battalion of German artillery, and captured 30 enemy soldiers.

Operating with the 1st Division, the 344th Battalion succeeded in cutting the barbed wire and engaging a number of machineguns in the vicinity of the Bois de Rate. A gasoline shortage hampered tank operations on 13 September, the second day of the battle; the tanks had consumed more fuel than anticipated because of muddy ground. The tankers spent 14 September attempting to reestablish contact with the infantry. On that day an eight tank patrol from the 344th attacked, without infantry support, and dispersed a battalion of German infantry near Woel. This was the final tank action in the St. Mihiel operation.

Although a lack of serious resistance at St. Mihiel did not provide an opportunity to demonstrate the full offensive value of tanks, the tankers did give valuable aid to the infantry. Furthermore, the Americans gained much worthwhile experience in the use of tanks over difficult terrain. During the four-day battle, the 304th Brigade lost two tanks destroyed by shell fire, 22 ditched, and 14 because of mechanical difficulties. The brigade suffered 14 casualties among its personnel; but only two of these occurred among troops inside a tank.

The Meuse-Argonne offensive, beginning on 26 September, was the largest American operation of the war. In the initial phase the two American light tank battalions operated with I Army Corps. Originally the 344th was to support the corps' advance on the front extending from Vanquois to La Harazee. Upon reaching the First Army objective, the 345th would "leap frog" the 344th and continue to support the attack so far as possible.

Serious resistance, especially along the edge of the Argonne Forest, necessitated the use of both battalions by the end of the first day of the offensive. Heavy machinegun fire provided most of the resistance, particularly near Varennes. Although the tanks reached Varennes at 0930 on 26 September, the infantry did not arrive until 1330. While getting tanks forward and rallying disorganized troops, the brigade commander, Colonel Patton, was wounded. Major Sereno Brett replaced Patton and led the brigade for the remainder of the campaign.

On 27 and 28 September the American tanks answered requests for assistance from the infantry.

Dummy tank used for machinegun training. Rockers simulated tank movement.

Although coordination was poor, small groups of tanks assisted infantry squads and platoons to reduce enemy strong points. On the 28th tanks entered and captured Apremont five times before the infantry advanced, consolidated, and exploited this success. From 29 September until 4 October 89 American tanks supported the attack of the 1st and the 28th Divisions.

During this period the tankers and infantrymen overcame liaison difficulties and worked well together. In this fighting the brigade suffered heavy losses in men and equipment because of accurate German artillery fire. Only 30 tanks, many of which were unfit for effective combat, because of mechanical trouble, remained in action on the morning of 5 October. The next day all American tanks withdrew to Varennes for overhaul.

It was apparent that there were insufficient tanks to reequip the entire brigade. Therefore, brigade headquarters formed a provisional company, commanded by Captain Courtney Barnard, and ordered the remainder of the 304th back to the Tank Center at Langres. From 16 October until 1 November the provisional company remained in corps reserve at Exermont. In their last action of the war several American tanks of the company participated in the general advance on 1 November in the vicinity of Landres-et-St. Georges and earned the commendation of the commanding general of the 2d Division.

Somewhat like the 344th and 345th, the 301st Heavy Tank Battalion met with only limited success.

Attached to the 2d Tank Brigade of the British Expeditionary Force and equipped with 47 British heavy tanks, the 301st assisted the American II Corps and an Australian corps in an attack on the Hindenburg Line during late September 1918. Of the 34 tanks supporting the 27th Division only ten actually became engaged in combat. Most of those disabled ran afoul of an old British minefield. Once again coordination between tanks and infantry was poor. The 2d Brigade operation report concluded, "Due to the fact that the 27th Division had never had an actual operation with tanks, the Infantry Commanders did not seem to grasp the idea of tanks cooperating with Infantry."

In conjunction with the British IX and XIII and the American II Corps, the 301st successfully attacked German positions north of Brancourt on 8 October. The tanks fought through to the final objective giving effective support to the foot troops.

Poor visibility disrupted a II Corps-301st Tank Battalion attack nine days later. Only half of the 20 tanks which started finished the operation. The final attack of the 301st occurred on 23 October when nine tanks assisted two British divisions near Bazuel. The tank commanders reported little opposition and good targets despite visibility problems and difficult terrain. All nine tanks beginning the assault rallied at its conclusion. The infantry commanders praised the work of the tanks. Following this operation the 301st remained in GHQ reserve until the end of hostilities.

Military experts disagreed as to the value of tanks during the war. Skeptics could point to the experience of the three American tank battalions and ask the enthusiasts if this was an example of the ultimate weapon. Poor liaison, mechanical breakdowns, heavy tank casualties (123 percent from all causes during the Meuse-Argonne), and their inability to operate in certain situations contributed to the pessimistic view of the value of tanks.

On the other hand, tank enthusiasts found cause for optimism in the success of mass tank attacks, such as the British assault at Amiens on 8 August 1918. Luddendorf called this the "black day" of the German Army. Sir Douglas Haig, who in 1917 called tanks "a minor factor under present conditions," said in his final report on the war, "Since the opening of our offensive in August tanks have been employed in every battle and the importance of them can scarcely be exaggerated."

The debate over the value of tanks continued for nearly two decades after the Armistice. During the early post-war years the experience of tanks from 1915 until 1918 weighed heavily on both sides of the argument.

(The next article in this series will examine developments in the immediate Post-World War I period.)

Bibliographical Note

Material for this article came from a number of sources. The great bulk was derived from materials in the National Archives at Washington. Operations reports of the various tank units, a history of the 304th Brigade, and the AEF Adjutant General File were all found in Record Group (RG) 120 which contains the complete AEF records. The War College Division File (RG 165) was also helpful for information on planning. Another good source were volumes in the U. S. Army in the World War, 1917-18 *series published by the Department of the Army in 1948. The volumes entitled* Organization of the AEF *and Reports of the* Commander-in-Chief, AEF Staff Sections and Services *contained reports by Rockenbach and Patton on tank activities during the war. A pamphlet published in 1918 by the War Plans Division,* Instructions for the Training of the Tank Corps in France, *was good for data on training. Among the secondary sources used were J. F. C. Fuller's* Tanks in the Great War *(1918), Arch Whitehouse's* Tank *(1960), and Ladislas Farago's* Patton *(1963). The quote from Douglas Haig came from E. W. Shepard's* Tanks in the Next War *published at London in 1938. T.K.N.*

TIMOTHY K. NENNINGER, a native of Cincinnati, received a Bachelor of Arts degree from Lake Forest College (Illinois). While attending college, he successfully completed Marine Corps Platoon Leaders Class training, but was discharged in 1965 for medical reasons. He received a Master's degree in American History from the University of Wisconsin in 1968. This series of articles arose out of the author's Master's thesis, which was entitled, "The Development of American Armor, 1917-1940." At present the author is continuing his work toward a PhD in history at the University of Wisconsin.

U. S. ARMY ARMOR SCHOOL TRENDS

CPT James S. Dickey, Distinguished Graduate of Armor Officer Advanced Course 3, is congratulated by GEN James K. Woolnough, Commanding General, U.S. Continental Army Command. CPT Dickey is holding the engraved Revere Bowl awarded by the United States Armor Association.

The Distinguished Graduate of Regular Army Armor Officer Basic Course Number 1, CPT Wesley K. Clark, and his wife, Gertrude, accept congratulations and a Revere Bowl from BG William W. Cobb, Assistant Commandant of the Armor School, after the class graduation ceremonies. CPT Clark, of Little Rock, Arkansas, set a new record for highest academic average of any graduate in the history of the course. A former Rhodes Scholar, he also stood first in the USMA Class of 1966 and was awarded an Armor Association Presentation Saber.

PASSING THE ARMOR WORD

A classified edition of The Armor Center Letter was distributed in September to commanders down to regimental and separate Brigade level. This publication serves as the means of disseminating to the field ideas on and discussion of new developments in Armor which are generated by the Armor Panel, composed of the agencies and units located at the Armor Center. It has been decided that the contents of the *Armor Center Letter* will be limited to classified information. Wider dissemination of unclassified material will be achieved by publishing it in the Branch Professional Journal ARMOR.

NEW ARMOR SCHOOL REFERENCES

The Armor School's *Armor Reference Data* (Special Text 17-1-1) has been revised by the Command and Staff Department. Highlights of the new edition are inclusion of the airmobile division, the armor battalion (light), the armored cavalry squadron of the armor group, and Vietnam modified units. The airmobile division includes the air cavalry squadron. *Armor Reference Data,* which serves the student as a reference handbook on the organization, manning charts, summaries of equipment and characteristics of weapons for Armor units, reflects organizations prescribed by Department of the Army Tables of Organization and Equipment, and anticipates changes thereto. The *Armor Leader's Guide* (Special Text 17-15-1), a pocket-sized text prepared by the Armor School, is currently being revised to update the material included and to add new material which has become available. The revised edition should be available for issue to students by the end of FY 69.

ENGINEER CREW TRAINING

In a recent action, Continental Army Command directed the Armor School to develop guidance for advanced individual training of crewmen on the combat engineer vehicle (CEV) and armored vehicle launched bridge (AVLB). In response, the School has prepared a new army subject schedule, 17-12F20, which prescribes MOS technical training and refresher training for the crewmen involved. The MOS technical training is in the form of a 10-week advanced individual training program which results in awarding of the MOS, 12F20, upon completion. Hand in hand with the subject schedule a new training circular, 17-14, has been prepared to provide interim guidance in the conduct of CEV gunnery training and to highlight the gunnery techniques peculiar to the CEV.

NEW GERMAN LIAISON OFFICER REPORTS

Lieutenant Colonel Hubertus A. Ewart is the new German Liaison Officer at the Armor School replacing Lieutenant Colonel Friedrich J. Sacha who has returned to Germany. Commissioned in 1942, Colonel Ewart commanded a tank company in Russia during World War II. He was wounded four times before being assigned as an instructor at the former German Armor School in Wunsdorf, near Berlin. After the war he was an industrial manager and served as a judge of the Labor Court in Nurnburg. He reentered the Army in 1956. In 1965 he assumed command of Panzer Bataillon 204, one of the first to be equipped with the new German *Leopard* tank. Colonel Ewart's son, who served in the U.S. Army for six years, and his daughter now live in Chicago.

2LT David M. Wells accepts a Revere Silver Bowl from COL Robert L. Freeland, commander, 194th Armored Brigade. 2LT Wells was the Distinguished Graduate of Armor Officer Basic Course Number 3.

LESSONS LEARNED IN VIETNAM

The Communication Department has published the fourth in its series *Lessons Learned in Vietnam*. These booklets set forth the latest information on the complete range of communications problems encountered in Southeast Asia. Emphasis is placed on the performance of new communications equipment and on tactical communications procedures. Copies are available from Commandant, U. S. Army Armor School, ATTN: AHBAAS-CM, Fort Knox, Kentucky 40121.

Identical twins, 2LTs Donald M. Ketchum (left) and Ronald D. Ketcham both graduated with honors from Army Officer Basic Course One. Distinguished Honor Graduate Donald Ketcham's wife holds the silver bowl he was awarded while second honor graduate Ronald Ketcham and his wife read his inscribed plaque.

Command Sergeant Major Bernard D. Moravitz, a veteran of more than 27 years of service in the Army, is now the U. S. Army Armor School's top ranking enlisted man.

AOAC YEARBOOK

Armor Officer Advanced Course Number 1-69 has announced plans for compiling and publishing a class yearbook entitled *Spurs 'N Sprockets.* LTC Robert J. Bertrand, Executive Officer, School Brigade, is the advisor to the yearbook staff.

NEW AOB INSTRUCTION

A new unit of instruction, "Platoon Leader's Responsibilities for Maintenance," was approved and incorporated into the Automotive Department portion of the Armor Officer Basic Course in September. This unit imparts a knowledge of techniques available to a new platoon leader for evaluating the current maintenance status and for starting and continuing an effective maintenance program.

FORT KNOX IN THE BIG PICTURE

In August, a film team from the Army Pictorial Center visited the School's Weapons Department to film two sequences which will be incorporated into a *Big Picture* presentation. The two sequences show instruction given turret trainees on the *M60* series tanks and on the *XM40* weapons system of the *M551 General Sheridan.*

SHOWING AT YOUR CINEMA SOON

On-site photography for a new training film, *Armored Cavalry Troop in Retrograde Operations* was completed in September. Technical advice on the film was given by the School's Command and Staff Department. Troop I, 17th Cavalry, 194th Armored Brigade provided the troop support for the film. The new film, TF 17-3912, should be available to units by late March 1969.

2LT David Talbot accepts Revere Bowl signifying his selection as Distinguished Honor Graduate of Armor Officer Basic Course Number 2. LT Talbot, a resident of Miami, received a direct commission in April while serving in Vietnam. Making the presentation is COL Leonard Schroeder Jr., Deputy President, U. S. Army Maintenance Board, who made the graduation address.

2LT Bruce R. Bauer of Oshkosh, Wisconsin, receives the two Draper fund Revere Bowls he won for becoming the Distinguished Honor Graduate of the Armor School's Armor Officer Orientation Course Number 1 and for winning the Military Stakes. Congratulating the double winner is COL Robert Freeland, CO, 194th Armored Brigade who was guest speaker at the class graduation.

A Lesson In Hieroglyphics

```
DEC-69-2        5JAN68     (or  0038)
AD     1/22ARM                 ARM     A64
MAJ JOHN M JONES  099099
1234 YELLOW RIBBON DRIVE
FT TANKER, WZ  12345
```

This is the plate of a hypothetical member who has filled out all the blanks on his membership application and latest change of address or of a member on whom we have done some research in one of the few spare moments which present themselves in the offices of ARMOR. The address lines are self-explanatory. The first line reflects circulation and accounting information. DEC-69 indicates that the members dues are paid through December 1969 and that the November-December 1969 ARMOR is the last that he will receive if he fails to pay his subsequent dues. The -2 indicates that he paid for two years. A -1 would indicate payment for one year. 5JAN68 is the date that the payment, together with name and check number, was entered in our accounting books. 0038 is a sample of the coding number used prior to 1968. This entry permits backtracking to the page on which the member's check was recorded in our accounting books.

Now for the second line. First comes present status (i.e. AD=active duty, ARNG=Army National Guard, etc.). Next is the member's unit and branch if known to us. The A in A64 indicates membership status as defined in the Constitution and By-Laws (i.e. A=active, B=associate, C=honorary (only five at present), D=cadet or midshipman). The 64 indicates the initial year of *continuous* membership if it has been reported to us. From 1967 on this has been entered as each new member is enrolled.

When applications are received, they are usually processed the same working day. The member is then sent (by first class mail) his membership card, a decal and a reader service card. At the same time the latest issue of ARMOR is sent to him by second class mail. In all cases each year's dues include six issues of ARMOR. Subscribers are processed in a similar manner. Of course, no membership card or decal is sent to subscribers.

IF YOUR PLATE IMPRESSION LACKS SOME OF THE INFORMATION SHOWN, OR HAS INCORRECT INFORMATION, PLEASE USE YOUR READER SERVICE CARD TO LET US KNOW.

ARMOR — The Magazine of Mobile Warfare

SPEEDY SERVICE REQUEST

☐ *Change my address effective* _____

☐ *Hold my magazines until further notice.*

☐ *Send application blank(s) to* _____

☐ *PLEASE* _____

_____

CURRENT ADDRESS

NEW ADDRESS

_____

_____

_____

_____ **ZIP** _____

THE POST OFFICE CAN NOT FORWARD ARMOR TO AND FROM APO ADDRESSES

NEWS NOTES

Looking over a rare book in the U.S. Army Military Research Collection at Carlisle Barracks are MG William J. McCaffrey, Army War College commandant, COL George S. Pappas, director of the collection, and GEN Bruce Palmer, Jr., Army Vice Chief of Staff.

GENERAL PALMER DEDICATES ARMY HISTORY REPOSITORY

General Bruce Palmer, Jr., Army Vice Chief of Staff, recently dedicated the U.S. Army Military History Research Collection at Carlisle Barracks. Noting the invaluable acquisitions thus far of more than 100,000 books, manuscripts and papers which have already been catalogued and indexed, General Palmer highlighted several. These included the 1494 edition of "Tactics" by the Roman general Vegitius, the original manuscript of Emory Upton's "Military Policy of the U.S.," General Cook's diary of his Indian campaigns and the papers of former Army Chief of Staff General Harold K. Johnson.

In his address, General Palmer said, "This Army collection is one dedicated solely to perpetuate the history and traditions of the U.S. Army and is now available to all. . . . for this collection to be worthwhile, the entire Army must cooperate." He asked all to urge the donation of personal papers, records, letters, diaries, photographs and similar items which "will not only serve to preserve the legends of past proud service, but will help throw light on the future course of this great Army of the United States."

Those seeking a safe place for their military memorabilia may obtain further details from the Director, U.S. Army Military History Research Collection, U.S. Army War College, Carlisle Barracks, Pa. 17013.

ARMOR AVIATOR WINS DSC

Captain Robert L. Grof, Department of Tactics, U.S. Army Aviation School, has been awarded the Distinguished Service Cross for gallantry in Vietnam on 19 June 1967. Captain Grof distinguished himself while an aircraft commander with Troop D, 3d Squadron, 5th Cavalry, 9th Infantry Division. During an evacuation mission he flew into a combat area where there were over 100 casualties and landed to load the wounded. Despite being hit when machine gun fire struck his aircraft, he flew several wounded to a treatment center. Refusing to leave his ship he returned to evacuate more casualties.

Captain Grof again was wounded during a second attempt to recover more wounded men. His ship was shot down, but he remained in the craft to direct other ships by radio to a more secure area. He saw another helicopter shot down and made repeated trips to help the survivors to safety and to recover ammunition to establish a defense perimeter. He, and a group he organized quickly, successfully repelled the enemy until medical evacuation helicopters could land and pick them up.

CPT Robert L. Grof is presented the Distinguished Service Cross for heroic action in combat by BG Frank Meszar, deputy commandant of the Army Aviation School.

MAJ Alan R. Wetzel is congratulated by West Point cadets.

ARMOR MAJOR WON DSC WITH INFANTRY UNIT

Major Alan R. Wetzel recently was presented the Distinguished Service Cross for extraordinary heroism in Vietnam by Brigadier General Samuel W. Koster, Superintendent of the United States Military Academy. The citation noted that Major Wetzel (then a captain commanding a company of the 2d Battalion, 14th Infantry, 25th Infantry Division), on 16 February 1968 in Tay Ninh, gallantly led an assault through intensive fire from a well-intrenched enemy battalion-size unit. On three occasions his effective leadership prevented the enemy from ejecting his numerically inferior command from its objective. On the last of these, Major Wetzel, though wounded by an enemy rocket, together with six of his men drove off a strong enemy counterattack with a deadly barrage of grenades and rifle fire. Major Wetzel is now assigned to the Office of Military Instruction at West Point.

BLOCK BUSTER

A test conducted by the 1st Armored Division at Fort Hood has determined conclusively that the direct support artillery 155mm howitzers are effective for obstacle clearance. A crib of telephone poles and railroad ties buried four feet in the ground was filled with large rocks to form the test target across a range road. A howitzer from Battery C, 1st Battalion, 73d Artillery then went into action from the march and fired at the blockade from 660 meters away. A second round proved unnecessary. One round, one blockade. Mission accomplished.

FIGHTING SIXTH CHANGES COMMANDERS

The traditions of both the old and new cavalry were represented as the 6th Armored Cavalry Regiment honored changing commanders. Outgoing regimental commander Colonel Clayton N. Gompf was awarded the first Oak Leaf Cluster to the Legion of Merit. He was cited for his outstanding leadership and direction under which the 6th Cavalry has developed, during the past year and six months since reactivation, into one of the finest combat-ready units of the United States Army.

Colonel John R. Mitchell then received the regimental standard as he became the 48th commander of the regiment established by President Lincoln on 5 May 1861.

As a climax to the impressive change of command ceremony, the troops of the regiment passed in review led by four horsemen dressed in cavalry uniforms of yesteryear. And, as the last ground troop passed the reviewing stand, helicopters from the air cavalry troop made a low level "flyby" trailing yellow smoke.

After graduating from the United States Military Academy in 1943, Colonel Mitchell served with the 10th Armored Division during World War II in Europe and with Eighth Army during the Korean War. He holds a Master of Arts Degree in International Relations from Georgetown University and has also attended the Command and General Staff College and the National War College. His last command was the 2d Squadron, 10th Cavalry, 7th Infantry Division in Korea during 1964 and 1965. His most recent assignment was on the Army General Staff with the Office of the Deputy Chief of Staff for Military Operations.

THE BETTER TO SEE YOU WITH

A newly developed Xenon searchlight is bright enough that newspapers can be read in its over half-mile diameter beam 10,000 feet from the light source according to Spectrolab of Sylmar, California. Aircraft illuminating battle areas in Vietnam with this light would be able to fly at higher and safer altitudes. Called the Nightsun FX150, this 20,000 watt searchlight could light up about half of the downtown section of Saigon at one time. The 168-pound device can also be mounted on ground and water vehicles.

DIVISION AIR DEFENSE BATTALION ORGANIZED

The first tactical Chaparral-Vulcan battalion (see ARMOR, November-December 1968) has been activated at Fort Bliss. The 6th Battalion, 67th Artilery is the first of several such battalions to be organized and trained at the Air Defense Center for eventual assignment to Army combat divisions. Army field commanders will then have available the rapid fire power of the 20mm Vulcan gun and the low altitude air protection of the Chaparral heat-seeking guided missile. Of the total of 125 wheeled and tracked vehicles in the battalion, 32 will be the self-propelled Vulcan guns. Authorized strength for the battalion is 393 officers and enlisted men.

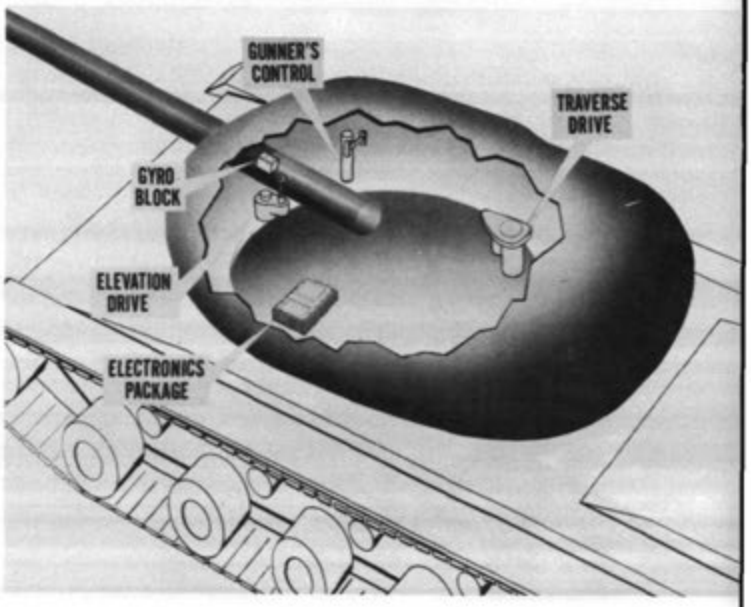
NEW HONOR UNIT

One hundred percent of the officers and warrant officers of the 1st Squadron, 101st Cavalry, New York Army National Guard are now members of The United States Armor Association. The squadron is commanded by LTC Edward J. Brennick of Staten Island.

NEW TANK GUN STABILIZER

A new, high-performance stabilization system for tank weapons is being built by the Ordnance Department of General Electric's Electronic Systems Division under a U.S. Army contract. The gun stabilizer is designed to enable tankers to fire from a moving vehicle with increased accuracy. Called the Optimum Ratio Stabilized Drive, the new system is all-electric and uses solid-state control electronics. It makes split-second compensations for the rapid hull motions of the tank allowing the gunner to remain on target even under the most severe conditions. The present Army contract calls for prototype systems to be installed in the Army's new M60A1E2 tank for formal evaluation testing. Previous performance tests by GE and the Army of an engineering model on an M60A1 tank during 1967 have demonstrated the system's ability to provide greater accuracy against moving, as well as stationary, targets.

Built by GE as a company-funded development, the engineering model was tested initially on a specially constructed bump course in Pittsfield and was later shipped to Aberdeen Proving Ground for additional testing by the Army. Its performance was evaluated under pitch, roll, yaw, and static conditions during bump course runs, zig-zags, 360-degree pivot steers, drop tests, and static tracking maneuvers.



M60 SERIES TESTS PLANNED

The Combat Developments Command (CDC) Armor Agency at Fort Knox recently completed plans for a mixed tank company test. The test will be run by three organizations equipped with varying numbers of M60A1 and M60A1E2 tanks during day and night operations in a mid-intensity war environment. Test units will consist of a pure tank company with 17 M60A1E2 tanks, a company with both type tanks within the platoons, and a company with one platoon of M60A1E2s. The test is multi-purpose. It is to determine the workability of each type test organization and its comparative effectiveness in day and night offensive, defensive and retrograde operations. It will generate information on the operability, reliability, and maintainability of the M60A1E2 tank. The firepower of each type test platoon will be measured during a live fire exercise. Also to be measured in the CDC exercise will be the test platoon's ability to acquire and engage targets, and fire accurately.

THE TARPAULIN

Covers a bit of everything gleaned from the service press, information releases, etc. Contributions are earnestly sought.

TAKE COMMAND

COL John F. Forrest, Infantry, 1st Bde, 2d Armd Div. . . . **LTC William C. Black, III,** 2d Sqdn, 10th Cav, 7th Inf Div. . . . **LTC Frederic J. Delamain,** 3d Bn, 33d Armor, 3d Armd Div. . . . **LTC Lee E. Duke,** 2d Sqdn, 11th Armd Cav Regt. . . . **LTC Daniel M. Gauger,** 2d Sqdn, 9th Cav, 24th Inf Div. . . . **LTC John P. Haumersen,** 4th Sqdn, 7th Cav, 2d Inf Div. . . . **LTC David A. Hicks,** 1st Recon Sqdn, 2d Bde, USATCA. . . .**LTC John A. Hutchins, Jr.,** USA Armor Human Research Unit. . . . **LTC Adam Jimenez,** 2d Bn, 68th Armor, 8th Inf Div. . . . **LTC Theodore R. Lowman,** 19th Bn, 5th Bde, USATCA. . . . **LTC Leonard D. McGuire,** 4th Bn, 3d Bde, USATC, Ft. Lewis. . . .**LTC Joseph H. Moore,** 12th Bn, 3d Bde, USATCA. . . . **LTC Robert D. Ogg,** 15th Bn, 4th Bde, USATCA. . . . **LTC Wallace C. Steiger, Jr.,** 1st Sqdn, 2d Armd Cav Regt. . . . **LTC James R. Stuart, Jr.,** 13th Bn, 4th Bde, USATCA. . . . **LTC Frank E. Varljen,** 2d Sqdn, 4th Cav, 4th Armd Div. . . . **LTC Robert O. Viterna,** Infantry, 4th Bn, 46th Inf, 1st Armd Div. . . . **LTC Seth Wiard, Jr.,** 1st Sqdn, 3d Armd Cav Regt. . . .**CSM Dana Brookover,** 194th Armored Bde, Ft. Knox.

ASSIGNED

COL Louis Gelling, Director of Doctrine, USACDC. . . . **COL Rolfe L. Hillman,** Infantry, Chief of Staff, 2d Armd Div. . . . **COL Albert W. Jones,** Deputy Commander, USATCA. . . . **COL (BG Designee) Jack Mac Farlane,** Chief of Staff, III Corps. . . . **LTC William T. Rife,** G3, 2d Armd Div.

VICTORIOUS

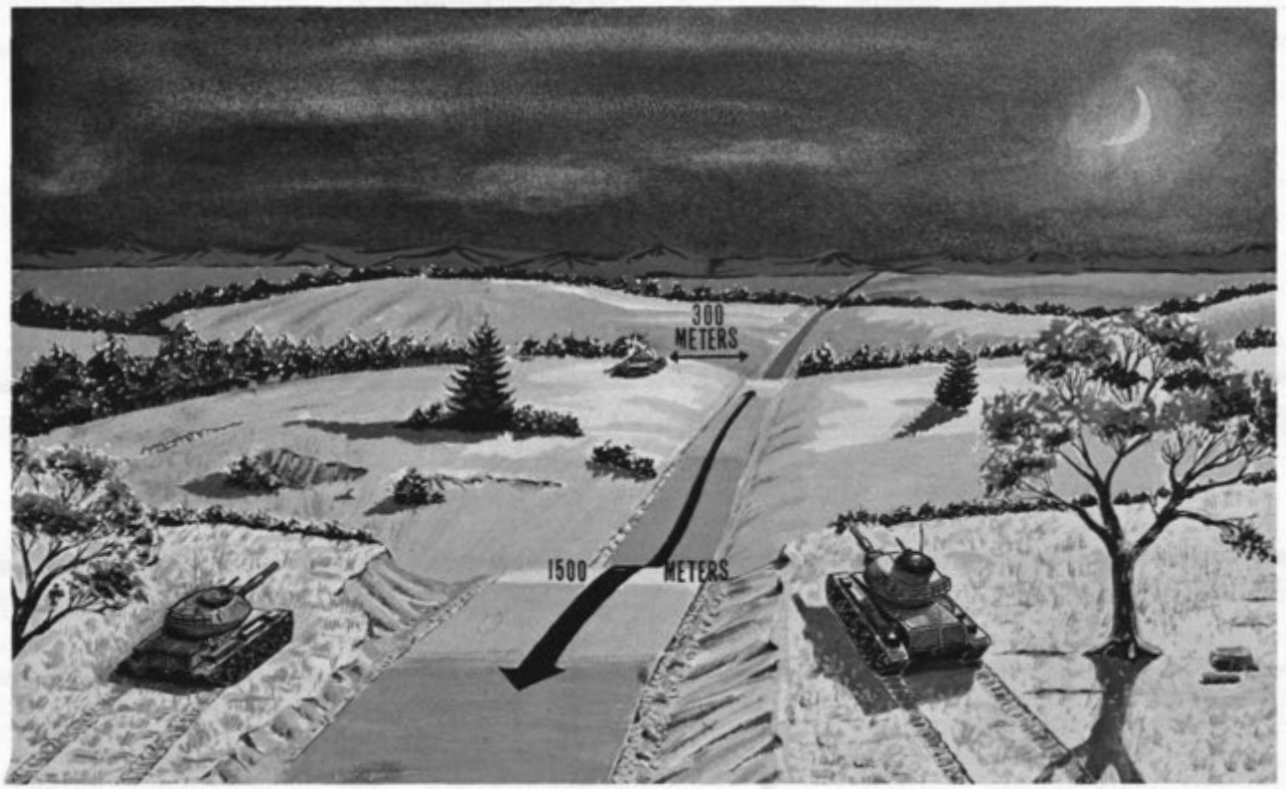
1st Sqdn, 18th Armd Cav Regt Troop A tank crew, under **SGT George Wright,** scored 1485 of possible 1950 points to top all Sixth Army tankers. Now attached to 3d Armd Cav at Ft. Lewis, 1/18 Cav was called up from California Army National Guard in May. . . . Among four Army members receiving citations from the President for cost reduction and management improvement was **LTC Dennis M. Boyle,** USA Aeronautical Depot Center, Corpus Christi, Texas for "perception and ingenuity . . . permitting transport aircraft to carry five helicopters" instead of only three. Results were faster delivery and 38 percent dollar savings.

AND SO ON—

1st Bde, 25th Inf Div, Vietnam, **COL Robert L. Fair,** Commanding, has been adopted by the city of Galveston, Texas. . . .**MAJ M. G. Canning,** 17th/21st Lancers, has joined 1st Armd Div G3 Section as British Army exchange officer replacing **MAJ A. W. N. Richardson,** 16th/5th Lancers, who, since 1965, has been with "Old Ironsides," as Assistant G3 and Executive Officer, 3d Sqdn, 1st Cav. . . . A camera crew has filmed activities at **"The Home of Armor"** for a spring 1969 "Big Picture" series TV special. . . . **6th Armd Cav Regt** wives have started a continuing program to assist families of the counterpart ARVN 6th Armd Cav Regt. . . . **LTC Robert I. Stoverink** is now president of the Fort Hood Chapter, Army Aviation Association. . . . **BG Lawrence V. Greene,** V Corps Chief of Staff, has been elected president of Frankfurt, Germany AUSA chapter. . . . **MAJ Gary L. Clark,** who served in Vietnam as a Huey pilot with the 220th Avn Recon Co and as S3, 212th Combat Spt Avn Bn is one of 16 officers and two NCOs selected by DA to tour the Nation speaking on their combat experiences. . . . **COL E. W. Williams,** USA-Ret, 39th regimental commander of the 3d Armd Cav Regt in 1953-54, was hosted on tour of newly reopened at Fort Lewis regimental museum by **COL G. V. Reberry,** 50th commander. COL Edwards is the son-in-law of late MG Guy V. Henry, Jr., 24th commander and grandson-in-law of BG Guy V. Henry, 12th commander.

How Would You Do It?

US ARMY ARMOR SCHOOL PRESENTATION



SITUATION:

Your tank platoon (2d Plat, Team A, TF 1-10 Armor) is occupying a defensive position. During the night, word has been received from an infantry outpost that an enemy tank has moved into position 300 meters left of a road junction located to your front. Tank 22 and tank 23 have the road junction plotted on their range card and it has been determined that both can engage the enemy tank. The Platoon Leader has issued the following fire command: BEARCAT TWO TWO AND BEARCAT TWO THREE THIS IS BEARCAT TWO SIX, TWO TWO – MAIN GUN, TWO THREE – WHITE LIGHT, ONE TANK IN POSITION, 300 METERS LEFT OF TARGET ALFA, AT MY COMMAND . . . .

REQUIREMENT 1.

You are the tank commander of tank 22. You must have your sights and gun as near to the target as possible when it becomes illuminated to prevent it from escaping before you can engage it. The engagement will be made with HEAT ammunition since it is an armor target and likely to be positioned with its front slope toward you. Your range card is prepared for HEP ammunition and the data recorded for Target Alfa is: "Ⓐ RJ, Defl 2880R, QE + 18, RG 1500." What is your fire command?

REQUIREMENT 2.

You are the tank commander of tank 23. You must insure, when the searchlight is turned on, that the target is illuminated. Your range card was prepared in haste and contains only data for the main gun. The range card data for the road junction is: "Ⓐ RJ, Defl 390L, QE + 19, RG 1500." Referring to your firing table, you determine the superelevation for HEP (the range card ammunition) at 1,500 meters is 20 mils. What is your fire command?

AUTHOR: MAJ GLAZE **ILLUSTRATOR: JOE WARD**

SOLUTIONS

REQUIREMENT 1.

GUNNER – DIRECT FIRE
INDEX HEP – FIRE HEAT
TANK
DEFLECTION – THREE ZERO EIGHT ZERO RIGHT
QUADRANT – PLUS ONE EIGHT
AT MY COMMAND – (After Platoon Leader commands FIRE) – FIRE

1. Before you can issue your fire command, you must determine the deflection to the target. The deflection is determined by adjusting the deflection to the road junction with the number of mils necessary to move the point of aim 300 meters to the left. The mils necessary to shift left 300 meters can be determined by applying the mil relation ($\frac{\text{Width}}{\text{Range}}$ = Mils). By dividing the range (1.5) into the width (300) you determine that a 200 mil shift left of the road junction will lay the gun near the target. This 200 mil shift left is applied to the road junction deflection 2880 right, and the deflection to the target is found to be 3080 right.

2. The same quadrant elevation is used because the target is at about the same elevation as the road junction, and will lay the gun at an elevation that will require only a small change once the target is illuminated. (Remember that the gunner must index HEAT once he has centered the bubble.)

REQUIREMENT 2.

GUNNER
WHITE LIGHT
TANK
DEFLECTION – FIVE NINE ZERO LEFT
QUADRANT – MINUS ONE
AT MY COMMAND – (After Platoon Leader commands FIRE) – FIRE

1. The deflection and the searchlight quadrant elevation must be determined before you can issue your fire command.

a. Using the method discussed in the first requirement you also determine that a 200 mil shift left of the road junction is required. This is applied to the road junction deflection of 390 left, and the deflection to the target is found to be 590 left.

b. Because the searchlight beam travels in a straight line, the superelevation must be removed from the main gun QE to determine the QE for the searchlight. By substracting the superelevation (–20 mils) from the main gun QE (+19 mils) the searchlight QE is found to be –1 mil.

2. When firing tables are not available, the superelevation can be determined by indexing HEP into the computer and the range to the target into the range finder. The superelevation will then appear in the superelevation counter window of the ballistic computer.

NOTE: For additional information refer to FM 17-12 para 112, 114, 156.

FROM THE BOOKSHELF

A HISTORY OF WARFARE **$15.00**
An Old Soldier's Legacy

Field-Marshall Viscount Montgomery of Alamein. Illustrations. 584 pp.

Man has been waging war for many thousands of years; and he has been writing about his wars for around nine of those millennia. But not until now has an individual skilled and eminent in warfare also turned his talents to the writing of military history. Oh, to be sure, famous generals have written before of war—but their volumes have been memoirs of personal experiences, justifications of events, defenses of decisions, or narrow studies of some aspect or another of matters military. To those least qualified—civilians and soldiers who have never experienced supreme command—has fallen the task of synthesizing the history of warfare. That is, until Montgomery of Alamein filled the void with this book.

Without exception, generals who have reached the very top in the profession of arms claim to have been avid students of military history. Waiting in the pages of the past, they all say, are lessons to prepare us for the present and point us toward the future. To be expert at war, both study and practice are necessary. Montgomery aptly admonishes that, although opportunity for the second is often rare, "The first is always possible and there is no excuse for its neglect." In the same vein, he warns, ". . . to plan the future wisely nations must learn from the past. Neglect of this principle means that the path to success in the future must be trodden the hard way—and the cost is then paid in men's lives." Having thus joined a host of illustrious predecessors in proclaiming the importance of dipping into military history, Montgomery goes all of them one better—he personally interprets the story of warfare in the light of his own not inconsiderable experiences.

To write the book, the old soldier sat himself down with a pair of young scholar/researchers whose combined age was forty-two. They dug for facts while he wrote and commented. A professional military historian was then hired to comb through each chapter churned out. The result is the best survey of war and the art of waging it ever done.

In a handsome book, liberally laced with pictures, maps, and illustrations (the average is about one for every two pages) in both color and black-and-white, Field-Marshall Montgomery traces the evolution of warfare from the days of the ancient to the shadow of the atom. Moreover, unlike all too many writers who have trod this field before, he does not shy away from Asian military history; his is truly a world-wide approach. The narrative is succinct and accurate, the interpretations blunt and pithy; it is good history and typical Monty. A few random selections:

On Charles XII—"Some writers have considered him to be one of the great captains. . . . I do not agree. He never seemed to have any clearly defined strategy. . . . He did not understand international politics, and he lacked wisdom and intelligence."

On World War I generals—"It can be said that the soldiers were worthy of better leadership."

On F.D.R.—"Roosevelt never seemed to me to be clear about what he was fighting for."

On why the South did so well at first in the Civil War—"It was a great advantage for the South to be able to cut loose from all the red tape of the War Department in Washington."

One of his own principles of war—"Never march on Moscow."

An intriguing conclusion which he draws from history is that a power controlling the sea (and air) will inevitably topple one based solely on land. The current extensive efforts being made by Russia to enlarge and extend her naval might indicate that men in Moscow have also been pouring over lessons from yesteryear—and reaching the same conclusion.

Few things about war have remained constant. Weapons, tactics, personalities, organization, political environment, terrain, even weather are different in each war—indeed, in each battle. But man is the same. He may be bigger, more numerous, healthier, and better educated than he once was, but he is still quarrelsome, combative, aggressive, brave, and cunning—in short, a warrior. And certain truisms, like man, have not changed: to be stronger at the decisive point is no less valid a precept today than it was 2000 years ago. An analysis of military history, in Montgomery's words, "will show the student that the same principles of war which were employed in the past appear again and again throughout history, only in different circumstances."

It seems to follow, then, that all aspiring soldiers should study military history. And, for the library of neophyte or expert, I can recommend no better work than *A History of Warfare*. For that matter, it is too valuable a work to be left only to the soldiers.

LTC Dave R. Palmer
United States Military Academy

ECLIPSE **$6.95**

by Alan Moorehead. 319 pp.

An alert reader will note that this book first appeared in 1945, shortly after the guns fell silent in Europe at the final German surrender on 7 May. He will also ask why after 23 years had the book been republished? Does the book really merit this renewed interest? This reviewer asked himself these questions before reading the book and, after completing it, offers the following answers.

An entirely new generation of readers has come to maturity since World War II. This generation, itself a wartime generation, has a keen though not always sympathetic, interest in warfare—its phenomena and aberrations. Alan Moorehead, a brilliant writer and skillful observer, has written about World War II with an intimacy rivaled by few war correspondents. Although his knowledge of the reasons behind military decisions and strategy suffers from a lack of access to documents then unavailable, Moorehead has an intuitive feel for many of the factors motivating the wartime commander. The enquiring reader, however, will have to look elsewhere for an understanding of the strategy and tactics of the war. Yet this reviewer concludes that the book definitely merits it reappearance before the reading public after almost a quarter century. For few writers have succeeded as well in giving the reader the feel of what it was like to have experienced the war in Europe with the troops in the field. The casual spontaneity, often characteristic of military tactics and behavior, comes through vividly in some fine passages describing the early days of the Italian campaign as well as the closing weeks of the campaign in northern Europe. In short, *Eclipse* is one man's perceptive impressionistic eyewitness account of the war in Europe.

Dr. Ernest F. Fisher
Office, Chief of Military History

EMENDATIONS

In the article "The American Six-Ton Tank" (p. 48 *ARMOR,* Nov-Dec 68) it was erroneously stated that a *sulfuric* acid generator was used in creating smoke. The acid was *sulfonic.* Both are malodorous, but the latter at least was less corrosive to man and tank.

NAPOLEON IN RUSSIA **$7.50**

by Alan Plamer. 318 pp.

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Page 1

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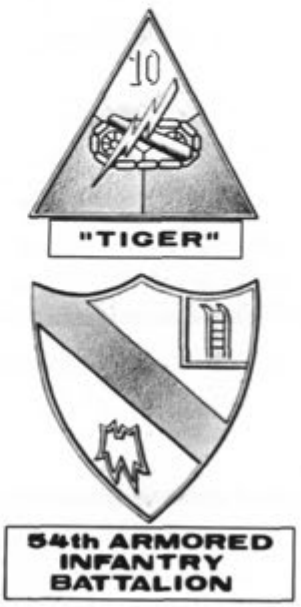

VICE PRESIDENT SPIRO T. AGNEW

Probably none of those who were graduated from the Armored OCS at Fort Knox on 23 May 1942 had a first, much less second, thought that among their newly commissioned classmates was a future Vice President of the United States. But, on that day, Spiro T. Agnew was one of those who donned the gold bar of a second lieutenant and the Mark VIII tank insignia of the Armored Force as he embarked on World War II service as an Armor leader.

Assigned initially to the 8th Armored Division, where he commanded an armored infantry company, then Lieutenant Agnew next went to the 20th Armored Division cadre as the Armored Force expanded. Then, in March 1944, he joined the 10th Armored Division with which he served in its three campaigns—Rhineland, Ardennes-Alsace and Central Europe. For much of his combat time in Europe, "Ted" Agnew, as he is known to his Tiger Division comrades, was a company commander in the 54th Armored Infantry Battalion.

Vice President Agnew was awarded the Bronze Star Medal, the Combat Infantry Badge and the right to wear permanently the Distinguished Unit Citation. The latter was earned by his unit for its gallant actions in the fighting at Bastogne during the Battle of the Bulge.

The portrait of Vice President Agnew was done for the 10th Armored Division Veterans' Association by artist Donald W. Stuck of Washington, D. C. Permission to use this sketch was graciously granted by E. L. Loiacono, Editor of the association's Tiger Tales.

ARMOR

The Magazine of Mobile Warfare

Volume LXXVIII **March-April 1969** **No. 2**

ARTICLES

FEATURES

DEPARTMENTS

ARMOR Magazine is published bimonthly by the United States Armor Association, Suite 418, 1145 19th Street, N.W., Washington, D. C. 20036, to stimulate interest in, provoke thought on, and provide an open forum for decorous discussion of professional matters. Articles appearing herein represent the personal views of the contributors. Unless otherwise stated, they are neither expressions of official policy nor do they represent the position of the publisher. Unless credited, photographs are official Department of Defense releases.

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LETTERS TO THE EDITOR

"Quo Vadis Air Cavalry?"

Dear Sir:

Please permit me to reinforce LTC Wooley's thoughts on air cav. I concur. My troop, commanded by Major John C. Bahnsen, Jr., at present, gives me 90 percent of my good intelligence and over 60 percent of my kills. It is versatile, effective in this area of operations and, most important, essential. I operate it as a troop under the troop commander. Never piecemeal.

We are trying to do an article on this unit and some of the techniques we have developed, but it's quite difficult to find the time.

Again to Wooley—thanks for the push! We had better grab the air cav ball and run with it. If we don't, someone else will.

G. S. PATTON
COL, Armor
Commanding
11th Armored Cavalry Regiment
APO San Francisco

Hmmm!

Dear Sir:

Enclosed is payment and application for reinstatement of membership. I let mine slip accidently and I forgot about it because I was reading my unit fund copy every month. I look forward to the magazine every month and read it avidly. Keep up the good work!

ARMOR COMPANY COMMANDER
APO New York

In days of yore, the Editor was an IG. Through the mists he visualizes a sharp, but indignant, soldier asserting, "Sir! I don't want to cause any trouble. But, the (company) (troop) (battery) commander latches on to each new ARMOR and we never get to see it until it's months old. Can you help the men?" It seems to us that it is only right and fair for the officers and senior NCOs to join and support their Association and journal and let the other unit members have first crack at the dayroom copy, or better still, copies.

THE EDITOR

"Man In The Middle"

Dear Sir:

Hurrah and Amen to the article "Man In The Middle" written by LTC Lewis S. Sorley, III, in the November-December issue of *ARMOR!* This is undoubtedly the finest article on exactly what a battalion executive officer is that I've had the opportunity to read. Not only does the article outline effectively the problems facing a new executive officer, but it poses a key question as to the utilization of the XO by the "Old Man."

I honestly believe this article should become required reading for all future battalion level XO's . . . but more importantly for each new battalion commander. Unfortunately, all of us tend to forget the past as we move up . . . so this article would do much to bring back our days as the exec.

One final note. As a member of the Armor Association for more than ten years I do not recall many articles on the reserve components (USAR and ARNG) appearing in *ARMOR*. Perhaps articles have not been submitted. Certainly we of the USAR and ARNG have taken our lumps in recent months with the press coverage given to a small but vocal minority, so it would be most refreshing to read of the accomplishments of the reserve forces.

Having been away from an Armor troop unit for sometime (I am presently serving with a USAR Training Division), I look forward to each issue of a very professional magazine —*ARMOR*.

PHILLIP J. ZELLER, JR.
MAJ, Armor-USAR
HHD, 4th Bde (CST), 89th Div (Tng)

Both the coverage and the quality of ARMOR depend mostly on volunteer authors. We have tried, and are trying hard, to get more material on the very real contribution of our Army National Guard and Army Reserve comrades-in-arms. We deplore the unfair treatment given the majority by some media which have placed undue emphasis on the bizarre activities of a few. Hopefully, some of the readers of ARMOR will send in manuscripts which will help to set the record straight.

THE EDITOR

"Cavalry Operations"

Dear Sir:

I am reading LTC Raymond R. Battreall's articles entitled "Cavalry Operations" with more than average interest since I was one of the "junior leaders" that Colonel Battreall was determined to make a Cavalry officer out of when he took over the 3d Squadron of the Brave Rifles in the spring of 1967.

Looking back, I cannot help but think that his fine series of lectures evolved from a feeling of desperation rather than from an inspiration. When he took over the squadron, he found himself commanding five troop commanders who had just turned first lieutenants as well as a staff that was, with the exception of the executive officer, MAJ Thomas Dollarhide, equally devoid of experience. The closest most of his young officers had come to field duty was the class picnic back in the Armor Officers Basic Course.

The ultimate test of the success or failure of his lectures and practical exercises came that winter in the form of a three-day exercise that will always be fondly remembered by the V Corps Maneuver Damage Officer. The grand finale of the exercise was a flank security mission the overlay for which was large and complex enough to be the blueprint for the Astrodome.

Colonel Battreall saw the seeds of his lectures blossom that last day when his pupils executed the mission with the deftness of seasoned Cavalry officers. Nonetheless, he still managed to interject one final teaching point that day when he suggested to one of his troop commanders who was having more than his share of communications problems that he strap a VRC-12 on his back, put a battery under each arm, and shinny up the highest tree in the area if that was what it took to maintain communications with squadron headquarters.

DAVID W. OWEN
CPT, Armor
Ft. Wolters, Texas

Encouragement

Dear Sir:

Please find enclosed my check for two more years of membership in our Association.

I feel that I must compliment you on the excellent caliber of *ARMOR* Magazine and encourage you to keep up the good work.

KENNETH L. BENTON
1LT, Armor
Fairchild AFB, Wash.

We are encouraged—and we will try to do even better. THE EDITOR

PHASE LINE 81

REPORT, DO NOT HALT!

The first issue of *The Cavalry Journal* came forth from the steam letterpress of Kecheson and Reeves at Leavenworth, Kansas in March 1888. Eighty-one years and 29 editors later, *ARMOR*, its direct descendant, issues from the automated offset presses of the William Byrd Press at Richmond, Virginia. Happily, the present staff is not compelled to include such editorial notes as: "The absence of the French accents in the places where they should be, (*sic*) is due to a want of facilities on the part of the printer." Omissions and errors today are solely due to a want of faculties on the part of the editor.

Also, unlike its original ancestor, this issue of our professional journal has neither discussions of the relative merits of the saber and revolver as weapons for the mounted soldier nor prescriptions for improving the condition of horses. But, this is not to say that *ARMOR* today is not equally concerned with the current and future means of mobility and weapons for mounted warfare.

Significantly, 81 years have not altered the general goals of the Association which has published the journal as its primary means of attaining its objectives. As stated in the first issue, these remain professional improvement and unity and the advancement of the mounted service.

This seems an inappropriate time to dwell inordinately on the past. Excellent histories of Association and journal by distinguished former editor and historian Lieutenant Colonel William Gardner Bell, AUS-Retired, have been published—"Society and Journal of the Mounted Arm" (*ARMOR* March-April 1958) and "From Horse to Horsepower" (March-April 1963.) These are must reading for all who would know and be inspired by the achievements of the Army's oldest professional association and journal.

Where do we stand today? The Executive Council has a renewed vitality and broad representation of all members. Its individual and corporate interest and vigor are inspiring and must surely show on the pages of *ARMOR*. New management procedures and a sound investment program insure maximum effectiveness for every dollar handled. Service-oriented Armor people on the staff and full utilization of the capabilities of the admittedly antiquated circulation machinery have resulted in improved delivery of *ARMOR*. Book sales are at an all-time high. The physical quality of *ARMOR* is excellent. Judgements concerning its editorial quality must be left to you the readers.

Circulation is higher than ever. However, that stated, one must add that, expressed as attainment of the potential, it is woefully small.

We must earn some $10,000.00 in the next few years to make possible the acquisition of a new and efficient circulation and accounting system. At the same time product improvement, and thus mission accomplishment, will require adequate funding. Achieving these necessary objectives depends on each, *and all*, of us doing our part to build membership to where it should be.

Will *ARMOR*, or its successor with yet another name, be going strong in 2050 A.D.? On what *you* do toward strengthening the Association and journal during your active years will, in large measure, determine the answer.

"Fall back and regroup" is not an Armor motto. "KEEP MOVING" is.

the Editor

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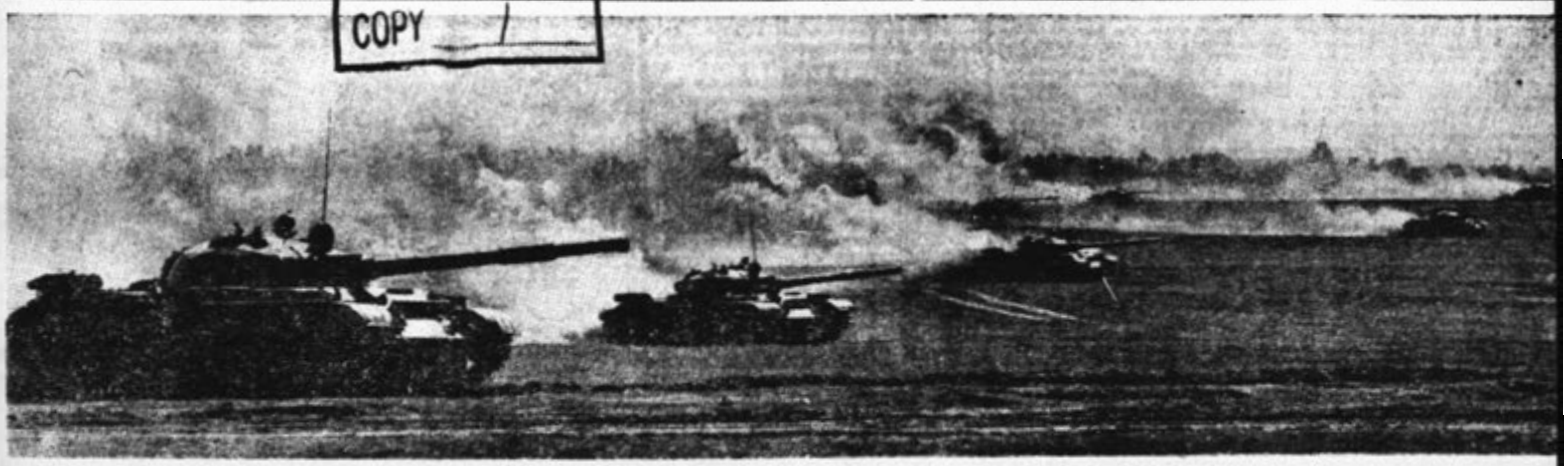


PROFESSIONAL READING FOR THE

SOVIET ARMOR LEADER

by Lieutenant Colonel Frederick C. Turner

Part II

In an article entitled "Maneuver of Forces" appearing in *Red Star* on 20 September 1967, the statement was made that "in modern warfare there will not be a solid front and the maneuverability of tanks is of even greater importance." The Soviet reader is informed that Soviet tactics are designed to exploit this maneuverability. Articles in the military press consistently advocate what the Soviets term "dynamic tactical operations."

ATTACK

Offensive tactics are the most discussed. In open Soviet military publications the reader learns that tank interval in the attack varies between eighty and one hundred meters. The platoon leader is not particularly encouraged to lead his platoon by riding in the lead tank. Especially in the exploitation phase he is expected to attack strong points "from the flank and rear, not from the front." Firing on the move is one of the keys to Soviet offensive tactics; another is speed of movement. The Soviet armor leader is told: Don't stop to destroy the enemy by fire.

An article on crew coordination stresses the role of the driver. He should move with utmost speed in changing combat formations, should pick good level firing positions, and should observe and report on firing. In the exploitation, the Soviet tank company commander is expected to "destroy the counterattack by fire and then attack immediately."

RECONNAISSANCE

In approaching a village, the Soviet tank commander is expected to "examine the roofs of buildings, the edge of the village, and the trees" for evidence of the enemy. His loader "can climb a tree and observe." When all seems clear, the tank commander should "pass around the populated area and enter from the rear."

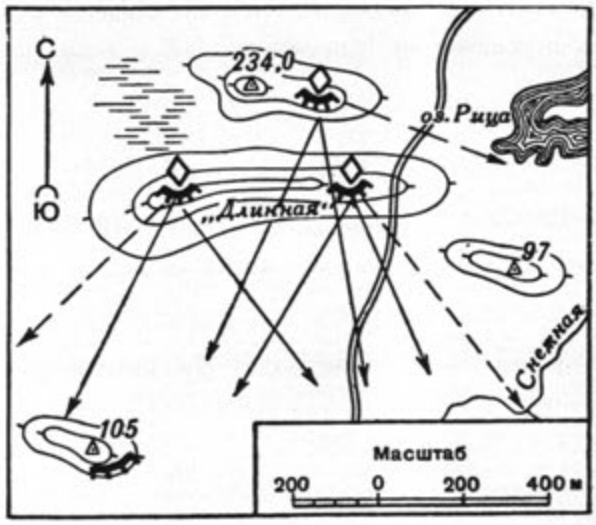
The extensive use of ambushes is advocated to capture prisoners as well as to destroy enemy units. When conducting a reconnaissance if one is confronted by a single enemy vehicle, the correct procedure is: If it doesn't see you, let it go by and report; if it sees you, destroy it by point blank fire, examine, seize documents, and, if possible, take a prisoner.

DEFENSE

The Soviet tanker is told to be "ready to repulse and hold 15-20 minutes after receiving an order to set up a defense." Such is the gist of an article on "Training Tank Crews to Act on Defense," published in January 1967. In "Tanks in the Defense" the Soviet tank platoon leader is advised to defend by placing his tanks on the rear slope (using infantry forward) and to select supplemental positions at least 100 meters apart. The use of tank ambushes is recommended. To facilitate control the Soviet tanker is warned that in the defense "the tank changes firing position only on the approval of the platoon leader." An article on a tank battalion defense in the Arctic advocates placing infantry 200-250 meters in front of and to the flanks of the tank strong points.

REAR GUARD

The operations of a tank battalion as the rear guard are covered in an August 1967 *Military Herald* article. In the tactical exercise described, the rear guard consists of a tank battalion with a battery of self-propelled 85mm guns, a battery of 122mm howitzers and two engineer platoons attached. With 15-18 kilometers between defensive positions, the operation is designed to "give the main body 1-1½ hours head start so that in case of an enemy breakthrough, it can organize its actions." In the disengagement the initial move is by the company least engaged or opposite the weakest enemy. The company usually leaves one platoon behind to cover its withdrawal.



In an article published in 1967, Soviet tankers were advised to defend by placing tanks on the rear slope and selecting supplemental positions at least 100 meters apart.

BATTALION XO

To facilitate command and control in a tactical situation, the Soviet articles stress that the battalion executive officer (called the chief of staff) is often up front in his armored personnel carrier—either at a good OP or at some other position where he can serve to keep both himself and the commander informed and also be ready to assume command in case the commander is incapacitated.

DISABLED TANKS

If a tank is disabled and can't move, the crew will "continue to fire from it in place to destroy the enemy and at the same time try to repair the damage." As a minimum, the loader is expected to remain in the turret manning the machine gun when the rest of the four-man crew is effecting repairs. If the tank can not be repaired quickly, "smoke pots and grenades are use to cover the emergence of the crew from the tank and to simulate its burning." These are to be set off upwind and the crew leaves under the cover of the smoke. The first crew member to leave "takes a loaded machine gun with him, and the second carries the other machine gun or magazines and belts of ammunition." Each is to carry his individual weapon and hand grenades. The crew will then "defend the tank from outside the artillery bursting range for a round directed at the tank."

Since the Soviet tank platoon with its three medium or heavy tanks is smaller than most Western tank platoons, the loss of two tanks decimates its effectiveness. In case two tanks are knocked out,

the remaining tank is to "join the adjacent platoon, company or battalion-size unit and continue battle as part of it."

GUNNERY

An article in *Kommunist Vooruzhenykh Sil,* the party political organ in the armed forces, gives the Soviet tanker confidence in his gunnery. An unsigned article entitled "The History of Soviet Tank Development" informs him that he now has "the capability to determine distances precisely, to effect speedy and errorless aiming at a fast-moving target, and to destroy targets under conditions of limited visibility and even in darkness."

The Soviet gunner is responsible for preparing range cards, determining the range, and firing. The most dangerous target is usually engaged first—regardless of the range. Thus, the gunner will fire first at the distant antitank gun before engaging the nearer machine gun. However, the position or situation of the enemy weapon should also be considered. Such was the case of "a tank at 1200 meters and a recoilless antitank gun at 600 meters." Since the enemy tank had its turret traversed to the rear, the solution was to open fire first on the antitank gun.

The Soviets place great emphasis on firing while on the move. In the article "Firing from a Tank on the Move" the Soviet tanker learns that he can "fire fairly accurately from the moving tank at a distance of 300 meters with the tank cannon." In another article the gunner is advised that when the tank is moving he should "press the firing button without delay once the aiming mark is brought to the point of aim." In the Soviet tank crew all members are taught to look for targets and the enemy. As to what range is considered maximum, it is interesting to note that in "The Tank in the Attack," a 1967 *Military Herald* article, the reader is informed: "an enemy tank at 1000 meters was considered beyond the range of direct fire when using the tank gun at a comparatively low target."

An article entitled "Perfection of Tank Gunnery Training" tells of the success of a twice-weekly dry-firing exercise for the tank company. The two-hour exercise includes four half-hour county-fair stations on target acquisition, tank weapon selection, fire commands and technique of fire (sub-caliber). The objective is "to open fire fast with aimed fire." Speed of engagement is important since "in fifty seconds the enemy tank can fire four to five rounds."

An article on "Tank Sub-Caliber Exercises During the Winter Training Period" describes the physical setup of the tank range. Each regiment (the basic tank unit using separate training facilities) usually has six tanks on rocking frames and three mounts with sights. This will take care of the Soviet tank company (three platoons of three tanks each with the commander supervising training). The article explains that "not less than once a month there is an exercise in which all trainees review the procedures and rules for firing a pistol or submachine gun and throwing hand grenades from inside a tank."

In "Advice to a Crew about Firing from a Tank," published in *The Military Herald* in 1967, the tanker is warned to "be sure that the tracks are tightened evenly so the tank doesn't wander to one side." He is also cautioned to "watch out for a fuel tank becoming empty and having to switch fuel tanks during firing—especially on the move." In addition to remembering to switch the fuel petcock ahead of time, he is advised to check shock absorbers, exhaust fans, ammunition storage, intercom, stabilizer, gun zero and sights. The article recommends having "officers, sergeants and soldiers who are good marksmen fire first on the range"—a psychological gambit.

A typical three-station gunnery course using sub-caliber ammunition is described as follows: At the first station fire is delivered on two targets at two short stops. The first target is a tank in a prepared position at 700 meters. The target is exposed for one minute and ten seconds. The second target is an armored personnel carrier moving at the speed of 12kph at a range of 900 meters for a distance of 200 meters. The requirement is to give the proper fire command, load the main gun with a dummy round and fire three sub-caliber rounds.

Station No. 2 tests observation, reconnaissance for targets, and delivery of fire while wearing gas masks. This is done on the rocking frame tanks—at short stops.

The third station is a test of methods used in laying the main gun, firing a round, and adjusting fire as the target changes position.

In advanced unit gunnery the drivers and first-year loaders learn how to fire an accurate round from a short halt. The more experienced loaders in their second and third years of service take part in gunners' advanced training.

ANTITANK WEAPONS

The Soviet tanker reader is warned that "tank troops must be trained to detect and destroy enemy

A Soviet three-tank platoon (left) mounts vehicles. Detailed technical information on the T54s pictured here and the T55 (below) has only recently reached print in Soviet publications even though they have been a mainstay of the Soviet Army since the late 1950s. Personnel carrier in background is BTR60PK.

antitank weapons and particularly the launch vehicles of the antitank guided missiles." These "PTURS" (as they are called in abbreviated form in Russian) include rockets guided by wire and radio or specifically "the SS-11, ENTAC and Shillelagh with a firing range of two kilometers or more." Crediting the source of information in the usual Soviet manner ("According to reports in the foreign press . . ."), a *Red Star* article on "Tanks Against Antitank Guided Missiles" informs the Soviet armor leader that these "PTURS have a rate of fire of up to two to three missiles per minute and penetrate more than 400mm of armor." He is then made aware of the limitations of such weapons. These include "the dead space closer than 250-500 meters, their effectiveness only on comparatively open sectors of terrain, the crews general defenselessness against bullets and shells, and their low rate of fire." Also mentioned is their restricted use in built-up areas, at night, in fog, during smoke screens and in dazzling light."

Crossing minefields and laying and disarming mines receive extensive coverage in Soviet professional publications. In addition to specialized articles such as "Engineer Training in a Tank Company," numerous articles on tactics and driver training include sections on crossing minefields. Whether it be the driver passing "through mine fields marked with one-side luminous signs" or the tank commander dismounting to disarm a mine, the entire crew is expected to be knowledgeable on the subject.

EQUIPMENT

Until recently the Soviets were reluctant to discuss the technical aspects of any operational piece of equipment in their own open military publications and often even shied away from calling it by its proper nomenclature. For example, the *T54* medium tank until very recently was frequently dubbed "the tank of the 1960s." The *T34* medium tank, designed in the 1930s, is currently the subject of detailed technical articles. So is the *PT76* amphibious tank which was put into the hands of troops in the late 1950s. A February 1968 article on "The *T54* Tank" gives detailed information on the standard (but not the newest) Soviet medium tank. The *T54*

has been the armor mainstay of satellite armies for years, and it is now found in fairly large numbers in the Israeli Army—thanks to the booty of the six-day War.

An article in a magazine called *Behind the Wheel* informs the Soviet reader about the four-man *T54* tank. The driver has responsibility for the control section which includes the "controls for the engine and transmission, machinegun, vision and night vision devices, compressed air tanks for starting the engine, interphone, course indicator, forward fuel tanks, storage batteries and ammunition." The combat section holds "three crewmen with cannon, machinegun, sight and vision devices, radio and intercom, heater, escape hatch, and part of the ammunition." The turret can be rotated 360° either manually or electrically. Incidentally, the commander's hatch is on the left side and the loader's on the right.

External attachments on the *T54* include fuel and oil tanks, smoke pots, headlights, searchlight projectors, signal lights, tow cables, canvas, and a beam for extracting tanks from holes. The cooling system is a sealed, liquid type which in winter uses antifreeze. To assist starting the diesel engine in winter, the *T54* has a special heating system. This includes "a spray jet heater for heating the oil, bulk fuel, tubing and electrical equipment." The coolant is also heated and thus warms the block and engine cylinder heads. A compressed air starting system with two compressed air tanks is provided in case the electric starting system fails.

COMMUNICATIONS

The present family of Soviet radios was put into the hands of troops in the late 1950s. Soviet armor authors indicate that there is a need for greater range and that relay stations are a necessity for dispersed tank units.

A recent article entitled "Tankers Learn Radio Maintenance" stated a need to integrate communication training into gunnery and driving programs. Radio discipline and radio procedure is constantly stressed. Radio silence is habitually observed prior to contact with the enemy.

Radio procedure differs slightly from that of some other armies in that the transmitter call sign is repeated prior to termination of the transmission. Example: "Falcon 2, this is (I am) Falcon 1. Straight ahead, southern edge of woods, 1500, tank dug in. From your position—open fire. This is Falcon 1. Out." No reply is required or expected.

Before moving out for a field exercise, training is conducted at a radio station in the company net. A radio transmission such as "Thunder" (*Grom*) is often used in exercises as a signal to attack. Other combinations of numbers as 222, 333, 444 are used as signals to open fire, concentrate company fire, and so on.

TRAINING

The typical Soviet military article describes a training exercise. It is often written by a battalion or regimental commander who writes of the good (or poor) example set by subordinate commanders and leaders. Although the major unit is not identified, the officer hero or scapegoat often is.

The Soviets use didactic and repetitive training as a basis for combat effectiveness. Perfection is the object. In driver training one article describes an obstacle course where, when the driver overcomes the obstacle at first attempt, he is released. "If he does not, he must continue."

The need for on-the-spot corrections is emphasized in an article on "The Tank Platoon in the Attack." The platoon leader stops the tank crew and measures distances when the tank line interval is improper.

Maximum use of concurrent training is advocated. This includes practice in distance estimation while moving to the range, use of flag signals while on the march, and communication practice. During the march the crew is expected to observe the route and terrain features. Later several crew members may be called upon to describe the "direction of movement, characteristics of the march route, and to draw a sketch of the march route with map symbols for the items encountered."

Command post exercises are conducted in wheel vehicles including "cargo trucks with radios." Combat training missions are carried out "while wearing protective clothing . . . and this is to be done by day and by night while wearing gas masks."

An article on "Engineer Training in a Tank Company" criticizes the excessive use of posters to teach. It advocates more practical work in reconnaissance, determination of bridge load capacity, reinforcing bridges, and similar skills.

Replacement training and the personnel turnover rate is a challenge for the Soviets. One article on the tank crew mentioned that "three of the crew (all except the loader) are leaving the service." The average Soviet tanker is drafted for three years. Recent changes in the conscription laws may result

in a twice-a-year induction cycle. This would obviously result in a radical change in the present Soviet training cycle which is based on a fall induction, basic training throughout the winter and advanced unit training culminating in maximum unit combat readiness during the period of late summer.

MANAGEMENT

The fact that money *is* an object and that the Soviets are not oblivious to casualties is made clear in a recent book by Marshal Zakharov, Chief of the General Staff of the Soviet Armed Forces:

> In the final analysis, dearest of all is victory, but victory is three times more valuable when little blood has been spilled and few resources have been expended.

An article in a recent *Military Herald* explains how integrated planning or the critical path method can be used for training a tank battalion in the attack. Applied to a tactical exercise, program evaluation and review technique (PERT) facilitates command and control by making it possible to "determine precisely the duration of an operation and uncover intrinsic reserves of time and resources." Thus, reconnaissance, refueling, issuance of orders and many other activities are scheduled for maximum efficiency. At the same time this management tool can serve as a check list.

DRIVING AND MAINTENANCE

The key to Soviet maintenance is the tank driver —called "mechanic-driver" (*mekhanik-volityel*). By most standards he is not actually a mechanic, but his title does indicate his responsibility for first echelon maintenance.

The tank driver is the subject of many articles. He is expected to keep the proper interval in column, demonstrate correct use of gears, shift down when the engine temperature rises too high, make sure that the engine temperature is below 70°C. (158°F.) before starting an underwater crossing or cutting off the engine, watch oil pressure and stop the vehicle when it is low. As a driver-mechanic he is expected to be able, for example, to repair a broken oil line at night, assisted by the crew, one of whom "holds the flashlight" while another "holds the tools." He must shift gears for different terrain, cross steep antitank ditches and swampy areas, ford and snorkel rivers and streams, execute battle formations, replace track blocks, approach and detour obstacles at maximum speed, move across a treadway bridge, locate

A Soviet tank commander. The average Soviet tanker is a three-year draftee.

and camouflage his tank in a defensive position, and reconnoiter withdrawal routes to temporary and alternate firing positions.

The entire crew is expected to assist with inspections and maintenance. To supervise maintenance in the tank company there is a deputy company commander for technical affairs. He is, in effect, the motor officer and as such conducts maintenance classes and safety instruction.

RAIL TRANSPORT

The road net inside the Soviet Union is not nearly as extensive as that in most of Europe. For that reason, as well as trafficability and vehicle wear, rail transport is of considerable importance and interest to the Soviet armor leader.

An article in a 1967 *Military Herald* describes the rail transport of a tank unit during a training exercise in which a simulated nuclear strike destroys stations and railheads along the rail line. The battalion-size unit loads battalion headquarters (a tank and an APC), two tank companies (20 tanks), a medical team, two POL tankers, five ammunition trucks and a kitchen. The troops, who mount air and chemical security during the rail movement, put on protective clothing and don gas masks when passing through contaminated areas. When the train is forced to stop at an area where the rails have been knocked out, the crews move from troop cars to the flat cars where they mount their tanks, offload them directly onto the ground and make a 100 kilometer march to enter a combat situation.

SECURITY

Security has always been a Soviet fetish and at times it takes on what to an American would seem to be ridiculous proportions. An article on "The Tank Platoon on Reconnaissance" in a 1967 *Military Herald* stressed the need to make use of foreign insignia and patches on servicemen's clothing and unit markings on equipment for the purpose of identification. This serves to underscore the Soviet system of wearing no organizational patch or insignia and of not identifying vehicles as to unit. Rank and branch of service is usually evident, however. In the same article the reader learns that during the exercise the commander correctly "checked enemy dead lying by the road for documents and checked insignia for the unit of the dead." This was to determine if it was that of the unit known to be withdrawing in the sector. Another commander was criticized for not ordering an inspection of a knocked out enemy vehicle to establish who the enemy was.

The Soviets, in writing about their training exercises, habitually refer to units as "N Regiment" (*N-skaya chast*). The platoon and company designations are often given and so is the name of the officer being praised or criticized. The only Soviet army tactical organization lower than a Group of Forces (army groups stationed in Germany, Poland and Hungary) or a military district that is identified by a definite unit designation is the Kantemirovskaya Guards Tank Division which regularly participates in the Red Square parades on May Day and October Revolution Day.

Incidentally, in addition to the open publications quoted and analyzed in this article there are various limited-distribution publications for higher ranking armor leaders. Magazines such as *Military Thought* (*Voyennaya muisil*) are often much more frank and uncompromising in their criticism of shortcomings. The limited-distribution magazine serves to keep the "self-criticism" (*samo-kritika*) within the family. Another Soviet publication not considered in this article is the *Soviet Military Review*, a monthly magazine published in English exclusively for foreign consumption. It does not constitute professional reading for the Soviet armor leader [*nor generally for others*, ED.]

PSYCHOLOGY AND DISCIPLINE

The Soviets use psychology to enhance combat effectiveness and discipline. An article in the NCO magazine *Starshina-Sergeant* with the title "Each One is Near and Dear" portrays the company mail clerk delivering a letter to a sergeant in the tank company. The letter is from a previous trainee who was a "difficult soldier." In the flashback the reader sees this soldier as his tank throws a track on the road during a training exercise. As the crew hurries to get the tank operational, the soldier asks: "Why hurry? There's no war!" In this case the reader is told that the tank commander sets the example for his men. The crew wants to get the track on as much to help the tank commander as to improve combat readiness.

In another incident the same soldier is sent to work on the construction of a tank combat firing range. The following dialogue takes place:

"I won't work."

"Why? Too hard?"

"No, not too hard, but I came to serve as a soldier not to carry heavy things."

"Then maybe you can tell me whom we can invite to build us the range we need."

Needless to say, once the soldier understood and was inspired by the leadership, the project was completed with his enthusiastic support.

On 10 September of each year, Tankers' Day is celebrated. The newspapers and information media eulogize the Soviet tanker of the past and strive to inspire those of the present.

Tanker helmets (*tankoshlemi*) and coveralls (*kombinezoni*) are items of uniform designed to distinguish the Soviet tanker from other military personnel and thus enhance his prestige.

CONCLUSION

The Soviet tanker is told again and again, as in the 29 February 1968 edition of *Red Star*: "As always before, Soviet tanks are the best in the world and are superior to the latest USA tanks."

A February 1968 edition of *Red Star* carried the following testimonial to the value of armor—words sweet to the ears of the Soviet tanker:

> Tanks are the principal striking power of the ground forces. Tanks have shown themselves most adaptable to the conduct of military operations under the conditions of nuclear weapons. They can operate in radioactive zones, cross river underwater, and accurately conduct fire both night and day.

The professional reading for the Soviet armor leader is designed to translate these stated capabilities into combat realities.

Five-Zero-Yankee

by Major Ben G. Crosby

11 o'clock, 20 Aug. 1967. The radio in the operations center blurted. "Cougar six-five, this is Thunderball five-zero-yankee. SITREP no change. We're still moving north about 1000 meters in from the beach."

"This is six-five. Roger, out."

Team Hocker, call sign "Thunderball," commanded by Captain Bill Hocker, a tanker, had evolved out of a mutual admiration of Lieutenant Homer Krout's reconnaissance platoon and Hocker's Company C, 2nd Battalion, 34th Armor. The recon platoon, known as "Krout's Killers," was an elite bunch that would tackle any size fight with no holds barred. They had developed a liking for the tanks since the new CO had joined them in the field. "Old Bill" Hocker and Homer Krout made quite a pair. Homer loved the devastation the tanks left behind and Bill loved the way Homer's men would charge into the very jaws of death right beside the iron monsters. They, together with Thunderball five-zero-yankee, SSG Dieter Burger, the fighting operations sergeant, made Team Hocker go. And a going concern it was.

MAJOR BEN G. CROSBY, Infantry, the son of the late Colonel Ben G. Crosby, Armor, was graduated from the United States Military Academy in 1958. Following two years with the 82d Airborne Division he served with the 1st Cavalry Division in Korea where he was commandant of the division NCO Academy. From 1962 to 1964 he was a company commander and staff officer with the 2d Airborne Battle Group, 503d Combat Team (now the 173d Airborne Brigade) in Okinawa. After graduation from the Infantry Officers Advanced Course in 1965, he remained at Fort Benning as an instructor in the Mobility Department. During his recent tour in Vietnam he was S3 of the 2d Battalion, 35th Infantry. Here he earned the Silver Star, Legion of Merit, Bronze Star (V) and 20 Air Medals. He is now assigned to the Doctrine Directorate, Headquarters, U. S. Army Developments Command.

"Cougar six-five, this is five-zero-yankee. We've got a resupply bird coming in a few minutes and we'll be holding up until we get this resupply finished."

"Cougar six-five. OK, but move out on that mission ASAP! Over?"

"Five-zero-yankee. Roger, out."

Team Hocker's mission was unique for a predominantly tank outfit. They were to move to the hamlet of An Tho and conduct a detailed search of the area. This type mission is one in which a unit is assigned a small area, such as An Tho hamlet to search for spider holes and enemy. The techniques used were developed by the 2nd Battalion, 35th Infantry, better known as the "Cacti Blue," who exercised operational control over Thunderball. LTC Norman L. Tiller, or "Cougar six," CO of the Cacti Blue, believed that these small searches would eventually defeat the Viet Cong by denying them their hiding places. The operations had, in the past, been extremely successful. It was this "hole hunting" technique that wedded Recon to Tank Company.

They made the perfect combination. The old adage —likes repel—opposites attract—described Hocker's team. Recon platoon and the tank company were direct opposites—but so were Krout and Hocker. Perhaps that's what made the team great. Hocker—quiet, reserved, a thinker, mature, delib-

Victors at An Thach examine captured enemy weapons. (Left to Right) CPT Hocker, LTC Tiller, LT Krout and the author.

erate and Krout—young, courageous, dynamic, but with more leadership than many seniors could muster. They were a pair, and the catalyst, five-zero-yankee. . . Burger, was all that noncommissioned officers should be . . . young, brave, smart, handsome, practical and loyal. They made Thunderball run.

"Five-zero-yankee, this is Cougar six-five. Dolphin (The 174th Assault Helicopter Company) reports that your resupply bird picked up some ground fire north of your location."

"This is Thunderball six. What coordinates?"

"This is six-five. Vicinity bravo-sierra-eight-zero-zero-four-six-zero, about five minutes ago."

"Six-five, this is five-zero-yankee. Roger. We'll check it out."

Hocker sent a section of three tanks north toward the area of the ground to air fire. No sooner had they arrived than the lead tank spotted two enemy soldiers running along a trench and opened fire, killing one. Almost on signal all three tanks were raked by automatic weapons' fire. A fight was on! The M48s swung into action. The screech and rattle was deafening as Thunderball answered the call to battle. Amidst the dust and diesel, the "dinks" were there. The Second Company, 97th V. C. Battalion was ready to fight.

"Six-five, this is five-zero-yankee. CONTACT! Receiving heavy automatic weapons' fire from the north and northwest. How about some Aloha birds?"

"Six-five. Rog. Got location?"

"Five-zero-yankee. STANDBY."

"Eight-one-two-four-five-five, over."

"Six-five. I gotcha. On the way."

"Five-zero-yankee. Thanks, out."

Hocker, realizing that heavy automatic weapons fire meant at least an enemy platoon and probably more, deployed the remainder of his team north to join the three tanks fighting.

Meanwhile slowly boring holes through the sky with his "birddog" was the brigade forward air controller, Major Smith, USAF, better known as "Helix two-two." Monitoring all radio nets with eagle eyes straining earthward, he seldom missed the action . . . whenever possible directing his high-flying far-reaching, silver-blue jets screaming at a target to leave the ground smoking and pockmarked with instant swimming pools. Smitty loved a fight!

"Hello, down there, this is Helix two-two. What's all the rumpus?"

"Helix, this is five-zero-yankee. We've been getting some automatic weapons' fire from the north and northwest of where those three tanks are. How about taking a look?"

"Yankee, Helix here. How about having your lead tank pop smoke?"

"Rog, Helix. Smoke on the way."

"Five-zero-yankee, Helix here. I got your smoke. Identify Red?"

"Helix, this is five-zero-yankee. That's affirm. North and northwest of that smoke is where the fire is coming from."

"Rog, Yankee. I'm going down for a look."

While Major Smith was making his house to house aerial recon, the brigade aviation section was already pulling pitch with their H23 observation helicopters. Armed with two door gunners, the Alohas could sting as well as see and were feared by the enemy as much as the more heavily armed HUEY gunships, the Sharks.

Thunderball rolled north, joined its three companion tanks and turned to the northwest in a full blown attack against the enemy position now under eyeball contact by Helix two-two. Smitty reported that he saw 10-20 enemy, all armed, moving about positions in the village of An Thach. Hocker deployed on line. The enemy fire increased. A tank on the right was hit. No flame! Two men wounded. Burger called "Medevac." Hocker moved on!

"Cougar six-five, this is five-zero-yankee, over."

"This is six-five, GO!"

"This is five-zero-yankee. Got two whiskey-india-alpha. Not bad. Need Dustoff at coordinates eight-zero-five-four-six-zero. Over."

"This is six-five. Roger that. Come up on Dustoff's push. Do you need guns? Over."

"This is five-zero-yankee. Standby."

"Six-five, this is yankee. Affirm on those gunships. Six wants them on the Thunderball freq, over."

"This is six-five. Roger. Aloha is airborne and will be coming up on your push. Sharks will be out in about five minutes. Over."

"Five-zero-yankee. Thanks, out."

The hot noonday sun parched the throats of the recon troopers and scorched the decks of their iron pals as they attacked the hamlet. The clank of the tracks was matched by the zing of the bullets as the enemy machine guns chattered away harmlessly at Hocker's tanks. Reassuringly came the whop, whop, whop of the heavily ladden Shark gunships as they took up orbits around the battle area. The sides were shaping up. The enemy had the west half of An Thach. Thunderball had the east. Suddenly Helix spotted several enemy moving along a trench on the south side of the hamlet. Hocker turned Aloha loose while the Sharks stood by.

"Helix two-two, this is Aloha zero-one, would you mark that trench where you saw the dinks?"

"Roger, Aloha. Turning in for a mark now. Mark, away."

"Helix, this is zero-one. I got your whiskey papa just west of that red-roofed hooch?"

"This is Helix. That's affirm."

"Aloha, zero-seven, this is zero-one. I'm going to make a run down the trench heading west. Cover me on the right."

Another enemy bunker fills up as a dozer tank goes to work in the vicinity of An Thach.

"Zero-seven, Roger."

"Shark Lead, this is Aloha zero-one. I've got a bunch in this trench below me. Can you give me a hand?"

"Zero-one, Shark Lead. Roger, I see 'em. Move out of the way. We'll be rolling in from east to west.

"This is zero-one. I'm clear. Give 'em hell!"

The whoosh of the rockets momentarily drew everyone's notice as the Sharks poured it on the enemy position. Hocker, realizing that the enemy had more than just a platoon in An Thach, moved one of his platoons further to the north and Krout's men moved with the tanks to protect them from tank killer teams. The fight raged on. Hocker and Homer pressed their men further into An Thach. The resistance became fanatical. One Viet Cong charged the lead tank firing his BAR, only to be blasted into limbo by the 90 millimeter. Colonel Tiller, overhead in the command and control helicopter decided to throw B Company, moving slowly toward the scene of contact, into the fray. "Bravo" doubled their pace heading south. At the same time, Cougar six directed the A Company commander to get his unit ready for a helicopter pick up. They would be air assaulted near An Thach.

"Thunderball six, this is Cougar six. I'm going to put Alpha in if I can get the lift ships. Where do you want him?"

"Cougar six, this is Thunderball six. It would be

best if you put him in that open field just south of An Thach."

"This is Cougar six. Roger, out."

The battalion S3 air had already alerted the lift ships and reported that A Company could be lifted in two complete lifts. Since the gunships were already on station over the contact area, no further request for Sharks would be necessary.

"Five-zero-yankee, this is Cougar six. What's your situation now?"

"This is five-zero-yankee. We're right in the center of them now. We've been killing them left and right. I don't know how many. They're everywhere. Wait, out!"

Hocker and Krout attacked due west into the center of An Thach achieving the classic armor penetration which split the enemy into two forces, one on the north side of the penetration and the other on the south. Aggressively exploiting their success, they pursued the enemy until he subdivided into even smaller units attempting to flee from the fire-belching ironclads and their sweaty soldier protectors. This head-long drive pitted tank against man. Time after time a tank literally ran a desperate dink into a hole where a determined dogface grenaded him into oblivion. Realizing the western escape route was sealed by the low flying helicopters, the enemy tried suicidal tactics. Following the lead of their dead BAR man, several charged directly at the command track. Burger zapped 'em and reported.

"Cougar six, this is yankee. Two of 'em just jumped on my track. They're KIA. We're still moving west. I can see the rice paddy ahead. I think they've broken up now."

"Five-zero-yankee, this is Cougar six. Good. Keep rolling. The paddy on the west is covered by Aloha and the Sharks. They won't slip out there."

"This is Thunderball six. Roger that. When we reach the paddy, request permission to reverse course and cover the hamlet again. We didn't get several dinks that darted into holes. Over?"

"This is Cougar six. Permission granted. We'll put Alpha down to the southeast and have them block that corner. Bravo is working south along the paddies and can cover the northern escape route. We've got all exits blocked."

The scheme of maneuver directed by the battalion commander in effect boxed in any enemy that may have been bypassed in Thunderball's first attack. When Captain Hocker reached the western edge of An Thach and turned his tanks around to retrace their tracks, he had killed 26 enemy and captured nine weapons including a 60mm mortar. At the same time Company A completed the air assault on a landing zone south of An Thach and immediately began a systematic search of the village. The move back over smoldering An Thach was slow and deliberate. No "hell-bent for leather" march this time. The tanks were motionless, fifty ton pillboxes that secured each house while Krout's killers took it apart piece by piece. The din of battle was dead. Only the occasional burst of fire and the thump of a grenade bursting underground was heard.

"Thunderball six, this is Cougar six. Do you have an LZ where I can land and talk?"

"This is Thunderball six. Rog. We'll secure one next to our personnel carrier. Standby for smoke."

"This is Cougar six. Roger, I have your violet smoke. On the way in."

That day, tiny innocuous-looking An Thach yielded 53 enemy dead and 18 weapons. Colonel Tiller's official report of the action states:

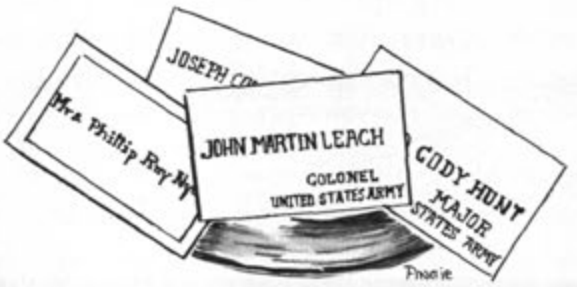
"Captain Hocker repeatedly concentrated his forces in overwhelming strength at the enemy's location as reported by the aerial observers. This outstanding employment of tanks and infantry together, the firepower and maneuver of the tanks with the close-in fighting of the infantry, resulted in the virtual annihilation of the 2d Company, 97th Battalion, 2d VC Regiment."

EPILOGUE

This article is dedicated to Captain William Eddy Hocker (Thunderball Six) who was a great combat leader as well as a polished author (See "Clear As A Cloudy Day," ARMOR, July-August 1967) and to Staff Sergeant Dieter Hans Burger (Thunderball Five-Zero-Yankee) who was a fine combat soldier. Two weeks after the battle of An Thach herein described, both were killed in action while serving their country.

On Calling

QUAINT CUSTOM
or
MODERN MANNER



by Marion Leach

It usually happens when the stage is set like this: scenery—brand new quarters (that is, they are newly moved into) and the transportation people only recently made their exit leaving behind all your worldly possessions, placed and misplaced, opened and unopened; characters—a couple of ever exuberant Army youngsters made even more so by long days of travel and a tour in the confines of the guest house and a flurrying, frustrated, feminine Army wife. Enter—one militarily well-dressed Armor husband, eagerness showing in his face and voice as he says, "Hey, honey, isn't it great! My new commanding officer wants us to call on them tonight!" Then looking over the whole miserable situation he adds lamely, "Think you can make it?" With eyes closed and strength somehow magically inherited from all those Armor, Cavalry and other Army wives who were on stage before her, the leading lady breathes a soft but firm, "I can make it." And make it she does.

How well the Armor wife knows that calling in our modern Army is one of the oldest military social customs still in use. It's a charming old custom too, even if a bit formal perhaps and always done at the discretion of the one called upon. Such specifics as dress and time are the prerogative of the commanding officer too. These are usually learned about from the aide or adjutant shortly after one has reported for duty at a new station. The responsibility for finding out the local customs and arranging a time for each call lies with the new arrival.

Wives accompany their husbands on these calls. She goes dressed in something simple and suitable for early evening, with gloves and purse. Once all Army wives wore hats to call but the working day was more leisurely then and calls were made before 1800. Not so today, for calling is done after a later working day and often after the dinner hour. A call is not an invitation for an evening but rather an opportunity for people to get to know each other. Fifteen to twenty minutes is its duration and the Armor wife of today knows it is her responsibility to give a subtle signal for departure. (The good Armor husband sees her cue and rises promptly so that they may leave!)

T'was only a few minutes together but since first impressions are often lasting they are important. Arrival at the appointed hour, proper dress and a pleasant, friendly attitude are all important. So are calling cards; they should be unearthed if necessary, from the foot-locker that holds the contents of the desk and go calling tucked in the Armor wife's purse for it is she who leaves them inconspicuously in the card tray either as they arrive or depart. Cards are never handed to the host or hostess. She places one of her cards and two of her husband's in the card tray as she remembers that ladies do not call on gentlemen and that gentlemen call on ladies as well as other gentlemen.

No calling cards for the Armor wife to carry? Make the call anyway, no apologies necessary for not leaving cards but by all means be prepared the next time calls are made. Time was when guest lists were made up and invitations sent out to those whose

ILLUSTRATIONS BY ANGIE CUNNINGHAM

cards were in the tray and no one wanted to be left out. Engraved cards are both socially and militarily correct. Printed cards are for business purposes only. Calling cards should bear the full name to be quite proper. It's true that they cost a bit more but isn't that cost justified? The impression that lasts of one doing things correctly is worth much and Army moves are frequent enough to set up a pattern of calling. Besides these cards have other uses. They make dandy enclosures for gifts of all sorts, saving money in that department. They can also be used as invitations for all kinds of parties except the most formal. They accompany nicely a bouquet of garden fresh blooms or a plate of brownies for the new neighbor across the way and they serve handsomely for brief thank you notes.

If engraved calling cards can not be programmed into the slender budget, put them on a "want list" for birthday or Christmas. Tell those doting parents and others who are often looking for something special to give that engraved cards would be ideal. The copper engraving plates can be left with the engravers and can even be re-engraved to reflect promotions as these come along. This makes for considerable saving each time a new supply of cards is ordered.

"But calling has gone out" someone says or "we've never paid a call when we arrived on post," says another. There is truth in both remarks. In a sense calling has gone out, for far too many Army officers fail to institute this lovely old custom when they are in positions to do so. And the more often this happens, the more Army couples who have never paid a call! A cycle of "custom destruction" develops, which if allowed to continue, will make calling only a memory in the minds of those who have had the experience or only a reference in a book of Army social customs. Let's not let it happen, at least not in Armor circles.

Nurture the custom of calling; there are many variations so do what pleases you best. Enjoy the formality of receiving or paying this social nicety and endear yourself by so doing to those on whom you called or who called upon you. The Armor wife always will rise to the occasion and be prepared to accept callers, or change like a chameleon from the character on a stage full of packing boxes to the Army wife who can be proudly presented to the new commander or other senior officer. Together, Armor couples can keep alive and enjoy an Army custom too good, too valuable and too rewarding to be lost along the way.

Is the custom of calling on the way out? Is it passé? Let's hope not. Let's *make* it present day! Let's keep this wonderful part of our Army heritage alive!

"It was an open and shut case–
but the court wouldn't convict him."
–Anonymous Commander

SEARCH AND SEIZURE

by Captain Martin J. Linsky, JAGC

The newly-enacted Military Justice Act of 1968 has been making all the legal headlines recently—and justifiably so for it has made substantial changes in the administration of military justice. While these changes benefit the commander, they will certainly not solve all his disciplinary problems.

One such problem that has plagued commanders in the past and will continue in the future concerns the legally complex subject of search and seizure. This article notes a few of the practical situations regarding search and seizure from the viewpoint of a troop commander. It is designed not to set forth all the legal principles involved in this difficult area but to assist the commander to walk safely in difficult terrain.

The concept of search and seizure does not strike one initially as being particularly complex. The average layman would, I suppose, suspect that the practical application of this concept should cause no particular difficulties. He would assume that, if the police have reason to believe that a man has evidence of a crime on his person or in his home, a policeman may simply search the man or his home, and if he finds no evidence of a crime, then *c'est la vie*. He would assume further that if he does find evidence of a crime, then he simply turns it over to a prosecutor who takes the man before a judge and jury, introduces into evidence that which was seized, and the man, thereafter convicted, based at least in part on the seized evidence, goes to jail. However, it is not quite so simple.

In the United States the whole subject of search and seizure is complicated because of the very nature of Americans and because of the nature of the society we Americans have created. We do not like to see the little guy being intimidated by the police or anyone else. We believe in every American's right to security against unreasonable searches and seizures. We presume that all men who are accused or suspected of crime are innocent until proven guilty. We believe that this presumption of innocence can be overcome or rebutted only in a court of law where the prosecution has proved beyond a reasonable doubt that the man accused of crime is in fact guilty.

On the other side of the coin, of course, is the fact that the American society as a whole has a right to be protected against the criminal element within it, and, furthermore, that the criminal himself has no right to escape punishment. Needless to say, a criminal will escape punishment if there is no evidence of a crime to use against him.

Accordingly, a balance must be struck between the rights of individual citizens and the rights of citizens as a whole. The balance, in this context, must be found between the right of an individual not to be searched unreasonably and the right of society as a

whole, by way of its representatives, e.g., the police, to search for evidence of crime and to seize such evidence when discovered.

The Fourth Amendment to the Constitution of the United States, which is part of the Bill of Rights, provides:

> *The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.*

The Fourth Amendment strikes the balance. It does not forbid all searches and seizures—only unreasonable searches and seizures. But who decides what is reasonable and what is unreasonable? This is important because the former type of search is legal while the latter is illegal.

Within the civilian community the person who orders searches, or to phrase it differently, the person who strikes the balance between the rights of the individual on the one hand and the rights of society on the other, is a magistrate. A magistrate usually is a qualified lawyer. The police, if they decide to search a man's home must appear before this magistrate and request an authorization to search, or search warrant.

The Fourth Amendment tells the magistrate that he should not give the police a search warrant unless there is probable cause to believe that a crime has been committed and that evidence of this crime may be found in the place to be searched.

Within the military community the person who orders searches or who strikes the balance usually is a troop commander. The troop commander, like his civilian counterpart, must be aware of the rules on reasonableness of searches as laid down by judicial authority. Accordingly, it behooves all troop commanders to coordinate closely with the Staff Judge Advocate before authorizing searches.

What is the consequence if a troop commander or a magistrate authorizes a search which is unreasonable because not based upon probable cause? The first major consequence, of course, is that the law has been violated and not just any law but the Constitution itself. The law enforcers in their attempt to bring law breakers to justice will themselves have violated the law. This would be a sorry state of affairs to say the least. A second major consequence is that any evidence seized during the course of an unlawful search may not be used in evidence against an accused, and if this is the only evidence connecting the accused with an offense, the accused goes free. This is the so-called "exclusionary rule" which the United States Supreme Court created over fifty years ago. It is most important, therefore, that only lawful searches be carried out, as the alternative is that the law enforcers will be breaking the law and that the initial law breakers may well go free.

Against this backdrop let us now examine a few of the practical problems which troop commanders can expect to face. Suppose you are a troop commander and two investigators from the CID make an appointment to see you. They tell you that they have reason to believe that Specialist Four John Smith, a member of the 3d Platoon, who lives on post in one of the barracks of your command, is in possession of marihuana. They want to search his foot locker when he is not around. What should you do? First, you should inquire exactly why they feel that Specialist Smith has marihuana in his foot locker. Suppose they tell you that one of the military policemen who directs traffic on post and with whom they have coffee each morning told them that he observed Smith smoking what smelled like marihuana in a downtown bar two months ago. Should you authorize the search? The answer is, "no," for the simple reason there has been no connection shown between Specialist Smith and marihuana at the time the authorization to search is being sought. A full two months has gone by since Smith was observed in the bar. There is no evidence of a connection between the suspected use of marihuana downtown and the possession of marihuana by Specialist Smith in his foot locker. There is no showing that the MP is able to detect the presence of marihuana. In short, probable cause to believe that Smith has marihuana in his foot locker is absent. Does this mean that under no circumstances could Specialist Smith's foot locker be searched? No, it does not. Smith may consent to a search of his foot locker. If he freely and voluntarily gives permission to search, any marihuana found as a result of a subsequent search may be used as evidence against him in a trial by court-martial. However, a refusal to consent to a search, which some may call a silent admission of guilt, cannot be considered in determining if there is probable cause to believe that marihuana is in the locker.

What steps do you take in seeking a consent to search? Many commanders apparently believe that prior to asking for permission to search, a commander must advise the individual of his rights

under Article 31, Uniform Code of Military Justice, and of his right to counsel. This is not so. Must you tell the individual why you want his consent to search? The answer (and this now comes as a surprise to many commanders) is, "no." What then must you tell Specialist Smith before you can legally search his foot locker? The answer is, nothing. All you have to do is ask for his consent to search and if he freely consents, as distinguished from yielding to the color of your authority, the subsequent search is legal. Of course, preliminary advice as to the reason for the search, and to the effect that the search cannot be made without a reason recognized in law, and that the accused has the absolute right to refuse to consent to the search, but if he consents any evidence found in the search can be used against him in a criminal trial, is eminently desirable. Preliminary advice of this kind would be strong evidence of an informed and voluntary consent rather than submission to, or acquiescence in, the assertion of authority.

The average enlisted man is used to following orders and when an officer "suggests" or "asks" him to do something, the enlisted man's natural reaction is to feel that he is required to comply. If the only evidence available to a court-martial to determine the question of the legality of the search is that you as troop commander asked Smith to open his foot locker and he did so, the result would probably be that evidence discovered as a result of the search would be inadmissible because the government would be unable to prove that the consent was freely given. To avoid this problem consent to search should be in writing. The necessary assistance in preparing a statement of consent may be obtained from the local Staff Judge Advocate. In conducting a search, evidence of any crime may be seized. If Specialist Smith consented to the search and you as commander looked for marihuana in his foot locker but found only a camera which had been reported stolen by someone else in the 3d Platoon, you could properly take possession of this stolen camera and it could be used in evidence against Smith in a criminal trial. On the other hand, if the search of Specialist Smith's foot locker for marihuana was unlawful, the fact that the stolen camera was located in his foot locker could never be used as evidence against him in a criminal trial.

If, as a result of a lawful search, marihuana is seized or a stolen camera is found in Specialist Smith's foot locker, the next step is to question Smith as to where he got the marihuana or why the item of stolen property was in his foot locker. The best procedure at this stage is to turn the matter over to the professionals—the accredited criminal investigators. These investigators are trained in proper investigative techniques and are familiar with the warning that must be given to a suspect to conform with existing legal requirements. Before Specialist Smith could be questioned concerning the property seized, it would be necessary to advise him fully of his rights under Article 31, Uniform Code of Military Justice, and of his rights to counsel as follows: Inform the individual of the offense of which he is accused or suspected. Then give him this warning:

"Before I ask you any questions, you must understand your rights.

1. You have the right to remain silent.

2. Any statement you make may be used as evidence against you in a criminal trial.

3. You have the right to consult with counsel and to have counsel present with you during questioning. You may retain counsel at your own expense or counsel will be appointed for you at no expense to you. Appointed counsel may be military counsel of your own selection if he is reasonably available.

4. Even if you decide to answer questions now without having counsel present, you may stop answering questions at any time. Also, you may request counsel at any time during questioning. By counsel I mean lawyer or attorney."

After this warning is given, ascertain whether the accused or suspect understands his rights and will be able to freely, knowingly, and intelligently waive them. If he does so understand his rights, then specifically ask him these two questions:

"1. Do you want counsel?

2. Do you want to make a statement and answer questions?"

If the accused or suspect indicates that he wishes to consult with counsel, do not question him until counsel is obtained. Likewise, if the accused or suspect indicates he does not wish to be questioned, and he has no counsel present, do not question him. The failure to warn Specialist Smith of his rights at this juncture would render any statement he makes in answer to your questions inadmissible in evidence against him.

There is an evidentiary principle in criminal law popularly referred to as the "fruit of the poisonous tree" doctrine. The application of this doctrine has resulted in some accused individuals going free because the law enforcers violated the law. As indicated previously, if the initial search of a soldier's foot locker is illegal because not based either on probable cause or on the freely given consent of the soldier to search, any evidence of a crime seized during the course of the search is inadmissible in evidence. Likewise any evidence that comes to the attention of the law enforcers as a result of their initial illegal search is also inadmissible. If a stolen camera is found in the course of an illegal search and Smith, having been fully warned of his rights, voluntarily admits that he stole the camera from one of the other soldiers in his platoon, this confession would probably be inadmissible as the product or fruit of a "poisonous tree," namely, an illegal search.

What would happen to the camera? Can Smith keep the stolen camera as well as avoid prosecution? The answer is, no. The camera may be returned to its rightful owner and the rightful owner may even sue Smith in a civil action for conversion of his property. If marihuana were found during the course of an illegal search, it could be seized and then destroyed, since the possession of marihuana is unauthorized.

If the CID agents, however, come to you as troop commander and advise that they have statements from a reliable informer that Specialist Smith has marihuana in his foot locker, the situation may be different. Information furnished by a reliable informer can form the basis for probable cause so that a search may be authorized. If the CID agents tell you that their informer is a member of the same platoon as Smith, that the informer and Smith live in the same barracks, that the informer has seen Smith place marihuana in his foot locker within the last few days and that the informer has given reliable information to the CID in the past, then you may authorize a search of Smith's foot locker, even though you have never talked to the informer and do not even know his identity. Your authorization to search should be specific, e.g., Specialist Smith's foot locker or living area in a specified barracks. It should be limited in time, e.g., the CID agents may search within the next forty-eight hours after the issuance of the authorization to search. It should also be specific as to the object of the search, e.g., marihuana. Your authorization to search should itself be in writing, but may be oral. The important thing to remember here is that not only must the CID agent have the information but he must also impart it to you before you may authorize the search.

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A distinction must be drawn between a "search" and an "inspection." A search is a quest for evidence relating to a crime and, as noted previously, must be based on probable cause. An inspection, on the other hand, is an examination of a person, a unit, or an area to insure individual or unit readiness. Since an inspection has nothing to do with law enforcement, the element of probable cause does not enter into the picture.

It should be noted that the Fourth Amendment is only applicable to searches of those parts of a barracks which are more or less the personal domain of the individual soldier, generally his bed, his wall locker, and his foot locker. Accordingly, searches of the public parts of a barracks, such as the latrine, stairwells, and overhead boards for evidence of crime or contraband are legal with or without the presence of probable cause.

The problem in this area of search vs. inspection concerns the so-called "shakedown." The term "shakedown," of course, means nothing more than the procedure whereby all or a substantial portion of a unit stands by while the commander or some other person in authority inspects or searches the area. The difficulty is in determining whether there is a shakedown search or a shakedown inspection. The distinction is significant.

A shakedown search, i.e., a quest for evidence of

a crime, like any other search must meet the requirements of the Fourth Amendment. That is to say, it must be reasonable. Not only must it be based on probable cause, but the scope of the search must be limited as to the place to be searched and the objects to be seized. For these reasons, a shakedown search is generally of doubtful legality. A shakedown search almost by definition is exploratory in nature. As such, it is violative of the Fourth Amendment which forbids most general exploratory searches. Thus, a search of all the foot lockers and wall lockers in a barracks for contraband or unauthorized weapons would generally not be based on probable cause and in any event would be exploratory, and anything seized as a result of the search would be inadmissible in evidence at a trial by court-martial. Any contraband found during the illegal search would, of course, be subject to confiscation as previously noted.

A shakedown inspection, however, is a different animal. It is not designed to solve crimes but to test the readiness of a unit. Thus the Saturday morning inspection when the company falls out in front of the bunks while the commander checks clothing, equipment, and appearance is a perfectly legal—in fact necessary—procedure. It may indeed be exploratory, but it is a reasonable exploration. There is no question of probable cause, but by the same token, there is no crime to be solved. The Fourth Amendment is simply not applicable. This is not to say, however, that the commander is powerless if he discovers evidence of a crime during a command inspection. On the contrary, he may properly seize such evidence which would be admissible in evidence at a trial by court-martial.

There is one caveat with regard to command inspections, and that is there must be complete good faith. A search, like Miss Stein's rose, is a search, is a search. Calling it an inspection won't make it so. If it is a search, it will be tested in the crucible of the Fourth Amendment and, if there is any question of good faith, it will be found wanting. This, it should go without saying, is a complex and difficult area. If you as a commander, have any doubts in a particular situation, the best course of action is to contact your local Staff Judge Advocate. Better still, contact him anyway. If you don't have any doubts, you probably don't understand the problem.

This article, as promised, has treated the complex subject of seareh and seizure *vis a vis* the military commander. Everybody, I am certain, will wholeheartedly subscribe to the "right of the people to be secure . . . against unreasonable searches and seizures. . . ." Too often, however, the reaction to the application of this Fourth Amendment guarantee has been to protest that because of "legal technicalities" the guilty are being set free. First of all, the Fourth Amendment, far from being a legal technicality, is one of the basic foundations of our way of life. However, it is true that a guilty person may occasionally escape punishment through the application of procedural rules. The best answer that can be given to this seemingly paradoxical situation has been furnished by the late Justice Felix Frankfurter of the United States Supreme Court: "The history of liberty has largely been the history of observance of procedural safeguards," and after all, this is what it is all about.

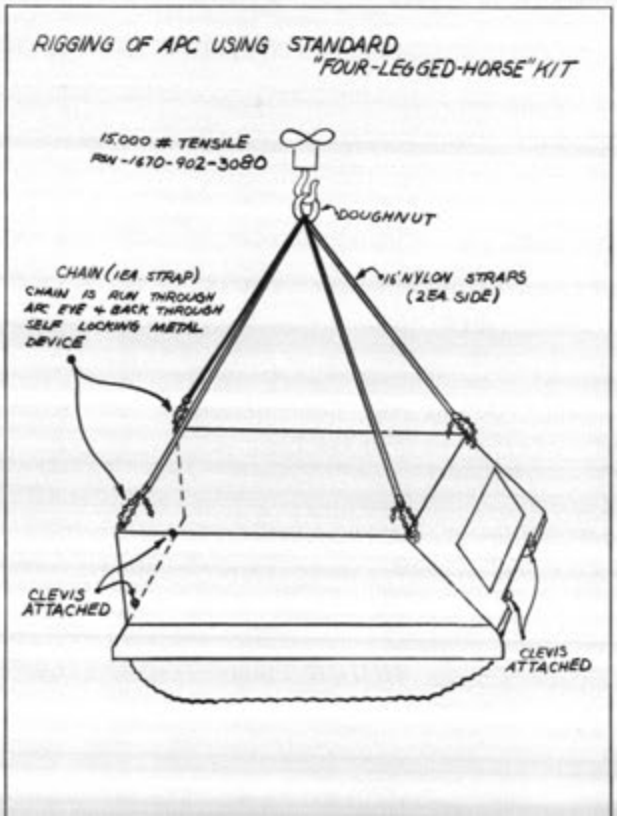
BOGGED DOWN! ▼

"Mental mobility triumphs over physical immobility" might well be a credo for those who are dedicated to truly mobile warfare come what may in the form of obstacles.

TO THE RESCUE ▼

Major General Ellis W. Williamson, Commanding General of the 25th Infantry Division, first developed an imaginative solution to the problem of retrieving vehicles stuck in the rice paddies and swamps of Vietnam when he commanded the 173d Airborne Brigade. Observing that a mired vehicle frequently could not be pulled out by another vehicle without losing the retriever also, General Williamson surmised that in using a towing vehicle free of ground effect lay the answer. Experiments proved this to be the case.

It is now SOP in the Tropic Lightning Division to request a CH47 helicopter to extract stuck APCs and trucks where organic ground vehicles are inadequate for the task. APCs in over the tops of their hulls can be pulled out by the more powerful CH54.



The accompanying illustrations portray the techniques and equipment used. The vehicle's own power is used to assist the lifting and towing helicopter.

MUCK OUT

▲ *HIGH AND DRY!*

▲ *ALMOST...*

5th PLACE

ARMOR OFFICER ADVANCED COURSE 3
1968

an officer's future . . .

THE COMMANDER'S RESPONSIBLITY

by Captain R. L. Sloane

The present decrease in time-in-grade requirements for promotion has made officer counseling increasingly more important. In today's Army a newly-commissioned officer can look forward to being a first lieutenant in twelve months, a captain in another twelve months and a major after only five years service. As might be expected the career development objectives have also been lessened, but not to the same degree as time-in-grade requirements. As a result, officers must be more efficient not only in their job performances but also in their career planning. If today's officer needs a certain type of experience to qualify for promotion he has to perform satisfactorily the first time. He can no longer expect a second assignment to a position in which his first performance was sub-standard.

The responsibilities for counseling an officer on career planning and on his job performance rest with the Department of the Army Office of Personnel Operations, his immediate and intermediate commanders and the officer himself. The Department of the Army is primarily concerned with change-of-station assignments, policy formulation and career development records. Because of the magnitude of this job, there is naturally a limitation on the extent to which personal contact can be made with officers throughout the Army.

Therefore, much of the responsibility and effort of officer career development, of necessity, falls on the commander and on the officer himself. If an officer wants to advance in grade he must be knowledgeable concerning both career-planning goals and

job-performance criteria. Many hours of instruction on these subjects are given each officer as he enters the service. But because of constantly changing requirements during his career progression the bulk of the task must be accomplished by his commanders. The commander then is of great importance as a link in the counseling chain of responsibility.

Consequently, if we as commanders are to fulfill our duty as a link in this chain we must know and understand what counseling is. For this purpose, let us define counseling as the face-to-face relationship between a commander and his subordinate for the purpose of communicating advice, instruction or judgment as an aid in the clarification or solution of a problem. Effective counseling will encourage the individual to attain maximum improvement and strive for the most beneficial developmental pattern.

Similarly, if we are to do this duty effectively we must realize and be able to overcome the shortcomings apparent in today's officer-counseling system. In a recent survey conducted at Fort Knox, 10 percent of the officers questioned volunteered an opinion that commanders lack the ability to solve counseling deficiencies. While this percentage is not high it is significant.

The two most frequently encountered problems appear to be a lack of understanding of how to counsel and an inability to determine when to counsel. Only by solving these problems can we hope to do effectively the types of counseling necessary in our modern Army.

The first of these is performance counseling. The purpose of this counseling is to attempt to close the gap between job knowledge and job performance by exposing the officer to factors that need improvement for effective performance. In a survey of an Armor Officer Advanced Course class it was found that 150 officers had received 1245 efficiency reports up to that time in their careers. Seventy percent of these reports were written without prior counsel being given the rated officer. These officers had not been advised of their weaker points and were not given opportunities to improve before being rated. Only forty-six percent were counseled at the time the report was submitted. Even though the officers not counseled may see their reports at either Washington or St. Louis it is obviously more beneficial to be able to discuss them with the rating commander who has first-hand knowledge of their job performance. Although commanders are encouraged to show efficiency reports to rated officers, they are not required to do so in all cases.

At this point a distinction should be made between officer efficiency reporting and counseling. AR 623-105, *Officer Efficiency Reports,* describes the primary purposes of the report as being first, to "provide a measure of an officer's overall value to the service to be used with other information as a basis for personnel actions," and second, to "furnish information necessary for efficient utilization and assignment of individual officers." The Officer Efficiency Report (OER) was not designed as an aid for the commander's use in counseling although it does present an accepted format for job performance measurement. Even though efficiency reporting and counseling are done separately they should be coordinated in order to motivate the rated officer to achieve maximum self-improvement.

When deciding whether or not to counsel an officer about his efficiency report, the commander should realize that every officer has certain defense mechanisms which prohibit his being able to judge his job performance in the same light as others see him. In spite of this limitation the officer must be able to evaluate his own progress in order to plan effectively his future development. Psychologists have shown that the degree to which an officer is able to perceive his own abilities is directly related to both his achievement level and his leadership ability. Proper coordination, by the commander, of efficiency reporting and counseling will increase the officer's ability to judge his own performance.

In order to achieve this increase the commander must know how to counsel. He must be sure that he covers the *efficiency* and not the *adequacy* of the officer. Adequacy is the degree to which goals are met whereas efficiency is the degree to which these goals are met relative to the officer's ability and the resources available to him. The officer should be evaluated in comparison with others in a similar job and with equivalent time in grade, military schooling, experience, branch and rank. When interviewing the officer the commander must be careful not to stereotype the officer's job performance. Applying the "halo effect" is a common error and one of the reasons for recent revisions of the OER. These errors can seriously hinder the effectiveness of the best-planned counseling session.

A commander must also know when to counsel. *Performance counseling* is normally divided into three phases. The first is the initial orientation on duties, responsibilities and standards. This phase establishes the relationship between the commander and his subordinate and sets the goals to be attained

CAREER PLANNING FOR ARMY COMMISSIONED OFFICERS

DA PAM 600-3

during the rated officer's tour of duty. The second phase is counseling on an as-needed basis with minimum delay between the act and the interview. Counseling on a specific act should not be delayed until an efficiency report is submitted but should be accomplished while the act is still fresh in the minds of both the commander and the subordinate. By supervising the efforts of his officers to meet standards and responsibilities set in the first phase the commander will enhance his relationship with them. The third phase consists of periodic formal counseling with adequate preparation and firmness. This type of interview should be conducted at the end of an officer's tour of duty and at any other time that an efficiency report is submitted.

The second type of counseling necessary is that of *career counseling*. While efficiency reports are initiated by commanders and serve as an aid in performance counseling, career plans are developed by the Department of the Army and serve as guides in career counseling. These plans guide the pattern of an officer's assignments to ensure his progressive and balanced development and provide for maximum opportunity for advancement within his capabilities.

One of the factors, however, in obtaining a developmental assignment is the officer's request for the particular type of duty needed. Before he can request this duty he must know what career requirements he has to meet. It is the commander's responsibility to advise him of the requirements of the career plans and patterns for the officer's branch.

In the Fort Knox survey it was determined that 78 percent of the officers responding had completed their Basic Military Development requirements at the end of the allowed eight-year period. By the end of the 15-year Intermediate Military Development period 73 percent of officers surveyed had completed their requirements. While both of these percentages are relatively high they show that approximately 25 percent of the officers did not meet their developmental requirements in the allotted time.

There are various reasons for this lack of requirement fulfillment, but a major one is commander's failure to conduct career counseling at all, or failure to do so effectively. DA Pamphlet 600-3, *Career Planning for Army Commissioned Officers,* states that all career officers have the responsibility and duty to ensure that junior officers have a full understanding of an Army career. Each officer should be counseled continually concerning the opportunities, benefits and challenges of such a career in order to stimulate him to pursue a military career and while so doing to become more efficient and proficient. Career planning is necessary to an officer's advancement because it will make attaining the required experience possible. But this planning cannot be done without effective guidance by the commander.

Before a commander can counsel effectively he must have sufficient factual knowledge of career patterns and programs. To conduct the career counseling interview properly he should:

► Believe sincerely in the Army as a life and a profession.

► Know the advantages and benefits of an Army career.

► Know and understand the officer to be counseled.

► Be familiar with the officer's attitudes and motivations.

A commander must take whatever time is necessary to ensure that he is completely prepared before conducting the interview. While he is not expected to know everything, it is his responsibility to ensure that questions which he cannot answer are referred to the proper authorities. How you as a commander conduct this counseling interview may determine, in large part, the officer's success or failure in the Army.

Likewise, the commander is expected to know when to counsel. When we neglect this duty it is usually because we feel the officer does not need it, we cannot find the necessary time, or we believe that this is done informally on an as-needed basis and therefore the need for formal counseling is obviated. While no regulations prescribe the frequency or times to conduct the interviews, commanders are urged to schedule them on a regular and continuing basis.

The first opportunity the commander will have is during the initial welcome of the officer to the unit. After this meeting formal counseling should be conducted during the first and second year of service for Reserve officers and during the first and third year for Regular Army officers. For officers beyond their third year of service commanders should determine if counseling is needed, based upon the officer's requirements and past progression. While too much counseling will never hinder an officer, a lack of counseling may.

Performance and career counseling sessions will only be as effective as you make them. To aid you in this function there are a few common-sense rules which, if followed, will allow you to counsel more effectively.

► Ensure that the place where you conduct the interview is private and free of interruptions.

► Avoid a listless manner. This will only serve to diminish the force of the interview and discourage the officer's confidence.

► Put the officer at ease. Tenseness will make him reluctant to express his true feelings.

► Allow yourself to relax. A cordial atmosphere will help you to overcome any feelings of reticence or timidity the counselee may have.

► Avoid radical voice or facial expressions that will cause the officer to be overly self-conscious of what he is saying.

► Listen attentively, then analyze the probable effect of your words before replying.

► Maintain your own ideals. Do not allow your principles to be compromised by lax attitudes.

► If you must refuse a request do it in a kindly way. Attempt to not alienate the officer or you will lose his confidence.

► Be receptive to the other man's feelings. This is the surest way to instill confidence in him.

► Avoid long periods of silence as they will make the officer uneasy and self-conscious.

► Do not express pity. Put him above pity by speaking sincerely and restoring his self-assurance.

► Make yourself understandable. Do not confuse the officer by making apparently contradictory statements or by using frames of reference that he cannot comprehend. At the same time do not talk down to the officer as this will create a gap between you.

► Treat information obtained during counseling as confidential.

► Do not make decisions. Guide the officer into making his own.

Even though a commander may know how and when to counsel he will not be able to fulfill his responsibility until he has established a counseling program within his unit. To make the program effective he must not only make himself available for counsel but must also inspire his officers to seek advice. Counseling is an important aspect of leadership—not leadership of a single command alone but leadership which will lead to a stronger officer corps for the entire Army.

CAPTAIN ROBERT L. SLOANE, Armor, was commissioned in 1963 from the United States Military Academy. He graduated from the Armor Officer Basic and the Airborne courses in 1963 and the Ranger course in 1964. He was then assigned to the 3d Squadron, 4th Cavalry in Hawaii, where he served as platoon leader, Shotgun Detachment Commander in Vietnam, and troop executive officer. In 1966 he accompanied the squadron to Vietnam with the 25th Infantry Division and again served as troop executive officer and then as brigade S2 (Air). Returning to CONUS he was assigned to the 6th Armored Cavalry Regiment at Fort Meade. With that regiment he served as regimental S1, squadron commander, troop commander, and squadron S2. He graduated from the Armor Officer Advanced Course in September 1968 and is currently assigned as a student at the University of Wisconsin.

LYNX

By Lee L. McFarland

The Canadian Armed Forces are now using a new command and reconnaissance vehicle designated *Lynx*. This is FMC Corporation's C&R vehicle, but with modifications to meet Canada's needs. The last of 174 of the new vehicles was delivered at the end of October 1968, and the vehicles are now serving with units throughout Canada, and with Canadian units in Germany.

Lynx uses *M113A1* powertrain components and is essentially the same vehicle being used by the Netherlands Army for reconnaissance missions. Over 260 *M113* C&R vehicles were produced for the Netherlands by FMC Corporation.

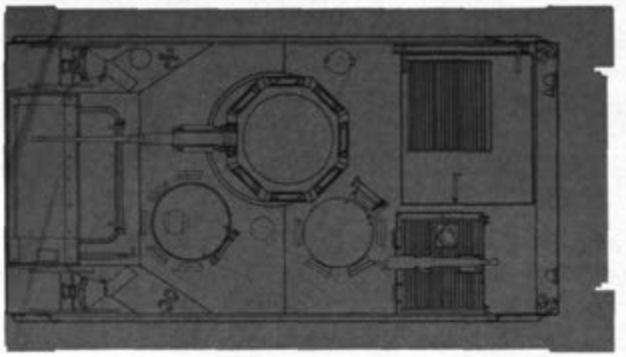
The *Lynx* is the smallest and fastest of the *M113* airborne multipurpose family of vehicles. It is specially designed to perform a wide variety of command and reconnaissance missions. Its speed, agility, armor protection and fire power suit it ideally for these.

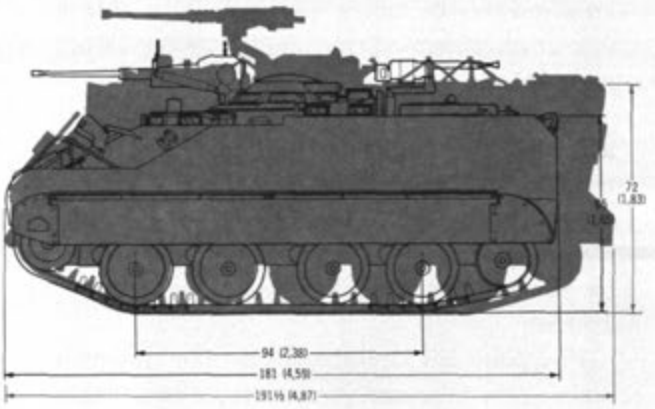
The fully armored aluminum vehicle carries a crew of three—commander-gunner, driver and radioman-observer. Full-tracked and amphibious, it moves rapidly over rough terrain and crosses lakes, rivers and streams. The lightweight vehicle can be parachute-dropped for airborne operations.

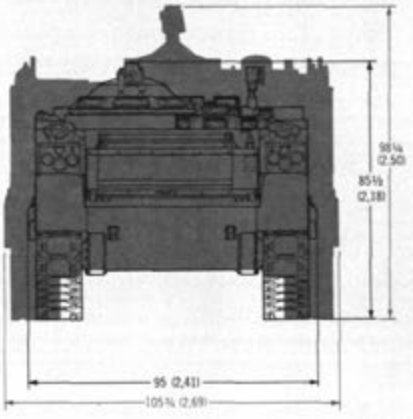
Over 97 percent of *Lynx*'s basic repair parts are the same as those used in the *M113A1* family. This

LYNX AND THE M113A1 AT A GLANCE

	LYNX	M113A1
WEIGHT COMBAT LOADED, LBS	19,340	24,235
WEIGHT AIR DROP, LBS	17,030	19,020
GROUND PRESSURE, PSI	6.8	7.7
SPEED, MAXIMUM, MPH	42.5	42.5
SPEED, SUSTAINED		
10% GRADE, MPH	21	15
SPEED, AMPHIBIOUS, MPH	3.5	3.5
ACCELERATION (0-30) MPH, SEC	19.2	24.5
CRUISING RANGE, MIS	325	305
FUEL, GALLONS	80	95
FUEL CONSUMPTION, MPG	4.1	3.2
TURNING RADIUS, FT	11	13
TRENCH CROSSING, IN	60	66
CLIMBING ABILITY	60%	60%
VERTICAL OBSTACLE, IN	24	24
TRACK ON GROUND, IN	94	105







includes engine, transmission, differential, final drives, track, wheels, and many other major elements of the power train and suspension. The high durability and reliability of *M113* components has been well established both in tests and in actual use in many areas of the world. The use of parts that are common with the widely used *M113* family greatly simplifies logistic support by reducing the number of peculiar spare parts that must be carried. Moreover, the tools and technical skills required to service major components have already been acquired through the existing M113 programs.

Combat ready, the vehicle weighs 9½ tons. It has a maximum governed speed of 42.5 miles per hour and can maintain a sustained speed of 21 miles per hour on a 10 percent grade. Range with on-board fuel is 325 miles. Its 22.2 horsepower-per-ton ratio allows exceptionally high performance.

Inherently amphibious, *Lynx* will cross inland water barriers. Like other vehicles in the *M113* family, it is propelled in the water by its tracks. The aluminum armor gives ballistic protection against shell fragments, flash burn, small-arms fire, and anti-personnel mines.

GENERAL ARRANGEMENT

The hull is a weldment of aluminum armor plate similar to that of the *M113A1* APC. Plate thicknesses vary on the different planes of the hull to provide ballistic protection with minimum weight.

The hull is divided into three major compartments: steering differential compartment at the front, crew compartment in the center, and powerplant compartment at the rear.

The steering differential compartment is easily accessible through a counterbalanced access door

located on the sloping front hull plate. A trim vane, externally mounted on the front of the hull, stabilizes the vehicle during amphibious operation.

The crew compartment in the center of the vehicle is in optimum position for observation and for ease of communication between crew members. It has three stations: driver, radioman-observer, and commander-gunner. Each station is readily accessible through counterbalanced hatches located over each crew member in the top hull plate. An escape hatch is located in the bottom hull plate of the crew compartment.

The powerplant compartment at the rear is easily accessible through hinged doors located in both the top and rear hull plates and through a removable panel in the bulkhead between the crew and powerplant compartments. Two ballistic grills are located on the top hull plate for engine air intake and exhaust.

Five plugs are located in the bottom hull plate for draining the bilge and various components located in the compartments. One large access plate is located below the powerplant compartment for servicing powerplant components. All hatches and doors are equipped with internal locks and have watertight rubber seals.

ARMAMENT

The primary armament is a caliber .50 machine gun mounted in an *M26* cupola. This cupola is a completely enclosed, mechanically operated armored unit with eight vision blocks affording 360° vision for the commander-gunner.

Secondary armament is a 7.62mm machine gun mounted in a pintle forward of the radioman-observer station. Additionally, *Lynx* features smoke dischargers, located behind the headlight clusters at the front of the vehicle. Each discharger will fire grenades to establish smoke screen cover.

POWER TRAIN

The power train consists of an engine, transmission and transfer gear case located in the powerplant compartment; a drive shaft through the crew compartment; and steering differential, pivot steer brakes, final drives, drive shafts and associated universal joints located in the steering differential compartment. All power train components, except the drive shaft, are common to the *M113A1* Family of Vehicles.

The engine is a General Motors Corporation *6V53* diesel engine, a V-type, six-cylinder, two-stroke cycle, compression ignition engine, developing 215 HP at 2800 RPM.

The cooling system utilizes a belt-driven cooling fan and an automotive-type two-pass radiator for engine cooling. The system includes an oil-to-water cooler for cooling the engine, transmission and differential oils.

The FMC-designed and manufactured transfer gear case is bolted to the rear of the engine. The four-gear train provides power transfer from the engine to the transmission at a gear ratio of 1.286:1. The transfer gear case provides three power take-off drives and two pump mounting surfaces.

An Allison transmission, *Model TX-100-1,* is attached to the power output end of the transfer gear case. It is a standard heavy-duty automatic transmission with three forward and one reverse, speeds.

A two-part drive shaft and a center support bearing located in the crew compartment are utilized to transmit the power from the power plant to the steering differential.

The FMC-designed and manufactured controlled differential mounted in the differential compartment at the front is used for steering and braking the vehicle. The differential has four principal units: a right-angle gearbox, a differential steering assembly, steering brake shoes and output shafts. The left steering brake drum is connected through a planetary gear train to the left output shaft, and the right brake drum is similarly connected to the right output shaft.

When the vehicle is driven in a straight line, power from the steering assembly is delivered equally to each output shaft. The brake shoes are mechanically linked to the steering levers at the driver's station in the crew compartment. Application of pressure on either steering lever slows the respective brake drum and reduces the speed of that output shaft. At the same time, differential action within the steering assembly increases the speed of the opposite output shaft. This simultaneous braking/acceleration action causes the vehicle to turn in the direction of the braked side. Equal pressure on both steering levers slows or stops the vehicle.

FINAL DRIVES

Two FMC-designed and manufactured final drives (one on each side) are mounted in the differential compartment. The final drives receive power from the differential and transmit this power at a 3.93:1 ratio to the track drive sprockets.

Built for a wide variety of command and reconnaissance missions, the *Lynx* has speed, agility, and armor protection. A top view (left) shows the hatches for the driver, commander-gunner and radioman observer. Below, the vehicle swimming. Vehicle equipment includes two electrically operated bilge pumps.

SUSPENSION

Lynx is equipped with torsion-bar suspension with eight individually sprung, dual, rubber-tired road wheels. Four pairs of road wheels and two pairs of idler wheels travel on a track on each side of the vehicle. Each set of idler wheels has a hydraulic track adjuster to maintain track tension. The "live" rubber-bushed steel track consists of six-inch-pitch track blocks linked together with steel pins and nuts. Externally mounted bolt-on rubber pads on each track block protect hard-surfaced streets and highways during operation.

FUEL AND ELECTRICAL SYSTEMS

Resiliently-mounted fuel tanks are located on both the left and right sponsons in the crew compartment. Fuel is delivered to the engine through strainer and filter elements by an engine-driven pump.

The electrical system is a 24-volt, direct-current system. It consists of an AC/DC 100 ampere, 24-volt generating system; two 12-volt batteries connected in series; a starting system; a lighting system; and various transmitters and switches. Automatic reset circuit breakers protect the electrical components.

MISCELLANEOUS

Two electrically operated bilge pumps, with a 44 GPM capacity each, are mounted on the vehicle's lower hull plate in the differential and power-plant compartments. The pumps discharge from the top of the hull to the left side.

A fixed five-pound fire extinguisher is located near the driver's station. It can be released either by the driver or from the outside of the vehicle. The fixed extinguisher releases carbon dioxide through a spray nozzle into the power-plant compartment. The vehicle is equipped with electrical outlets, antenna mounts and brackets for installation of numerous types of radio equipment. In addition, space has been provided for the installation of a *NAVAID* system.

All primary controls and instruments are easily accessible at the driver's station in the crew compartment. These include: steering laterals, pivot steer levers, seat adjustment, master switch, throttle control and engine fuel cut-off, throttle pedal, transmission selector, vehicle slave receptacle, power-plant instruments, and switches.

Lynx, now in service, is providing commanders and scouts with the speed, mobility, and maneuverability needed in today's fast-moving armed forces.

LEE L. MC FARLAND, is with the Information Services at the Ordnance Division of FMC Corporation. Mr. McFarland has been engaged in development and production programs at FMC for the past 15 years.

Specialist Five Dwight Hal Johnson was born at Detroit, Michigan on 7 May 1947. Following graduation from Northwestern High School in Detroit, he entered the service on 28 July 1966. He completed basic and advanced individual training at the United States Army Training Center, Armor, at Fort Knox in January 1967. Then he joined Company B, 1st Battalion, 69th Armor in Vietnam. Following a normal one-year Vietnam tour, Specialist Johnson served with Company A, 3d Battalion, 77th Armor at Fort Carson until July 1968, when he was honorably discharged. In January 1969, he reenlisted. Sergeant Johnson is now an Army recruiter in his home state, Michigan.

Citation

The President of the United States of America, authorized by Act of Congress, March 3, 1863, has awarded in the name of The Congress the Medal of Honor to

Specialist Five Dwight H. Johnson
United States Army

for conspicuous gallantry and intrepidity in action at the risk of his life above and beyond the call of duty:

Specialist Five Dwight H. Johnson distinguished himself by gallantry and intrepidity at the risk of his life above and beyond the call of duty on 15 January 1968 near Dak To, Kontum Province, Republic of Vietnam. On that date, Specialist Johnson, a tank driver with Company B, 1st Battalion, 69th Armor, 4th Infantry Division, was a member of a reaction force moving to aid other elements of his platoon, which was in heavy contact with a battalion size North Vietnamese force. Specialist Johnson's tank, upon reaching the point of contact, threw a track and became immobilized. Realizing that he could do no more as a driver, he climbed out of the vehicle, armed only with a .45 caliber pistol. Despite intense hostile fire, Specialist Johnson killed several enemy soldiers before he had expended his ammunition. Returning to his tank through a heavy volume of anti-tank rocket, small arms and automatic weapons fire, he obtained a submachine gun with which to continue his fight against the advancing enemy. Armed with this weapon, Specialist Johnson again braved deadly enemy fire to return to the center of the ambush site where he courageously eliminated more of the determined foe. Engaged in extremely close combat when the last of his ammunition was expended, he killed an enemy soldier with the stock end of his submachine gun. Now weaponless, Specialist Johnson ignored the enemy fire around him, climbed into his platoon sergeant's tank, extricated a wounded crew member and carried him to an armored personnel carrier. He then returned to the same tank and assisted in firing the main gun until it jammed. In a magnificent display of courage, Specialist Johnson exited the tank and again armed only with a .45 caliber pistol, engaged several North Vietnamese troops in close proximity to the vehicle. Fighting his way through devastating fire and remounting his own immobilized tank, he remained fully exposed to the enemy as he bravely and skillfully engaged them with the tank's externally-mounted .50 caliber machine gun, where he remained until the situation was brought under control. Specialist Johnson's profound concern for his fellow soldiers, his conspicuous gallantry, and his intrepidity at the risk of his life above and beyond the call of duty are in keeping with the highest traditions of the military service and reflect great credit upon himself and the United States Army.

Citation

The President of the United States of America, authorized by Act of Congress, March 3, 1863, has awarded in the name of The Congress the Medal of Honor to

Captain James A. Taylor
United States Army

for conspicuous gallantry and intrepidity in action at the risk of his life above and beyond the call of duty:

Captain James A. Taylor (then First Lieutenant), Armor, was serving as Executive Officer of Troop B, 1st Squadron, 1st Cavalry, on 9 November 1967 in the Republic of Vietnam. His troop was engaged in an attack on a fortified position west of Que Son when it came under intense enemy recoilless rifle, mortar, and automatic weapons fire from an enemy strong point located immediately to its front. One armored cavalry assault vehicle was hit immediately by recoilless rifle fire and all five crew members were wounded. Aware that the stricken vehicle was in grave danger of exploding, Captain Taylor rushed forward and personally extracted the wounded to safety despite the hail of enemy fire and exploding ammunition. Within minutes a second armored cavalry assault vehicle was hit by multiple recoilless rifle rounds. Despite the continuing intense enemy fire, Captain Taylor moved forward on foot to rescue the wounded men from the burning vehicle and personally removed all the crewmen to the safety of a nearby dike. Moments later the vehicle exploded. As he was returning to his vehicle, a bursting mortar round painfully wounded Captain Taylor, yet he valiantly returned to his vehicle to relocate the medical evacuation landing zone to an area closer to the front lines. As he was moving his vehicle, it came under machine gun fire from an enemy position not fifty yards away. Captain Taylor engaged the position with his own machine gun, killing the three man crew. Upon arrival at the new evacuation site, still another vehicle was struck. Once again Captain Taylor rushed forward and pulled the wounded from the vehicle, loaded them aboard his vehicle, and returned them safely to the evacuation site. His actions of unsurpassed valor were a source of inspiration to his entire troop, contributed significantly to the success of the overall assault on the enemy position, and were directly responsible for saving the lives of a number of his fellow soldiers. His actions were in keeping with the highest traditions of the military profession and reflect great credit upon himself, his unit, and the United States Army.

Captain James Allen Taylor was born at Arcata, California on 31 December 1937. Following graduation from the Arcata Union High School, he entered the service on 2 August 1955. After basic and advanced individual training with the 29th Armored Infantry Battalion, 3d Armored Division, he accompanied that unit to Germany where he served until July 1958 when he returned to the United States. In November 1958, he again went to Germany where he served with the 2d Armored Cavalry Regiment until April 1962. From then until November 1963, he was stationed at the United States Army Training Center, Armor, at Fort Knox which he left for further service in Germany with the 2d Squadron, 4th Cavalry until July 1965. Thereafter, he was commissioned in Armor upon graduation from the Infantry Officer Candidate School at Fort Benning in February 1966. He then attended the Armor Officers Basic Course. In May 1966, he joined the 1st Squadron, 1st Cavalry (1st Regiment of Dragoons) which was at that time assigned to the 1st Armored Division. He accompanied that unit to Vietnam in March 1967. In July 1968, he returned once again to Fort Knox to attend the Armor Officers Advanced Course.

THE TANK CORPS REORGANIZED

TIMOTHY K. NENNINGER

Rapid demobilization followed the Armistice. As soon as possible the War Department returned troops to the United States and discharged them. On 11 November 1918 the Tank Corps consisted of 483 officers and 7700 enlisted men within the continental United States and 752 officers and 11,277 men overseas. By May 1919 most of these troops had been discharged.

During late 1918 and early 1919 tank troops from Camp Colt and Tobyhanna in Pennsylvania, from Fort Benning, Georgia, and from Camp Polk, North Carolina transferred to Camp Meade, Maryland, the Tank Corps demobilization and storage center. Beginning in March 1919 tank troops from overseas began to arrive with their equipment. The French and British wanted to produce new tanks and therefore did not want the models they had loaned to the Americans during the war. At Camp Meade the Army collected 218 French Renaults, 450 American built Renaults, 28 British Mark Vs, and 100 Mark VIIIs built at Rock Island Arsenal. The collective worth of these machines was 32 million dollars. These demobilization activities represented the concluding acts of the past war. What about the future of the Tank Corps?

In August 1919 Secretary of War Newton D. Baker ordered General Rockenbach to return to Camp Meade as Commandant of the Tank Corps. Subsequently, on December 31, Congress fixed the Corps' strength at 154 officers and 2508 men. Rockenbach protested that this allotment was insufficient to operate in time of war. He maintained that the United States needed at least two tank brigades. But Congress was in no mood to appropriate funds for a large military establishment. Tankers had to be satisfied with a small organization and confine their efforts to improving their service with the means at hand. Congress charged the Tank Corps with formulating sound tactical doctrine, developing improved tanks, and disseminating information on the value of tanks. No one needed to prod tankers into lobbying for their service. Tank Corps officers, particularly George Patton, Sereno Brett, and General Rockenbach, began to impress upon military and civilian officials the need for tanks in modern warfare.

As commandant, Rockenbach was in a particularly advantageous position to express his views. In testimony before Congressional committees, in articles for military journals, and in speeches for military gatherings, Rockenbach defended the tank's performance during the war and stressed the need for developing improved tanks in the future. In a lecture at the General Staff College, Rockenbach said the Tank Corps had resisted entangling alliances with any of the traditional branches but that its support in combat would be of value to all of them. According to Rockenbach, the use of tanks reduced infantry casualties. He thought that function and design should govern Tank Corps needs in the future. To carry out their mission tanks should be designed to cross any defensive position, to go anywhere the infantry could, and to possess sufficient armament to cope with protected hostile machine guns.

Despite the necessity of close association between tanks and infantry, Rockenbach opposed permanent attachment of tank units to infantry divisions. He maintained that tanks could not be used in every situation and should not be wasted on a division operating in unfavorable terrain. Before a Senate

subcommittee Rockenbach defended the wartime tank organization. He said that the Tank Corps should remain a separate entity assigned to General Headquarters for use as the tactical situation dictated. Because of their special nature, tanks needed their own organization to coordinate the procurement of proper equipment with the Ordnance Department, to conduct the necessary specialist training, and to plan tank-infantry operations with GHQ.

In response to a lecture by General Rockenbach, Major General Charles P. Summerall, an outstanding wartime corps commander, wrote, "Far from disagreeing with any part of the lecture, the only comment that I heard . . . was that you had presented the subject in a very conservative manner, and that all were in hearty sympathy with the development and use of the Tank Corps." Some of the Tank Corps' own officers agreed with Summerall that Rockenbach was too conservative. Rather than experimenting with and developing new tanks, Rockenbach sought to maintain the status quo.

Patton's biographer wrote that upon return to the United States after the Armistice, Patton vigorously promoted research, development, and training: three activities essential to the improvement of tanks. Soon after arriving at Camp Meade, Patton realized that several forces, including General Rockenbach, combined to thwart his efforts. A close friend of Patton's during this period, then Lieutenant Colonel Dwight D. Eisenhower, expresses similar sentiments in his book *At Ease!*

During the war Eisenhower commanded the tank training center at Camp Colt. After the end of the war he went with the tank units to Camp Meade. On the controversy surrounding tanks, Eisenhower writes that he, Patton, and several other young officers disagreed with accepted doctrine. They thought tanks should be fast and should attack in mass formations. This group of officers conducted experiments with World War I tanks and held demonstrations for War Department officials. Several of the group, including both Patton and Eisenhower, wrote articles for military journals expressing their "revolutionary" ideas. But the War Department disapproved of their divergence from established doctrine. Eisenhower writes, "I was told that my ideas were not only wrong but were dangerous, and that henceforth I was not to publish anything incompatible with solid infantry doctrine." Confronted with such pressures, both Patton and Eisenhower soon left the tank service.

Official War Department doctrine called for tanks

Brigadier General S. D. Rockenbach, Commandant of Tank Corps, who defended the tanks' performance and stressed the need for improving them.

to be used as close support weapons for the infantry, thus the wartime practices for the employment of tanks would continue. A board of officers convened by the War Department in 1919 to study tank tactics recognized the value of tanks as an adjunct to the infantry but declared them incapable of independent action. To emphasize further the association of tanks and infantry the board maintained that the "Tank Service should be under the general supervision of the Chief of Infantry and should not constitute an independent service." Their recommendation that tanks be under Infantry control broke with the wartime arrangement by which the Tank Corps retained autonomy from branch authority. Peacetime exigencies gradually pushed the War Department into placing tanks under the control of the Chief of Infantry.

Ultimately the question of a separate Tank Corps came before Congressional committees holding hearings on the reorganization of the Army. The question raised in these committees was not over the value of tanks but over the necessity for a separate service. General Peyton C. March, the Chief of Staff, said that American military authorities were fully convinced of the offensive value of tanks. March himself believed the Tank Corps was "technical enough and important enough to keep it as a separate arm." Disagreeing with March, General Pershing expressed the belief that tanks should be under the control of the Chief of Infantry; they were an adjunct to that arm. For Congress the question of a separate tank service became one of economics.

Could the government afford an independent tank organization in view of the reduced postwar military budgets?

Congressman Harry E. Hull of Iowa presented the problem as follows: "I can see how perhaps in the case of war there might be some need of a separate organization for tanks, but I am unable absolutely to see any reason during peacetime for the creation of the overhead that would have to be established to give you a separate organization." Evidently the majority of Congress agreed with Mr. Hull. Section 17 of the National Defense Act, as amended by Congress on June 4, 1920 assigned all tank units to the Infantry.

In tactics as well as organization, the reorganization of 1920 had a tremendous impact on tank development. Under Infantry control, tanks naturally had to conform to infantry tactics which meant continuing the close support mission of World War I. Independent tank attacks had no place in infantry doctrine.

A conference held by the General Service Schools at Fort Leavenworth, Kansas in October and November 1921 discussed the organization and tactics of infantry tanks. The conference report together with comments elicited from other officers and included in the report indicate post-1920 thought on the use of tanks. To secure close cooperation between tanks and infantry the report proposed assigning light tank companies as organic components of infantry divisions. Additional tank units would compose a GHQ reserve. This would insure the maximum use of a limited number of tanks. GHQ tanks, distributed in depth, would be allotted to the corps delivering the main assault. Terrain and the mission of the assault divisions dictated the distribution of available tanks. Departing from established doctrine, the conference suggested the allotment of additional machineguns to each tank company. In a defensive situation these units could serve as machinegun companies. Again departing from normal doctrine, the conference maintained that in certain situations tanks might successfully assist horse cavalry in performing its missions.

Criticism of this report came from several War Department sources. On 9 December 1921 the Tank Board met at Fort Meade to consider the report of the General Service Schools conference. This board criticized the proposal for using tank companies as machinegun units. Tankers required additional training, equipment, and manpower in order to carry out any dual missions. The board maintained that tanks were offensive weapons only. According to the Infantry Board the number of tanks available during wartime would not be sufficient to maintain division tank companies as well as GHQ tank units. Furthermore, divisions might not operate in terrain suitable for employment of tanks. Tank companies organic to infantry divisions might prove more of a burden than an asset. Writing to the Commandant of the General Service Schools, the Adjutant General charged that instructors at the conference failed to deal with existing organization, units and arms. Instead, they made unauthorized assumptions regarding the tank service. The Adjutant General said that uniformity of tactical doctrine cannot exist unless all schools based their teachings on existing organization. Tactically, tanks served as an auxiliary of the infantry. According to the Adjutant General, any discussion of tank tactics had to begin with that premise.

Even before the reorganization the Army took steps to insure closer cooperation between tanks and infantry. Early in 1920 the Secretary of War, in response to a request by the 1st Division commander, General Summerall, assigned one tank company to each infantry division and assigned one battalion of tanks to the Infantry School at Fort Benning. After the reorganization the units retained at Camp Meade included the 16th Tank Battalion (Light), the 17th Tank Battalion (Heavy), and a maintenance company. Meade was also the location of the Tank School and the hub of postwar tank activities. In the event of war Meade would have become a mobilization, training, and replacement center for tank units. Four light tank companies and six separate light tank platoons were the remaining tank units assigned to Regular Army posts. In addition, the National Guard had fifteen light tank companies located throughout the United States. All tank organizations, National Guard and Regular Army, were organic to infantry divisions.

Lack of funds restricted but did not halt the postwar activities of American tank units. For fiscal year 1921 Congress appropriated only $79,000 for use by tank units. During the war, tank crews operated their machines for the entire day but peacetime budgets dictated that tanks be driven for a few hours at most because of a lack of funds to buy gasoline. Despite the inconvenience caused by tight budgets, tank units conducted important training and attempted to stimulate interest in tanks. A letter from First Lieutenant Eugene F. Smith, platoon leader of the 1st Platoon, 9th Tank Company at Fort Devens,

ROBERT J. ICKS COLLECTION

At the end of World War I 100 Mark VIII tanks were collected at Fort Meade. At that time the United States had almost 3000 Mark VIIIs that had cost $85,000 each to build.

Massachusetts, to now Colonel Rockenbach aptly reflected the difficulties and nature of tank training during the twenties.

Smith's platoon moved from winter quarters to Fort Devens between 12 and 17 May 1924. Upon arriving at their training area they constructed a tank park to house and protect their vehicles. Beginning on 9 June and continuing for three weeks the tanks helped in felling trees and clearing land for a drill field. This was valuable experience because it gave all hands an opportunity to drive the tanks under difficult conditions. After completing the preparation of their training area, the platoon held a test mobilization on 3 July. Despite only 24 hours notice the test went well.

From 7 to 9 July two tanks of the platoon assisted the 5th Infantry in conducting demonstrations for an Elks convention in Boston. During the second and third weeks of July the platoon assisted in the summer training of the 26th Tank Company of the Massachusetts National Guard. Several reserve tank officers trained with the platoon from 21 July until 2 August.

Tactical exercises with infantry regiments constituted the unit's primary activity in the latter part of July. On 15 and 16 July the unit participated in field problems with the 13th and 5th Infantry Regiments; these were part of the regiments' annual tactical inspections. During both of the exercises the tanks moved about eight miles under their own power and impressed the infantry officers present with their ability to keep up with the march column.

On 24, 28, and 31 July, Smith's platoon participated in the tactical inspection of the 18th Infantry Brigade which was observed by the I Corps commander and some War Department officials. To advertise the mobility and strength of tanks the platoon conducted a demonstration for the visiting dignitaries. One tank crossed a trench system, drove across a bridge, knocked down a tree, and then returned to the starting point. Smith noted, "We received some very good publicity in the Boston papers because of it."

The platoon held a demonstration of tank-infantry coordination in an attack for ROTC and Organized Reserve Corps personnel on 1 August. Following this exercise several officers expressed their surprise that tanks could move so rapidly and assist the attacking infantry so well. More than just training his own men, Smith attempted to publicize the tank and impress other officers with its possibilities. The performance of the tanks in these summer maneuvers convinced many officers that they could rely upon tanks in any combat situation. Smith concluded his letter to Rockenbach, "They don't have to know that on one problem we had to stop and put a new

fan belt on one tank, a new water pipe from the pump to the radiator on another and stop every half mile and fill the radiator on another because it sprang a bad leak."

The most important tank activity of the twenties was the Tank School at Fort Meade. Among its more important functions the school trained personnel for tank units such as Lieutenant Smith's platoon. Although the enlisted men received instruction only in their specialties, the officers took a more comprehensive course. Included in the officers' program was instruction on motors, ignition systems, battery maintenance, vehicle chassis, light tanks, heavy tanks, weapons, tank marksmanship, tank combat practice, tank history, tank organization, tank tactics, reconnaissance, intelligence, and chemical warfare. The courses were a balance between theory and practice. The National Guard and Reserve officers course began in March of each year and continued for three months. The Regular officers course was of ten months' duration. Specialty schools for enlisted men lasted for about three months. After graduation the officers served a tour of several years with a tank unit. Most of the enlisted students came from one of the units at Meade and they returned to their former units upon graduation. But the type of training received by the men created some problems. The skills developed at the school were valuable in a society becoming rapidly motorized and many Tank School graduates left the service to take higher paying civilian jobs. In order to retain trained personnel, the Army began to assign students to the school who had at least two years remaining on their enlistments.

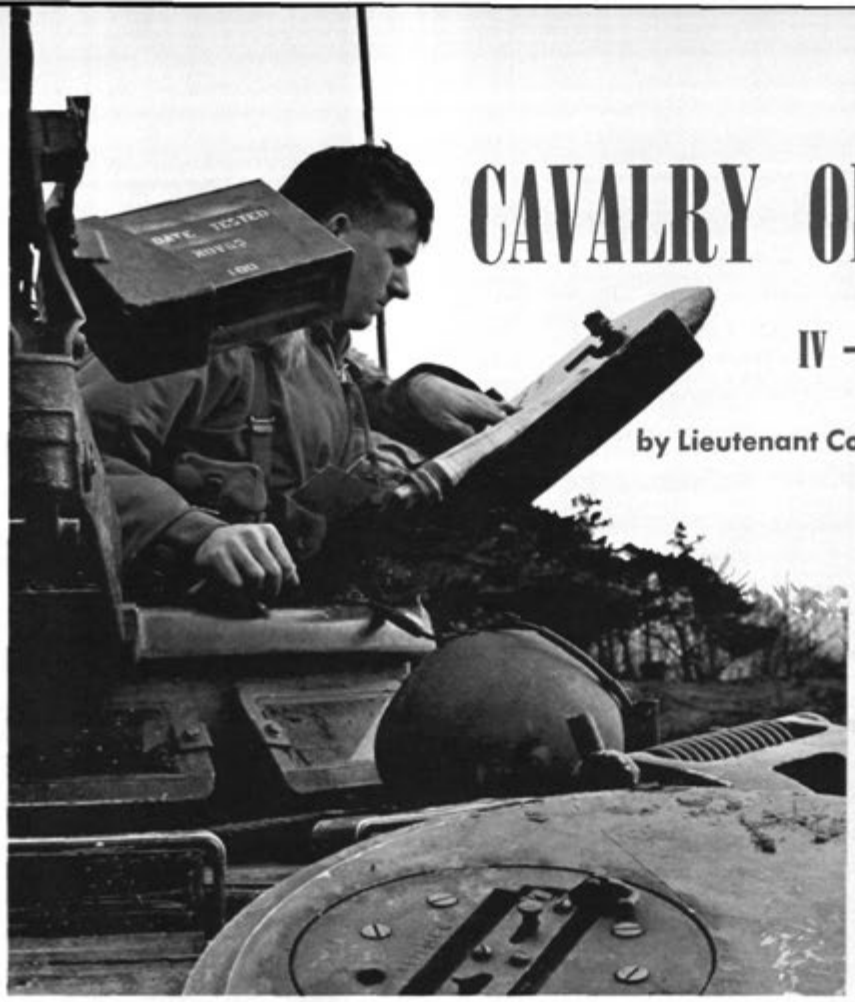
Another activity located at Meade and closely associated with the school was the Tank Board. Originally organized in 1919 as the Tank Corps Technical Board, this body conducted tests, undertook studies, and made recommendations about tanks, tank equipment, tank unit transportation, and similar technical matters. Following the reorganization in 1920 the board disbanded until 1924. In October of that year the Commandant of the Tank School, with the approval of the Chief of Infantry, appointed four permanent members of the Tank Board. This board cooperated with the Tank School, the Ordnance Department, and other agencies concerned with improving tank development. Army Regulations 75-60 of 30 April 1926 reorganized the board. Rather than four permanently assigned officers, the board now consisted of the Commandant of the Tank School, three officers designated by the Chief of Infantry, and one officer representing the Chief of Ordnance. In 1929 the Chief of Infantry, upon recommendation of the president of the board, named a recorder and two other members. Similar to the Infantry Board, the Tank Board became a part of the Office of the Chief of Infantry.

ROBERT J. ICKS COLLECTION

A Six-Ton Tank crashes through old barracks at Fort Meade. Demonstrations such as these were organized by tank enthusiasts to impress upon the public the usefulness of the tank. Despite favorable newspaper reports, funds provided were scanty.

For initial equipment requirements the Tank Board prepared performance specifications. Upon request of the Chief of Infantry, the proper supply facility procured the item and sent it to the board for tests. The board exercised a coordinating role between the tank troops and the supply agencies. Following the conclusion of tests, the board issued a report on the acceptability of the particular piece of equipment. Among the items considered by the Tank Board were communications systems, maintenance equipment, accompanying guns for tanks, a trench digging tank, tank machineguns, and development of new tank models. Members of the board and the test officers worked on projects individually. At frequent meetings the board as a whole reviewed and reported on the individual projects.

The postwar years were both a time of transition and a period of stagnation for American tank development. Although the 1920 reorganization changed the organizational structure of the Tank Corps, small postwar military budgets limited activities. Among other things, this hindered production of new, improved tanks. But a number of officers retained an interest in tanks. They wrote for military periodicals, tried to impress their fellow officers with the capabilities of tanks, and like Lieutenant Smith, attempted to "advertise" tanks. By the end of the decade the Army was contemplating more positive steps for improving the American tank service.



CAVALRY OPERATIONS

IV — RECONNAISSANCE

by Lieutenant Colonel Raymond R. Battreall, Jr.

As the name implies, the primary mission of a reconnaissance unit is reconnaissance. This is true from the individual trooper level to the squadron level.

Reconnaissance is a task inseparable from any other mission which might be given. The gathering of intelligence is a never-ending project which seeks to reduce the unknown aspects of the enemy and the area of operations.

Reconnaissance is a continuing responsibility of each commander and every soldier. The term, however, is often misunderstood and misleading. It means to get information, even if you have to fight for it. It must not be limited to the "sneak and peek" concept of dismounted night patrols.

This article will review the fundamentals of reconnaissance and the application of these fundamentals to the actual methods of reconnaissance.

DEFINITIONS

Reconnaissance is the directed effort in the field to collect information of the enemy and the area of operations through ground and air activities. It is an effort to gain all information of military value, both positive and negative. There are three types:

Route reconnaissance is the directed effort to obtain information about a specific route to include obstacles and enemy along the route and adjacent terrain which would affect movement along the route by a friendly force.

Zone reconnaissance is the directed effort to obtain detailed information of all routes, terrain, and enemy forces within a zone defined by boundaries.

Area reconnaissance is the directed effort to obtain detailed information of all routes, terrain, and enemy forces within a specific and clearly defined area.

The type reconnaissance undertaken depends on the information desired, time allowed, enemy situation, terrain, and the size of the reconnaissance unit. In any case, the mission of reconnaissance calls for a thorough search of the assigned area. In most conventional war situations, platoon size is normally the smallest enemy unit reconnaissance elements look for. (In Vietnam, squads or even individuals are often the targets. To find such small elements is, however, obviously a *dismounted* task best performed by infantry supported by Armor strike forces in case contact is made. This is called "search and destroy" and is a different breed of cat from recon-

naissance as a mounted, Cavalry mission.) So recon people look where a platoon could hide. It isn't necessary, then, to beat the brush. That is a waste of time. But it *is* necessary to investigate tracks, concealed areas, lateral roads where a platoon might be, and other suspect things and places. Above all, remember that RECON IS RECON! Don't waste time trying to differentiate one type from another. The difference between the three types is, in most cases, academic.

FUNDAMENTALS

► You must be able to communicate. What good is the information you gather if you can't tell anyone about it?

► Report all information accurately. Recon is conducted to obtain information. The information gathered is of no value to the commander if it is not reported accurately and in time to be useful. All information, both POSITIVE and NEGATIVE, must be reported. Answer the questions *what, where, when, doing what.*

► Orient on the location or movement of the intelligence objectives. Don't make the mistake of maneuvering in accordance with the movement and location of friendly forces.

► Use control measures (e.g. phase lines, contact points and check points) to coordinate the operation of all elements.

► Maintain contact with the enemy. Finding an unknown enemy is the most dangerous thing a recon unit does. Once he is found, never let him go.

► Factors in determining frontage (METT):

Mission (type of information sought.)

Enemy Situation (size and type of enemy expected.)

Terrain and Weather (special attention to the number of routes to be covered.)

Troops available for the mission (normally one platoon can cover one route.)

CONTROL MEASURES

Let's explore control measures:

► Radio—This is vital for internal control and communications with higher headquarters.

► Location of the commander—If an airplane or helicopter is available, use it. The air offers the commander the optimum ability to keep track of and control his units and to move quickly to the critical point once it is identified.

► Phase lines—These give the commander a positive check on the location of his forces. Cross and report. *Stop only when specifically ordered to.*

► Check points—These should be prominent features on the ground. Units must report when they reach all check points. They are an excellent tool to redirect units when necessary.

► Boundaries and contact points—Physical contact must be made at contact points. Boundaries define responsibility and prevent accidental engagements between friendly units.

TECHNIQUES OF MOVEMENT

In reconnaissance one must constantly strike a balance between safety and the required speed of movement. The *safest* thing to do, obviously, is to dig a hole and stay in it. Of course, this accomplishes very little. Successive bounds, therefore, become the norm. In this type of movement no vehicle crew ever moves over ground which it has not already observed. This is even more important than the fact that friendly guns overwatch each movement. Never forget the importance of careful, thorough observation through binoculars. It is much, much better to detect the enemy by seeing him than by being shot at by him. Whether you see him or not, though, always pick out your next stopping point and identify patches of available cover before starting your move. If you are fired on, at least you will already know where you want to go to shoot back.

Successive bounds, then, offer the best compromise between safety and the need to move. Nevertheless there will be times when this technique is just not fast enough to satisfy higher headquarters. When faced with this dilemma your next resort is to use alternate bounds. In alternate bounds the moving vehicle crew does not have the chance to observe the ground over which it moves, but its teammate does and will naturally signal a halt if it detects anything. This plus the teammate's overwatching fire makes alternate bounds only slightly more dangerous than successive, and they are half-again faster. Of course, occasionally there will be such an overriding demand for speed that you can't even afford alternate bounds. There's nothing to do then but take a deep breath and move out steadily until the enemy makes you stop. This is obviously the most dangerous technique, to be reserved for true emergencies.

Regardless of the movement technique used, don't overlook the benefits of reconnaissance by fire (unless, of course, you think the enemy doesn't already suspect your presence) and the life insurance value of pre-planned supporting fires.

"It is much, much better to detect the enemy by seeing him than by being shot at by him . . ."

CONDUCT OF RECONNAISSANCE

Regiment, squadron, and troop will each receive their mission, analyse the factors already discussed, and divide the total job into platoon-sized parcels. The platoon leader, then, receives a zone, route, or area to be reconnoitered along with various phase lines, check points, and time schedules. He may well add a few control measures of his own. If at all possible he will keep his platoon intact. One scout squad moves by bounds reconnoitering the primary route. The platoon leader follows that squad at observation distance. The second scout squad reconnoiters lateral routes and critical terrain to the flanks. The rest of the platoon, under the platoon sergeant, follows one to three minutes behind. In this formation the scouts, who actually do the physical reconnoitering, know that the full striking power of the platoon is ready to back them up quickly when needed. They then move out, employing whichever movement technique the lieutenant prescribes, boldly and aggressively looking for a fight. Over-caution and timidity have no place in Cavalry operations.

The platoon is primed to launch its attack from march column at the slightest provocation, thereby insuring that small outposts and enemy harassment will not achieve significant delay and that more formidable strong points will be thoroughly developed before the buck is passed upstairs. On the other hand, all concerned remember the difference between boldness and foolishness. Scouts observe carefully before exposing themselves by movement. The platoon leader insures that supporting fires are readily available and positions himself where he can see what happens to his scouts. When contact is made he makes a quick, but complete, estimate of the situation, launches his attack whenever it has a chance for success, but refrains from launching it when the odds are hopeless. Platoons, after all, just aren't big enough to overrun battalions—but they can overrun companies if they have surprise and shock on their side. If the platoon attacks and is repulsed, as will occasionally happen, it has still accomplished its mission, for the enemy will have been forced to fire all his weapons and reveal his disposition in the process. This is what developing the situation means. Whatever transpires, the platoon leader reports frequently, fully, and accurately. This is reconnaissance.

NIGHT RECONNAISSANCE

If you must reconnoiter at night, do so on foot. The concept of a mounted night recon is just so much hogwash. Noise discipline at night is all-important and you don't get it by riding in armored vehicles. Every advantage is on the side of the dismounted listening post or ambush. Mounted recon at night will produce or of two results: negative contact or death. So dismounted recon is the order of the night!

RECONNAISSANCE IN SUM

Reconnaissance is a mission inseparable from other missions. It is a continuous responsibility of each individual soldier. It does not imply "sneak and peek" action. Essentials of reconnaissance are speed and reporting of information. Use mobility to get information or place your firepower where it is needed. Then report what is going on.

From The Armor Branch Chief....

TO KEEP THE BEST II

Are you thinking of applying for a Regular Army commission? If so, you may have many questions that need to be answered before applying. Below, in question and answer form, is the information most often sought by officers who visit Armor Branch seeking information about appointment of active duty Reserve officers in the Regular Army.

Q. Why go RA?

A. First of all, the RA officer can take considerable professional and personal pride in the fact that he is identified as one of those found "good enough" for RA status. The RA Officer Corps is relatively small and its size is limited by law. The competition for appointment is stiff, the selection standards are high, and most officers know this. When considering an RA career on a more tangible basis one cannot overlook the fact that the same law which establishes and determines the size of the RA Officer Corps also provides guaranteed tenure for the RA officer providing his manner of performance continues to be acceptable. On the other side of the coin, the career officer must consider the fact that the Reserve officer has active duty tenure only so long as the nation's security posture dictates a need for his continued services. Even when Reserve officers are serving on active duty in relatively large numbers, they normally are limited to a career of 20 years of active duty. Therefore, as a result of his assured career tenure, the RA officer is likely to get the nod over his equally qualified Reserve contemporaries for important personnel actions which can be described as long term career investments. In other words, whenever "all other things are equal" it is only common sense to invest in the career of the officer who is most likely to be around longer. The Army's positions of highest responsibility, and the promotions that accompany them, usually go to officers who are nearing or have passed their 20th year of service. In light of the Reservist's lack of guaranteed tenure, it stands to reason that the preparation for these positions goes to RA officers most of the time. One might ask why it is advisable to consider RA status very early in a career if its significance is most meaningful in later years. The answer is simple: First there is the consideration of career security from the beginning. Also, some of the career building blocks can come relatively early for some officers, and further, a relatively senior RA aspirant might find his year group's vacancies already filled by others who made their decisions earlier.

Q: When can a Reserve officer apply for RA?

A: After he has served at least eight months on active duty.

Q: In what permanent RA grades may selected applicants be appointed?

A: Second lieutenant through colonel (See para 4i, AR 60-100 for manner of determining RA grade in which appointment is made). An applicant's active duty (AUS) grade is not taken into consideration when RA grade is determined, except that it cannot be lower than the RA grade for which he is eligible.

Q: What is the minimum age for appointment in RA?

A: 21 on date of appointment.

Q: What is the maximum age for appointment?

A: Applicants must not have reached their 27th birthday on date of appointment. This age maximum is statutory and may not be waived. However, the age maximum is increased by:

a. The number of years, months and days of active commissioned service in the Army after attaining the age of 21 years and subsequent to 6 December 1961, and/or—

b. A period (not to exceed 2 years) equal to the days, months, and years by which age exceeds 27 years.

Q: What is the minimum educational requirement?

A: At least two years of college. Applicants without baccalureate degrees must have a DA Two Year College Equivalency Certificate.

Q: What is the minimum active duty obligation incurred by a RA appointee?

A: Three years from date of appointment.

Q: How long does it take to process a RA application?

A: About six months. Applicants serving in OBV II status may voluntarily request retention on active duty until final action is completed on their applications. (See AR 135-215, Paragraph 5a(4), Definite Term Agreement.)

Q: What is a RA year group?

A: In general terms, a RA officer's year group is the year in which he would have been appointed a RA second lieutenant had all his active commissioned service been in RA status. A RA appointee's year group can be determined roughly by subtracting from the date of his RA appointment all prior active commissioned service after his 21st birthday.

Q: In what RA year groups are there vacancies for Armor officers?

A: All year groups except 1942, 1948, 1957, & 1961. (Note: Lack of year group vacancy does not automatically result in disapproval of a RA application.)

Q: What must one do to apply for RA?

A: A prospective applicant should read AR 601-100 and get his personnel officer to help him with administrative details. Briefly, an officer having less than five years of active commissioned service must apply on DA Form 61 and appear before a field interview board. Applicants with five or more years of active commissioned service may apply by letter, and appearance before a field interview board is not required. Information regarding completion of both forms of application, and required inclosures, is contained in AR 60-100.

Those having further questions are encouraged to write Armor Branch, OPD, Office of Personnel Operations, Headquarters, Department of the Army, Washington, D.C. 20315 or telephone OXford 6-8730 or 8529.

ARMOR NOMINATIONS

FOR COLONEL—AUS

	Sequence Number
Allen, Warren P	0223
Astarita, Edward F	0720
Avery, Albert M, Jr	0288
Becton, Julius W, Jr	0686
Bein, Robert K	0513
Bellinger, John B	0779
Berres, John P	0252
Blair, Robert M.	0013
Blakeslee, James A	0799
Brouillette, Frederick	0211
Burner, Jean P	0643
Carroll, Robert M	0694
Clark, Egbert B, III	0648
Cox, Carlisle B, Jr	0844
Crampton, Theodore	0664
Crane, Joe D	0830
*DeRamus, Thomas B	1001
Deehan, Donald E	0789
Dickinson, Hillman	0972
Diehl, Robert C	0658
Doyle, Lee T	0356
Egger, James B	0635
Faith, John C	0634
*French, Daniel W	1044
*Gearan, William K	1048
Gillis, William D	0894
*Graham, Charles P	0978
Grandelli, Charles	0109
Grant, William D	0642
Greene, Charles A	0572
Grills, Angelo	0853
Guelker, Clarence W	0576
Gutting, Louis J	0447
Haszard, Sidney S	0458
*Heiden, Charles K	0973
Heller, Thomas J	0897
Hendricks, Jess B	0785
Hill, James G	0946
Houston, Frank W	0265
Hughes, John B	0783
Ireland, Merritte W	0414
Johnson, Marshall D	0201
Jones, Roy M	0935
Katagiri, Taro	0237
Kinsey, John D Z	0115
Landis, Benjamin L	0160
Lang, Vincent W	0929
Lauderdale, John R	0190
Leu, Bernard J, Jr	0563
*Lewane, Leonard L	1040
McArdle, John F	0376
McCuen, John J	0791
*McDowell, William	0980
McEnery, John W	0790
McSpadden, Garland	0357
Mesick, Robert A	0549
Morrison, James L	0693
*Nutting, Wallace H	0979
Plummer, Walter W	0610
Rigler, Charles A	0771
Roach, Andrew J	0721
Rogers, Selwyn P, Jr	0161
Sargeant, Arnold M	0805
Schmalzel, Joseph L	0378
Sebastian, Nicholas	0820
Sherman, Frederick	0588
Smith, Paul V	0702
Steward, Cleveland	0624
Thrush, Francis H	0257
Todd, William R	0391
Tuberty, James T	0949
Tunnell, Teddy B	0888
Tyree, Thomas B	0776
Vail, William H	0524
Weaver, Harold A	0304
*Williams, Paul S, Jr	1019
Yakimovicz, Floryan	0456

• Secondary zone

ARMOR BOX SCORE—COLONEL

OVERALL

	CONSIDERED	SELECTED	% SELECTED	Secondary Zone SELECTED
Armor	200	67	34	10
Army	2896	833	29	93

FIRST TIME CONSIDERED

	TOTAL	SELECTED	% SELECTED
Armor	93	56	60
Army	1235	631	51

FOR LIEUTENANT COLONEL—AUS

	Sequence Number
Ameel, Joseph B	2235
Andy, Charles W	0910
Ardizzione, Leo A	1339
Avey, James F	1246
*Bahnsen, John C Jr	2787
Baker, Richard D	1235
Basil, Benjamin J	1225
Beasley, Lewis E	1727
Beaty, William E	2712
Bell, Joe K	2353
Bergen, James P	1827
Bills, Arthur D	1481
Bloom, James W Jr	1050
Bradberry, William	1147
Brokenshire, James	1880
Brown, Edward M	1638
Brown, Joe A	0919
*Brown, Lee D	2898
Burns, Charles W	1977
Busby, Leman O	1718
Campbell, Lucius J	0446
Cardillo, Richard G	1906
Carrillo, Armando E	0465
Carver, Dudley J Jr	2051
Casey, Leonard R	2700
Catlin, Joseph D	1352
*Cei, Peter G Jr	2816
Chestnut, Albert B	0422
Chisolm, Patrick D	2631
Coley, Malcolm G	2120
Cooley, Andrew L Jr	2349
Cox, William J	2351
Damskov, Donald M	1997
Daves, Phillip E	2288
Davis, Dwight A	1222
Day, Edward H Jr	1320
*De France, Rudolph	2788
Diaz-Estrella, Fran	2687
Dickey, William W	1143
*Doneski, Bernard J	2963
Doray, Paul D	0721
Downing, Joyce W	0368

Duchon, Mark	0092	Kreilick, Elvin A	2570	Putnam, Earl L	2241
Easterling, Ned H	0595	La Fever, Billy	0561	Pye, William T	1485
*Ebert, Vernon E	2776	*Lang, Marlin C	2829	*Raines, Fred B	2828
Eddins, Watha J Jr	1800	*Langer, Joseph A Jr	2838	Ransbotham, James I	1149
Erkelens, Henri F	0824	Larkin, Thomas B	0359	Ray, William D	0745
Evans, William H	1518	*Lawley, Fred W	2740	Reid, Robert C	2026
Finkbiner, Glenn G	1558	Lee, Edwin T	0234	Rider, Archie A	1264
*Fiske, John R	2981	Lee, William W Jr	1353	Riticher, Raymond J	2665
*Fitzmorris, Lawrence	2796	Lehman, Ralph L Jr	1309	Rose, Harold L	0767
Fleming, Hewell D	1610	Lehman, Robert L	1541	Ross, Paul L	0627
Fleming, Norwood W	1809	Lemley, Ezra S	0617	Rumbaugh, Earl E Jr	0657
Floyd, John D	1335	Lippert, Gerald D	1355	Russell, Benjamin B	1363
Fluker, Thomas D	1242	Little, Ronald W	1321	Sample, Frank W	0187
Foster, Donald G	1099	Lo Re, Jesse D	1589	Santa Barbara, Jose	1967
Fuller, Richard G	2043	Lorigan, Robert E	1428	Schmid, Henry G	1019
*Glock, Howard G	2773	Mac Donald, Alexander	1836	Schuessler, Richard	2629
Gminder, Russell	1396	Marden, Richard H	0678	Scoggins, Larry E	2557
Haley, Robert H	2635	Martin, Francis B	1687	Scott, William L	0404
Hall, Francis W	2944	*Mason, John	2807	Senn, Thomas J	1539
Harms, Norman D	0590	Mc Ginnis, William	0705	Shimunek, Richard D	1851
Harris, George W	1565	Mc Kalip, Homer D	2707	Shiver, Ivey M III	0654
Harrison, Francis X	0438	Mc Namara, John T	1479	Siegelman, George E	0498
Harvey, Richard W	2081	Medley, George W	2227	Sieminski, Edmund J	2127
*Hattersley, James G	2754	Meetze, Henry W	1825	Smart, Ernest A	2648
Helinske, Norman E	0690	Melbye, John	2508	Smith, Henry H Jr	0843
Helmlinger, Robert	2460	Melville, Royall T	2649	Sparks, Donald E	2550
Henne, Carl Jr	2010	Mendel, Thomas E	2345	Stapleton, Homer L	1584
Herbert, James M Jr	0167	*Molinelli, Robert F	2899	Stephens, Herschel	0995
Hill, Gerald D Jr	1305	Moran, William J	1187	Stevenson, Carl B	3018
Hill, James R	2251	Murchison, John T	0603	Strudeman, Richard	1438
Hlywa, Nicholas G	2372	Newhart, George G	0707	Sydenham, Stanley R	1805
Hoffman, James H	1054	Oakley, Eldon B	1649	Taylor, Richard F	2032

ARMOR BOX SCORE—LIEUTENANT COLONEL

OVERALL

	CONSIDERED	SELECTED	% SELECTED	Secondary Zone SELECTED
Armor	230	165	72	27
Army	3112	2185	70	243

FIRST TIME CONSIDERED

	TOTAL	SELECTED	% SELECTED
Armor	171	149	87
Army	2244	1960	88

Hoffman, Robert L	1643	OConnell, Marvin G	1685	Taylor, William J	2033
Hopper, Mack H	1546	Olvey, Lee D	1784	Totten, Donald E	0664
Hosmer, Calvin III	2642	Pace, Linwood A Jr	2694	Trouve, Raymond J	2223
Houck, Peter L	0181	Pankowski, Alfred J	1318	Tuggle, Lewis M	2527
*Hussey, Donald P	2918	Pedrick, Eugene S	1437	Tutwiler, James D	2463
Iller, Alfred J Jr	0886	Persons, George A	0480	Valz, Donald J	1523
*Johnsen, John L	2778	*Petracca, John M	2912	Vitello, Patrick A	1923
*Johnson, Harry W	2772	Phillips, Henry L	0738	Vogentanz, Peter G	2155
Jolley, Joseph D	1534	Pick, Rudolph	0849	*Wagner, Robert E	2850
Jones, Raymond L	1141	Plott, Thomas J	1421	Walton, William G	0239
Kelley, Norman D	2490	Pohly, Glenn W	2175	Watson, Harold T	0611
*Kelly, Edward V	2884	Poston, Robert E	1148	*Weihl, William L	2777
*Kelly, Thomas W	2905	Posz, Joseph D	2554	Welling, Gerald R	1130
Kemp, Donald T	1146	Powell, Ralph J	2520	Wells, Macon W	1826
*Kendrick, Floyd R	2879	Pritchard, Walter L	0599	Westerman, Ted G	2698
*Kirk, John M	2789	Provost, Leroy W Jr	0706	Whitehead, Wilbur T	0624
Klingman, Harold E	1553	Pulliam, Nathan M	2510	Wilke, Thomas W	2534
Krause, Hubert O	0710	* Secondary zone		Young, Eulse C	1543

BID THE SOLDIERS SHOOT

by SP4 Samuel B. Pierson

"Bid the Soldiers Shoot."
"Such a sight as this
Becomes the field, but here shows much amiss.
Go, bid the soldiers shoot."
—Fortinbras, Hamlet V. ii 412-414

It had been a sleepless night for First Lieutenant Richard O. Washburn. In fact, a sleepless weekend. Every night four important letters had been appearing and disappearing, haunting, tantalizing, disturbing. TCQC. Tank Commanders Qualification Course. TCQC. Tango Charlie Quebec Charlie. TCQC.

Under normal circumstances, 1LT Washburn was the model of composure and coolness. An ROTC graduate in '65, Dick Washburn had always excelled at everything he had tried. In college he had captained the swimming team, made the Dean's List four years running, and had been chosen as his ROTC unit's Distinguished Graduate.

But now all of this seemed to have been wasted. Now his Army career hung in the balance.

Or did it?

On the one hand, TCQC was merely a routine, annual Army exercise. Like a PT test or rifle qualification. On the other hand, for a young commander it was no less than a guillotine poised aloft. It contained the best and worst elements of the night before Christmas and a teenage boy's first date.

Dick Washburn inadvertently shook his head. It was all too chilling to think about. He knew how a rookie pitcher must feel in his first game. Or how the football coach feels before the big game. But pitchers and coaches always had one more chance. A loss today could be evened with a victory tomorrow.

But not so for a troop commander. If TCQC went

poorly, it would be a permanent blot on his military record. A millstone to be hung forever around the neck. Why, it was not unheard of for troop commanders to be relieved on the spot by overzealous squadron commanders.

TCQC. Tank Commanders Qualification Course. Tanks Capable, Quickly Captain. Tanks Crummy, Quickly Civilian.

Another shudder went down Dick Washburn's spine. Sure it would be fine to "take it all in stride." It would be great to relax and let the wheel of chance spin as it may. But Dick Washburn was different. To him it was important. To him—

"LT Washburn, sir! S-3 is on the phone. Something about one of our tanks!"

"LT Washburn speaking, sir. . . . Good mornin' Bob. Nervous? Why should I be nervous? Hell, we don't leave for Graf until tomorrow morning. Gives me almost 24 hours to prepare. . . . WHAT? Say that again, slowly. One-of-my-tanks-is-missing-from-the-vehicle-park. Now that's not very damn funny. If this is your idea of a joke—WHAT? ! Of course I haven't taken F-28 anyplace! Where would I take an M60A1 the day before TCQC? . . . Listen, there's got to be a simple explanation for this. I'll give you a ring back in a few minutes."

Dick Washburn could feel cold sweat breaking out. Of course there had to be a simple explanation for this. Tanks don't just disappear. Has to be a simple explanation.

"Top!"

1SG Archibald M. Cleaver quickly bustled into his commander's office. The beads of sweat on Cleaver's rather corpulent face indicated that he was not completely unaware of the problem. Now he stood there, like a child who has been caught raiding the forbidden cookie jar.

"Sir?"

"Top, do you know where F-28 is?"

"It should be in the park, sir."

"I *know* where it should be. I want to know where it *is*. Damn it, you're my first sergeant. You should know where it is. Tanks can't walk. Where-is-that-tank?"

For one of the few times in his life, Archie Cleaver was speechless. He stood there, wringing his hands together. One could see that the wheels were turning. His thought process, albeit a bit slow, was always quaintly precise.

"Maybe it's in one of the shops, sir."

"On the day before TCQC? Impossible."

"Perhaps it's still in the park? Just overlooked or something."

"Now how could anybody—I mean *anybody*—overlook several tons of tank?"

"I know! Somebody must have borrowed it. You know, sir, for a demonstration or something. Maybe —"

"Borrowed a tank?"

"Well maybe someone needed it. . . ."

"For what? A bookend?"

"No sir, not like that. But—"

"Top, please find that tank. It is very hard to do well in TCQC if you don't have a tank. Now I want us to do well in TCQC. You want us to do well. All of us want to do well. So please, Top, find out where F-28 is."

And as the slightly bewildered first sergeant exited, Dick Washburn sat back in his chair and lit a cigarette. The stench of the smoke made his eyes water. The short reverie was interrupted by a timid knock at the door.

"Come in."

Through bleary eyes Dick Washburn could see the short, stocky figure of SSG Thomas Gibbs. Perfunctorily Washburn returned the sergeant's crisp salute.

"Is it about the tank, Gibbs?"

"Tank? No sir, nothing wrong with my tank. Least not when I looked at 'er last. Ah, excuse me sir, in all due respect, sir do you *always* smoke that way?"

"Just what is wrong with the way I smoke?"

"Well, nothing, sir. Maybe it's just that I never tried smoking that way."

"*What* way, sergeant?"

"I mean smoking the filter like that. Sure smells funny, sir. But to each his own I always says."

A somewhat red-faced troop commander quickly extinguished his cigarette with a violent thrust into the ashtray. After a moment to regain his composure (and his vision), Washburn blinked his eyes several times and said:

"What is it that you wanted?"

"Sir, it's about my wife. You see, sir, she's due to have a baby."

"Congratulations, Sergeant. I'll see that you get a 3-day pass after TCQC. Now is that all?"

"Ah, no sir, not really. I was just talking to Doctor Derrick. He says that I should sort of stay back with my wife until she delivers."

"Now sergeant, you realize what tomorrow is. We can't allow anybody to stay back. As a tank commander, you especially will be needed every day."

"Sir, I, ah, —er realize that. But, well, the doctor ordered me to stay back. Our first baby. Me and my wife's, I mean."

"Sergeant, your wife is having the baby, not you. As I understand the process, you've done your part. Now it's up to your wife."

"Yes, sir. Well, sir. Here, sir, read this note from the doc."

Filled with an odd mixture of bewilderment and frustration, Dick Washburn took the proferred note from the NCO's trembling hand. *"Dick: Sorry to do this to you, old man, but I'm afraid that Gibbs stays back. It's their first child and there's the possibility of complications. Doctor's orders and all that. Fred."*

Well, that settled that. Dandy, just dandy. First a tank turns up missing. Now a tank commander must stay back. As Dickens would say, there are the best of times and the worst of times. After reassuring SSG Gibbs that he would not be held for treason, Washburn turned slowly to the morning report. As he read the report he could hear the sound of voices from the Orderly Room. Then a door slammed. How could he do his work without peace and quiet?

"Top!"

"Sorry for the noise, sir. Sir, it seems that PVT Downer is AWOL again. He missed bed check last night and nobody has seen him today."

"That's his third AWOL in the last month. I swear that that kid is going to be a 212 case before he's through. And the irony is that he's such a fine gunner—when he wants to be. . . . I guess you heard about SSG Gibbs?"

"Yes sir. It's too bad."

"Too bad?! It's practically sedition!"

"Sir?"

"Sedition. Treason? I mean that Gibbs is a career soldier. He should have known better than to have a baby during TCQC."

"Maybe he couldn't have helped it."

"Of course he could have helped it. All it takes is a little common sense and a calendar. Damn it, this is TCQC, not some KP detail!"

"Not to add to your troubles, Sir. But have you read the morning report? Rybacki is down with the mumps."

Cleaver suppressed a nervous giggle before he went on.

"Seems that his whole family came down with 'em, and now he's got the bug. Looks like a week of bed rest for him, sir."

And with that parting shot Cleaver trundled down the hall to attend to the more mundane matters at hand. Even Cleaver knew that it was best to leave the old man at times like these.

Rybacki. Gibbs. Downer. Even F-28. If it was not one thing, it was another! The immense burden of command responsibility began to grow on Dick Washburn's shoulders. For some reason he suddenly thought of that statue of Atlas standing in the middle of Rockefeller Center in New York. Both he and Atlas seemed to be bearing a burden; both he and Atlas were naked, out in the open, always in the presence of a hoard of unknowing onlookers. But Atlas' burden never changed. Dick Washburn's task seemed to grow heavier by the hour. Of his nine carefully trained, finely honed tank crews, but one was now complete. F-23 was without Sp5 Lopez—he was home on emergency leave. F-24. Without a gunner. F-25. No TC. F-26, deadlined by the mechanics. F-27 had burned out a motor on the way back from the training area. F-28 was AWOL. F-30's cohesion was now destroyed by the mumps. And F-31 was still up at the training area, waiting for surgeons to operate on it after its fight with a bad piece of HEP.

Even Snow White had seven Dwarfs. Even Job had four comforters. Even a damn bicycle had two wheels. But Dick Washburn now had one—count them—one tank.

How did Hitler feel after Stalingrad? Napoleon after Waterloo? Washington after Valley Forge? Why, how did the Dodgers feel after Bobby Thompson's home run?

Suddenly Dick Washburn knew how it felt to have the wheel of fate land on the house's number. For a long time he just stared out the frosted window at the gray, gray sky. The brisk November wind kicked up little piles of dust and scattered them high above the frozen earth. The ominous threat of snow hung heavily in the somber air. Here and there troopers could be seen wending their way across the parade field, pile caps pulled tightly over reddened ears. Occasionally the whine of a tank engine or the chug of a five ton. But even these sounds were quickly swept away by the ruthless wind. A heavy stillness abounded, a placid darkness, a frozen motionless, a gloomy aura of forboding. The lull before the storm.

For long, quiet minutes Dick Washburn silently cursed the gods. He cursed the weather; he cursed doctors and diseases, wives and mothers. What more could he have done? He had motivated his men—anyone could see that. He had trained them, trained them well. Given them leadership, the best leader-

ship he knew how. And had treated them with fairness and with patience, the way a father might treat a slightly backward child. Through his example and through his decisions he had seen his men mature, seen them grow from a loose bunch of individual soldiers into a united, motivated team.

And now what? What did he have to show for it? What did *they* have to show for it? Some commanders could point to the reenlistment rate. But F Troop's rate had dropped because men used to reenlist just to get away from the troop. Courts martial? F Troop's had stayed about the same because the the squadron commander seemed to take an almost preverse delight in handing Washburn the "tough" cases and the rehabs. "You can handle 'em, Dick. And if they give you some difficulty, figure that they just sort of belong in F Troop." Washburn always laughed pleasantly at this last remark, but deep inside he resented this hackneyed commentary on he and his men.

So it had all come down to TCQC. Last year F Troop had come within a whisker of failing TCQC. But this year it would have been different. They had wanted an evolutionary change toward the better; he had gotten them a revolutionary change. They had wanted improvement; he had set the stage for a miracle. For Dick it had all been a challenge, a chance, a call. Rags to riches. Cellar to pennant. Bottom to top. Like baseball's Philadelphia Whiz Kids, like horse racing's Citation, like a modern phoenix.

Now what? Now what the hell could he do? Go to the colonel, tell him all the things that had gone wrong. But the colonel had his own problems. Could he quit? Perhaps a graceful surrender in the face of total defeat is good military strategy. But to that idea all he could think of was an historical "Nuts!" What could he say? A pregnant wife, an AWOL, bad weather, an emergency leave, a case of the mumps. . . . Was this the stuff that wars were made of?

It was all too much to even think about. Somewhat akin to Goldfinger's remark to James Bond: "Once is happenstance. Twice is coincidence. But the third time is enemy action."

"Top!"

"Sir?"

"Get the troop together in the classroom for a meeting today at 1300. Everybody. Then write this down. Changes for TCQC. SGT Webb goes from F-28 to F-23. Put PFC Smith as a gunner on F-24. Roberts joins Wilson's crew. I want you to try and be TC on F-25. I know it's been a while for you, but we're in a bind. The rest of the changes we can make in the classroom. See what the men want to do.

"Next, get SSG Tarvinski to give a lecture in the classroom about the effects of adverse weather on tank gunnery. You know, how wind affects the rounds, snow glare, all that stuff. Then this afternoon get all the crews together someplace and let them talk to each other. Then let the whole troop off by 1500. Give 'em some time to think. . . . You got all that?"

"Yes sir! You know, it's been a long time since I brought a tank downrange. But I think that it might be fun trying it again. Once the love of armor gets in you, you just never seem to lose it. Know what I mean, sir? And sir? I think that F-28's come home to roost. Seems the crew took it up to the sports field to get used to the snow."

"Fine, SGT Cleaver, real fine. C'mon now, we got work to do. What do they say at Indianapolis before they start the 500? 'Gentlemen, start your engines.'? We've gotta get started!"

POSTSCRIPT:

The following article is from the *Stars & Stripes:*

RECORDS SET AT GRAF

Grafenwoehr—Three range records were broken yesterday and one was tied by Troop F of the 2d Squadron 12th Armored Cavalry Regiment.

Led by their commander CPT (then 1LT) Richard O. Washburn, the troop smashed all previous for gunnery proficiency on the Tank Commander's Qualification Course (TCQC). Commanded by LTC John P. Remington the squadron as a whole easily broke the record for tank qualifications.

Despite heavy snow and gale force winds, Troop F qualified nine tank crews on seven different tanks. Four of the nine qualifiers managed to top the old record for scores made on Range 42. And in an oddity, one of the record breaking crews was commanded by the troop's First Sergeant, Archibald M. Cleaver.

In ceremonies yesterday at Corey Barracks, newly-promoted CPT Washburn was cited for his "perseverence, leadership, and professionalism" by the Corps Commander, Lieutenant General Porter M. Wilson. CPT Washburn was presented an Army Commendation Medal for his achievements.

CPT Washburn leaves Germany next week to attend the Armor Officers Advanced Course at Fort Knox, Ky.

U. S. ARMY
ARMOR SCHOOL TRENDS

USMC LIAISON OFFICER

Lieutenant Colonel Vincent J. Gentile is now the USMC Liaison Officer at the Armor School. Upon graduation from Albright College, Lieutenant Colonel Gentile was commissioned a Second Lieutenant in 1952. After attending the basic school at Quantico, Virginia and the Associate Armor Officer Course at Fort Knox, Lieutenant Colonel Gentile served as a platoon leader from 1953 to 1954 with the 1st Marine Division in Korea. Then, after completing a three-year tour at Quantico's Officer Candidate School, he was assigned as an Inspector/Instructor with the 29th Rifle Company, USMCR, Buffalo, N. Y. Lieutenant Colonel Gentile has also served as a tank company commander with the 3d Marine Division in Okinawa, as Marine Corps Representative with the Navy Audit Officer at Camp Lejeune, and as a special projects officer with the Office of The Chief of Staff, at Headquarters Marine Corps in Washington. His last assignment was with the 1st Marine Division as a tank battalion executive officer and battalion commander and as Assistant Gl.

NCO PREP COURSE

The Armor School now makes available a correspondence course designed both for those who anticipate attending the Non-Commissioned Officer Candidate Course and for those junior NCO's who have not had the benefit of such formal military schooling. The cost-free course emphasizes practical matters such as fundamentals of counter-insurgency operations, unconventional warfare, survival, escape and evasion as well as the duties of the leader in conventional warfare and training situations. Further details are available from The Director, Nonresident Instruction, U. S. Army Armor School, Fort Knox, Ky. 40121.

BRITISH LIAISON OFFICER

Major David H. S. L. Maitland-Titterton, 9/12th Royal Lancers (Prince of Wales) is the United Kingdom's new liaison officer at the Armor School. A native of Exeter, England, and a graduate of Campbell College, Belfast, Northern Ireland, and the Royal Military Academy, Sandhurst, Major Maitland-Titterton served from 1955 to 1961 with his regiment as a troop leader in Germany, an intelligence officer in Cyprus, and a squadron 2IC (Second In Command) in Belfast, Northern Ireland. From 1961-63 he served as General Staff Officer 3 (Operations) with the 53d Division/District Headquarters, Glasgow, Scotland. From 1963-68, he again served with the 9/12th Lancers as 2IC and squadron leader.

FRENCH ARMY LIAISON OFFICER

The new Fench Army liaison officer to the Armor School, Major André Loussouarn, was born in Colombes, France and is a graduate of the Saint-Cyr Military Academy. He was commissioned in Armor in 1948, and attended the Armor Officer Basic Course at Saumur. He then served as a tank platoon leader in Speyer Germany until 1951. Later, he served in Indo-China both as an infantry platoon leader and as a tank platoon leader. In 1956 and 1957, he attended the Armor Officer Advanced Course and the French Staff College. During the Algerian Conflict, Major Loussouarn served in G3 and G2 Staff positions. He also commanded a horse cavalry troop and a tank company. From 1961-1968, he served in a variety of staff positions.

The Distinguished Service Cross for Armor Leaders

Captain Timothy J. Grogan was presented the Distinguished Service Cross by Major General James W. Sutherland, Jr., Commanding General of the Armor Center at Fort Knox, for his actions while serving as commander of an armor/infantry task force near An Bao, South Vietnam. His unit was Headquarters Company, 1st Battalion, 69th Armor, 4th Infantry Division. A 1963 graduate of West Point, CPT Grogan is now attending the Armor Officers Advanced Course.

The actions of Chief Warrant Officer Raymond A. Kerns as pilot of a scout helicopter merited him the award of the Distinguished Service Cross. Lieutenant General Andrew J. Boyle, V Corps commanding general, made the presentation to the pilot who is now serving with the 18th Aviation Battalion. At the time of the action CW2 Kerns was a member of Troop A, 1st Battalion, 9th Cavalry, 1st Cavalry Division (Airmobile) and was on an armed reconnaissance mission in Binh Thuan Province, Republic of Vietnam.

First Lieutenant Earl D. Greer was awarded the Distinguished Service Cross in Vietnam at the Cu Chi base camp by General Creighton W. Abrams, Commander of U.S. Forces in Vietnam. The award was presented for 1Lt Greer's exploits during a four-day action with the 2d Battalion, 34th Armor, 25th Infantry Division, near Tan Hoa.

Sergeant Jerry D. McAfee was awarded the Distinguished Service Cross for his actions while serving with the 11th Cavalry in Vietnam. Lieutenant General Jonathan O. Seaman, First U.S. Army commanding general made the presentation in ceremonies at Fort Meade. SGT McAfee is now a tank commander with Troop G, 6th Armored Cavalry Regiment.

How Would You Do It?

US ARMY ARMOR SCHOOL PRESENTATION

SITUATION

Your task force communication officer, a Signal Corps officer, has been evacuated to the field hospital. You have been assigned to take over his job. The task force has been speadheading a pursuit behind enemy lines. The CP and combat trains have just moved into a small village and the teams are dispersed around the village. Due to a critical shortage of fuel and ammunition, the task force has been ordered to consolidate and hold its present positions until resupply can be accomplished. Poor weather precludes aerial resupply. The S4 estimates it will take from 24 to 48 hours for the resupply to be accomplished. The task force commander orders his teams to hold in place and directs that his CP be set up in the village.

AUTHOR: CPT JEROME F. BALDA

PROBLEM

The task force commander gives you the following guidance:

"Due to the critical shortage of fuel I want only one FM radio per team operational at any one time. Within the CP I want one radio on the Brigade Command FM net and the Battalion Command FM net and one on the Brigade Command AM net. The S3 track can handle these nets. I want maximum usage of wire within the CP. I do not want wire laid to the teams because of enemy guerrilla activity and pockets of resistance. I want you to come up with a system that will give all my staff officers quick and direct access to our operational FM nets and at the same time maintain our present dispersion. Give me your recommendations in 30 minutes. Do you have any question?"

ILLUSTRATOR: PFC DUANE YEAGER

Solutions

There are several practical solutions to the problem using the established radio and wire communications in the task force in conjunction with the radio communication between task force and brigade.

1. An easy method uses the wire and radio systems with the radio operator acting as a relay. He could receive a message over the telephone and then transmit the message over the radio to the addressee. The reverse procedure would be used for incoming radio messages. Although this is a workable solution, it does not meet the needed characteristic of speed and the system is subject to inaccuracies through the additional transmissions required to send a given message.

2. A good method employs the use of the existing radio and wire nets in conjunction with a Radio Set Control Group AN/GRA-39 in a radio wire integration (RWI) system as illustrated in figure 1.

a. The steps for the installation of this system are as follows:

(1) Attach the connected cable and plug of your local unit to the Retransmit R/W audio connector on your receiver/transmitter. Batteries are already installed in the local and remote units.

(2) Run WD-1/TT field wire from the top binding post on your local unit to the bottom binding post of your remote unit.

(3) Run WD-1/TT field wire from the bottom binding post of your local unit to the top binding post of the line pack in the SB-22/PT designated for the RWI system.

(4) Run WD-1/TT field wire from the top binding post of your remote unit to the bottom binding post of the line pack in the SB-22/PT designated for the RWI system.

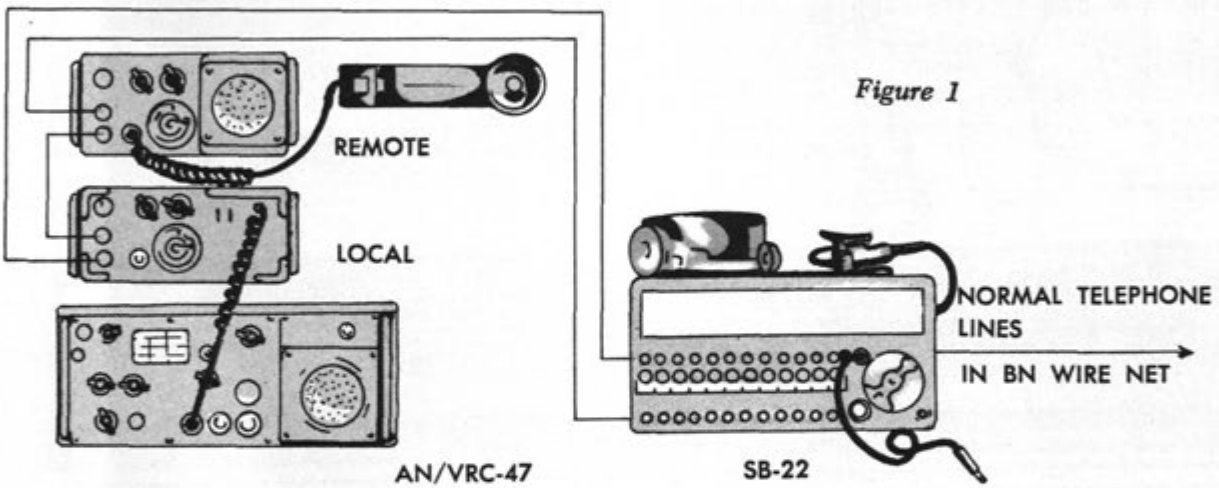


Figure 1

Note. The user's TA-312 should not be more than 2 wire miles from the radio set due to signal losses beyond this range.

(5) Attach the handset H-138/U to the audio connector on your remote unit.

b. The radio operator becomes the RWI operator under this system. A staff officer desiring to use the radio calls the switchboard operator, using his TA-312 telephone and asks for RWI. When the RWI operator answers, the staff officer will ask for the desired net; in this case either the Brigade Command FM net or Task Force Command FM net. The RWI operator checks to ensure he has the correct frequency and then informs the requesting staff officer that his next transmission will be over the radio and that he must use correct radiotelephone procedures. The staff officer then waits approximately 3 seconds to allow the operator to key the radio set. The RWI operator must key the set (in order to let the staff officer transmit over the radio) by depressing the press-to-talk switch on the handset H-138/U attached to his remote

Solutions cont'd

unit. When the staff officer says OVER, the operator must release his switch to allow reception of the incoming response. This procedure is continued until one of the parties gives an OUT.

c. This is a good, workable solution however, it does require an operator to continuously monitor all RWI calls and smooth operation of the systems requires well oriented, well trained personnel.

3. A better method of RWI to use is basically the same as that described above with the addition of a special purpose cable. This system is illustrated in figure 2.

The installation of this system is identical with that shown in figure 1 except for installing the special purpose cable. This cable is nothing more than a salvage cord from a handset H-138/U with the "A" (ground) and "C" (radio pin) conductors stripped on the ends. (See figure 3.) Attach the cable to the remote unit and then attach your "A" conductor to the bottom binding post on the local unit and the "C" conductor to the top binding post on the remote unit. This cable allows the radio set to be keyed by the press-to-talk switch on the telephone set TA-312/PT, thereby relieving the radio operator of this requirement. All the radio operator has to do now is ensure that his radio is on the proper frequency and remind the user that he should use correct radiotelephone procedures. Correct installation of the field wire and special purpose cable as shown in figure 2 is essential to proper operation because of polarity.

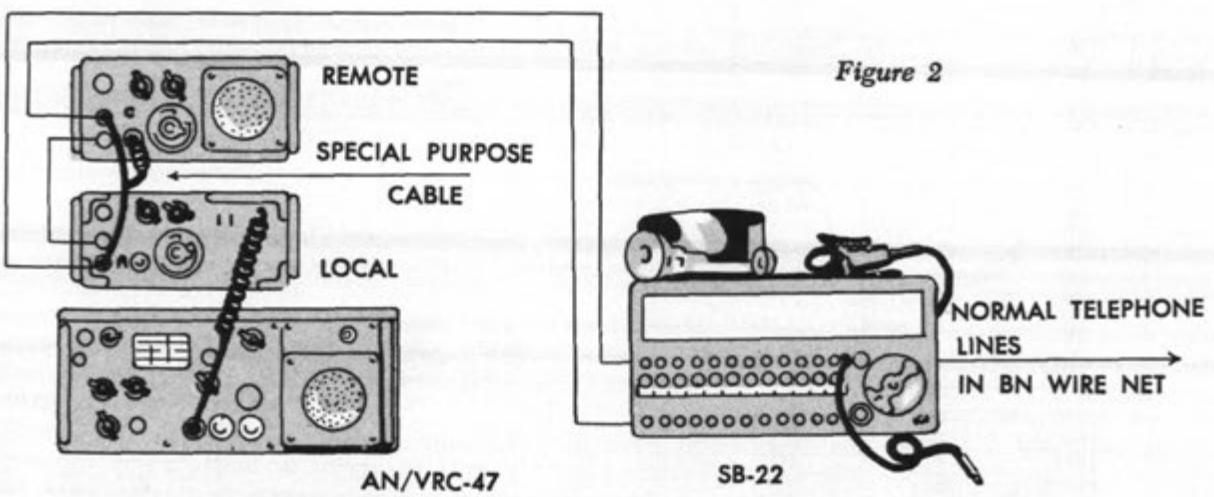


Figure 2

Note. User's TA-312 should not be more than 2 wire miles from the radio set due to signal losses beyond this range.

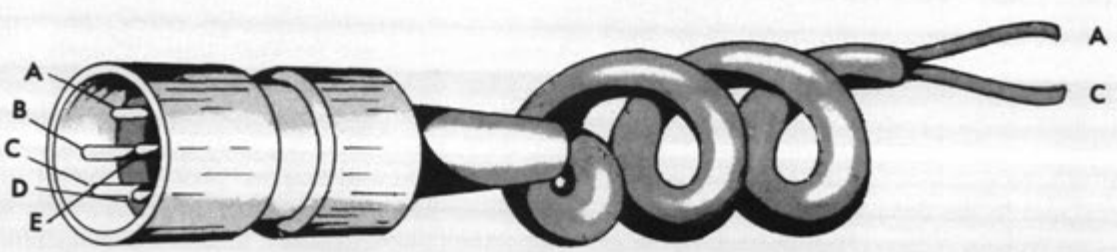


Figure 3

NEWS NOTES

GOVERNOR REAGAN HONORS THE UNITED STATES ARMOR BRANCH

The Honorable Ronald Reagan, Governor of California, proclaimed 12 December 1968 as United States Army Armor Day and urged all Californians to observe appropriate ceremonies honoring the men, past, present and future of the United States Armor.

Among those present for the proclamation signing ceremonies were Major General Glenn C. Ames, Commanding General of the State Military Forces and Brigadier General Thomas K. Turnage, Deputy Adjutant General for Army and member of the United States Armor Association Executive Council.

Governor Reagan is no stranger to the Armor Branch, having served during World War II as an officer in the United States Cavalry, Armor's predecessor.

At the conclusion of the signing ceremonies, BG Turnage presented the Governor with membership in the U. S. Armor Association, a copy of ARMOR Magazine, and a letter of welcome from General John K. Waters, Association President.

General Ames, on behalf of the State Military Department, presented the Governor prints of a mounted Cavalry officer and of "Old Bill," the symbol of mobile warfare, both works by Frederic Remington.

LTC Herbert R. Temple, the Governor's military aide, then concluded the ceremony by reading a message from General Bruce Palmer, Jr., Vice Chief of Staff of the United States Army, which stated: "On behalf of General Westmoreland and myself, please accept best wishes on becoming a member of the Armor Association." The message cited Governor Reagan's Cavalry service, his interest and enthusiasm in supporting the United States Army, and his concern for those who are serving in Vietnam and "have placed duty above self." It concluded: "As Vice President of the Armor Association, I am delighted to be among the first to welcome you 'back' to Armor and the United States Army."

Governor Reagan receives "Old Bill" from MG Ames, Commanding General of the State Military Forces. Below, Governor's proclamation.

Executive Department
State of California

PROCLAMATION

WHEREAS On December 12, 1776, the United States Army Cavalry was created by a resolution of the Continental Congress; and

WHEREAS The Army Organization Act of 1950 provided that "The Armor shall be a continuation of the Cavalry"; and

WHEREAS Armor, as the continuation of Cavalry, retains the heritage, honors and history of the Cavalry Branch; and

WHEREAS Throughout the history of our country, the men of Armor and its predecessor Cavalry whether on the plains of Kansas, on the deserts of North Africa, or in the jungles of Vietnam, have distinguished themselves by their skill and valor in combat; and

WHEREAS Armor and its predecessor Cavalry is known as the Army of Mobile Warfare, earning the right to be called "The Combat Arm of Decision" through the military characteristics of mobility, firepower and shock effect; and

WHEREAS Cavalry, the horse mounted soldier, played a significant role in the conquest of California in 1846-47, and in the protection of California's citizens and settlements thereafter during the pioneer period of our Golden State;

NOW THEREFORE, I, RONALD REAGAN, GOVERNOR OF CALIFORNIA, do hereby proclaim December 12, 1968 as U.S. ARMY ARMOR (CAVALRY) DAY, urging all Californians to observe appropriate ceremonies honoring the men, past, present and future of the United States Army Armor, formerly the Cavalry.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of California to be affixed here this 12th day of December, One Thousand Nine Hundred Sixty Eight.

Ronald Reagan
Governor

Secretary of State

by
Deputy Secretary of State

4th ARMORED DIVISION HAS NEW COMMANDER

MG Stephen W. Downey Jr. became the 20th commanding general of the 4th Armored Division in a 3 December ceremony at Cooke Barracks, Goeppingen, Germany, as he received the division standards from MG E. C. D. Scherrer. In command since May 1967, General Scherrer has been reassigned as Chief, Joint United States Military Mission for Aid to Turkey in Ankara. MG Downey is with the 4th Armored Division for the second time. As a colonel in 1961-62 he was commander of the former Combat Command A.

MG Scherrer was awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding services" during his command. In bidding farewell, he said: "You men have been tremendous. . . . Throughout, you have performed in accordance with our motto, 'They shall be known by their deeds alone.' "

MG Downey came to the 4th Armored Division following an assignment as Director of Procurement and Distribution in the Office of the Deputy Chief of Staff for Personnel in the Pentagon.

An ROTC honor graduate of Stanford University, General Downey was commissioned a Regular Army second lieutenant of cavalry in 1939. During World War II, he first served with the 33d Infantry Division and then in Sixth Army headquarters, participating in the New Guinea, Admiralties, Leyte and Luzon campaigns. From 1947 to 1950 he was with the War Department General Staff and then in the Office of the Army Chief of Staff. General Downey served in SHAPE from 1958 until 1964 except for the period during 1961-62 when he was with the 4th Armored Division. In 1964 he became assistant division commander of the 2d Armored Division at Fort Hood. Following that assignment, during 1966 and 1967, he was with the U.S. Army Combat Developments Command at Fort Belvoir.

FORT HOOD RECOGNIZES A HERO

A sergeant, whose heroism exemplified that long line of American gunners who have insured victory in many of the Nation's most perilous battles, received a hero's welcome when he returned to Fort Hood after he was presented the Medal of Honor by the President of the United States.

SGT Sammy Lee Davis was greeted by LTG Beverley E. Powell, III Corps and Fort Hood commanding general and MG Leonard C. Shea, 2d Armored Division commanding general. Later, with Generals Powell and Shea, SGT Davis inspected the honor guard led by First Sergeant William J. Heidbreder Jr. of the 5th Battalion, 14th Field Artillery.

Earlier in the week, Indiana Governor Roger Brannigan presented him with the flag of his home state. SGT Davis was also an honored guest on the Ed Sullivan show in New York.

The Medal of Honor citation described how SGT Davis, then a member of Battery C, 2d Battalion, 4th Field Artillery, 9th Infantry Division, wounded and alone after being left for dead, continued firing his 105mm gun and his M16 rifle until all ammunition was exhausted. Then, despite his serious wounds, he helped to rescue three wounded infantrymen who were separated from the main American position by a canal. His example inspired others to continue to victory in an unequal fight between a VC battalion and an isolated American fire base.

SGT Davis is now assigned to the 2d Armored Division's 6th Battalion, 92d Field Artillery, commanded by LTC John J. Churchill.

ARMOR AND CAVALRY PAST REMEMBERED AT FORT MEADE

As could well be expected, a cavalry unit that has participated in 26 major campaigns in a dozen different countries and has amassed 104 years of active service in the U.S. Army, is justly proud of its history. To show the highlights of this outstanding history, the Sixth Armored Cavalry Honors Museum has been established at Fort George G. Meade, Maryland. In the museum is an extensive collection of Fighting Sixth historical items, mementos and documents, many of which are on loan from collectors across the nation. When one is in the Fort Meade area, it is well worthwhile to stop to see this fine Armor regimental museum.

PHOTO: ALBERT L. LIPSCHULTZ

The 12th Armored Division Association has presented a plaque in memory of the unknown of World War II to the Tomb of the Unknowns in Arlington National Cemetery. The Association president, Robert H. Saehloff of Kingston, N. Y., presented the plaque on behalf of the association members and placed a wreath before the Tomb. After the wreath-laying ceremony, the presentation party gathered in the trophy room behind the Tomb to place the plaque in a display case. Included were (left to right): Robert H. Saehloff, Association president; John V. Clark, 56th Armored Infantry Battalion unit representative; MG Carlos Brewer, former division commander; MG Charles V. Bromley, former commander of Combat Command B; former division commanders MG Roderick R. Allen and BG Williard A. Holbrook, Jr.; former aide to General Allen, COL Frank R. Pagnotta; BG Sherburne Wipple, Jr., former commander of the 92d Cavalry Reconnaissance Squadron; and Stephen J. Czecha, representing the 66th A.I.B. The 12th Division Association plaque joins those of the 1st, 2d, 3d, 4th, 5th, 6th, 7th and 10th Armored divisions.

BRAVE RIFLES WELCOMES 51st COMMANDER

At a 3 December ceremony, marking his assumption of command, COL Sidney Hack received the 3d Armored Cavalry Regiment's standard from MG William W. Beverley, Fort Lewis Commanding General. Outgoing regimental commander COL G. V. Reberry, who has been assigned to the Military Advisory Command in Vietnam, received the Legion of Merit for his exceptionally meritorious service in command of the regiment in Germany and at Fort Lewis.

COL Hack enlisted in the Regular Army in 1941 and served in the Pacific Theater before attending OCS in 1943. During World War II, he was a platoon leader and tank company commander in the 47th Tank Battalion, 14th Armored Division in the European Theater. Subsequently, he commanded a tank company in the 14th Armored Cavalry Regiment and the 3d Battalion, 32d Armor, 3d Armored Division, both in Germany. His other assignments include service with the Staff and Faculty of the Armor School, MAAG, Vietnam, the Joint Chiefs of Staff, U.S. Army Combat Developments Command Headquarters, and Headquarters, U.S. Army Europe.

COL Thomas Dooley (left), Armor Center Chief of Staff, and COL Ace L. Waters, Jr., Assistant Chief of Staff, G3, examine the saber and personal flag used by the late MG Guy Vernor Henry when he was Chief of Cavalry. Above these is the memento marking fifty years of active Army service presented to MG Henry by then President Truman in a 1947 ceremony at the White House (See ARMOR Jan-Feb 1965 and Jan-Feb 1968). These items are among the memorabilia in the recently dedicated Henry House at Fort Knox. Henry House is the quarters for dignitaries visiting the Home of Armor.

1st ARMORED DIVISION SIGNAL BATTALION WINS CLARKE AWARD

The achievements of the men of the 141st Signal Battalion, commanded by LTC William A. Lancaster, were recently recognized when GEN Bruce C. Clarke, USA-Ret., personally presented the award that bears his name. The 1st Armored Division award is granted to the unit using the most effective training procedures and techniques while also making the greatest contribution to the division. Established in 1966, the award commemorates the service of GEN Clarke as a pioneer member and former commander of "Old Ironsides." Previous winners were the 16th Engineer Battalion and the 3d Battalion, 19th Artillery.

While at Fort Hood, GEN Clarke, author of "Guidelines for the Leader and the Commander," spoke to the senior Old Ironsides NCOs at a luncheon given them in his honor. GEN Clarke noted that "a new wave of professionalism, strengthened by personnel who work to increase their education, will permeate the military as it moves forward."

NEW BRIDGE TESTED

Production tests have begun on the new assault bridge mounted on the M113 APC (See ARMOR Jan-Feb 1968, News Notes). A total of 29 units have been ordered. Five of these will be used for research and development evaluations. The remainder will be tested in the rice paddies and swamps of Vietnam.

The folding bridge is carried in a retracted position on the carrier and can, without exposure of personnel, be emplaced hydraulically in less than two minutes. After manual hook-up of two hydraulic connections, the bridge can be retrieved by reversing the launching procedure. In addition, it can be launched or retrieved from either end.

The weldable aluminum alloy bridge is capable of supporting 15-ton loads over spans of up to 33 feet. It weighs 2700 pounds and can be emplaced where heavier equipment would bog down. The carrier, with bridge, has the same swim capability and 3.5 mph water speed as an unmodified APC. Both bridge launching and folding mechanisms include major units of lightweight aluminum.

The bridge was designed, and the first prototype was built, at the U.S. Army Mobility Equipment Research and Development Center at Fort Belvoir. The 29 production units are being fabricated by the Unit Rig and Equipment Company of Tulsa, Oklahoma.

WHAT THOSE WHO WERE THERE MIGHT SAY

"I was there too" is often all you hear from those who have taken part in historically significant events, but who believe that their role was not an important one. Now the U. S. Army is looking for the relatively unknown who were there when it happened. The famous will not be ignored, but particular attention will be paid to the less well known who nonetheless have important personal knowledge concerning military events of the past.

The U.S. Army Chief of Information is compiling a list of names to present to "American Heritage" magazine as possible subjects for the magazine's new interview series, called "Before the Colors Fade." Anyone may suggest the names of persons connected in some way with significant military events. Suggestions should include the name and address of the subject and a brief outline showing why the individual has an interesting story to tell. The suggestion, with the sender's name, address and telephone number, should be sent to the Office, Chief of Information, Public Information Division, Washington, D.C. 20310.

M551 SHERIDAN TESTS ARE USER ORIENTED

The M551 Sheridan Armored Reconnaissance/ Airborne Assault vehicle underwent thorough testing during November and December 1968 to check how well it fits the needs of the ultimate user—the average armored vehicle crew. Tests took place at Fort Riley, Kansas and Fort Stewart, Georgia. The 1st Battalion (Light), 63d Armor of the 1st Infantry Division (currently attached to the 24th Infantry Division) was the test unit. The battalion is commanded by LTC Louis C. Wagner. The tests were directed by MG Linton S. Boatwright, Commanding General of the 24th Infantry Division. Deputy Test Director was COL George E. Kimball, on temporary duty from the Armor School at Fort Knox for the U.S. Army Combat Developments Command (CDC) troop tests.

An important feature of the tests was a survey of the user's viewpoint of M551 maintainability and of the weapons system. CDC testers looked for realistic user opinions about the time needed to load, sense rounds, and adjust fire. Maintenance features and procedures were scrutinized thoroughly. Crew opinion was also sought on living with the M551 by the book to see if the book did the job.

The book was CDC's field manual together with the TOE.

Parts of the test program evaluated the M551 in simulated engagements in Western Europe and in Southeast Asia. Other tests measured system effectiveness in a conventional non-nuclear environment. Related tests are proceeding in Alaska.

In platoon firing exercises, both stationary and moving targets were engaged by the M551's .50 caliber and 7.62 machineguns as well as by the Shillelagh guided missiles and by conventional ammunition fired from the vehicle's 152mm gun tube. The Sheridan's conventional round is unique in the present Army munitions inventory since it has a cartridge case that is self-consuming. Thus there are no leftover shell casings to clutter up the fighting compartment during intensive firing.

During the tests, CDC also evaluated gun safety devices such as the compressed air Bore Scavenging System. Two air bottles, that look like fire extinguishers tucked into the crew compartment, make up the scavenger. Each of these blows seven cubic feet of compressed air at 650 pounds per square inch down the 152mm gun tube after each round is fired.

The air blast clears the tube of any residue left by the combustible cartridge. This action causes a peculiar streak of gray smoke and hiss sound to be emitted from the tube after firing. The scavenger is reinforced by an air compressor that self-starts after a few rounds have been fired. However, 24 rounds can be fired in rapid succession without the compressor. A recent improvement on the scavenger keeps the breech closed until after the compressed air has been swirled through both breech and tube. This eliminates the chance of residue falling into the crew compartment.

In another safety move, the round and crew have been protected by packaging the conventional ammunition in neoprene (a black rubber compound) and in white nine-ply nylon. The first keeps moisture out while the latter gives ballistic protection preventing any chance of premature detonation of the round. These two layers of "overalls" are easily peeled off by the loader as the round goes into the tube. Tests have shown that the peeling takes little time and does not hamper rapid firing.

In addition, the Sheridan's various night vision devices such as infra-red, searchlight and starlight scope were looked at carefully in night runthroughs. The starlight scope is an image-intensifier using existing natural light and has the advantage of being undetectable by the enemy.

The results of the integrated field tests of the M551, the doctrine for its employment and unit organization will be used by CDC to finalize the structure and doctrine for the light armor battalion.

NEW TANKERS LEARN WHERE IT HAPPENS

New tankers of the 1st Training Brigade, USATCA, now receive six challenging days of field tactical training during the sixth week of their eight week Advanced Individual Training. This new program was started by COL Charles R. Gorder, brigade commander, who wants to prepare the new soldier for immediate service in any of the many Armor units scattered throughout the world. The specific program was developed in the S3 section headed by MAJ Richard G. Parker.

The first four days in the field are devoted to firing exercises with concurrent training in listening and observation, dismounted patrolling, armor tactics and occupation of assembly areas. On the remaining two days the Aggressors appear and the training situation changes rapidly through taking offensive action, moving into both blocking positions and night assembly areas, laying and probing for mines, conducting road security operations and reconnaissance patrolling. The trainees also face a full-scale night attack on their laager position and encounter Aggressor mines and ambushes.

A ONCE MIGHTY MASCOT

Many mascots growl, some snarl, and a few even cluck, but the mascot of Company M, 2d Armored Cavalry Regiment purrs, coughs and, at one time, thundered. This cavalry unit's mascot is an 18-ton M24 Chaffee tank.

Nicknamed "Mighty-Mite," this tank carries the guidon of M Company and leads the company's armored column to and from the Grafenwoehr training area. Driver of the tank is SFC Arthur Wicks, who says that it took two months of off-duty time to get the tank running. He and another unit tank commander, Specialist 5 Roland Hayes, together attempted to restore the tank as "original throughout."

Powered by a pair of side-by-side Cadillac V8 engines, M24 tanks appeared in battle during the closing days of World War II. The M24 was later used successfully by the Americans in Korea and the French in Vietnam. Over 25 countries were to employ it in their armies. The 75mm main gun, however, is no longer powerful enough to oppose today's main battle tanks. Still, the M24 is a proud mascot to a modern charging armored force.

1969 ARMOR UNIT REUNIONS

1st Armored Division: 21-24 August, Philadelphia
John W. McNutt,
12 Greymore, Chesterfield, Mo. 63017

2d Armored Division: 1-3 August, New Orleans
Colonel R. F. Perry,
PO Box 8116, Wainwright Station, San Antonio, Tex. 78208

3d Armored Division: 24-26 July, Detroit
Paul W. Corrigan,
38 Exchange St., Lynn, Mass. 01901

4th Armored Division: 17-19 July, Niagara Falls, Canada
Lieutenant Colonel Risden L. Fountain,
4414 Volta Pl. N.W., Washington, D.C. 20007

5th Armored Division: 14-16 August, Louisville
Mrs. Claire E. Watrous,
8549 Lowell St., St. Louis, Mo. 63147

6th Armored Division: 23-26 July, Pittsburg
Edward F. Reed,
Box 492, Louisville, Ky. 40201

7th Armored Division: 14-16 August, Miami
Irving Osias,
147-28 72d Road, Flushing, N.Y. 11367

10th Armored Division: 29 August-1 September, Baltimore
Jack Garrity,
1010 Sunset Drive, Somerdale, N.J. 08867

11th Armored Division: 12-16 August, Philadelphia
Ray S. Buch,
Box 108, Pittstown, N.J. 08867

12th Armored Division: 31 July-2 August, Cleveland
Harrold J. Hendricks,
Box 13, Skokie, Ill. 60076

14th Armored Division: 25-27 July, Chicago
John B. Williams,
6036 Christian St., Philadelphia, Pa. 19143

16th Armored Division: 8-10 August, New Haven
Lester Bennett,
5820 Recamper Drive, Toledo, Ohio 43613

1st Cavalry Division: 22-24 August, Columbus, Ga.
COL Alfred E. Stevens,
PO Box 11201, Albuquerque, N.M. 87112

2d Cavalry: 26-28 September, Jackson, Michigan
MAJ Louis T. Holtz,
726 Mancill Road, Strafford, Pa. 19087

HET70 TO APPEAR SOON

Chrysler Corporation Defense Operations Division has received a contract from the U.S. Army to produce 200 semi-trailers for the U.S./West German heavy equipment transporter (HET70). (ARMOR Nov-Dec 67 and Nov-Dec 68.) Assembly of the semi-trailers will be carried out in the Chrysler-operated Detroit Tank Plant in Warren, Michigan. The first semi-trailer units are scheduled to be turned over to the Army next summer. Among HET's many features is the capability to stay within the 25,000 pound axle load limitations of most major U.S. highways. Its 4-inch high flat bed semi-trailer can be raised and lowered pneumatically to reduce the turning radius and permit tire changes without jacking.

THE TARPAULIN

Covers a bit of everything gleaned from the service press, information releases, etc. Contributions are earnestly sought.

TAKE COMMAND

MG E. C. D. Scherrer, Chief JUSMMAT, Turkey. . . . **COL Hyrum Dallinga,** U.S. Army Personnel Center, Ft. Lewis. . . . **COL Charles B. Hazeltine, Jr,** Commander, CDC Institute of Systems Analysis. . . . **LTC George L. Bernard,** 4th Bn, 1st Bde, USATCA. . . . **LTC George R. Crook,** 7th Sqdn, 1st Cav, Vietnam. . . . **LTC William W. De Loach,** 2d Sqdn, 17th Cav, 101st Abn Div. . . . **LTC Theodore O. Gregory,** FA, 3d Bn, 19th Arty, 1st Armd Div. . . . **LTC Merritt W. Ireland,** 1st Sqdn, 11th Armd Cav Regt. . . . **LTC Robert S. McGowan** 3d Sqdn, 4th Cav, 25th Inf Div. . . . **LTC John W. McKelvey,** Infantry, First U.S. Army NCO Academy, Ft. Knox. . . . **LTC Carmelo P. Milia,** 1st Bn, 77th Armor, 1st Bde, 5th Inf Div, Vietnam. . . . **LTC Robert M. Reuter,** 7th Sqdn, 17th Cav, Vietnam. . . . **LTC William C. Rousse,** 1st Sqdn, 9th Cav, 1st Cav Div. . . . **LTC Stan R. Sheridan,** 1st Bn, 69th Armor, Vietnam. . . . **LTC William T. Tanner, Jr,** 4th Bn, 73d Armor, Ft. Ord. . . . **LTC Thomas A. Tullar,** 1st Bn, 66th Armor, 2d Armd Div. . . . **LTC Howard C. Walters, Jr,** 4th Bn, 64th Armor, 3d Inf Div. . . . **LTC Kenneth H. White, Jr,** 3d Bn, 77th Armor, 5th Inf Div. . . .**LTC Richard J. Woolshlager,** 2d Sqdn, 3d Armd Cav Regt. . . . **CSM Malcolm Carden,** 10th Bn, 5th Bde, USATCA. . . . **CSM Max E. Daniels,** 1st Armd Div. . . . **CSM Herbert L. Eaglin,** Spt Comd, 2d Armd Div. . . . **CSM Jack D. McNabb,** Div Arty, 1st Armd Div.

ASSIGNED

BG Wallace L. Clement, ADC Americal Div. . . . **BG Melvin A. Goers,** ROTC Dirctorate, CONARC. . . . **BG Richard L. Irby,** Deputy CG, Fort Lewis. . . . **BG Albin F. Irzyk,** ADC, 4th Inf Div. . . . **COL Stanley P. Hidalgo,** Deputy Chief of Staff and Secretary of the General Staff, Army Materiel Command. . . . **COL Donald A. Kersting,** Dep CS, USA Armor Center. . . . **COL Ace L. Waters, Jr,** G3, USA Armor Center. . . . **LTC Robert C. Diehl,** CS, USATC, Ft. Bragg. . . . **LTC Charles E. Kirtley,** MPC, Provost Marshal, 1st Armd Div.

VICTORIOUS

Co B, 124th Maint Bn, 4th Armd Div won the Big M award as best maintenance unit in Seventh Army. . . . Hell on Wheels annual tank gunnery awards went to **2d Bn, 66th Armor** (LTC Harvey B. Johns, Jr.); **Co C, 2d Bn, 66th Armor; 2d Plat, Co C, 1st Bn, 67th Armor;** and to **Tank 11, 1st Plt, Co A, 1st Bn, 66th Armor** (SFC Sherrod W. Gibson).

AND SO ON

United Nations Day found the **1st Armd Div** with 110 friendly alien soldiers from 27 nations assigned. . . . **4th Sqdn, 12th Cav, 5th Inf Div** mounted a patrol on horses to raid successfully the CP of the 69th Inf Bde during a recent operational readiness test at Fort Carson. . . . Veterans of the **70th Tank Battalion** (now the 70th Armor), activated at Ft. George G. Meade in 1940, have presented one of 18 new stained glass windows in the post chapel. The window memorializes the departed members of a unit which distinguished itself in World War II and Korea. . . . A highlight of the Army Aviation Association of America Annual Meeting in Washington, D.C. was the presentation "Air Cavalry and Its Role in Mounted Combat—Today and Tomorrow" made by **MG James W. Sutherland, Jr, LTC Robert H. Nevins, Jr, MAJ Charles V. Wollerton** and **CPT Hubert H. Chole.** This dynamic symposium made it crystal clear that "Air cavalry is a first stringer on the Armor Team" as aptly stated by MG Sutherland. . . . **Larry W. McCabe,** Co A, 25th Avn Bn, 25th Inf Div, went from WO1 to CW2 to 2LT in nine days. The newly commissioned Armor aviator is now headed for the AOB course at Fort Knox. . . . **CPT Richard H. Goldsmith** took command of his father's former troop, C of the Fighting Sixth, recently. In 1948-49, while a captain, the senior Goldsmith (LTC Howard F. Goldsmith, USA-Ret) led the troop which was then part of the U.S. Constabulary in the occupation of Germany. . . . Of 13 Army wives receiving awards at a Military District of Washington Army Community Services ceremony, five were Armor ladies—**Mesdames John C. Burney, Jr** (ARMOR artist **Mary Burney**), **Franklin M. Davis, Jr, Stephen O. Edwards, George S. Patton** and **John G. Wheelock.**

CUPS OF VALOR

Sketch by Peter F. Copeland from CUPS OF VALOR © 1968 Stackpole Books

By N. E. Beveridge. Stackpole Books, Harrisburg. 106 pp. Illustrations. **$6.95**

How the American soldier from Revolution to Vietnam fared in barrack, bivouac and battlefield, how he dressed, what he ate, and the weapons he used, have all been well chronicled. But the traditional and imaginative libations which eased the rigors of his campaigns and were indispensable to the exultation of victories have received scant attention from military historians. Now, under an appropriate *nom de plume*, an obviously gifted and erudite historian has filled that gap with a rollicking, yet authoritative, book which not only recounts the geneses of these historical concoctions—many of them lasting tributes to the resourcefulness of the American soldier—but also thoughtfully provides authentic recipes for the curious, courageous, or thirsty.

From the rum and hard cider of the Green Mountain Boys—(I started testing selected recipes with this one but after three retests and corresponding days lost in writing this review, my wife made me quit.)—to a WWII Marine's mixture of rice wine and Jap aviation fuel, this brief anecdotal history of military drinking presents some of the more (in) famous libations against a well written and accurate historical backdrop. Some are well known, grand old drinks—hot buttered run, Fish House punch, French 75—others read like the inventions of a mad scientist (or thirsty soldier)—Gin Horror, Jungle Juice, and a revolting brew allegedly passed off as artillery punch to fledgling gunners at the Fort Sill Officers' Club. The latter appears sufficient justification for gunners young and old to transfer to the Cavalry, and its sacrilegious appellation would seem to warrant replacement of the Club Officer if not the Commandant.

As with any anthology—poetry or punch recipes—readers will promptly note the omission of some of their favorites. This aged imbiber of martial refreshments noted the absence of the historic First Artillery Punch and that stalwart potion of the 6th Infantry prepared by mixing a bottle each of spirits representative of the regiment's battle honors—Canadian whisky for 1812, tequila for Mexican, bourbon for Civil War, rum for Cuba, Cognac for WWI, and so on with a few other additions to lend historical body.

CUPS OF VALOR is a truly delightful little book, appropriately illustrated with amusing pen and ink sketches, well indexed and cross indexed, whose appearance might well solve the problem of a gift for the man who has everything.

M. T. Bottle

The reviewer is no mean military historian himself. A true man of mobile warfare, he has commanded armored units up to and including a division. Together, these qualifications seemed to us to suit him well for the precarious task of reviewing what we found in our preliminary evaluations to be a volume of more than passing interest to the thoroughgoing scholar of things martial. THE EDITOR.

The War To End All Wars

THE AMERICAN MILITARY EXPERIENCE IN WORLD WAR I.

by Edward M. Coffman. Oxford University Press. 412 pp. 1968. **$9.75**

In the war which was to end all wars, the United States mobilized, organized, trained, and helped supply military forces large enough to provide the balance of victory for the embattled Allies in Europe. Doctor Coffman, Associate Professor of History at the University of Wisconsin, has written what is undoubtedly the best single account of that effort yet to appear. Thoroughly and meticulously researched, fleshed out with extensive personal interviews, it describes the organization and planning, the mobilization and support, the decisions and the carrying out of decisions, in terms of men in government and men in trenches who were participants in this great event. With remarkable balance and perspective, Coffman moves from Washington to Allied War Council to battalion and regimental command post, preserving at each level the essential flavor of events. Logistics support of the armies, the air service, the Negro soldier's participation—normally lightly touched facets of general histories of the war, are skilfully joined with descriptions of top level controversies over strategy, employment of American troops, and the personal relationships between Pershing, Chief of Staff Peyton C. March, and Secretary of War Newton D. Baker. Other less well known ingredients of the American military experience are expertly and objectively aired: the value of the relatively new Army education system in training staff officers for planning duties in the war; Pershing's policy of relief of commanders for reasons that frequently remain obscure to this day; the coming of age of the Army General Staff system; confusion over relationships between the Chief of Staff in Washington and the Commander-in-Chief in the field; personal antagonisms between men who twenty years later were to fill senior military positions in another great war. All these are combined expertly with personalized battle accounts of small unit actions in the mud and cold of France, in the fog and confusion of war. A superb book—*must* reading for the professional. DAS

INTERIM REPORT On the US Search for a Substitute for Isolation

by Thomas K. Finletter, W. W. Norton & Co. 185 pp. 1968. **$4.95**

One-time Secretary of the Air Force (1950-53), the US Ambassador to NATO (1961-65) Thomas K. Finletter takes for the theme of this book how President Truman and his successors carried out the task of building a whole new foreign policy for the United States to replace the abandoned policy of isolationism after World War II. To him the North Atlantic Alliance should be the central pillar of strength in the North Atlantic Community; NATO the shield to protect the Alliance from Soviet attack in Europe; and the UN the world organization for collective security to contain aggression in the rest of the world. Ambassador Finletter sees as weaknesses of the Alliance its lack of a policy to deal in concert with problems outside NATO; and its failure to act except to supervise NATO operations. The Alliance further has been weakened by its members: French attacks on the Alliance commencing in 1958 leading to eventual French withdrawal from NATO; and member decisions to go it alone in such diverse places as the Middle East and Vietnam. From without, the Alliance has been sundered by deliberate and clever Soviet maneuvering to block Western unity—responsible for defeat of nuclear sharing and MLF proposals. Particularly is the United States taken to task for going it alone in Vietnam, as well as in several situations in the Middle East. Ambassador Finletter has a broad view of the potential of the North Atlantic Alliance—much broader than most who write on the subject, and broader even than the original architects of the Alliance intended. For surely the Truman Doctrine, US alliances in the Middle East, and the policy of containment are generally considered as apart by most commentators. If it was intended that the Alliance have a broader base and expanded responsibilities, such was never communicated clearly by the policy makers. But the Finletter case is a persuasive one, deserving of a good deal more consideration than has been given it in the past; indeed, it might well provide a practical means of moving internationalism ahead within the realm of political possibility—a badly needed alternative in our foreign policy. DAS

BOOKS of permanent value

THE DESIGN AND DEVELOPMENT OF FIGHTING VEHICLES

R. M. OGORKIEWICZ. Newly published, and reviewed in the November-December 1968 Armor, this book is a must for anyone with a professional interest in the tools of armored warfare. A number of charts, diagrams, and data tables together with 174 photographs support the superb text. 208 pp. Illustrated. $7.95.

HISTORY OF THE UNITED STATES ARMY

RUSSELL F. WEIGLEY. This excellent, scholarly work presents not only names, places and events but, perhaps more importantly, it places the Army in the context of the times from the Revolution to today. The Regular Army, the Militia, the National Guard and the Reserve are all treated in depth. Moreover, the author's admirable style makes this book interesting and enjoyable to read. 688 pp. Illustrated. $12.95.

HISTORY OF THE UNITED STATES ARMY

COL WILLIAM A. GANOE. Long out-of-print, the standard fact book on our Army is again available. There is no better single source for names, dates and events in American military history. 640 pp. Charts, tables. $8.00.

DICTIONARY OF MILITARY AND NAVAL QUOTATIONS

COL ROBERT D. HEINL, USMC-Retired. This reference is expensive but worth every cent of its price and more. It is truly unique in that there is no other single source of quotations on military life and science. Essential for the speaker and writer who would increase interest and become himself quotable. 367 pp. Table of subjects. Index of sources. $15.00.

THE YELLOWLEGS

RICHARD WORMSER. The best history of the United States Cavalry yet published. The scholarship is impressive and the readability outstanding. No one interested in Armor traditions should lack this thoroughly excellent background work. 468 pp. Illustrated. $6.50.

THE OFFICER AS A LEADER

BG S. L. A. MARSHALL. Combines practical knowledge, front line experience, and new findings about leadership for the modern military leader. 288 pp. $6.50.

PANZER BATTLES

MG F. W. von MELLENTHIN. The reasons why German armor won and lost. The book, now in its fourth printing, never lingers long on the ARMOR Book Department shelves. Maps are clearly drawn, many photographs of the German commanders. 383 pp. $5.95.

GUIDELINES FOR THE LEADER AND THE COMMANDER

GEN BRUCE C. CLARKE. Neither the modest price nor the compactness of this volume should mislead one to underestimate its great value. Here a distinguished soldier, who rose from private to general in a military career of over 40 years, presents practical, down-to-earth pointers on how to lead and command in the U. S. Army. The newly published revised edition contains chapters on modern management techniques as applied by today's Army. $2.00.

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ARMOR

MAY-JUNE 1969

DWIGHT DAVID EISENHOWER

14 October 1890–28 March 1969

Shortly after final peace came to Dwight David Eisenhower, a Pentagon staff officer called ARMOR. He asked whether or not General Eisenhower had ever been in Armor. The initial reaction was to state that, prior to becoming a general, he had always been an infantry officer. But, the quickest of thoughts led to the answer that, while he had never been in the Armor branch, he had been a tanker and was always with and for armor, the concept.

On 24 March 1918, three years after his graduation from West Point, Captain Eisenhower became the original commander of the first tank training center in the United States at Camp Colt, Gettysburg, Pennsylvania. His first of many honors was a Distinguished Service Metal the citation for which notes that Lieutenant Colonel Eisenhower "displayed unusual zeal, foresight and marked administrative ability in the organization, training and preparation for overseas service of technical troops of the Tank Corps." His next decoration was the DSM for distinguished service as Commander-in-Chief of the World War II Allied Forces in North Africa.

In 1920, following service as a tank brigade commander, Eisenhower reverted to the permanent grades of captain and major. He then was graduated from the Infantry Tank School after which he commanded the 301st Tank Battalion until 1922.

The November 1920 *Infantry Journal* carried an article entitled "A Tank Discussion" by Captain D. D. Eisenhower, (Tanks), Infantry. Today, the article seems quiet in tone, reasonable and well documented. It noted that "There is no doubt that . . . in the future tanks will be called upon to use their ability of swift movement and great fire power."

In a letter to General Bruce C. Clarke, concerning his article "Armor Maxims Plus Application Equal Victory" (ARMOR, Sep–Oct 1967,) former President Eisenhower wrote "it may amuse you to know that in 1920 and 1921 George Patton and I publicly and earnestly expounded similar ideas in the service journals of that day. Such a doctrine was so revolutionary, as compared to the World War I practice, that we were threatened with court martial. Our championship of the basic principles, which you now so rightly support, was anathema to the high military officials of that day."

Following graduation from the Command and General Staff School at the top of his class in 1926 and from the Army War College in 1928, Major Eisenhower became Assistant Executive to the Assistant Secretary of War. In 1931, during that tour, he authored a perceptive article, "War Policies," for the *Cavalry Journal*.

In 1941, Colonel Eisenhower, as Third Army Chief of Staff, was largely responsible for planning, and then analysing, the employment of the embryonic Armor elements in the Texas and Louisiana maneuvers. To a great extent, it was from these exercises that evolved the organizations, tactics and techniques which were to bring victory first in Africa and Sicily and then on the Continent of Europe—victory which was captained by General Eisenhower and which saw armor in a prominent role.

Dwight David Eisenhower knew people and he knew how to weld them into a team. Soldiers of many nations, citizens of the United States and of the world, and strong personalities such as Patton, Montgomery and DeGaulle trusted and followed his lead. His humility, fairness, common sense and moral courage were legendary.

It was the proud privilege of many of us to serve under his military command, the proud privilege of many more to follow his leadership as First Citizen of the Republic, and it is the proud privilege of us all to join in a farewell tribute. A salute to a great man, who though honored more than most, never forgot armor.

"ARMOR INVADES WESTERN EUROPE"

an original painting for *ARMOR*

by

WILLIAM LINZEE PRESCOTT

The cover painting shows DD tanks of the 741st Tank Battalion shortly after they were launched from LCTs at H-50 on D-Day, 6 June 1944.

The 741st Tank Battalion, less its Headquarters, Service and D (light tank) companies, was attached to the 16th Infantry, 1st Infantry Division for the landing on Omaha Beach. Companies B and C were equipped with DD tanks and company A with standard M4A1 tanks. Company B, attached to the 2d Battalion Landing Team was to land on the right flank of beach Fox Green and Company C, attached to the 3d BLT, on the left flank of beach Easy Red, both at H-5. Company A was to support by fire from landing craft and to hit the beach at H-Hour.

The DD (duplex drive) tanks were M4s modified for amphibious employment by waterproofing and the addition of a collapsible canvas screen. Two small screws mounted at the rear between the tracks were driven through a gearbox by the tank engine. Maximum swim speed was about four knots. Steering was accomplished by swivelling the screws.

The 741st Tank Battalion DD tanks were launched some 6000 yards from the beach into heavy seas. Of the 32 DD tanks from B and C companies, only five reached shore—two by swimming and three landed by an LCT which could not lower its ramp while under way. However, most of the crews were rescued and soon saw combat in replacement tanks.

Company A landed on schedule having lost only two tanks which went down with an LCT.

The 741st Tank Battalion was awarded a Presidential Unit Citation for its gallant actions in the invasion.

From this small beginning, armor in Western Europe was to grow by VE-Day to over 5000 medium tanks plus thousands of other vehicles in 15 armored divisions, 10 armored groups comprising 45 tank battalions, 13 cavalry groups comprising 28 mechanized cavalry squadrons, 48 infantry division reconnaissance troops and 4 airborne division reconnaissance platoons. In addition, there were a tank destroyer brigade and 13 tank destroyer groups which together comprised 60 tank destroyer battalions.

The cover artist, William Linzee Prescott, himself landed in Normandy on D-Day at St. Mére Eglise—by parachute. He was then an intelligence sergeant with the 3d Battalion, 505th Parachute Infantry Regiment, 82d Airborne Division. One of his best known military works is a heroic mural of D-Day presented to the West Point Museum by the USMA Class of 1944. Mr. Prescott served as the first volunteer civilian artist in the Army Vietnam Combat Art Program (See ARMOR, May-June 1968, cover and notes.)


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ARMOR

The Magazine of Mobile Warfare

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ARTICLES

FEATURES

DEPARTMENTS

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LETTERS TO THE EDITOR

A True Cup of Valor

Dear Sir:

As M. T. Bottle mentioned in your review of N. E. Beveridge's *Cups of Valor* there is always someone who finds his favorite item missing from an anthology of any sort. Further it seems to me that the reviewer is quite correct when he notes that the *authentic* First Artillery Punch should be more widely known (and used?).

This is the authentic First Artillery Punch, and its ingredients, which were in common use some 100 years ago, support this claim. It was given to my father over 50 years ago by Colonel Marshall Randol, who in turn got it from his father who was the Commanding Officer of the First Artillery Regiment in the Civil War. The elder Randol stated that this recipe was frequently used before, during and after Civil War times.

"Prepare a pint of triple strength black tea and a pint of triple strength green tea and blend the two together.

Place in the punch bowl or a suitable container about ¼ of a pound of loaf sugar. Grate upon it the rinds of 3 lemons, then their juice, and the juice of 2 oranges.

Pour over all the boiling hot tea mixture. Stir well and put aside to cool, covering the container to prevent the escape of the aroma. When perfectly cool, stirring slowly, add 1 quart of *Jamaica Rum (not the light bodied Puerto Rican variety)* then 1 quart of good sherry, and then 1 quart of good brandy. Mix the ingredients well and chill. Years ago the chilling was accomplished by surrounding the container with snow or ice. Let stand, covered, for at least a week in a cool place, preferably a refrigerator.

When ready for use, place a block of clear ice in a large punch bowl and then to the mixture add 4 to 6 quarts of Champagne which greatly improves the punch and gives it life. (If desired, 8 quarts can be added without impairing the aroma or body.)"

I understand that prior to the Civil War, apple or peach brandy was used instead of Champagne. The quantities as given above are suitable for small groups, such as were found on one or two company posts—about 20 to 25 people. I was also told that when entertaining other branches of the service, it was found necessary to dilute the punch with an equal amount of mineral water or tea, but this seems an unnecessary degradation of good punch.

GEORGE RUHLEN
Major General, USA

Washington, D. C.

Thank you for bringing to our attention a grand old refreshment often enjoyed at the hands of our hospitable redleg colleagues. We do not recall any *occasion when the gunners added inert ingredients for the benefit of any Armor or Cavalry guests. That would not only be a degradation, it would be a desecration!* THE EDITOR.

Rare Books Needed

Dear Sir:

The Armor School Library needs a number of classic books now out-of-print. Persistent efforts from 1955 to the present have failed to produce copies. The thought comes to mind that among your readers there are those who would be willing to donate one or more of the titles to the library of "The University of Armor."

Titles needed include: *The War of 1812* by Henry Adams. Combat Forces Journal Press. 1944; *History of the U.S. Cavalry 1793-1863* by A. G. Brackett. 1865; *Revolutionary Fights and Fighters* by Cyrus Brady. 1909; *Lee, Grant and Sherman* by A. H. Burne; *Small Wars: Their Principle and Practice* by Charles Callwell. 1903; *His Autobiography* by General George Crook; *A History of Cavalry* by George T. Denison. U.S. Cavalry Association, 1887; *Sound Off: Soldier Songs from the Revolutionary War to War II* by Edward Arthur Dolpf. Farrar. 1942; *America's Combat Weapons* by Will Eisner. 1960; *The Revolutions of Latin America* by Halcro J. Ferguson. Thames and Hudson; *Paths of Armor* by Fifth Armored Division. Albert and Love Enterprises. 1950; *The Army of the Potomac from 1861 to 1863*. 1906; *Washington: Commander in Chief*. Houghton, 1930; *The Army in My Time* by John F. C. Fuller. Ryerson Press. 1936; *Memoirs of an Unconventional Soldier* by John F. C. Fuller. Saunders. 1936; *Administration of the American Revolutionary Army* by Louis C. Hatch. Harvard University Press. 1904; *Hitler's Strategy* by Frances H. Hinsley. Cambridge University Press. 1951; *Tanks and Armored Vehicles* by Robert J. Icks. Duell. 1945; *Mobile Warfare* by Basil Liddell Hart. 1944; *Rag, Tag and Bobtail* by Lynn Montross. Harper, 1952; *Study in Personality: General George Brinton McClellan* by William Starr Myers. 1934; *Black Jack Pershing* by Richard O'Connor. Doubleday; *Soldier* by General Matthew Ridgway. Harper, 1956; *American Military Equipage* by Frederick Todd. Hastings, 1965; *Merrill's Marauders* by U.S. Army War Dept. U.S. Government Printing Office. 1944; *General George S. Patton, Jr.* by J. Wellard. Dodd. 1946; *The Brain of an Army* by Spenser Wilkinson. Constable. 1913; *The Rise of General Bonaparte* by Spenser Wilkinson. Oxford University Press. 1930; *The Tank: Its Birth and Development*. William Foster & Co., Ltd.; *Fighting Tanks* by G. Murray Wilson.

RAY L. TEEL
LTC, Armor
Secretary

US Army Armor School
Fort Knox, Kentucky 40121

"Search and Seizure"

Dear Sir:

Congratulations on the continued excellence of our publication. I use the word *our* intentionally, for I know the importance of promoting our Association and our magazine.

And let me pass congratulations as well to CPT Martin J. Linsky for his fine article "Search and Seizure" (*ARMOR*, Mar-Apr 1969). It was the best down-to-earth treatment of a difficult question I have ever seen.

Please grant permission to reproduce the article for use in my instruction of ROTC military justice classes here at St. Lawrence University.

DAVID A. KRETSCHMAR
CPT, Armor

ARMOR is always pleased to grant reproduction permission for professional or scholarly purposes. And, we might add, we plan to have further articles setting forth authoritative, practical advice on military legal questions of interest to Armor leaders. THE EDITOR.

The NEW PATTON MUSEUM

Nearly 200,000 people from everywhere in the Nation will visit the Patton Museum at Fort Knox this year, and every one of them will miss something. They will miss, for one thing, getting a good look at the displays they came to see, for the displays are now located much too close together in the shadowy recesses of a barn-like building. If it is Sunday or a summer day, there will be too many people in the limited space to allow a close look.

The visitors will also miss invaluable items that have been offered to the museum but not presented yet due to the peril of fire in the present museum. That this is no unfounded fear is apparent to any who have seen these World War II construction wooden buildings burn to the ground in only a few short minutes.

But, more than any of these, the visitors will miss a feeling of the panorama of armor and cavalry. They will miss the excitement of technological development, the drama of the men of armor and cavalry in mounted combat, and the sense of dignity and honor that befits these men and their mounts.

Happily, it is this year that construction is scheduled to begin to create another Patton museum; one that will faithfully portray the drama, vitality and distinction of the long history of armor and cavalry in a way that no one will miss any part of the stimulating whole.

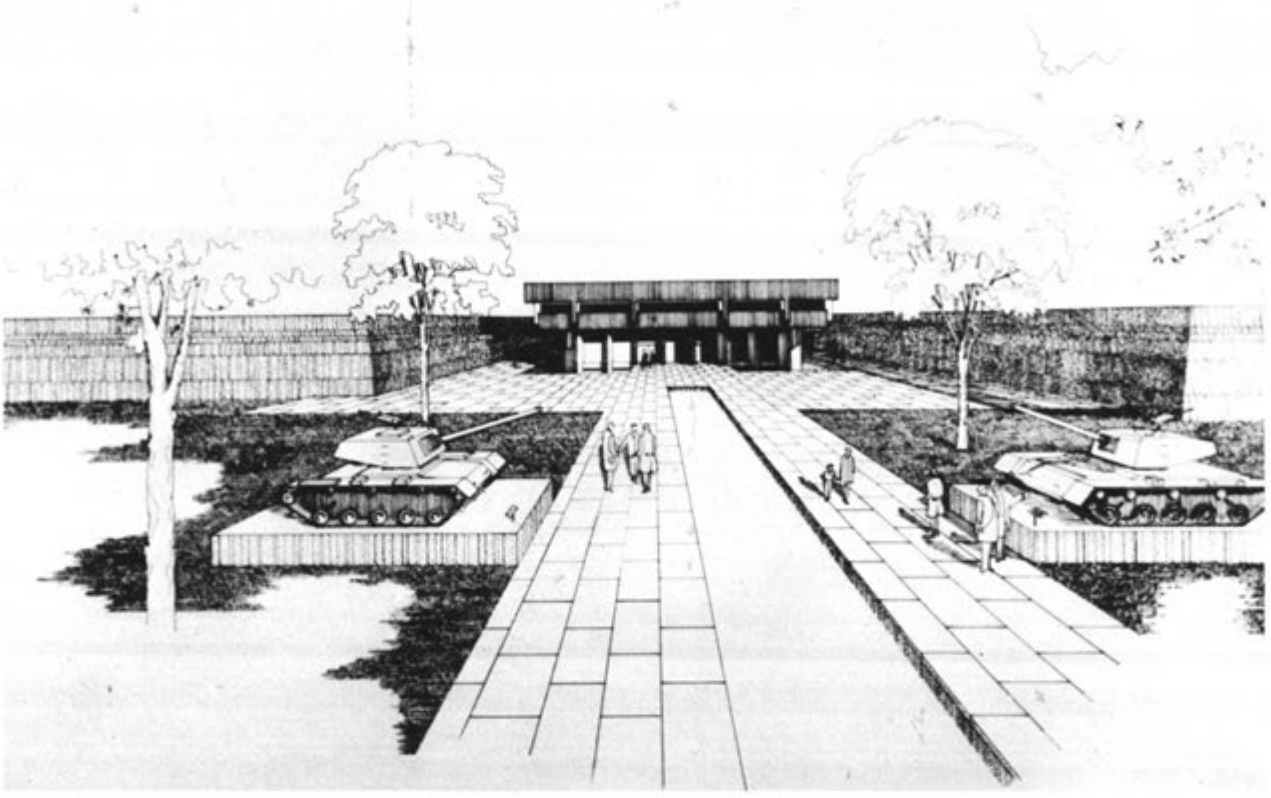
The new Patton museum will be far more than a layout of static displays. The museum will make armor and cavalry history "living history"; and, certainly, fewer subjects are livelier than the history of the mobile arm.

The museum collection was started in World War II when General George S. Patton began a program of sending to the United States tanks and armament captured by the Third Army. This equipment was gathered at Fort Knox where it later became known as the Patton Collection and formed the nucleus for the Patton Museum founded in 1949.

To make possible a fitting presentation of armor and cavalry history, the Cavalry-Armor Foundation was formed. Its purpose is to raise $3 million by public subscription. This represents the minimum amount required to construct the planned modern facility. While no public funds are available to the Department of the Army for building the museum, the Army has agreed to allot 112 acres of prime land at Fort Knox for the new museum and to maintain and staff it when it has been completed.

As evidence of their indorsement of the objectives of the museum, people stationed at Fort Knox alone already have contributed in excess of $100,000. Active Army, Army National Guard and Army Reserve units throughout the world are engaged in ongoing programs to support the museum. So too, many military associations and groups are adding their support. The United States Armor Association has

A CAVALRY-ARMOR FOUNDATION PRESENTATION



The reflecting pool leads from the parking lot up to the main entrance of the Patton Museum.

continually acted to support the museum.

National corporations, foundations and businesses will be asked for the largest portion of the funds. However, it is desirable and essential that there be strong support and approval by individuals with military interests or backgrounds as well as from those business interests which will benefit most from the increased tourist activities.

The attractive site of the new Patton Museum faces Dixie Highway where it intersects with Brandenburg Road at Fort Knox. Visitors will approach the building by way of a spacious mall with a long reflecting pool. The building, constructed of architectural concrete, will contain a total of 100,000 square feet and will be surrounded by terraces, gardens, a parking area and picnic grounds. Plans call for the building and mall to be illuminated at night which will afford a spectacular view from the highway.

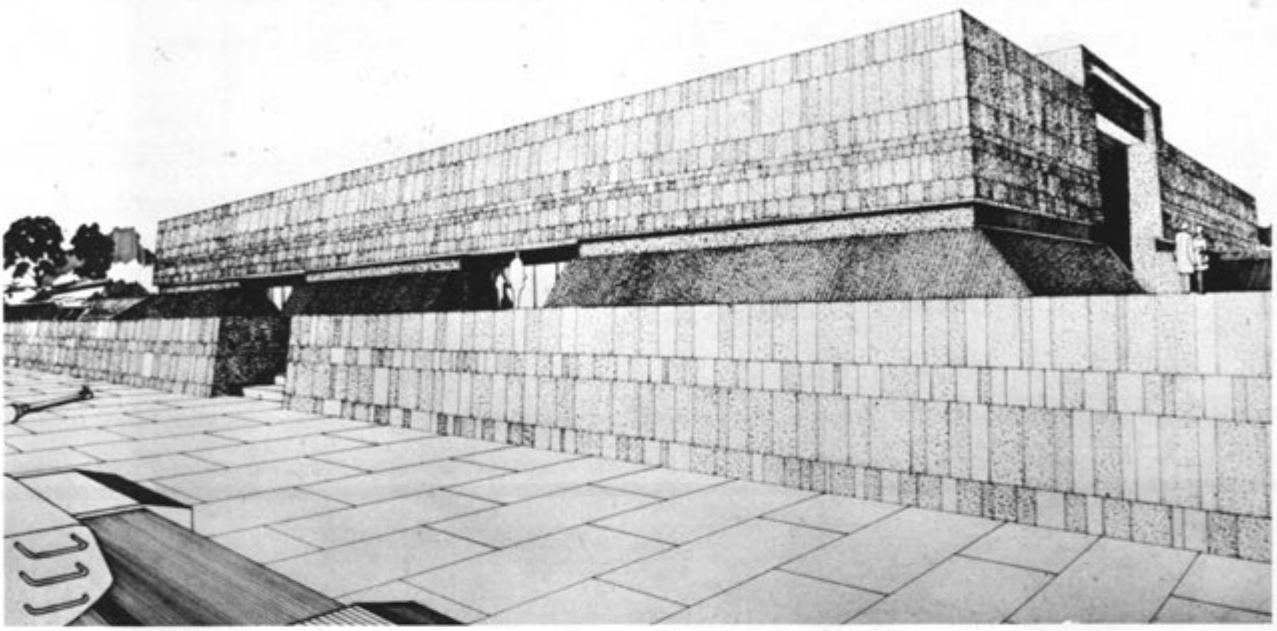
The Hall of Flags will extend the entire length of the building and is the largest of the many specialized areas planned for the museum. Hanging from the balcony will be the flags and battle streamers of famed fighting units. Flags from the States and foreign countries also will be displayed. A reception area and selected presentations will be included in the Hall of Flags.

A unique feature of the museum will be the technology section with a research laboratory for the study of design, metals and techniques. Its availability to the industry-armor team should prove invaluable. A large, well-designed library, staffed with specially qualified librarians, will contain one of the Nation's most comprehensive collections of books and source material pertaining to mobile combat.

Also planned for the museum is a large auditorium to be equipped with the latest advancements for audio and visual presentation of lectures and demonstrations. In addition to the thousands of casual visitors each year, many organized groups and large numbers of school children visit the present museum. Reliable projections based on a national survey indicate that over a half million people annually will visit the new Patton Museum. The auditorium will provide a place for their orientation and will serve as a hall for meetings of students of the Armor School and civic and military groups and associations.

One of the popular attractions in the current museum is the Patton display. Presently, there is not enough space to arrange attractively General Patton's personal effects, field van, and the sedan in which he was riding when the accident which resulted in his death occurred. The new museum will permit the proper display of this exhibit.

Another section, the historical spectacular area, promises to be one of the most exciting parts of the museum. Here mobile warfare will be depicted as it developed down through the centuries beginning with life-size chariots and horses of the earliest times and



View of the Patton Museum from the highway. Museum will be lighted at night. Walls are of architectural concrete.

extending to modern weapons and equipment to include helicopters. Modern electronic presentation techniques will permit the visitor to hear the sounds of battle and incisive commentary on each scene.

The Hall of Mobile Warfare will have a display of armored vehicles of the past and present and replicas of equipment projected for the future.

Parts of the museum will be given over to a gallery of portraits of leaders of all ranks and a display of the insignia and special marks of recognition won in battle by armor and cavalry units. Visitors will also see exhibits showing the role of the Army National Guard and the Army Reserve which will make clear their vital contribution to our national defense. A Fort Knox section portraying the major role of that post will round out the presentation of armor and cavalry history.

In the many years of planning that have been devoted to the new Patton Museum, the foremost thought has been that the museum should be a place where permanent recognition can be given to all those who have served in the military forces over the years and have by their personal sacrifices and dedication earned a place in history.

After careful consideration of the many courses that could be taken to achieve this goal, that best suited seemed to be a memorial program in which individuals, military units, corporations and businesses could participate and receive permanent recognition of their participation.

Thus, each area of the museum has been designated as a memorial opportunity. These range in price from $250,000 for the mall and reflecting pool to an individual's name on the patriots' wall for 10 cents a day for a period of three years, or a total amount of $109.

A memorial named in honor of a revered person, living or deceased, provides tangible evidence of admiration and affection. Likewise, a memorial to a famed military unit is an opportunity to preserve the past and share in the future.

The new Patton Museum is intended to be a living entity, rather than a storehouse of antiquity. It will disseminate information and documentation on the continuing evolution of defensive and offensive armor devices. Students, researchers, the industry-armor team, soldiers of the past and present, in fact, all of our citizens will find an inspiring experience when they visit the new Patton Museum. And, in this atmosphere steeped in the traditions of the past, thousands of young men starting their military careers will be able to reflect on deeds of courage and valor which have profoundly shaped the course of history.

It is hoped that in the years ahead the Patton Museum will be a source of great pride to the entire Nation and to all who were privileged to have had a part in assuring that this important undertaking had become a reality.

We need a few tanks to...

by Lieutenant Colonel T. S. Riggs, Jr.

Most tankers recoil in horror at the sound of these words, which so often lead to individual tank platoons being separated from their parent units for long periods to operate with infantry forces. But such deployments have often been highly successful in the conflict in Vietnam. The 1st Battalion, 69th Armor had considerable experience with this type operation during 1968, and I offer here some observations on what seemed to work best. Based on this experience, interviews with most of the tank battalion and cavalry squadron commanders in Vietnam in late 1967 and early 1968 and recollections of related operations in the Korean War, I shall also present here some purely personal recommendations on organization of Armor units to carry out such missions effectively.

1/69 EXPERIENCE

In April 1968, 1/69 Armor was directed to send one TOE tank platoon by sea to Phan Thiet. This destination was about 250 miles from the remaining elements of the battalion, which were then conducting operations in the An Khe and Phu Cat areas under operational control of the 173d Airborne Brigade. At that time it was estimated that the platoon commitment would last three or four weeks, until the expected onset of the rainy season at Phan Thiet. The 2d Platoon, Company C, less one deadlined

tank, formed the nucleus of the force. It was reinforced by one 3d Platoon tank to bring it to full strength, and by a 5-ton truck for ammunition and fuel, two mechanics, and an aidman. Recognizing that coordination of logistical and administrative support would be a major task, the battalion also furnished a liaison officer, with a radio-equipped jeep and a driver. In addition to normal tools and equipment, the platoon carried a tow bar, an engine sling, and several wire rope cargo slings scrounged at the port as extra long tow cables for use in the absence of a tank recovery vehicle.

Since the platoon achieved repeated successes and the dry weather continued, the commitment was extended. By August, operating in conjunction with Popular Forces, Regional Forces, the 44th ARVN Regiment, and the 3d Airborne Battalion, 506th Infantry, the platoon had been credited with over 200 enemy killed in action. In view of maintenance problems developing after extended operations away from normal support, I Field Force, Vietnam directed replacement of this platoon by another. The remote location of the platoon had also prevented exchanging of tanks as they reached the mileage for depot overhaul. One tank had 15,000 miles, three times the standard for overhaul.

We took this opportunity to form a provisional detachment to replace the platoon. This consisted of one tank and crew from Company A and two each from B and C Companies. The two liaison officer positions in headquarters company were used to provide for a provisional detachment commander and a platoon leader without depriving the line companies of officers.

Under this new arrangement each line company was short a tank in one of its platoons, and two companies were short one of their headquarters tanks. But, for the first time in months, Company C had its normal tactical organization of three platoons and the battalion had the flexibility of three essentially equal companies. Not only did the provisional detachment organization improve the balance of the remaining elements of the battalion, it also permitted better administrative support and control of the detached troops. The detachment commander was responsible directly to the battalion headquarters and was supported by the staff. In this way, one tank company commander was freed from being distracted from his immediate concerns.

There was some speculation about possible teamwork problems in the composite unit, which moved to Phan Thiet by sea as soon as it was formed. Two engagements in late August, just after it arrived, resulted in enemy losses of 27 killed one day and 22 another being credited to the platoon and proved that the platoon leader had been able to weld his crews into an effective fighting force quickly. The habit of rapid adjustment to changes in task organization, found in any well trained Armor unit, was a major factor in this success.

TACTICAL EMPLOYMENT

Both the original Company C platoon and the provisional detachment found that decisive tactical results were best attained when the tanks were used in a striking force or reaction force role. On the offensive (in search and destroy, search and clear, or reconnaissance in force operations), infantry elements were used to find enemy forces. The infantry, and supporting artillery, helicopters, and tactical air, fixed the enemy in place while the tank force moved rapidly to the point of contact under control of the overall commander. A combined tank-infantry attack then produced victory with minimum friendly casualties. Tanks were particularly effective when the enemy was in fortified positions.

Not committing the tanks with a portion of the searching force had two advantages. First, not only in the Phan Thiet area, but everywhere the battalion operated, enemy forces avoided contact with units which had tanks. The size and sound of the tanks made them easy to detect at a distance. This usually allowed the enemy to evade the tanks when they were moving at infantry speed. This enemy characteristic should be considered regardless of the size of the tank force available. It can also be exploited positively. We had good success with a technique of infiltrating dismounted ambushes into positions along likely routes of withdrawal from a suspected area, then driving a mechanized force rapidly into the area. In avoiding the armor the enemy tended to neglect precaution in favor of faster movement, increasing his vulnerability to ambush.

The second advantage of not tying tanks to searching infantry is more directly related to detached tank platoon operations, where there are insufficient tanks for a reserve if the platoon takes part in the search itself. In some cases, in which contact was made by another searching element, time was lost in disengaging the tank platoon from the unit it was with since the infantry had to adjust their deployment to compensate for the absence of tank support. Additional time was frequently lost because the terrain limited lateral movement by the

tanks. Finally, readjusting command relationships was difficult when the supported force was not American. With the tanks centrally located on good movement routes and the platoon leader in direct contact with the overall commander, planning and coordination were facilitated and the decision to commit the tank striking force could be executed rapidly and effectively.

In defensive and security operations, the tank force was best used to react rapidly to enemy attacks on friendly positions. Here too, the tanks proved highly effective.

A possible disadvantage of the striking force/reaction force role is vulnerability of the tank unit to ambush during movement when little or no infantry support is available. In the Phan Thiet area, one enemy force placed an ambush for the tank platoon and kept it in place for three weeks before the tanks came their way. In spite of this preparation, the tank platoon inflicted a decisive defeat on the enemy force without losing a man or a tank. Based on this, and on other experiences in other areas, we welcomed direct contact with enemy forces anywhere, knowing that armor protection and normal attention to local security would permit us to employ our overwhelming combat power effectively.

PROBLEM AREAS

The detached platoon commitment at Phan Thiet did have some significant drawbacks. First, such a small separate force was extremely sensitive to attrition of vehicles caused by maintenance problems, combat damage, or difficult terrain. Immobilization of one tank usually left an available force of only three because if one broke down in the field, or was mined or mired, another had to be left to secure and assist it. This meant combat operations without an effective base of fire, which other experience of the battalion had proved to be a risky expedient. Second, the absence of such mobility aids as a tankdozer or armored vehicle launched bridge (AVLB), found in larger Armor units, made the platoon more sensitive to obstacles than a platoon operating with its parent tank battalion. In addition, the lack of a tank recovery vehicle (VTR) to retrieve the results of any error in terrain judgment forced the platoon leader to be unusually conservative in his terrain estimate.

Similar tactical results and similar weaknesses were demonstrated when platoons were detached for less extended operations with forces of the Republic of Korea (ROK) Capital Infantry Division and the airborne battalions of the 173d Airborne Brigade. To overcome some of the limitations of the individual tank platoon in one week-long operation with the ROK 1st Infantry Regiment, it was reinforced with an AVLB, a battalion VTR, an *M113* communications vehicle (the air control team track), and a 5-ton truck. The support package was very helpful in most respects, but difficult for the platoon leader to control effectively. During a later operation in the same area, C Company (minus the platoon at Phan Thiet) with one AVLB, gave tank support first to the ROK Cavalry Regiment and then to the ROK 1st Infantry Regiment. Two days later one tank platoon was withdrawn from the ROK commitment, leaving only one tactical platoon. We decided to leave the company headquarters with the ROK regiment to make available combat support and combat service support to this remaining platoon, as well as to assist the ROK commander through his having available the greater experience of the company commander in the tactical employment of tanks. The platoon withdrawn was employed and supported directly by the battalion headquarters on other operations without difficulty.

HINTS FOR COMMANDERS

Based on the foregoing examples, and other experiences of the 1/69 Armor, the following suggestions are offered to Armor commanders who must detach a small tank force for extended operations away from the parent unit with a non-mechanized force:

- If other commitments permit, send something more than one platoon so that there will be a full platoon operating when the usual attrition takes place.
- Provide combat support and combat service support elements equivalent in kind, if not in quantity, to the support enjoyed by a company operating within the battalion. Non-mechanized units will have no recovery or maintenance capabilities with which to support tanks and usually will not have enough transportation for the tons of fuel and ammunition consumed by the tanks.
- Make available an officer, in addition to the platoon leader, to coordinate support.
- Try to sell the supported commander on a strike force/reaction force role for his tanks as the most effective way for a small tank unit to contribute to his operations in most situations.
- In each case, consider sending a company (minus) for a short-term detached mission. The re-

The author receives the Silver Star and Legion of Merit from Major General William R. Desobry, Director of Operations, ODCSOPS, DA, on 15 January 1969. With him is his father, Major General Theodore S. Riggs, USA-Ret.

LIEUTENANT COLONEL T. S. RIGGS, JR., was commissioned in Armor in 1951 from the Officer Candidate Course at the Ground General School and saw combat in Korea with E, H, and Tank Companies, 31st Infantry, 7th Infantry Division. Later Armor assignments included five and one-half years in non-divisional tank battalions, three years in the Weapons Department at the Armor School, and one year as executive officer of a divisional cavalry squadron. He is a graduate of the Armor Advanced Course and the Command and General Staff College. He spent seven and a half months as a combat developments liaison officer in Vietnam before commanding the 1st Battalion, 69th Armor, from March until September 1968. He is presently assigned to the Office of the Deputy Chief of Staff for Military Operations.

maining platoon or platoons can be employed and supported effectively by the battalion headquarters directly or by attachment to another tank company. For a longer-term mission consider a tailored provisional detachment organization.

PROPOSED ORGANIZATION

Recognizing that the conflict in Vietnam could continue for some time and that conflicts under similar conditions are likely possibilities for the future, Armor should develop organizations designed to operate most effectively under such conditions. In conflicts of this kind the bulk of the forces employed will be non-mechanized infantry, either US or Allied. Armor units will be in the minority, but even very small tank units will be highly effective when properly employed. There will be repeated requirements for minimum-size tank forces for critical operations in widely separated locations.

In a later article I plan to discuss how larger Armor units should be organized to contribute most effectively to such an infantry war. For the present, however, I propose to treat only the smallest organizational element which can do the infantry support job effectively. Whether it serves as a basic building block for a new type of larger Armor unit, is organic to some larger infantry unit, or is formed by task organization from a current type Armor unit is left moot for now.

For the purposes of this discussion, the Minimum Independent Tank Element (MITE) is defined as the smallest force of tanks, supporting equipment and personnel suitable for effective sustained combat operations in conjunction with non-mechanized forces which do not have the support of other tank forces. The next few paragraphs examine the required characteristics of the MITE as just defined, and lead to a recommended organization for such a unit.

FIRE AND MANEUVER

An independent tank force must always be capable of movement supported by tank fire. No other weapons system now available is able to deliver equivalent sustained volumes of accurate and destructive firepower, which is immediately responsive to the requirements of the situation. This is particularly true where engagements typically take place as encounters at close range. Tanks in a base of fire not only respond to calls from supported tanks and infantry, they are also able to detect and destroy targets themselves. Although an individual tank could be considered, theoretically, as the base of fire sub-element, in practice it must have at least one partner to keep up continuous support during occasional weapon stoppages and during the reloading of the turret ready ammunition racks from hull stowage. A pair of tanks can permit at least minimal all-around observation and local security. The crew of a single tank cannot secure itself and carry out a base of fire mission properly at the same time. The minimum effective

base of fire element, then, is a section of at least two tanks.

The maneuver sub-element should also be a section of at least two tanks. A minimum base of fire could usually support a larger maneuver force effectively. And within a larger tank unit the maneuver force should be at least two or three times the base of fire for the best offensive balance. Here, however, we are concerned with the minimum effective force. Properly supported, two or three tanks working closely with an infantry unit can produce locally decisive results. A key consideration in organizing the sub-elements of the MITE is that they must be functionally interchangeable, that is, sub-elements must be capable of performing either the base of fire or the maneuver force role. In a larger unit, greater flexibility and enhanced combat effectiveness will result from having more than two sub-elements. Within a force like the MITE, however, the minimum requirements can be satisfied by two sub-elements, one for each basic role.

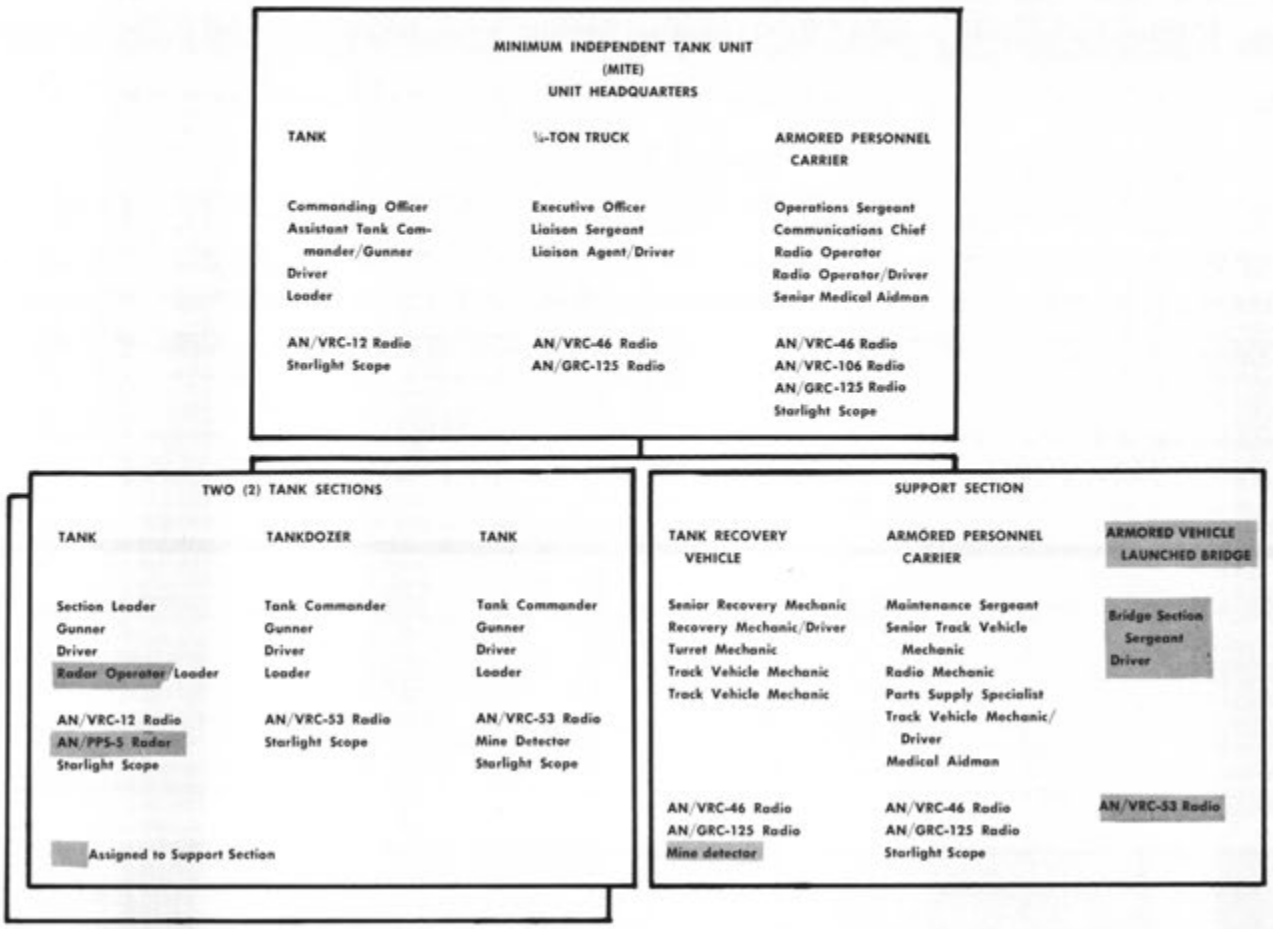
The tactical commander controlling the two tank sections must be mounted in a tank. Only then does he have that mobility and protection, which results in the capability to move wherever he can best influence and direct the action. His tank may be organic to one of the sections. But his effectiveness and the flexibility of the unit will be increased if the command tank can operate with either section without reducing the other to less than two tanks. Thus the MITE requires a fifth tank for the commander. So far I have succeeded only in defining the present tank platoon, but many years of experience suggest that it is reasonable for the basic tactical capability of the MITE to be that of providing at least the equivalent of the present tank platoon for prolonged periods.

Consideration of attrition, as discussed above in relation to the Phan Thiet experience, leads to the conclusion that the MITE should have more than five organic tanks in order to ensure that it will retain its capability to operate with at least the minimum required strength during sustained action. A unit of six tanks could lose one and still field two sections of two, plus a command tank. But usually the immobilization of one tank generates a requirement to leave another to secure it, thus reducing the force to four and tying the commander to one of the sections. An organization with two sections of three tanks each, plus a command tank for a total of seven, seems preferable. At full strength it would not be too difficult to control and it could accept the attrition of two tanks without loss of minimum tactical capability and normal flexibility. Even with three tanks out, it would still be able to fight with two mutually supporting sections, although with reduced flexibility for the commander.

SUPPORT

The MITE must have a capability for combat service support while working with units which have no means for maintaining or recovering tanks and only limited means for moving large quantities of fuel and ammunition. Track vehicle mechanics, at least one turret mechanic, one radio mechanic familiar with tank interphone systems and specialized radios, a parts specialist, and an experienced maintenance supervisor must be provided. A VTR is required primarily for its recovery capability, but also for the many other built-in features it has for organizational maintenance and repair, particularly the lift needed for replacing power train components and repairing mine damage to the suspension. There should be at least one tracked resupply vehicle which can follow the combat elements closely to permit immediate replenishment of ammunition. Depending on the distance to supply points and the availability of medium helicopter support, more fuel and ammunition vehicles may be needed. Coordination of logistical functions and doing necessary administration will require an officer in addition to the tactical platoon leader. He would also take care of liaison with the supported infantry unit. For the latter function he would need the assistance of a liaison NCO. There should be one administrative and liaison vehicle with a two-channel radio. A unit command post capable of 24-hour operation, which can move with the tactical elements, will also be needed. This should be mounted in an armored personnel carrier.

To increase cross-country mobility in difficult terrain, at least one tank in the unit must have a dozer kit, and one in each section would be preferable. If the MITE is working with airmobile, airborne, or Allied units, an AVLB should also be included. When the unit is with a US infantry division an AVLB can be made available by the division engineer battalion. Means for locating and destroying antitank mines are essential to mobility. US engineer units can provide these, but a MITE with an Allied unit might need its own mine detectors, and demolitions, together with training in their use. Because of its substantial contribution to night combat capability, ground surveillance radar is another item which a MITE with a non-US force should have.



A unit consisting only of tanks and specialized supporting equipment needs additional dismounted personnel to permit adequate local security. Thus there is a great temptation to include some organic security personnel. Since it is a *minimum* element, however, the MITE should rely on the supported unit to provide security. By using all vehicles, including the VTR and CP track, 50 to 80 soldiers can easily be transported wherever the unit goes. This would be more than enough in most cases. It should be clearly understood that the supported unit is responsible for reinforcing the inherent security capability of the MITE with at least two or three infantry squads.

TANK MITE

The accompanying chart shows a MITE organized to support an Allied infantry force. It is assumed that some other US forces, such as artillery, are also supporting the Allied infantry and are in turn supported by a forward support area (FSA), or a similar logistical unit, capable of providing all necessary classes of supply and direct support maintenance. Availability of helicopter medical evacuation and emergency resupply by medium helicopter are also assumed. No mess is included, so the MITE would eat C ration, supplemented by occasional hot meals furnished by the FSA, other US units, or the Allied forces. Items which would not normally be included if supporting a US infantry division are shaded.

This MITE has 12 vehicles of which 11 are armored, two officers, and 47 enlisted men. No separate fuel and ammunition vehicle has been provided. Our diesel-powered tanks and personnel carriers can operate for two or even three days on their own fuel tanks. The CP and maintenance tracks can carry ammunition for emergency resupply and can be used to distribute fuel delivered by helicopter in 600-gallon rubber drums when necessary. For sustained operations under conditions where fuel and ammunition are not delivered into the unit area for distribution, one or more tracked logistical carriers should be added. Not having addressed the question of larger unit organization, I have not provided for

a first sergeant. If the MITE were a separate TOE unit the operations sergeant could be changed to a first sergeant.

CAVALRY MITE

So far the MITE has been discussed only as a tank force. The armored cavalry platoon has many of the capabilities needed for employment as an independent force in support of non-mechanized elements. As modified for operations in Vietnam, the cavalry platoon is a team of three tanks, six armored personnel carriers equipped as armored cavalry assault vehicles (ACAV), and one mortar carrier. A cavalry platoon employed for an extended period away from its parent squadron would require essentially the same combat support and combat service support discussed above. Adding the support section and the liaison and CP elements of the headquarters of the type MITE to a cavalry platoon would give the unit fifteen vehicles, two officers, and about 72 enlisted men. (25% more vehicles and 50% more men.)

In comparison with the tank MITE, the cavalry platoon has more combat vehicles (nine vs. seven), the ability to post its own dismounted security, and an indirect fire weapon. Its main disadvantage is in firepower. The ACAV can deliver a great volume of machinegun fire but lacks the destructive capacity of the tank, particularly against fortified positions. When giving close support to dismounted infantry the greater accuracy provided by the turret and fire control equipment of the tank, as compared to the flexible mounts and open sights of the ACAV, is also important. The MITE, with its greater number of tanks, is definitely better suited to the mission of close cooperation and support of a dismounted force. The cavalry platoon is better suited to missions where its greater tactical self-sufficiency outweighs its less destructive firepower. The current platoons of the 11th Armored Cavalry have no tanks and would be even less suited to the MITE mission than other cavalry.

SUMMING UP

We in Armor should recognize that there is a continuing need for tanks to support dismounted infantry, particularly in the underdeveloped areas of the world where future conflicts are most likely. Our tank units have been organized primarily with the requirements of mechanized warfare in mind, but they have the ability to adapt to conditions requiring that small tank units support infantry units in widely separated areas and for extended periods. Some of the techniques to accomplish this adaptation are discussed above. These, and the methods learned by other units which have met similar requirements, deserve wider study.

This article has dealt with only one of the roles of our tank units in Vietnam, primarily because this role is under-emphasized in our doctrine and in the reports of this conflict which have appeared this far. But this platoon level role is far from being the whole story. For example, in several ROK Capital Division operations a tank company was used against dug-in NVA located and fixed by ROK infantry, with results a platoon size force could not have achieved.

Company B, 1/69 Armor was under operational control of the 1st Mechanized Battalion, 50th Infantry (Mechanized) during the May 1968 "Second Round" battles. At one point in an engagement with an NVA regiment the firepower of a mechanized infantry company and two-thirds of B Company was barely sufficient to attain fire parity until another tank platoon arrived. The destruction of the enemy regiment achieved later in this battle could not have been accomplished by a smaller mechanized force. Tank companies and battalions, cross-reinforced with mechanized and non-mechanized infantry, have accomplished all sorts of missions from road security through assault on enemy base areas, with great success. Any changes to improve our ability to carry out the task of providing small tank forces to support infantry in dispersed areas must preserve our ability to operate effectively in larger masses.

As long-range projects we need to come up with both improved organization and equipment for warfare in underdeveloped areas. In Korea and in Vietnam tanks designed for completely different missions and terrain (and obsolescent for their intended role) were used with notable success. What might have been done with new vehicles designed for the job at hand?

The long, hard process of developing better materiel should start without delay, and with a priority at least equal to the *MBT70*.

Improved organization can be accomplished much more quickly and easily than equipment development. The MITE has been offered here as a possible basis for a new organizational concept. Now seems the time to give added emphasis to all the facets of creating the kind of units needed in Southeast Asia and similar areas if Armor is to make its full contribution as the Combat Arm of Decision.

AN ANNIVERSARY
1909-1969

Colonel Robert J. Icks

ROBERT J. ICKS COLLECTION

This year marks the sixtieth anniversary of several events in our military history which have long been forgotten. It seems appropriate to recall them as well as to give recognition to some of the individuals involved in those events.

We take for granted today our huge defense establishment and its global commitments. Even the fighting of a war, which already has lasted longer than any war in which we ever were engaged, has produced little disruption in our daily lives at home except for an ill informed and emotional minority. Yet it has been only sixty years since we were taking the first faltering steps to eliminate the serious military shortcomings which had always come to light when we went to war.

In 1909, the authorized strength of the Regular Army was 65,000, the bulk of which was stationed in Hawaii, the Philippines and Alaska. The troops in this country were still spread around in small posts and colonels commanding regiments seldom, if ever, saw their entire regiments at any one time. "Soldiers and Sailors Not Admitted" and "Soldiers and Sailors Keep Off the Grass" were not uncommonly seen signs posted in cities. The pay of a private was $21.00 a month before deductions. But the quality of the individual soldier was good. And, without question, the responsibility placed on company and field grade officers in administering more or less independent commands at isolated posts developed unique qualities of leadership and initiative which, nine years later, were to prove themselves during the huge World War I effort.

The "milishy" in the United States, on the other hand, had been the butt of civilian jokes and military criticism for over a hundred years. The passage of the Dick Bill in 1903 had been aimed at raising the militia to standards approaching those of the Regular Army. By the time the provisions of that law had been in effect six years tremendous improvements already had taken place. General Leonard Wood,

then Chief of Staff, decided that the time was ripe to demonstrate to the nation the improvement that had been made and to bring the military closer to the people. In addition, he was anxious to dramatize the still existing weaknesses of the Regular Army and the false security created by our coast defense system.

Although military exercises and encampments were nothing new, realistic division-sized maneuvers never had been held in peacetime. Such maneuvers would give higher commanders as well as officers and troops in both the Regular Army and the National Guard an opportunity to develop still more and to achieve greater respect for one another.

A good many maneuver areas were considered but the one finally chosen was in Massachusetts. The selection was made because of the numerous lakes, rivers, large swamps, cranberry bogs, forests, cultivated land, fences, stone walls and small towns it contained. War Department approval was received, followed by the approval of a number of Eastern states and the District of Columbia. In addition, because of age-old civilian fears of damage caused by the military, the selectmen of the various towns and villages in the proposed maneuver area were visited in order to allay these fears and to promise prompt payment by the War Department for any damage done.

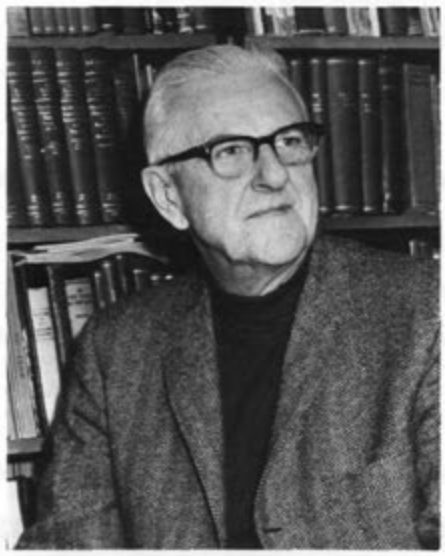
The maneuvers were arranged for the period 14-21 August 1909. The general situation assumed was that on 10 August, following an unexpected severance of diplomatic relations, war was declared between a strong European power (Red) and the United States (Blue). On 11 August, the Blue Atlantic Fleet was assumed to have been defeated off the coast of Maine by a superior Red fleet with the remnants taking refuge in Portland and Portsmouth harbors where they were blockaded. A portion of the Red fleet was detached to act as escort for a Red landing force. The main Blue Army was assumed to be mobilizing with Albany, New York, designated as a point of concentration. Blue forces of militia and regulars were concentrating for defense of the Boston-Narragansett area.

The Blue commander was told to expect a Red landing at some point between Narragansett, Rhode Island and Portland, Maine. He was ordered to advance to the line Adamsdale - Attleboro - East Norton - North Raynham - Bridgewater - Silver Lake - Kingston not later than midnight 14 August, after which the defense of the area was left to his discretion.

The Blues were considered to be the 1st Division of the I Corps of the Blue Army. It was made up of the 2d, 5th, 6th, 8th and 9th Infantry; a squadron of cavalry of Troops A, B and D; a battalion of artillery of Batteries A, B and C; a signal battalion; an ambulance battalion and quartermaster troops, all from the Massachusetts Volunteer Militia; two battalions of cadets from the United States Military Academy, and the Regular Army coast artillery units in the area.

The Reds were assumed to be the 1st Division of the I Corps of the Red Army. This division comprised the District of Columbia National Guard 1st Field Battery, the 1st and 2d Infantry, the 1st Separate Infantry Battalion, an ambulance battalion and a signal battalion; the Connecticut National Guard 1st and 2d Infantry, Troop A, Battery A and a signal company; and the New Jersey National Guard Cavalry Squadron A. The New York National Guard was represented by the the 7th and 14th Infantry, the 22d Engineers, Cavalry Squadron A, the 1st and 2d Signal Companies and the 1st, 2d and 3d Batteries of Field Artillery. In addition to these National Guardsmen, the Red force included a squadron of the Regular Army 10th Cavalry.

For identification, blue hat scarves were worn by



COLONEL ROBERT J. ICKS, USAR-Retired, served in the Army as an enlisted man in World War I. Following graduation from Ripon College, he received an Army Reserve commission in 1927. During World War II he served as a colonel in the Ordnance Department. Colonel Icks' business interests have included sales, trucking, insurance and management consultation. A lifelong student of armor, his archives are well known to authorities in the field. He has authored five books on armor and numerous articles for professional journals.

the Blues and red hat scarves by the Reds, while the umpires wore white hat scarves.

The Reds were commanded by General Tasker Bliss, a regular. The Blues were commanded by General W. A. Pew of the Massachusetts Volunteer Militia. Regular as well as National Guard officers formed the staffs of both forces.

The Reds landed from three transports near New Bedford and suffered from the same type of foul-up that occurred on occasion even during World War II —the troops on one transport, their armament on another. The Reds got into Nahant, cutting the communication of the Blues with Boston. Several minor battles culminated in a big battle for Hanover Four Corners on 20 August. General Bliss of the Reds claimed to have pinned down the Blue line and to have turned the Blue flank, leaving the road open to Boston. This was denied by General Pew, who was backed by General Wood. General Wood believed that the Blues would have been capable of four or five more days of resistance which would have given time for deployment of other Blue troops from the Albany area.

The actual maneuvers occupied five days. The troops were in action from 0500 to 1300 daily. Afternoons were devoted to adjustment of lines after consultation by the umpires. The weather was very bad. It was cold and rainy most of the time. Severe gales off the coast prevented carrying out a great part of the program planned for the coast defenses. Contrary to expectations, there were no disorders, drunkenness or vandalism and no sickness occurred. The local inhabitants for the most part entered into the spirit of things and exhibited a great deal of genuine partisanship.

The success of the maneuvers was largely the result of the enthusiasm of the participants, the abilities of the umpires and observers as well as those on the board of officers with each army carrying funds, blank receipts and releases to eliminate immediately any civilian complaints of damage done. Generally, these were reasonable although one farmer demanded and was paid for the drinking water consumed by a few soldiers passing by.

The cost was about $100,000 of Federal funds, plus some expenditures by the several states, which covered the use of rented transport, rail and land transportation, extra rations, other rentals and damages.

The training provided by these maneuvers was extremely valuable and pointed out some shortcomings, the major ones of which were adjudged to be shortages of cavalry, field artillery and signal troops. But the use of wireless telegraphy, of balloons manned by balloon troops and officers who were undergoing flight training with the Wright brothers, automobiles for staff use and automobiles for towing artillery and carrying supplies and the hundreds of motorcycles used by both sides lent an air of emerging modernity. Although horse cavalry still was in use, there was some portent of the future in the firing of machine guns from horseback by an enterprising sergeant of the 10th Cavalry.

Another first was created in the form of what then was called a condiment box. This was the first compressed ration in our Army. In a package about the size of a pack of cigarettes was a large half pound lump of sugar, two squares of compressed coffee, a block of salt and a small wooden capsule containing pepper.

Many foreign attachés attended. And there were about 250 news correspondents from publications and press associations or about one correspondent for every 60 soldiers engaged. The publicity received was very considerable and helped to carry out General Wood's original hope of bringing the military closer to the people.

There was another "first." Automobile trucks used to move supplies from railheads to the troops in the field already have been mentioned. However, the automobile in a combat role was not yet considered sufficiently dependable in spite of experiments in European armies for several years. But an enthusiastic citizen soldier saw an opportunity to attract attention to the automobile for combat purposes during the maneuvers.

Captain John H. Sherburne, Jr. commanded an artillery battery of the Massachusetts Volunteer Militia. When word of the pending maneuvers reached him he sought and obtained permission to include in his battery for the maneuvers two automobile trucks, each mounting a naval Driggs-Schroeder one pounder gun with shield on a pedestal mount, in order to prove the practicality of automobile guns.

At the close of the maneuvers, part of Brigadier General William A. Pew's report to the Massachusetts Adjutant General read: "As there were no machineguns with our division, Captain J. H. Sherburne, Battery A, Field Artillery, improvised two guns to replace machine guns. He obtained two one-pounders, each of which he placed on an automobile truck. These two guns were ubiquitous and rendered most excellent service. . . ."

ROBERT J. ICKS COLLECTION

It can be seen from this that machineguns then were considered artillery. In fact, in newspaper and magazine accounts of the maneuvers, these guns sometimes were referred to as machineguns or "simulated" machineguns.

The provisional auto truck platoon comprised members of the battery except for the professional chauffeurs who came with the trucks which were rented from a Boston teaming and trucking company. One truck was a Packard and one was a Frayer-Miller, each rated at 3-ton capacity. They were chain driven with tires of solid rubber. The only changes made in the trucks were the bolting of the pedestal gun mounts to the open truck platforms and the installation of an ammunition box behind the driver's seat. The guns could be rotated freely through 360° in azimuth although they could not be fired to the front when the driver was in place. They had an elevation of about 25° and were controlled by the gunner through the use of a shoulder piece.

The first use made of these automobile guns was a 20-mile run, with one truck going to East Taunton and one to Taunton. Each truck carried infantry and was accompanied by cavalary. These teams theoretically destroyed nine bridges in less than three and a half hours. They later were used to support an infantry battalion at Middleboro camouflaged with pine branches and in defilade on the reverse slope of a hill. A Red flanking movement was countered by a seven-mile run in forty minutes during a heavy rain on a road that was a virtual quagmire in order to back a Blue infantry battalion which was beginning to crack from the weight of superior numbers. This was followed for another day by a leapfrogging rear

guard action by the two trucks, each of which also carried a platoon of infantry who dismounted and deployed whenever its gun went into action.

On the last day of the maneuvers, the automobile gun platoon participated in a general Blue attack. Just as hostilities closed, it was sent on a wide swing to participate in a Blue flanking movement.

The roads in the maneuver area around Middleboro and Bridgewater at that time were unpaved except for an occasional state highway. When dry, rims on artillery wheels sank out of sight in the dust. In wet weather, the roads were deep with mud. In both cases, they were deeply rutted in wide "Cape Cod" gage made by farm wagons which had a track about a foot wider than the normal tread.

The trucks thus were tested over these roads in both kinds of weather yet did not appear unduly handicapped. On some occasions they were driven across ordinary pastures and down country lanes having considerable grade. They were used steadily for five days on good roads and bad and carried, in addition to a gun crew of four and a driver, up to thirty infantrymen. No mechanical difficulties of any consequence were suffered.

Many members of the battery later rose to prominence. Colonel George A. Parker was a private in the battery at that time and a member of one of the gun crews. Colonel Robert E. Goodwin was 1st Sergeant under the command, as he told this author, of "that dynamic leader John H. Sherburne." He recalled the truck mounted guns as "vivid evidence of John Sherburne's resourcefulness and imagination." Later, during World War I, Colonel Goodwin succeeded to the command of the 101st Field Artillery when Colonel Sherburne became a Brigadier General.

Lieutenant General Daniel Needham, a lifelong military and business associate of the late General Sherburne in the law firm of Sherburne, Powers and Needham of Boston, also spoke enthusiastically of General Sherburne. Major General Sherman Miles, USA-Retired, was a 1st Lieutenant at that time and was Regular Army instructor and umpire with the battery during the maneuvers. He was the son of Lieutenant General Nelson A. Miles who, as Sherman Miles recalled to the author, once, during a campaign against the Indians in the 1880's, had mounted a tarpaulin-covered pack howitzer on a mule drawn Quartermaster escort wagon, much to the later consternation of attacking Indians.

And it was Nelson Miles, who shortly after the turn of the century, had recommended conversion of five of our cavalry regiments to an automobile corps. He was influenced in this by another citizen soldier, Major (later Colonel) Royal P. Davidson of the Illinois National Guard. Colonel Davidson was commandant of Northwestern Military and Naval Academy, then of Highland Park, Illinois but later of Lake Geneva, Wisconsin. He built the first armed and partially armored cars in the United States and used them in cadet training. These cars and a bicycle corps made a trip to Washington and back and it was this that had inspired General Miles' enthusiasm.

Colonel Davidson continued his interest in automobiles for warfare. In 1910 he entered two Cadillac military cars in the gruelling Glidden Tour. In 1915 he built the first fully armored car in the United States. This car and several of the earlier cars were driven by cadets from Lake Geneva to the West Coast. The armored car then was expressed to Plattsburg, New York at the request of General Leonard Wood for use in the maneuvers there. (See "Davidson's Armored Cavalcade," *ARMOR*, November-December, 1966.) Colonel Davidson, like General Sherburne, received little official encouragement but the interest shown by General Miles, General Wood and others spurred him nevertheless. His efforts unquestionably influenced General Sherburne and, in turn, many others like the members of the New York National Guard unit in 1916 who financed their own White, Mack and Locomobile armored cars and later took them to the Mexican Border when the Guard was mobilized there.

General Sherburne visualized the eventual use of guns of greater caliber, with light vehicle armor over the entire vehicle, the ability to be driven forward or backward and footboards on the sides to carry accompanying infantry. Tactically he did not envision automobile guns as replacing conventional field artillery but rather considered them as mobile bases of fire, as reserves to bolster threatened points, in rear guard actions and as anti-aircraft weapons.

Although it cannot be said that any of these armored cars or automobile guns were the direct ancestors of today's armored vehicles and self-propelled guns, they played their parts in the general development and use of automotive power for military purposes in the United States. Most importantly, their creation represented one result not only of the imagination and enthusiasm of citizen soldiers but also of regular soldiers who recognized, channeled and encouraged this imagination and enthusiasm. Now, as then, this relationship is one of our strongest military assets.

PHOTO COURTESY OF THE DAIMLER CO.

DAIMLER FERRET SCOUT CARS

RICHARD M. OGORKIEWICZ

Readers of *ARMOR* hardly need to be reminded of the fact that the United States Army has shown little interest in wheeled armored vehicles since World War II. However, it is probably less well known that several other armies have maintained or adopted a radically different attitude. They not only use wheeled armored vehicles extensively but continue to develop new models.

The most successful of these vehicles include the British series of *Ferret* scout cars. In their different forms the *Ferrets* have now been in service for 18 years with the British Army, which has successfully used them throughout the world both in combination with other armored vehicles and on their own. The *Ferrets* have also been procured from Britain by more than 20 other countries.

A DISTINGUISHED LINEAGE

The origins of the *Ferrets* are very distinguished as they are produced by the Daimler Company, of Coventry, England, which has been associated with armored vehicles from their very beginning. The world's first armored vehicle, the wheeled "war car" built in 1902 by F. R. Simms for Vickers, Son and Maxim, Ltd., was, in fact, powered by a Daimler engine. Daimler engines also powered the world's first tanks, from the experimental *Little Willie* of 1915 to the British *Mark IV* used in the battle of Cambrai of 1917, which was the first successful, large-scale armored operation.

The more immediate ancestry of the *Ferrets* goes back to World War II. They are, in fact, the direct descendants of the Daimler *Scout Car* of that conflict. This was a small, low-silhouette, two-man vehicle designed for scouting and liaison duties. The ideas behind it resembled, in some respects, those which a little later led to the development of the jeep. But the *Scout Car* was a much more sophisticated vehicle, as well as being armored. Ultimately 6626 Daimler *Scout Cars* were produced. These were successfully used by British armored units in all the major campaigns of World War II.

The successful performance of the Daimler *Scout Car* led to further development of this type vehicle after World War II. Thus, in 1947, the British Army issued a requirement for an improved scout car which led to the *Ferret* (or *FV.700*) series of vehicles. Their development and production were again entrusted to the Daimler Company, which built the first prototype in 1948 and which by 1951 began to deliver the *Mark 1* (or *FV.701*) version for service with British armored units.

AUTOMOTIVE FEATURES

The general characteristics of the *Ferret Mark 1* are similar to those of its predecessor. It is a two-man turretless vehicle retaining the basic automotive features of the Daimler *Scout Car* which was remarkably advanced for its day. In particular, it has the same H-type drive-line layout. The drive is taken from the engine, through the gearbox, to a single central differential and then to shafts running fore and aft on either side of the vehicle.

Two important advantages accrue from using the H-type transmission layout. First, the single central

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differential eliminates the possibility of traction loss due to one of the four wheels slipping. Second, the use of parallel shafts on either side of the hull means that the driver and engine can be placed between them, instead of being placed above the usual single shaft running down the center of the vehicle. The result is a lower hull and a significantly lower vehicle silhouette than that of more conventional wheeled armored vehicles. In fact, the silhouette is no higher than that of an equivalent tracked armored vehicle.

As in the earlier *Scout Car,* all four wheels are independently located by means of double wishbones and are sprung by coil springs. The engine is, however, different. All the *Ferrets* are powered by a Rolls-Royce *B.60*. This six-cylinder, 260 cubic inch, water-cooled, gasoline engine develops 129 bhp and gives the *Mark 1* a maximum road speed of 58 mph.

IMPROVEMENTS IN MOBILITY

The more powerful engine, longer wheelbase and larger diameter tires made the *Mark 1 Ferret* markedly superior to the earlier Daimler *Scout Car*. But, the mobility of the *Ferrets* has been improved still further during the past few years. The most important of the contributing changes is the adoption of very much larger, 11.00x20 tires on the *Mark 4,* in place of the original 9.00x16 tires. This has more than compensated for the progressive increases in weight which has risen from the 9296 pounds of the *Mark 1* to 12,000 pounds for the combat loaded *Mark 4*. In addition, the larger tires provide better off-the-road performance. To be precise, the increased tire diameter and width have reduced ground pressure and the increase in tire diameter has also improved traction and obstacle crossing ability.

Another very important improvement introduced with the *Mark 4* is the flotation equipment. This equipment, which can also be fitted to all the earlier models of the *Ferret* series, enables these armored cars to cross water obstacles under their own power. This greatly improves their overall operational mobility and increases their effectiveness as reconnaissance vehicles for which the ability to swim across inland waterways without assistance is particularly important.

BRITISH CROWN COPYRIGHT

Daimler Scout Car of World War II

BRITISH CROWN COPYRIGHT

The original Ferret Mark 1

The current "big wheeled" Ferret Mark 4

PHOTO COURTESY OF THE DAIMLER CO.

The flotation equipment consists of a collapsible, bellows-type fabric screen which is permanently carried on a frame fitted at fender level. The screen can be quickly raised or lowered. Its front section incorporates transparent plastic vision slots which enable the driver to see ahead when it is erected. To keep the size of the screen to a minimum, additional buoyancy is given by large watertight stowage boxes of reinforced plastic located between the wheels on either side of the hull.

MISSILE ARMAMENT

In keeping with its original modest role, the turretless *Mark 1* was armed only with a pintle-mounted .303in. *Bren* light machinegun. However, the *Mark 2* has a turret mounting a *.30in. Browning* machinegun. This has made it much more effective, particularly in various security roles.

Since 1961 a number of *Mark 2 Ferrets* have been given additional armament in the form of *Vigilant* antitank guided missiles. Thus the modified *Mark 2/6* carries two *Vigilants,* one on either side of the turret, ready to fire and two more stowed on the left side of the hull. The missiles can be controlled by the vehicle commander from inside the turret or from outside the vehicle, by using a sight/controller unit and separation cable. When the missiles are controlled from a remote position, the launch vehicle can remain under cover.

The *Vigilants* have shaped charge warheads capable of piercing heavy tank armor. Thus *Ferrets* equipped with these missiles can engage battle tanks at considerable range. In fact, the installation of the *Vigilants* on the *Ferret* has transformed it from a light scout car into a highly mobile tank destroyer. By the same token, armored units equipped with *Ferrets* have become more self-sufficient and therefore more effective.

The current *Mark 4* could also be fitted with *Vigilant* missiles. However, it has not been because of the development of yet another model armed with even more powerful missiles. As a result, the *Mark 4* retains the same armament as the *Mark 2*. In fact, it has the same turret and hull. The difference between it and the earlier model are automotive.

ALUMINUM ARMOR

The latest model of the *Ferret* is the *Mark 5*. This has the same hull and automotive characteristics as the *Mark 4* but it is fitted with an entirely new turret. The turret houses four *Swingfire* antitank guided missiles which are mounted in pairs on either side of the vehicle comander's/gunner's station and are elevated for firing. At other times the missiles are fully protected by the turret armor, in contrast to the missiles in all the earlier armored vehicle installations. In addition to the four ready-to-fire missiles in the turret, there are two more stowed in armored containers on the hull. The turret also mounts a 7.62mm machinegun.

The *Swingfire* is a second-generation missile which is both more powerful and longer-ranged than the *Vigilant*. The *Swingfire*-armed *Mark 5* is, therefore, even more effective than the *Vigilant*-armed *Mark 2/6*. The missile installation of the *Mark 5* is also greatly superior. In particular, it is much less vulnerable.

It is noteworthy that the new turret is of aluminum armor. Except for armored vehicles of American origin, the *Mark 5 Ferret* is, in fact, the first production model of a combat vehicle with aluminum armor to appear anywhere in the world.

DOCTRINE AND EMPLOYMENT

Ferrets are assigned by the British Army principally to two types of armored units, namely Armoured Regiments and Armoured Car Regiments. The Armoured Regiment, which corresponds to an American Armor (tank) battalion, has a reconnaissance company with a platoon of 12 *Ferrets* as well as a helicopter platoon. The Armoured Car Regiment is a battalion-size unit intended primarily for reconnaissance and has a number of companies in which *Ferrets* are combined at platoon level, in equal proportions, with the heavier six-wheeled *Saladin* armored cars armed with 76mm guns.

The use of *Ferrets* in both types of unit is governed by the British Army doctrine on reconnaissance which differs from that of the U.S. Army. In particular, the British Army expects it reconnaissance units to obtain information by stealth rather than by fighting. This is based on the premise that when a reconnaissance unit engages in combat it reveals itself to the enemy and thereby reduces the value of the information it requires, through losing the element of surprise. Thus British reconnaisance units are not given battle tanks since they are not expected to engage in actions requiring such powerful vehicles. Instead, their equipment is expected to be highly mobile and as inconspicuous as possible. These requirements are well met by the *Ferrets* which are noted, among other things for being very quiet by comparison with tracked reconnaissance vehicles.

The most recent Mark 5 Ferret with Swingfire missiles elevated for firing.

PHOTO COURTESY OF THE DAIMLER CO.

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Ferret with flotation screen erected for swimming

The emphasis on the avoidance of combat during the performance of the reconnaissance task of gathering information does not mean that units equipped with *Ferrets* are never expected to fight. On the contrary, they are expected to fight but generally when engaged in other than reconnaissance roles. In particular, they are expected to fight delaying actions when they form part of screens covering major armored units. For this reason, some of the *Ferrets* are armed with antitank guided missiles with which they can fight even battle tanks.

SECURITY OPERATIONS

Moreover, in some cases *Ferret*-equipped units might be the only armored units present, because heavier armored equipment might not be available or can not arrive on the scene, even by air. This has happened more than once in the limited-scale operations carried out by the British Army in different parts of the world. In such circumstances units equipped with *Ferrets* would again be expected to fight. For operations of this sort, the *Ferrets* would be organized into companies equipped with no other armored vehicles and a proportion of them might again need to be armed with antitank guided missiles.

Missile armament is, however, superfluous in one category of operations in which *Ferrets* are often used by themselves. These are security operations in which *Ferrets* have served with particular success. In these operations they have proved greatly superior to tracked armored vehicles because they are much more suitable for prolonged patrolling, being less fatiguing for their crews and requiring a far smaller maintenance effort. At the same time, because of their armor, they have proved superior to unarmored ¼-ton trucks which are often used in this role but which are vulnerable to snipers or even to a well-aimed brick.

In consequence *Ferrets* have been used throughout the world in a variety of security operations. These have ranged from the policing of the frontier between Northern Ireland and Eire to the large scale operations of the French Army in Algeria. *Ferrets* have also taken part in all major United Nations peace-keeping operations, from the Gaza strip in 1957 through the Congo to the much more recent operations in Cyprus.

The *Ferrets* have also been used successfully in a variety of other, secondary roles. For instance, each British battle tank company has two in the headquarters platoon and they are also used as commanders' vehicles in other units. There is also a special version of the turretless *Mark* 1, the Mark *1/2*, which can carry three men instead of the usual two and which is used by British infantry units as a reconnaissance and liaison vehicle.

All these different successful modes of employment clearly demonstrate the usefulness and versatility of the *Ferret* and of well-designed light wheeled armored vehicles in general. Moreover, the potentialities of the *Ferret* can be realized still further. Therefore, its manufacturers, the Daimler Company, are continuing an active research and development program. The goal is to bring about even better vehicles of this type.

SHORT, OVER, LOST or...TARGET

A range for firing novel ideas which the readers of ARMOR can sense and adjust. This is a department for the new and untried from which the doctrine of tomorrow may evolve. Items herein will normally be longer than letters but shorter and less well developed than articles—about 750 words maximum is a good guide. All contributions must be signed but noms de guerre will be used at the request of the author. ON THE WAY!!

WHY NOT A COMBAT BADGE FOR ARMOR?

by Captain Ronald M. Cross

Sergeant Johnny Graves served as an Armor crewman with the 11th Armored Cavalry Regiment in the Republic of Vietnam. His unit conducted operations primarily in the area between the Cambodian border and Saigon, an area where some of the most severe fighting during the years 1967 and 1968 took place. He was awarded the Silver Star and two Bronze Stars for valor during the Viet Cong's Tet Offensive in early February 1968.

Prior to reporting for duty at his CONUS assignment at Fort Knox, Johnny went on a much deserved leave at his home in Oshkosh, Wisconsin. His parents and fiancée met him at the train station. While on the way to the family house, Johnny's father commented that Johnny must have had a plush assignment in Vietnam because he had not been awarded the Combat Infantryman Badge. Mr. Graves' felt that the Infantryman was the only soldier who really saw combat and was, therefore, the only man who could call himself a soldier. The fact that tankers had no combat badge proved that they never really were engaged in combat. His father's comments were the first of many similar remarks Johnny was to hear from the veterans in Oshkosh. Each time Johnny was forced to endure the resulting humiliation because he did not know why there was no combat badge for Armor.

Even after Johnny embarked upon his duties at Fort Knox, he relived again and again the humiliation he had felt when asked why he had not been in the fighting in Vietnam. Apparently his decorations for valor meant less to Americans than a combat badge.

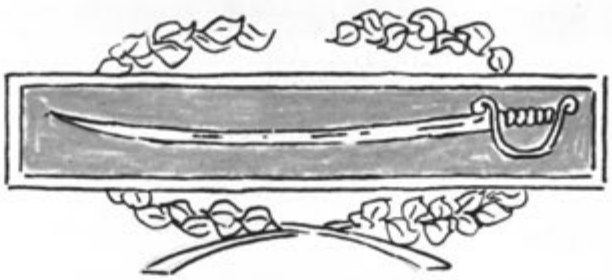
Captain Ronald M. Cross, *Armor, is a 1964 USMA graduate who has served in command positions with both Armor and Infantry. A ranger and paratrooper, he was awarded the Combat Infantryman Badge for service in Vietnam.*

The above story about Johnny Graves is not a unique one. It is typical of the situation hundreds of young Armormen have found themselves in during the past several years. Arising out of this story is the natural question of why the Armor branch does not have an emblem to recognize all of its men who have fought, are fighting, and will fight for their country? Is it a necessity or a nicety to recognize those men who return from a combat zone without any decorations other than service ribbons, yet who are so vital to the successful operation of Armor units?

During World War II, the US Army discovered that it could no longer rely completely on its tradition and heritage to inspire its men. A new symbol was designed to help the "common soldier" unite with his unit, his branch, and his service. It was also supposed to provide him with a tangible sign that he was a man among men: a sign that would tell all Americans this. The "common soldier" was the Infantryman. The symbol—the Combat Infantryman Badge.

It is important to note that then armor was still young and unproven in spite of General Patton's successes in Europe and the spirit, tradition, and history of the Cavalry, its parent. Years would pass before the US Army would completely integrate Armor into its over-all concepts, language and thinking.

The advent of the ROAD Division finally accomplished this with its inherent concept of tailoring its organic combat units to facilitate the accomplishment of a given mission. A commander now had to be able to employ his forces as a combined arms team as well as a pure unit. Consequently Armor and Infantry officer branch training programs had to be expanded to include instruction that would prepare their graduates to occupy leadership, command, and staff positions in either branch. Perhaps more importantly, the graduates received instruction on how to employ the two branches together in a



SSG C. B. LUCAS, JR.

combined arms role. To make this expansion possible, a common language, fundamentals, and concept of employment had to be developed. Thus the stage for the future was set.

Today Armor has been accepted fully as an integral part of the combat arms team. This acceptance is significant because it places the importance of the Armorman's role on a par with that of the Infantryman. No longer should the "common soldier" be thought of as an Infantryman. He should, rather, be thought of as a fighting man—both an Infantryman and an Armorman. Accordingly both should be entitled to the recognition.

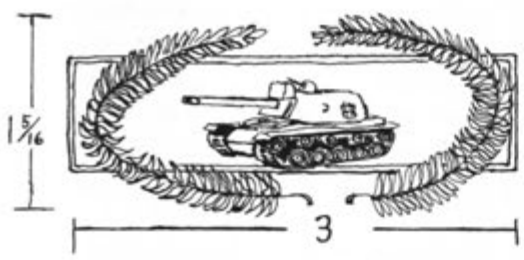
The second factor to be considered is that the Cavalry is the forefather of the Armor Branch. Because of this relationship, the Armorman has been indoctrinated in the Cavalry tradition and is expected to draw from it *esprit de corps*. Almost every Armor unit today points with pride back to its Cavalry heritage. This tradition is a necessary motivational aspect of the Armor way of life, but it at best only partially fulfills its function. A soldier can not wear his *esprit* on his chest. A civilian can not look at the man and gain any idea of his "esprit" or his professional competence.

The Armorman today needs a symbol comparable to that needed by the Infantryman in World War II. He needs it for the same reasons. The Armorman needs a Combat Armor Badge. The Armor Branch and the Army will, correspondingly reap the same benefits the Infantry and the Army did in World War II.

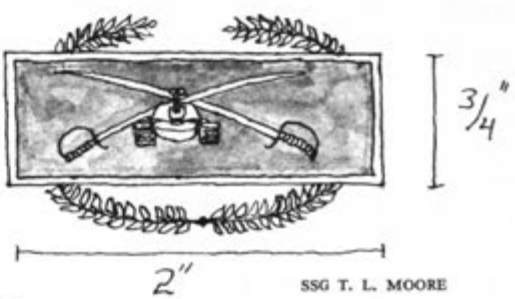
As this author is neither an artist nor an expert on heraldry, only a brief description of a combat badge for Armor is presented. Certain elements would be essential in the design of the badge. They are the traditional combat badge wreath, the traditional Armor color of yellow, and the Sherman tank (the first tank to play a decisive role during a major war).

Throughout this thesis so far no differentiation has been made between the Armorman and today's Cavalryman (officer and enlisted). This omission has been intentional. All Armor officers, or those with an Armor duty assignment, must be capable of performing in either capacity. All senior NCOs with either a Cavalry or Armor MOS also should be able to perform in either. The lower ranking enlisted men need only have a basic duty MOS of 11D or 11E. These Armormen need only two more basic requirements before they will be eligible to be awarded the badge. The first is to have been in an Armor duty position for a minimum of 30 days and to have drawn hostile fire during that period. The second is that the award may only be given to members of units of brigade size or smaller.

Armor has long since come into its own. In the future Armormen will continue to take their places at the side of their fellow close combat soldiers, the Infantrymen, in fighting for their country. They need and will continue to need a symbol that will cause them to have even more pride in themselves as men and as Armormen. A symbol that will allow *all* to know them for what they are—combat soldiers.



SSG T. L. MOORE



SSG T. L. MOORE

Badge Concepts From ARMOR Files

Francis staggered into the barracks . . .

LINE OF DUTY INVESTIGATIONS

by Captain Stuart J. Offer, JAGC

Specialist Four Francis was drunk. He staggered into the barracks, weaving from bunk to bunk, tripped on a foot locker and sprawled on the floor. Specialist Four Anderson, who had watched Francis lurch down the aisle, picked him up and dragged him to his bed. But Francis wasn't ready to sleep yet. Instead, he began singing at the top of his lungs, with great operatic gestures—one of which propelled him out of his bunk onto the barracks floor again. Now Specialist Anderson got mad. He picked up Francis by the shoulders and started to drag him outside. Francis resisted and pushed him away. That was enough for Anderson, who hauled off and hit him in the face. Results: a broken jaw for Francis and a fractured wrist for Anderson.

You have been appointed the "line of duty investigating officer" for both cases. What is the purpose of your investigation, how should you carry it out, and what is your conclusion? This article is intended to help answer these questions.

Line of duty and misconduct determinations are made primarily for the purpose of providing facts required to administer Federal statutes affecting the rights, benefits and obligations of members of the Army. For example, a member who for more than one day is unable to perform his duties because of an injury resulting from his own misconduct must make up the lost time. And if the injury results in permanent disability, he is not eligible for disability retirement or severance pay. Thus, the conclusion reached by the investigating officer is of crucial importance to the injured soldier and the nation's taxpayers.

Often, line of duty investigations are conducted incidental to acts which might also be the subject of disciplinary proceedings such as Article 15 punishment or court-martial. But the line of duty determination itself is nonpunitive in nature. The final action taken in line of duty proceedings is not determinative in disciplinary proceedings and, conversely, the findings of the disciplinary proceedings are not conclusive as to line of duty determinations.

As a line of duty investigating officer what should you do? First, you should get a copy of DA Pamphlet 27-6, "Principles Governing Line of Duty and Misconduct Determinations in the Army," and a copy of Army Regulations 600-10. Chapter 5 of this regulation is particularly helpful. These are the basic guidebooks for the investigating officer, and much of the information contained in this article can be found in them.

Second, you should make a full investigation of the circumstances surrounding the injury. In making your investigation, you will want to obtain the injured member's side of the story. Before you question him you must advise him of his rights under Article 31(b) of the Uniform Code of Military Justice, and of the purpose of the investigation. Contact your local Staff Judge Advocate if you have any question as to what this entails. Also contact your local Adjutant General for the proper forms to be used in making your report. If it is practicable, the member concerned should be present at the examination of witnesses. As a minimum, if it appears to you that your conclusion will be "not in line of duty" or "due to own misconduct," he should be given the opportunity to examine the evidence and submit a statement or other evidence in rebuttal. You must determine in your own mind what caused the injury. Be sure that anything you rely upon to reach this conclusion is in the record. Your conclusion will be reviewed by higher authorities and they can't read your mind. An investigating officer's report cannot be *too* complete!

The third duty of the investigating officer is to make his findings. Was the injury incurred in line of duty? Was it caused by the member's own misconduct? To aid you in making these findings certain rules and presumptions have been evolved over the years. The most important rule is that injury or disease is presumed to have been incurred in line of duty

and not due to the member's own misconduct. The Army gives its members the benefit of the doubt. This presumption as to line of duty may be overcome only by substantial evidence that the injury or disease—

- was proximately caused by the intentional misconduct or willful neglect of the member; or
- was incurred during a period of unauthorized absence; or
- was incurred while the member was neither on active duty nor engaged in authorized training in an active or inactive duty status *and* was not aggravated by military service.

In each and every case, your job as investigating officer requires you to determine whether substantial evidence exists to rebut this important presumption. "Substantial evidence" is that evidence that a reasonable mind can accept as adequate to support a conclusion. It is not a trace or a hunch. On the other hand, you need not be convinced "beyond a reasonable doubt"—the standard of proof used in courts-martial. With this basic rule in mind, let's take another look at the hypothetical Anderson-Francis Case outlined at the beginning of this article.

The facts establish that Specialist Francis was drunk. Is this misconduct for line of duty purposes? The answer, as you might suspect, is that it depends. If the injury was incurred as the result of the intemperate use of intoxicating liquor, it is considered to have occurred not in line of duty and due to misconduct. One who voluntarily becomes intoxicated is held to as high a standard of conduct as one who is sober. Intoxication does not excuse his conduct. Suppose, for example, that when Francis tripped on the foot locker he fractured his shoulder in the resulting fall. We may infer that Francis was, as a direct consequence of his intoxicated condition, unable to maintain his balance and therefore fell, sustaining the injury. Consequently, your finding would be "not in line of duty—due to his own misconduct."

It is important to note that the intoxication rule applies only when the injury is the result of the intoxicated condition of the member. In legal terms, misconduct of a service member bars him from Army benefits only when his injury was "proximately caused" by the misconduct. Proximate cause means the moving or direct cause. It is not enough that the misconduct merely contributes to the injury. For example, in our hypothetical case we would say that the direct cause of Francis' broken jaw was the punch by Specialist Anderson. While the fight might not have occurred if Francis had not been intoxicated, we cannot say that his drinking did more than merely contribute to the whole course of events, Francis didn't start the fight, and we can't say that he could reasonably expect that his drinking would lead to a broken jaw. So, as the investigating officer, your conclusion as to the broken jaw would be "line of duty—not due to own misconduct."

Here is a helpful point to remember. If you believe that an injured service member was drunk, make certain that all evidence is in your report. Obtain sworn statements from people who saw him and from the doctor who examined him. Have them relate therein what actions of the member led them to conclude he was drunk, for example odor of alcohol on breath, staggering walk, slurred speech. Build up your report the first time, then it won't have to be sent back to you to be completed!

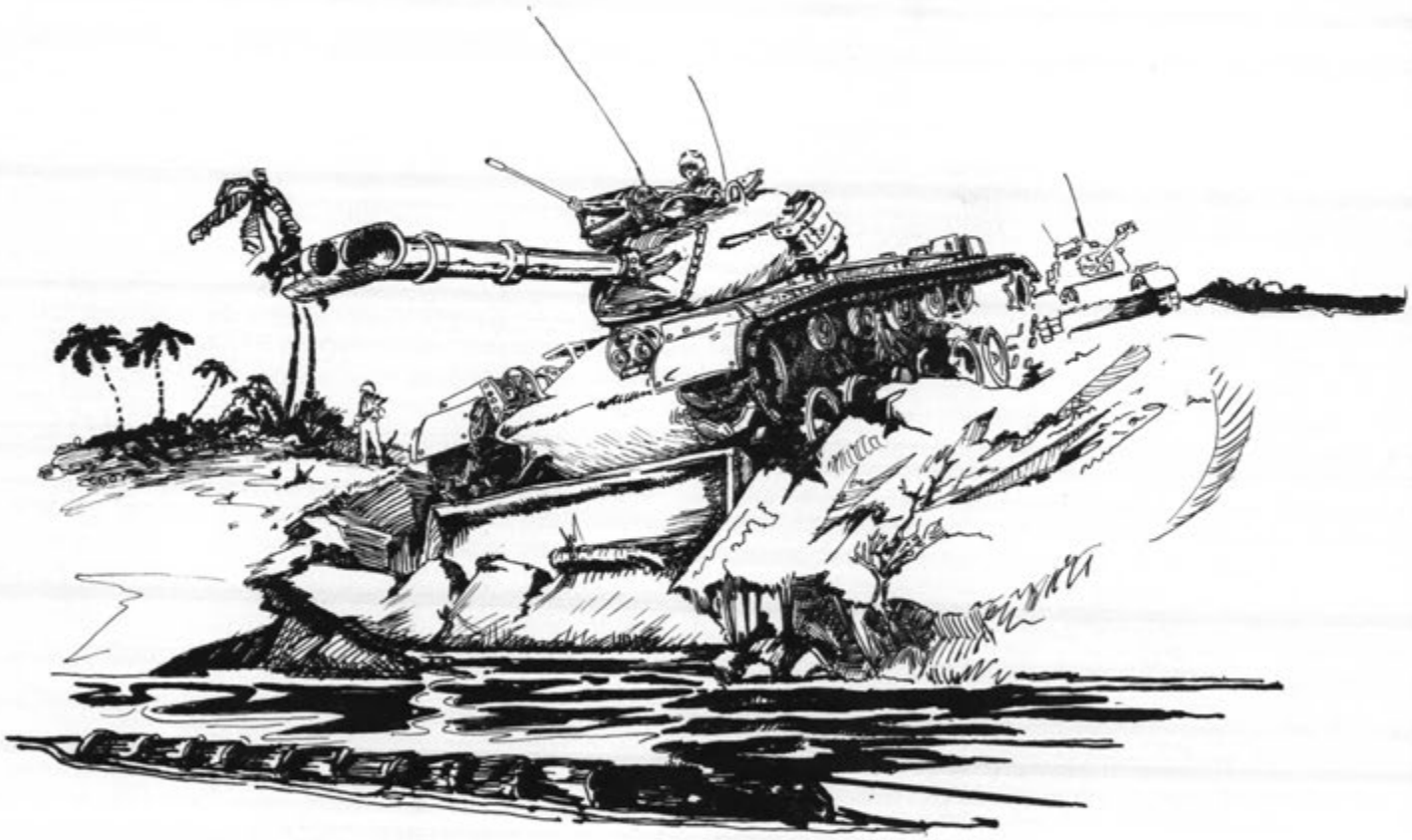
What about Specialist Anderson's broken wrist? Here the rule is clear. Injury incurred as the result of an act of wrongful aggression is incurred not in line of duty and due to misconduct. If Anderson has been permanently disabled by his venture into fisticuffs he'll get no benefits from the Army.

In conclusion, your duties as a line of duty investigating officer are important ones. You must investigate the circumstances surrounding the injury; record and assimilate the evidence obtained; evaluate it to determine exactly what occurred; make findings as to line of duty and misconduct; and report the results of your investigation clearly and concisely. Your determination may have a profound effect on the service member and his dependents and may involve substantial expenditures by the United States. Do your job carefully. If you have any questions, don't hesitate to seek advice from your Staff Judge Advocate. Remember too—don't take punches at singing drunks!

CAPTAIN STUART J. OFFER, JAGC, is assigned to the Military affairs Division, Office of the Judge Advocate General. A 1964 graduate of the University of Washington, he received his LLB Magna Cum Laude from Columbia University in 1968. He was Managing Editor of the Columbia Law Review.

BATTLEFIELD PREPARATION in AREA WARFARE

by Major Robert W. De Mont



FOREWORD

After-action reports from Vietnam are persuasive evidence that those units which best prepare their potential battlefields for employment of all available combat power achieve the greatest success. The tactic of fixing the enemy and then moving in armor, over pre-selected and prepared routes, for the final assault has produced devastating results time and again.

This article covers the continuous making ready of the Bong Son Plain for armor employment during the period March to May 1967. By the end of May the extensive development began to pay off. Subsequent actions in June and July further proved the great value of battlefield preparation. Accounts of two of these actions by LTC Robert H. Nivens, Jr. and MAJ Donald W. Williams were published in the July-August 1968 ARMOR.

In 1962, the South Vietnamese were given the M113 armored personnel carrier (APC) to determine the feasibility of armor employment in Vietnam. From the beginning, the APC was successful in combat and in traversing unfavorable terrain. This success led to additional APCs being committed to the Vietnam effort. Even so, many in influential positions were not convinced that armor—and especially tanks—should be employed more widely, because Vietnam was not "tank country." This was a phrase reiterated by many of the U.S. advisors and commanders during the early commitment of the *M113* in Vietnam. Swamps, monsoons, swift streams and rivers, mountains, dense jungle, and the elusive guerrilla created a requirement primarily for helicopters to move and support combat troops. Armor advisors advocated the extensive use of the APC, but very little was heard about the tank.

Operations *Cedar Falls* and *Junction City,* in the fall and winter of 1966-67, illustrated how armor could be used in conjunction with airmobility in terrain that was formerly considered not trafficable for armor. How was this accomplished? It was through the ingenuity of the commanders of the units involved, the hard work of the individual Armor crewman, the foresightedness of the commanders and planners, and the engineer and logistical support committed that Armor was able to flex its muscles and demonstrate its capabilities. A previously inaccessible jungle was literally opened to vehicular movement into the area.

Successful operational concepts are formulated by the leaders who have the insight to see the full capabilities of their forces and have the perseverance to see their plans through to completion. In order to prepare to use a specific operational concept in area warfare much terrain preparation may be required. This can involve the cutting of landing zones in the jungles and on mountain and hill tops to accommodate helicopters and building and securing roads to afford multiple ground routes into an area for resupply or combat vehicles. Areas 100 meters to each side of the roads might need to be cleared by Rome plows to prevent ambushes. And, entire jungles could be eliminated to channel enemy movement and location, to allow surveillance, and to permit easy access for subsequently committed combat power to destroy the observed enemy. Terrain which was not useable for airmobile and mechanized operations could be prepared so that helicopters might be used in conjunction with ground combat vehicles to form a fast, hard-hitting and highly mobile combat force.

The BONG SON Area—March-July 1967

In March 1967, my unit (Company A, 1/69 Armor) was placed under operational control of the 1st Air Cavalry Division (Airmobile), which was then operating in the Bong Son plains. Here the streams, stream banks, rice paddies, steep gorges and foothills appeared to be formidable obstacles for the 52-ton *M48A3* monsters. The value of the tanks in this area was undoubtedly questioned by many of the airmobile-minded infantrymen. To many an infantryman, Armor has traditionally meant maintenance, logistical and security problems. Prior to the arrival of A Company, the 1st Air Cavalry had been in several firefights against an enemy fortified in huge coconut tree log and dirt bunkers. Many casualties were suffered by the air cavalrymen because

A tank platoon crosses the rice paddies on line.

A Viet Cong fortified village after destruction.

they did not have the staying firepower on the ground that would give them the upper hand in a firefight as they closed with the enemy. Artillery and airpower were employed to bombard the target areas, but the enemy continued to have plenty of fight left after the bombardments.

Under the guidance of Colonel James C. Smith, 1st Brigade Commander, a major effort was made to prepare the plains area for armor-airmobile operations. Company A, with infantry and combat engineer support, began to build a tank trail around the periphery of the plains area and, at the same time, started to determine what areas could or could not be traversed. This initial undertaking was finished in eight days. During this time much work was accomplished, many lessons learned, and many techniques developed. The attached engineer dozer had prepared multiple crossings of streams and gorges which had been caused by the monsoon rains. It had built trails around the bases of hills and to the tops of terraced hills. The tanks explored the area to the right and left of the prepared trail, which made the area resemble a huge spider web when viewed from the air. The tanks moved to each hamlet in the area, so that the tank commanders would know what hamlets could be approached and from what directions.

During this operation the tank commanders learned that fast moving streams could be dammed in one place by an engineer-furnished dozer or the tank dozer. Thus crossings could be made downstream without creating a gummy crossing site where following tanks might be bogged down.

The main gun, firing high explosive (HE) delay or high explosive plastic (HEP) (and there is a 90mm HEP round in the inventory) could be used to blast the exit angles of stream banks. Coconut trees thrown into the stream bed kept the tanks from nosing into the stream bottom and made for a firm crossing site. The tanks could be moved parallel to a stream bank and neutral steered with care into the bank. The bank would gradually collapse, lessening the angle of entrance into the stream.

Some two or three days before the arrival of A Company in the area, the engineer squad was airlifted to critical points to destroy dams which had been built by the Viet Cong or local sympathizers. They destroyed these dams so that the paddies would be emptied of water and would then support tank movement. This was only done in paddies that were not planted and which were obviously flooded to prevent tank movement.

After some hours of recovery experience, the tankers learned which paddies could be negotiated and which could not. The color of the rice shoots and soil was one of the clues to trafficability. Simple rules, such as no tracking, no stopping, no sharp turning, and keeping the accelerator to the floor paid large dividends in the form of successful vehicle movement. After experiencing the ease of trafficability across rice paddies, the tank commanders would not hesitate to cross even the wet paddies (as long as that black murky soil was not present).

With the use of the tank dozer or engineer dozer, fields of fire in bamboo thickets, coconut tree groves, or rice fields were cleared. A seemingly impossible site was made into a well-prepared and defensible position. In addition, the tanks would assist with the use of their third weapons system, the tracks and

hull, to level the brush and trees until 100-150 meters was flattened and cleared. This cleared area could also then be used as a landing zone for helicopters when they brought in resupply. The coconut logs could be used as protection from enemy direct fire weapons by the infantrymen. Whatever trees or brush remained near the perimeter would be cleared by morning by harassing and interdiction fires using tank cannister rounds.

Huey and *Chinook* helicopters were used to transport fuel, oil, parts and hot food to the tank elements. This eliminated the need for the security which would have been required to move a fuel tanker, mess truck or VTR to the site. An engineer bulldozer was available with each pre-positioned platoon to provide necessary dozing support since it was much more mobile on the steep sloped hills and stream banks than the tank dozer.

In successive operations in the plains area, multiple crossings were made across defiles and streams. The tanks then had free access into the entire plains area and could keep the enemy from channelizing movement by the use of mines or booby traps at limited crossing sites. The tanks were able to assist the infantry at any hamlet in this area whenever they were needed. Tanks were tactically pre-positioned at landing zones so that they could be used as a quick reaction force or as a tank-infantry search and destroy force.

Major Robert W. DeMont, Armor, is a 1959 graduate of the United States Military Academy. Upon completion of the Armor Officer Basic Course and ranger and airborne training, he served for three years with the 2d Armored Cavalry Regiment in Germany as Davy Crockett platoon leader, reconnaissance and tank platoon leader, cavalry troop executive officer and, finally, troop commander. After attending the Armor Officer Career Course, he was assigned to the US Army Armor and Engineer Board at Fort Knox. While in Vietnam he served as a staff advisor to the ARVN 8th Cavalry and as commander of Company A, 1st Bn, 69th Armor. He is presently assigned to the Combat Materiel Division of the USACDC Infantry Agency, at Fort Benning.

This tank crossed where it seemed easiest and struck a mine made from a 106mm recoilless rifle round, a 2.75 inch rocket and a 155mm round.

This prepared battlefield made possible the added advantages that the tanks provided to the hard hitting 1st Air Cavalry Division. Also, it made possible the employment of a powerful combined arms team ready to deal the enemy a crushing defeat anywhere in the Bong Son Plain. Numerous actions during the months of May, June, and July 1967 illustrated this well.

An after-action report of more recent combat operations in 1968 stated that throughout there was a tendency to believe that the tanks had been moved as far forward as possible and could not be moved any farther due to trafficability. It was not until a "We don't know until we try" attitude was adopted that it was revealed that tank operations are only limited by a lack of imagination and perseverance on the part of the commanders. "Despite the restrictive terrain, US Armor supported all attacks either in close complement with infantry or from firing positions along the line of departure."

Area warfare permits a commander time to develop the tactical area so that his entire combat power can be brought to bear on the enemy. Many methods of Armor employment are outlined in the various field manuals. But it is up to Armor leaders to use their initiative, experience, and abilities to find new methods of exploiting the great combat power of Armor.

But They're So - Different

by Colonel Thomas W. Bowen

Anyone who ever attempts to describe the differences in cultures, races, or regions immediately encounters the pat phrase, "Some of my friends are ————, and they are not at all like that!" True, for in each culture, race, and region all people are not like that. It is in the understanding of this as a truism that this is written. Where any person seems to be maligned, an apology is offered; when generalities slight feelings, the oversimplification is only for clarity; for each example cited, the author personally knows an exception. We are each different but with a residue of sameness.

In Vietnam a cultural impasse occurs daily, from the torrid steaminess of the Delta to the cooler climes of the plateaus and the northern provinces. However, one common plaintive message seems to be heard from all sectors, "But they're so different, they don't understand." It is the hope of this brief article to aid understanding. Realize first, however, that the statements boldly set forth here are not supported by statistical analysis, nor the result of any meticulous survey taking. This analysis is the basic result of gut feeling coupled with genuine appreciation of the many things, values, and attitudes in our counterpart culture which may rival if not exceed some of our own. Ethnocentrism is a disease of all races, colors, and creeds.

What is so different about the Vietnamese culture? Why doesn't the American Advisor instantly understand the problem? Nail the differences down.

FIRST DIFFERENCE—ATTITUDE

The American culture is monistic in almost all aspects. One thing is right! This applies whether the subject falls into the ridiculous or the sublime area. For example, "The only *true* religion is Seventh Day Adventist" or whatever is yours; as the cigarette advertisers would put it, "We'd rather fight than switch" —"I want Jim Beam with Wink and nothing else." The Americans must have a single right. Monistic to the hilt!

The Vietnamese attitude is much more pluralistic, in choosing a road or selecting an attitude, the other possibilities are not automatically counted as wrong or ruled out. (For example, Buddhism has a place for Christ, a credit which is not returned.) One may be chosen but the other is not peremptorily rejected, nor does it have to be wrong. This dualism is perhaps reflected in the market price, there is no one price as we find in our supermarkets. There are many prices which are arrived at dependent on many variables; there is no "take it or leave it" price.

This first difference is also reflected in the resulting polarization which occurs in the American as opposed to the Vietnamese culture. If it is right or wrong—period—then some action must be taken. If it is more right or less wrong—questionably or possibly—then perhaps we can change the framework surrounding the problem or the other conditions and perhaps the problem will reduce itself. Such is the

attitude of insurance companies when they spread the loss of a disaster. If it is dissipated no one is hurt too badly and harmony—peace—is maintained.

In many ways it is as if the Vietnamese feel that good and evil are balanced 50-50. And by adroit maneuvering, the balance can be maintained and not upset. The American, on the other hand, feels that the battle must be fought. Since time is important it must be done immediately; action now is the answer! To the Vietnamese the American cliché "Do something even if it is wrong" is an anathema. Nothing could be further from (their) truth! The answer is semi-action. You do not attack the problem directly, you change the background. You move the surrounding framework so harmony can now roll forward. The answering solution is not as forthright as the American result of a direct conflict might be. But it may well be more effective and less costly in money, and perhaps, lives. A simile might well be that of a direct cavalry charge versus harassing artillery fire.

One could easily cite our Holy Wars as typical of our unyielding attitudes. There is room for only the "true believers." The innocent may be hurt but the ends justify the means. To the Vietnamese the order of things would be that all people suffer evil days. The effort must be to balance the evil days with those most fortunate good ones.

SECOND DIFFERENCE—CHANGE

Closely allied to attitude is the image which each culture holds of itself. "*If* I could see myself as others see me. . . ." Here the American sees himself as most tolerant, receptive to new ideas; "I don't care where it came from, does it work?" There is almost a tradition of non-formality. Change is almost good for change's sake.

The Vietnamese are different; the loyalty to tradition is good in the same view. Their loyalty to tradition equates to change for change's sake. The *method* of doing something is important. The ritual involved in the taking of tea epitomizes this attitude. Protocol is a necessary function. And in this vast difference of image, the American advisor acts as a powerful agent for change. "Can't you see the advantages? Is tradition as important as health?"

Each American, to a greater or lesser degree, pictures himself as a unique combination of idealism and realism. This all-seeing union is blended with an extreme suspicion of opportunism. Opportunism is bad *per se*. Almost the reverse is true of the Vietnamese. The possible is what may be accomplished. Idealism is fine, but really what can practically be done? Practical results are the answer as to the possible; for example, as is politics to the American politician. "Face" is important, but harmony must reign—not an Armageddon between extreme right and extreme wrong. And harmony may well involve more than two sides!

THIRD DIFFERENCE—REASONING PROCESSES

In many ways this difference is the crux of all the problems of understanding. The American is primarily analytical, while the Vietnamese is primarily conceptual. The American says, "What makes it tick?" Looking inwardly the Vietnamese says "What's the overall idea?" Looking outwardly perhaps it is best illustrated in the printed language. The American says "M + A + N = MAN." The Vietnamese (Chinese) would only print "人" as man. All mutual problems fall into this dichotomy. For example, both American and Vietnamese may agree on the problem—it is the same—visualize it as a square box. The American looks into the box. . . . "How do we accomplish that?" "Where do we get the resources for that?" "Let us solve the details!" The Vietnamese view the same problem box differently; "How is this problem box going to affect the other problem boxes?" "How can we get all the problem boxes in harmony?" "What philosophical questions are involved?"

The strangest facet of this difference is that different approaches help resolve problems. The Americans think they are realistic and analyze the problem working out the logical solutions within their framework of values. At the same time their Vietnamese counterparts are taking a most pragmatic approach and obtaining a practical answer within their framework of values. The result necessarily is a compromise which best fits both sides, assuring some mutual cultural understanding.

FOURTH DIFFERENCE—LEADERSHIP ATTITUDE

Attitude toward leadership may seem a minor problem as opposed to those already presented. But

COLONEL THOMAS W. BOWEN, Armor, is currently the Senior Advisor in Thua-Thien Province. Having served in Vietnam for over two years on his current tour and for two years on a previous assignment with MACV, he brings considerable experience to the problem of differing cultural orientations. A graduate of the USMA and the Army War College, Colonel Bowen has commanded Armor units from platoon through squadron. He holds an MA in Psychology from Vanderbilt University. A career-long ARMOR author, his most recent articles have been "What Makes Red China So Red?" (March-April 1967) and "But He's Only a . . ." (July-August 1968.)

this difference is most difficult for Americans to fathom. To an American, leadership is institutionalized; "I don't like the President, but he's our President" is a typical response. The American is loyal to the office—not necessarily to the individual in that office. To the Vietnamese the reverse is true, the loyalty is to an individual. The commitment is to a specific person. While an American can be critical of his chosen banner-bearer and still be loyal: a Vietnamese cannot! Each twist and turn is rather slavishly followed. Groups rarely split off from a following to join the opposition. The American is cynical and may or may not follow. The Vietnamese reflects more traditional values and is truly loyal to his particular leaders.

This facet is one which must confound Americans for it results in the leader having and using power in manners which are traditionally unacceptable to Americans. For example, as a result of this unswerving loyalty, the Vietnamese uses the resultant power for both public and private gain. The province chief takes 10 bags of cement from the 300 allocated to a school building to finish his patio. Corruption? Would the ten bags of cement make the school really last longer? Or has this particular province chief balanced the good and the bad—the public and private—in a most harmonious way? Power is only sought when it can be used. Which leads us to the—

FIFTH DIFFERENCE—WHO'S IMPORTANT?

All of the foregoing is bound up by this question. Who's important? What really counts? The difference is evident. The American basically conforms to status groups, markedly so in the younger age groups. It may seem unlikely when considering much of our yellow popular media propaganda, but many, if not most, Americans have a community spirit of awareness. The Vietnamese, on the other hand, conform to a kin group or at the highest level to a village group with a very limited sense of community or higher loyalty. The American self-image of rugged individualism is in violent contrast to the Vietnamese attitude of family over self.

SOLVING THE DILEMMA

So what's to do? Obviously the differences are great, in fact, immense. Can they be resolved? To a degree, perhaps, but as Rome or any other worthwhile structure was not built in a day, neither were differences of this magnitude quickly resolved. A little knowledge *is* a dangerous thing, no knowledge is fatal; understanding, like enthusiasm, is contagious. A little goes a long way.

THE EXPERIMENTAL MECHANIZED FORCES

by Timothy K. Nenninger

By the latter part of the twenties, as the mechanical capability of the tank increased, military officials became more far-sighted about its use. Increased mobility and heavier firepower enabled tanks to assume a more independent role.

The Chief of Infantry, and thus the officer having operational control over American tanks, Major General Robert H. Allen wrote in 1927, "My studies at the General Service Schools at Fort Leavenworth have convinced me that the tank was the only new ground weapon born during the World War that would, in future wars, play a role as conspicuous as the airplane, being the only weapon that could be relied on to overcome the machinegun and prevent a recurrence of the stabilized condition of 'trench warfare' similar to the Western Front."

Even the cavalry saw possibilities for tanks. In 1927 Major General Herbert O. Crosby, the Chief of Cavalry, recommended incorporating tank units into cavalry divisions and assigning antitank weapons to cavalry regiments. Colonel Samuel Rockenbach, commander of the infantry tank service, proposed that the cavalry and other branches, as well as the infantry, contribute to tank development. He said, "I submit that the recent developments by the British will have an effect in modifying our ideas in regard to tanks and that the role of tanks is no longer a special weapon for infantry, but that it is just as important to cavalry divisions, corps, and the Army." The British efforts, not the proddings by the Americans, precipitated an important change in American tank development.

In early 1927 Secretary of War Dwight Davis witnessed the maneuvers of the British Experimental Mechanized Force at Salisbury Plain. This force, composed largely of tanks and other cross country mechanized vehicles, impressed him so much that later in the year he ordered the organization of a similar American unit to serve as a military laboratory. Including troops from all branches, infantry, cavalry, tanks, artillery, air, ordnance, and supply, the force would be self-sufficient. Davis authorized the commanding officer to ignore existing regulations concerning organization, armament, and equipment. By conducting tests, the War Department sought to develop proper equipment and correct doctrine for the mechanization of additional units. General Charles P. Summerall, then Chief of Staff, ordered the Operations and Training Section (G3) of the General Staff to undertake a study of mechanization which would serve as the basis for the organization of a temporary Experimental Mechanized Force. On 30 December 1927 Summerall approved a preliminary G3 report for the organization of that force. Elements of the Mechanized Force would organize and train at their permanent stations and then assemble at Fort Meade during the summer of 1928.

An infantry tank officer and former Commandant of the Tank School, Colonel Oliver Eskridge, commanded the Fort Meade force. Units assigned to the Experimental Mechanized Force included the 16th and 17th Tank Battalions, one separate tank platoon, one battalion of the 34th Infantry, an armored car troop, one battalion of the 6th Field Artillery, an

engineer company, a signal company, a medical detachment, the 1st Ammunition Train, a chemical warfare platoon, an ordnance maintenance platoon, and a provisional motor repair section. By 3 July 1928 the entire force had assembled.

Major Douglas T. Green, Plans and Training officer for the unit, outlined the program of instruction, training, and tactical exercises. From 9 to 14 July training would consist of instruction on equipment, inspection by the commanding officer, and instruction in short route marches to determine proper methods and procedures for road travel. Following this preliminary training, the entire organization would make a five day march to Aberdeen Proving Ground and Carlisle Barracks, and then return to Meade. Such an exercise would give valuable experience in determining proper grouping in march columns, economical rates of march, means of command, supply, and reconnaissance while on the march, and methods of conducting night marches. During the latter part of July and into August the unit would conduct tactical training for offensive operations. From 27 August until 15 September the schedule called for the solution of field problems to test the tactics taught during the preceding training period.

Although the unit generally followed the training program, difficulties arose. Obsolete wartime equipment, which often broke down, proved the greatest handicap. Insufficient equipment and improper balance made the force a poor demonstration unit. Colonel Eskridge requested that the War Department cancel a proposed visit by foreign military attachés because he feared that a poor performance by his troops might embarrass the entire Army.

Despite its imperfections, the Experimental Mechanized Force could not be considered a failure. Both Eskridge and the Assistant Chief of Staff G3, Brigadier General Frank Parker, agreed that the unit provided useful technical and tactical information. By the end of September 1928 the force had accomplished its mission. Therefore, on 19 September, Parker recommended to the Chief of Staff that the unit be disbanded as originally planned. General Summerall approved this on the twentieth. After 1 October all the component units of the Experimental Mechanized Force returned to their home stations.

In the spring of 1928, while plans progressed for the organization of the experimental unit, the War Department began planning for a long-range mechanization program. General Parker submitted a report in March 1928 which emphasized the necessity of firepower and mobility to achieve success in modern warfare. Parker regarded tanks as a means of restoring the power of decision to battle. During World War I and after, tanks were tied to the infantry thus reducing their mobility and shock effect. Instead of this, Parker believed that they should drive forward and attack hostile reserves and rear installations. Not adopting an extreme pro-mechanization position, he considered entirely mechanized armies inconceivable. They were prohibitively expensive; logistical support would be difficult; machines could not operate in all kinds of terrain and weather. But mechanized units were valuable additions to any offensive operation.

The potential uses of mechanized units outlined in Parker's report included operating as the spearhead of an important attack, as a counterattack force, and as the advance or flank guard of strategic formations. Proper organization was necessary for any mechanized force. These required sufficient striking power to penetrate the enemy's defense and disorganize his reserves. But mechanized units could not be so large as to become unwieldy. Tank companies comprised the principal striking power of any mechanized force. As envisaged in Parker's report, light tanks, the leading element in an assault, attacked weak points in the defense; enemy flanks were particularly vulnerable. Self-propelled artillery and medium tanks supported the advance by overcoming strong points and widening gaps in the enemy's line. Infantry, brought forward in mechanized vehicles, consolidated the ground captured by the tanks. Supply, maintenance, and other support elements were mechanized in order to keep up with the advance.

In concluding his report, Parker made several specific recommendations for the long-range development of mechanization in the United States Army. He proposed that procurement of equipment for mechanized units, including light and medium tanks, a reconnaissance car, cross-country vehicles for infantry and support units, and self-propelled artillery, commence during the 1930 fiscal year. Congress had to pass the necessary legislation to establish one permanent mechanized unit during fiscal 1931. This unit would use both modern and obsolete equipment. During 1931 and 1932 the obsolete equipment would be progressively phased out. Secretary of War Davis approved Parker's report as the basis for future development and organized a board of General Staff officers to prepare the details for future action.

Among those appointed to this board was Major Adna R. Chaffee, Jr., a cavalryman and a member of the G3 section of the War Department General Staff. From the time of his assignment to G3 in June 1927

until his death in the summer of 1941, Chaffee remained one of the leading American advocates of mechanization. Before 1927 Chaffee knew nothing about tanks. Realizing that G3 was beginning studies on mechanization, Chaffee learned all he could about the subject. At Rochester he witnessed the demonstration of a new tank, capable of 18 miles per hour, built by James Cunningham and Sons. Chaffee also saw a test of the Christie tank which could go 42 miles per hour. These demonstrations convinced him that tanks should not be tied to the infantry, advancing at a walking pace. The maneuvers of the British mechanized units also aroused his interest. At this time a friend of Chaffee's, Charles G. Mettler, was serving as military attaché to Great Britain. When Mettler visited Washington in 1927 Chaffee questioned him about British efforts in mechanization. Some years later Mettler recalled, "He loaded me with a terrible list of things he wanted to know and expected me to find out for him when I returned to London." His own observations and information received from sources such as Mettler stimulated Chaffee to promote mechanization. Although not immediately *the* moving force in American mechanization (he ranked sixth in seniority on the Mechanization Board appointed in 1928) Chaffee's influence gradually increased and his interest never waned. But the development of mechanization cannot be attributed to any one person. Progress was slow and the result of the efforts of many officers.

Initially the eleven man Mechanization Board met on 15 May 1928 in Room 346 of the State, War, and Navy Building. Thereafter, it met from time to time as work demanded. Members of the board, who were from all branches of service, witnessed demonstrations of new tank models and the exercises of the Experimental Mechanized Force. In their final report, issued in October 1928, the board reached conclusions about mechanization similar to General Parker's report. The group also outlined a tentative program for future development.

The board recommended the organization of a unit similar to the recently disbanded Experimental Mechanized Force to serve as a technical and tactical laboratory. A force of 131 officers and 1896 men would be organized into a headquarters, one light tank battalion, two mechanized infantry battalions, one field artillery battalion, an engineer company, and a medical detachment. In order that tactical doctrine would keep pace with mechanical developments, the board proposed supplying the force with the latest equipment. Although not recommending

Colonel Adna R. Chaffee

formation of a separate branch, the board emphasized the necessity of forgetting branch rivalries and traditions in order to make progress in the field of mechanization. With one exception, all of the branch chiefs concurred in the report. On 31 October 1931 the Secretary of War approved the recommendations but because of budgetary considerations postponed organizing a mechanized force from fiscal 1930 until fiscal 1931.

Major General Stephen O. Fuqua, the Chief of Infantry, was the exception among the branch chiefs concurring in the report. Earlier he had disagreed with the conclusions of General Parker's report on mechanization. Fuqua's criticism was based strictly on branch rivalry; exactly the sort of thing the Mechanization Board wanted to avoid. A separate mechanized force threatened the complete control over tanks which the infantry had had since 1920. Fuqua protested to Parker, "The tendency in this study to set up another branch of the service with the tank as its nucleus is heartily opposed. It is as unsound as was the attempt by the Air Corps to separate itself from the rest of the Army. The tank is a weapon and as such it is an auxiliary to the infantryman, as is every other arm or weapon that exists." According to Fuqua, the authority for tank development should remain where it was—with the Chief of Infantry. Despite the General's protests, the War Department proceeded with its plans for mechanization.

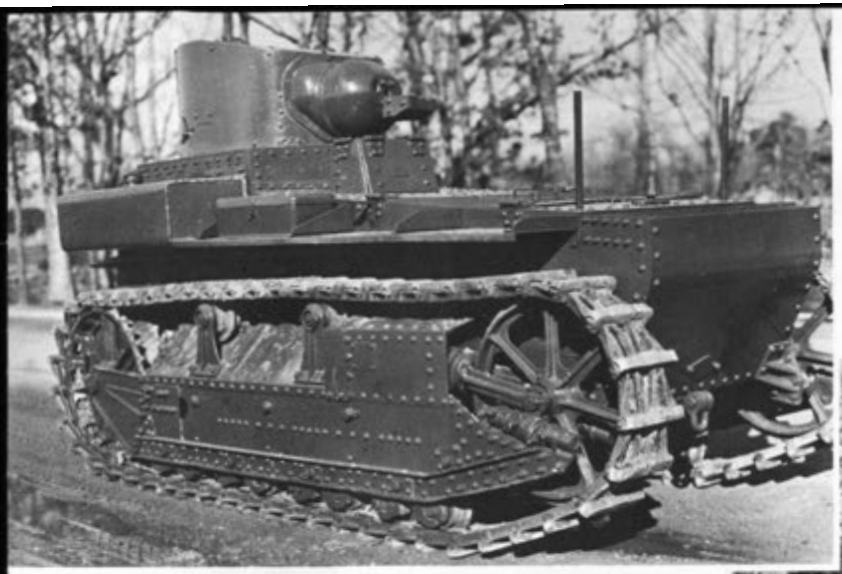
In his 1930 annual report, the Chief of Staff, Gen-

2d Cavalry Division Armored Car Troop leads the Mechanized Force across the James in Virginia. Behind the commander's touring car is a Franklin armored radio car.

Two T1E1 tanks and one Model 1917 tank on Army-developed 6-wheel trucks move across the James River.

Btry A, 6th FA with French 75mm guns portéed on WW I FWD trucks. Below: Self-propelled American 75mm guns on Mark VII chassis.

◀ Maintenance problems appeared as experimental and obsolete equipment built up road mileage.



◀ T1E1 light tanks of the 1st Tank Regt. Powered by a Cunningham V8 engine, this tank could achieve 21.9 mph. Armament was one 37mm cannon and one .30-cal machinegun.

THE MECHANIZED FORCE

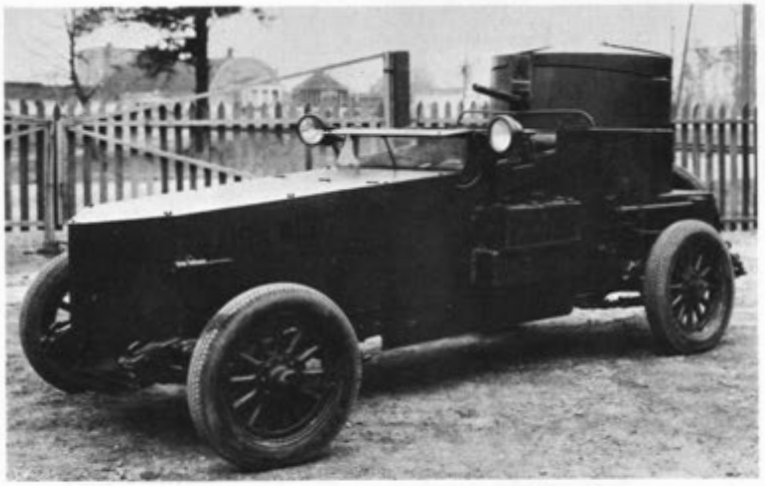
In early 1927, Secretary of War Dwight Davis witnessed the maneuvers of the British Experimental Mechanized Force at Salisbury Plain. Very much impressed, he ordered the organization of a similar American unit to serve as a military laboratory. After the abortive start in 1928, an American Mechanized Force was finally organized in November 1930 with the equipment shown in the National Archives photographs on these two pages. The Force commander was then Colonel Daniel Van Voorhis.

From 1 November 1930 until 31 June 1931, the Mechanized Force traveled about the eastern states, introducing mechanization to the U.S. Army. When the Mechanized Force mission was completed, General Douglas MacArthur, Chief of Staff, ordered it disbanded but directed all branches to mechanize so far as possible. The days of the horse as a means of military mobility were numbered. However, it would be nine more years until an armored division would be born.

A Browning .30-cal watercooled machinegun mounted in a ¾ ton Chevrolet truck. Crew is from Co. H, 34th Infantry.

A T2 White twin .50-cal antiaircraft machinegun mount accompanying the Mechanized Force.

Franklin 95hp 6-cylinder medium (7138 lb) armored car armed with one .50-cal and two .30-cal machineguns.



Chevrolet light (3300 lb) armored car armed with .30-cal machinegun. Armor is 3/16-inch except for ¼-inch plate on turret.

MG R. W. GROW COLLECTION

Colonel Van Voorhis and Major Sereno Brett speaking into a Paramount Sound News microphone at Fort Eustis in 1931. To the left of the tree stands Major R. W. Grow who later, as a major general, commanded the 6th Armored Division in World War II.

eral Summerall reaffirmed the Army's commitment to proceed with formation of a mechanized force. He declared, "From being an immediate auxiliary of the infantry the tank will become a weapon exercising offensive power in its own right." Recognizing the importance of a suitable tank force, Summerall ordered that the proposed Mechanized Force become a permanent unit, not a temporary or experimental organization. But the development program, so carefully planned, ran into unexpected difficulties.

The inability of the Ordnance Department to produce a tank acceptable to the Tank Board and the lack of funds delayed the organization of the mechanized force. Failure to produce a suitable tank was particularly crucial because tanks formed the nucleus of the force. Everything else might disappear and the tanks could still accomplish at least part of the mission; but without tanks the remainder of the force was useless. Until the late twenties the Army used surplus wartime equipment. As the experience of the Experimental Mechanized Force indicated, this equipment was obsolete.

Unfortunately, the advent of the Great Depression paralleled the decline of wartime materiel. Retrenchment and stabilization of military budgets made a modernization and reequipment program difficult. The War Department had to determine how best to maintain the Army with limited funds. And availability of funds often affected policy. Ordnance Department estimates for fiscal year 1932 reflected this trend. Priorities for the submitted Ordnance budget of $2.4 million were for limited service tests and procurement of semi-automatic rifles, 3-inch anti-aircraft guns, and as many tanks as possible with the remaining money.

When the final War Department budget directive reduced the amount to $1 million, the General Staff, which determined priorities, decided to use the money for the highest priority items: the rifles and only a few tanks. The Staff decided that progress in tank development warranted the purchase of only a few tanks to test tactics and keep up with the latest technology. Because of these decisions, the Mechanized Force, when finally organized at Fort Eustis in November 1930, used unsuitable, obsolete equipment.

On 24 November 1930 Colonel Edward O. Croft, the Acting Assistant Chief of Staff, G3, selected units for the force. Company A of the 1st Tank Regiment, equipped with six World War Renaults, five modernized Renaults, and four T1E1 tanks, formed the nucleus of the unit. One armored car troop of ten vehicles served as the reconnaissance element. One battery of the 6th Field Artillery, equipped with obsolete service trucks, not self-propelled guns as the War Department studies advo-

cated, provided fire support. Equipment problems also plagued the engineer company assigned to the force as its transportation initially consisted of horse-drawn wagons. Fifteen light tanks, 10 armored cars, seven tractors, 66 trucks, 22 automobiles, and less than 600 men composed the Mechanized Force.

General Summerall selected Colonel Daniel Van Voorhis as commander of the unit. Van Voorhis, a career cavalry officer and recent (1929) graduate of the Army War College, had no previous experience with tanks. As executive officer, Summerall picked Major Sereno E. Brett, a former wartime commander of the 304th Tank Brigade. During September 1930 Van Voorhis, Brett, and Chaffee, now head of the G3 Troop Training Section, visited Aberdeen Proving Ground, Holabird Quartermaster Depot, and Fort Eustis. They conferred with officers at these posts relative to the equipment and organization of the Mechanized Force. The Chief of Staff based the tactical and training missions of the force on the findings of these officers. In combat the Mechanized Force would execute missions presenting an opportunity for tactical and strategical mobility and quick, hard striking power. The training mission of the unit was to determine the proper tactics involved in the operation of fast tanks with other mechanized and motorized arms. From 1 November until 31 December the force would organize and conduct individual training. Unit training and combined drills to perfect teamwork followed. Beginning in March and continuing until the end of the fiscal year in June, the unit planned to hold field exercises and maneuvers with troops of other arms.

During the period from 1 November 1930 until 31 June 1931 the Mechanized Force carried out its proposed training schedule. The 34th Infantry (Motorized) and the Air Corps Tactical School assisted in some of the maneuvers. Operations consisted of command post exercises, field problems, maneuvers, demonstrations, and ceremonies. Among the exercises were night tactical and strategic marches, offensive combat against entrenched infantry, offensive operations against another mechanized force, attacks involving wide turning movements, seizure of key positions, and operations as a covering force for a larger unit.

All of the missions executed by the Mechanized Force emphasized its mobility. Traditionally, cavalry was the branch of mobile warfare. But during the twenties the cavalry had done little in the field of mechanization. Recognizing these facts, General Douglas MacArthur, who became Chief of Staff on 21 November 1930, ordered the Mechanized Force disbanded and directed all branches, in particular the cavalry, to mechanize so far as possible. This decision affected the development of American mechanization down to the organization of the Armored Force in 1940.

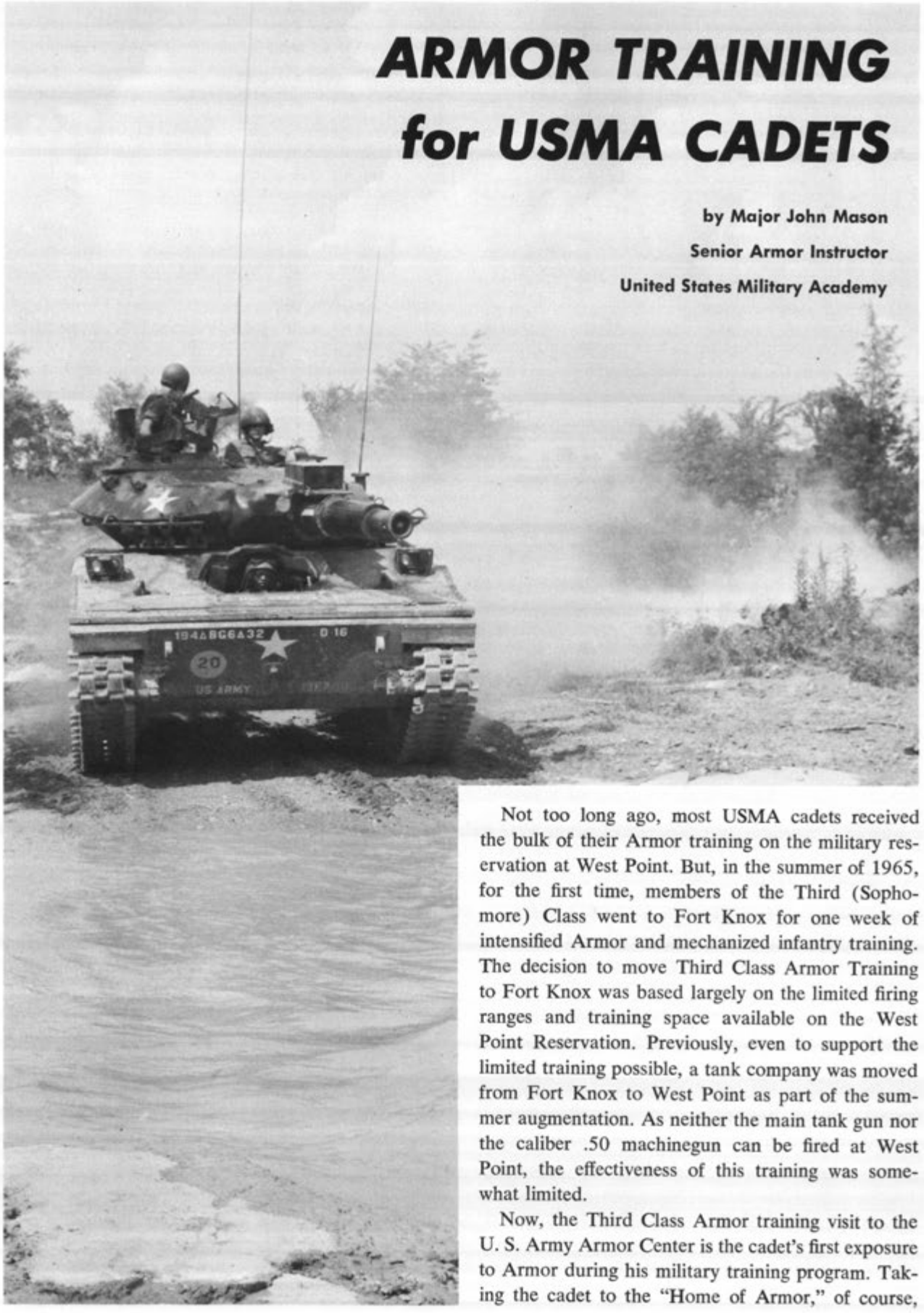
A Bibliographical Note to Chapters II and III of the Development of American Armor

The author used several sources in preparing Chapter II. Foremost were records in the National Archives. Departmental memos, reports from the various conferences considering tanks, and some personal correspondence were found in Record Group 94 (The Adjutant General's File) and Record Group 177 (The Chiefs of Arms File). Other primary sources included Congressional documents such as the *Hearings Before the House Military Affairs Committee, Vol. I* (1919) and the *Reorganization of the Army Hearings, Vol. I* (1919); both of these volumes were published from the records of the 66th Congress, 1st Session. *War Department Annual Reports* also provided valuable facts and figures about tank units. Three *Infantry Journal* articles furnished information on tank activities during the twenties: William E. Speidel, "The Tank School," June 1925; "The Tank Board," August 1926; Ralph E. Jones, "The Tank School and Tank Board." The Farago biography of Patton and Eisenhower's *At Ease!* (1967) gave useful insights into the activities of these officers.

Material at the National Archives also constituted the primary source for Chapter III. Memos by branch chiefs, the Assistant Chiefs of Staff, and the AG were found in the Adjutant General's File, Record Group 94. Operations reports of the mechanized units and the report of the Mechanization Board were also in this file. Additional material was found in RG 177, the Chiefs of Arms File. General Chaffee's obituary in the April 1942 *West Point Assembly,* written by Charles G. Mettler, provided some useful information. "The Impact of the Great Depression on the Army, 1929-36," an unpublished dissertation from Indiana University by John W. Killigrew, was also very good. *War Department Annual Reports* contained data on tank development and outlined overall policy.

ARMOR TRAINING for USMA CADETS

by Major John Mason
Senior Armor Instructor
United States Military Academy



Not too long ago, most USMA cadets received the bulk of their Armor training on the military reservation at West Point. But, in the summer of 1965, for the first time, members of the Third (Sophomore) Class went to Fort Knox for one week of intensified Armor and mechanized infantry training. The decision to move Third Class Armor Training to Fort Knox was based largely on the limited firing ranges and training space available on the West Point Reservation. Previously, even to support the limited training possible, a tank company was moved from Fort Knox to West Point as part of the summer augmentation. As neither the main tank gun nor the caliber .50 machinegun can be fired at West Point, the effectiveness of this training was somewhat limited.

Now, the Third Class Armor training visit to the U. S. Army Armor Center is the cadet's first exposure to Armor during his military training program. Taking the cadet to the "Home of Armor," of course,

makes the best instruction available to him in our branch. Here, the U. S. Army Armor School conducts a one-week program of instruction which includes automotives, tactics, weaponry, communications, and an overview of the branch itself.

The mobility and flexibility of Armor operations afford the cadet an opportunity to demonstrate initiative and aggressiveness. As can be readily seen from the Program of Instruction (POI), the cadet experiences a maximum amount of Armor training within the week spent at the Armor Center. This serves as an excellent culmination to the summer's Third Class training at Camp Buckner. Prior to the cadet's trip to Fort Knox, he has spent four or five weeks in combat arms orientation and training at Camp Buckner, a summer training site located about five miles from the center of the Military Academy. His exposure to artillery, infantry, engineer, and signal training there serves as a good prelude to his combined arms training at the Armor Center.

In the period between the cadet's Third Class Armor training and his First Class (Senior) year, he is exposed to Armor in its role as a member of combined arms forces. In the academic year following his Third Class summer, the cadet is introduced to company level tank and infantry units and their supporting artillery, signal, and engineer elements. During the Second Class (Junior) academic year, the cadet's military instruction is intensified as he is introduced to combined arms forces at task force level. He learns to employ the elements of the combat arms in offensive, defensive, and retrograde movements. In the second semester of his Second Class year, he is introduced to airborne and river crossing operations.

Finally, as part of the First Class trip, the cadet revisits Fort Knox for the purpose of expanding his understanding and appreciation of Armor. The First Class trip, in addition to a stop at the Armor Center, includes visits to the Artillery Centers, the Infantry Center, the Engineer Center and the Signal Center. The Armor Center offers a two day program of instruction designed to give the cadet a greater understanding of Armor as a branch and the combined arms team as a concept. Emphasis is placed on Armor's role in Vietnam, air cavalry, and related aspects to which the cadet has not been previously exposed. Included is an air cavalry demonstration, an orientation on Armor in Vietnam, and demonstrations by the Armor/Engineer Board. The visit culminates with the Armor Mobile Forces Firepower Demonstration. The total effect, then, of the cadet's two visits to the Armor Center will be to provide him with an accurate picture of Armor as a branch and as a concept. Not only will he be familiar with the duties of an Armor platoon leader, but he has received a broader view of Armor operations and trends for the future.

UNITED STATES MILITARY ACADEMY
THIRD CLASS ARMOR SCHOOL POI

AUTOMOTIVE INSTRUCTION:	
DRIVING TANKS AND APC'S	4 HOURS
TANK AND MECHANIZED INFANTRY TACTICAL TRAINING:	
TACTICAL DOCTRINE—SMALL ARMOR UNITS	2½ HOURS
BATTLE DRILL	2 HOURS
TEAM ATTACK, DAY	4 HOURS
TANK HEAVY TEAM, NIGHT ATTACK	4 HOURS
ARMORED CAVALRY PLATOON TACTICAL TRAINING:	
EMPLOYMENT OF ARMORED CAVALRY PLATOON	1 HOUR
CONDUCT OF ROUTE RECONNAISSANCE	4 HOURS
COMMUNICATIONS:	
ARMOR COMMUNICATIONS	2 HOURS
WEAPONS AND GUNNERY:	
TURRET FAMILIARIZATION AND CONDUCT OF FIRE	4 HOURS
SUBCALIBER FIRING AND AUXILIARY FIRE CONTROLS	4 HOURS
CREW FIELD FIRING	4 HOURS
MORTAR TRAINING AND FIRING	6 HOURS
NIGHT SERVICE FIRING	2 HOURS
TOTAL:	44 HOURS

It is at this point that many outstanding cadets decide to apply for a commission in Armor.

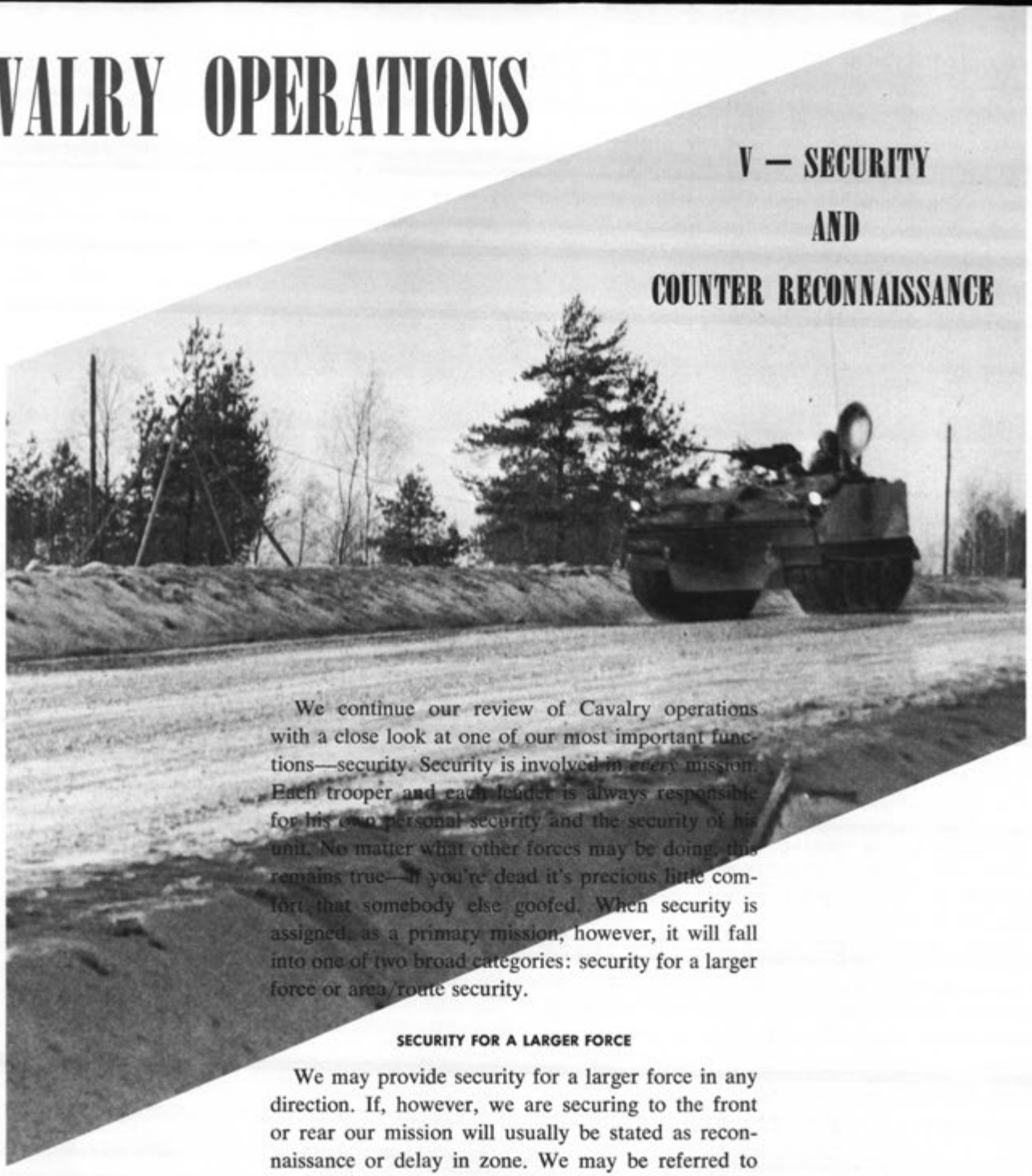
To facilitate the familiarization of cadets selected to participate in Army Orientation Training (AOT) with an Armor unit, afford the capability of limited branch instruction, and assist in displays and orientations, the Armor Section of the Office of Military Instruction does have a limited amount of armor equipment at West Point. On hand are one *M60* tank, one *M551* AR/AAV *General Sheridan,* one *M114* armored command and reconnaissance vehicle, and one *M151* jeep for instructional and orientation purposes. In many instances, the cadet who looks forward to being a tanker or cavalryman will want to get on the vehicles during his free time in the afternoons or on Saturdays. And this he can do.

From a beginning in his Third Class Armor Training, on through tactics instruction in the Third and Second Class years, and culminating with the First Class trip to Fort Knox, the cadet has had the opportunity to see and to work with Armor.

Thus all have gained an appreciation of this dynamic branch of mobile warfare. Thus are many influenced to make the arm of mounted combat their professional specialty.

CAVALRY OPERATIONS

V — SECURITY AND COUNTER RECONNAISSANCE



We continue our review of Cavalry operations with a close look at one of our most important functions—security. Security is involved in *every* mission. Each trooper and each leader is always responsible for his own personal security and the security of his unit. No matter what other forces may be doing, this remains true—if you're dead it's precious little comfort that somebody else goofed. When security is assigned as a primary mission, however, it will fall into one of two broad categories: security for a larger force or area/route security.

SECURITY FOR A LARGER FORCE

We may provide security for a larger force in any direction. If, however, we are securing to the front or rear our mission will usually be stated as reconnaissance or delay in zone. We may be referred to as an advance guard, covering force, or screening force, but the techniques employed boil down to reconnaissance or delay, so we need not pursue them further here. If our mission is to provide flank security, though, there are a few special considerations and techniques to be remembered.

The mission of a security force is two-fold: it must deny the enemy observation of the larger force (counterreconnaissance) and it must provide sufficient warning of the approach of significant enemy forces to allow the friendly force to react appropriately. This mission and the considerations arising

by Lieutenant Colonel Raymond R. Battreall, Jr.

from it remain the same whether one is discussing a scout squad securing its platoon's flank or a whole squadron securing the flank of a division or corps.

Obviously we must cover all routes by which the enemy could approach the main force. How far out we go to do this depends upon the terrain; the nature of the enemy threat; our own strength; and the size, type, and activity of the force being protected. The amount of reaction time required varies with the nature both of the enemy and of the friendly force. Note also that the means of providing the necessary time are a combination of our communications ability and our ability to delay. Each case, then, is different. We must first ascertain the required reaction time from the higher commander, then make our estimate of the situation and decide how to go about the job.

If the force to be secured is stationary our job is relatively simple. We determine where we want a chain of strong points and OPs connected by patrols and backed up, if at all possible, by a mobile reserve (in other words, a mobile defense). Then we proceed to reconnoiter the area *between* the protected force and the selected line to insure that no enemy is already there. This vital point is often forgotten. And finally, we set up our screen and go about our business.

If the protected force is moving, as it usually will be, our job is more complicated. We must still set up the same screen, but the screen itself must move to keep pace with the protected force. There are two ways to do this, both of which require close liaison to keep tabs on the progress of the larger force. These are:

► Leapfrogging small units (troops or platoons) from one blocking position to another. This is the best and safest method. It requires, of course, careful supervision, close coordination, and expert timing. OPCON of individual platoons may pass from troop to troop as the screen moves.

► Continuous movement of all units along a route parallel to the main body. This is considerably more dangerous but may be required if the main body is moving rapidly. We can, of course, minimize the risk by putting our own security force, scouts or a few platoons, still further to the flank.

In either case positive arrangements must be made for continuous physical contact between ourselves and the head of the protected force. Hopefully the larger force may have its own organic Cavalry to accomplish this. If not, we must provide for it. *The terrain between the two forces must always be reconnoitered lest we find ourselves with the enemy between us.*

If the enemy approaches he is immediately engaged and reported. If we can, we stop him and destroy him. If he is too strong for that, we delay him to the maximum and advise the main force so that it can take appropriate action. As in any delaying action it may become necessary for all or part of the squadron to conduct a do-or-die defense in order to buy enough time for the main body.

ROUTE/AREA SECURITY

Route and area security have long been listed as Cavalry missions, but very little attention was paid until recently as to how they might be performed. When the 3d Cavalry deployed to Germany during the 1961 Berlin crisis it became the first US Army line combat unit in modern times to have area security for a full-time mission. The pertinent doctrine was developed through trial and error and confirmed by major FTAs in Germany and later by actual combat by the 11th Cavalry and other units in Vietnam. As is so often the case, the new doctrine is not really new. It is a rediscovery of the tactics of our Indian-fighting Cavalry in the Old West.

RESPONSIBILITY

The friendly installations within an area are inherently responsible for their own local security. The Cavalry is responsible to provide adequate and timely relief forces as required. The Cavalry must not be frittered away in fixed perimeters, no matter how critical the installation. Moreover, the Cavalry commander must himself be the area security commander, with full authority to commit his forces as he sees fit—and full responsibility for the results. He must stoutly resist being subordinated to some other headquarters which tells him what to send where and when, for this reduces him to the status of a dispatcher and, more important, makes timely responses impossible. The Cavalry, then, must have a mission-type order to protect all designated installations and routes in a given area from enemy airborne and air-landed forces, irregulars, and infiltrators.

ORGANIZATION OF THE AREA

The area to be secured will probably be large—2000 to 3000 square miles of terrain containing a hundred or more critical installations is not at all unusual for a squadron. It must obviously be subdivided into more manageable troop sectors. If the size of the area and the road net permit, the squadron will hold out a reserve—probably the tank troop.

Quite likely, though, four troop sectors will be required, and the tank troop cross-reinforced with a recon troop will have to take one of them. The Horse Guns (How Battery) will be positioned in the area of greatest threat but will have pre-surveyed positions and complete fire plans for all areas in case of need.

Within each sector the troop commander establishes a complete network of surveillance and communications using his scouts, augmented as required by riflemen, on OPs and roving patrols. He coordinates with each installation to determine the layout and local defense plans, the probable time each can hold out against the expected type of attack, methods of communication and recognition signals, and one or more tentative attack plans for his own forces. If necessary he may lend an installation a radio or station a liaison agent with them. If the installation is unmanned (for example, a bridge) he may have to place a small detachment on or near it to keep it intact until help can arrive. Great care is required to avoid piecemealing the entire troop. Regardless of other factors, a substantial mobile strike force *must* be retained. It is conceivable that a troop might be spread so thin that all this has to be done at platoon level in platoon sectors, but it is enormously better if the troop sector can be treated as a whole.

It is already obvious that a troop fighting its sector as a whole should be scrambled. Scouts provide OPs and roving, erratically scheduled patrols which will inhibit guerrilla movement even when they do not detect it. Some riflemen and even a tank or two may be required to outpost otherwise naked installations, but the bulk of these and the mortars must be held out as a strike force.

CONDUCT OF OPERATIONS

OPs and patrols operate constantly, the patrols taking great pains to avoid setting a predictable pattern. Maximum use is made of all available aerial observation to expand and assist patrol coverage. Contact is established with local authorities to restrict and control civilian movement and to gain vital intelligence. Road blocks are set up at various times and places to spot-check civilian movement and detect guerrillas among them. Tanks and riflemen so used are still available to the strike force by virtue of their inherent communications and mobility.

When the enemy is detected by any element, contact is maintained at all costs and the troop commander dispatches all or part of his strike force to destroy him. He then reports to squadron. Squadron reviews the overall situation and confirms or modifies the troop commander's decision *while the strike force is enroute.* The essential point here is that no time is wasted while higher headquarters makes up its mind. Forces move *instantly* when contact is reported.

Depending on the big picture, squadron can let things go as they are, move other strike forces to assist, shift How Battery fires, commit air-mobile resources, or stop the moving force before it engages. When the enemy is engaged the object is to *destroy* him completely. Pursuit is relentless, even across unit boundaries (coordination is by radio) and even to the point of dismounting to pursue on foot if necessary. Guerrillas are the most difficult of all enemies to find and fix. Once found, nothing must prevent their destruction.

ANTI-AIRBORNE ACTION

Major airborne assaults are obsolete in any area secured by Cavalry. Elementary map study and reconnaissance will reveal all usable drop zones. These are covered by surveillance. At the first sign of airborne activity strike forces are launched. Since airborne forces require some time to assemble and reorganize after landing, the object is to deny them that time. Available forces are committed piecemeal if necessary to maintain chaos in the DZ and prevent reorganization. An alert squadron can prevent an airborne division from assembling and wreak havoc in the process. Only overwhelming close air support can swing the balance back to the paratroopers, and even then a division-sized airhead can easily be destroyed by nuclear fires.

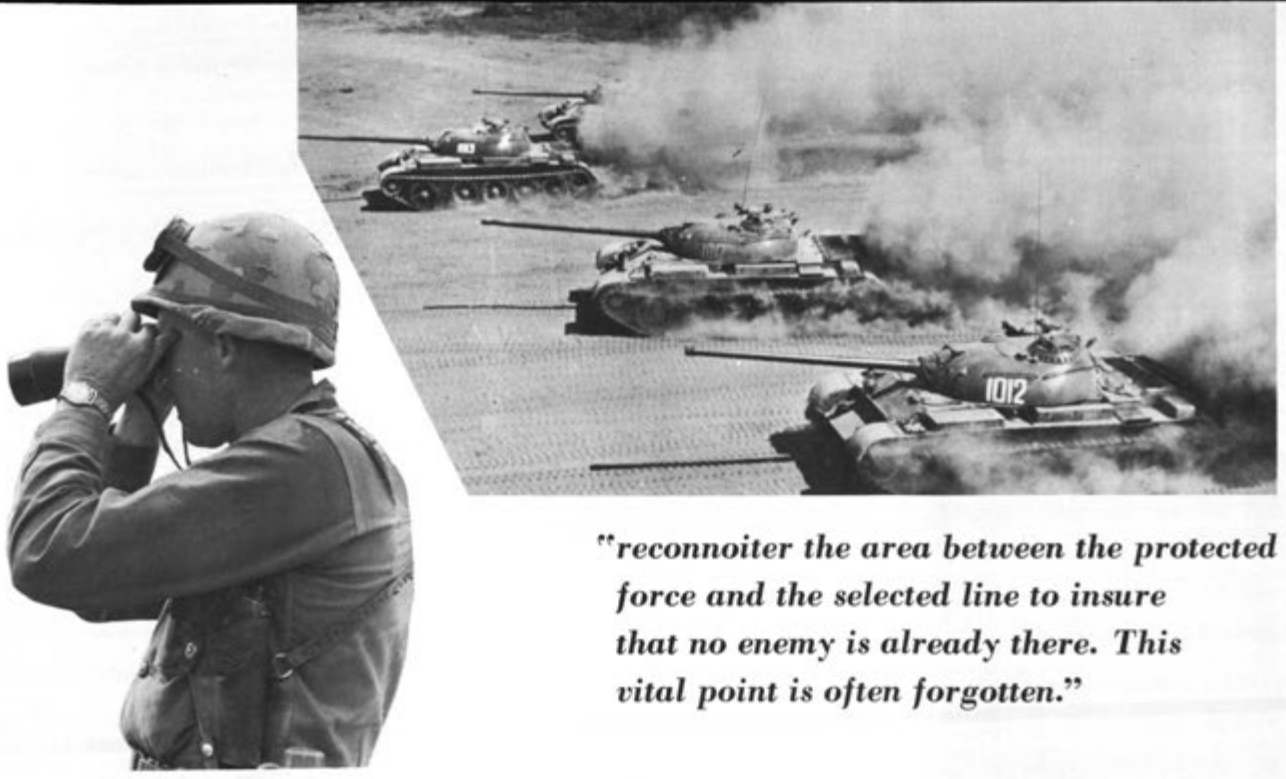
ANTI-AMBUSH PROCEDURES

Ambush is a constant and deadly threat in all area security operations. And the danger is never greater than when hurrying to the rescue of an attacked installation. Frequently the installation is only bait in a carefully laid trap. There are several ways to cope with this danger.

► All elements—strike forces, CPs, trains—must shift their positions at least daily both to reduce the risk of attack on the position itself and to make it impossible to predict accurately the route they will follow to any particular installation.

► Strike forces must move cross-country or by back trails whenever possible in preference to main roads.

► Moving columns must make maximum use of aerial surveillance, on-call tactical air, pre-arranged artillery and mortar fires, and reconnaissance by fire.



"reconnoiter the area between the protected force and the selected line to insure that no enemy is already there. This vital point is often forgotten."

► Large columns must contain time intervals to minimize the chances of all being ambushed at once.

► All units must have thoroughly rehearsed anti-ambush battle drills to be executed automatically on the warning "Ambush left (right) (all-round)."

These battle drills must provide for:

① the firing of a pattern of grenades completely surrounding each vehicle. This is best accomplished by externally mounted mechanical grenade throwers. In their absence, each crewman throws one or more grenades in a pre-designated sector to assure full coverage. This protects against very close in tank-killer teams. As soon as grenades are away, all hatches not required for the manning of weapons are buttoned up.

② and almost simultaneously—*all* vehicular weapons are fired in "bursts of belts" in the predesignated surveillance area of their vehicles. This gives the unit all-around protection to a greater range and begins to wrest fire-superiority from the enemy. Tank guns and howitzers fire cannister or beehive if available, otherwise alternate rounds of HEP and WP. Firing is sustained throughout the action. As the situation clarifies, weapons are traversed from less active sectors and trained on the main enemy position.

③ and again almost simultaneously—all combat vehicles move as rapidly as possible to physically close with and overrun the ambush position if it can be identified and into the best available cover if it cannot. Wheeled vehicles take available cover and their crews dismount to return fire vigorously.

④ and simultaneously with all of the foregoing—all elements not actually within the ambush launch an attack from march column to overrun and cut off the escape of the ambushers. All available air, artillery, and mortar fire is called down.

⑤ *on order* after the position has been overrun and supporting fires lifted or shifted—scouts and riflemen dismount to mop up.

⑥ pursue or continue the original mission as indicated by the situation.

ROUTE SECURITY

Routes are best secured as integral parts of the area through which they run. Sometimes, though, a particularly vital route or part of a route will demand closer attention. In such cases the route is divided into troop or platoon sectors, particularly critical points are outposted, scout patrols are established on erratic schedules, and troop or platoon strike forces are stationed along the route. A troop can cover about 30 miles of road in most any terrain thoroughly enough to permit reasonably safe convey movement. Convoy escort is the least efficient of all methods of providing security. It limits the number of convoys that can move, ties down the escort force, causes excessive wear on tracked vehicles, fatigues crews, and gets the escort caught in the same ambush as the convoy itself. It is to be resorted to only in desperation for extremely critical individual convoys.

"Security," then, describes a multitude of sins. It lacks the ring of glory of some other missions, but it is tremendously important, challenging, and demanding. Cavalry is ideally suited for it by reason of its mobility, firepower, communications, and flexibility. Indeed, this was our branch's prime contribution to the settlement of our own country. We must be prepared for security missions no less than any other.

for extraordinary heroism . . .

THE BATTLE OF LANDING ZONE 27 VICTOR

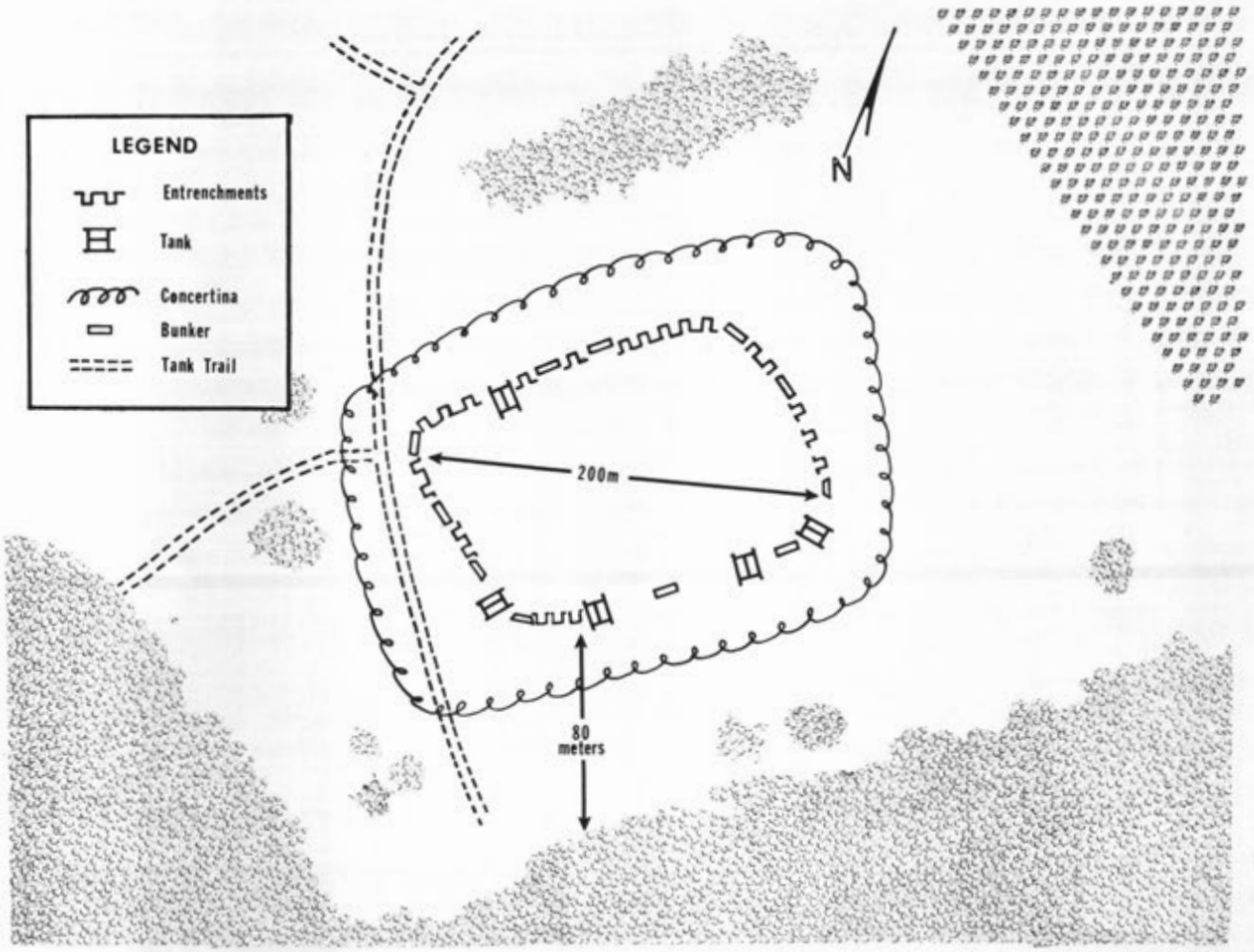
There has been much talk in this war in Vietnam about the search for a set piece battle. Genuine examples have been rare, but the Battle of Landing Zone 27 Victor was one in every sense. A reinforced NVA battalion frontally attacked a dug-in infantry unit supported by tanks and, though repulsed repeatedly, kept on attacking throughout a long, dark and bloody night, suffering some 197 casualties in the process. Significantly, they have never done so since—most of the later big successes of Armor units in Vietnam have resulted from meeting engagements, counterambushes, or, most often, reinforcement of embattled friendly units.

It was fitting that this engagement involved an element (the 1st Platoon of Company B) of the 1st Battalion, 69th Armor, for this was the first US tank battalion deployed to Vietnam, and has since seen service in the jungles around Cu Chi, in the expanses of the Central Highlands, and on the coastal Plains. In the process it has done much to demonstrate the significant role for Armor in this war, despite the obvious difficulties posed by the terrain and communications network.

It was in the Highlands, on the night of 9-10 August 1966, that two units, one US and one Korean, fought together so bravely and so determinedly that both were awarded Presidential Unit Citations. The US tank platoon was assigned to provide perimeter defense for Landing Zone 27 Victor, occupied by Captain Lee's 9th Company, 3d Battalion, 1st Cavalry Regiment (Republic of Korea). The position, in the western reaches of Pleiku Province, southwest of Duc Co, was adjacent to the Cambodian border. The platoon's five tanks were stationed at strategic points around the perimeter of the position. As the sun set, members of the tank platoon, under the command of 2LT Charles E. Markham, set a 50% alert, cast a last look at the single strand of concertina wire around the perimeter and the heavy stands of elephant grass beyond, and gave a final check to the lay of their guns.

Shortly before midnight, alerted by a member of the 9th Company to the sound of digging nearby, one tank crew used its searchlight to illuminate the area and conducted reconnaissance by fire with its coaxial machine gun. Within seconds, the entire treeline to the southeast erupted with heavy enemy automatic weapons fire. Although three tank crew members were lightly wounded in this exchange, they managed to mount their tanks and engage in returning the fire. The volume of incoming fire continued to build, including heavy concentrations of small arms, mortars and recoilless rifles in addition to the automatic weapons. There followed numerous assaults by small groups attempting to penetrate the defensive perimeter, and it appeared that the defenders' initial reconnaissance by fire had served to disrupt a planned attack. In the face of this sustained assault, the defenders' courage and tenacity were demonstrated by the fact that only a single enemy broke through the defensive wire, and he was killed by a Korean soldier with his bayonet.

Nearly continuous illumination was maintained over the battle area throughout the night, first by the two tanks mounting searchlights and by mortars fired



from within the 9th Company position, later augmented by US and ROK artillery and a US Air Force flareship. All available types of tank ammunition (except high explosive anti-tank) were used, with coaxial machine guns and canister rounds fired from the main guns used most extensively. Coordination of fires between tanks was continuous, with the commander of one tank alerting the commanders of adjacent tanks when targets moved toward their sectors of fire. One tank flicked on its searchlight periodically to draw fire, while another tank stood by to take under fire the enemy thus revealed. A US medic moved coolly from point to point, treating US and Korean wounded throughout the night.

The Korean artillery forward observer attached to the 9th Company used all the artillery available. His initial fire came from C Battery, 61st Artillery (Republic of Korea), and it was soon joined by the fires of additional US and ROK artillery positioned at Duc Co and by a US battery at Landing Zone 27Y. At times, the 105mm fire was called in to within 30 meters of the 9th Company perimeter, with heavier artillery being used to interdict the enemy's routes of withdrawal.

The engagement finally ended at 0430 the morning of 10 August 1966, with the enemy's determined effort to overrun the position defeated and the surrounding battlefield literally covered with his dead. A sweep of the area revealed seven satchel charges and some 350 RPG-2 antitank rockets, and enemy equipment captured included five 60mm mortars, a heavy machine gun, 45 AK-47 rifles, 19 other rifles, 12 antitank rocket launchers, and a large quantity of ammunition and packs and other individual gear. Enemy documents retrieved and prisoner of war interrogation reports indicated a planned coordinated attack against the 9th Company position by an estimated battalion of the 88th NVA Regiment. Instead, the enemy battalion suffered devastating losses and was virtually destroyed as an effective fighting force.

At an awards ceremony held after the battle LTG Chae Myung Shin, commanding Republic of Korea Forces in Vietnam, decorated members of the US tank platoon and spoke of the inspiration provided by the effective cooperation of US and ROK soldiers during this fierce battle. It will continue to give example of what courage, professionalism and teamwork can accomplish.

From The Armor Branch Chief....

OFFICERS ASSIGNMENT PREFERENCE STATEMENT

DA Form 483, Officers Assignment Preference Statement, is the primary means available to you to make your assignment and school preferences known to Armor Branch. It is the principal tool utilized by the branch action officers to insure that *your* desires are considered.

The personnel turbulence created by Vietnam, which is characterized by more frequent moves and more rapid promotions, makes it more important than ever that the preference statement on file be current.

Your preference statement is consulted each time a personnel action is considered for you. The preferences and considerations listed are evaluated both in terms of the current requirements and of your career needs.

Follow the instructions listed below as you prepare your statement. This will result in a more meaningful and more useful document to be used in formulating your assignment:

► Study and follow the instructions on the reverse side of the preference statement.

► Refer to AR 614-30 concerning various overseas tour lengths prior to filling out paragraph 8b.

► Study DA Pamphlet 600-3 to determine what assignments will fit in with your career pattern.

► Be specific in listing any special considerations in paragraph 10c. If necessary attach substantiating documents.

► Do not "waste" choices! Be realistic and ask for a type of duty in keeping with your grade and experience. Also ask for an area and station where Armor officers are assigned. For example, do not expect an assignment in the Bahamas.

► If assigned overseas, submit your preference statement at least nine months before DEROS. List your DEROS in the remarks column. Enter the name, address and phone number of someone through whom you can be located while on leave after DEROS.

► Mail the statement direct to Armor Branch. To clarify the use of P(Primary) and S(Secondary), two examples are shown.

EXAMPLE A

8. ASSIGNMENT PREFERENCES (See instructions on reverse side)									
a. PREFERENCES FOR CONUS ASSIGNMENTS AND SCHOOLING (All Officers)									
P	DUTY	S	ARMY AREA	STATIONS					
6	TROOPS: COMMAND	2	FIRST	1	Ft Meade	2	Ft Dix	3	USMA
	STAFF MOS ( )		[redacted]						
	JOINT STAFF DUTY MOS ( )		THIRD						
	DA STAFF MOS ( )	1	FOURTH	1	El Paso	2	Tex A&M	3	Baylor U
	CONARC	3	FIFTH	1	Ft Carson	2	Ft Riley	3	Ft Levnwth
	US ARADCOM	4	SIXTH	1	U of Calif	2	Ft Irwin	3	Ft Lewis
	ARMY STAFF MOS ( )		MDW (Includes entire Washington, D.C. area)						
1	ROTC INSTRUCTOR								
4	NG ADVISOR		SPECIAL MILITARY SCHOOLS (All Officers)						
3	ARMY RESERVE ADVISOR		SCHOOL				COURSE		
5	SERVICE SCHOOL INSTRUCTOR	1.							
2	RECRUITING DUTY	2.							
		3.							

With respect to Example A, if the only ROTC requirement available is in California, you might well receive this assignment because duty is your primary consideration.

EXAMPLE B

8. ASSIGNMENT PREFERENCES (See instructions on reverse side)									
a. PREFERENCES FOR CONUS ASSIGNMENTS AND SCHOOLING (All Officers)									
S	DUTY	P	ARMY AREA	STATIONS					
6	TROOPS: COMMAND	2	FIRST	1	Ft Meade	2	Ft Dix	3	USMA
	STAFF MOS ( )		[redacted]						
	JOINT STAFF DUTY MOS ( )		THIRD						
	DA STAFF MOS ( )	1	FOURTH	1	El Paso	2	Tex A&M	3	Baylor U
	CONARC	3	FIFTH	1	Ft Carson	2	Ft Riley	3	Ft Levnwth
	US ARADCOM	4	SIXTH	1	U of Calif	2	Ft Irwin	3	Ft Lewis
	ARMY STAFF MOS ( )		MDW (Includes entire Washington, D.C. area)						
1	ROTC INSTRUCTOR								
4	NG ADVISOR		SPECIAL MILITARY SCHOOLS (All Officers)						
3	ARMY RESERVE ADVISOR		SCHOOL				COURSE		
5	SERVICE SCHOOL INSTRUCTOR	1.							
2	RECRUITING DUTY	2.							
		3.							

Concerning Example B, if a troop requirement exists at Ft Bliss in El Paso, Texas, you might well receive this assignment as location is your primary consideration.

In both examples, the assumption is that the assignment made meets both service requirements and career needs.

REMEMBER—Armor Branch can not consider your preferences if you don't submit them!

AOB STUDENTS ALLOWED TO CHOOSE ASSIGNMENTS

On 1 July 1968 Armor Branch began a program which allows OBV II officers attending the Armor Officer Basic or Orientation Courses to change their assignment or to be stabilized during their initial tour in exchange for a third year of service. MOS schooling as indicated below is also included as part of the program.

Officer students who elect to enter the program may submit a request for a change or stabilization of assignment and/or additional military schooling, together with an application for a voluntary indefinite service agreement, while attending one of the aforementioned courses. Selections are based on a list of current world-wide requirements. If the request is approved, the officer is assured 18 months in his new or stabilized assignment. Afterwards he may be assigned to Vietnam or other geographical areas as determined by the Department of the Army. The assured 18 months includes time spent in the MOS schooling but it excludes the period of attendance at the basic or orientation course.

AVAILABLE SCHOOLS

Airborne
Civic Action
Civil Affairs
Information Officer Basic
Organizational Officer Maintenance
Pathfinder
Psychological Operations
Ranger
Redeye Missile
Special Forces
Supply Staff Officer

IT'S NOT FUNNY! ! !

MANY CHANGES OF ADDRESS CARDS NEVER REACH ARMOR.

When you send one, you should receive by first class mail within three weeks one of our yellow Reader Service Cards imprinted with your new address. If you do not, please write us and send your message in an envelope.

U. S. ARMY ARMOR SCHOOL TRENDS

NEW VIETNAMESE LIAISON OFFICER

Things have changed considerably since Major Dao Trong Tran's last tour at the Armor School in 1957. Then, as a young officer from the little-known country of Vietnam, he was graduated from the Organizational Maintenance Officer's Course. Now, 12 years later, he has returned to serve as the Vietnamese Liaison Officer in the Allied Officer Training Department. And his country is now well known to Americans. Major Tran, the proud father of 10 children, is from Saigon. He served previously as executive officer of the ARVN 3d Armored Cavalry Squadron. He holds many decorations, including the Vietnamese Army Distinguished Honor Medal, and four Crosses for Gallantry.

STUDY ON MOS 11E, ARMOR CREWMEN

The Armor School, in coordination with the other members of the Armor Center Team, is conducting an exploratory study to determine the best possible short and long range programs of advanced individual training (AIT) for *MOS 11E, Armor Crewman.* The study is considering the impact of future combat vehicle requirements on these training programs. With the projected addition of the *M551 AR/AAV* and the *M60A1E2* and *MBT 70* tanks to the Army inventory, a series of overlapping periods, during which several types of armored fighting vehicles will require training base support, are foreseen. To ensure that our Army remains the best trained in the world, this study will examine training selection criteria, methods, and facility requirements to determine what adjustments and reconfiguration may be necessary to accomplish the training mission.

UPDATE—LASER TRAINING DEVICES

Development of the *3A102B* Ruby Laser Stimulator ("U.S. Army Armor School Trends," ARMOR, Nov-Dec 1968) has been terminated as a result of recommendations at an in-process review held in early 1969. Development of the helium-neon laser simulator will continue with the hope that a practical laser trainer device can be fielded within a reasonable time. The Armor Center Team has stated that its member organizations and agencies are prepared to go to extraordinary lengths to expedite development action on a laser-type tank gunnery firing simulator since such a device would have a definite training value.

1968 GRADUATES EXCEED 9000

The Armor School graduated a total of 9300 from its various courses during 1968. Thirteen classes of the Armor Officer Basic Course accounted for 1482 graduates. The five classes of the Regular Army Armor Officer Basic Course accounted for 398 diplomas. Three classes of the Armor Officer Advanced Course produced 645 leaders. The Preventive Maintenance Courses for junior and senior officers were responsible for 692 and 903 graduates respectively. Thirteen classes in the Organizational Maintenance Officer's Course included 430 graduates and four classes of the Special Officer Leadership Course 142.

Enlisted courses consisted of General Vehicle Repair (GVR), Turret Maintenance (TM), and Field Radio Mechanic (FRM). The breakdown is as follows: GVR—2,738 graduates TM—525, and FRM —1,335. The three courses had 88 individual graduating classes.

SCOUT SQUAD PROFICIENCY EXERCISE

The initial draft manuscript of a new DA Training Circular 17-3, *Scout Squad Proficiency Exercise,* has been prepared by the Armor School and should be undergoing field review in the near future. The circular gives detailed guidance and check lists for the establishment of a course to evaluate scout squads in tactics, communication, demolition, reporting, teamwork, and weapons proficiency. The course is designed to be adapted to any training area that may be available to units conducting the training. The weapons proficiency portion of the exercise may be conducted on established ranges. The live and blank firing phases are presently being tested by the Armor School. The scheduled submission date of the final manuscript to TAG for printing is in the third quarter of FY 70.

MARINE LIEUTENANT LEADS AOB #10

Second Lieutenant Michael G. Qualls, USMC, 5th Marine Division, Camp Pendleton, Calif., is congratulated by Lieutenant Colonel Vincent J. Gentile, USMC, Armor School Marine Corps representative, as Brigadier General William W. Cobb, Assistant Commandant, looks on. 2LT Qualls, a 1968 graduate of Kansas State University, was designated Distinguished Honor Graduate of Armor Officer Basic Course Number 10. He holds the Draper Trophy marking this achievement.

AIR CAVALRY INSTRUCTION

The Commandant recently approved a new concept for expanded air cavalry instruction at the Armor School. Impetus for the program stemmed from the need for aviators, crewmen, staff officers, and commanders skilled in the use of air cavalry and by the lack of any program in the Army school system which teaches the tactics and techniques peculiar to air cavalry.

The concept calls for beginning two new courses of instruction at the Armor School. One is designed for aviation rated officers scheduled for assignment to air cavalry units who have recently completed general aviation training at the USAAVNS. The other is intended for enlisted men scheduled for assignment as aerial observers in air cavalry units.

Three other classes will receive increased instruction in the tactics and management of air cavalry. These are: the Armor Officer Basic Course, the Armor Officer Advanced Course, and the Senior Officer Preventive Maintenance Course. The briefing for the latter, minus demonstrations included at Fort Knox, would be appropriate for presentation wherever the need for air cavalry instruction exists. Plans call for the initiation of the aerial observer course and the add-on to the SOPM course in the first quarter of FY 70, with the other three scheduled for introduction as soon thereafter as practicable.

SPECIAL TEXT ON ARMOR OPERATIONS IN VIETNAM

The Armor School has undertaken production of a special text on Armor operations in Vietnam to meet the needs of junior leaders and Armor crewmen. The text will include information on the tactics and techniques applicable to tank and cavalry units together with a synopsis of methods and procedures found to be the best through analysing the cumulative experience of Armor units in Vietnam. The book will also incorporate tips for increasing the effectiveness of the individual Armor crewman. Tentative publication date is July 1969.

VIETNAM PACKETS

Officers and NCOs on orders to Vietnam are encouraged to write The Director, ISD, US Army Armor School, Fort Knox, Ky. 40121 for their free orientation packet. Included in the up-to-date material is an Armor leaders guide, communications lessons learned in Vietnam, examples of armor employment in Southeast Asia and several useful pamphlets on the area and its peculiarities.

HOW WOULD YOU DO IT?

US ARMY ARMOR SCHOOL PRESENTATION

SITUATION

You are the platoon leader of an armored cavalry platoon in Vietnam equipped with M113 ACAV's. You were conducting a reconnaissance in force operation when your platoon engaged a small group of VC. During the contact one of your ACAV's hit a mine and the front two roadwheels on the right side were damaged to such a degree that the vehicle could not be operated. The enemy has been dispersed, a prisoner taken, and from the captured VC you have learned that a much larger force is due within a few hours. In order to prevent the disabled carrier from falling into enemy hands, it must be destroyed, evacuated by expedient means, or repaired on the spot using the tools and material on hand. The disabled vehicle is needed along with all the other carriers for the success of your mission. There are no spare roadwheels or a roadwheel arm lifter available, however, you do have spare track blocks within the platoon. You inspect the vehicle and discover that only the wheels and track are damaged; the hub and roadwheel arm are in good condition.

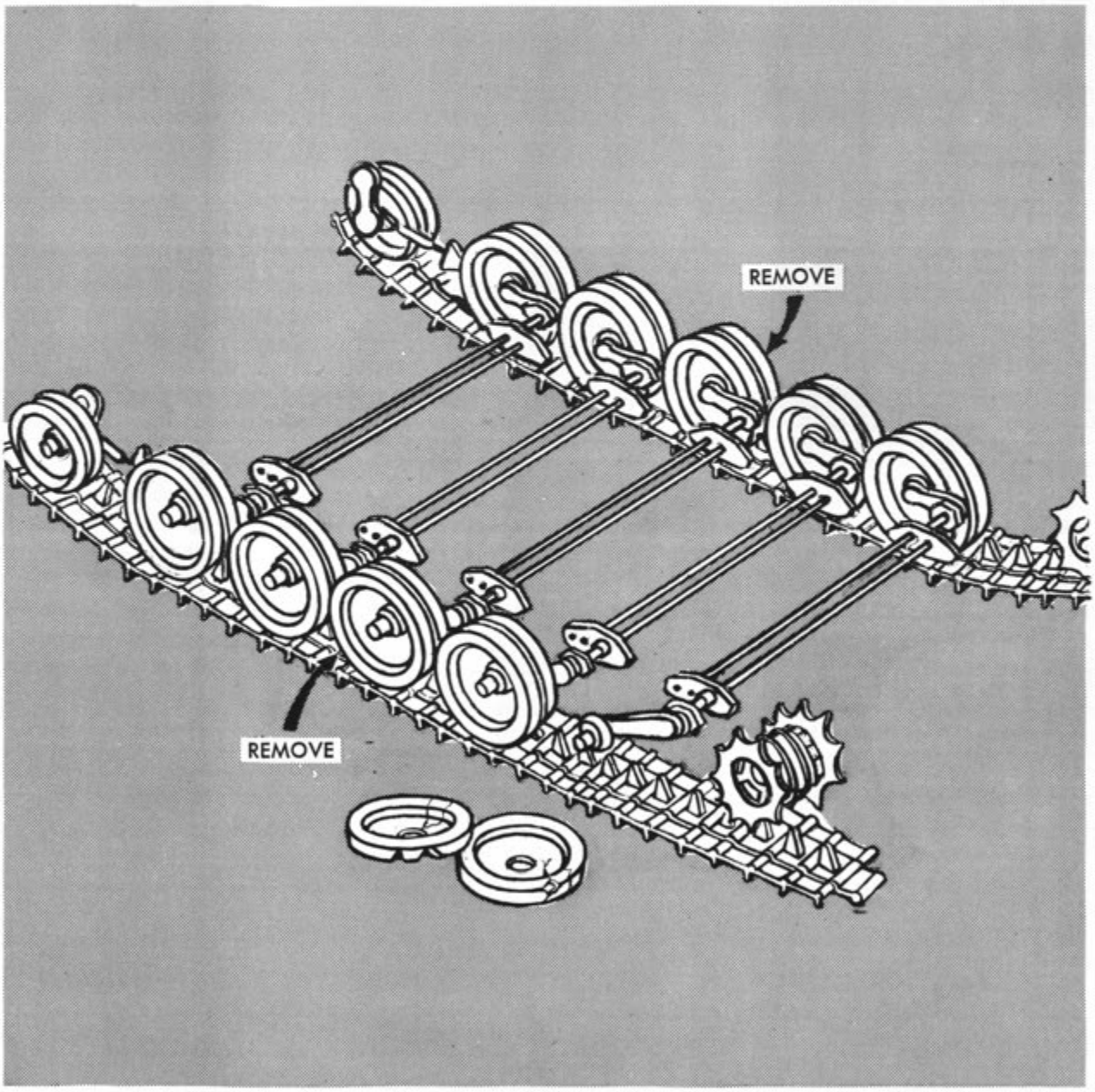
How would you do it?

AUTHOR: WILLIAM WALLACE

ILLUSTRATOR: JOE WARD

SOLUTION

Place a stone or piece of wood (or other solid substance) about one-inch thick in front of each of the inside center roadwheels. Move the vehicle forward until both outside center roadwheels are clear of the track and remove them. Replace the nuts to hold the inside wheels on the hub. Break the track (if not broken by the mine) between the damaged roadwheels and the sprocket. Move the upper portion of the track toward the rear until it clears the damaged roadwheels. Start the engine, shift the transmission into a forward gear, apply steer, and drive the vehicle forward until the damaged wheels are clear of the track. Dig out the dirt from under the damaged wheels to allow them to move down to relieve the tension on the torsion bar. Remove the damaged wheels and replace them with the two undamaged wheels which were taken from the center portion. Two wheels must be used to reduce the possibility of throwing the track. The vehicle can operate safely with only one wheel at an intermediate position until a replacement wheel can be obtained. Shift the transmission to reverse, apply steer, and back the vehicle until the roadwheels are on the track on the correct position to allow the track to be reconnected. Connect the track, replacing track blocks as necessary, adjust the track tension, and carry on with your mission.



NEWS NOTES

ARMOR LEADER RECEIVES FOURTH STAR

Lieutenant General George R. Mather has been promoted to general and assigned as Commander in Chief, U. S. Southern Command. He replaced General Robert W. Porter, Jr., who retired in February.

During the past year General Mather has been assigned as Director of Civil Disturbance Planning and Operations, Department of the Army, in Washington. Last May he delivered the keynote address to the United States Armor Association's 79th Annual Meeting (ARMOR July-August 1968). General Mather was commissioned in the Cavalry on graduation from the U. S. Military Academy in 1932. During World War II, while serving with the 28th Division he was seriously wounded in the Huertgen Forest operation. During his career he has been Commander of the U.S. Military Group in Brazil and Commander of the 2d Armored Division at Fort Hood. Recent assignments include commanding the V Corps in Germany and the III Corps at Fort Hood.

COLONEL PATTON AWARDED DSC

Colonel George S. Patton, 11th Armored Cavalry Regiment commander, has been awarded the Distinguished Service Cross for extraordinary heroism in Vietnam. COL Patton distinguished himself by his actions on 5 September 1968 during a battle with a North Vietnamese Army force near Chanh Luu. From his helicopter he spotted 58 enemy soldiers attempting to escape an encirclement. Landing nearby, COL Patton came under intense fire that damaged his helicopter. Aided by helicopter gunships, COL Patton led an assault against the North Vietnamese, forcing them to withdraw. When a platoon of infantry arrived to assist him, he then led a squad into a ravine and directed an assault on an enemy rocket propelled grenade team left behind to cover the enemy withdrawal.

PHOTO BY L. JAMES BINDER, EDITOR, ARMY MAGAZINE

Colonel George S. Patton

DISTINGUISHED SERVICE CROSS RECOGNIZES SERGEANT'S HEROISM

When all the unit officers were wounded or killed, Staff Sergeant Gary D. Brewer assumed command and deployed his troop for a five-hour struggle with the Viet Cong and North Vietnamese. For this and other heroic actions on 31 January 1968, SGT Brewer was awarded the Distinguished Service Cross by Major General Linton S. Boatwright, commanding general of the 24th Infantry Division and Fort Riley.

SGT Brewer was a platoon sergeant in Troop C, 1st Squadron, 11th Armored Cavalry on 31 January—the opening day of the Tet offensive. At 0630 his troop was ambushed as it cut into an enemy penetration of the Tan Son Nhut airbase perimeter. Facing six enemy battalions and a withering fire, SGT Brewer maintained communications and requested and directed medical evacuation of the wounded and air resupply. When members of his force became separated, he dismounted and fought his way through the enemy to regain contact and direct their fire. Many times the enemy threatened to overrun the troop, but the courage and skill of SGT Brewer inspired the confidence of the troop which contributed heavily to American victory in the battle. (An account and map of the battle appear in the Letters to the Editor, ARMOR, January-February 1969.)

113TH CAVALRY EUROPEAN TOUR

A tour of the "Red Horse" Cavalry's World War II combat route is scheduled for 31 May to 21 June 1969. Former members of the 113th Cavalry Group, Mechanized (Group Hq; 113th Cav Rcn Sqdn, Mecz; 125th Cav Rcn Sqdn, Mecz) and attached or supporting units who may be interested in participating can get further details from William Johansen, Red Horsers, Inc., 4938 W. North Ave., Chicago, Ill. 60639.

ARMORED CAVALRY SERGEANT HONORED BY POSTHUMOUS DSC

Sergeant Douglas G. Factora, who refused to stop fighting and save himself before the battle was won and his wounded evacuated, was honored posthumously by the award of the Distinguished Service Cross. General Ralph E. Haines Jr., Commander in Chief, U.S. Army, Pacific, presented the award to Laura D. Factora, the widow of SGT Factora and her two-year-old son, Patrick.

SGT Factora was cited for extraordinary heroism on 13 May 1968 while serving as a member of Troop C, 1st Squadron, 11th Armored Cavalry Regiment in Vietnam. He was assault vehicle commander during an attack upon a well-fortified position in the vicinity of Cu Chi.

SGT Factora personally eliminated many enemy positions with machinegun fire and grenades before his APC was struck by an enemy antitank rocket. He was thrown from the APC and seriously wounded, but, despite intense pain, he remounted the APC, rallied the crew and continued the assault. He destroyed more enemy positions until his APC was again hit by an enemy rocket. This round wounded many of his crew and set the APC afire. SGT Factora carried his men from the carrier, ignoring his own injury and safety. When he was sure they had been treated and evacuated, he allowed himself to be evacuated. He died en route to the hospital.

WORLD WARS TANK CORPS ASSOCIATION PLANS GET-TOGETHER

The World Wars Tank Corps Association is planning their 1969 get-together at Williamsburg, Virginia for September 4, 5 & 6. Those interested may write Don Warner, Chairman, WWTCA National Headquarters, 9 Park Street, Boston, Mass. 02108.

FORT KNOX OFFICER NAMED OUTSTANDING LIEUTENANT

A 26-year-old Fort Knox company commander has been selected as the Outstanding Lieutenant in the First United States Army for 1968. First Lieutenant Douglas G. Zimmerman, commander of Company A, 2d Battalion, 1st Brigade, USATCA, was chosen from approximately 5000 eligibles. Announcement of the selection was made by Lieutenant General Jonathan O. Seaman, First Army commanding general, who presented 1LT Zimmerman with a certificate of achievement. The Society of American Wars, sponsor of the competition, honored Zimmerman at a dinner.

Before beginning active duty, 1LT Zimmerman was cadet colonel of the ROTC unit at Arizona State University. After graduation and attendance at the University of Arizona Law School he was admitted to the Arizona State Bar. While in the Armor Officer Basic Course at Fort Knox, he was selected for the Commandant's List and was graduated in the top 10 percent of his class. Assigned to his parent unit in July 1968, he was named its commanding officer in December.

SPEARHEAD HISTORY WANTED

Veterans of the 3d Armored Division and others interested are asked to contribute historically significant items to the new division museum at Spearhead headquarters in Frankfurt, Germany. Items such as weapons, photographs, flags, works of art, articles of uniform and unit and individual decorations are needed. However, contributions need not be limited to these. Donors will be identified when an item is displayed. Donations should be accompanied by a description of the item and its historical significance. Questions and donations should be addressed to: Public Affairs Officer, Headquarters, 3d Armored Division, APO New York 09039.

NEW AFV TESTED

A new armored personnel carrier (APC) based on the now standardized M113 has been potential-tested at Aberdeen Proving Ground. The vehicle, called the XM765 APC, has a versatile 20mm gun and firing ports. The ports are designed to allow soldiers to fire their personal weapons from within the vehicle while either moving or halted. Another innovation is the addition of 2000 pounds of steel applique armor to the front and sides of the vehicle.

The XM765 has so far undergone testing for over 4000 miles of travel on rough terrain, cross-country and paved roads. The additional armor has not impaired the carrier's mobility, automotive performance or swim capability. The new 20mm gun (Model 820) increases the effective range, armor defeating capability and antipersonnel lethality of the XM765.

Like similar vehicles developed by other nations, the XM765 is designed as an armored fighting vehicle rather than solely as an armored troop carrier. Combat experience in Vietnam as well as that in earlier conflicts has indicated the need for such a vehicle in the United States Army inventory.

PHOTO BY PFC ERIC LAMBERSON

Modern outriders from Troop F, 8th Cavalry, patrol South Vietnamese skies. These Cobra gunship mounts of the "Blue Ghosts" fly in support of the 1st Squadron, 1st Cavalry.

MOTORCYCLE MOBLIZATION

A dent in the Viet Cong mechanization program occurred when two of their Honda 50 motorcycles were captured by units of the 25th Division. Major General Ellis W. Williamson, 25th Division commander, decided that the motorcycles might help save time on road-sweeping operations and passed them down to the 4th Battalion (Mechanized), 23d Infantry of the division. During the wet season, sweep teams must proceed along Vietnamese roads on foot. However, during the dry season, with someone out front on Hondas, they are able to spot mines, booby traps and trip wires at a much quicker pace. The experiment has proved so successful, in fact, that more Hondas are on order from Japan.

FOR A SMOOTHER SAFER RIDE

A new Army jeep is now undergoing testing by the U.S. Army Armor and Engineer Board at Fort Knox. The new jeep, or 1970 model ½-ton Military Truck, shows many new improvements such as "lube-for-life" suspension and steering joints, a better transmission, and greater windshield visibility. Two-speed electric windshield wipers and new lights have been added, as well as a new type fuel pump, a semi-trailing arm rear suspension system and a "deep-dish" steering wheel.

The jeep is being operated in all foreseeable possible conditions. Before testing is ended, it will have been driven over 20,000 miles. Road mobility is checked on both wet and dry roads and cross-country mobility is checked on dry and muddy terrain. The 1970 model performance is also under examination under blackout conditions and in convoy. Throughout the tests, engineers are checking the jeep's fuel and oil consumption. Major Donald M. Buckbee, Chief, Support Vehicles Branch of the Engineer Board, is project officer for the tests.

JUNGLE-EATERS ORGANIZED

While the M48 and armored personnel carrier have been making headlines and winning fire fights, another almost unnoticed tracked vehicle is making a heavy contribution toward success in Vietnam. The medium tractor with the Rome plow has cleared the jungle that hides the Viet Cong and exposed his hideouts. (See ARMOR, Jan-Feb, 1969.) Recently the Engineer Agency, U.S. Army Combat Developments Command (CDC), has created the new Table of Organization and Equipment 5-87T, Engineer Land Clearing company. The basic armament of this unit is 30 Rome plows.

Named after the Georgia city where it was built, the Rome plow is a "C" shaped blade mounted on a medium tractor. The left edge is armed with a "stinger," or protruding metal spike. In action, the operator raises the blade and lays the heavy spike against the tree. Simultaneously he lowers this blade inching the tractor forward. Using this rail-splitting technique, the stinger will slice vertically trees up to five feet thick. On large trees the stinger may be used several times until they are weakened enough to be sheared off by the blade at ground level. The tractor operator is protected by a steel canopy, and as he stacks the trees into neat windrows, a guide bar helps direct the direction of the fall of the tree. Each plow is capable of leveling one to two acres an hour depending on the density of the jungle. The company is organized so that two shifts of tractor operators are used during daylight clearing operations. For lighter growth a chain is attached between two tractors. They move forward with the chain acting like a giant scythe leveling 300-foot swaths of growth. In clearning operations a heavy disc harrow is used to retard regrowth.

The land clearing company is organized with three platoons and other administrative and maintenance support elements. It is also equipped with a retriever to move disabled tractors and 12 tracked carrier vehicles for transporting men and equipment.

SWEDISH INFORMATION SERVICE

NEW SWEDISH ARMORED BRIDGE LAYER

A new bridge-laying armored vehicle is undergoing testing by the Swedish Army. The Swedes claim that the vehicle's top-mounted light metal bridge can be telescoped 49 feet (15 meters) across a water course in five minutes and support a load of 50 tons. This may be compared to the new prototype U.S. assault bridge mounted on the M1113 APC with an announced span of 33 feet and a capability of supporting 15-ton loads. The M113 assault bridge can be emplaced in two minutes. The Swedish vehicle, including the bridge, weighs about 25 tons and is amphibious, say the Swedes. It is equipped with a machinegun and a smoke thrower. This bridge-layer is constructed so that most of its components are identical to those of other vehicles previously delivered to the Swedish Army.

HET70 IS COLD WEATHER TESTED

German-built and American-built Heavy Equipment Transporter 70 prototype versions have undergone an extensive series of Artic tests at the U. S. Army Artic Test Center at Fort Greely, Alaska. Designed to transport the jointly developed MBT70, the HET70 can also carry other equipment. Both models have a load capacity of 105,000 pounds.

AH56A ARMOR PERFECTED

The new AH56A Cheyenne helicopter will soon be carrying armor designed to stop caliber .50 armor-piercing projectiles. Development of the boron carbide composite armor has only recently been announced. The new armor is about one inch thick and weighs about 12 pounds per square foot. The makers of the armor, the Norton Company of Worcester, Mass., claim no other system available gives equivalent protection at this low weight. Although caliber .50 ammunition is a threat facing low-flying aircraft, until now available armor has only provided protection against caliber .30 projectiles. The difference between the two is illustrated by the fact that the caliber .50 APM2 projectile has a kinetic energy four times that of the caliber .30 APM2.

NEW LAND NAVIGATION DEVICES DELIBERATED

The U.S. Army Combat Developments Command (CDC) is considering the use of Canadian land navigation equipment on U.S. Army vehicles. Two devices, GAN (Gyro Automatic Navigation system) and MAN (Magnetic Automatic Navigation system) have already been demonstrated and examined by combat and related branch commanders.

The use of land navigation devices promises a new method of maintaining orientation. Once installed and adjusted, they continue to give the exact location of vehicles in northings and eastings which are displayed on a small panel installed in the vehicle. Another unit called a plotter gives a pictorial representation of location in the form of a lighted dot and arrow projected on the underside of a conventional military map. A unit using these devices will always know where it is even if it is in the middle of jungle, desert, or polar snows.

GAN and MAN have identical components except for their heading references. Here GAN uses a north-seeking gyro compass oriented to earth rotation, while MAN has a magnetic header that looks like an antenna when vehicle-mounted. GAN and MAN would be adaptable to most Army vehicles, but MAN's magnetic system would not work on tanks since turret rotation and the great mass of ferrous metal would cause unstable signature. Conversely, MAN would be particularly effective in Southeast Asia where maximum magnetic variation is no more than one degree. MAN has the additional advantage of being field-repairable, while GAN's header must leave the field and return to the manufacturer for repair. In addition, MAN has the capability of instantaneous orientation while GAN needs a warm-up period to adjust to earth movement.

LOCKHEED STUDY WILL ANSWER ARMOR READER'S QUESTION

"Must the Army's main battle tank (MBT) go it alone?" asked Lieutenant Colonel David K. Doyle in the March-April 1968 ARMOR. Now, Lockheed Missile & Space Co., of Sunnyvale, California will attempt to answer such questions by undertaking a $271,000 study of possible companion vehicles for the Army's MBT. Lockheed will generate data to help the Army evaluate various families of vehicles which could accompany and support the main battle tank on future battlefields.

The vehicle types Lockheed will study include an armored recovery vehicle, a combat engineer vehicle and an armored vehicle launched bridge which will be able to place a 60 to 100-foot bridge across streams and gullies. In 1965, using computer simulation techniques, Lockheed made a design analysis of the MBT for the Army Materiel Command. The present Army study will likewise make extensive use of computer simulated combat conditions. It was brought about by the increased performance of the MBT compared with older tank designs. For an efficient battle ground system, companion vehicles must have capabilities matching the main battle tank.

THE TARPAULIN

TAKE COMMAND

COL Charles C. Clayton, 1st Bde, 1st Armd Div . . . **COL George F. Otte, Jr.,** School Bde, USAARMS . . . **COL Wilbur H. Vinson,** FA, Div Arty, 2d Armd Div . . . **LTC John A. Albree,** 2d Bn, 4th CST Bde, USATCI, Ft. Ord . . . **LTC Arthur L. Amey,** 5th Recon Sqdn, 2d Bde, USATCA . . . **LTC Arthur R. Arnold,** USA Reception Station, Ft. Knox . . . **LTC Philip L. Bolte,** 1st Sqdn, 1st Cav, Americal Div . . . **LTC Leo M. Brandt,** 1st Bn, 69th Armor, 4th Inf Div . . . **LTC Thomas E. Carpenter,** 3d Sqdn, 5th Cav, 9th Inf Div . . . **LTC Leonard E. Carter,** 1st Sqdn, 2d Bde, USATCA . . . **LTC Johnny J. Churchill,** FA, 6th Bn, 92d Arty, 2d Armd Div . . . **LTC Ralph M. Cline,** 2d Bn, 22d Inf(M), 25th Inf Div . . . **LTC J. Godfrey Crowe,** 4th Bn, 21st Inf, Americal Div . . . **LTC Otto C. Doerflinger,** FA, 2d Bn, 3d Arty, 3d Armd Div . . . **LTC Francis R. Everding,** 7th Bn, 2d Bde, USATCA . . . **LTC John B. Fitch,** 3d Sqdn, 17th Cav, Vietnam . . . **LTC Edward P. Freedman,** 5th Bn, 1st Bde, USATCI, Ft. Ord . . . **LTC William C. Haponski,** 1st Sqdn, 4th Cav, 1st Inf Div . . . **LTC Edward W. Houy, Jr.,** QMC, 503d S&T Bn, 3d Armd Div . . . **LTC Roy M. Jones,** 17th Bn, 5th Bde, USATCA (Succeeding **LTC William C. Jones**) . . . **LTC Donald C. Lundquist,** 1st Bn, 64th Armor, 3d Inf Div . . . **LTC Richard A. Miller,** 2d Sqdn, 1st Cav, Vietnam . . . **LTC John B. Noll,** 1st Bn, 4th CST Bde, USATCI, Ft. Ord . . . **LTC Dunbar S. Norton,** 1st Sqdn, 18th Cav, Ft. Lewis . . . **LTC James M. Peterson,** 1st Sqdn, 9th Cav, 1st Cav Div . . . **LTC Roderick C. Rennick,** 1st Sqdn, 10th Cav, 4th Inf Div . . . **LTC Douglas S. Smith,** 2d Bn, 47th Inf, 9th Inf Div . . . **LTC Raymond C. Smith,** 1st Bn, 327th Inf(AM), 101st Abn Div . . . **LTC Harry E. B. Sullivan,** 2d Sqdn, 2d Armd Cav Regt . . . **LTC Duane R. Tague,** 2d Bn, 34th Armor, Vietnam . . . **LTC Monroe G. Thomas,** 10th Bn, 5th Bde, USATCA . . . **LTC Walter L. Watkins,** 4th Bn, 35th Armor, 4th Armd Div . . . **LTC Charles A. Wickers,** 18th Bn, 5th Bde, USATCA . . . **LTC Chester A. Woods,** 3d Bn, 1st Bde, USATCA . . . **MAJ Morris D. Coberth,** Sp Trps, USATCA . . . **CSM Thomas D. Call,** 16th Bn, 5th Bde, USATCA . . . **CSM Joseph E. Chapman,** 8th Sqdn, 1st Air Cav, 194th Armd Bde . . . **CSM Charles Clark,** 1st Bn, 66th Armor, 2d Armd Div . . . **CSM Ernest A. Ferrante,** 8th Bn, 4th Bde, USATCA . . . **CSM Marvin D. Hovey,** 1st Sqdn, 18th Cav, Ft. Lewis . . . **CSM Billy B. Kosinski,** 1st Bn, 66th Armor, 2d Armd Div . . . **CSM Elbert A. Martin,** 17th Bn, 5th Bde, USATCA . . . **CSM James W. Mattingly,** 4th Bde, USATCA . . . **CSM Samuel McClure,** Div Arty, 3d Armd Div . . . **CSM John C. McManus,** 2d Bn, 52d Inf, 1st Armd Div . . . **CSM Edward P. Morgan,** 19th Bn, 5th Bde, USATCA . . . **CSM Homer R. Moss,** 2d Bde, 1st Armd Div . . . **CSM Joseph W. Walsh,** 2d Bn, 1st Bde, USATCA.

ASSIGNED

BG Frank B. Clay, USACGSC, Ft. Leavenworth . . . **BG Arthur W. Kogstad,** Hq USA Materiel Comd . . . **BG William R. Kraft,** ADC, 9th Inf Div . . . **BG Judson F. Miller,** Deputy CG, USATCI, Ft. Ord . . . **COL Jack L. Balthis,** CofS, USAARMC . . . **COL James P. Cahill,** Dir of Instructional Services, USAARMS . . . **COL Charles M. Fergusson,** Deputy CofS, III Corps . . . **COL F. G. Gosling,** CofS, USATCA . . . **CHAP(COL) Emil F. Kapusta,** USA Armor Center . . . **COL Vincent W. Lang,** CofS, 12th Spt Bde, Ft. Bragg . . . **CHAP (LTC) Elmer H. Ammerman,** 1st Armd Div . . . **LTC Charles E. Armstrong,** IG, USATCA . . . **LTC Robert G. Bond,** XO, 2d Armd Cav Regt . . . **MAJ Cecil E. Carter,** G2, USA Armor Center . . . **MAJ Joseph A. Langer, Jr.,** G3, 1st Armd Div . . . **MAJ Buel T. Rose,** MI, G2, 1st Armd Div.

WHAT IS A CAVALRYMAN?

By MAJ FREDERICK J. FILBERT
Exec. Officer, 1st Sqdn., 1st Cav.

Some where between the apple-cheeked innocence of the Combat Center and the urbane worldliness of the Sydney R&R veteran, we find a delightful creature known as a Cavalryman. Cavalrymen come in assorted shapes and conditions, mostly "out of." You find them everywhere, but mostly riding through "Indian Country" on Tanks, ACAVs, LOHs, and Cobras. Local merchants love them; "Charlie" hates them; the Americal Division staff tolerates them; new platoon leaders frustrate them; infantrymen ignore them; and the combat medics protect them.

A Cavalryman is confusion with profanity on his tongue...experience with three Purple Hearts on his chest...imagination with a slice of C4 in his mouth...and faith with a flak jacket on his back.

A Cavalryman has the appetite of an IBM computer, the energy of a nuclear reactor, the curiosity of an old maid, the enthusiasm of a kid in an ice cream plant, the lungs of an umpire, and the shyness of a bull elephant in the mating season.

He likes women, beer, ice cream, Playboy magazine, letters from "The World," Australia, steaks, "DEROS," hot showers, Hong Kong, and hot chow. He isn't much for the Monsoons, RPGs, AK-47s, spit and polish, broken torsion bars, C-rations, roast beef, Kool Aid, powdered eggs, "Charlie," walking, or waiting in line.

No one else is so early in the chow line, or so often at the beer cooler. When you want him he's somewhere in the AO. When you don't want him he's hovering over your desk with 117 reasons why he should be promoted or go on a third R&R. No one else can cram into one fighting vehicle a double basic load of ammunition, 10 cases of C-rations, two rolls of barbed wire, 14 shaped charges, a portable TV, one chaise lounge, three beer coolers, five cartons of cigarettes, an empty tool bag, two transistor radios, three machingeguns, a rice-polishing machine, and a pet monkey.

A Cavalryman is a fabulous creature. You can keep him out in the field, but you can't keep him out of the "vill." You can frustrate his desires, but you can't frustrate his drive. You can top his jokes, but you can't top his combat record. He's your conscience, your shadow, your second set of eyes, your psychiatrist, and your despair. But when the chips are down and the bullets richochet off your track, he's your pride and joy, your fair-haired boy; a slashing, hard-charging bundle of nerve and sheer guts.

When you return from three days of hard fighting, trudge wearily through the mud to your bunker, and settle down with a cup of hot coffee, he can bring tears to your eyes with those tender, sympathetic, and understanding words, "I sure am sorry about your jeep, sir, but we were just trying to beat the other tanks to the fuel pump...."

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FROM THE BOOKSHELF

GENERAL S. L. A. MARSHALL'S LATEST ON VIETNAM

BIRD Cowles, New York. 1968. 206 pages. $3.95

WEST TO CAMBODIA Cowles, New York. 1968. 253 pages. $3.95

Reviewed by Lieutenant Colonel THOMAS W. COLLIER

General Marshall tells us again, as he has told us for twenty-five years and more, how soldiers fight. The general's skills and techniques are time honored, but his latest books are as fresh as this morning's headlines—and a lot more accurate. *West to Cambodia* and *Bird* describes a series of the small clashes in the jungles of western Pleiku Province and the foothills of coastal Binh Dinh that made up the bitterly fought fall and winter campaigns of 1966. These were flat-out military battles, involving the 1st Air Cavalry and 4th Infantry Divisions and Special Forces. Read about them in these two excellent little books if you want to know how today's Americans lead and fight.

General Marshall's method of research is unique, effective, and costly. In a session that starts like a board of investigation and often ends like a revivalist tent-meeting, he interviews in mass the entire unit that fought a particular action. Each man tells his full story in front of all others, and is freely corrected by them. Rank is respected, but is not used to shield the facts. Often a commander, like LTC Robert H. Siegrist of 1st Bn, 5th Cavalry, can remember giving an order, but Captain Drake—and the A Company radio operator—can recall his exact words: "Move then. Shag ass and get on down there." (*West to Cambodia*, p. 229) General Marshall, busy with his cigar and his notebook, directs the session, probing around a point until his experience tells him that it has been reduced to its essential truth. This is expensive research—it cost 1st Bn, 5th Cavalry two battalion-days of talking to produce the facts for one chapter, "Ordeal by Ambush," in *West to Cambodia*. But the end product is a distillation of conflicting, often incorrect impressions of battle into reliable, cross-checked data.

General Marshall skillfully weaves this data into descriptive and captivating stories. There is nit to pick in these stories: the general often clutters the picture with too much detail, and his personal sketches are poor substitutes for situation maps. There are also a few factual and typographical errors: the A-1E propeller-driven attack aircraft is referred to once as an "81-E," and later as an "A-1 jet." (*West to Cambodia*, pp. 145, 221.) Happily, the story line is strong enough to carry the reader over these distractions.

West to Cambodia and *Bird* are battle history at its best. In them you can read the honest facts of soldiers in combat. From them you can derive a host of lessons: the wastefulness of search and destroy, the danger of operations along the enemy's sanctuary, the infantryman's delight in well-directed artillery and air bombardment, the erosion of security by boredom and fatigue, the cohesion and determination of organized men under deadly fire. To remind the veteran, instruct the replacement, and inform the public, these two books are among the very best on Vietnam.

The reviewer was a participant in the operations described in the two books reviewed above. He was present during one of the author's interviews for West to Cambodia. THE EDITOR.

THE COURT-MARTIAL OF GENERAL GEORGE ARMSTRONG CUSTER **$5.95**

by Lawrence A. Frost. University of Oklahoma Press. 280 pp. Illustrated. 1968.

Written by a long time student of Custeriana, who was recently elected a Fellow of The Company of Military Historians for his contributions in this field, this is actually two books in one. The first, a detailed and comprehensive account of the 7th Cavalry's Indian scout in western Kansas in 1867 (Hancock's Expedition) properly sets the stage for the second, a verbatim account of the trial of Custer for certain of his actions during that campaign. Accounts of both are rarely found and with one exception are incomplete, superficial and incorrect, even in unit histories.

This book should have particular interest for the military reader. The 1867 campaign reintroduced the Army to the problems it was to face for the next quarter century of Indian fighting. Those with court-martial experience will find themselves following the trial as though they were members, perhaps disagreeing with some of the court's decisions, and possibly becoming a bit confused as to the findings on some of the specifications and charges due to an inadvertent omission in copying the trial record.

However if they will post the following to the bottom of page 245 all will be clear:

> The Court was then cleared for deliberation, and after considering the evidence adduced found the accused, Bvt. Maj. Gen. G. A. Custer, Lieut. Col. 7th U. S. Cavalry, as follows:
>
> Of the 1st Specification 1st Charge—Guilty of the Specification, substituting the words "Ft. Harker," for the words "Ft. Riley," and the figures "200" for the figures "275."
>
> Of the 1st Charge—Guilty.
>
> Of the 1st Specification of the second Charge —Guilty.
>
> Of the 2nd Specification of the 2nd Charge—Guilty of the Specification, substituting the words "Ft. Harker" for the words "Ft. Riley;" omitting the words "two ambulances and," and substituting the word "four" for the word "eight," and omitting the words "ambulances and," and attach no criminality thereto.
>
> Of the 3rd Specification of the 2nd Charge—Guilty.
>
> Of the 2nd Charge—Guilty.
>
> Of the 1st Specification of the Additional Charge—Guilty.
>
> Of the 2nd Specification of the Additional Charge—Guilty of the Specification omitting the words "the following named and designated soldiers of his Regiment, viz.: Bugler Barney Tolliver."

Dr. Frost has presented an authoritative account of the 7th Cavalry's first Indian campaign and dispelled many commonly accepted misconceptions surrounding Custer's trial, although he has wisely refrained from discussion or argument of Custer's guilt and the sentence of a year's suspension thus thoughtfully permitting the reader to arrive at his own conclusion. MG GEORGE RUHLEN

THE ART OF WINNING WARS **$6.50**

by Colonel James Mrazek. Walker & Co. 218 pp. 1968.

Creative thinking is a necessity in today's armed forces. Creative thinking is an art—the opposite of science—beautiful where science is not. So creativity is the antithesis of disciplined military science. Yet most of the great captains of history have been artists—intuitive nonconformists who, in many cases, defied all rules in achieving military success. From Alexander to Giap, author James Mrazek expands his hypothesis in this attractive treatise on creativity and leadership, adding some new highlights to a subject that has been flogged to ribbons. One all-too-short chapter examines creative leadership and the naval commander—with the submarine commander as the epitome of the creative artist at work. Kretschmer, Prien, Schepke, Hardegen and Kale of the German U-boats, and Maurer in *Atule,* Sam Dealy in *Harder,* Street in *Tirante,* Benson in *Trigger* are portrayed as outstanding creative artists in campaigns that, in the aggregate, destroyed millions of tons of shipping and combat vessels in War II. To these he might well have added the fabulous peacetime exploits of Anderson in *Nautilus,* and Calvert in *Skate.* Finally, Colonel Mrazek develops the guerrilla as a creative artist, quite properly showing the Chinese guerrilla theorists as legatees of T. E. Lawrence's genius. One might argue that the guerrilla is merely a clever innovator who makes-do with minimal resources. Who argues this way must admit nonetheless that the same level of creative energy used in conjunction with plenteous material resources might well have produced more attractive results in our current antagonisms with the guerrilla. DAS

THE ORIGINS AND LEGACIES OF WORLD WAR I

by D. F. Fleming. Doubleday. 352 pp. 1968 **$6.95**

Drawing from a rich background as a university educator, from firsthand experience living through the history he writes about, and from the compelling urge to try and prevent history from repeating itself —an urge shared by many of his generation, D. F. Fleming, Emeritus Professor of International Relations at Vanderbilt, has written a tightly packed little book on an enormous subject. He styles it, "an urgent message to each citizen who wishes to see succeeding generations of our youth fulfill their destinies." It is a lucid precis of the causes of World War I, of the legacies of that war which led to the next, and of the lessons to be drawn from that complex train of events. Causes of the Great War, and their contribution to the Second War, are familiar to most students of good political science courses, and are given clean, objective analysis. Lessons are uniquely Professor Fleming's, and deserve comment. War cannot be used as an effective instrument of policy, says Professor Fleming, because its consequences can never be foreseen nor controlled by those who make war. Even the great Bismark could not effectively use war as a controlled instrument—if so able a fellow failed in this, who then could hope to succeed? Involvement in complex mutual security arrangements puts the great power dog at the mercy of the satellite tail. Just as pre-1914 Germany, having acquired Austria-Hungary as a satellite, found that to secure allegiance she had to allow the satellite a fatal initiative. Both the US and the Soviets are in analogous positions today, in such diverse situations as the Soviets in East Europe, and the US in Vietnam, Israel, Korea, Taiwan, to mention but a few. In desperate straits, governments often go to war to stave off disaster—pre-1914 Russia and Austria-Hungary. Do we see the same thing today in Soviet actions in East Europe; in the US involvement in Vietnam? Wars are made by politicians in isolation of an indifferent or ignorant public which ultimately has to bear both the cost and the agony. With war socialized by nuclear weapons, can executives be allowed this kind of discretionary power? Finally, can an awareness of these lessons militate against repeating the tragedies which brought them to being? Professor Fleming hopes so—that is why he wrote the book. At the same time, his realistic outlook as a political scientist causes his alarm that

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we are not sufficiently aware of the lessons. He is strongly anti-war, strongly pro-international organization, and as a consequence many will dismiss his arguments as shopworn and trite. But who has a better idea? For even if mutual fear of nuclear cataclysm is sufficient to prevent the world from disintegrating with a bang, what is there to say that continued reliance on the military as a prime mover of foreign policy, and on 'less intense' wars as appropriate policy measures, will not cause the world to die anyway—this time with a whimper? DAS

GERMANY'S MILITARY STRATEGY AND SPAIN IN WORLD WAR II **$7.00**

by Charles B. Burdick. Syracuse University Press. 1968. 228 pp.

This book is an important contribution to military studies of World War II. Not only does it fill an accustomed gap in the literature of war strategy from the German side, but it provides a fascinating account of German staff planning in action. Hitler often rationalized the premature end of his Thousand-Year Reich in his failure to pursue the advantage in Spain, seizing Gibraltar, in the summer of 1940, after the defeat of France. Obsession with a cross-channel attack, a rebuff by Franco, and personal vacillation all followed in turn or combination to keep Germany out of Spain. All the while, the German staff, with characteristic efficiency calculated requirements for the movement through Spain and reduction of fortress Gibraltar. By 1943, Hitler, reviewing his situation, for the first time gave up his Spanish plans for the realities of holding the passes of the Pyrenees with a token force assembled from meager resources. Pictures are good, maps could be better, scholarship is superb—worthwhile professional reading. DAS

MEMORANDUM FROM THE ARMOR BOOK DEPARTMENT

This is being typed at deadline time in order to bring you our latest news.

NEW BOOKS - - THE BITTER WOODS by John S. D. Eisenhower ($10.00), in which Armor gets proper credit for its part in the Battle of the Bulge, is selling briskly. Highly recommended. . .ROMMEL AS MILITARY COMMANDER by Ronald Lewin ($8.95). A skillfully done and very interesting analysis of a great Armor commander. . .THE TANKS OF TAMMUZ by Shabtai Teveth ($8.95), to be published on 20 May, proved hard to lay down. Written by an Isareli journalist, who fought as an Armoured Corps reservist in 1967, it was described by General Moshe Dayan as "an outstanding book, the best I have read about our wars". . .WEST POINT-THE MEN AND TIMES OF THE UNITED STATES MILITARY ACADEMY by Thomas J. Fleming ($8.50). Presented with wit and backed by scholarship, this is a pleasure to read as well as informative. . .THE SECOND WORLD WAR by MG J. F. C. Fuller ($7.95) - - the third printing of a tendentious history which stays at the eye of a storm of controversy, not recommended for the closed-minded. . .THE WAR IN THE FAR EAST, 1941-1945- A MILITARY HISTORY by Basil Collier ($8.95). Interesting history from an author who can always be counted on. Fascinating anecdotes about some very real "characters".

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