ARMOR
july-august 1973

ARMOR *the Magazine of Mobile Warfare*

THE UNITED STATES ARMOR ASSOCIATION ▲ 1145 19th Street, NW, Washington, D C 20036
Telephone (202) 223-2161

Fellow members of the Armor Association:

When a small group of Cavalry officers met at Fort Leavenworth on 9 November 1885 to found the United States Cavalry Association, they faced an uncertain future. They set as a goal for this Association professional unity and the improvement and advancement of the cavalry service in general. However, before this goal could be fully realized a number of major obstacles had first to be overcome.

Potential members numbered only 424 officers scattered over a large, and sometimes remote area. They comprised a police force rather than an army—fighting Indians, guarding and operating stage lines, protecting railroads and restricting the depredations of desperadoes. Even the US Army, as it was emerging from the aftermath of the Civil War, was in a restless and uncertain period.

However, due largely to the foresight, courage and just plain hard work of those original members, the Association grew. Within three years after its foundation, it had become a model for other branch-oriented associations.

In the years since 1885, the Association has grown in both membership and prestige. Changes in the Army were quick to be reflected in the Association. But while the vehicles and the philosophies of warfare may have been altered, the original goal—professional unity, and improvement and advancement of mobile mounted warfare—has always remained.

As those who have gone before us, we are called upon to make a number of changes in our Association once again. While the structure and perhaps the function will change, the goal will not.

These changes are a result of a decision by the Department of the Army to establish a uniform and consistent policy in its relationships with private associations. In the past, the Armor Association and several other branch associations have been staffed by Active Duty personnel. However, after a number of indepth studies conducted by the Department of the Army, it has been decided to prohibit the use of military personnel in this manner.

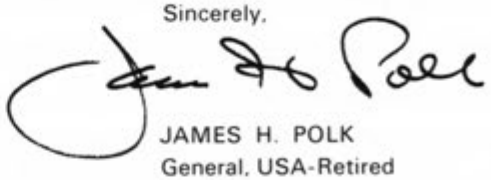
During these studies, however, it became obvious that the Army was the first to realize the great need for the continued dissemination of information vital and challenging to the education of its forces. After negotiations among the Armor School, Department of the Army and the Armor Association, it has been decided to continue, uninterrupted, the publication of *ARMOR* Magazine. Fort Knox has offered to establish the journal as an official publication of the Armor School, and has provided very adequate editorial office space. Perhaps even more importantly, they have strongly expressed their intent to maintain the high standards of the journal—allowing it to function in an objective manner and continuing to present a broad spectrum of viewpoints.

At this time, the future role of the Association is less clear. Since it will no longer be directly responsible for the journal, it will be forced into new areas of service. While some might conclude that this future is bleak, such need not be the case. In fact, the reverse is true.

The first concern of the Association has always been service to its membership. This will continue from our new offices at Fort Knox. In what actual areas the Association will now involve itself will be determined after our move is complete and various proposals are studied in greater depth. However, the Association is not dead, nor is this option even being considered. This point should remain clear.

Much the same as our founders, our role now becomes the formation of a new structure for our Association. We have the benefit of many years of experience, a well-established membership of dedicated professionals and a clear-cut and needed goal. Quite frankly, this new challenge will require that our membership pull together in an even stronger bond of professionalism. If the Association is to remain a viable, functioning organization, it will be a result of your foresight, your dedication and your work. Throughout our past we have always had such support—I see no reason to doubt it now.

Sincerely,



JAMES H. POLK
General, USA-Retired
President

ARMOR

the Magazine of Mobile Warfare

Volume LXXXII | July-August 1973 | No. 4

ON THE COVER . . .

Posters such as this are only a small part of the Army-Wide Training Support Department's campaign to insure a well-trained and well-educated US Soldier.

ARMOR Magazine is published bimonthly by the United States Armor Association, Post Office Box O, Fort Knox, Kentucky 40121, 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.

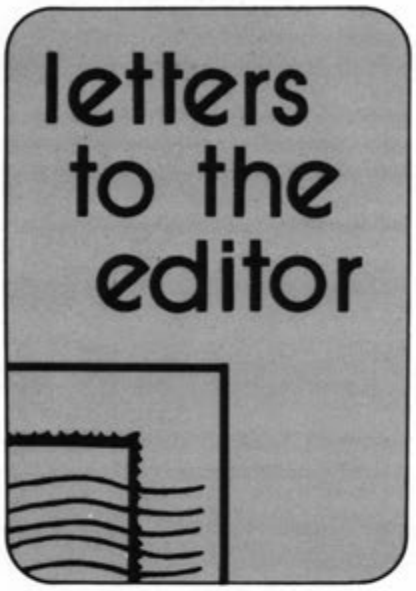
MEMBERSHIP DUES (including ARMOR): $6.50 one year, $12.00 two years, $18.00 three years. Active or associate membership is open to all active, reserve, retired or honorably discharged members of the U.S. Armed Forces.

SUBSCRIPTION RATES: Individuals not eligible for membership, unit funds and institutions may subscribe to ARMOR. **Domestic:** $6.50 one year, $12.00 two years, $18.00 three years. **Foreign:** $8.00 one year, $15.00 two years, $22.50 three years. Single copies $1.50.

CORRESPONDENCE: All correspondence should be addressed to ARMOR, Post Office Box O, Fort Knox, Kentucky 40121 (Telephone: Autovon 464-2257 or Commercial (502) 624-2257).

POSTMASTER: Second-class postage paid at Fort Knox, Kentucky and at additional mailing offices.

ARMOR may be forwarded to person in the United States Service whose change of address is caused by official orders (except to APO addresses) without payment of additional postage (158.4 Postal Manual).



More On Tank Destroyer

Dear Sir:

Captain Timothy R. O'Neill's article entitled "A Tank Destroyer For the 70s," which appeared in the May-June 1973 issue of *ARMOR*, proved to be very interesting. There is nothing as difficult to put across as a new idea—except the attempt to resurrect and put across an old one! Once a weapon or its tactical employment has been rejected, it is difficult, if not hopeless to get it reconsidered, at least within the memory of those who rejected it.

Captain O'Neill's pitch for reconsideration of the tank-destroyer concept is very thoughtfully developed. His premise is that the failure of the TD to live up to the predictions of its enthusiastic proponents was due to the nature of the war being waged by the United States and its allies. Combat was primarily offensive and the TD concept would be considered mainly in the defensive role.

The motto of our World War II TDs was "Seek and Destroy." This technique and philosophy proved their undoing. In North Africa I once saw a TD battalion commander arrive *on foot* at a division forward command post. He had just lost his last TD, including his own vehicle, while *seeking* enemy tanks.

Most US tankers of World War II vintage had a healthy respect for the German *88* in its dug-in antitank role. Placed in well-concealed positions and covering critical avenues of approach, they usually achieved first round hits on our tanks and armored cars. However, they were practically immobile, easily outflanked or the crews destroyed by observed artillery fire. Captain O'Neill's TDs will be mobile but not immune to medium artillery unless they are loaded up with armor, in which case they become, in fact, tanks.

The tactical employment of the new breed of TDs proposed by Captain O'Neill contemplates their use in a rather restricted defensive deployment. The premise being that during a war in Europe enemy tanks will have the advantage of operating offensively while we will be forced to accept a defensive attitude. Thus, our TDs will be able to select the most suitable terrain and sites for their employment. Unless I misunderstand his concept, his TDs should not be employed in the active defense or counterattack role.

To me, such a concept seems wasteful and smacks of "Maginot Line" thinking. There is doubtful economy in developing a weapons system which has such limited application. I find it depressing to accept the assumption that the NATO allies must resign themselves to a strictly defensive reaction and capability in countering possible future Warsaw Pact aggression. This does not suggest much hope for a successful conclusion to hostilities.

I must also take issue with the doctrine that the TD battalion should retain its organizational integrity and be employed strictly under division control. In my division during World War II, with most of our tanks still having only the 75mm cannon, we often organized for combat with one or usually two TDs in each tank company in order to take advantage of their 90mm guns for long range targets. Of course this did not please the TD people, but it worked and a very close and mutually respectful relationship developed. It is hard for me to visualize a situation where a TD battalion could be usefully employed as a unit.

While I am greatly impressed with the capabilities of the *TOW* missile, my recollection of target acquisitions in Europe does not include many at ranges of 3,000 meters. Most were about one third of that figure or less. Of course the *TOW* in a helicopter may often be employed at that range. But on the ground, in the terrain of Western Europe, tanks were often engaged at almost point blank range.

In spite of my comments and criticisms of Captain O'Neill's resurrection of the tank-destroyer concept, I am very much impressed with the logic of his thinking and the manner in which he presents the arguments for his philosophy. I think it is great for young, enthusiastic capable officers to develop and present new ideas or to modernize old concepts. There is no reason why they should be inhibited from doing so because of any possible disagreement from older or more experienced people who, by the nature and extent of their own experiences or study, naturally tend to hang on to their own ideas. These young people should not only be heard but should be listened to with respect and appreciation.

I. D. WHITE
General, USA-Retired
Dublin, New Hampshire 03444

Armor Mission Statement Needs Evaluation

Dear Sir:

I read with interest General Talbott's article, "The Role of the Mechanized Infantry," in the March-April issue of *ARMOR*. Armor officers should take close notice of the new or proposed mission statement for Infantry, which states: "Its *primary* mission is to *locate* the enemy. . ."

My first impression was that the statement was an encroachment on the cavalry portion of the Armor mission statement. However, to my dismay, "finding the enemy" is not listed as an Armor mission. Actually, the entire Armor mission statement in AR 10-6 is rather innocuous.

Are we to abdicate this cavalry mission? I think not. Congress designated Armor as the continuation of the cavalry, which has always had the role of finding, fixing and fighting the enemy. If Armor can successfully oppose the Infantry expanded mission statement, the Armor Center should also propose a change to AR 10-6. That change should recognize the cavalry portion of the Armor mission.

CARL M. PUTNAM
Lieutenant Colonel, Armor
Army War College
Carlisle Barracks, Pennsylvania 17013

Airmobile Ranger Company An ACCB Extravagance

Dear Sir:

The following is offered in response to Lieutenant Colonel Jimmy Weeks' article "ACCB: Tank Finder and Killer" (*ARMOR*, March-April 1973). Without descending into discussion of the imponderables of the armed helicopters' utility as antitank weapons, the organization of the Air Cavalry Combat Brigade seems to suffer from a practical deficiency. The inclusion of the airmobile ranger company in the assault helicopter squadron's TOE is a counterproductive extravagance.

What is the ACCB's mission? Apparently it hunts and kills tanks, but if so, what is the rationale for a full airmobile company? Long range patrols are for reconnaissance by definition, and special reconnaissance at that, of a sort required at corps level or higher. If the ACCB needs to know where the tanks are, why use infantry, even airmobile, for once on the ground these long range patrols will forge ahead at 1.5 miles per hour or less, depending on the individual load and terrain. The existence of the ACCB idea assumes, I hope, a certain survivability for the advanced attack helicopter beyond

the friendly FEBA; granting this premise for the "sake of no argument," why not assign aeroscout elements? If the ACCB is to have charge of the long range reconnaissance effort, we are going astray somewhere, because this is not logically related to the brigade's stated mission.

Once those long range patrols are inserted, the attack helicopter squadron parent unit is bound with a silver cord to footmobile ground elements. Whether those elements are hunting tanks or just watching, they are probably going to have to be extracted in a big hurry when the enemy finally gets mad at them. This process is going to tie down the parent squadron's fighting resources, which should be doing other things.

One gets the impression that the airmobile ranger company is the product of two experience factors: the seeming anomaly of a ground-oriented D Troop stuck onto the air cavalry squadron TOE and the utility of the aerorifle platoon in the air cav troop. The airmobile ranger company is not, I submit, the logical extrapolation of either, and seems to be an unwarranted shotgun wedding of two disparate and conflicting ideas. If aerorifle platoons are needed for local security and recovery/extraction/rescue, then use aerorifle platoons which have apparently proven their utility in such roles—but don't waste three entire companies in this mission. Two possible alternatives would be one aerorifle platoon at troop level, or one aerorifle company at brigade.

But don't send out long range patrols to hunt and kill tanks—a practice which brings to mind the story of the elephant and the conceited flea. . .

TIMOTHY R. O'NEILL
Captain, Armor
Fort Knox, Kentucky 40121

Modern Technology Limits Design by Evolution

Dear Sir:

I have studied with a great deal of interest the numerous articles in *ARMOR* pertaining to the *M60* series tanks and the possible replacement designs for these vehicles. I believe that the *M60* series tanks are good vehicles which have served American Armor well and which represent a high point in American tank design evolution. I would hesitate to apply the label "best tank in the world" to the *M60* series, but readily admit that it has redemonstrated the reliability and ruggedness which may be the hallmarks of American tank design.

However, I must admit that I don't share Colonel Stan Sheridan's rather boundless enthusiasm for continuing the *M60* series into the 1980s. Nor do I adhere to Mr. Charles Salter's apparent feelings that we must evolve the *M60* series to death in order to take advantage of its well-established logistical support facilities. To postulate the *M60* in its various models as the permanent answer to our main battle tank requirements is to disregard the fast pace of modern technology; this fast pace can make "revolutions" necessary in order to effectively counter the threats it can create.

Of course it would be illogical to be opposed to the concept of planned evolution in tank design. This concept has been utilized under a wide range of circumstances as evidenced in such vehicles as the American *Sherman*, the British *Centurion*, the German *Mark IV* and the Russian *T34/T62*, to name a few.

The point I wish to stress is the caution which must be exercised in realizing just how much a design can be altered or added onto before it becomes overworked; that is, before it reaches its level of optimum effectiveness. When this point is reached, it is sheer folly to continue development of this particular design, and the research to find a replacement vehicle to fill the role of the aging system becomes of prime importance if no chinks are to appear in the armor of the military's strength.

A case in point: the German *Mark IV* started World War II filling the need for a "heavy" vehicle which would support the lighter German tanks with its short 75mm gun. As the war continued, the *Mark IV* was constantly uparmored and upgunned in an attempt to assure its survival on the battlefield in the face of mounting technological opposition. I feel it safe to say that this vehicle reached its level of optimum effectiveness in early 1944—nearly a year before the war's end. Thus this vehicle was used after it could no longer maintain its battlefield ace-in-the-hole; that is, the *Mark IV* went into battle with the odds of survival stacked against it. This is a position which no weapons system can successfully occupy without coming out the worse for it. I am not suggesting that I feel the *M60* is paralleling the history of the *Mark IV*, but I believe such cases are worth consideration as the *M60A3* is being developed.

Admittedly, it would be difficult to realize when the level of maximum effectiveness is reached, especially since the *M60* series is unblooded in battle (a situation which makes design weaknesses evident *very* quickly). However, weapons systems planners must not be over-zealous in support of their product's service life—neither must they regard "revolutions" in technology as heresy.

ROBERT E. STONE II
Cadet, ROTC
Florida Southern College

Army Publications Need Upgrading

Dear Sir:

With the end of the draft a present reality and with the completion of another wartime era in the history of the US Army, we have an excellent opportunity to take inventory of our nearly two-hundred-year-old institution. A volunteer army always sounds good, but in order to recruit and retain these volunteers, we must professionalize the structure of the Army so that self-satisfaction and advancement are realities.

Recently, I procured a copy of a new publication, TC 23-3, "To Catch a Tank . . . 'Big Game' Hunting Made Easy," dated 30 June 1972. A postpaid card used to survey the general opinions of this new type of publication was included with each text. "To Catch a Tank" is a publication of the US Army Combat Arms Training Board at Fort Benning, Georgia. It is written by the Antiarmor Board of the US Army Infantry School. The purpose of the training circular is to provide a consolidated, easy-to-read picture of what is available in the field of antiarmor weaponry and how to deploy the equipment. The material provided in the publication does conform as closely as possible to existing doctrinal literature and is very readable. By using color, cartoons, step-by-step procedures and varieties of type sizes, the message is descriptively portrayed. To me, the problem is not what is portrayed, but how it is depicted.

The area of publications is not following forward toward the goals of a professional army. The ideas which we initiate today are those with which we will live for the next decade. "To Catch a Tank" is a publication which can effectively be carried forward into other areas. Should it gain a positive audience reception, we may see future titles as "To Shoot a Tank," "To Fix a Tank" or other descriptive titles which will supposedly make hunting, shooting or fixing easy. I don't think we need to make things easy. By making everything easy either through the process of accomplishing a goal, or through easy reading destroys initiative. It solves challenges before they can be created. It brings the Army down to a level of comic book and handy-dandy, do-it-in-five-steps solutions. This is not professionalism.

In order to create a truly professional army, we must strive to upgrade every aspect of the organization from its equipment to its structure. Somewhere between these two poles lies the method of portraying the doctrine of the Army . . . Army publications.

With the upgrading of standards for admission into this organization plus the internal programs for increasing the educational levels of the members, we should have the opportunity to increase the reading level at which these high troop-exposure publications are written. This will not only boost the professionalism with which these valuable texts are written, but it will also raise the reading levels of the soldiers who read them.

Yes, there will be a problem for some soldiers who are not able to comprehend the material. We must think, though, of the long range goals. A lack of comprehension of the material will give the reader an opportunity to use his initiative. By realizing his problem, he may solve it through either a reading program or through another program in the Army educational system. This will provide him with not only a solution to his immedi-

ate problem, but also provide him with a higher educational level for later life. This situation may also lead the soldier who cannot comprehend the material to another person for consultation. This will increase our professionalism by creating a teaching-learning situation which will bring about discussions and, ultimately, solutions.

"To Catch a Tank" contains much valuable information. There is no question about that. The question lies in the educational level on which this circular is written. We are of a new age in the Army today . . . an age of professionalism. To challenge the reading skills of our soldiers, we must upgrade the reading material which comes out of the various printing offices. Cartoons, comics, large print and simple sentences are from the age of ignorance. In today's age of achievement and competition, we must improve every level of Army life to include the reading level of its publications.

ROBERT E. LAIRD
First Lieutenant, Armor
APO New York 09139

CATB Replies

Dear Sir:

It is not unusual for soldiers to complain about the style, format and readability of Army publications. But their complaints have usually been diametrically opposed to the comments of Lieutenant Laird. Rather than requesting more obfuscation so that he can "use his initiative" to discover meaning, the soldier has normally asked for material that is easier to read and understand.

The US Army Combat Arms Training Board (USACATB) approach to training literature is to provide information beneficial to trainers and soldiers and present it in a format that will encourage wide readership and understanding. Several experiments in format and style are being tried. "To Catch A Tank" exemplifies a highly illustrated, easily read and understood format designed for the individual soldier.

This format might be described as one that trains and entertains. The success of *PS* Magazine, the many soldiers who seem to like the cartooning approach and statistics which indicate that the cartoon page ranks high among newspaper readers support this approach.

The highly illustrated approach does seem to be successful. USACATB has received feedback that indicates 92 per cent of 1,023 respondents believe the format is a good idea for training literature and that other subjects should be presented in a similar fashion. These respondents, of all ranks, have led us to believe that *appropriate* topics presented in this manner would be well received. In fact, this format has been applied to map reading, camouflage and the Vulcan weapons system, again resulting in even more favorable response.

This is not the only format we are using; other styles and formats are also being tried. In fact, the highly illustrated publications are but a small part of the USACATB effort. Training circulars in production range from a word-picture mix of the cartooning variety, to art highlighting major points, to limited, strictly functional illustrations. In all cases, the information is the important part of the publication and the art only enhances the appeal and understanding of the copy. Thus, each publication is designed for a specific topic and specific target audience. So far, feedback indicates that all the varying approaches are preferred over the difficult style and staid appearance of most Army publications.

In regard to reading levels, research has shown that a person enjoys reading material that does not tax his reading capability. Authorities in this field (Gunning, Flesch, *et al.*) state that the majority of readers will have difficulty reading anything with an index equivalent to a 12-grade level. In fact, the average reading grade level (RGL) is approximately two years below the highest completed grade of formal education. For the Army, it has been determined that the average soldier reads best that material with a 9-grade reading level. But an Army study reviewed 470 manuals and discovered that 94.3 per cent of the manuals had an average RGL above the ninth grade and that 65.4 per cent were written at the college level. These results were termed "rather startling and discouraging facts."

These facts have caused USACATB to make a conscious effort to try techniques that will keep soldiers from ignoring or being turned off by the usual Army manuals. Professionalism depends on a state of mind as well as a state of being. That is to say, the professional knows his job and does it well. Professionalism is not denigrated by the availability of publications which foster understanding of a soldier's job and skills. Professionalism should not be confused with pedantry. If training literature is written clearly and presented in a format that enhances readability and understanding, then professionalism is abetted and not hindered.

Although we disagree with certain of Lieutenant Laird's contentions, USACATB welcomes the dialogue and is interested in all viewpoints. USACATB wants to help the professional soldier perform his job and anything to that end will be considered.

WILLIAM J. HILSMAN
Colonel, Signal Corps
President, USACATB
Fort Benning, Georgia 31905

Combined Arms Operations Could Dilute Strength

Dear Sir:

Captain William J. Vanden Brook's letter, "Combined Arms Operations" (*ARMOR*, January-February 1973), was quite interesting and thought-provoking. While there is little doubt that such an organization would familiarize commanders with the capabilities and limitations of the various combat arms units, I take issue with Captain Vanden Brook's proposed TOE for a number of reasons. He envisions a platoon of tanks assigned to each Infantry company replacing the 106mm recoilless rifles. If the 106 is unsatisfactory as a tank destroyer (which it is), are we to diminish our Armor strength in mass in order to assign platoons of tanks in the restrictive mission of tank destroyer? *TOW*, *LAW* and a multitude of other weapons currently being developed will do the job quite well, while the new MICV should offer a qualitative and quantitative improvement in mechanized Infantry's firepower and armor protection. Perhaps a mechanized infantry assault gun (see *ARMOR*, January-February 1972) is the most cost-effective answer. A tank certainly is not.

Captain Vanden Brook's cross-attachment of Infantry to Armor is more reasonable and ideal (from a tanker's point of view). However, don't we do this with the team? The team concept lends greater flexibility to mass, then cross-attach, then mass again (the armored cavalry scrambles its elements to mass). Even under Captain Vanden Brook's TOE we would still have a requirement to mass, with perhaps more confusion resulting.

If the suitable employment of combined arms teams is the real problem, then perhaps a more thorough training program for combat arms commanders is required. Combat arms officer basic and advanced courses are currently integrating increased combined arms training in their programs of instruction. As for maintaining and increasing commanders' qualification in combined arms employment, perhaps an annual combat arms qualification course and test would, in part, fill the need. This course would be structured to provide combat arms officers an update and refresher on current doctrine and materiel in respect to combined arms employment of units of the size they would most likely command.

The actual test should be structured as a military stakes course, combining annual physical training requirements with problems identified for each rank appropriate to employment of combat arms units typical for command by that rank. Emphasis should be placed on qualifying officers in the employment of combined arms support for his unit.

A significant increase in professional currency, physical confidence and officer corps readiness would be a result.

In conclusion, the current team concept allows for a high degree of flexibility in tailoring forces to the mission while insuring the capability to mass units of a single combat arm quickly. The desire to provide for the proper employment of combined arms teams can be accomplished without a new TOE.

STEPHEN N. MAGYERA
First Lieutenant, Armor
Fort Knox, Kentucky 40121

Armor Center Commander's Update

By Brigadier General George S. Patton

As Assistant Commandant of the United States Army Armor School, it is an honor to present this edition of the Armor Center Commander's Update. With this issue, the Armor Center and School bid farewell to their Commander and School Commandant, Major General William R. Desobry, a leader who has rekindled the spirit of Armor, revitalized the traditions of the Cavalry—its elan and esprit, and fostered the restoration of the vital aspects of individual pride. General Desobry came to Fort Knox, fresh from commanding the 1st Armored Division, inspired with the challenge of our times. I vividly recall his summoning the individual soldier to meet Armor's call when he said, "We are moving to meet tomorrow—you can move with us. Armor offers you the colors of a proud past combined with the challenge of a rapidly evolving future."

Our tours at this great Post have been closely parallel in terms of time. As I look in retrospect since his assumption of command in April 1971, I have seen General Desobry build Fort Knox into the true home of Armor and Cavalry.

This Post prides itself on new academic buildings, renovated barracks, a new and top quality museum, theaters and better recreational and athletic programs. Existing academic, medical and religious programs have all been planned and executed for the betterment of the Knox community and, of vast importance, a professionally competent Regular Army. The continuous outpouring of current doctrine, tactics, training and innovative armor techniques have gained for Armor an enviable reputation Army-wide.

General Desobry has done much to further and solidify Armor's four dimensional concept which has, over the past two years, become a doctrinal cornerstone of the Armor family. His wealth of professional experience and knowledge coupled with foresight and determination were of prime importance in successfully "spreading the word" through a series of published magazine articles and guest speaker appearances. The great majority of these concepts have been or are being incorporated into Armor School instruction and proponent manuals.

Our Commandant's prompt and accurate assessment of inadequacies in numerous organizations and programs brought about changes which benefited Armor units worldwide. As Director of the Main Battle Tank Task Force, he was faced with the difficult task of developing the required characteristics for the Main Battle Tank of the future. The methodology generated from this Task Force has received well deserved recognition throughout the user community and should be a model for all future Task Forces of this nature.

General Desobry capitalized on his Armor Center Team by utilizing this professional group as a true forum for resolution of armor-related problems. Combining talents and expertise of all technical and tactical units Post-wide, General Desobry aptly tapped their knowledge, enabling the decision-making process to be truly representative of the Armor community and the user. He directed

examinations of the Army Maintenance System, tank ammunition, the *XM1*/MBT and the *M60A2*, to name but a few. The Armor Center Team thus gained, during his stewardship, a significant degree of recognition throughout all levels of the Army.

Paramount in every endeavor was his continuing concern for the individual soldier and the welfare of their families within his community. For their ease and comfort, General Desobry instituted free liberty bus service, mobile health and commissary vans, and changes in working hours of PXs and recreational facilities. He encouraged new programs of out-reach and welcome to the families of junior enlisted men living off-post.

Complementing his soldier-oriented programs are: the improved AOAC, AOB and Noncommissioned Officers' programs; changes in the United States Army Training Center's tank gunnery programs which have increased motivational response and training interest in conjunction with reduction of ammunition expenditures and cost; changes in USATCA basic combat training which have resulted in a more professional, MOS-skilled cadre and a trainee better armed with the fundamentals of soldiery. To improve the entire instructional spectrum, systems engineering of classroom and field instruction was intensified, creating an improved and far-reaching technique for determining precisely what the student must know. Introduction of this methodology has resulted in enormous savings of instructional time and reflects in large monetary savings for both Fort Knox and the Army.

General Desobry's contribution to both Armor Association and AUSA activities are impressive. As Vice President of the United States Armor Association, General Desobry has been instrumental in supporting numerous innovative improvements towards solidifying the Association and enhancing the reputation of its professional magazine. During his tenure, he was instrumental in the initiation of an extensive correspondence program whereby personal contact could be maintained with all members of the Association, battalion commanders and prospective members; the adoption of a highly successful Unit Awards Program which served as an incentive to make *ARMOR* Magazine available to personnel in lower grades; enhancing the professionalism of the magazine by the presentation of officially sanctioned letters of commendation and certificates of achievement to those personnel submitting acceptable articles for publication; the adoption of improved printing techniques which resulted in substantial monetary savings to the Association; and in a membership increase from 24 per cent to 46 per cent of Armor officers Army-wide.

General Desobry's aggressiveness and dedication culminated in a successful drive which resurrected the Daniel Boone Chapter of the AUSA, making it one of the leading chapters in the Army. When General Desobry arrived in 1971, the Chapter numbered less than 2,100. Under his leadership, the Chapter grew to 3,190, an increase of over 52 per cent.

The officers, noncommissioned officers and enlisted men join with me in extending our personal thanks for the important contributions he has made over the past two years. We extend our hearty best wishes to General and Mrs. Desobry and their fine family as they leave Fort Knox for a new and challenging assignment in Europe.

THE PATTON EAGLE PRINT

The Cavalry-Armor Foundation is offering for sale in limited edition the George S. Patton Jr. Commemorative Eagle Print by wildlife artist Gene Gray. The print, which measures 22 by 27 inches, is a duplicate of the original painting now on display at the Patton Museum. There are 2,000 signed and numbered prints in the edition. All proceeds from the sale of the print will go toward the further construction of the new Museum of Cavalry and Armor at Fort Knox.

The prints will be available on a first come, first served basis, and will cost $50.00 each, plus $1.00 for handling and postage for each print. Payment should accompany orders and should be sent to the Cavalry-Armor Foundation, Box L, Fort Knox, Kentucky 40121.

LIGHT ARMORED UNITS

The Quiet Revolution

Lieutenant General
Jean Marzloff

Forged by the pressures of total war, the normal or "heavy" armored formation has remained relatively stable since about 1943. Composed of medium or Main Battle Tanks (MBT), and assisted by suitably attired auxiliaries, such units fulfill a mechanized offensive role—maneuver and combat. However, the need to "mechanize" other land warfare tasks with similar types of vehicles has not abated.

Reconnaissance, liaison, security and perhaps deception are still considered indispensable tasks and are often grouped together to constitute a second field of armored vehicle employment. In general, all armies have assumed that this second field demanded new organizations and perhaps new equipment to fulfill the different roles noted above. But despite a general acceptance of this assumption, solutions have varied widely, as shown in the five armies discussed below. In each case, different results seem to be the product of differences in past military experiences, present resource limitations and shifting geo-political relationships.

FRANCE

Today, the French Army is almost entirely oriented on conventional and nuclear warfare in Europe. In this context, the tasks of mechanized (ground) reconnaissance and security are confided to the armored cavalry regiment (ACR). Two different ACRs have evolved. The first, the Battle ACR, is designed to operate with major battlefield units; the other, the DOT ACR, is destined to provide a mobile reserve behind the battle area (mainly the interior of France, and termed *Defense operationelle du territorire* or DOT units).

Two Battle ACRs are employed at corps level to provide information and security for corps units. They accomplish their mission not only through passive observation, but also by engaging major enemy units (and forcing them to deploy). To insure the first capability, each Battle ACR is divided into four troops and 20 platoons. The second capability—combat—is conferred by equipping each of these platoons with three medium-weight Panhard *EBR* armored vehicles, each mounting a 90mm cannon. At present, the platoon, consisting of the three *EBRs* and three scout jeeps, is the basic combat reconnaissance unit. The regiment, with strong communications nets and corps reinforce-

AML

ments, is able to articulate these platoons on a broad front of approximately 30-45 kilometers to fulfill its missions.

The second, or DOT ACR, is designed to operate behind the battle zone (i.e., in the interior of France) under an extensive area command. There the regiment, in cooperation with local police, civilian defense and military reserve forces, will deal with hostile commando units infiltrated by land, sea or air or deep enemy armored penetrations, perhaps as the aftermath of a nuclear attack on the main battle forces. Proper missions include direct combat against nonarmored forces, combat reconnaissance, counterin-

EBR

surgency, route and installation security, observation and intelligence gathering, and holding or screening tasks. Not surprising, its command and logistical functions are more decentralized than its battlefield counterpart. The DOT ACR is divided into three troops and the troop is the unit of normal operational employment. Each is capable of conducting platoon-size operations up to 1,000 square kilometers. The troop is organized into one headquarters, three armored, one commando and one support platoon. The three armored platoons, each containing five Panhard *AML* armored vehicles and four scout jeeps, and reinforced with troop elements, are the basic combat reconnaissance cells. Each is larger and has more operational capability than the platoons of the Battle ACR. The entire DOT regiment, however, is small and is allocated only 190 vehicles including 50 *AMLs* two-thirds with automatic weapons and one-third with the 90mm cannon).

The relatively powerful *EBR* and the new, air-transportable *AML* remain the materiel strongpoint of the two French units. Currently, most development work is being done to replace the scout jeeps with more appropriate machinery and to introduce some sort of antitank missile capability into the platoon cell. At the regiment and troop echelon, *RASIT*-type surveillance radars are needed as well as an organic aviation capability. In the latter case, financial limitations have prohibited substantial progress.

GERMANY

The Bundeswehr concept of recon/security units differs greatly from the French. Here a need for *short range* formations is felt, and thus reconnaissance units have been placed at the brigade and division level rather than at the corps echelon. Also significant, Germany has avoided developing a variety of specialized light armored machines. West German recon/security units are equipped with their standard MBT (*M48* or *Leopard*) and the more or less conventional Hotchkiss *SPz* armored carrier (which may be replaced by a new 19-ton eight-wheel armored tank).

The small organic recon platoons (with five MBTs and seven *SPzs*) have only limited, local responsibilities. More powerful is the divisional armored reconnaissance battalion. The battalion consists of two recon companies comprising 16 light sections with two *SPzs* each and six heavy sections of three MBTs each. These 22 cells (the company headquarters is considered a relay or rallying point) are supported by a heavy company with 10 MBTs and 18 *SPzs*, plus a mortar and an engineer platoon. As in France, organic

aerial support has not been adopted—an absence that reflects the Bundeswehr stress on tactical, "close-in" reconnaissance as well as budgetary considerations.

GREAT BRITAIN

As in the French Army, the British Army of the Rhine (BAOR) employs two armored reconnaissance regiments at the corps level. But any similarity with Continental formations ends here. The BAOR regiments are extremely small and equipped only with light wheeled machines. Each regiment is divided into three reduced squadrons and 18 troops—

corresponding more to the US Cavalry platoon. The tiny troop is the operational cell—15 are labeled recon troops and each is given two *Saladin* armored cars and two *Ferret*-type (one mounting *Vigilent* missiles) light armored vehicles; the remaining three troops possess *Saracen* carriers and are designated support troops. Each troop cell is commanded by an officer and tasked only to collect information. They have no significant combat or staying powers.

The existing British wheeled machines—*Saladin*, *Saracen*, *Ferret*—are outmoded and due to be replaced; the *Ferret* by what is essentially an improved version, the *Fox*; and the other two by members of the fully-tracked *Scorpion* family of machines. But agility and speed will still be more important than armor and firepower. Thus, for the present, the British Army remains faithful to the traditional missions of reconnaissance units where observation has priority over combat.

UNITED STATES

The American Army boasts some of the strongest and largest light armored units in the world: the three-squadron armored cavalry regiment (ACR) and the divisional armored cavalry squadron. Both formations

have missions similar to their French and German counterparts and both are extremely well-endowed. The ACR squadron is composed of three cavalry troops backed by one MBT troop of 17 *M60s* and one self-propelled howitzer battery. The one divisional squadron can marshal three mixed (MBT—Armored Cavalry Assault Vehicle or ACAV) troops and one air cavalry troop. In both units, the troops are subdivided into platoons or task groups of variable composition; however, the helicopter units of the air cavalry troop usually remain under the close supervision of the squadron commander.

To date, the disappearance of the *M41* light tank,

and its temporary replacement with "conventional" machines such as *M60s* and doctored *M113* and *114* personnel carriers or ACAVs has produced substantial benefits in supply, maintenance and training uniformity. But this development did make a substantial departure from tradition and today the introduction of the superb *Sheridan* vehicle promises to tip the scales back in favor of specialization. Light at 17 1/2 tons with a small three-man crew, and yet fully-tracked and mounting the dual missile/projectile 152mm tube in turret, the *Sheridan* system seems capable of replacing either the MBT or the ACAV in the above formations—or both.

USSR

Precise information concerning Soviet armor is scarce. At present, their light armor units seem to consist of a three-platoon recon company at the tank and motorized rifle regiment level, and a three-company recon battalion at the division and field army echelons. All formations are outfitted primarily with light, amphibious armored vehicles: *PT76* light tanks and *BRDM* armored carriers. In general, the units at regiment and divisional level are concerned with the collection of tactical information through observation, while avoiding combat as long as possible. In contrast, the recon battalion at the field army echelon can be reinforced with combined arms teams and target acquisition capabilities, and complemented by corps light aviation (air force helicopters) and possibly parachute units. It has a much greater mission capability and a much broader area of operation. Its main tasks appear to be fixing hostile nuclear batteries, detecting large enemy concentrations and preparing for the commitment of major units.

CONCLUSIONS

At the higher command echelons, the responsible commanders must be informed in order to conceive and conduct their maneuver, cover their dispositions prior to commitment and during its development and, where necessary, deceive the enemy about their intentions.

The advent of nuclear fire is likely to transform the aspects of battle seriously; its threat will necessitate additional means, first of information, but also of security because of scattering of dispositions. The fierceness of nuclear strikes will entail sudden changes in the situation thus requiring rapid reactions in order to exploit favorable opportunity or to reorganize broken up dispositions. And this explains how much the field of action of reconnaissance units has been amplified.

In each army discussed, their level of employment, and to a lesser extent, their organization and equipment is directly related to the proximity of their nation to the projected battlefield. For example, the Bundeswehr has no need for long range reconnaissance units or rear security elements similar to the French DOT ACR. The West Germans are seemingly trying to have, above all, a strong cover but at a relatively short distance from its maneuver forces. In contrast, similar French, Russian and British units are successively more specialized and more concerned with strategic considerations. The US intends to have, to some extent, a multipurpose Armored Cavalry capable of carrying out a number of various missions. US Armored Cavalry is provided organically with a great number of helicopters.

What is particularly striking in the first place, when you study the reconnaissance units in the different countries is that this problem is on the agenda list everywhere. This is made obvious by a great deal of technical and doctrinal research.

If the present "quiet evolution" of these formations is ever to become revolutionary, the United States Army now seems to hold many of the keys to its inauguration. But as the pace of mechanical evolution quickens, all countries must similarly be prepared to *gouverner vers le large*.

LIEUTENANT GENERAL JEAN MARZLOFF, a graduate of both *Saint Cyr* and *Saumur*, has been closely associated with French Armor units throughout his career. His assignments have included service during the 1933/36 Middle East Campaign and with the 1st Regiment, *"Chasseurs Algeriens,"* 5th Armored Division during World War II. In 1950 he became Deputy Chief of Staff for the 5th Armored Division and Central Zone, Germany, and then in 1953, assumed command of the 8th Regiment Hussars and Experimental Center for Armor. He has commanded the Civil and Military Sector, Medea, Algeria, and in 1960 became Commander of Armor and Cavalry, Algeria. Returning to *Saumur* in 1963, he became Commander of the School for Armor and Cavalry. Prior to his retirement from Active Duty he was Inspector of Armor and Cavalry.

TIEN CHI HELPER TASK FORCE

major edward w. shaw

By February of 1971, community relations between US troops and Vietnamese civilians in Qui Nhon, Republic of South Vietnam had deteriorated to such an extent that anti-American demonstrations, shootings and strained relationships were the order of the day. Buses had been burned, other vehicles damaged, and militant religious groups were advocating immediate US troop withdrawal from Qui Nhon.

However, this disastrous situation changed completely in a span of less than four months. Subsequently, higher elements of the US Command would point to Qui Nhon as a model for other areas encountering community relations problems.

This rapid transformation in community relations began when Lieutenant Colonel Robert L. Schweitzer, who is fluent in Vietnamese and extremely knowledgeable of the customs and traditions of Vietnam, was selected to the newly-created position of Deputy Commander for Community Relations (DCCR), Qui Nhon Support Command on 1 March 1971. After a rapid, yet thorough, analysis of the situation, an organization which became known as the Helper Task Force was formed. The principal staff officers were on second-tour assignments in RVN and possessed above average fluency in Vietnamese. The task force was composed of four sections: Intelligence; Community Relations; Special Operations; and Information Office.

The Intelligence Section gathered data on enemy activity in the province and published a comprehensive daily intelligence summary (INTSUM) for the Support Command. Because the enemy had frequently attempted to exploit demonstrations as a means to discredit the role of the US Forces in Vietnam, the Intelligence Section also provided many additional services for the task force.

The Community Relations Section organized and managed two councils, conducted seminars with company-sized units, and performed daily liaison and coordination with local Vietnamese military and civilian officials on community relations. The primary council was the Friendship Council consisting of Vietnamese and US leaders. Those included were the province chief, the province senior advisor, the commander of the Qui Nhon Support Command and the DCCR. The province chief served as the chairman, while the DCCR was the vice chairman. This council met on a monthly basis; however, it was prepared to meet more frequently on an emergency basis if the situation so dictated. The Community Relations Council consisted of "in house" participation. Each separate unit within the Support Command provided a member to the council which met weekly to discuss applicable problems in community relations as pertained to US troops. The company-sized seminars helped explain the US role in Vietnam, the history of Binh Dinh Province, a review of the troublesome accidents or incidents and an open question and answer period.

Special Operations dealt with planning and coordinating combined raids against the Viet Cong Infrastructure (VCI) and drug traffic, foreign claims coordination and civic action projects. The combined raids were conducted primarily by Vietnamese Military Police, National Police, Customs officials and were supported by US Military Police and Helper TF personnel. During this period, over 16 million piasters (equivalent to 58,000 US dollars) were paid in foreign claims. In some cases, this involved neglected accidents that had occurred two and three years earlier. A dam project was planned and successfully completed by the Helper TF and organic agencies within the Support Command. This project provided protection for the beleaguered populace of Phu Hoa hamlet on the outskirts of Qui Nhon. Each fall for the previous nine years, the monsoon rains and subsequent flooding had ravaged the hamlet.

The Information Office published a daily news summary to provide information on international news and sports, local news and commentaries which frequently critiqued the strong and weak points of the Command's accident/incident trends. Also, the office arranged for Vietnamese coverage of US civic action programs by both the press and television media in the area.

With regard to the specifics and functioning of the

task force, the base of the windshields on all four of the task force's jeeps were painted with the markings, *Tien Chi—Helper TF* in large yellow letters. Tien Chi literally translated means helper. These distinctive markings became a by-word and confidence builder for both Vietnamese and US personnel.

A 24-hour Tactical Operations Center (TOC) kept informed of all problem areas by monitoring the military police radio frequency and other applicable radio nets. It also served as NCS of the Helper net. When an accident or incident took place, the nearest Helper TF vehicle was dispatched to the scene. A direct telephone "hot" line existed between the Helper TOC and the Vietnamese Qui Nhon Garrison Commander's office in downtown Qui Nhon. If a demonstration loomed as a possibility, assistance could be requested instantly from the Vietnamese officials.

The technique of proceeding directly to an accident or incident was not and should not be construed as ambulance chasing. The intent was to make a rapid assessment of the situation, assist with the language problem, assure the Vietnamese that the entire matter would be thoroughly investigated, and if the US party was at fault, appropriate assistance would be rendered. The task force never got involved with instant payoffs or hasty generalizations at the scene of a problem. The net result was an immediate reduction in the total number of accidents and incidents, and improved understanding by all. It should be noted that during this very difficult period, not one demonstration occurred in the area of interest. This could not have been accomplished without the responsiveness of the task force to all potential incidents. As a result of this positive approach, the Helper TF gained the respect of the Vietnamese people in Qui Nhon and Binh Dinh Province.

The success of the Helper TF was primarily due to the use of innovative skill in organizing the task force, a great desire to assist the Vietnamese people and at the same time bring about common understanding, and the determination of the entire task force to restore successful community relations. In this particular case, a relatively small force provided the impetus which enabled the entire Qui Nhon Support Command and the South Vietnamese people to live and work together in harmony.

MAJOR EDWARD W. SHAW, commissioned in Armor from Norwich University in 1961, has served in Vietnam in both an advisory capacity as well as Executive Officer and Operations Officer of the 3d Squadron, 11th ACR. A 1972 graduate of the Air Command and Staff College, Major Shaw is currently assigned to the Company Grade Section of Armor Branch, Officer Personnel Directorate.

ARMY-WIDE TRAINING SUPPORT DEPARTMENT

To help insure that the modern soldier's military education does not end with his last class at the Armor School, the Army-Wide Training Support Department (AWTSD) is developing several new programs for individual and unit field training. These courses, many of which will contain self-paced instructional materials in an audio-visual-performance mode, are now, or will be in the near future, available to training managers in the field.

Perhaps the most far-reaching of the programs being developed for individual training is the Training Extension Course (TEC). Designed to both obtain and maintain MOS proficiency, TEC will enable small unit commanders to efficiently determine training deficiencies and will provide an improved method for remedial/refresher training.

Currently, TEC lessons are being developed for eight key Combat Arms MOSs—11B; 11C; 11D; 11E; 13B; 13E; 16P and 16R. After troop testing, these courses will be made available to each unit, and as the expertise of the Armor School grows in this area, other functionalized courses will be developed.

Another of the individual training programs being offered is the Armor Correspondence Course. To date, the following are now available to officers or enlisted personnel: Armor NCO Basic and Advanced; Armor Officer Basic and Advanced; Armor Officer Refresher; and Motor Officer courses. On 1 January 1974, AWTSD is expected to have completed the development of an Aeroscout Observer Course and an Attack Helicopter Course.

All courses go through an extensive validation process which helps assure the quality and soundness of the instructional materials.

AWTSD also offers a series of loose-leaf MOS Study Guides. These booklets contain all the references needed by enlisted personnel to study for their MOS evaluation test. Initial distribution of the guides for 11D10/20 and 11D40 was made in March 1973 down to company/troop level. Guides for 11E10/20 are being distributed now, and the 11E40 booklet should be available in August of this year. Individuals needing a copy of the guide should contact their unit training NCO. The MOS Study Guide concept will be expanded to include other lower density MOSs in the near future.

To further aid in the continued educational growth of the individual, AWTSD advisors are available from 0800 to 1630 hours (EST) Monday through Friday. Call Autovon 464-5430 or commercial (502) 624-5430. Correspondence should be addressed to AWTSD or personal visits made to Building 1595, Vinnedge Hall, Fort Knox. Also, several items that can be used to promote Armor, such as the poster which appears on the cover of this issue of *ARMOR* Magazine, are available through AWTSD. Catalogs and a limited number of Armor Branch Orientation Magazines are also available. If promotional materials are needed, every effort will be made to fulfill the request.

As more and more unit training responsibility has been placed in the hands of the small unit commander, AWTSD can now provide him with several important training aids.

The Armor/Cavalry Instructional and Reference Materials Catalogue lists those items available through AWTSD, and is updated monthly as new material is developed. These catalogues, and also a number of basic publications, special texts and other catalogues, are automatically sent to unit commanders to insure that they have access to the latest educational techniques.

In an effort to improve communications with the field, the Armor School has expanded the number of liaison visits being made to USAR Schools, ROTC units and Armor/Cavalry units of the Active Army and Reserve Components. The purpose is to establish and strengthen lines of communication and to personalize training support. Training assistance in operations, maintenance, tactics and training techniques are typical of the types of assistance provided in the past. The Armor School is also ready to assist Reserve Component units to meet their staff training requirements. Brigade and higher level staffs are encouraged to study their training needs and contact the Armor School for assistance at any time.

SUMMARY

INDIVIDUAL TRAINING	UNIT TRAINING
TEC Program	Instructional/Reference Material Catalog
Correspondence Course Program	Monthly List of Instructional Materials
Group Study Plans	Automatic Distribution
Student Counselling	USAARMS Mailing List
MOS Study Guides	Liaison/Contact Team Visits
Branch Promotional Material	Reserve Component Staff

CONTACT: The Army Wide Training Support Department (AWTSD), Autovon 464-4415 or Commercial (502) 624-4415 or write:
Commandant
US Army Armor School
ATTN: AWTSD
Fort Knox, KY 40121

THE VOLUNTEER

If all goes well, the United States Army will be well on its way to an all-volunteer force by midsummer. At the same time the Army will be at its lowest strength since the late '30s—it will also be our highest paid Army in history. All of these facts may bode well for the people of the United States, whether in the Army or out, but nagging thoughts continue to threaten this euphoria. Is this highly-paid small force sufficient for our needs? Does the higher pay attract the type of individual who must be recruited if this elite force is to be efficient? Can pay alone insure troopers with the needed talents and attitudes? Unfortunately, in industry we find that a common complaint among managers is, "We are paying more and more and getting less and less." Will this be true of our Volunteer Army? Will the Army become a haven for the unskilled and those unmotivated to do other than merely get by?

What happens will depend more upon those holding leadership positions than upon the recruiting sergeants. For the leaders—particularly those closest to the troops—will determine what motivation the Volunteer Army trooper will have.

With the draft, low motivation and hence low productivity could always be overcome by adding more manpower. If enough manpower was applied any job could be accomplished albiet with poor efficiency. Manpower was then cheap; now with the Modern Volunteer Army wages in competition (as it should be) with the civilian arena, manpower is no longer inexpensive—and therefore is also limited.

We can no longer afford a trooper whose sole interest is "How much do I get paid?" or "When is quitting time?" He must be fully productive—he must be a trooper really dedicated to his assigned mission and its accomplishment. We can no longer tolerate soldiers who are oriented in the "get-by" manner. We must have in the modern Army troopers who have pride in their job and, as important, in their professional capability—in short, people who produce!

The way to both productivity and improvements in productivity lies in motivation of individuals. While this truism is easily cited, the exact identification of the problem is reminiscent of the mole who was caught in a leg trap and after biting off three legs, discovered it was the fourth which held him in the trap. Many civilian employers have thought that merely high wages, ample fringe benefits and security would motivate their employees in the hoped-for manner. It has been discovered that this is not necessarily the case. Certainly, pay and fringe benefits are rather basic and strong motivations; however, if the first question which a prospective employee asks is about the retirement plan, the employer would certainly be wise to look elsewhere for his worker.

In our increasingly affluent military society, the most basic needs of the soldier are well satisfied. As this occurs, other needs become the keys to maintaining and improving motivation. These keys or motivational factors are frequently those neglected in our leadership strategy. The result is a failure to obtain the fullest use of the vast reservoir of talent and energy available when the individual troopers are fully motivated.

Total motivation is the culmination of three general factors: satisfaction of basic needs; environmental climate; and self-fulfillment. Each factor varies in importance according to the individual and the qualities of his job. One might arrange these variations in the form of a spectrum of motivation.

Note that at the low level or minimum motivation end of the spectrum, the dominant motivating factor is to provide the basic requirements—food, housing, security. The environmental climate provides some motivation, but at the low level, this factor of motivation is primarily one of physical

By Brigadier General

requirements also. For example, the work location will be a positive motivational influence if it is pleasant and not difficult from a physical standpoint.

As these primary needs are fulfilled and the individual achieves minimum motivations, we find that to increase his motivation we must increase our emphasis on the factors which dominate the right side of the spectrum of motivation. Note as you move to the right that the relative and quantitative values of the general factors change. Basic requirement factors become less important, these requirements being satisfactorily filled. To become more and more fully motivated, the individual requires increases in the other factors—environmental climate and self-fulfillment.

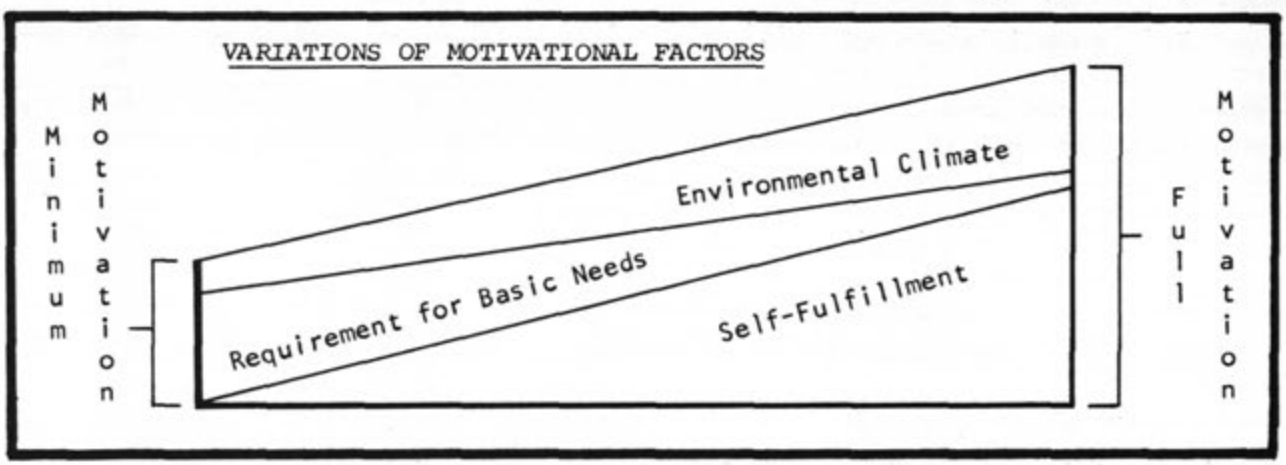
Note that as we move toward the higher levels of motivation, environmental climate increases only slightly in importance. However, the makeup of the environmental climate factor changes. It is no longer primarily physical conditions—it now includes more and more the attitudes of leaders and of fellow workers. For example, is he praised for good work? Is the attitude among his fellow troopers one of cooperation and mutual respect?

No great study of this illustration is necessary to conclude that the principal factor in increasing a trooper's level of motivation lies in increasing the general factor of self-fulfillment. For, as discussed in the prior paragraphs, today's trooper has solved the problem of his requirement for basic needs. His pay is the best yet. Certainly the current drives to improve his barracks and other supporting facilities are evidence that the Army is keenly aware of the necessity to improve at least the physical portion of his environmental climate. Thus, the key to increased motivation lies in the most nebulous of the general factors—self-fulfillment. The motivating factor of self-fulfillment might also be called self-realization, for it involves the drive to fulfill one's basic capabilities and potentialities, to be creative, to achieve, to accomplish a worthwhile mission. Fulfillment of these drives results in a person feeling worthy, competent and proud of his job and himself. The trooper *wants* a raise in pay but he *needs* opportunities to solve new problems which will task his initiative and inventiveness. He wants to feel his efforts count for something. He wants to be a contributor.

What can be done to insure that our volunteer trooper has this type challenge? What are the obstacles to achieving the self-fulfillment which will insure the fullest motivation. Let's look at a couple of standard "bug-a-boos" to a more fully motivated Army.

One great obstacle to morale, well-feeling, and hence to good motivation, is the "they" syndrome. This syndrome is reflected in statements such as: "They said we had to do it this way. They won't let you change that. They don't allow this. They this and that," until the trooper believes "they" are conducting a personal vendetta against not only his initiative, but his health and well-being as well. Only at the highest level may the question, "Who are 'they' to direct this or that?" be asked. It would not be surprising to discover that some of George Washington's directives from Valley Forge are still in effect if they have acquired the status of "they" directives over the years. This syndrome leaves the trooper with the personal feeling that he is such a small cog, he is not even entitled to know who "they" are.

The best way to eliminate the "they" syndrome is to counter it with the "we" approach. The leader who listens in earnest to suggestions whenever he can and is willing to be influenced by such suggestions and/or criticism has already solved a good deal of the problem. First, his troopers will learn he's willing to listen —and to do something about the situation. Second, this will insure the surfacing of questions regarding



Thomas W. Bowen

"they" obstacles and the leader can act to eliminate these morale-defeaters and efficiency-blockers. Third, this "we" approach emphasizes the team approach, which study after study validates as the most effective way to operate.

Lest this approach be misunderstood—it is not a matter of voting how to or whether to attack the objective, but a sincere effort by the leader to gain participation of the troopers in finding the best way to do things—and in turn an attempt to appeal to each soldier's sense of individual and collective importance to the team effort.

Another major obstacle to a challenging and self-fulfilling atmosphere is boredom. Obviously a job which is boring can't be challenging or give one a sense of accomplishment. Stagnation in many Army jobs will lead to boredom! Boredom is costly, destroying the very initiative we are trying to build. But how many truly challenging training periods can be given to the rifleman or machine gunner? Certainly ingenuity and initiative can find more than are listed in our basic manuals, but more needs to be done.

Job rotation is a good start. The old "Fall Out, Number One" gun drill can be a starting point. Cross-training and training for higher level positions makes for versatility and adds to the capabilities of the outfit. Our elite force must be able to cadre a much larger one—every corporal must be ready to be a platoon sergeant, every sergeant ready to command a company. The trooper who is gainfully rotated within his unit becomes adept at the different jobs and actually feels more secure about his value to the unit. He also becomes accustomed to changes in assignments and responsibilities, accepting these changes without apprehension. New blood produces new ideas, and new ways to do the old jobs in new, and hopefully, better ways. The entire cycle upgrades the capability of the unit. Obviously some jobs are still routine. These are the ones the leaders concentrate upon—restructure if necessary and constantly look for ways to expand the job's challenge.

A third obstacle to increased motivation through self-fulfillment is the "mistake" syndrome. In the simplest terms, this means how mistakes are handled in the unit. Are troopers at all levels "allowed" to make mistakes? Or is the supervision such that mistakes are not tolerated? Nothing creates a more favorable atmosphere for initiative and personal involvement than demonstrating confidence in a subordinate's ability to do the job without constant checking and/or correction. Frequently, a leader may make the mistake of always assigning the best man to the most interesting and challenging jobs. This is, of course, understandable—the leader wants to insure that these tasks are done well. But while this will probably result in a better present record for the unit, the long-term result will be a deterioration of the poorer performer's effort. The trooper at all levels needs an opportunity to make a mistake. "His" approach to the problem may obviously not be as good as the one the leader would propose—but it's *his!* And whether or not it is, in fact, better will never be proved until it is tried. The lower effectiveness of the unit due to allowed mistakes will be more than compensated for by the improved morale of individuals who are allowed to try their wings.

A single, unified theory of how to motivate troopers will never satisfy everyone. In dealing with individual humans, we are dealing with the most complex resource in the world. There will never be a computerized or mathematically neat approach. However, the leadership of our Volunteer Army must deal successfully with this problem if the Volunteer Army is to accomplish its purpose. We must remove the obstacles to motivation. Most simply we must motivate through meaningful training; by assigning responsibility and, at the same time, allowing freedom to the individual trooper to find *his* own best way and to learn by making mistakes; and by insuring that the chain of command includes a channel of communications.

The specific examples cited above may not fit your unit; if so, work up some other obstacles and work on reducing them. If we can, the Volunteer Army will become *Our* Army and one which will fulfill the mission.

BRIGADIER GENERAL THOMAS W. BOWEN, a graduate of the US Military Academy in 1948, holds a master's degree in Psychology from Vanderbilt University. From March 1968 to July 1969 he served as the Senior Advisor of Thua Thien Province. From April 1971 to June 1972 he was assigned as CG, US Army Advisor Group, I Corps, and Deputy Senior Advisor, Military Region 1. General Bowen is currently the Director of Intelligence Support in the Office of the Assistant Chief of Staff for Intelligence.

THE SHERIDAN

Airborne Cavalryman's Big Punch

by

Lieutenant Colonel Robert E. Helton

Never before has so much been so misunderstood by so many as has the *M551* Armored Reconnaissance/Airborne Assault Vehicle (AR/AAV), more popularly known as the *Sheridan*. The *Sheridan* was born in controversy, accepted with reluctance and used without understanding. It stands today misunderstood and blasphemed by too many who have never given it a true chance to do the job for which it was designed.

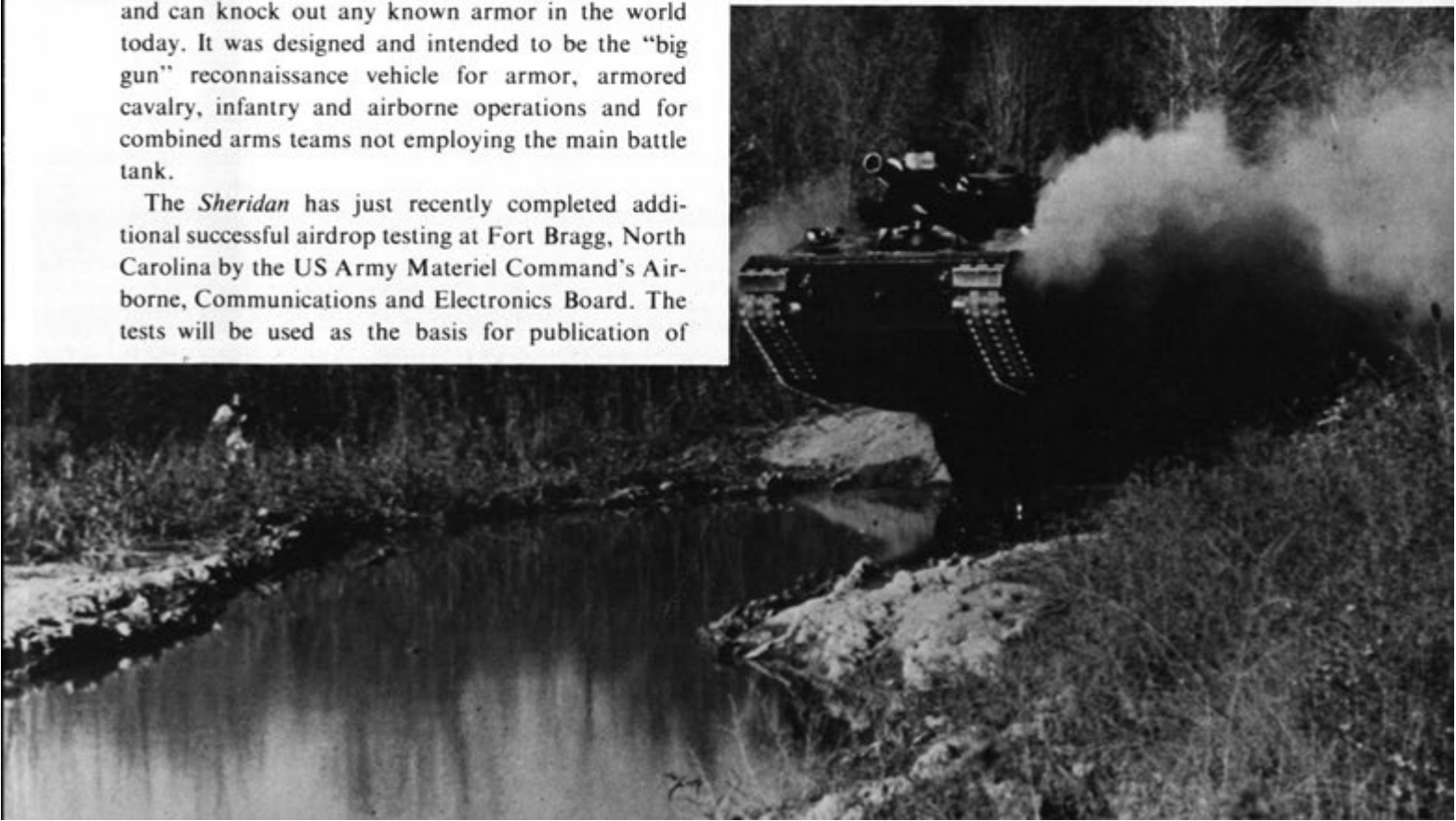
The *Sheridan* is considered by too many to be a tank, to operate as a tank—and its performance invariably is compared to the performance and characteristics of a tank. Nothing could be further from the truth. Despite the striking similarities in appearance, noise and operation, it most definitely is not a tank. It was designed neither to be a tank nor to perform the tank mission. It does not have either the armor protection or the staying power required of a tank.

This highly sophisticated, "lightweight" vehicle can fight anywhere in the world. It is air transportable and air-droppable, it can "swim" streams and lakes, and can knock out any known armor in the world today. It was designed and intended to be the "big gun" reconnaissance vehicle for armor, armored cavalry, infantry and airborne operations and for combined arms teams not employing the main battle tank.

The *Sheridan* has just recently completed additional successful airdrop testing at Fort Bragg, North Carolina by the US Army Materiel Command's Airborne, Communications and Electronics Board. The tests will be used as the basis for publication of rigging procedures for the vehicle which will allow it to "jump in" with airborne tactical units when fast deployment of troops and firepower is needed.

This vehicle is extremely agile—capable both of turning within its own radius due to pivot steer, and of climbing a 60 per cent grade. It is fast—with a top speed of more than 43 miles per hour. It is powerful—with a 300 horsepower diesel engine. It is a distance runner—to a range exceeding 350 miles. And it packs a long range lethal punch.

Those who have not fully appreciated the sophistication of this innovation upon the surface weapons scene must recognize that, since its inception, the *Sheridan* represents a new concept. With its completely electrical turret system and the 152mm gun/launcher system which is incorporated in its profile, the *Sheridan* is a distinct departure from past vehicles. With its primary armament being the gun/launcher, which can be operated either electrically or manually, this versatile vehicle also boasts secondary armament consisting of a 7.62mm coaxial machine gun as well as a .50 caliber machine gun.



Lethal? You bet! Of course its major and unique armament capability is the "big bang" that its *Shillelagh* ground-to-ground missile provides. And both the missile and the combustible case-type ammunition which it carries may be fired at the option of the commander without adaptation devices. Other features contributing to the vehicle's effectiveness include aluminum armor, a smoke grenade launcher, rotating driver's hatch and multi-purpose conventional ammunition rounds with armor killing properties that are also effective against troops and fortifications. In addition, the *Sheridan* possesses the capability of operating at night and under conditions of low visibility. Assuredly, it is a dramatic departure from the past.

This departure from past practices and the quantum jump forward in technology which the *Sheridan* exemplifies, coupled with the reluctance of many to accept change were, to a great extent, responsible for its adverse reputation at the outset. Those who are knowledgeable about the intricacies of the *Sheridan* express every confidence that, given the opportunity to perform its designed mission, it will prove itself and eradicate doubts about its capabilities and its effectiveness as a viable, effectual weapons system.

However, the key to this accomplishment and the prime factor in outliving the past are in people. Too many have been willing to pass along what others, without real *Sheridan*-related experience, have said.

It is acknowledged that in the initial phases of deployment very genuine problems existed with the system. Such problems, in great measure, can be—and indeed are—attributed to those who were supposed to operate and maintain the *Sheridan.* The vehicle was new and highly sophisticated—troops viewed it with scepticism. Operators were quick to realize that their new "tank" wasn't like old "Betsy," who they traded in for the later model. It suddenly became all too apparent to maintenance personnel that their tank experience was of but limited value in handling the *Sheridan's* maintenance problems, especially in the turret area.

In too many cases, people who should have been vitally concerned with figuring out the new vehicle merely threw up their hands in resignation, instead of giving some studied thought as to how it worked, why it was different from the older vehicles and what would be required to make it effective. Even today the *Sheridan* continues in this fight against its shadowy past—troops continue to recall problems which surfaced two to three years ago and convey this picture of the *Sheridan* to the uninitiated, who pass it along as gospel.

Virtually all of the major problems encountered during the initial deployment of the vehicle have been corrected by modification, component redesign and the vast user experience gained. Despite this, the *Sheridan's* performance has not yet captured the

confidence of many of its users—it must be given the chance to do so. As the old saying goes, "A piece of equipment will only be as good as its operators and mechanics make it." Today's facts do not support the complaints of the past. Like any other piece of equipment, the *Sheridan* requires adequately trained, technically proficient personnel. Given that, there is little evidence that properly operated and maintained vehicles will suffer anything more than random failures.

The *Sheridan* with its *Shillelagh* capability can destroy the heaviest armor known out to extended ranges. It offers greater tactical and strategic mobility, increased firepower and a capacity for longer sustained action than any vehicle previously used to perform the reconnaissance function. The *Sheridan*, as an integral part of a cavalry unit, gives the commander the flexibility to quickly move a strong unit to protect a main battle force flank, to fill a gap as an economy of force unit, or to screen a large area for early warning of enemy movement.

However, to accomplish these missions, the system must be creditable and have the confidence and loyalty of its crews and maintenance people. The crews of the light armor section in cavalry units must be trained to function efficiently as a team, with a strict orientation as to mission. The entire platoon must understand and appreciate the capabilities and limitations of its primary and most devastating direct fire weapon. The organizational and support maintenance personnel must be trained and proficient in their field, both as mechanics and repair parts specialists. Prescribed load lists must be constantly reviewed, updated and maintained at the record of demand level. If all of these things are carried out with a professional, dedicated and positive attitude, the *Sheridan* will serve its users well and be afforded the chance of ridding itself of the stigma of the past.

In essence, lets stop the "old wives' tales" and rumor-mongering and accept the vehicle as it is now—not as it "reportedly was!"

LIEUTENANT COLONEL ROBERT E. HELTON, served with the 1st Squadron, 1st Cavalry, 23d Infantry Division which employed *Sheridan* vehicles in combat. He is currently assigned to the Firepower Division, Systems Directorate, ACSFOR.

Panzergrenadiere: German Mechanized Infantry

By Brigadier General Alfred Ritz

When the *Marder* armored personnel carrier was introduced to West German armored infantry units in 1971, it became apparent that the capabilities of this new weapon system would necessitate changes in traditional armored infantry doctrine. Compared to its predecessor, the *HS30* Armored Troop Carrier, the *Marder* possesses vastly superior firepower, an improved night fighting capability, greater cross-country mobility, stronger armor and more usable interior space. However, even the most sophisticated equipment can be rendered ineffective by improper utilization. While the fundamental principles of fighting with mechanized infantry remain unchanged, certain revisions to existing doctrine should be considered.

Armored infantry is part of and parcel of the infantry, and as such, its missions in battle are similar to those of the infantry:

- To seize terrain from the enemy, to rout him from dug-in positions in the field or to destroy him in close combat with or without weapons.
- To break into fixed inclosures using shock troops, to carry on battle in and around buildings and to participate in mop-up operations.
- To comb through forests or break into forest positions occupied by the enemy.
- To cross waterways before the opponent, to infiltrate the enemy on the opposite side or to attack him in full combat.
- To hold terrain and to keep the enemy from penetrating a position or to destroy or force retreat of advancing enemy formations.
- To carry on battle against enemy armor.

These missions must be fulfilled by day or by night, in any kind of weather, at any time of year.

The branches of the infantry differ less in the weapons they possess than in the manner in which they carry out their movements against the enemy. Paratroops, who can cross great obstacles and long stretches of territory quickly by using air transport, are, after landing, no more mobile than foot riflemen. Mountaineers, on the basis of training and equipment, can cross highland regions on foot, even where no organized march is possible and where air trans-

port is too dangerous due to hostile fire.

Armored infantry has the greatest cross-country mobility. When mounted, the mechanized infantryman can go across any terrain accessible to his tracked vehicle. He can ford streams mounted and, with minor preparation, cross larger bodies of water with the *Marder*.

TERRAIN INFLUENCES

The cross-country mobility of the *Marder* is equal to that of the *Leopard* tank. Thus tanks and infantry can carry out combined operations, each performing their own peculiar mission. However, in a tank-versus-tank battle in open terrain, there is no place for the armored infantry. Their vehicles' relatively thin skin prohibits dueling with enemy tanks.

The mechanized infantry fulfills its function by protecting the flanks of tank formations, by clearing areas to the rear of the offensive thrust or by pushing past enemy tanks to find its own path to its objective, free from enemy interference. The hope that armored infantry can assume the antiaircraft mission during tank battles vanishes as the troop carriers must seek cover from enemy tank fire. Against low-flying aircraft, the automatic cannon of the *Marder* can merely serve as a self-defense weapon.

The more cut-up and varied the terrain, the more cover there is, the greater grows the importance of the armored infantry. The increases in the amount of cultivated land and the density of population in West Germany heighten the significance of armored infantry for battle there, assuming that tanks and artillery will be hampered in operations in such areas. The landscape of troop training grounds is not comparable to the land where these troops will be employed. Thus, the great value of the armored infantry is frequently underestimated.

WEATHER CONDITIONS AND VISIBILITY

Tanks and armored personnel carriers have the same kind of night vision devices for their drivers and gunsights. But conditions of poor visibility, such as fog, render these devices largely ineffective. The limits of visibility as restricted by fog are important both day and night, as they limit the accurate placement of fire and the pinpointing of enemy locations and movements.

There are no adequate statistics on how much fog there is in the various sections of the country at different times of the year. From 26 November to 2 December 1968, a series of 1,512 observations were taken at several locations in southern Germany. In 67 per cent of these, visibility was less than 1,000 meters—63 per cent by day and 70 per cent by night. A major factor is the consideration that by day, most of the ranges of visibility were below 300 meters, and by night, below 200 meters. The frequency of visibility above 500 meters was insignificant.

The greater the frequency of limited visibility conditions, the more important close or even hand-to-hand combat becomes. This is within the realm of the armored infantry. The technical advances in night fighting devices have not made any significant change in this area.

FIREPOWER ADVANTAGES

The firepower of the armored infantry is considerable. In addition to the hand weapons and antitank guns found in every armored infantry group, the *Marder* is a versatile weapon system itself, consisting of a 20mm automatic cannon, a coaxial machine gun, a tail-mounted machine gun, four submachine guns firing through ball mounts and a planned antitank weapon with a range of more than 1,000 meters. Because of this variety of weapons and the amount of ammunition carried, the *Marder* is a fire-spitting monster which can turn back enemy infantry, lightly armored vehicles and low-flying planes at ranges in excess of 1,500 meters. At the same time, it is quite capable of close combat. Until the addition of the proposed antitank weapon, the smoke screen unit is capable of concealing the *Marder* quickly and for a considerable length of time.

The *Marder's* troops will approach the vehicle on the battlefield with great care. The fire around a personnel carrier leaves no dead space. It will be necessary for the troops to take advantage of the terrain when mounting or dismounting.

In addition to 50 *Marders*, the armored infantry battalions are equipped with 120mm tank mortars. Based on the mobility of the mortar carrier and the number of soldiers assigned to the firing units, the versatility of this mortar fire will be fully adequate for a battle calling for great mobility.

METHODS OF COMBAT

When equipped with the *Marder*, armored infantry troops will be able to fight in three different styles: mounted; dismounted with support from the vehicle; or dismounted without support. The particular battlefield situation will dictate which of these alternatives will be preferred in that situation.

The ammunition of enemy antitank weapons and tank guns can penetrate the armor of the *Marder* and could force the vehicle to take cover. When these enemy weapons are being employed it will be necessary for armored infantry troops to carry on dismounted combat with support from the *Marder* under cover. Through the effective use of available firepower it may be possible to cut off the enemy or hold him down so that he cannot use his mounted cannons or antitank weapons. This favorable situation could permit mounted combat by armored infantry troops.

In a delaying action, the armored infantry will yield ground mounted, holding down the penetration of the enemy with the far-ranging weapons mounted on the *Marder*. When defending from a blockade or a stronghold, machine guns, bazookas and rifles will be used from positions to the front of the automatic cannon. When defending from a static position, the weapons of the armored infantry should be emplaced in prepared firing positions. In addition, it could be useful to have individual soldiers dismount and conduct reconnaissance of partially concealed positions, so that the troop carrier can remain under cover. These scouting parties could maintain contact with their vehicles by means of radio transmissions.

Thus, it will be necessary for armored infantry to dismount when:

- enemy antitank weapons are being employed.
- other weapons besides the mounted weapons of the *Marder* are to be employed to the sides of the vehicle.
- conditions of landscape and visibility dictate dismounted combat (swamps, water, forests, towns, fog or blinding snow).
- scouting missions, observation and safety require dismounted action.

Mounted combat or dismounted combat with fire support from the vehicle make the best use of the mobility and firepower of the armored infantry. Fighting on foot without the support of the weapons mounted on the troop carrier should be avoided wherever possible, as it does not capitalize on the strengths of the armored infantry.

The duties that must be performed by the armored infantry, the position of the enemy, terrain, and visibility will lead, in the majority of cases, to employing these troops dismounted under the support of the weapons of the APC. Our experience in World War II indicates that armored infantry troops will fight dismounted far more often than they like. In training therefore, the crew in the rear area of the troop carrier should be prepared for dismounted action in accordance with the tasks they will be expected to perform.

MOVEMENTS IN THE TERRAIN

The top mounting of the automatic cannon and the mounted machine guns on the *Marder* present definite advantages. However, as a result, the silhouette and total height of the vehicle have grown. It will thus be a matter of special concern in the training of the commander, the driver and the first gunner that they understand the principles of exploiting the landscape when approaching enemy positions with their troop carriers.

One of the shortcomings of current doctrine and training is the overwhelming emphasis placed on formal drill, to the near neglect of realistic terrain utilization exercises. While formal drill at stated intervals promotes control of the unit, more emphasis in training should be given to using terrain as a tactical advantage.

Presently, terrain utilization is taught to drivers in an exercise in which one driver follows an announced, staked-out path, and the other driver, 50 meters to the side, is to use the terrain in moving to his objec-

tive. This training exercise, emphasizing the right and wrong methods of traveling cross-country, always makes particularly clear to the driver following the staked-out path why it is important to exploit the landscape in driving toward an objective. It is on this correct utilization of land, and on the skill of the driver in traveling over this land correctly and in using it tactically in his travels that the lives of the crew and the fulfillment of their mission in battle depend.

The forms of extended drill are not an end in themselves. Concealing the approach of the troop carriers from the sight of the enemy and from the effect of his direct fire weapons is more important than keeping diagramatically to an interval and distance of 50 paces. It is a vicious circle. First one must train the armored infantry in the forms of extended order drill, and then one must teach them to deviate from these forms as required.

THE FLOATING *MARDER*

In contrast to the *HS30,* the *Marder* can navigate deep waters with slight preparation. The vehicle can be equipped with its flotation equipment under cover in about ten minutes. Removal of the equipment after crossing a body of water is possible in about five minutes.

Even if there are only enough sets of navigation equipment in an armored infantry battalion to equip one company, this capability will greatly affect the course of a battle for a body of water. Once the first company sent across has succeeded in throwing the enemy back from the other bank so that enemy armor-piercing weapons no longer have an effect on the water, additional troop carriers can come forth from cover, cross the water and will either reinforce the firepower of the first company or will take possession of additional territory. It will depend on the situation whether it is best to take the navigation equipment back across the water from the hostile shore to equip additional troop carriers.

FIRING IN BATTLE

The mounted weapons of the *Marder* open fire when stopped in a battle position. Only in exceptional cases—such as when it is a question of getting a jump on the enemy, or when even undirected fire can hold him down or when the enemy, himself, has opened a surprise fire—is it permissible to open fire on the move. The necessity of finding a fixed firing position would be unnecessary if weapon stabilization made it possible to aim the fire under movement. There is at least a possibility that such equipment will be added to the *Marder.*

One must bear in mind when choosing a firing position that a personnel carrier at the edge of an

open, uncovered area with a firing range of over 2,000 meters will rarely find the enemy coming in front of its automatic cannon if the enemy can find better routes of approach through broken and covered neighboring land. Too often in selecting firing sites one thinks not of the enemy and from which direction he will come, but rather of the firing range of the weapon.

ORGANIZED ANTIAIRCRAFT DEFENSE

Mechanized units must be prepared for an air attack at all times in any position near the battlefront. The danger that their movement across a piece of land could be frozen by these attacks forces the armored infantry to use their automatic cannons against flying targets. The individual *Marder* can protect itself against the attack of low-flying planes. The armored infantry platoon or company can protect targets against air attack when their positions are located so favorably that they can fire against the low-flying aircraft before the plane's weapons can be fired.

An organized antiaircraft defense could mean that the armored infantry company assigned this mission could maintain radio contact with an antiaircraft battalion in the zone involved. In this manner, the reports of the aircraft observation troops of the antiaircraft battalion could be passed on to the armored infantry company. This offers the following advantages:

- The armored infantry can be fully certain that approaching aircraft belong to the enemy.
- The direction of approach is thus known in advance, so that a time advantage for opening fire is attained.

This type of cooperation can become important, for example, when armored infantry troops are assigned to protect railroad lines while troops are being unloaded or to protect an area for armored units. Such an organized antiaircraft defense, however, cannot be carried out if the armored infantry is in combat with a ground enemy.

ARMORED INFANTRY— CORE OF THE INFANTRY

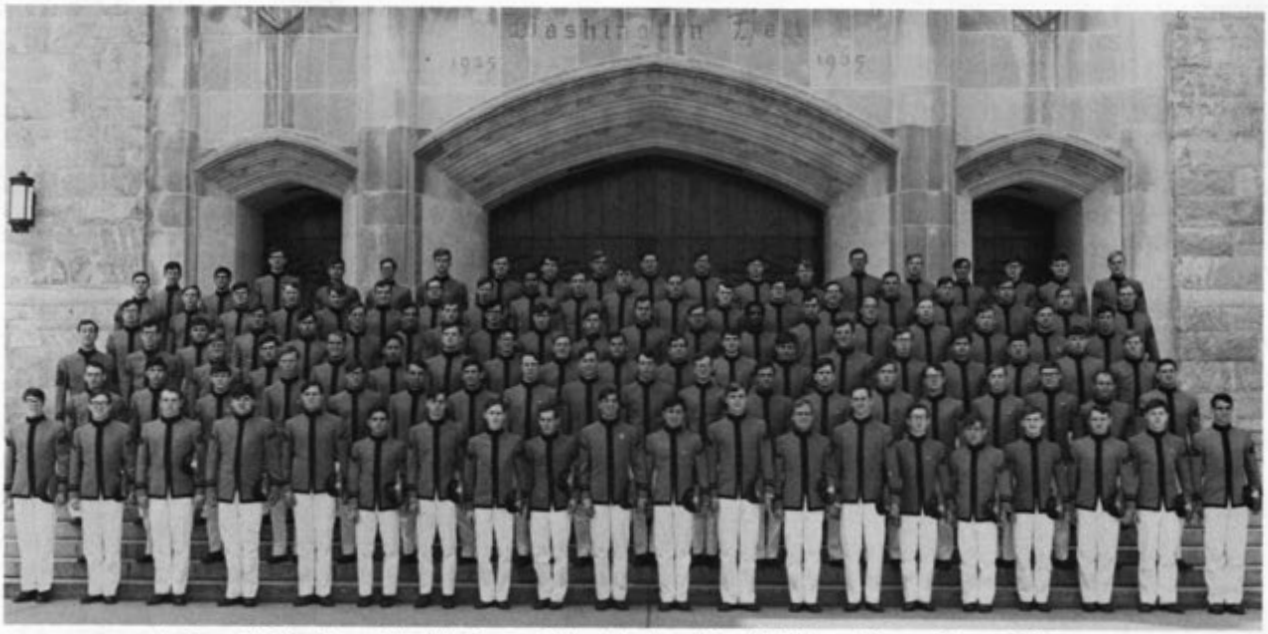
On the basis of number of units, the armored infantry already forms the main part of today's infantry. Because of their great fighting power and their unique method of combat, which always promises success, they should be the ultimate goal of the future development of the infantry.

BRIGADIER GENERAL ALFRED RITZ first served with German Mechanized Infantry units in the Polish, French and Russian campaigns during World War II. Following an assignment as Chief Instructor, Mechanized Infantry School at Potsdam-Krampnitz, he commanded the 1st Battalion, 1st Armored Infantry Regiment on the Russian front in 1944. General Ritz holds a master's degree in economics and has served in key staff, instructional and command positions, including Chief, Publications Division and Service Branch Chief, Infantry and Antitank. Upon his retirement he became editor of the German Army Magazine "Truppenpraxis."

Reprinted from TRUPPENPRAXIS, *by permission of the Editor.*

ARMOR GRADUATES
CLASS OF 1973
UNITED STATES MILITARY ACADEMY

The 122 USMA Class of 1973 graduates who chose Armor as their branch are an impressive group. Sixteen are in the top 100 of the class and, of these, five are in the top 13. Included in the Armor group are three brigade staff members, six are regimental staff members, seven are on battalion staffs and four are company commanders. Forty-six of the graduates have indicated a strong interest in attending Army aviation training after a year of troop duty. Initial assignments will see 39 moving to Europe, nine to Korea and one to Hawaii. Seventy-three will remain in the United States. Welcome aboard!



1st Row: O'Maley, Tapp, Mitchell, Brown, Skiver, Maringer, Planchak, Lingar, Pierce, Bergeret, Simpson, Kee, Quinnan, Dowalgo, Bohlender, Rubinstein, Conover, Ciccotti, Rose, Gaziano.
2d Row: Tyner, Masterson, Hawkins, Bubb, Pallone, Schleck, Paggi, Jose, Brown, Boerth, Klegka, Bauer, Brooks, Atkins, Griffin, Ponikvar, Shaffer, Schulte, Danhof.
3d Row: Quinn, Saunders, Simonsen, Hoerer, Douglass, Yamashita, Franklin, Daly, Perkins, Young, Schwab, Bailey, Landry, Francis, Welo, Ruvio, Richburg, Casey, O'Donnell.
4th Row: Gibbs, Marrero, Held, Farrell, Griswold, Thomas, Bessler, Feil, Elliott, Clark, Sousa, Gerbers, Crisp, Baker, Crockatt, Blevins, Twomey, Williamson, Bartok.
5th Row: Olsen, Vidlak, Freise, Raymond, Hoffman, Holly, Putignano, MacMullin, Bivens, Farris, Leney, McArthur, Schoultis, Sweetman, Halstead, Burton, McDonald, Guardia, Mair, Poccia.
Top Row: Riggers, Sciarretta, Peterson, Branham, Feeley, Scharpenberg, White, Hinson, Clouse, Ehlers, Miller, Tapp, Read, Hladkyj, Sanborn, Barry, James, Wamsley, Peterjohn.
Not Pictured: Donnell, Eckert, Marcy, Petricka, Ressner, Workman.

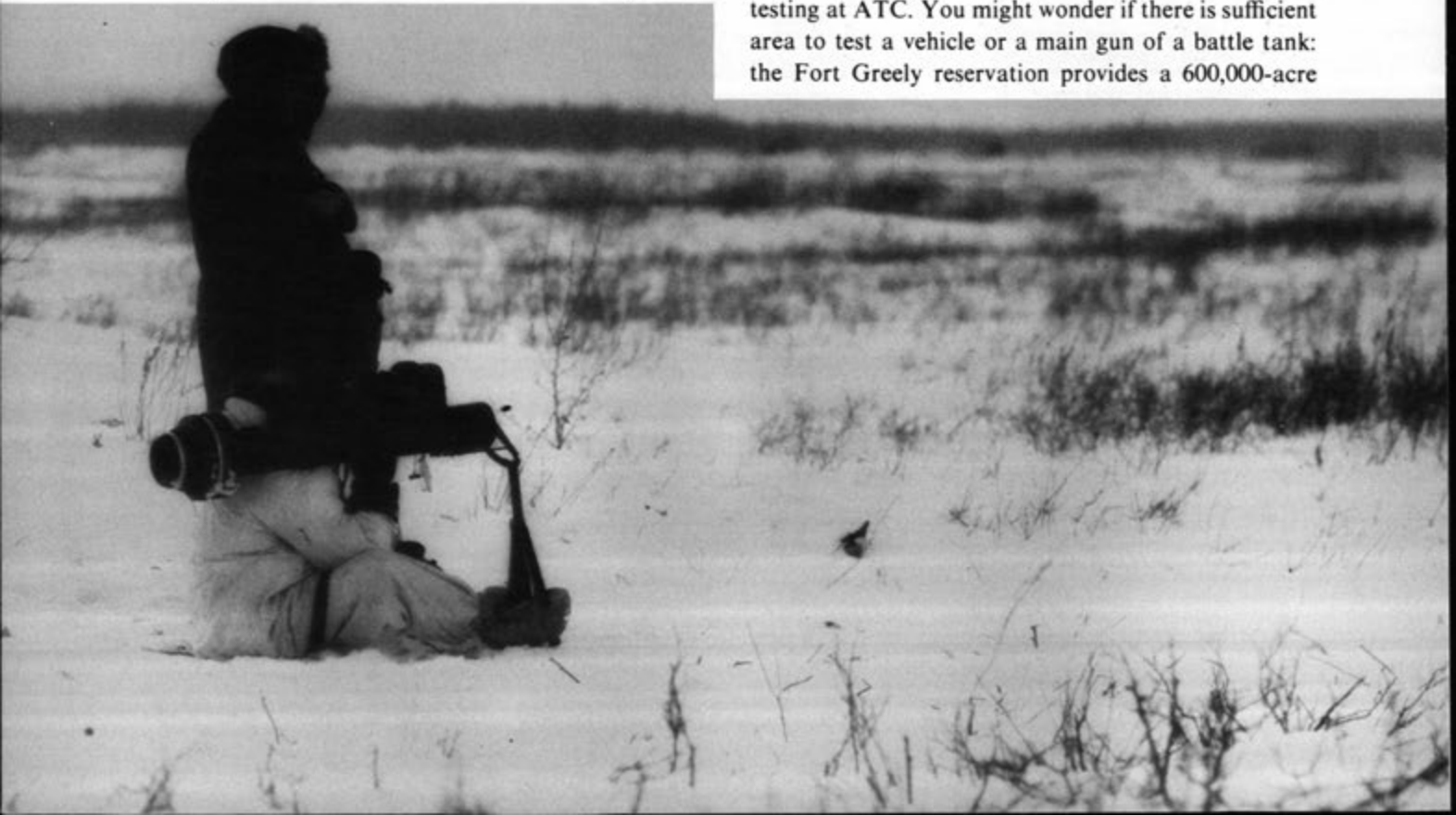
ARCTIC TESTING

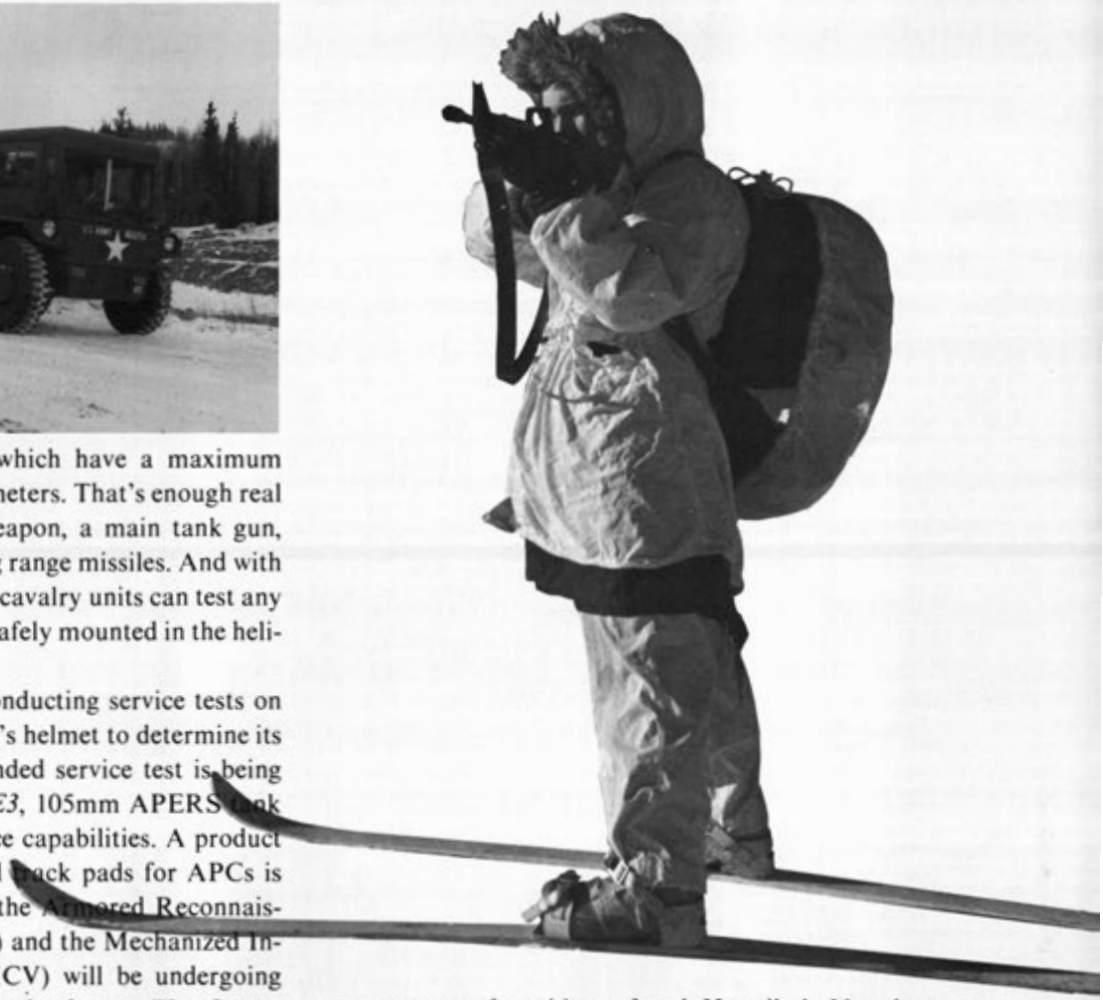
by Captain William A. Brinkley

After World War II, the United States realized that potentially we might have to fight in an arctic or subarctic area of the world, and we lacked a great deal of both equipment and expertise necessary to conduct successful combat operations in the northern environments. The Defense Department recognized the need for arctic testing and the first task forces arrived in Alaska in 1946. A permanent Arctic Test Board was established in 1949 with various agencies since developing into the present Arctic Test Center (ATC). The Center is a Class II Activity under the control of the Test and Evaluation Command. ATC is one of three environmental testing agencies—tropic, desert and arctic—concerned with the testing of equipment against a specific environment. During the hostilities in South Vietnam, the Center's testing workload was greatly reduced, due to priority, but emphasis is once again being applied to equipment performance in the cold environments.

The Center's product, a complete test report, is a part of the basis for decisions by the Army's procurement agencies: Do we buy it or not? The scope of the test report can be as narrow as a table of firing data at a specified temperature; or as broad as an expanded service test which requires "soldier-proofing" during field training exercises and normal duty. Each report must be objective, complete and timely to be of use to the Army. A test officer is assigned to every project which requires testing, and he must plan, conduct and report on his product during the test season.

Most soldiers have a preconceived notion that arctic means subzero temperatures on a continuing basis. And to a tank company commander, the idea of every river being frozen, the ground being harder than concrete, rolling terrain with little vegetation and a natural bridge of glaciers through mountain ranges would bring a world of almost unrestricted mobility. Yet, during the spring and summer months, the thawing muskeg and tundra will grind armor operations to a halt and make a unit as practically road bound as in many areas of Vietnam. And there are very few roads in the northern environments that are usable on a year-round basis. Thus, the arctic is a total environment; a land of four seasons that can provide a complete challenge to tactics, materiel and equipment. Developers are being encouraged to conduct year-round testing at ATC. You might wonder if there is sufficient area to test a vehicle or a main gun of a battle tank: the Fort Greely reservation provides a 600,000-acre





complex and firing points which have a maximum unobserved range of 50,000 meters. That's enough real estate to test an artillery weapon, a main tank gun, and many of the Army's long range missiles. And with unrestricted airspace, the air cavalry units can test any weapons system that can be safely mounted in the helicopter.

The Center is presently conducting service tests on the *DH132* Armor Crewman's helmet to determine its suitability for use. An expanded service test is being conducted with the *XM494E3*, 105mm APERS tank round to determine its service capabilities. A product improvement test of studded track pads for APCs is being conducted also. Both the Armored Reconnaissance Scout Vehicle (ARSV) and the Mechanized Infantry Combat Vehicle (MICV) will be undergoing suitability testing at ATC in the future. The Center will also be looking at the trail-truck vehicle to determine its military potential as a lightweight, highly mobile vehicle capable of supporting an Infantry squad in the northern areas of operation. All of the tests will be conducted on a year-round basis. It is important to remember that a piece of equipment purchased by the Army must be able to withstand the effects of all types of environments: temperate, desert, arctic and tropic. With the increased interest of the Congress in the Defense Department expenditures for new equipment, more emphasis will be placed on items designed to be used in every area of the world in which the Army might some day find itself. The new AR 1000-1 explains the Army concept of procurement implementing the guidelines established by Congress.

When exposed to the elements at -50 degrees Fahrenheit, ten-weight oil has the consistency of ice cream; plastic cases shatter when dropped; the ability of batteries to take and maintain a charge is reduced to the point of ineffectiveness; soldiers cannot survive without proper winter clothing and sleeping gear; tires become flattened at the point of contact with the ground after remaining in position overnight. Basically, these same types of problems faced Hannibal, Napoleon and Hitler, and they are the same problems the US Army will face if required to conduct operations in northern environments. The Arctic Test Center answers the question: "Can a soldier use this piece of equipment and use it effectively to fight in the cold regions of the world?"

CAPTAIN WILLIAM A. BRINKLEY, commissioned from Tennessee Technical University, holds a BS degree in industrial engineering and has served with Armor units in CONUS and Korea. He is presently assigned to the US Army Arctic Test Center at Fort Greely, Alaska.

THE

UNITED STATES

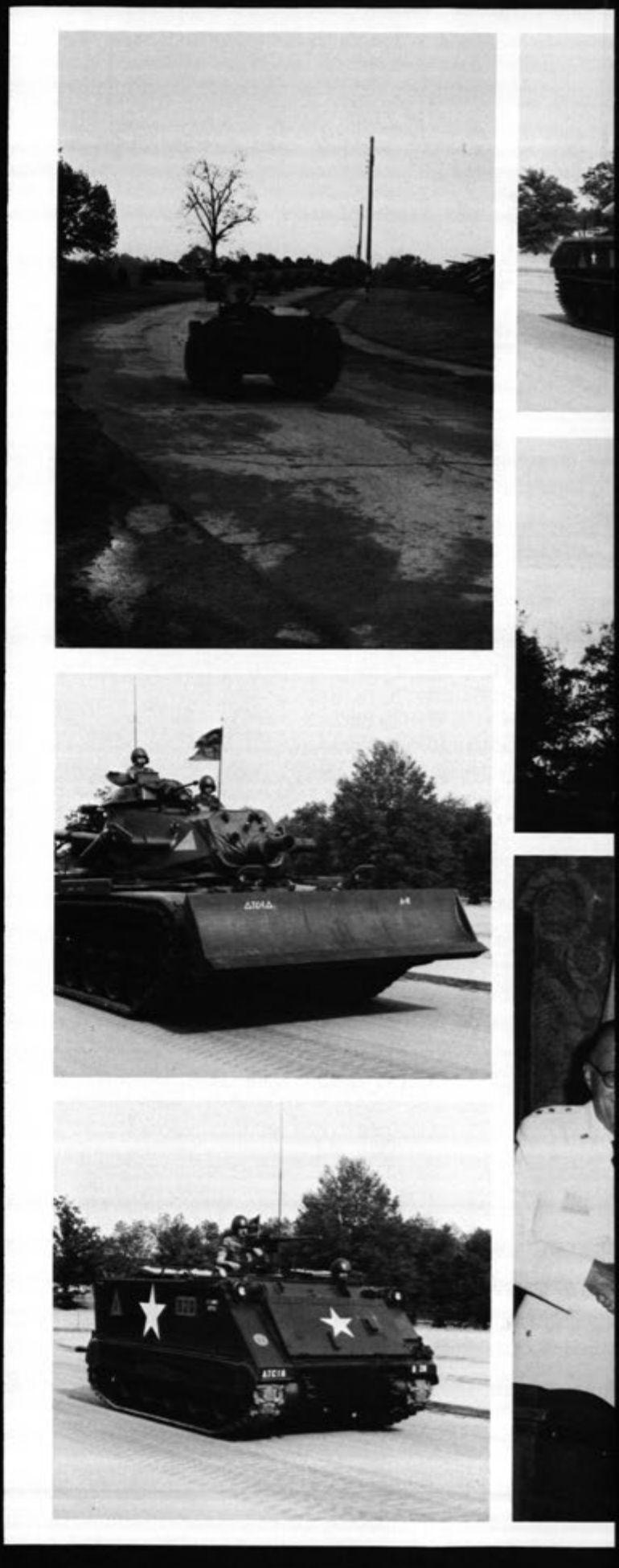
ARMOR ASSOCIATION

84th

ANNUAL MEETING

10-12 May 1973

Fort Knox, Kentucky



The Keynote Address

THE ARMY MATERIEL COMMAND

by

General Henry A. Miley

I am greatly honored to serve as your Keynote Speaker, today. I have done some research on your previous keynote speakers. The results suggest that I am the first Ordnance officer, ever, to perform in this capacity. In fact it appears that of all the uniformed keynote speakers you have had, I am the first logistician.

I am not sure what this break with tradition may imply. Perhaps the "One Army Concept" has been fully accepted by the Armor Community. In any case, I am delighted to be here on the platform and I intend to take full advantage of this "prime time" opportunity.

If I may speak for Ordnance and the logistician in general, we have always felt a community of spirit with the tanker. I suspect that this is true; first, because the tanker is a principal customer of our logistical services. A second basis for our rapport with you, and this is my personal perception, has been our mutual respect for hardware and all that the phrase implies.

What do I mean here? During the long years since 1776 the Army's materiel has steadily increased in complexity as it has increased in capability. The relationship is probably not linear but the fact remains that as our weapons systems have become more lethal and effective they have imposed greater burdens on the user and maintainer. And this has happened despite our continuing effort to retain simplicity.

In my experience the tanker has always accepted this fact with good humor and understanding. The great Armor people, with whom I have worked for almost 30 years, have recognized that combat capability and operational readiness require a delicate blending of good hardware, trained crews, proper and timely maintenance, available repair parts, and a disciplined organization of these ingredients. When this delicate blending is not achieved, or achieved imperfectly, force effectiveness suffers. The first reaction of the uninitiated is to complain about the equipment. We hear such complaints all the time—unreliable—defective—oversophisticated. But the knowledgeable tanker knows, and is on the record in this respect, that even the best hardware, if it is not properly operated and maintained, will not live to fight another day.

My chief concern, as we move into the era of an All-Volunteer Force is—will that force attract and retain the quality people to operate and maintain our modern equipment? By this I mean, not just the individual operators and mechanics, but also the management people at the end of the line who must insure: that scheduled maintenance is performed, properly and on time; that failures are properly diagnosed; that needed repair parts are on hand; and that quality repair work is performed.

Each Tuesday I spend most of the morning, with my staff, examining the OR rates on selected important combat items—like tanks and *Sheridans*, and *Vulcans*, and APCs. I can tell you that Tuesday, right now, is not my happiest day. The purpose of these reviews is to identify the specific causes and cures for specific problems at specific locations. I have been on this trail for almost a year now and the universal panacea that I am seeking has not presented itself.

How far can we go in the direction of increased complexity before the diet becomes too rich for our blood? I suspect that every thinking individual in the Army is giving that question some consideration today. Certainly we are, in the Materiel Command.

The first step, of course, is to make sure that our requirements for weapons systems performance have been developed systematically and that they represent, insofar as we can determine, exactly what we need—and no more. In my remaining time I propose to share with you some of the intellectual explorations we have indulged in—during the past couple of years—and their effect on our tank design philosophies. I will recite some of the questions—talk about a few of the so-called facts—and at the end, comment briefly on our new tank program.

As a starter, an always invigorating question—"What is the future of the tank on the battlefield?"

What are some of the facts? A 1972 Russian study stresses the mass employment of armor for both nuclear and nonnuclear warfare. The study acknowledges that the NATO countries are trying to close

the numerical armor gap. The study states "tanks may be asked to perform many tasks, especially in an offensive, and fighting enemy tanks is the most difficult of all."

"Therefore," the study goes on, "the ability of tanks to destroy enemy tanks is regarded as the main criterion of their effectiveness."

The Russian study contends that the battle will be fought 24 hours a day—that the NATO night-fighting capability is limited, and therefore night combat will be most lucrative.

So much for the Russian study.

Against this numerically superior force we will present antitank capabilities which range from *LAW* through *Dragon, TOW*, antitank helicopters, the *Sheridan* and of course, our tanks.

It comes down to this. Our potential enemy regards the tank as his principal offensive weapon. We and our allies identify the tank, because of the disparity in numbers, as a weapons system which will find itself generally in a defensive situation.

This being so, some more questions are in order. Is the tank the principal antitank weapon? If we move away from the European scenario, does the main battle tank have a role as part of the combined arms team? Can the tank survive in an environment where friendly air superiority is non-existent or limited? (I note, here, that enemy tanks in Vietnam experienced great difficulty under these conditions.)

In the non-European environment would a lightly armored, highly mobile gun platform be a suitable or better alternative? Will our dwindling petroleum supply have an impact on our concept of deploying large tank forces overseas? What is the tank's principal weapon? Will the tank's primary role be an antitank weapons system or for use, primarily, against soft targets? What will be the make-up of the most likely enemy force? Is the European scenario the most likely?

One of our recent studies indicates that in offensive operations against NATO the Warsaw Pact force would consist roughly of 40 per cent tanks, 20 per cent thin-skinned vehicles, and the remainder infantry and other soft targets. On the other hand on the defense the Warsaw Pact mix gets harder—50 per cent tanks, 25 per cent thin-skinned vehicles and 25 per cent infantry and others.

Our study concluded that the 105mm gun appears to be the best main gun for both offense and defense. Picatinny Arsenal's work on the new discarding sabot round appears to be in the right direction. There is some interesting contractor work on a 105mm missile but the price in cost and complexity looks high. The Canadian *Carde* caliber .50 shows promise as a secondary weapon. The proliferation of hand-held, antitank weapons has increased the importance of onboard suppressive fires. Hence, the *Bushmaster*-type weapon with an HE round looks attractive.

Question: What can be done to improve first-round hit capability which is dominant in our simulations?

Improvement in first round hitting can be achieved through increased muzzle velocity, reduced dispersion of the ammunition and by increased sophistication of the fire control system. We suspect that, for the foreseeable future, we are approaching practical limits in muzzle velocity and dispersion. We conclude that we must turn to better fire control, for further improvement, carefully weighing the increased cost and sophistication.

Let me move to another think-piece—terminal homing munitions. What will be the effect of terminal homing weapons, when they are fielded on armor? Can terminal homing be easily defeated? Is terminal homing a panacea?

Let's look at some facts. The best information, today, suggests that laser-guided weapons either helicopter or artillery launched will improve firepower against tanks—provided good target designation can be achieved.

Countermeasures against the laser designator depend upon detection of the laser radiation. There are some limitations. Intense combat situations degrade the crew's capability to monitor the detectors. The three-dimensional battlefield increases the burden on the busy tank crew. Therefore, we will need an automatic detection device giving warning and directional information.

Once warned, what can the crew do about it? The accuracy of "smart" bombs, guided missiles and projectiles make it apparent that the tank is vulnerable—always assuming that good designation is achieved. Intercept of the incoming weapon is beyond the tank's capability. The crew will have roughly 15-20 seconds to disrupt weapon guidance.

Evasive maneuvers or moving to cover will not be totally reliable and evasive action could well disrupt the armored operation. The tank could, given warning and direction, fire on the laser position.

What else can we conclude? The sophisticated laser-guided weapon, when it comes of age, will pose a new and important threat to the tank on the battlefield. Survivability will be enhanced by early warning of and alert to the presence of laser guided systems. A combined arms approach making use of friendly aircraft and artillery appears to be a must. A coordinated program for attacking laser positions

should become a part of our doctrine.

Let me turn from lasers to another favorite of mine—smoke. I am not sure that we have completely explored the use of smoke in the combined arms context. I refer to the use of smoke not only to cover tank withdrawal but also the use of smoke to defeat laser-designated chemical energy rounds. Our present on-board screening system, the *M176* grenade launcher, is relatively slow-acting and may be screening too close to the tank, thereby inhibiting maneuvers. In the original concept our new tank was to have had both the grenades and an integral smoke generating device. The latter was scrubbed to reduce cost.

During the development and testing phase I suggest that we rethink the smoke device. The on-board generator would provide almost instant smoke without instant obscuration. It would eliminate the requirement for reloading externally, particularly unattractive during combat. The generator would be safe to use in proximity to friendly troops since the smoke is nontoxic.

In summary, on this point, I think we should do some more work on the tactical use of smoke for tanks. Are two capabilities—the grenade and generator both required? If not, which is the most effective?

Here's a new subject. How difficult or easy is it to acquire ground targets, particularly tanks, from the air?

At China Lake a recently conducted series of helicopter target acquisition tests gave some clues. The targets were tanks, trucks and artillery pieces. The aircraft were helicopters with only nonaided visual acquisition flying at 100 to 200 feet altitude at 60 knots. The majority of the targets were acquired at 500 meters slant range. At 1,000 meters acquisition fell off significantly. In open terrain normal acquisition was at 1,100 meters. In terrain with trees and some concealment normal acquisition fell off to 450 to 600 meters.

A first-cut conclusion, based on the China Lake experiments, suggests that targets like tanks are not easily acquired by the nonaided eye with aircraft flying close to the ground. So, as in the case of other weapons systems, target acquisition will be the key to the success of tank killing helicopters.

Here's another one. What is the real value of agility in combat vehicles? Agility is defined as the capability of a vehicle, generally by virtue of horsepower to weight ratio and transmission efficiency, to accelerate rapidly and change direction on the battlefield. The objective, of course, is to reduce the probability of hit by an enemy gunner.

As long as a human being is doing the tracking it is clear that rapid acceleration/deceleration and changing direction will impair the gunner's ability to track. At the same time, of course, the evading vehicle's ability to fire on the move will be affected.

To date we have not been able to quantify, precisely, the reduction in hit probability due to speed and direction changes. Last year our Human Engineering people did some research at Fort Knox, using vehicles with varying mobility characteristics. The vehicles used were the *M60A1* tank, the *M113* carrier and an experimental lightweight, agile vehicle which we called the *XM109*.

The test used gun cameras and precise instrumentation to record times. The data have not yet been fully refined to give precise quantification but there are some interesting findings already. Although the *XM109* was capable of high cross-country speed, it averaged only 22 miles per hour when cover and concealment were used intelligently. The *M60A1* averaged 12-14 miles per hour under the same conditions. Our new tank with a 1,500 horsepower engine should match the *XM109*.

My Systems Analysis Agency has done some research on the effects of speed and silhouette on tank survivability. The criterion was probability of hit. The vehicles were the *M60A1* and the new *XM1*. The conditions were tanks moving along selected paths at different speeds and with varying times of intervisibility between defending and attacking tanks.

The results gave a 6 per cent decrease in hit probability for every 5 miles per hour increase in speed. The *XM1*'s lower silhouette appears to yield in addition 8 per cent reduction in hit probability.

If battlefield mobility is the extent to which a weapons system can move from point A to point B under threat of attack then mobility is a complex function of automotive performance, the size and shape of the target presented, and ballistic protection. On the other hand there is evidence that the more ballistic protection the more freedom of movement on the battlefield. We conclude that there is no convincing evidence that the lightweight, super agile vehicle is the way to go.

So we come to grips with the fundamental question. Are we beginning the development of a new tank which the tanker really wants and needs?

I am satisfied that we are. If you were listening closely as I ranged over my "things we think about" the proposed characteristics of the *XM1* should have come clearly into focus. We worked very closely with Major General William Desobry and his task force as

they developed the characteristics package for the new tank. This package was carefully reviewed and modified, in some areas, at the departmental level with a view to cost reduction. At the end, however, both General Desobry and I—and I think I speak for him—were satisfied that the statement of requirements was solid and attainable.

At this point I must emphasize, and this is often lost in translation, that we are launching a program to develop a new tank—not beginning to produce it. Development implies design, test, redesign, retest, trade-off, examination of alternatives, and test again at the subsystem as well as the vehicle level.

We will stress throughout the process—reliability—maintainability—and producibility. In accordance with the Army's new acquisition policy the user will get his hands on developmental tanks for two periods before any decision to produce is made. It is my fond hope that the user will speak up loudly and clearly after these two test and evaluation periods. I keep reminding all who will listen that the development phase is the time for change. Changes which are made after the production line begins to run are costly, time consuming, and furnish support to the critics who say we don't really know what we want.

We will do all these things within a constrained time period and under established cost ceilings. The new tank program will not be an easy job, but we have learned some lessons from MBT70, and we have done a lot of homework. We have fielded a good project manager team under Brigadier General Baer. We know that we will have lots of helpers watching us—from all levels in the national structure.

I know that you wish us well.

ARMOR NEW DEVELOPMENTS

by
Major Richard Pell

On behalf of General Desobry, the Armor School is pleased to have this opportunity to address the 84th Meeting of the Armor Association. My presentation is designed to provide an update of Armor developments since our last meeting, and to alert you to significant events scheduled for the future.

The recent reorganization of the Army has served to strengthen the impact made by the Armor Center Team on doctrine and materiel development. The former Combat Developments Command—Armor Agency has become a part of the Armor School, giving the Commandant the functions and resources for the development of Armor doctrine and materiel requirements. With doctrine training and materiel under a single manager, increased coherence can be anticipated for Armor programs.

During last year's demonstration at St. Vith Range you were introduced to the idea that Armor is a "Four-Dimensional Force" consisting of armored cavalry, air cavalry, attack helicopter and tank units. We at the Armor Center continue to believe that this is the proper way to consider Armor, and that the Armor leader must think in multi-dimensional terms.

Modern Armor forces, when properly blended with mechanized infantry, artillery, and engineeers, and supported by an efficient logistical system, provide the commander with the capability of conducting mobile warfare as it was envisioned by our predecessors; that is, to first find the enemy, fix him, and then to fight and finish him.

The "find" function is performed by a combined air-ground cavalry team, which joins the complementary capabilities of detailed reconnaissance by ground elements with the extensive area and range acquisition of air cavalry. This team provides the commander with timely information on enemy locations, strength and dispositions so that appropriate action can be taken to counter his intended plan.

To aid in fixing the enemy, the commander may choose a combination of combat maneuver elements. The impact of the technological advances of the *TOW* and *Dragon* will be important considerations in determining the composition of this force. Using *TOW* and *Dragon*, mechanized infantry now possesses the capability of providing a greater portion of its own antitank defense. No longer representing the total means of medium and long range antitank defense, the offensive role of the tank can be more fully realized. Thus the commander is given a wider option to concentrate large reserves of tank heavy forces. Regardless of which units he selects, he will utilize tactical air and available artillery.

To fight and finish, the commander will make maximum use of his force's mobility, represented by the attack helicopter; and protected firepower, represented by the tank. In conjunction, these forces generate the

shock effect necessary to close with and destroy the adversary in detail.

For the commander to execute a plan as just described, his Armor force must be efficiently organized, properly trained and be equipped with materiel that permits his employment concepts to become a reality. During the remaining minutes, I will briefly discuss the progress made toward this goal.

First, concerning armored cavalry units, the armored reconnaissance scout vehicle program continues on schedule. At the time of our meeting last year, six candidates—three tracked and three wheeled—were being evaluated by the Army. Two contractors were selected during the past year to produce prototype vehicles.

Lockheed Missile and Space Development Company was awarded the contract for development of the wheeled vehicle concept. This candidate is a six-wheel drive vehicle which attains water propulsion and steering from a combination of a hydrojet pump and wheel rotation. The design includes a roll joint which permits the rear set of wheels to twist independently of the front.

The second candidate is a tracked vehicle being developed by the FMC Corporation. It incorporates pivot steer, low ground pressure and an aggressive track. Water vanes on the idler wheels and track shoes enhance water mobility. Both vehicles are powered by a diesel engine and have similar mobility, firepower and crew protection characteristics. Both concepts offer excellent cross country speed, a road range of 450 miles and improved night surveillance equipment. The firepower requirement calls for a two-man stabilized weapon station which has a day/night sight synchronized with an automatic cannon as the main weapon. The 20mm *M139* gun has been selected as the interim weapon, with each station designed to accept the 20-30mm Vehicle Rapid Fire Weapon System or *Bushmaster* as the follow-on armament.

Side-by-side testing of these two candidate vehicles will be conducted beginning in late 1973. These tests conducted at Fort Knox and other sites will determine which candidate is most capable of providing the characteristics essential for the scout vehicle of the future.

As I indicated, the follow-on armament required for ARSV is the 20-30mm *Bushmaster* weapon system. This weapon is of interest to Armor and the combined arms team since it will be the primary armament on MICV and is proposed as the coaxial armament on the new main battle tank.

The primary objective of the *Bushmaster* program is to achieve the ability to defeat enemy lightly armored vehicles at long ranges. An antipersonnel capability will be provided through instantaneous remote selection of at least two types of ammunition —armor piercing and high explosive.

During the past year three candidates for *Bushmaster* have been undergoing development. One candidate is a 25mm entry submitted by Aircraft Armaments Industries which feeds horizontally from either side. The next proposal, also 25mm, is the Philco-Ford entry, which feeds vertically from the right or left. The third candidate, which also feeds vertically from either side is a 27.5mm weapon built by General Electric.

All three candidates are undergoing a "shoot-off" at Aberdeen Proving Ground, along with the 20mm *M139* automatic cannon, to determine which system will be selected to fulfill the *Bushmaster* requirement. The decision to enter full-scale development with a single contractor will be made by the end of this year.

The Mechanized Infantry Combat Vehicle deserves attention as the proposed replacement for the *M113* as the rifle squad carrier in the cavalry platoon. The program has an even greater effect on Armor under the concept of the combined arms teams, since this vehicle will give new capabilities to mechanized infantry units in the areas of firepower, survivability and mobility.

Firepower is provided by a *Bushmaster* weapon and a coaxial 7.62mm machine gun mounted in a fully-stabilized one-man cupola. Firing ports on each side allow squad members to fight from their vehicle when the tactical situation so dictates. Survivability is superior to that of the *M113* because of improved armor and better ballistic shape. In the area of mobility, improvements are dramatic. The ability of MICV to move over rough terrain at high speed will add to the survivability of the vehicle by making it a much more difficult target to acquire and engage. This mobility will allow MICV to keep pace with the new main battle tank when the two are conducting combined operations. In November 1972, after evaluation of proposals from three prospective contractors, a contract was awarded to FMC Corporation for development of MICV.

Moving now to the next dimension of Armor, I will address some significant events that have taken place in the programs for the aircraft found in air cavalry units. Of greatest impact is the recognition of Armor as the proponent, not only for the air cavalry units, but for the scout helicopters and attack helicopters found within these units. This action was directed by General Bruce Palmer during his remarks to Combat Vehicle Program Review 1972 and was again confirmed by a letter dated 26 February 1973 signed by the Vice Chief of Staff of the Army.

Vietnam combat experience during last year's

North Vietnamese offensive aptly demonstrated the feasibility and effectiveness of firing *TOW* missiles from helicopters to defeat enemy armor. However, the *AH1G Cobra*, the only helicopter in the Army inventory specifically designed for the attack role, lacks a true antiarmor capability. The *TOW-Cobra* program marries the concept of utilizing missile-firing helicopters to defeat enemy tanks with a proven aerial fighting vehicle.

TOW missiles are mounted in removable paired racks on the outboard wing stations and either four or eight missile configurations may be used. *TOW-Cobra* will retain the capability to employ all standard weapons subsystems to include various combinations of the 2.75-inch folding fin aerial rockets.

Developmental testing of *Cobra* aircraft is now underway. Full scale operational testing will be conducted by the Armor Center beginning in October. This test will be performed by the 7/1 Air Cavalry Squadron of the 194th Armored Brigade. Conversion of existing standard *Cobras* to the *TOW-Cobra* configuration is scheduled to begin in August 1974. Current plans call for five standard *Cobras* and four *TOW-Cobras* in the aeroweapons platoon of the air cavalry troop.

We are also looking at the impact *TOW-Cobra* will have on training. Aviator transition training should be brief and offer few problems due to similarities with the standard *Cobra*.

Gunner training, however, requires a new approach. Due to the $2,000 plus cost of *TOW* missiles, gunner training and proficiency firing could become a very expensive proposition. In order to conduct meaningful and less costly training, a training device which enables the crew to train in target tracking without firing actual missiles is under development.

A companion vehicle to the *TOW-Cobra* is the product improved aerial scout. This program is designed to improve the current fleet of scouts by providing stabilized optics for target acquisition and a reduction in visual, and IR signature for increased survivability. These improvements will be accomplished through a series of engineering change proposals and modification work orders. In order to provide an aerial scout which will be compatible with the Advanced Attack Helicopter, a requirement for an Advanced Reconnaissance Helicopter has been prepared. The Advanced Reconnaissance Helicopter concept is to provide improved flight performance, target acquisition and target designation capabilities. A requirement for an Advanced Attack Helicopter has been submitted to Department of the Army; and if the requirement is approved, a task force will be convened shortly to develop the concept formulation package to be used in requesting proposals from industry.

I will now cover the Main Battle Tank dimension of Armor. Since our last meeting the *M60A2* tank has gone into full production. The first vehicle came off the line last February and deliveries are being made to the various agencies involved in the final developmental and operational testing of this system.

The remaining major tasks in the *M60A2* program are the initial production test being conducted at Aberdeen Proving Ground and Fort Knox and the Intensified Confirmatory Troop Test at Fort Hood, Texas. Training for crews and turret mechanics of the test battalion is being conducted in the Armor School's Weapons Department. Over 500 *M60A2* tanks will be built. The *M60A2* tank battalion will contain 54 tanks and the majority of these battalions will be stationed in Europe. The *M60A2's* long range accuracy coupled with its fire on the move capability provides the commander with a flexible weapons system—a system that can be employed effectively as a pure *M60A2* unit or integrated with other tanks and mechanized infantry in either offensive or defensive operations.

Another program to upgrade the tank fleet is product improvement of the *M60A1*. Although not a formal part of the product improvement program, consideration is being given to providing passive night sighting equipment. Advanced image intensification, or starlight scope type elbows which are completely compatible with the current gunners and commanders periscopes, have been developed and are being used. Also under consideration is the *VSS-3A* pink light searchlight which is used to enhance the imagery under extreme low light conditions. This same search light is used by the *M551 Sheridan*.

During the past year contractor testing of prototype vehicles has been conducted here at Fort Knox and at Jefferson Proving Ground, Indiana. While production of tanks with all eight improvements is scheduled for 1976 certain items are available today. The new track has been placed in the supply system, and current production tanks include the new air cleaners and stabilization. The fielding of the *M60A2* and *M60A1* with stabilization will cause some changes in tank employment and training due to the fire on the move capability. Guidelines for stabilized gunnery are included in the latest version of FM 17-12, Tank Gunnery, published last November.

To complete my discussion of Main Battle Tanks, I will now move to a subject of particular interest—that is the development of the new main battle tank, the *XM1*. The Main Battle Tank Task Force formed at

Fort Knox and commanded by General Desobry completed its work and published its final report last August. Final DOD approval to enter the validation phase was granted in January. Contractor proposals are currently being evaluated by a Source Selection Evaluation Board.

For firepower, the *XM1* will possess a conventional gun, optimized for kinetic energy ammunition, and complementary weapons consisting of a coaxially mounted *Bushmaster*, a caliber .50 machine gun mounted at the tank commander's station, and a 7.62mm machine gun at the loader's position. The main gun is to be stabilized and adequate fire control will be provided to give the *XM1* a high probability of attaining a first round hit at those ranges where targets are most frequently acquired. With complementary weapons capable of defeating lightly armored vehicles and personnel at long ranges, the tank commander can select the more appropriate weapon for target engagement. The loader's and tank commander's weapons provide close-in protection and a deterrence against air attack. The *XM1* will possess the best night fighting equipment that technology and cost permit.

The mobility of the *XM1* will be significantly increased over that of current tanks by the combination of a higher horsepower engine and a superior suspension system. The power to weight ratio of *XM1* will be almost twice that of the *M60* series. The increased cross country speed and agility of *XM1* will increase the survivability of the vehicle by reducing exposure time. Survivability is to be further enhanced by improved armor protection and a reduced silhouette. Maximum use will be made of the technique of compartmentalization. Vulnerable components such as fuel and ammunition are to be separated from each other and crew areas by armored bulkheads.

Task Force requirements call for the *XM1* to be more reliable than our current tanks. This will result in a better combat availability rate. A directed effort will be made to reduce the crew maintenance time required on this tank. In summary, the *XM1* should be a highly mobile and survivable, offensive weapons system that will meet the needs of Armor for many years.

The final dimension of Armor is the attack helicopter. During the past year two operational attack helicopter companies have been deployed from Fort Knox and assigned to USAREUR. Each corps has operational control of one company. Both companies were deployed with 21 standard *Cobras*. It is currently planned that once production of *TOW-Cobra* has begun, it will replace the *AH1G* in the attack helicopter company on a one-for-one basis.

Just as development of a superior main battle tank will increase the effectiveness of our tank formations, the fielding of the Advanced Attack Helicopter promises significant improvement in the capabilities of the attack helicopter units.

New requirements for an Advanced Attack Helicopter were prepared by a Task Force that began work over a year ago. The Task Force examined the basic Army concepts under which previous armed helicopters had been developed and the results of more recent studies, experiments and field evaluations concerning the employment of such aircraft. The concept developed calls for nap-of-the-earth flight to avoid radar directed antiaircraft guns, and stresses target engagement at maximum standoff. The capabilities specified for the Advanced Attack Helicopter describe a system oriented on enemy armor. The vehicle is to be capable of nap-of-the-earth flight with maximum fuel and ordnance loads, and agility is stressed in preference to high air speeds.

Current plans call for the Advanced Attack Helicopter to be fielded with *TOW* as the primary antitank weapon. Growth potential for the eventual acceptance of a fire and forget missile is required. Following termination of the *Cheyenne* program in August, action was taken to obtain approval of the Advanced Attack Helicopter requirements document. Final Department of Defense approval was obtained in November with requests for proposals from industry being issued the same month. The source selection evaluation board for the Advanced Attack Helicopter is currently in session. It will recommend two contractors, from several bidders, to enter the next phase of development.

I have just described some of the changes taking place in the equipment side of Armor, however the trooper cannot be forgotten. Without him, the finest tank or aircraft in the world is a pile of metal. I would now like to briefly outline some of the major improvements in training that have taken place over the year.

Armor formerly supported two MOS skills—medium tanks and cavalry reconnaissance. Both fight mounted, but doctrine differs substantially. Now with the four dimension concept, our graduates must be knowledgeable in these two areas plus their aviation derivatives—tactical and technical experts whether the MOS holder flies or rides on the ground.

In March, a goal that the Armor School has sought since the end of World War II was realized. With approval of a 12-week Armor Officer Basic Course, all initial entry lieutenants will be qualified as both tank unit and armored cavalry unit commanders. The course stresses hands-on, and field evaluation indicates it is a best seller at all levels.

As directed by the Chief of Staff, the Armor School

has initiated professional type instruction for enlisted students. The first step in the Noncomissioned Officer Education System is the Noncommissioned Officer Basic Course. This is a dual-track course which offers E6/E7 level training for both MOS 11E (Armor) and MOS 11D (Reconnaissance) students in grades E3 through E5.

In September we began our first Noncommissioned Officer Advanced Course. This course generally parallels the Officer Advanced Course to include diagnostic testing and an NCO comprehensive evaluation. Students are E6s and E7s in both 11D and 11E MOS and training is designed to support duty at the first sergeant—senior staff NCO level.

Specialist programs have also seen important changes. The Motor Officer Course is one of our older courses, however, the past year has seen a transfer of proponency for the motor officer MOS from the Ordnance School to the Armor School. As a result, Fort Knox now conducts motor officer training for all organizational level motor officers. The redesigned course provides training on vehicles most closely associated with the student officer's own branch.

Department of the Army has approved an action which will divide the 45K turret mechanic MOS into three new MOSs: 45N (*M60A1*); 45P (*M551*); and 45R (*M60A2*). Separate programs of instruction have been approved. While common subjects will be presented to all turret mechanics, the emphasis is on training the man on the system which will be found in his future unit.

In the past few minutes I have presented some of the changes which are taking place in Armor. I'm sure you will agree with me that much progress has been made in providing the trooper and his commander with the assets and skills envisioned in the modern Armor Concept.

MASSTER BRIEFING

by
Colonel Charles Canedy

Since this is the first time that MASSTER has been privileged to address this Association, I think it appropriate to take a few minutes to briefly describe what we are, where we are, what we do and to highlight what MASSTER testing we have done to assist the Armor Community. Our acronym of MASSTER stands for Modern Army Selected Systems Test, Evaluation and Review. Our mission is to plan, conduct and evaluate field tests and experiments to determine military potential or operational suitability of materiel/systems, to make recommendations pertaining to organization, doctrine, materiel and training, and to provide data for higher level resolution of force structure and organizational problems.

MASSTER responds directly to the Department of the Army for test direction and reports. This is done through the Operational Test and Evaluation Agency (OTEA), a Class II activity of the ACSFOR. Our command and support come from the Forces Command (FORSCOM) through III Corps. The reasons for this relationship are quite clear. We are a big test unit; we rely on the two principal divisions at Fort Hood for our test resources; therefore, the problem is greatly simplified if we can turn to one man, the Corps Commander, with our requests for support. The divisions respond accordingly, since they work for the Corps Commander.

How does MASSTER get a test? As indicated previously, the Operational Test and Evaluation Agency (OTEA) chairs a committee called the Test Schedule and Review Committee. It is through this agency that all input, all requests for tests, must filter in the form of outline tests plans. Once approved, tests are documented in a Five Year Test Plan, which becomes the authority for the test. I would hasten to add that virtually anyone, in or out of the Army, can suggest tests which they would like to have run. In the case of the Armor Center, the outline test plan would merely be submitted to TRADOC, who in turn would submit it to OTEA.

Among the resources available to MASSTER at Fort Hood are the 1st Cavalry Division, the 2d Armored Division and the 13th Support Brigade. Support of MASSTER is one of the primary missions of each of these organizations.

One of the major areas we have entered that is not specifically related to Armor is command and control—specifically, which type of staff organization will be most effective. After looking at the current H series staff organization and at an alternative organization proposed by CDC which would have made the staff chiefs directly responsible to the commander, we concluded that there had to be a more efficient staff orga-

nization. What we have come up with is an organization which eliminates the chief of staff and gives the two assistant division commanders specific jobs—operations and support. Perhaps the most significant aspect of this organization, however, is the combining of the G2 and G3, thus establishing a truly operational side of the house, and, likewise, the combining of the G1, G4 and G5 activities and putting them under the chief of support. Hopefully, in January we will convert the entire 2d Armored Division to this type staff organization, not only at division level, but also at the brigade and battalion levels.

I'd also like to briefly point out that all of Fort Hood is currently tied up with OSD Tests 2 and 6, the purposes of which are essentially two-fold. The tests will validate the training package of the reserve training unit; and, secondly, will examine the roundout of active forces with reserve forces. In fact, the 2d Armored Division will receive three roundout battalions this summer, and the training examination will be conducted with the entire 2d Armored Division. In order to do that, of course, it will take the entire 1st Cavalry Division to provide them an aggressor, necessary controllers, data collectors, etc.

Now, let's get down to some tank business. We started the *M60A2* Intensified Confirmatory Troop Test on 7 April of this year. We started it by sending personnel of the 1st Battalion, 67th Armor, 2d Armored Division to Fort Knox to start their turret training. We will be involved with the test for virtually a year, and our real purpose is to wring out the *M60A2* so that we know what problems there are and what the answers to these problems are. What are the logistical problems, if any? Are there unique training problems which should be identified? In sum, when the tank deploys, USAREUR should be right up to speed and ready to run with this tremendously important vehicle.

Our training phase has shown that the live fire phase ought to consist virtually of running the tanks through the qualification tables. The maneuver phase is to provide some insights into doctrinal considerations and of course to accumulate mileage for the RAM test. And finally, if necessary, we will go into an intensified RAM exercise to take at least a platoon of tanks to 3,000 miles and an inordinate number of missiles and ammunition fired—like eight every 100 miles.

I'd also like to mention that on 6 August hopefully we will dedicate the new Crittenberger Tank Range in honor of Colonel Dale Jackson Crittenberger. It is quite a unique range, in that it is some six kilometers long and can be run from either east or west. More importantly, the *M60A2* employs a laser rangefinder. Range safety requirements with the laser rangefinder are going to pose some serious problems on many installations in both the US and Europe. At the Crittenberger Range we will have a natural mask that affords us virtual freedom of laser operations. The range will accomodate up to five tanks firing concurrently. Conceivably, you could fire an entire battalion on Tables VI and VII and probably VIII in one day.

We've played with an awful lot of night vision gadgets at MASSTER. With the Far Infrared Thermal Imagery (FIRTI) mentioned by General Miley this morning, we found that our capability was increased, however because of its great expense and complexity, we couldn't find a place for it. What we could find a place for, however, is the current *M32* gunner's periscope with an image intensifying elbow substituted for the infrared elbow. You can then take the current *M38* periscope and, for about $1,000 a copy, provide the *M60A1* with a night firing capability under almost all light levels—down to ten to the minus four. You don't find many nights of ten to the minus four. I have fired this thing out to ranges in excess of 2,000 meters with not only first round hits, but more importantly, with second round hits, because that's where image intensification usually runs into trouble. With another device, the pulse gaited laser, it is possible to "focus" at one particular range. Thus, if you are interested in something at 1,800 meters, you just range it on out to that distance.

I think if you all go back and search your memories, you probably can't remember the last time you fired a service APDS round. We asked the 1st Battalion, 67th Armor, the unit testing the *M60A2*, to also test the *L45* practice APDS round. This round was initially developed by the British and was tested here at Knox in 1967. At that time it was determined that it was a fine round and that we should buy it. We have finally bought it. The problem with firing service APDS is that your range fan restriction is in excess of 22,000 meters. Firing the *L45*, you are reduced to those ranges associated with the old 90mm gun, in the vicinity of 12,000 meters. Therefore, we have provided the community with a round with which you can train tankers to fire APDS. The round matches the service round ballistically only out to 2,000 meters, but we think that's the critical range at which APDS will be fired anyway.

Our camouflage program was initiated at the request of General Palmer, and its something we should have looked into before. We have officially dedicated the 2d Brigade (St. Lo) of the 2d Armored Division to evaluating our camouflage program. Unofficially, virtually everyone at Fort Hood is in-

volved in the camouflage program. There are even some of us who still wear OD T-shirts, although they are becoming hard to get. Essentially we have gone to a pattern painting process for all our vehicles. We have recommended that all production tanks be painted on the line in a pattern configuration. Now we are doing it at Hood. The point I would like to make is that you don't have to hire any engineers; you don't have to hire any technicians; you just issue the trooper a pattern. He sketches his own pattern and paints his own vehicle, with the exception of aircraft.

We've also looked at all kinds of nets. You will recall that the US Army's burlap net weighs in excess of 150 pounds. People and crews are reluctant to break out the net and attempt to camouflage anything because of this weight factor. We've also got stowage problems on combat vehicles. Is it realistic to be doing this in a fluid environment for those on the frontline trace? We're suggesting that perhaps it's not. Perhaps you can take better advantage of the natural foliage by clips and brackets and by pattern painting and forgetting the nets.

About a year ago, we acquired 33 off-the-shelf Suzuki 185 trail bikes, which are currently being tested by troops from the 1st Cavalry Division. We ran them through a comparative scout test pitting them against a composite air cav troop, a ground cav troop and a mech scout platoon. The test has shown us that there are certain occasions—and they are frequent—when providing the soldier with this kind of transportation can enhance his scouting capability. We did not say you ought to replace all scout platoons and things with motorbikes. What we are trying to say is that it makes sense to us if you take a little trail bike and you give one or two of them to this type platoon.

Another controversial item is the *XR311* or the dune buggy. MASSTER has some ten of these. Eight are assigned to the 2d Squadron, 1st Cavalry, the eyes and ears of the 2d Armored Division, and two are assigned to the 163d Military Intelligence Battalion. The purpose of examining them in the intelligence role was an outgrowth of our finding that the *M151* jeep, when carrying the radar teams of the division, was unable to keep up with the highly mobile armor forces. Therefore we have attached two of these dune buggies to the intelligence battalion to examine the speed and mobility potential.

Let us now turn our attention to the aerial side of the Armor Community and address specifically the developmental work which MASSTER is doing with respect to the Air Cavalry Combat Brigade. It is around this brigade that MASSTER has conducted and will continue to conduct a series of materiel as well as organizational systems type tests. Our initial examinations of the air cavalry problem centered around the examination of the appropriate mix of scouts to guns in air cavalry organizations. Our first test, ACCB I, had as its scope the determination of which mix, be it one to two, one to three, three to five and so forth, afforded us the best mix against an appropriate enemy force. We finally arrived at the general consensus that it ought to be about three scouts to five guns, and we learned a lot of other lessons as well from ACCB I. Some of these were that night learning is rapid for aviators, that current nap-of-earth doctrine is the only way to go, and that new equipment is needed for hiding the helicopter and for rapid forward refueling.

We then followed up with ACCB II, which was the examination of air cavalry problems at the troop level. What we did, basically, was to compare a conventional air cav troop (scouts, guns and rifles) with the attack troop (scouts and guns). We confirmed, in fact, that the three-to-five mix is good—however to achieve that mix you must have four-to-seven because of aircraft availability. So our lessons from ACCB II are: that the attack squadron should consist of three common attack troops, each with three common platoons containing the four-to-seven mix; that highly skilled airmobile infantry and direct support aircraft maintenance should be assigned at squadron level; that units based on the attack helicopter belong on combined arms teams on the mid-intensity battlefield; and that R&D effort should be directed at hiding helicopters, ammo packaging, forward refueling, gross and fine sensors for aircraft, nap-of-earth night operations including communications and navigation.

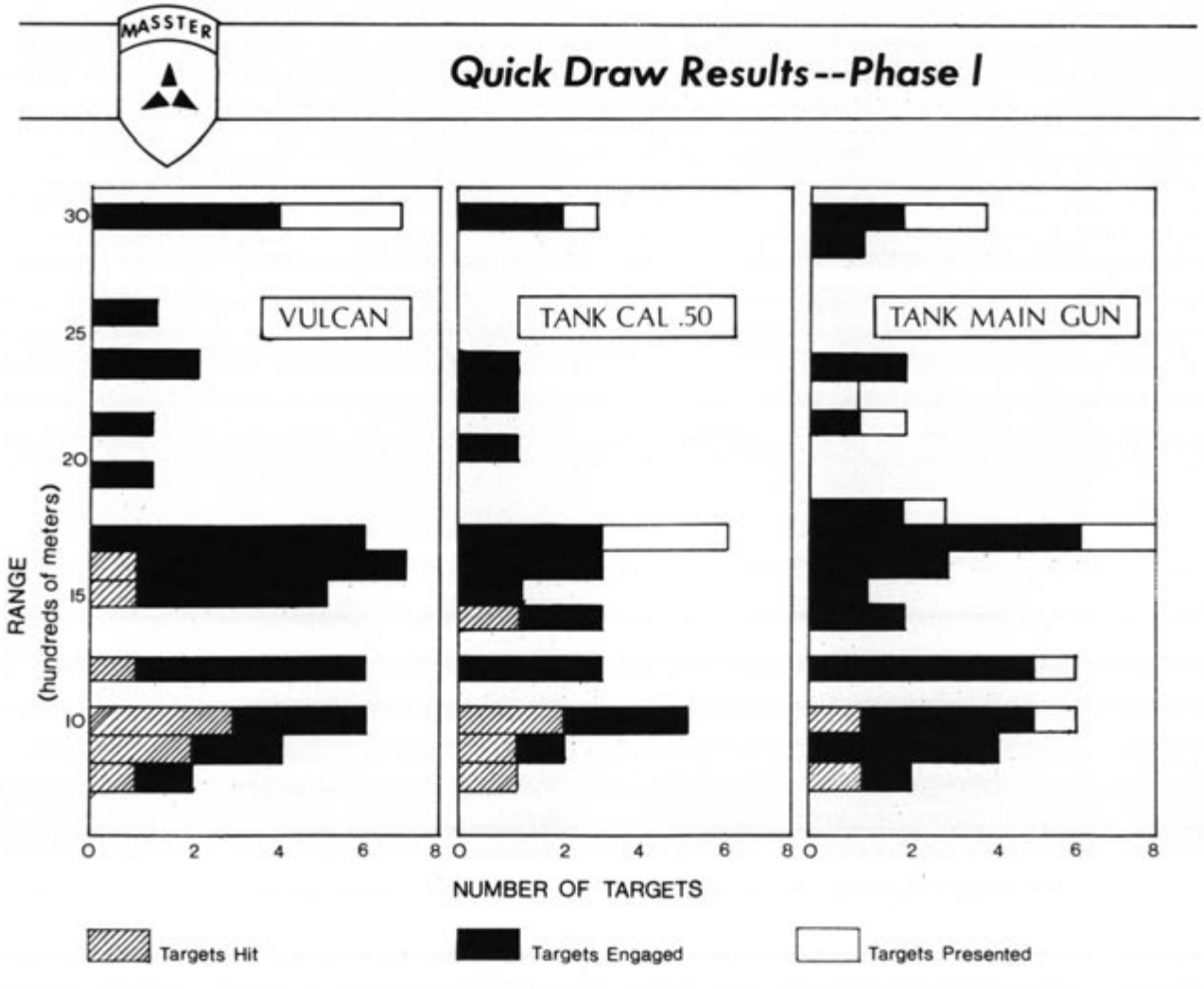
We feel that enhancing the night operation of the air cavalryman is much like improving that of the tanker. We feel that CAVNAVS will be the only way to go in the near time frame—or in the next five to eight years. Image intensification is definitely the cheapest and best way to go. No doubt thermal imaging will replace it some day, however, can you really afford a $150,000 system on every tank and every attack helicopter? I doubt it. Battles aren't all dark. Even HE has some illuminating effect and that's all you need to make image intensification work.

Let me say just a few words about the Aerial Rocket Antitank Program (ARAT). The purpose of ARAT was to try to optimize the currently available *AH1G* equipped with the 2.75-inch FFAR. If we were to go to war today in the mid-intensity environment, the only tank-defeating munition we have that is aerially delivered by helicopter would be the 2.75-inch rocket. Techniques have been developed at Fort Hood,

including the release of 380 rockets by a platoon of attack helicopters in less than two seconds time, either from the running fire or from the hover. We pitted this platoon against a target array consisting of 28 vehicles spread over a 750 meter by 300 meter area. Against this array, the rockets managed seven hits and 44 impacts within 15 meters of target vehicles. That's at a 1,000 meter range. A similar iteration of this test was run at 3,000 meters with only one tank killed. However, even with just that one kill there was considerable other battle damage from the 380 rounds. Our efforts continue in this area to include improving the stabilization system on the helicopter, improving the fire control system and we are currently conducting firing tests at China Lake, California. The accuracies are looking extremely favorable.

Another helicopter-related test, called Quick Draw, attempted to identify the vulnerability of the helicopter with respect to tanks and air defense weapon systems. Some of the results are shown on this chart. Although somewhat confusing, it suggests that there is not a great threat if our image of the aggressor tank and air defense systems are appropriate. For instance, with the *Vulcan* chart on the left, range is expressed on the vertical axis and targets are represented on the horizontal axis. Thus, at the 1,000 meter range, six helicopter targets were presented to the *Vulcan* gunner. Of those six, he obtained three hits. He saw three other targets, but was unable to obtain a hit. The helicopters in this firing phase were simulated by balloons which were of approximate *Cobra* size and were exposed for the appropriate time. On the tank main gun you will note that at the 1,500 meter range a total of eight targets were presented, of which seven were seen, but none were hit.

We have also been working very hard at MASSTER to determine if, in fact, the helicopter can survive in our adversary's ever-increasing capability to deny us use of his airspace. Our first problem is identifying the threat; secondly, is simulating the threat; and third, how to detect, avoid and/or suppress that threat. Our testing to date has included as near as we can simulate the threat weapons to include grail, our own *Redeye*, plus optics from not only our own weapons systems but from what are either true representations of the threat or, in fact, are threat equipment.



With respect to the radar and optical equipment tests conducted, with the radar and optical equipment used, 85 per cent of the targets were detected at nap-of-earth and 100 per cent were detected at 100 feet. The percentage of detection by radar, however, was only five per cent, whereas the optics picked up 95 per cent at nap-of-earth, which suggests that our greatest threat comes from optical tracking equipment. With respect to air defense-type missiles, I can summarize by saying that if the helicopter is truly in the nap-of-earth mode and if we can reduce the infrared signature of the helicopter as well as reduce some of the glint and glare, we are reasonably safe from those types of weapons.

If we project what we see as the enemy threat we would find that the weapons that we are concerned with are the *SA-7* (Grail), the *ZSU-23-4*, and the *ZSU-57-2* which would be with the front line units; *S-60* batteries from about five to fifteen kilometers from the front; all the way back to the *SA-6* gainful missile, which would probably be used back somewhere in the 15 to 20 kilometer area of the aggressor array. Assuming this type threat, we found that nap-of-the-earth will allow our helicopters to survive, and then, of course, as you increase the distance from the FEBA back to the division rear, altitude becomes less critical. The views we evolved from this type of testing are as follows:

- The radar threat is very small at nap-of-earth altitudes.
- Infrared can be defeated.
- Optics are very effective.
- The safe area can be used for target acquisition.
- We need two types of scout: a "light" scout and a "star" scout.
- Night operations at nap-of-the-earth are possible with CAVNAVS.
- The 2.75-inch FFAR with dual purpose warhead can play a part on the mid-intensity battlefield.

Hiding helicopters still remains a problem, both when in flight and on the ground. We have achieved some success in reducing the glint and glare produced by the rotor system and the dynamic components in the hub. We have gone to great expense and effort to try and eliminate the glint and glare from the canopy, and about the only useful solution we have surfaced is that perhaps we had better remove the canopy. Similarly, in hiding helicopters on the ground we can drape them, we can cover them, we can put disrupters on them and they still end up looking like camouflaged helicopters.

Perhaps one of the biggest strides MASSTER has made is in the forward area rearm-refuel point. The problem, of course, is whether you can expeditiously rearm and refuel the attack platoon in the forward troop areas of forward laager areas. It is important to remember that if, in fact, we are going to retain the true mobility with the air cavalry formations, all of the resupply equipment must be capable of being lifted by the prime mover of the troop—the *UH1*. During our recently concluded Attack Helicopter Squadron Test, we found that utilizing a crew of 14 people we could sling in the pumping equipment, the refuel equipment and the rearm equipment and be operational within seven minutes.

As an extension of the two-point system, MASSTER has also evaluated a five-point system. The advantage of the five-point system is that it not only has three additional nozzles, but it is also capable of being electrically driven either by an auxiliary power unit or conceivably utilizing the refueled aircraft's electrical source. Similarly, we have looked at not only the rearm equipment but also the doctrine and the techniques that are evolving and whether we can rearm concurrently while refueling. MASSTER believes that this can be done, and advocates not only the hot refuel, but the concurrent hot rearming. All it requires is a very simple installation to de-electrify your wing store stub.

LAGUMS—Laser Guided Missile System—I would throw out personally a sincere word of caution on LAGUMS. What we have found from the LAGUMS test is that we don't think it's the way to go. You buy yourself some inherent and serious command and control problems. The examination looked at the Air Force developed *Hornet* System, which is a laser seeker system coupled with a ground laser designator as well as an airborne laser designator. Basically you give the laser designator to an infantryman on the ground and then you call up your attack helicopter. You can all imagine the coordinating problems you have between the attack helicopter and the guide pointing—in short, who is he pointing at. I think we are going to suggest that it does not make sense to use this in lieu of the *TOW*. Nor do we think that this is a necessary step to the true fire and forget missile.

The Attack Helicopter Squadron Test was a test of an entire attack helicopter squadron conducted over all of the Fort Hood reservation plus areas far removed from Fort Hood. The organization tested was the attack helicopter squadron which consisted of three identical attack troops of 21 attack helicopters each and 12 scouts each; the airmobile ranger company; and a STAR platoon, which is a surveillance and target acquisition platoon. The STAR concept envisions taking all of the smart aircraft and putting

them in a special platoon which could then provide the scouting required under conditions of bad visibility and, of course, at night. The emerging result from the test is that the attack helicopter troop is a viable formation. Airmobile rangers, at least in the company size, are probably not the way to go, and principally because we have then asked the squadron commander to turn his attention in two different directions: one as an attacker, much as a tank battalion attacker; secondly, by giving him this airmobile ranger capability, which is inherently more directed toward reconnaissance and security, we have asked him to also look like a cavalryman.

In summary, let me say that MASSTER is a big organization with not only testers, but with troops and the necessary terrain. We are a responsive organization, in that we have a pretty good track record of having completed over 90 tests over the past three years. Finally, on behalf of General Seneff and the Fort Hood Community, I would like to extend a sincere invitation to the Armor Association to consider holding their 85th Annual Meeting at Fort Hood.

REPORT OF THE SECRETARY-TREASURER

Major Robert E. Kelso

Last year at this time I expressed to you my hope of channeling our efforts toward strengthening our membership and expanding the services offered by our Association. Because of your personal efforts and active support, I am able to report that we have seen significant progress in both of these areas.

I would therefore be remiss in my duties if I did not begin this report by expressing to you my sincere thanks and appreciation for your efforts. Our Association is financially strong. We offer a wide range of Armor-related services. We produce a highly-respected journal. Membership is growing daily, and we have a high rate of renewals. This success can only be attributed to one factor—a membership composed of professional, dedicated individuals who are willing to make a personal contribution of time and effort in order to have a viable Association.

Our professional Journal, *ARMOR*—The Magazine of Mobile Warfare, continues to receive wide and growing recognition for its contributions to military art and science from both the military and industrial communities. The magazine is now listed by many domestic and foreign reference works as one of the primary sources for information on mobile mounted warfare. In 1972, we continued in the tradition of presenting a wide range of articles dealing with Armor concepts, philosophy and technology authored by leading military and industrial experts. Equally as important, we have provided an open forum for the younger officer to express his own ideas and have attempted to provide a common ground on which a second lieutenant could challenge the ideas of a general officer.

This openness is best reflected in our Letters to the Editor Department. Simply stated, it has been our objective to publish letters that will cause people to think. The response on the part of the membership has been extremely gratifying. The letters we receive reflect careful consideration, innovative thinking and a deep understanding of military problems. I feel many could stand as a feature article in itself. My one regret is that we are limited in space for the department and therefore unable to publish many of the fine letters we receive.

In March of 1971 circulation reached a low of 8,180. For the past two years, it has been our primary objective to reverse this downward trend. In my report of last year, I stated circulation to be at 8,464. This year, total paid circulation for the March-April issue was 8,941. This shows a net increase of 761 subscriptions during the two year period. While our current circulation remains lower than the 1969 figure of 9,400, the Journal has made progress in gaining new members, especially when viewed in light of current troop reductions.

Two related areas of circulation deserve mention and, I feel, are more reflective of the current strength of the Association. First, membership is stabilizing, and we are now experiencing a renewal rate of over 70 per cent. Second, we are seeing a significant percentage increase in the number of Active Duty Armor officers in the Association. Two years ago, only approximately 24 per cent of Armor officers were members. Currently, 46 per cent of all Armor officers belong to the Armor Association. While we have not seen a sharp rise in the actual number of subscriptions, I feel these figures represent a significant strengthening of the overall membership base of the Association.

The production costs of *ARMOR* Magazine rose

$4,534 in 1972, while supplies and postage decreased by $524. The resulting net rise in *ARMOR* Magazine expenses was $4,009 or 10.21 per cent. Of this increase, $953 can be attributed to increases in printing costs while the remaining $3,580 was caused by factors directly related to the quality of the magazine. In 1972, we offered two 80 page issues, one three page cover and two four color covers, and more illustrations, charts and graphs to support our articles.

The Book Department continued to play a vital role in the financial performance of the Association. The Department has been greatly expanded and now offers a wide variety of services to our members. Total receipts for books and other items increased 79 per cent in 1972. The resulting income from the Book Department was $9,114. This figure, when compared to the previous $5,376 sales high of 1971, shows an increase of $3,738. While we have seen substantial increases in the cost of merchandise, the volume of sales has enabled us to maintain our low selling costs.

In 1972, the Association continued its traditional practice of making contributions to worthwhile endeavors. This expense showed an increase of $579 over the past year and is traceable to a $500 donation made to Armor Branch for the construction of the Armor Branch Reception Room.

The Association Awards Program met with much success during 1972 and has also been expanded. Currently, we direct an Award Program honoring top OCS, Military Academy and ROTC graduates. This program has been highly successful in acquainting top college graduates with Armor Branch and the Association. We have begun this year a second program honoring those battalion level units having membership in the Armor Association. The response to this particular program has been great, and serves as an incentive for battalion commanders to place *ARMOR* Magazine into the hands of enlisted personnel.

To summarize the financial condition of the Association, our balance sheet position as of 31 December 1972 showed cash at $19,349 with total assets of $97,382. Liabilities consisted of payables of $550 and deferred income of $47,392. The Association equity is $49,439. The total operating revenue for 1972 was $91,941; an increase of $15,320 or 20 per cent over 1971. Operating expenses for the same period were $90,338; compared with the previous year's total of $72,892, an increase of $17,446 or 24 per cent. Total income after expenses was $1,603. This figure compares reasonably well with the 1971 income of $3,728.

In closing, it is my estimation that the Association is now working from a position of strength. Our Journal is well-established in its field. Our membership is both growing and stabilizing. We are offering more services than ever before in the history of the Association. And while we are not making large profits, we are capable of meeting all expenses and planning for the future.

With the changes now taking place in the structure of our Association, I, too, will be changing jobs. It has been my great pleasure to serve as your 30th Secretary-Treasurer over the past two years. My only hope is that I have been worthy of your trust. Never in the past two years did Association business become a chore; rather it proved to be an occasion for making many close and personal friends. I sincerely thank you for your loyal support, your patience and understanding, and your friendship. All have meant a great deal to me personally and will be long remembered, as will all of you.

ELECTION OF OFFICERS

Colonel James Leach

As stated in the Constitution of our Association, the governing body of the Association shall consist of a President, three Vice Presidents, and an Executive Council of 14 Members. These Association officers are to be elected by the members at the Annual Meeting. The Constitution also provides that the Secretary-Treasurer and Editor will be appointed by the Executive Council and permits the President to add members to the Executive Council if necessary or proper.

General James H. Polk is completing a very successful first term as President of the Association. Our good fortune has been to enjoy his service when many military organizations, units and associations are suffering from anti-military sentiment and declining

membership and military strength. In spite of these pressures, his guidance has proven invaluable, as the Armor Association has remained a strong, viable organization working to achieve its goals of professional improvement and pride in service.

Our President, General Polk, was commissioned in the Cavalry upon graduation from the US Military Academy in 1933. During his 38 years of Active Duty he has enjoyed and endured with distinction numerous combat leadership and staff assignments at the highest levels, to include command of the famous 3d Armored Cavalry Group, the "Brave Rifles"—Patton's Ghost Cavalry. On 1 June 1967, he was promoted to the rank of general. Later, after many key assignments, he assumed the duties of Commander-in-Chief of the US Army Europe and Commanding General of the 7th Army—positions which he retained until retiring from the Army in April of 1971.

Now, as the Armor Association approaches a period of anticipated radical, though acceptable change in management guidelines and physical location, it is unnecessary to elaborate on the need for continued strong leadership. And so it is the honor of your Committee to nominate General Polk for a second term as President of the United States Armor Association.

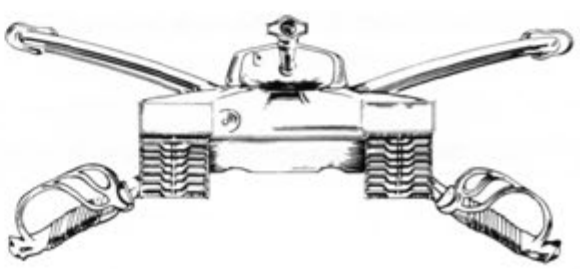
For first and second Vice Presidents we recommend the re-election of General Bruce Palmer Jr., Commander of the US Readiness Command; and Major General James H. Weyhenmeyer Jr., Commanding General of the 50th Armored Division, which encompasses National Guard Units in New Jersey, New York and Vermont. We are pleased that these gentlemen who have supported and served us so well are again available for service to the Association.

To fill the office of third Vice President, the Committee, with the concurrence of Generals Polk and Desobry, nominates Major General Donn A. Starry, who will become the new Commanding General of Fort Knox and the Armor Center, following General Desobry. General Starry has commanded tank units from platoon through battalion, and in 1969-70 he commanded the 11th Armored Cavalry (the famous Blackhorse) Regiment in Vietnam. Most recently, he was Director of Manpower and Forces in the Office of the Assistant Chief of Staff for Force Development. General Starry's record of service to the Armor Association is both long and distinguished. He is a seven-time author of full length articles for *ARMOR* Magazine, as well as the author of scores of book reviews which have appeared in *ARMOR* over the past several years. In 1968, he authored the *Starry Study*, which is the most comprehensive study to be done on the entire spectrum of the activities of the US Armor Association. We anticipate that General Starry will continue to have a profound effect on our Association, and it is with pride that we nominate him for the office of third Vice President.

Our selection of nominees for the other offices of the Executive Council has been guided by the provisions set down in the Constitution of the Armor Association. We have sought men in diversified positions, taking care to provide for some geographic dispersion, so as to have wide representation regarding rank and location. Thus, our slate includes the Assistant Commandant of the Armor School, the Chief of Armor Branch, two Army National Guard officers, and representatives from the Armor Center, the Army War College, the Military Academy, the Army Aviation School, 1st Cavalry Division, 2d Armored Division and the 3d Armored Cavalry Regiment. Eight of these gentlemen were members of last year's Executive Council, and as such will assist us in preserving the stability of leadership which our Association must have in the coming year.

Fellow members of the US Armor Association, I am privileged and honored to recommend to you the following slate of officers for the coming year:

Brigadier General George S. Patton, Assistant Commandant, USAARMS; Colonel Earl W. Sharp, ACSFOR, DA; Colonel Bruce Jacobs, Chief of Information, National Guard Bureau; Colonel Louis C. Taylor, Director of Operations and Training, Tennessee Army National Guard; Colonel Paul S. Williams Jr., Chief, Armor Branch; Colonel Lawrence S. Wright, Commanding Officer, 1st Bde., 1st Cavalry Division; Lieutenant Colonel William D. Ray, Army Aviation School; Lieutenant Colonel Lewis S. Sorley III, Army War College; Major Michael S. Davison, Senior Armor Instructor, US Military Academy; Captain Jerry W. Eatherly, 1st Bde., USATCA; Captain William L. Nash, US Army Aviation School; Captain George T. Raach, USAARMS; Captain Todd R. Starbuck, 3d Armored Cavalry Regiment; CSM Bobby C. Belcher, 2d Bde., USATCA; CSM Thomas J. Carruthers, 2d Armored Division; CSM Homer R. Moss, 1st Cavalry Division.



PEAT MARWICK MITCHELL & CO
CERTIFIED PUBLIC ACCOUNTANTS
1825 CONNECTICUT AVENUE, N.W.
WASHINGTON, D.C. 20009

The Executive Council
The United States Armor Association:

We have examined the balance sheet of The United States Armor Association as of December 31, 1972 and the related statement of revenue and expenses and Association equity for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statement of revenue and expenses and Association equity present fairly the financial position of The United States Armor Association at December 31, 1972, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

March 20, 1973

THE UNITED STATES ARMOR ASSOCIATION

Statement of Revenue and Expenses and Association Equity

Year ended December 31, 1972
with comparative figures for 1971

	1972	1971
Operating revenue:		
Dues and subscriptions	$ 55,540.98	54,627.94
Registration fees	986.00	1,089.50
Books, prints, and publication sales	32,384.08	18,091.85
Interest and dividends	7,764.48	7,473.02
Other	39.83	56.59
Royalties	226.20	281.75
Total operating revenue	91,961.57	78,620.65
Operating expenses:		
Armor magazine:		
Producing and delivering	40,944.71	36,410.24
Circulation	1,796.28	1,938.63
Promotion and advertising	1,181.71	401.15
Stationery and supplies	550.75	932.94
	44,473.45	39,682.96
Association:		
Annual meeting	872.10	843.58
Memorials and contributions	700.15	171.00
Awards	374.36	986.79
Cards, by-laws and decals	693.91	580.08
Armor index	-	126.52
	3,040.52	2,453.97
Book department:		
Books, prints, and publications	21,908.14	11,425.06
Postage	774.54	636.29
Supplies	383.62	369.61
Promotions	36.20	61.80
Other	166.72	22.16
	23,269.22	12,714.90
Operating expenses, continued:		
General and administrative:		
Equipment rental and maintenance	$ 1,143.05	579.96
Depreciation	3,876.96	3,686.84
Telephone	1,376.72	1,271.35
Staff travel and parking	3,443.13	2,960.31
Rent	4,157.99	4,142.20
Professional services	800.00	650.00
Other	4,757.48	4,371.72
	19,555.33	17,860.22
Total operating expenses	90,338.52	72,892.05
Excess of operating revenue over operating expenses	1,603.05	7,728.60
Other additions (deductions):		
Gain (loss) on sale of assets	-	(35.20)
Gain on sale of investments	-	2,507.34
Total other additions, net	-	2,472.14
Excess of revenue over expenses	1,603.05	7,200.74
Association equity at beginning of year	47,836.04	40,635.30
Association equity at end of year	$ 49,439.09	47,836.04

THE UNITED STATES ARMOR ASSOCIATION

Balance Sheet

December 31, 1972
with comparative figures for 1971

Assets	1972	1971
Cash:		
Demand deposits	$ 13,222.78	3,950.57
Savings accounts	6,126.22	7,890.71
Total cash	19,349.00	11,841.28
Marketable securities:		
U. S. Government securities, at cost which approximates market	14,895.00	14,296.56
Stock investments, at cost (quoted market, 1972 $39,631.49; 1971, $37,083.40)	40,479.02	38,278.63
Total marketable securities	55,374.02	52,565.21
Accounts receivable	4,959.91	4,386.61
Inventories, at average cost	6,202.03	4,942.29
Prepaid expenses	1,731.32	1,700.10
Office furniture and equipment, at cost (note)	23,216.02	22,263.28
Less accumulated depreciation	13,449.93	9,572.97
Net office furniture and equipment	9,766.09	12,690.31
	$ 97,382.37	88,123.84
Liabilities and Association Equity		
Accounts payable and accrued expenses	550.63	31.59
Deferred income - dues and subscriptions	47,392.81	40,256.21
Association equity	49,439.09	47,836.04
	$ 97,382.37	88,123.84

Note: Office furniture and equipment is being depreciated over their estimated useful lives using the straight-line method.

FINANCIAL HIGHLIGHTS FOR 1972

1968 gain $2,985.21 1970 gain $7,601.22
1969 gain $7,892.92 1971 gain $7,200.74
1972 gain $1,603.05

Composition of Gains: (losses);

	1971	1972
ARMOR Magazine	($4,156.57)	($10,278.29)
Investments	$5,980.36	$2,766.48
Book Department	$5,376.95	$9,114.86

ARMOR's Average Paid Circulation

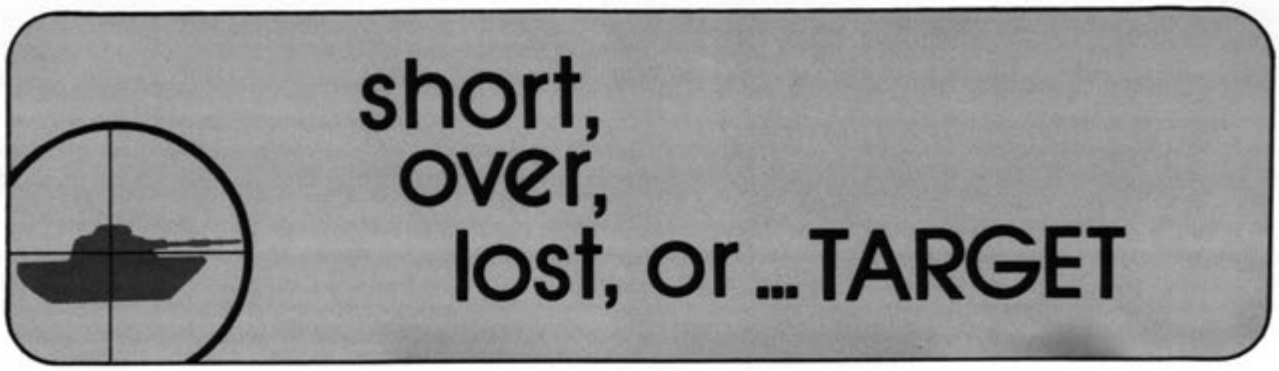
1968—7,073 1970—9,296
1969—9,400 1971—8,464
1972—8,730

The financial strength of the Association, and thereby its ability to serve the Armor Community, is totally dependent on the active support of all its members.

As our Association takes on a different structure and branches into new service-oriented functions, a strong, united and growing membership is essential.

In 1973, the Armor Association needs you. Can we count on your help?

The Secretary-Treasurer



Flying Sergeant

By Lieutenant Colonel Carl M. Putnam

Aviation, like Armor with its high degree of mobility, lends itself to the battlefield of tomorrow. The integration of organic aviation into Army combat operations made great strides during the Vietnam War. The assignment of organizational and doctrinal proponency for aviation units to existing branches will result in an increase of integration and combat effectiveness. However, two obstacles remain; peacetime austerity and Congressional demands to reduce the per cent of Active Duty officers. Therefore, the Army must reduce the cost of aerial organizations and decrease the relative number of officers involved. Since warrant officers are counted with commissioned officers, a partial answer would be to reinstate the noncommissioned aviator.

The Armed Services used noncommissioned aviators until the initial stages of World War II. Economic conditions in the US made the program very attractive. But partially as a result of morale factors, the program was discontinued; however, enlisted pilots were on Active Duty until recently. England, France and Germany successfully have used noncommissioned aviators for several years. A carefully planned career program could be as successful in the US Army.

The noncommissioned officer is the cornerstone of every good Army organization. Why then should Army aviation units be the exception? Only in aviation is the commissioned officer used as the operator of a combat vehicle. With aviation unit employment becoming the rule rather than the exception, it is time for a reevaluation of aviation and a decision to utilize the flying sergeant in an organizational structure similar to other combat and combat support organizations. This means a rated commissioned platoon leader, commanding a platoon of noncommissioned aviators and other members of the aircraft's crew.

Consideration must be given to the fact that the entire Army is highly technical, which has resulted in a more technically proficient enlisted man as compared to the enlisted man of the pre-World War II era. Even if the other Services persist in using commissioned officers, we need to carefully evaluate whether the Army can afford the luxury.

The major arguments against noncommissioned aviators center around responsibility. Questions arise whether the noncommissioned officer can be held responsible for the lives of other persons or for the utilization and maintenance of high value aircraft. Some assert that aviation procedures are too complex, that the morale of the flying sergeants would be low, or that the passenger would not have confidence in the vehicle's commander. But does the aviator have to be an officer?

The responsibility of making decisions during an emergency require a stable and reliable operator to be at the controls of the aircraft. They do not necessarily require an officer. At the same time, and possibly for the same flight, the aviation system exposes the same passengers to the operational decisions of highly trained and dependable noncommissioned officers assigned to normal TOE positions. A good example is the noncommissioned radar operator of the Ground Control Approach System, whose directions are followed faithfully by the aviator during instrument approaches. Another example is the air traffic controller. While air traffic is a civil function, in times of war the noncommissioned air traffic controller has a great responsibility in the combat area. The supersaturated airspace expected over the battlefield of the future will result in noncommissioned air traffic controllers having an even greater responsibility for human life.

The high initial cost of the modern aircraft is

another argument that wins the quick support of those against noncommissioned aviators. However, there is little difference in the cost of an *M60* tank and the *AH1G* helicopter, or the cost of the *M113* armored personnel carrier and the light observation helicopter. The operators of the *M60* and the *M113* are enlisted personnel, but the operators of the helicopters are officers. This difference should not exist for vehicles costing the same and performing similar missions.

Foremost in every discussion of this subject is the argument that the noncommissioned officer cannot cope with the complex aviation navigational procedure. But aviation operations sergeants are now required to be proficient in flight planning. Aviation procedures are no more complex than the gunnery system on a tank or the fire direction procedures used for missiles and conventional artillery. The key to proficiency is proper training and frequent usage by carefully screened personnel. The assertion based on complexity simply is not true.

Many persons argue that it is less expensive to pay the commissioned aviator more money than to train noncommissioned replacements every three or four years. Theoretically, these "flying sergeants" will leave the Army for high paying civilian employment after the initial enlistment. Assuming retention would be a serious problem, the answer is to develop a firm career plan which allows solid development in a career field.

Upon completion of flight training the aviator would be promoted to sergeant (E5). He would start his career in the more simple type aircraft such as the *LOH* or *UH1* helicopter, where the greatest need for aviators exists. After an initial four-year aviation assignment and as an inducement for reenlistment, he could be offered transition training into more sophisticated aircraft. The type of training would depend upon the needs of the Service and the sergeant's desire for a career field in one of the branches such as Infantry (*UTTAS*), Armor/Air Cavalry (Attack helicopters, *LOH*), Transportation (Heavy Lift and *Chinook*), Intelligence (*Mohawk*), or Artillery (Fire support). A sergeant trained in air cavalry would remain in cavalry for his career. He would start as a scout in an *LOH* and work his way through the lift platoon, and eventually fly an aerial weapon system. This would place the more experienced aviator in the more expensive aircraft, and in aircraft demanding greater responsibilities. The same would apply to airmobile units, surveillance units or any aviation unit requiring further specialization. The highest noncommissioned officer grades in these units would be reserved for the most experienced. Sergeants, branches and the Army would benefit through better trained units.

The morale of the flying sergeant would suffer because of the dissimilarity of grade, flight pay and social prestige between the sergeant and the officer aviator. This, according to one field grade aviator, was a major factor in the elimination of the original flying sergeant program early in World War II. Yet, these factors exist in a tank company, armored cavalry troop, and for that matter, in society itself. But, a careful analysis reveals that these factors are more of a problem in the warrant officer program since the discrepancies exist among men whose families habitually socialize together. Morale may suffer to some extent, but not to the extent that the commissioned officer aviator's morale is now suffering from the lack of challenging responsibility.

The present organization of aviation units has absorbed and is wasting officer talent. This has been true for years. In the early 1960s, the 3d Aviation Company (Kitzigen, Germany) was authorized one major and 13 captains; the company had three majors and 37 captains assigned, while full strength in lieutenants. Most were dissatisfied, due mainly to the lack of responsibility commensurate with the grade held. Several excellent captains, with costly aviation training, resigned from the Service. Meanwhile, four aviation rated captains in another division applied almost simultaneously for release from flying status. These four captains were on branch assignments and were experiencing command responsibility for the first time. Had these officers been offered the same challenge in an aviation unit, this expensive training probably would not have been wasted.

Later, when the build-up for Vietnam occurred, it was common for aviation companies to deploy with ten or more majors assigned. The possible record was 35 majors assigned to one assault helicopter company. In another unit, there were ten majors in the primary zone for lieutenant colonel, seven were selected, and all remained assigned to the company. Is there any wonder that some field grade aviators, without having an opportunity to develop with

normal command and staff assignments, are unable to satisfactorily cope with command and staff problems when the situation arises. The use of flying sergeants would correct this problem by offering command and staff challenges to the energetic officer who desires and seeks responsibility.

Aviation unit proficiency can be improved by the use of the flying sergeant. Modern equipment has created a two-way requirement on the commissioned Army aviator. The sophisticated modern aircraft, such as the *Cobra, Mohawk* and *Chinook*, requires a continuing proficiency. The other requirements, based on branch immaterial assignments of aviators, is for the aviation chain of command to be thoroughly familiar with the tactics of every type ground combat force. This second requirement is made more difficult with the additional speed and flexibility expected on the future battlefield. These two requirements are not compatible unless personnel assignment officers pay close attention to the 1970 proponency decision for aviation units. By doing so, Armor aviators would only be assigned to cavalry or attack helicopter units. The same would be true of other branch aviation units and would allow the rated officer to stay branch and aviation proficient at the same time. The other part of the equation is the flying sergeant, who like the tank commander, could retain his proficiency at a high level since he would be dedicated to one career mission and one vehicle at a time.

Money is important to modernization in any field and aviation is no exception. Budgetary trends indicate there will be little if any increase in funds available. Savings must be created and applied to research, development and procurement of more effective aerial weapons systems. One way is to reduce the high personnel costs. The flying sergeant would serve initially in the pay grade of E5 and would receive crew-member flight pay plus proficiency pay based on the score attained on the annual proficiency examination. Considering these items, a saving of $160 per month is created when the sergeant's pay is compared to the pay of the warrant officer (W1). Additional saving would be created because of the difference in flight pay and quarters allowance.

The concept discussed here does not propose to eliminate the commissioned aviator but rather to offer young commissioned aviators the opportunity for command responsibility much earlier than is now possible within the present aviation structure. While the concept would eventually eliminate the rated warrant officer through attrition, the Army would obtain a more proficient aviator, create a saving of money, prevent a waste of valuable officer talent, correct the present grade imbalance and obtain additional aviators while releasing officer strength to the combat branches. Further, the use of the flying sergeant would assist the Army in reaching a more favorable officer-enlisted ratio.

The most serious problems in adopting this aviation program are the reeducation of the Army and the reintroduction of an old system. First, the commissioned officers would fill normal command vacancies. The very few warrant officers not qualified for a commission could be given additional training and used in the aviation maintenance, administration and logistical fields until retirement. Additional aviation rated warrant officers would not be trained.

Commissioned aviators must be assigned into command positions of aviation units of their basic branch, in accordance with the proponency decision of April 1970. Flying sergeants would fill the remaining aviator vacancies. Prerequisites for aviation qualification courses must be developed to insure that the flying sergeant has a progressive career pattern. If a sergeant qualifies in every Army aerial vehicle during his first tour of service, there will be no challenges for tomorrow. Without challenges, a man will not reenlist.

The Army must realize that the noncommissioned officer is capable of bearing the responsibilities and mastering the art of flying. The flying sergeant program has many advantages which would assist the Army in reducing costs and in accomplishing the combat mission.

LIEUTENANT COLONEL CARL M. PUTNAM, commissioned from OCS in 1954, has held a wide variety of Army Aviation assignments. Colonel Putnam served as the System Staff Officer for the *Cheyenne* Attack Helicopter at Department of the Army, and then commanded the 1st Squadron, 9th Cavalry in Vietnam. He is a recent graduate of the US Army War College.

from the Armor Branch Chief


COL Paul S. Williams Jr.

Upon my departure as Chief of Armor Branch, I wish to express my appreciation to each Armor officer for his constant support of the Branch and demonstrated professionalism. My only regret is that the demand for officers with your qualities of leadership far exceeds the number of officers in our Branch. I can pay you no higher compliment.

My best wishes go with each of you as you continue in the service of our country.

The First OER

How significant is a lieutenant's first efficiency report? Is it viewed as a "grace" period, where consideration is given for his transition into the military environment? Is it used as the measure of his future potential, solidifying his specific advancement potential? In point of fact, it is neither.

The advent of OPMS and DA Form 67-7 make correct efficiency reporting procedure more critical than ever; and for the second lieutenant just leaving his starting blocks, this point is further reinforced.

Two key words are appropriate:

- SPECIFIC: An initial report plagued with generalities benefits neither the Army nor the rated officer. Identification of precise weaknesses is just as important for the new officer as specifying his strong points.
- FAIR: Over-emphasis must be curtailed in both directions. The young officer deserves, and will appreciate, a true and accurate description of his performance.

All efficiency reports are vital in career progression, but the first report can have more impact on the young officer than any other. It must not be used as a counselling tool; it must reflect the effects of prior counselling, if appropriate. It must not be inflated or deflated, leave room for improvement or overshadow necessary improvement. Make it a solid measure of the man.

Armor Branch Directory

ARMOR BRANCH CHIEF	
Colonel Paul S. Williams Jr.	325-7832
ASSIGNMENT SECTION	
LTC Marvin G. O'Connell (Ch, Asgmt Sec)	325-7833
LTC William A. Fitzgerald (LTC Assignments)	325-7835
MAJ Donald F. Borden (MAJ Assignments)	325-7835
LTC Rodney D. Wolfe (Aviator Assignments)	325-7839
MAJ Edward W. Shaw (CPT Assignments)	325-7841
MAJ John R. Archer (LT Assignments)	325-7841
Mr. James Harrison (New Accessions)	325-7841
PERSONNEL ACTIONS AND EDUCATION SECTION	
LTC Don A. McKnight (Branch XO and Ch, PA&E)	325-7834
MAJ Fred W. Greene (Losses: Resig, Retirements, REFRAD & Eff Rep)	325-7845
CPT Tommy A. Baucum (Gains: RA Pgm, Branch Trf, Extensions, Recall & Direct Apptmts)	325-7845
MAJ Gordon R. Sullivan (Sr Education: Grad Sch, DCP, CGSC & Specialist Pr)	325-7837
MAJ Robert L. Phillips (Plans, Programs & Promotions)	325-7839
Mrs. Agnes Burns (Jr Education: AOAC & OUDP)	325-7837
ADMINISTRATIVE SECTION	
Mr. Fred Benegalia (Ch, Admin Sec)	325-7843

For Autovon calls, dial 221 and the last four digits of one of the above listed numbers. For commercial calls, our Area Code is 703.

Company Grade Assignments

ADVANCED COURSE: The Armor Branch pol-

icy for attendance at the advanced course is that an officer should have a minimum of five years active commissioned service prior to attendance at the course. This policy has been established in accordance with the current Department of the Army view which states, "In view of the expanded time in service for promotion to captain and to provide more experience at the advanced course level of military education, five years active federal commissioned service is established as the goal for attendance at advanced courses." In keeping with the goal, with three exceptions, all of the officers selected for attendance at AOAC in FY 74 will have at least five years commissioned service. In addition to the time in service requirement, no officers are being selected for the advanced course who have not served in at least two different tour areas (i.e., an officer should *not* expect to follow the pattern of AOB-Germany-AOAC. Instead, he will be expected to serve in a second tour area such as: AOB-Germany-CONUS-AOAC). This requirement has been established by the Branch in order to meet the DA requirement for a higher experience level at the various advanced courses.

CONUS: Company grade officers can continue to expect stabilization at their CONUS duty station. Our minimum on station time is two years while our goal is three years. Officers who have not served an overseas tour can expect such a tour in either Korea or Germany after two-three years at their CONUS station. Officers who have served a tour overseas and have not attended the advanced course can expect to attend the advanced course when they meet the minimum time in service prerequisite. Officers who have been graduated from the advanced course and been on station in CONUS for two or more years may be selected for reassignment to Germany.

OVERSEAS: Company grade officers serving in Germany on an initial assignment can expect to be returned to the CONUS for assignment to a training center or TOE troop unit. Officers serving in Germany on an initial tour who are voluntarily extended in Germany can expect reassignment to a CONUS TOE troop unit. Officers serving in a long tour area who have also served either in CONUS or in a short tour area but have not attended the advanced course can expect to attend the course upon their DEROS. AOAC graduates serving in long tour areas can expect assignment to ROTC, service school staffs and faculty, mid-level staff positions or civilian schooling. Their assignments will be based upon their preferences and the current Army requirements.

Company grade officers serving in short tour areas are given priority in reassignment. Whenever possible we attempt to assign these officers to their stated preference as long as this preference is in keeping with acceptable career management practices and the officer is qualified for the assignment he requests.

Civilian Education

There have been some recent revisions to the Army's policy concerning **Graduate** Degree Completion Programs (DCP). Briefly stated, officers desiring to enter the **Graduate** Degree Completion Program (Bootstrap) will be required to:

- Complete their degree in 12 months.
- Obtain their degree in an academic discipline for which the Army has a validated position. Disciplines for which the Army has requirements are: Journalism, Business (OR/SA), Comptrollership, Business (ADPS), Logistics Management, Procurement, Operations Research/Systems Analysis Engineering.

Officers considering participation in the Advanced Degree Program for ROTC Instructor Duty (ADPRID) (AR 621-101 Mar 72) will still be permitted two years to complete their graduate degree, but they must:

- Obtain their degree in an academic discipline mutually acceptable to the school at which they will be an ROTC Instructor and the Army.
- Serve in the ROTC Instructor position for three years. (Since all ROTC Instructor positions will be validated by the Educational Requirements Board (AERB) there will be little noticeable impact caused by this change. The ROTC utilization tour will be changed from two to three years).

This is a major change in philosophy and represents a tightening of what has been a liberal program. One reason for the change is better management and the other is the new OPMS, which requires each officer to develop a specialty. Each of us should be pointing towards OPMS and if graduate degree completion is possible, tailoring the degree to a proposed OPMS specialty. For those of you who have already started a graduate program there will be a three-year grace period. In other words, if you have started a program and it is in a discipline other than one needed by the Army, there is a possibility that you can complete your degree work. However, you will only be allowed six months to do so. If you have any questions about the program please call Major Sullivan, Education Officer, 325-7837.

RIF Policy

Officers who have been selected for involuntary release and whose wives are pregnant may request retention on Active Duty to cover the birth of the child plus

six weeks. Officers exercising general court-martial authority are authorized to approve extensions. Information copies of approved extensions should be forwarded to Armor Branch. Format for the extension request is shown in AR 135-215.

Vietnam Armor Monograph

A number of Armor Officers have recently received letters from Lieutenant General William R. Desobry, former Commandant of the Armor School, requesting that they review a narrative of events in which they participated while in Vietnam. These letters and narratives are the first efforts of a team of officers assigned the mission of preparing a comprehensive monograph of the role of Armor, Armored Cavalry, Air Cavalry and Mechanized Infantry in Vietnam. While not pretending to be an official history, this publication will illustrate the lessons we learned, the development of tactics and techniques and tell the story of our branch in Vietnam.

If you have any information or material such as reports, maps, or photographs you are willing to share, please contact:

Commandant
US Army Armor School
Attn. ATSAR-CD-DD (Monograph)
Fort Knox, Kentucky 40121

Any material provided will be returned if clearly marked with a return address.

Drug Abuse and Equal Opportunity

The individual soldier has always been and will continue to be the Army's most valuable asset. His motivation, dedication and subsequent duty performance dictate our ability to accomplish all missions. Therefore, the Drug Abuse and Equal Opportunity program has achieved paramount importance in helping to insure the personal stability of our men. The placement of an officer in this critical position is not taken lightly by Branch; it is viewed as a tough, significant assignment. Moreover, the officer who successfully accomplishes the many and varied tasks inherent in this job has taken a valuable step forward in his professional development.

Armor Selections
For Major General—AUS

Baer, Robert J	20
Heiser, Rolland V	4
McEnery, John W	28
Patton, George S	3

Numerals are sequence numbers

Armor Selections
For Brigadier General—AUS

Dickinson, Hillman	7
Graham, Charles P	47
Heiden, Charles K	12
Nutting, Wallace H	8
Williams, Paul S Jr	48
Wright, Lawrence S	45

Numerals are sequence numbers

ARMOR SELECTIONS FOR COLONEL-AUS

*SECONDARY ZONE #ARMY AVIATOR

*Ballantyne, John L	0338
#Brannon, William W	0268
*Brown, Frederic J I	0357
*DeCamp, William S	0359
DeMuynck, Jack E	0158
Doran, Fred R	0225
Griffin, Bobby F	0286
*Healy, Thomas F	0317
Heath, Harry A	0155
Hetherly, James H	0172
Howitz, Ivan H Jr	0205
Hudachek, John W	0339
Hyde, Richard G	0159
Johns, Harvey B Jr	0016
Keith, Norman A	0173
Kidwell, Birtrun S	0041
*Martin, David C	0347
*Mead, Dana G	0385
Mitchell, Corwin A	0083
#Patterson, James H	0108
Petrenko, Glenn	0128
Putnam, Lawrence H	0044
#Shallcross, George	0184
Simmons, John E	0162
Solomon, Robert B	0245
Stouffer, Clair J	0001.3
Tipton, John H Jr	0078
Vivaldi, Joseph R	0208
*Wagner, Louis C Jr	0316
#*Woodmansee, John W	0377
#Wooley, Wilson C	0114

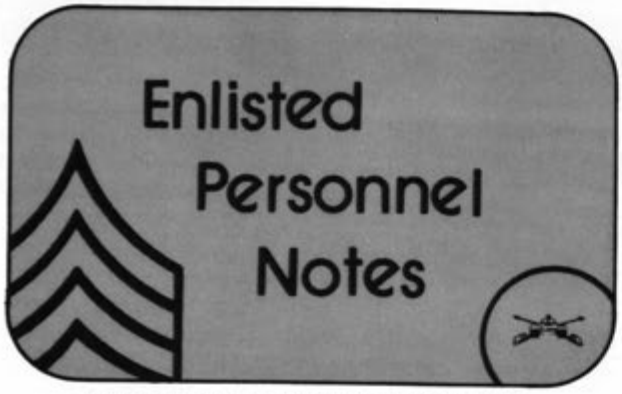
ARMOR BOX SCORE

OVERALL

	CONSIDERED	SELECTED	% SELECTED	SECONDARY ZONE SELECTED
Armor	137	23	16.8	8
Army	1716	265	15.4	66

FIRST TIME CONSIDERED

	TOTAL	SELECTED	% SELECTED
Armor	65	20	30.8
Army	733	225	30.7



From the Director of Enlisted Personnel

SPECIAL INTELLIGENCE MOS

The field of Military Intelligence offers many rewarding and challenging assignments for enlisted men and women. Successful completion of highly specialized courses given at the US Army Intelligence Center and School, Fort Huachuca, Arizona, leads to an award of the appropriate MOS in Army Career Group 97 (Special Intelligence). Although there is a need for qualified personnel in all the 97 Series MOS in the Intelligence Career Development Program (ICDP), there is a particular need for those who can fill jobs in both the 97B (Counterintelligence Agent) and MOS 97C (Area Intelligence Specialist) MOS at the Staff Sergeant (E6) and Sergeant First Class (E7) level.

Schooling for MOS 97B normally lasts 15 weeks. This training provides working knowledge of general counterintelligence activities, services, special operations, and security investigations. These courses cover countersabotage, counterespionage, surveillance techniques, study of foreign intelligence systems, US and foreign map reading, interview and interrogation techniques, legal principles, and other related subjects.

Training in Area Intelligence Specialist, MOS 97C, includes instruction in radio and other types of communications, government and history of nations, order of battle, human relations, map reading, report writing, military security, photography, cryptography, strategic, tactical and technical intelligence and counterintelligence. Appropriate practical exercises are used to put these subjects in the proper context. This training provides a working knowledge of duties of an intelligence specialist and it develops the knowledge and skill associated with intelligence data collection activities. These courses last approximately 19 weeks.

Qualifications for either of these MOSs are:

- US citizenship by birth (members of immediate family must also be US citizens).
- No relatives residing in a country within whose boundaries physical or mental coercion is practiced against persons accused of acting in the best interest of the US.
- Excellent character, discretion and unquestionable integrity and loyalty to the US.
- No record of conviction by court-martial during service with the Armed Forces.
- No record of conviction by civil court for any offenses other than minor traffic violations.
- High school graduate or equivalent.
- No information in Provost Marshal, intelligence, personnel or medical files that would prevent the granting of a security clearance.
- General Technical Aptitude Area score of 110 or higher.
- Minimum physical profile category B, normal color perception and free of any physical mannerism that would attract public attention.
- Have at least two years active duty upon submitting application.
- Be at least 21 years old at time of completion of training.
- Never have been a member of the US Peace Corps.

Those specialists who successfully complete training in either MOS will be laterally appointed to noncommissioned officer status upon award of the MOS.

Interested personnel should make an appointment with the nearest US Army Military Intelligence Organization for an interview.

PROTECTION FOR THE SOLDIER

Protecting you from an improper filing of any credible derogatory information that may reflect unfavorably on your character, integrity, trustworthiness or reliability, is of much concern to the Army. Since this type of information could prejudice your future, you are given the opportunity to explain or refute it.

Army Regulation 600-37 (Unfavorable Information) establishes policies and procedures to insure that unsupported or unresolved unfavorable information is not filed in your official personnel files. According to Chapter 2 of this AR (Unfavorable Information in Official Personnel Files), "Unfavorable information will not be filed in an official personnel file without the knowledge of the affected individual and an opportunity being afforded him either to make a written statement in reply to the unfavorable information, or to decline, in writing, to make such a statement." Note that this doesn't mean derogatory information will not be put in your official records. For example, if you were court martialed and found guilty or if you received an Article 15 this would be appropriately filed in your personnel folder after the case was completed.

To insure this protection for you, DA, under the provisions of Chapter 5 (Appeals) of AR 600-37, has established the DA Suitability Evaluation Board (DASEB) as the appeal authority for matters of adverse information entered in your Official Military Personnel File (OMPF). The DASEB has the responsibility to review and evaluate the validity of items of unfavorable information included in OMPFs.

Another safeguard taken for you by DA falls under Chapter 4, AR 600-200 (Qualitative Management). According to this AR, before a soldier is denied reenlistment, a special review board must examine his entire service record. An isolated instance of substandard performance or conduct will not by itself cause you denial of reenlistment. However, an established pattern of un-

satisfactory performance or misconduct may well cause reenlistment denial.

These two policies should be ample protection for you against any unjust denial of reenlistment or promotion. You must make the written appeal regarding derogatory information to the DASEB and the appeal must be filed within three years after knowledge of the alleged error or injustice.

See the referenced ARs or your unit personnel officer for guidance and the particulars on any action concerning unfavorable information.

RECLASSIFICATION TO IMPROVE YOUR CAREER OPPORTUNITIES

With the Army moving toward a more compact and professional force, you may find yourself in an overstrength Military Occupational Specialty (MOS). Your retraining and reclassification is a matter of great concern to the Army. Since many reclassifications require further training or formal schooling, these actions will be closely watched to insure that each man or woman is placed in a career field which can best utilize his/her knowledge and training qualifications. Retraining and reclassification will provide increased career opportunities to many individuals. Let's look at a couple of the understrength MOSs and what you must do to be reclassified into them.

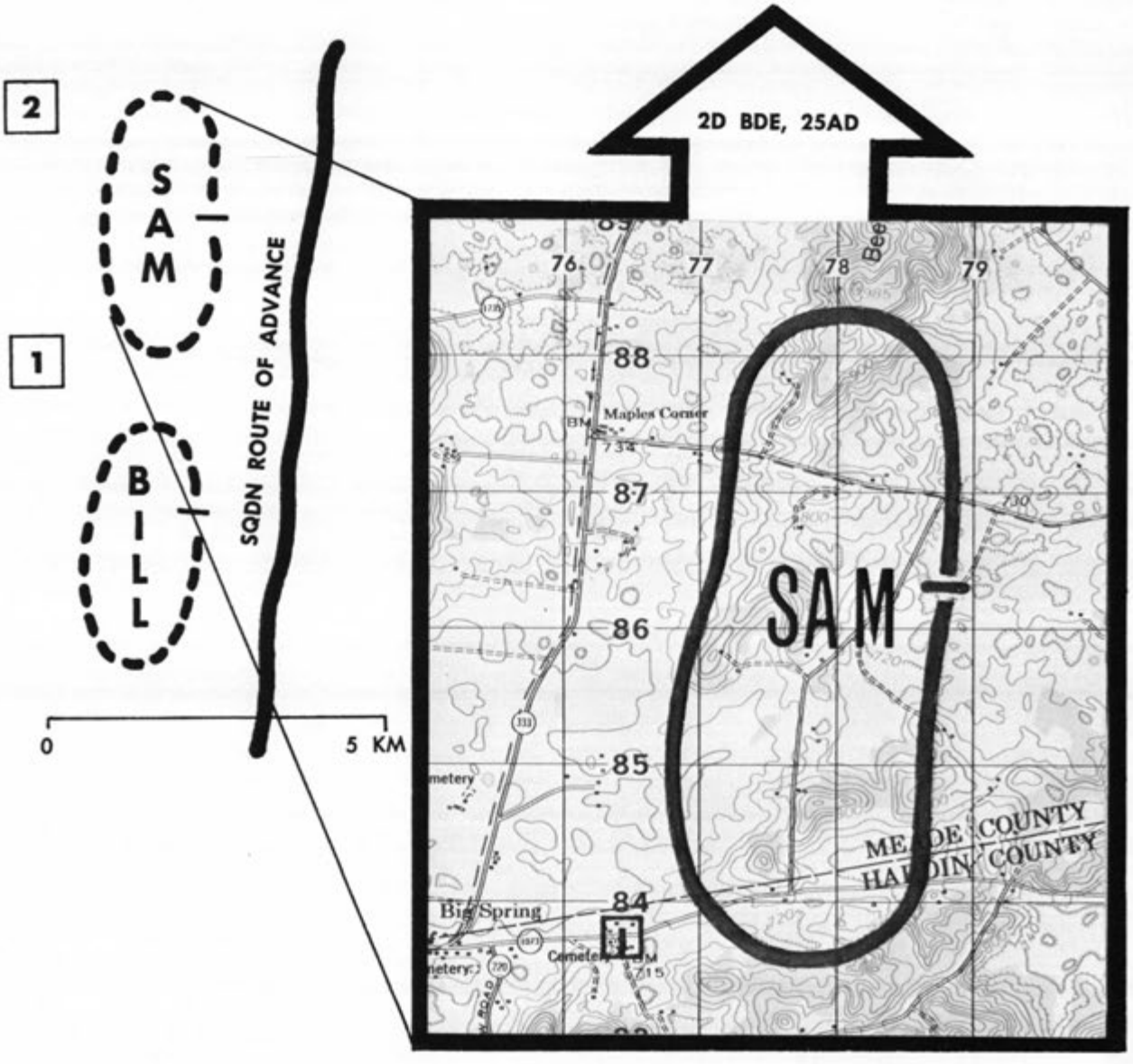
The legal field has some openings, especially in the ranks of Sergeant or Specialist 5 (E5) and Staff Sergeant or Specialist 6 (E6) to serve as legal clerks with MOS 71D. Legal clerks assist in preparation and processing of court-martial records, line of duty investigations, reclassification board proceedings and claims investigations. They help to prepare court-martial charges and specifications. Office duties entail examining and distributing incoming correspondence, directives, publications, and other communications and assisting in gathering legal data.

Among the skills and knowledge needed as a legal clerk include being qualified as Clerk-Typist (71B20 or 71B30) and knowing the authorized abbreviations for legal terms. Proficient use and application of regulations, manuals, publications and directives governing court-martial procedures is required. Physical and mental abilities require good near vision, eye-hand coordination, verbal ability, attentiveness and good memory. In addition you must have credit for two years of high school English and a standard score of 100 or higher in the aptitude area of Clerical on the Army Classification Battery tests to qualify for this MOS. You must be a member of the Active Army with nine months or more of Active Duty service time remaining upon completion of the Legal Clerk course. This course lasts seven weeks three days and is taught at the US Army Institute of Administration (PROV), Fort Benjamin Harrison. Reservists may also take this course.

Another MOS with many career opportunities is 24Q (Nike-Hercules Fire Control Mechanic). The Army presently needs Sergeants or Specialists 5 (E5), Staff Sergeants or Specialists 6 (E6), and Sergeants First Class or Specialists 7 (E7). Nike-Hercules Fire Control Mechanics maintain their specialized equipment such as target tracking radar, target ranging radar, missile tracking radar, computer, multichannel data recorder, associated battery control circuits and radar target simulators. They also isolate faulty components using the latest techniques to localize equipment malfunctions. Other duties entail the keeping of equipment maintenance logs, preparing maintenance forms, requisitioning supplies and preparing technical reports.

Skills needed for this position include knowing basic electricity and electrical circuits and the fundamentals of magnetism and electromagnetism. Some background in general science or having a minimum standard score of 45 in GED tests three and five high school level, and a standard score of 100 or higher in the aptitude area of Electronics (EL) on the Army Classification Battery tests will help you qualify for training as a 24Q. In addition, you must have 24 months or more of Active Duty service remaining after completion of the course and a final Confidential security clearance is required. To be awarded this MOS you must attend a 40-week course at the US Army Air Defense School, Fort Bliss.

If you are interested and can meet the prerequisites, see your unit personnel officer. To find out about any other MOS, DA Circular 611-14, published 24 November 1972 provides detailed surplus/shortage status of all MOS by grade. Complete information concerning prerequisites of all MOS can be found in AR 611-201 (Enlisted Military Occupational Specialties).



HOW WOULD YOU DO IT?

A PRESENTATION OF THE US ARMY ARMOR SCHOOL

SITUATION

You are the commanding officer, B/2-22 Cav, 25th Armored Division. The squadron has been given the mission of protecting the division's left flank during an exploitation. Troop A is the squadron advanced guard; Troops B and C are to occupy blocking positions on order. The terrain is gently rolling and the designated blocking positions dominate likely enemy company-sized avenues of approach. You have just received the mission to occupy blocking position SAM.

PROBLEM

1. How will you organize blocking position SAM? Include:
   a. Primary direction of fire for the main guns of the light armor section.
   b. Location of the radar, mortars, and the troop CP.
   c. Primary and supplementary platoon positions.
2. What support can you expect to receive from Troop D?

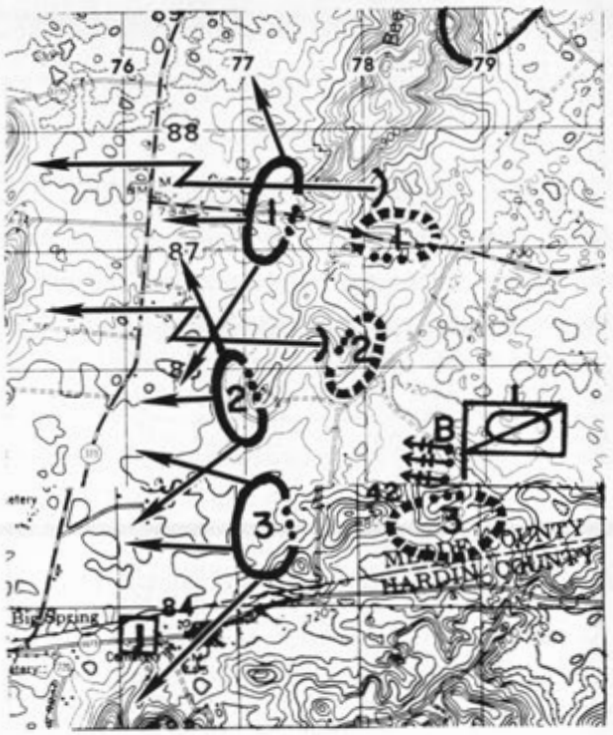
AUTHOR: CPT RAYMOND D. HARTJEN

ILLUSTRATOR: JOE WARD

DISCUSSION

a. The armored cavalry troop has the capability of occupying a blocking position from 3 to 5 KM in length. The light armor section and the rifle squad from each platoon will establish primary and alternate platoon positions. The scout squads will occupy OP's. Platoon support squads will be placed under troop control at least 1000 meters to the rear of the platoon positions to allow organic indirect fires to be placed as close as possible to platoon positions. The troop radar section should be employed overlooking the most likely enemy avenues of approach. The troop CP is normally located to the rear of the blocking positions, in the vicinity of the mortars for mutual security.

b. Troop D, 2-22 Cav will be providing support for Troop B by screening forward of the blocking position. Additionally, Troop D will support both the reconnaissance efforts of Troop A and the security operation of Troop C. Whenever possible, the aeroscouts will remain under the control of the Troop D commander. Elements of Troop D will be placed under the OPCON of the ground troop commanders only when the Troop D commander can not effectively control the entire air cavalry effort.



SOLUTION (map 2)

Selecting Brigadier Generals

by General Bruce C. Clarke, USA-Retired

Two or three times after I became a lieutenant general in 1953, I was appointed a member of a board of senior general officers designated to select colonels for promotion to brigadier general. The last time I was president of the board. On that particular occasion, the board had to select 35 brigadier generals from the 155 colonels whose records it was furnished.

I felt each time that it was imperative that each board member vote "yes" or "no" on each candidate based *only* upon his personal knowledge and the records; or else "log rolling" would result. All branches are not equally represented on such boards. My impression was that the individual members knew well less than half of the candidates.

Selecting the first ten was not too difficult. The next ten were more of a problem and the next ten, even more difficult. The last five required long and very careful consideration and procedures.

When each board action was completed, and its recommendations were signed, sealed and delivered, the members usually held a social hour at which time the factors which influenced individual votes were informally discussed. These appeared each time to be the important considerations influencing each member's vote:

- How had the officer performed in "hard" assignments where failures, if any, were easily detected and noted?
- Did his career pattern indicate that he had generally served in such "hard" assignments, or in predominately "easy" ones?
- Had he served in any assignments which called for more rank than he held at the time?
- How qualified were his rating officers to judge him?
- Did his ability indicators show a gradual, upward trend or had he recently leveled off?

Each colonel's *real* general efficiency rating seemed to be deduced by members of the board from consideration of the above five factors.

While there were very competent colonels who were not selected due to lack of vacancies, I felt each time that the board had carefully weighed the interests of the officer as well as those of the Army.

news notes

MG JAMES HOLLINGSWORTH NEW I CORPS COMMANDER

Major General James F. Hollingsworth, who has been nominated for appointment to lieutenant general, will replace Lieutenant General Richard T. Knowles as the commanding general of I Corps (ROK-US) Group in Korea. He comes to his new post after an assignment as deputy commanding general of 5th Army.

General Hollingsworth was commissioned in 1940 through the ROTC program at Texas A&M. Joining the 2d Armored Division at Fort Benning, he remained with the division through World War II and took part in its seven campaigns in North Africa, Sicily and Europe.

Major General James Hollingsworth

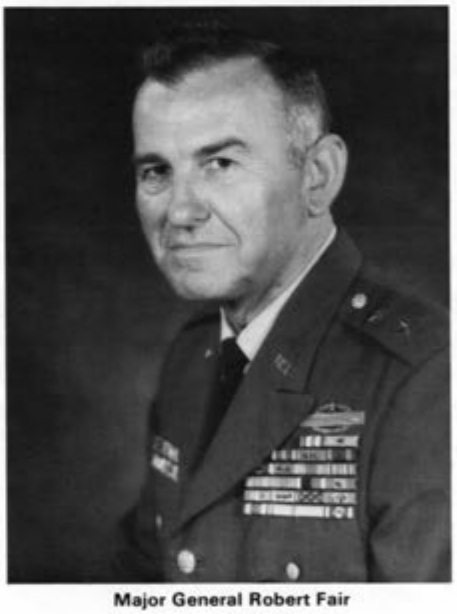
After World War II he served for a number of years on the faculty of the Cavalry School at Fort Riley. He later headed combined arms training at the US Military Academy. At Fort Hood from 1959 to 1961, he served as deputy commander of Combat Command A, 1st Armored Division and, later, as chief of staff, 2d Armored Division.

In Vietnam, General Hollingsworth was the assistant division commander of the 1st Infantry Division from 1966 to 1967. In August 1971, he became deputy commanding general of XXIV Corps in Vietnam and in December of that year, assumed command of the 3d Regional Assistance Command, USMACV.

MG ROBERT FAIR COMMANDS 2D ARMORED DIVISION

Major General Robert Leahy Fair is the new commander of the 2d Armored Division, replacing Major General George G. Cantlay. He comes to the "Hell on Wheels" Division after a tour as Director of Management Information Systems in the Office of the Assistant Vice Chief of Staff.

General Fair was commissioned in the Infantry from Officer Candidate School in 1944. In over 28 years of active service he has commanded infantry units from platoon through brigade, including command of the 1st Battalion, 6th Infantry (Mechanized), 1st Armored Division at Fort Hood in 1964.



Major General Robert Fair

In Vietnam, General Fair commanded the 1st Brigade, 25th Infantry Division in 1968. He later became Chief of Staff of the "Tropic Lightning" Division.

TWO NEW COMMANDS AT FORT KNOX

Two new commands have been added to the Fort Knox mission. Army Readiness Region VI and the Second ROTC Region were activated in a ceremony held on 3 July at Fort Knox. Lieutenant General Patrick F. Cassidy, commanding general of the 5th US Army, passed the col-

ors to the new commanders. Major General William S. Coleman commands Readiness Region VI and Brigadier General Paul S. Williams Jr. will take command of the Second ROTC Region later this month.

Readiness Region VI is one of nine such regions in the US. This new command will assist the reserve components in a four-state area: Indiana, Kentucky, Michigan and Ohio. The assistance will include improving and maintaining the reserves' readiness status with administrative help, technical guidance and instruction.

The Second ROTC Region will command all instructor groups at schools in Kentucky, Tennessee, Missouri, Illinois, Wisconsin, Indiana, Michigan and Ohio. This command's primary responsibility is to recruit and train young men and women in the military sciences by offering the best courses and the finest instructors available. Under the new reorganization, the Second ROTC Region at Fort Knox will plan and direct programs in 69 colleges and universities and 180 high schools.

4th BATTALION, 35TH ARMOR RECEIVES GENERAL BRUCE C. CLARKE AWARD

At a mounted review ceremony at Illesheim, Germany, Lieutenant Colonel Billy J. Wright accepted the General Bruce C. Clarke Award for the 4th Battalion, 35th Armor, 1st Armored Division, from Brigadier General Joseph P. Kingston, the assistant division commander. The award is annually presented to the top battalion in the 1st Armored Division, based on overall performance with emphasis on unit readiness and training.

RESERVE COMPONENT BATTALIONS TRAIN AND TEST AT FORT HOOD

Some 21,000 men of the 2d Armored Division, the 1st Cavalry Division and three reserve component battalions from Kentucky, Arizona and Tennessee took to the field at Fort Hood during the month of June to test the feasibility of early reserve component deployment as part of Active Army divisions. For the five-day test that climaxed the program, the 2d Armored Division with reserve component battalions maneuvered against an opposing force from the 1st Cavalry Division.

The activity, officially designated Division Post-mobilization Special Training Program and Test, was under the direction of Modern Army Selected Systems Test Evaluation and Review (MASSTER). The training and testing included a validation of a special postmobilization training program for a division, as well as testing the feasibility of deploying reserve component battalions earlier, in case of mobilization, by incorporating them into Active Army divisions.

Participating in the training and test activity were the 1st Battalion, 123d Armor (National Guard) from Paducah, KY, the 8th Battalion, 40th Armor (Reserve) from Tucson, AZ, and the 3d Battalion, 117th Infantry (Mechanized) (National Guard) from Cookeville, TN.

BLACKHORSE ASSOCIATION SCHOLARSHIP

A Blackhorse Association $1,000 Scholarship was presented this year to Miss Carolyn Roberts, daughter of Platoon Sergeant and Mrs. Theodore I. Roberts. Miss Roberts, accompanied by her mother, accepted the scholarship from Major General Donn A. Starry, the Association's newly elected president, during the Blackhorse Ball honors ceremony at the Annual Reunion of the 11th Armored Cavalry Regiment at Fort Knox. Sergeant Roberts, a member of F Troop, 2d Squadron, was killed on 27 April 1970 while assisting a crewman from a platoon vehicle during an ambush.

BUT WILL IT FLY?

This odd-looking vehicle of undetermined origins was recently located at Fort Carson. Unofficial sources there have attributed it as "The Mountain Post's" answer to the search for a new recon vehicle. No production decision has of yet been reached.

DEVELOPMENT CONTRACTS AWARDED FOR ADVANCED ATTACK HELICOPTER

The Army recently awarded prime development contracts to Bell Helicopter Company and Hughes Helicopters to initiate development of an Advanced Attack Helicopter system. Both contracts provide for a three-year effort to design and fabricate two flying prototypes and one ground test vehicle. At the end of three years, the

Hughes Prototype

Bell Prototype

Army will select the final contractor from the two competing firms to complete the development prior to production.

Army attack helicopter requirements were finalized last summer and a request for proposals was issued last November. Five helicopter manufacturers responded. The Army has established a design-to-cost objective of 1.4 to 1.6 million dollars per copy as the target production cost.

the tarpaulin

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

TAKE COMMAND

BG Paul S. Williams Jr, ROTC Rgn 2, Ft Knox . . . **COL Andrew H. Anderson,** DISCOM, 1st Armd Div . . . **COL Thomas F. Cole,** 1st Bde, 3d Armd Div . . . **COL Neil Creighton,** 7th Army Combined Arms Sch . . . **COL Robert W. Fisher,** 23d Spt Gp, 8th Army . . . **COL John T. Hodes,** 4th Psyop Gp, Ft Bragg . . . **COL Roderick D. Renick,** 1st Bde, USATCA . . . **COL Robert Schweitzer,** 11th ACR . . . **COL Walter Ulmer,** 194th Armd Bde . . . **COL Irving Taylor,** Ft Irwin . . . **LTC William E. Bartlett,** 6th Bn, 32d Armor, 4th Inf Div . . . **LTC Ronald F. Craven,** 4th Bn, 1st Bde, USATCA . . . **LTC William K. Harris,** 3d Bn, 33d Armor, 3d Armd Div . . . **LTC Allan R. Higgins,** 1st Bn, 63d Armor, 1st Inf Div . . . **LTC Anthony M. Jezior,** Inf, 1st Bn, 52d Inf, 1st Armd Div . . . **LTC James H. Jones,** 1st Bn, 70th Armor, 4th Inf Div . . . **LTC Michael C. Mahler,** 3d Sqdn, 12th Cav, 3d Armd Div . . . **LTC Walter E. Nader,** 1st Sqdn, 1st Cav, 1st Armd Div . . . **LTC Edward W. Newell,** 2d Bn, 63d Armor, 1st Inf Div . . . **LTC Robert K. Nicholson,** 3d Sqdn, 8th Cav, 8th Inf Div . . . **LTC Arthur N. Palmer,** 1st Bn, 64th Armor, 3d Inf Div . . . **LTC Charles J. Stedron,** 15th Bn, 4th Bde, USATCA . . . **LTC Merle L. Wade,** 1st Bn, School Bde, USAARMS . . . **LTC Robert A. Wagg Jr,** 3d Bn, 64th Armor, 3d Inf Div . . . **LTC Robert E. Wagner,** 1st Sqdn, 10th Cav, 4th Inf Div . . . **LTC Mowton L. Waring Jr,** 3d Bn, 35th Armor, 1st Armd Div . . . **LTC Billy B. Wood,** Tng Bn, USATCI, Ft Dix . . . **LTC Ronald W. Zeltman,** 2d Sqdn, 11th ACR.

ASSIGNED

LTG Gilbert H. Woodward, TIG, DA . . . **MG Edward Bautz Jr,** JCS . . . **MG George C. Cantlay,** NATO . . . **BG Alfred B. Hale,** ACSFOR, DA . . . **COL (P) Charles Heiden,** JCS . . . **COL William A. Adams,** TIG, CID Cmd . . . **COL Warren P. Allen,** ARR 2 . . . **COL Thurman E. Anderson,** HQ TRADOC . . . **COL Glenn Otis,** CofS, 1st Armd Div . . . **COL Stephen Bachinski,** ARR 1 . . . **COL William Beckwith,** ARR 9 . . . **COL Dewey E. Brown,** ACSFOR, DA . . . **COL Floyd J. Brown,** ARR 3, Ft Gordon . . . **COL Paul J. Brown,** CAA, Bethesda . . . **COL Robert F. Callahan,** ARR 2, Ft Dix . . . **COL John J. Cassidy,** HQ USAREUR . . . **COL Theodore Charney,** 1st RD, Ft Meade . . . **COL Kenneth E. Davison,** ARR 9, Ft Lewis . . . **COL Edward P. Davis,** DAC for CTD, USAARMS . . . **COL Lee P. Dukes,** DCSPER, HQ USAREUR . . . **COL Jack V. Dunham,** Dep CO, ARR 3, Ft Meade . . . **COL Joseph M. Gay,** PMS, Rice Univ . . .

COL William D. Grant, APG . . . **COL Clarence W. Guelker,** ARR 7, Ft Sam Houston . . . **COL Richard Harrington,** PEB, Ft Sam Houston . . . **COL William J. Hoar,** PMS, Marquette Univ . . . **COL Lawrence H. Johnson,** ARR 3, Ft Meade . . . **COL Robert J. Levitt,** PMS, NMI . . . **COL James A. Manning,** ARR 3, Ft Meade . . . **COL Louis B. Martin,** ARR 4, Atlanta . . . **COL Robert McGowan,** CATB, Ft Benning . . . **COL Stanley Millimet,** JUSMAGTHAI . . . **COL Charles L. Phillips,** EPG, Ft Huachuca . . . **COL Walter Plummer,** Dep SGS, OCofSA . . . **COL Paul D. Quinn,** Nuclear Agcy, Ft Bliss . . . **COL James B. Reed,** LEDD, USAARMS . . . **COL Bruce H. Robertson,** AMC Fld Spt Act, Ft Hood . . . **COL Mebane G. Stafford,** Def Attache, Tel Aviv . . . **COL Richard W. Streiff,** COA, DA . . . **COL James R. Stuart,** OSA . . . **COL Duane R. Tague,** ROTC Rgn 4, Ft Lewis . . . **COL Richard Vander Meer,** Committee Gp, USATCA . . . **COL Herman J. Vetort,** MASSTER . . . **COL Walter L. Watkins,** ROTC Rgn 2, Ft Knox . . . **COL Harold Weaver,** ARR 4, Atlanta . . . **COL Bruce F. Williams,** ACSI, DA . . . **COL Robert S. Williams,** USAARMC, Ft Knox . . . **COL Dan H. Williamson,** HQ USAREUR . . . **LTC Milton L. Aitken,** CAA, Bethesda . . . **LTC Richard Anderson,** ARR 8 . . . **LTC Ronald Artzberger,** MAAG Ethiopia . . . **LTC Thomas W. Atwood,** TRADOC . . . **LTC John Borgman,** MILPERCEN . . . **LTC Maurice Bostwick,** XVIII Abn Corps . . . **LTC Donald E. Boyd,** ARR 9 . . . **LTC Dennis M. Boyle,** OCRD, DA . . . **LTC Joe A. Brown,** HQ 4th RD, Ft Sam Houston . . . **LTC Robert M. Brown,** ARR 1 . . . **LTC Robert Burbank,** ARR 2 . . . **LTC Donald Campbell,** 1st Inf Div . . . **LTC William D. Carter,** ARR 2 . . . **LTC Leonard R. Casey,** C&S Dept, USAARMS . . . **LTC George R. Crook,** ACSFOR, DA . . . **LTC John Sherman Crow,** SGS, USAARMC, Ft Knox . . . **LTC Bruce E. Dahl,** USAARMS . . . **LTC Leon Dannemiller,** ARR 7, Ft Sam Houston . . . **LTC William S. DeCamp,** DCSOPS, DA . . . **LTC Frederick Delamain,** ACSFOR, DA . . . **LTC John H. Eliot,** CENTAG . . . **LTC Bernard V. Elliott,** Ft Gordon . . . **LTC John B. Fitch,** TRADOC . . . **LTC Samuel Focer,** W Mich Univ . . . **LTC Gordon H. Francis,** ARR 1 . . . **LTC Gaillard Freimark,** DCSOPS, DA . . . **LTC Melvin H. Geiger,** ARMISH MAAG . . . **LTC David Gilpatrick,** HQ AMC . . . **LTC Robert Gomez,** USMG El Salvador . . . **LTC Jerry H. Huff,** *XM1* Tank Sy, Warren . . . **LTC Alfred J. Iller,** MILPERCEN . . . **LTC Richard D. Junker,** TRADOC . . . **LTC Joseph Kennington,** ARR 4 . . . **LTC Joseph Langer,** Chief of Protocol Office, OCofSA . . . **LTC Scott J. Lehner,** ARR 9 . . . **LTC Richard A. Lilly,** Tng Dev Act, Orlando . . . **LTC Lawrence Lipscomb,** ACSFOR, DA . . . **LTC Joseph C. Lutz,** USA Spt Act Gp, (JA) . . . **LTC Bruce D. MacLean,** OTIG, HQ 1st Army . . . **LTC Bobby J. Maddox,** OCofSA . . . **LTC George W. Mainer,** ARR 9 . . . **LTC Don A. McKnight,** Armor Branch, MILPERCEN . . . **LTC Corwin A. Mitchell,** USAARMS . . . **LTC Sammy K. Mosley,** ARR 4, Redstone Arsenal . . . **LTC Robert D. Munro,** USAARMS . . . **LTC Marvin O'Connell,** Armor Branch, MILPERCEN . . . **LTC John M. Petracca,** Colonel's Division, MILPERCEN . . . **LTC Merle E. Prinz,** JUSMAG Greece . . . **LTC William H. Riedl,** MASSTER . . . **LTC David B. Sain,** DIO, USAARMC . . . **LTC Nelson H. Smith,** ARR 4 . . . **LTC John R. Sitten Jr,** QM Sch . . . **LTC Clinton W. Snyder,** ARR 1 . . . **LTC Carl B. Stevenson,** CINCPAC . . . **LTC Joseph T. Thomas,** ARR 8 . . . **LTC Peter C. Thomas,** ARR 2 . . . **LTC James A. Tipton,** TRADOC . . . **LTC Donald Valz,** G1, 2d Armd Div . . . **LTC Dale A. Vesser,** DCSOPS, DA . . . **LTC Robert J. Washer,** Campbell College, NC . . . **LTC Argle W. Wickware,** ARR 3 . . . **LTC Thomas C. Worth,** FORSCOM . . . **LTC Charles W. Zipp,** DCSLOG, HQ USAREUR . . . **MAJ David W. Adams,** ARR 4 . . . **MAJ John R. Archer,** Armor Branch, MILPERCEN . . . **MAJ Eldon K. Ball,** ARR 5 . . . **MAJ Richard Behrenhausen,** British Staff College, Camberly, England . . . **MAJ James D. Bradshaw,** Log Ctr, Ft Lee . . . **MAJ Oliver Brunton,** ARR 8 . . . **MAJ Douglas Burgess,** 4th Inf Div . . . **MAJ William Clough,** COA, DA . . . **MAJ William Corliss,** CGSC . . . **MAJ Dennis V. Crumley,** USAARMS . . . **MAJ James Danielson,** ARMISH MAAG . . . **MAJ Felix M. Delumpa,** HQ USAREC . . . **MAJ John G. Demchsak,** ADMINSCHCEN . . . **MAJ Lawrence A. Dimichele,** USAARMS . . . **MAJ Peter Doak,** ARR 1 . . . **MAJ Kenneth Fogelquist,** MAAG Iran . . . **MAJ John H. Ford,** ARR 6 . . . **MAJ Dale C. Gabriel,** MASSTER . . . **MAJ Sabin Gianelloni,** MASSTER . . . **MAJ John F. Glenn,** 3d ACR . . . **MAJ William T. Glover,** ARR 6 . . . **MAJ Fred W. Greene II,** Armor Branch, MILPERCEN . . . **MAJ Howard Gunerman,** ARR 1 . . . **MAJ Raymond M. Haney,** ARR 4 . . . **MAJ Thomas C. Harding,** ARR 5 . . . **MAJ Thomas H. Harvey,** DCSOPS, DA . . . **MAJ Larry Herrman,** ARR 3 . . . **MAJ Richard Holzheimer,** JUSMAGTHAI . . . **MAJ Gary R. Hoogenhous,** USAMFSS, Ft Sam Houston . . . **MAJ Bruce B. Hurry,** 1st Cav Div . . . **MAJ Arthur J. Jackson,** Log Ctr, Ft Lee . . . **MAJ Paul D. Keller,** ARR 2 . . . **MAJ John L. Kennedy,** ACSFOR, DA . . . **MAJ Paul D. King,** ARR 8 . . . **MAJ Irvin H. Kline,** ARR 1 . . . **MAJ Francis G. Lang,** ARR 4 . . . **MAJ William Lenfest,** USAARMS . . . **MAJ Robert D. Liles,** 3d Bn, 63d Armor, 1st Inf Div . . . **MAJ Gary O. Lozier,** 8th Inf Div Avn Office . . . **MAJ Marvin McDonald,** HQ EUCOM . . . **MAJ Charles McLaughlin,** CENTAG . . . **MAJ Paul K. McNamara,** HQ MICOM . . . **MAJ Dyson R. Miller,** MILPERCEN . . . **MAJ Wayne R. Miller,** AFEES, Ashland, KY . . . **MAJ William F. Moore,** Engr School . . . **MAJ Carlos Morrison,** Log Ctr, Ft Lee . . . **MAJ Hugh Mulvaney,** ARR 2 . . . **MAJ Charles Nason,** HQ USAREC . . . **MAJ Charles J. O'Brien,** 1st Bn, 33d Armor, 3d Armd Div . . . **MAJ Dundas Orr Jr,** Log Ctr, Ft Lee . . . **MAJ Donald W. Parman,** ARR 9 . . . **MAJ Bobbie G. Pedigo,** USAAVNC . . . **MAJ Robert L. Phillips,** Armor Branch, MILPERCEN . . . **MAJ Lewis Ranch,** HQ 6th Army . . . **MAJ William J. Riddel,** ARR 3 . . . **MAJ Patrick E. Riley,** Log Ctr, Ft Lee . . . **MAJ Clyde W. Roan,** ARR 2 . . . **MAJ James Schroeder,** COA, DA . . . **MAJ James L. Sharp,** ARR 3 . . . **MAJ Phillip Sheaffer,** OPM Adv Atk Hel . . . **MAJ Robert Sloane,** 1st Bn, 37th Armor, 1st Armd Div . . . **MAJ Harold L. Smith,** CATB . . . **MAJ Thomas R. Stone,** USMA . . . **MAJ Rodney W. Symons,** CGSC . . . **MAJ Robert B. Taylor,** ARR 2 . . . **MAJ Thomas Teasdale,** USAAVNS . . . **MAJ Jerry M. Thiels,** 1st Inf Div . . . **MAJ Albert Thurmond,** ARR 1 . . . **MAJ Joseph A. Tobin,** ARR 1 . . . **MAJ James V. Wasson,** OTEA . . . **MAJ**

Earl Webb Jr, ARR 9 . . . **MAJ Samuel D. Wilder,** TRADOC . . . **MAJ Fred Wilson,** CENTAG . . . **MAJ Alan Winkenhofer,** ARR 4.

VICTORIOUS

Joseph D. Heard has been elected president of the Cavalry-Armor Foundation . . . Five Armor National Guard officers have been selected for promotion to brigadier general, they are: **COL Robert S. Ford,** asst AG of California, **COL Herman Tenkin,** ADC, 50th Armd Div; **COL Holden C. West,** ADC, 30th Inf Div; **COL John J. Womack,** AG of Montana; and **COL Arvin R. Ziehlsdorff,** CofS, HHD, Wisconsin . . . An *M551 Sheridan* crew of the **3d Sqdn, 7th Cav, 3d Inf Div,** blazed its way down Range 80 at Grafenwoehr and amassed an individual crew score of 1150 of a possible 1190 points to finish with a USAREUR record. The crew was **SSG George Bowman,** TC, **SGT Darrel Weasonforth,** gunner, **PFC James Roche,** driver, and **PFC Palmer Iverson,** loader. The 3d of the 7th Cav went on to qualify 100 per cent of its *Sheridan* crews . . . **CPT Billy H. Causey,** B Trp, 1st Sqdn, 17th Cav, has received the seventh annual Helicopter Heroism Award of the Aviation Writers of America . . . Honor Graduates of C&GSC were: **MAJ Joseph C. Conrad; LTC Anthony U. Harring; MAJ Josef C. Jordan Jr; CPT Arthur L. West III; and MAJ Travis W. White.** The Commandant's List included: **MAJ Frank M. Alley Jr; MAJ Michael S. Davison Jr; LTC Edward W. Gale; LTC Henry J. Gordon; MAJ David McMillion; MAJ Michael D. Shaler; MAJ William N. Simpson III; LTC James A. Tipton; MAJ Vaden K. Watson; and MAJ Samuel D. Wilder** . . . The **3d Sqdn, 11th ACR** has won the V Corps Best Organizational Supply Activity Award . . . **MAJ Philip C. Medenbach** has been selected to attend the FRG Command & Staff College . . . **CPT Frame J. Bowers III,** currently assigned to the Armor School, was recently awarded the $2,500 Daedalian Fellowship Award, which is presented annually to a graduate of one of the service academies for his educational assistance in fields of aerospace engineering and flight . . . **SP4 Daniel J. Demers,** Hq Trp, 3d Sqdn, 116th ACR, has been elected to the Nevada State Senate . . . Another Armor Guardsman, **SP5 Robert Levine,** Co B, 1st Bn, 142d Armor, has been elected to the New York State Assembly . . . Distinguished Graduate of AOAC 1-73 was **CPT Thomas N. Burnette Jr.** Honor Graduates were: **MAJ Germain De. Swert (Belgium); CPT Nicholas Psaki; CPT Themistoklis Avgeropoulos (Greece); CPT William H. Janes; CPT Dennis H. Long; MAJ Jamshed Malik (Pakistan); CPT Glenn F. Rogers; CPT John W. McDonal; CPT Michael R. Smith; CPT Nolan A. Pike; CPT Thomas E. Stalzer; CPT John L. Throckmorton; CPT Alexander J. Capers Jr; CPT Kenneth L. Benton; CPT Robert W. Hess; CPT John H. Hemans; and CPT John E. Braun Jr.** Armor Association Writing Awards went to: **CPT Dean B. Becker III; CPT Kenneth L. Benton; CPT William K. Bergman; CPT John E. Braun; CPT Donald J. Brunner; and CPT Thomas N. Burnette Jr** . . . Distinguished Graduates of the Air Cavalry/Attack Helicopter Commanders Training Course to date are: **CPT Frank B. Markhan,** 175th Avn Co, ACAT 1-73; **CPT Henry R. Craig,** 16th Bn, 4th Bde, USATCA, ACAT 2-73; **CPT Rhett W. Lewis,** 3d Sqdn, 12th Cav, and **CPT Richard N. Roy,** 3d Sqdn, 1st Cav, 1st Cav Div, ACAT 3-73; and **1LT Joseph T. Carrato,** 3d Sqdn, 5th Cav, 9th Inf Div, ACAT 4-73.

AND SO FORTH

The **1st Sqdn, 6th ACR** bade official farewell to Ft Meade recently and moved to Ft Bliss, where they will become a squadron of the 3d ACR . . . **MG Heinz Guderian,** General of Combat Troops, FRG, and son of famed General Heinz Guderian, presented the Patton Museum a map used by his father during the Russian campaign of WWII . . . Other recent additions to the Patton Museum include the **ivory-handled pistols** GEN George S. Patton wore; the colors of the **7th Sqdn, 1st Cav** were also recently presented to the museum . . . The **LTG Geoffrey Keyes Park** has been dedicated at Ft Knox. The park, which is adjacent to the Patton Museum, was named after the former 3d and 7th Army commander . . . The **2d Bde, USATCA,** has been inactivated . . . **COL Robert L. Schweitzer** is the 46th Colonel of the 11th ACR . . . Tankers of the **1st Bn, 77th Armor** at Ft Carson have named a tank "Tommy's Tank" for a ten-year-old Muskegon, MI boy, **Tommy Schultz,** who lost both legs in an accident. **LTC Lawrence B. Fitzmorris,** the CO of the battalion, learned of the boy's interest in tanks and wrote him a letter and inclosed pictures of an *M60A1* tank with the words "Tommy's Tank" emblazoned along both sides of its 105mm gun . . . The **2d ACR** commemorated 137 years of Active Duty on the 16th of June. **COL John W. Seigle** is the 57th Colonel of the Dragoon Regiment . . . **TM 10-142, Armed Forces Recipe Service,** has some new recipes with an ethnic or regional flavor, included are: country-style spareribs; chicken vega; enchiladas; tacos; stewed chitterlings; and boiled pork hocks . . . New address of the **1st Cav Div Assn** is: Box 5129, Ft Hood, TX 76544 . . . **GEN Bruce C. Clarke's** revised edition of *Guidelines for the Leader and Commander* is now available through the Armor School Bookstore . . . The **1st Sqdn, USATCA,** has been designated the **5th Cav Sqdn, AIT** . . . Former **Field Marshal Eric Von Manstein,** who masterminded Nazi Germany's 1940 blitzkrieg of France, recently died at his home in Irschenhausen, West Germany . . . **MAJ John E. Grabowski's** columns in the *Ft Hood Sentinel* make excellent reading . . . **CSM Tadashi Mouri,** who served as CSM of the 3d ACR from 1969 to 1971, has been named the CSM of the US Military Academy . . . A colors change at Ft Hood recently involved the inactivation of the **3d Sqdn, 1st Cav, 1st Cav Div** and the activation of the **1st Sqdn, 6th Cav. LTC Alexander R. MacDonald** is the commander of the squadron . . . In honor of the 9th and 10th US Cavalry Regiments, detachments of which once served at West Point, Cavalry Plain at USMA was renamed **Buffalo Soldier Field** at an Armed Forces Day ceremony. "Buffalo Soldiers" was the nickname given the all-black 9th and 10th Cavalry by their Indian foes in the latter 19th century.

from the bookshelf

GEORGE C. MARSHALL; Volume III: Organizer of Victory
by Forrest C. Pogue. The Viking Press. 683 pages. 1973. $15.00.

This is the third volume of a masterful biography of a great man. In it, Dr. Pogue covers the period from the Casablanca Conference in January 1943 to the German surrender in May 1945, and he makes plain why General Marshall was so aptly described by Winston Churchill as "the true organizer of victory." The book constitutes a fine overall view of the global extent and complexity of the war and the difficult choices which had to be made. The dominant role played by General Marshall in planning and directing the war becomes more and more evident as the narrative progresses, and finally it becomes clear that President Roosevelt really could not spare him for the Supreme Command.

Dr. Pogue is uniquely qualified to deal with the events in this period of General Marshall's life. As author of *The Supreme Command* in the Army's official history of World War II, he interviewed a great number of the central characters of the time soon after the war, when memories were fresh. Subsequently, many personal diaries were made available to him and he has made wide use of both personal and official records. Rarely is a book as thoroughly researched and completely documented as this one.

Few men in history have been indispensable to the events of their time. General Marshall may have been one of those, for he most certainly was the individual who most nearly dominated the scene; a giant among giants. His immense grasp of military and domestic problems, his foresight, his integrity and great personal self-control, his demonstrated constancy of purpose all served to earn for him the confidence and trust of all. Many were the accolades which came his way in the universal thanksgiving for Victory in Europe, but those who lived through those times will best remember President Truman's later tribute to him as "the greatest living American."

Rarely have public figures understood the American people and their institutions as well as did General Marshall. It was the many things he did which were guided by this understanding that gained for him the trust and confidence of the President, of the Congress and the people of the country as well as of the military services. He was acutely aware of the need to forestall unfavorable public reactions and habitually acted quickly to eliminate causes for justifiable criticism as in the case of the prompt ordering of a reduction of the forces in Alaska after the fall of Kiska. He worked closely with the press in the weeks before the invasion of the European Continent to secure their cooperation by making certain that they were fully informed as circumstances permitted.

General Marshall's skill in selecting senior officers for the armies which served in the Pacific as well as in Europe is well known: Bradley, Collins, Devers, MacArthur, Krueger, Patton, Taylor and many others became household names. What is not as well known is his insistence on teamwork. The men selected were required to work well in Allied Commands as well as with the other military services. Cases in point were those of General Richardson's objections to service under an Allied Commander and, as a consequence, being relegated to an anonymous though important base command, and the more celebrated contretemps of the two Smiths—Major General Holland M. of the Marines and Major General Ralph C. of the Army's 27th Division.

The Chief of Staff's ability to work with the Congress was legendary, but he was just as successful in working with the Navy and the British Chiefs of Staff. With the latter he was fortunate to have Field Marshal Sir John Dill as the head of the British Staff Mission in Washington. Between them developed a mutual trust and friendship that served both nations well on many occasions. An interesting sidelight of those times was the lengths to which General Marshall went in having the United States heap honors (well deserved) on the Field Marshal to a degree which made it impossible for Churchill to carry out his threat of recalling him to London.

General Marshall is sometimes charged with ignoring political factors. Nothing could be further from the truth. Much of his time was devoted to thought and study of post-war political factors as well as the reality of politics on the home front, and no military decision was made without full consideration being given to them. He was acutely aware of the political considerations motivating the French from North Africa onwards and fully aware of possible Churchillian motives in pushing campaigns in the Mediterranean. But he abhorred political French Generals and believed strongly that political decisions should be left to the Heads of State.

Dr. Pogue convincingly and completely explodes the myth that General Marshall sat at Roosevelt's side at Yalta and urged him to make broad concessions to the Soviets. Not only was Marshall one of the first to recognize the fact and implications of the cooling of Soviet cooperation as their military fortunes improved, but he was not even present at the celebrated dinner—an error on the part of American protocol had resulted in a failure to include the US Chiefs of Staff, although their British and Soviet counterparts were present. This chapter alone is worth the purchase price of the volume.

This book is more than a fine biography; it is an excellent top level coverage of the period of World War II leading to victory in Europe. It is objective biography and reliable history both superbly written and, in this reviewer's opinion, "must reading" for every professional American Soldier.

Brigadier General Hal C. Pattison
USA-Retired

POWER AND EQUILIBRIUM IN THE 1970s
by Alastair Buchan. Praeger Publishers. 120 pages. 1973. $6.00.

In his foreign policy message of February 1972, President Nixon announced the abandonment of containment as a prime mover of US foreign policy and the adoption in its stead of a policy of coalition. This pronouncement opens the way for searching speculation on the requisites and conditions for international equilibrium in the years ahead. Many have speculated that what Mr. Nixon seeks is a classic balance of power on the style of Metternich's Europe. Is such a balance possible? If so, what are its dimensions? Are the lessons from past balances of power applicable in this instance?

This brilliant, tightly written little essay explores these and related questions bearing on international power and politics in the 1970s and 1980s. Too few rational political scientists have explored this problem in a meaningful way. And in the vacuum there has been too much liberal-based commentary from those whose complete lack of political and power sensibility is dysfunctional in the real world. This little book should be must reading for those who must chart national directions and policies, to include military professionals who must frequently translate national policies into convincing military programs for the execution of those policies.

Major General Donn A. Starry
Fort Knox, Kentucky

OUT OF THE BLUE

by James A. Huston. Purdue University Studies. 327 pages. 1972. $10.00.

This is a carefully, completely and accurately researched narrative of US Army airborne operations in World War II. After an introductory account of the greatest airborne operation of the war, the air invasion of Holland in September 1944, the author goes back to detailed study and consideration of conception, organization and training and then to accounts of other airborne operations. Although the book is unquestionably an authentic history textbook of airborne operations, its narrative style will hold the interest of the general reader as well as the military student or the veteran "trooper."

The pressures for and against the airborne concept so clearly outlined in this book will be strikingly familiar to the student knowledgeable of the difficulties attending the introduction of any new way of warfare. These pressures quite closely parallel those connected with the development of armor. While agreeing that it is probably too simple a generalization, the author is certainly correct when he states that these difficulties are largely attributable to a tendency which undoubtedly governs much in human affairs. It is simply the propensity in men to seek importance.

In 1943 the commander of Army Ground Forces, General Leslie McNair, had written: "I know of no instance where a commander had recommended a reduction of the means at his disposal—either personnel or materiel—and of few cases where a commander was satisfied with what he had. Invariably commanders seek more and tend always to make their unit self-contained. It was such proclivities that brought about the present wasteful and unwieldy organization."

A number of Ground Force officers proposed that troop carrier aviation be made organic to the Ground Forces. Several Air Force officers proposed that airborne troops be made organic to the Air Forces. Practically in no case did an Air Force officer propose Ground Forces control or vice versa. Lack of coordination due to Air Forces control of troop carrier aviation and Ground Forces control of airborne troops adversely affected training in the Continental United States. Overseas, the creation of an Airborne Command and later, the First Allied Airborne Army, resulted in much better coordination of planning and training.

In Europe, the unwillingness to commit small airborne forces to limited tactical operations is in contrast to airborne operations in the Pacific, where nothing larger than an airborne regimental combat team was ever employed in any one operation. Planning for extensive and large scale strategic airborne operations and the time involved to put them into effect in Europe generally resulted in the Ground Forces reaching objectives while airborne operations were still in the planning stage.

The author does not attempt to determine the influence of those airborne operations that were actually carried out on the final outcome of the war. He does indicate strongly that more effective use could have been made of airborne and Air Force resources by more imaginative strategic operations at the expense of the strategic bombing effort. The author ponders the question of whether or not the effect of airborne troops in specific operations and their effect on enemy dispositions as a force in being was worth the tremendous expense of training, equipping and maintaining the airborne forces.

General I.D. White
USA-Retired

TO PEKING—AND BEYOND: A Report on the New Asia

by Harrison E. Salisbury. Quadrangle Books. 308 pages. 1973. $7.95.

To Peking—and Beyond is an account of Harrison Salisbury's trip to Asia in May 1972. The book focuses primarily on China, but does include short sketches of Indochina and North Korea, and an overview of Asian relationships in the mid-1970s. Mr. Salisbury suggests in his report that a New Man (new national psychology) has been created in China and that this New Man and a dynamic, pragmatic foreign policy are giving greater stability and security to China.

Mr. Salisbury points out that the Cultural Revolution evolved from Mao's perceived need to correct counterrevolutionary thinking, temper the nation for hardships and consolidate his own political influence. The report concludes that the Cultural Revolution resulted in the formation of a new Chinese national psychology which has affected the intelligentsia and white-collar classes deeply, although the workers and peasants have been less affected. The New Man, according to Salisbury, is characterized by self-respect, dignity and a deep sense of self-sacrifice. While the book emphasizes the creation of a new idealism and a mood of exhilaration through the deliberately conceived chaos of the Cultural Revolution, it fails to explore adequately the practical results of the revolution—its impact on the industrial effort and educational activities, the human suffering and humiliation, and the destabilizing effect that it had on Chinese foreign affairs.

Throughout his report Mr. Salisbury provides interesting glimpses of Chinese life, ranging from acupuncture to boy-girl relationships. These sketches show China as modern and dynamic in some endeavors, yet simple and backward in others. The "snapshots" of China appear to have been tailored to show the self-sufficiency of the New Man and the strength of current Chinese values in comparison to Western, Soviet and pre-1949 Chinese values.

Mr. Salisbury attempts to dispel the notion of Chinese colossus with 800 million people—the "world's greatest mass of humanity, trained, obedient, ritualistically ready to do the bidding of their mythical leaders." Yet, his very discussion of the Cultural Revolution and schools to cleanse thoughts incompatible with the regime conveys the image of a state that permits little internal conflict.

The assessment of Asian interactions in the report lacks objective analysis. With little discussion, Mr. Salisbury brushes away the past by denouncing the US containment policy which led to the US military involvement in Asia and the tension which evolved between the United States and Asian communist states. Mr. Salisbury also takes time to attack the thought that communism is a monolithic force, in order to buttress his judgment that the US foreign policy for Asia in the recent

past was ill-conceived and premised on such a view, and to serve as a backdrop for his portrayal of a deep Sino-Soviet rift.

In evaluating great power relations for the New Asia, Harrison Salisbury points out that China probably views the Soviet Union as its greatest danger, thus Chinese foreign policy will be directed toward developing counterweights to that threat; one counterweight would be the normalization of relationships with the United States. Mr. Salisbury also maintains that China must improve it relations with Japan to strengthen its international position; Japanese technical assistance, coupled with Chinese manpower, should aid industrial development and contribute to less firm Soviet-Japanese relationships. Thus, closer US and Japanese relations might provide the balance needed by China as long as Soviet-Chinese tensions are maintained at a high level. On the northeastern flank, a rapprochement between North and South Korea might further lessen tensions on China's periphery; consequently, Chinese policy toward North Korea has been designed to maintain a community of interests. Mr. Salisbury warns the reader, however, not to draw hasty conclusions about the New China and her intentions because of her complexity—this is good advice.

To Peking—and Beyond must be classified as a report, rather than a thorough analytical look at Asia. For the military reader, Mr. Salisbury's failure to discuss the role of the People's Liberation Army is a disappointment, as is his failure to discuss the Chinese role in the Indochina war. Nevertheless, the report is quite readable and will put another view of China on the bookstands in a time of changing Asian relationships.

Lieutenant Colonel William M. Stokes III

PRESIDENTS, BUREAUCRATS, AND FOREIGN POLICY: The Politics of Organizational Reform
by I. M. Destler. Princeton University Press. 329 pages. 1972. $10.00.

This is an excellent book for the student of government. It is a scholarly text on the theory and mechanics of organizing a large government bureaucracy for the conduct of national security policy. The author has organized his subject well. First, he treats theoretical organizational alternatives, then he examines the approaches of recent Presidents and homes in on the responsibilities and organization of the State Department. Finally, he has extended discussion of alternative divisions of responsibility between the State Department and the National Security Council. The book has excellent bibliographical notes with a thoughtful and useful index.

Several particularly insightful portions of the book deal with the personal and institutional roles of the Assistant to the President for National Security Council Affairs (Dr. Kissinger). Mr. Destler describes well the stresses stimulated by combining in one person the responsibility to personally advise the President as well as to coordinate and comment on the output of the various departments of government. The book also provides extremely fine discussion of the uses of a staff. While this coverage is oriented to the highest level of national security policy, the treatment is equally applicable in explaining behavior in the Pentagon. "Uses of Staffs" is a useful chapter for professional reading if one is enroute to a Pentagon assignment.

There are several weaknesses in the text, although these criticisms undoubtedly reflect the personal biases of the reviewer. First, there does not appear to be adequate recognition of the policy role of systems analysis techniques. The author gives brief mention to the abortive attempts to introduce systems analysis in the State Department, but in so doing, he appears to overlook the significant role it plays in the Pentagon, be it in the Secretary of Defense's Office or within the Army in the Assistant Vice Chief of Staff's Office. Lastly, in his treatment of Dr. Kissinger, Destler overlooks a clear and available alternative which was pursued. That is, the development of a strong deputy to permit some flexibility in the delineation of institutional and personal responsibilities.

I recommend the book for students of national security policy, both for the theoretical treatment of a complex subject and for the current bibliography. Those with more general interests may wish to sample the book by scanning the chapter on "Uses of Staffs."

Lieutenant Colonel Fredric J. Brown
OCSA

ARMED AND ALONE: The American Security Dilemma
by Dean William Rudoy. George Braziller. 90 pages. 1972. $4.95.

Armed and Alone reports the highlights of citizen hearings held in Washington during 1972 under the auspices of "The Coalition in National Priorities and Military Policy." The coalition supposedly represents 30 million people, but it is doubtful that the thoughts expressed in the book are representative of all members of the organizations listed. There are no clues to the author's background or credentials for consolidating the report; however, the "Afterword" expressing the author's thoughts is anti-Nixon, anti-military and lacks objectivity.

The report criticizes the military thinking and approach to world leadership used by United States civilian authorities since World War II. This military-mindedness supposedly has prevented the resolution of the nation's social problems and has developed a society of waste. It is also pointed out that these military policies extend beyond the imperatives of military leaders. Further, that the military leadership was either neutral or opposed to every post-World War II military intervention.

The book supports the McGovern defense budget, downplays the Communist military threat and doubts that military power is the best guarantor of security. Based on this, the committee felt the United States should quit trying to Americanize the world and reevaluate its military commitments. The report asserts that the committee is not proposing a return to isolationism but then suggests that the country adopt a foreign policy which embraces neutrality, nonalignment, nonentanglement and fortress America.

The report is written in such a way to mislead the uninformed reader. This is unfortunate, as the book contains some good food for thought.

Lieutenant Colonel Carl M. Putnam
HQ, FORSCOM

THE BATTLE FOR EUROPE—1918
by H. Essame. Scribner & Sons. 216 pages. 1972. $8.95.

Armor enthusiasts should not be misled by the cover jacket of British historian Major General H. Essame's latest effort, *The Battle for Europe—1918*. Although the jacket depicts the first tanks (which, along with the airplane, were to revolutionize warfare thereafter), this history does not subscribe to the Liddell Hart—J.F.C. Fuller judgment that the tank represented a panacea of victory in World War I. Quite the contrary. Essame argues quite convincingly that it was the spirit of the Allied soldier, rather than technological innovations, which tipped the scales to ultimate victory in 1918. Thus, he directs

his study primarily at personalities rather than machines, at morale rather than strategy, at a history-as-seen-from-the-trenches rather than from the cockpit of a Spad or the hatch of a Whippet tank.

Despite one's personal or professional bias concerning the relative merits of the ingredients for victory in 1918 (General Essame served with the infantry in two world wars), you will find this book an engaging study of men and decision-makers in battle. The author grants high marks in courage and enthusiasm to American and Canadian troops in the counteroffensive of 1918 after Ludendorf had administered to the British Army on the Somme "its greatest disaster since Yorktown." To the Australian soldier, however, the author accords his highest praise. He considers the Australian soldier the best infantryman of the war "and perhaps of all time."

Numerous maps and photographs round out this extremely readable, sometimes controversial, always interesting view of the final actions of World War I.

Lieutenant Colonel John G. Fowler Jr.
Providence College

A NEW ISOLATIONISM: Threat or Promise?
by Robert W. Tucker. Universe Books. 127 pages. 1972. $6.00.

In this closely reasoned little book, political scientist Tucker makes a convincing case for a dramatic change in American foreign policy, embracing what he calls a new isolationism. His thesis is that for 25 years US goals in foreign policy have been interventionist—to extend and preserve US influence, not just to protect the US physically, or to secure the US economic position. Influence, in the Tucker view, has become synonymous with security. He then argues that this need not be the case; that the alternative to interventionism is isolationism—a fundamental American orientation, and both a viable and desirable alternative in a world evolving away from American influence.

Isolationism involves dissolution of US alliances, and the Tucker arguments for dissolution in East Asia make some sense. What if Japan were to go nuclear, spurred on by the absence of a US alliance; what's wrong with an East Asian power balance between the USSR, PRC and Japan? Argumentation like this inevitably stumbles over NATO and Europe. Tucker's essay is no exception and he recognizes his problem. Stay and dominate, leave and destroy the alliance, or attempt devolution—giving of adequate nuclear means and full authority for their defense to West European nations. These are the alternatives Tucker sees in the US dilemma regarding Europe. And as a good political scientist he hedges on US isolationism and Europe.

Sooner or later the United States must face the question of how much influence is required to keep viable a certain capability to sway developing situations or maintain necessary access to raw materials; and the consequences of the weakening or absence of a sufficient degree of that influence. But to suggest, as Tucker's logic must, that the US, or any great power, should be willing to move toward a world of sort of equal autonomous states, lacking all vestiges of imperialism and dominant spheres of influence, is to presume some fundamental behavioral changes in men and nations that do, indeed, seem a long way off. Since the military profession's second love seems to be political science, all of us amateur political scientists should read and contemplate this conservative who has hoisted himself on the liberal petard.

DAS

NONALIGNMENT: Theory and Current Policy
by Leo Mates. Oceana Publications. 543 pages. 1972. $12.00.

In *Nonalignment: Theory and Current Policy,* Leo Mates, former Yugoslav Ambassador to the United States and Permanent Representative to the United Nations, projects nonalignment as the David between two Goliaths. The author is not so presumptuous as to suggest that nonalignment will slay either east or west, but he does give it credit for both frustrating bloc control of the entire world and, through manipulation of various factors, defusing the cold war.

Nonalignment is a decidedly ambitious undertaking. Mates attempts through an interpretive review of post-World War II history to explain the great power malaise that created favorable conditions for nonaligned international politics, why so many newly decolonized and independent states opted for nonalignment, and the past and future beneficial impact of the nonaligned nations on the international body politic.

Aside from a disorganized presentation of his arguments, the weakness of this book lies in its failure to persuade the reader that nonalignment gives the underdeveloped, newly sovereign state a philosophy of action that protects its independence of domestic development while providing an opportunity to play a significant role favorable to its interests on the world stage. Power (economic, military, political, etc.) is the only weight on the scales of international politics that counts, and Mates admits that neither individually nor collectively do the nonaligned possess any considerable means to make their will felt. Furthermore, due to the very definition of nonalignment, what little power they do have cannot be coordinated. *Nonalignment* claims, however, that the third world can mobilize world public opinion as a potent force to influence the course of a world where, in the 1970s, the east and west, equal in power, counterbalance each other; the League of Nations built the foundation of its political house on the same sand.

Captain Henry J. Lowe
US Military Academy

THE CAMPAIGN FOR GUADALCANAL
by Jack Coggins. Doubleday. 190 pages. 1972. $9.75.

Welcome to what is hopefully one in a series of truly well done descriptions of important modern military events. The campaign is portrayed in the detail that one would hope to expect from a professional military historian, while shedding the annoying characteristics often associated with historical academics.

Interesting to those of us in the Army is Mr. Coggins' excellent description of the not-so-small and gallant part played by Army combat units (primarily the 25th Infantry Division and the Americal Division) in what has always been viewed as an all-Marine effort.

Mr. Coggins' approach to military history uses a combination of well-coordinated descriptions of happenings in relation to time; well positioned, excellent quality maps and sketches; coupled with a participant's feel for the maneuver of ground and sea forces. He describes military history in a style that should be used at Leavenworth and Norfolk when seeking military historical precedent and teaching points. I commend this and future efforts by him to our military educational system.

Lieutenant Colonel T.G. Westerman
AVCofSA

ARMOR *the Magazine of Mobile Warfare*

THE UNITED STATES ARMOR ASSOCIATION ▲ 1145 19th Street, NW, Washington, D.C. 20036
Telephone (202) 223-2161

Fellow Members of the Armor Association:

Perhaps the one characteristic that best describes the Armor officer is his ability to analyze a new situation and then take the appropriate action required for the successful completion of his mission. While he learns from his experience of the past, he is not limited by that past. In a word, he is flexible. Such a trait is now required of the Association and its journal.

Both stand on the threshold of a new, and I must add a somewhat uncertain future. Both will soon be taking on new forms, goals and structures.

During the past 86 years of continuous publication and service to the membership, our Association has been able to meet all operational and printing costs without seeking Army assistance. However, during that time we were fortunate to have the services of Active Duty military personnel serving on the staff.

For what I feel are very valid and well-thoughtout reasons, the Army has now decided to terminate this practice, and as of 1 July 1973, Active Duty personnel will no longer be permitted to serve as editors and business managers of private associations. While this ruling will result in an entirely new structure of our Association, I feel that it was made in the best interest of all the associations concerned and of the entire Army.

General Polk and the Executive Council of the Association have met on several occasions within the past few months to arrive at a workable solution. After numerous studies, moving the magazine to Fort Knox was seen as the best possible route for the Association to follow. Fort Knox has met this proposal with much enthusiasm, and it is our earnest hope and belief that the only notable change in *ARMOR* Magazine will be in its address.

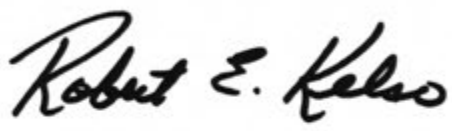
The future role of the Armor Association remains perhaps a bit more uncertain at this point. But I believe the actual fleshing out of the structure will, and in fact, should, come with time. At this point in our history, we are financially strong. We are composed of dedicated professionals, and we are unanimous in our desire for a viable association.

This is not to say that we will not experience any difficulties as we go through this period of transition. With any change, there are the necessary growing pains. If anything, I strongly feel that this action will unite the Association into a more viable force.

With the change in the Association, there will also be a change in the editorship of the magazine. At this time I would like to extend a sincere welcome to Lieutenant Colonel Burton S. Boudinot, who this month joins the *ARMOR* Staff as Associate Editor. This title is traditionally given to the officer assigned as the next Editor of *ARMOR* Magazine, and with the September-October issue, he will assume those duties.

Colonel Boudinot has served in a wide variety of key assignments within Armor and is highly qualified in both the military and journalistic disciplines. He has commanded the 6th Reconnaissance Squadron at Fort Knox, and his most recent assignment was with the US Army Armor and Engineer Board where he served as Chief, Armor Test Branch and participated as an AMC representative with the "Main Battle Tank Task Force." Colonel Boudinot's assignment as Editor of *ARMOR* will insure the continued publication of an objective, professional and highly respected journal.

In closing, I would like to take just a few lines to express my deep and lasting thanks to the members of this Association for the assistance given me over the past two years. And I would ask, now more than anytime in our history, for your continued support. Because of your training, your dedication and your professionalism, I am sure we can meet the challenges that this change in our Association will bring.



Major, Armor
Editor

ARMOR REGULARS

Items now available from:

USAARMS
Book Dept.
Bldg. 2426
Fort Knox,
Ky. 40121

Payment must accompany all orders.
Please add 10% for postage and handling.

Windbreakers

Green nylon windbreakers with gold Armor or Cavalry insignia. Specify size, Armor or Cavalry and zippered hooded or snap-button non-hooded. S, M, L, or XL. **$7.95**

Lighters

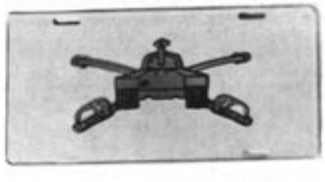
Old Bill lighters by Zippo.
$4.95

Stetson Cavalry Hats

Available with general officer, officer, warrant officer, or enlisted cord. Specify hat size and cord type.
$17.50

VIETNAMESE ARMOR BADGE $5.00

License Plates



$2.00 each

Cavalry—gold crossed sabers on red and white field
Armor—gold branch insignia on yellow background

SABER LETTER OPENER

$8

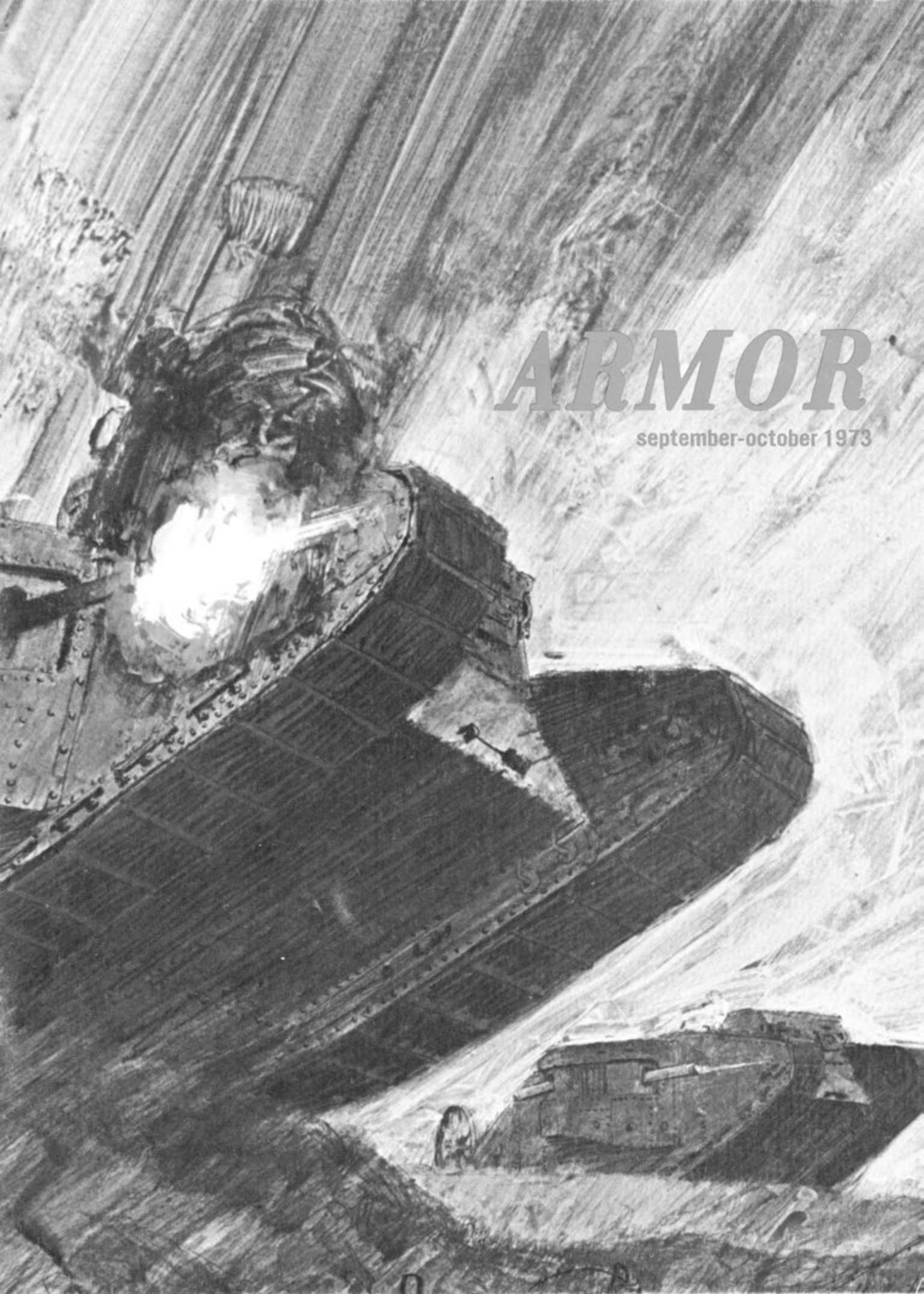
Beautifully designed, silver with black handle, 11" long.

OLD BILL. . . . $1.50
THE EVOLUTION OF ARMOR . . $2.00

CLOSE OUT!

Seventeen jewel Swiss calendar watches with Armor, Cavalry or Armor Triangle insignia.
Please specify first, second and third choices of insignia.
Orders postmarked after 15 September cannot be accepted.

$49.95



ARMOR

september-october 1973

ARMOR the Magazine of Mobile Warfare

U.S. ARMY ARMOR SCHOOL ▲ Post Office Box O, Fort Knox, Kentucky 40121
Telephone (502) 624-2257

A NOTE FROM THE NEW EDITOR

It is a distinct honor and pleasure for me to become the 31st Editor of *ARMOR* Magazine with its predecessor, *The Cavalry Journal*. I join the magazine staff believing that there is such a thing as "Armor Philosophy" and it continues to evolve from the shared experiences and thoughts of many. *ARMOR* Magazine is the reflection of a high-interest group who reads it, writes to it, and writes for it. In all cases the magazine is a medium to both inform and broaden the views of us all.

I find that the authors and readers of *ARMOR* are active and retired military people of both United States and foreign armed services. They also come from industry, research institutions and universities. Over the years, many statesmen, politicians and businessmen have subscribed to *ARMOR*. Each in some way has an interest in Cavalry/Armor heritage as it relates to mobile warfare, past, present and future.

As the magazine prepares to leave the guardianship of our fine 87-year-old association and becomes a government publication, this editor intends to continue publishing informative, thought-provoking, innovative and controversial articles of professional interest to our readers. We also plan to publish more historical pieces than have been used in the past.

The previous editor found that "Letters to the Editor" has become an increasingly popular forum. These exchanges of ideas are as important as the articles that generate them.

We also seek to create interest in a new feature titled, "Profile of a Professional"—a series of short, illustrative descriptions of passed-on Cavalry/Armor leaders and heroes who have contributed much to the glory and evolution of our facet of the Profession of Arms. The success of this department will depend largely upon your contributions.

Please also consider sending in some short anecdotes, as these experiences, perhaps not so funny at the time they happen, are most enjoyable when shared later.

ARMOR has a continuing need for good articles. Keep them coming. We request, though, that authors provide the necessary photographs and graphics if possible, as our staff is small.

Remember, *ARMOR* is your forum for helping to shape our branch for tomorrow. It is dependent upon the fresh, innovative ideas that can only be supplied by *you*.

BURTON S. BOUDINOT
LTC, Armor
Editor

ARMOR

the Magazine of Mobile Warfare

Volume LXXXII | September-October 1973 | No. 5

ARTICLES

FEATURES

DEPARTMENTS

ON THE COVER . . .

Although the first "landships" were produced in 1915, it was not until November 20, 1917, when, under the command of General Byng, tanks played a starring role in turning the Battle of Cambrai into an allied victory.

ARMOR Magazine is published bimonthly by the United States Armor Association, 1787 5th ACR Road, Fort Knox, Kentucky 40121, 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.

MEMBERSHIP DUES (including ARMOR): $6.50 one year, $12.00 two years, $18.00 three years. Active or associate membership is open to all active, reserve, retired or honorably discharged members of the U.S. Armed Forces.

SUBSCRIPTION RATES: Individuals not eligible for membership, unit funds and institutions may subscribe to ARMOR. **Domestic:** $6.50 one year, $12.00 two years, $18.00 three years. **Foreign:** $8.00 one year, $15.00 two years, $22.50 three years. Single copies $1.50.

CORRESPONDENCE: All correspondence should be addressed to ARMOR. Post Office Box O, Fort Knox, Kentucky 40121 (Telephone: Autovon 464-2257 or Commercial (502) 624-2257).

POSTMASTER: Second-class postage paid at Fort Knox, Kentucky and at additional mailing offices.

ARMOR may be forwarded to persons in the United States Service whose change of address is caused by official orders (except to APO addresses) without payment of additional postage (158.4 Postal Manual).

letters to the editor

Sheridan is a Tank

Dear Sir:

I am writing in reference to Lieutenant Colonel Robert E. Helton's article, "The *Sheridan*: Airborne Cavalryman's Big Punch," published in the July-August 1973 issue of *ARMOR*. While agreeing wholeheartedly with Colonel Helton's basic theme that the *Sheridan* is indeed the cavalryman's big punch and that it has the ability to fight anywhere in the world, I disagree with his and the Cavalry's refusal to designate it a "tank."

As the CDC—Armor Agency Project Officer on the *Sheridan* (1971-1972) and later while conducting research for my treatise, "Family of Armored Cavalry Vehicles (FAMACAV)," while at the Command and General Staff College last year, I discovered, much to my chagrin, that the antiarmor, direct fire support vehicle of the armored cavalry platoon is supposed to be a tank. First of all, during World War II, a hodge-podge of direct fire vehicles was used in the cavalry platoons of the Army. The Stilwell Board of 1946 (War Department Equipment Board) and later the Hodge Board of 1950 recommended the incorporation of a tank in the antiarmor role in the armored cavalry platoon. A variety of tanks served, the most recent of which was the now obsolete *M41 Walker Bulldog* 25-ton light tank.

Why not call the *Sheridan* a light tank? The troops do, among other things. It looks like one, drives and shoots like one, and has many other common features. It is primarily designed to destroy enemy armor at all battlefield ranges, just like its big brothers. With the advent of the *C5A*, it is not exclusively airborne. All it lacks is the weight of the armor of its big brothers.

I conclude that I personally would like to call the *Sheridan* a tank. I would then feel that it could indeed "fight anywhere in the world."

JOHN W. SCHNEIDER JR.
Lieutenant Colonel, Armor
Hampton, Virginia 23666

Flying Sergeant Supported

Dear Sir:

I have just read with great interest Lieutenant Colonel Putnam's article on the feasibility of reintroducing the flying sergeant to the Army's TOE (*ARMOR* July-August). It is a good idea for all the reasons he stated. But I would like to throw out two considerations stemming from the article. The first is a relatively minor point, the second a little farther reaching.

Colonel Putnam suggested that the flying NCO be started, on his first tour as an aviator, in either the LOH or *UH1* type aircraft. I'll go along with the *UH1*; and in a command aviation section, I'll go along with the LOH. But I think it is a mistake to presume that a LOH is a LOH is a LOH. I spent an 18-month tour in Vietnam as a LOH pilot, flying it in both its chief capacities. For five months I was assigned to the 62d Aviation Company (Corps) flying in command support of the XXIV Corps Headquarters; then for the subsequent 13 months I flew as a aeroscout pilot for Troop A 7/17th Air Cavalry. The difference in skills required for each mission is a night and day situation. It is a widespread misconception that you can toss, willy-nilly, any pilot who is new or volunteers into a scout ship as so much cannon fodder. Due to the myriad and extreme requirements in both flying-proficiency and spotting-skills laid on a scout pilot, a great deal of care should be exercised in choosing him.

My second point is a little larger in scope, for it deals indirectly with conception of policy concerning flight pay. I was trained through the warrant program and, like many of my former military contemporaries, accepted a direct commission offered in the Armor Branch after 18 months as an aviation warrant. Then, as now, I recognized the sense in paying commissioned officers a higher base pay in that the responsibilities they are called upon to assume are greater than those of the warrant officer. I did not then, nor do I now, recognize the sense in the disparity of flight pay.

This is a very serious morale factor to consider. A CW2 aircraft commander with several hundred hours of experience in a given aircraft still draws less in flight pay than his brand new lieutenant copilot, even though the warrant has responsibility for the aircraft while in flight. The situation is inequitable now, and would only be aggravated with NCO aviators.

I think that to make the concept of NCO aviators work, the Army must revamp the flight pay schedule to base its amount on the number of years accrued as an aviator, regardless of rank. I can hear the shouts and screaming already. But I, for one, have never heard an adequate defense for the present inequities in the flight pay schedule. Let's face it: a lieutenant is still a lieutenant and a sergeant is still a sergeant, even if they are drawing the same proficiency pay for the same degree of expertise. I can still recall the day after my commissioning how absurd it seemed to me to be flying at a higher rate of flight pay while performing the same missions with the same growing rate of skills as I had been receiving as a warrant the day before. The equal flight pay could eliminate a large and threatening morale problem in Colonel Putnam's proposal.

I might add that, in planning challenging career patterns for these NCOs, a provision for exceptional non-commissioned aviators to move into the warrant ranks in specialty fields such as maintenance, flight safety and flight instruction could be included.

A final thought that might be studied for its long-range feasibility would be to require prospective enlisted aviators to spend a two- or three-year tour assigned to a unit in their chosen branch before attending flight school. Wherever possible, these men could be utilized as crewmen or mechanics in the ships of the branch they might eventually be flying. This would serve a dual purpose. First, and this is important in view of the problems presented us by the all-volunteer Army, it would give the serviceman an opportunity to "try the Army out" before committing himself to a long enlistment as an aviator. It would also give commanders an opportunity to evaluate prospective aviators. As we all know, pre-performance testing cannot tell us everything we need to know about either a man or a machine. Secondly, the Army would reap immeasurable benefits in having aviators with an "up from the ranks" sort of orientation. The enlisted aviator would be a much better NCO and better oriented to missions by an early exposure to the people he is ultimately supporting, the ground units of his branch.

As a former Armor (Air Cavalry) officer, and as a citizen taxpayer, I strongly urge Armor and other branches to take a long look at Lieutenant Colonel Putnam's proposal. It merits careful consideration.

CHARLES A BELANGER
Chicago, Illinois

Headquarters Companies Require Strong Leaders

Dear Sir:

Congratulations to Captain Larry R. Jordan on his article, "You Too, HHC." Having commanded division headquarters companies in Asia and in Europe plus over two years' experience in my present job as Headquarters Commandant, HQ US Army Pacific, I can confirm that headquarters companies become a convenient dumping ground for officers relieved from other jobs. Upon one occasion, in Germany, during a tank battalion ATT (while serving as an umpire), I saw a battalion commander lose his job because of this practice. His headquarters let him down in the critical opening phase of the ATT. Almost all of the officers in the headquarters company were castoffs from the battalion line companies.

The job of battalion headquarters com-

pany commander should be rotated with other company commanders. The division headquarters company commander should be one of the best unit commanders in the division. The corps and army headquarters company commanders should have had prior experience at division or lower level.

I've found that to be a good headquarters company commander or a headquarters commandant one must realize that when one gives an order, it constitutes only three per cent toward having that order carried out on time and exactly as stated. The remaining 97 per cent is supervision.

I hope Captain Jordan will have a long and successful career, but would caution him to watch out for that MOS 2900 on his official file, or he may become a career headquarters commander type as some have done.

WILLIAM R. ELLIS
Lieutenant Colonel, Infantry
HQ USARPAC
APO San Francisco 96222

Farewell, Farewell!

Dear Sir:

It is a sad day for the ponderous prolificators of pompous prose. Those Army writers who sleep with a thesaurus under their pillows will forever remember and mourn the departure of the two great mothers of vernacular virtuosity about to disappear from the glossary of superfluous supernumeraries.

CONARC and CDC are headed for that great unabridged repository in the archives. Will the mundane ever know their equal? Probably not in this edition. So farewell, farewell, etc., etc., or is it . . . but not forgotten. No, we will never forget. Forget that great contribution to vocal vicissitudes, USACDC Pamphlet 310-9, a source of jewels and gems too rare to be passed without noting?

To start with, we find "ADOLPH," which the thirsty will be happy to know means, "Aerial Delivery of Liquid Provisions by Hose." We also like "BALTRAC," which the pamphlet states can stand for "Ballistable Tractor, Light and Medium"—sounds like a tractor fired from guns! And here are a couple of little gems, "CG" stands for "Center of Gravity," but "CGN" stands for "Commanding General's Notes." Just so our women members won't feel left out, we hasten to mention "DACOWITS" which CDC said can stand for, "Defense Advisory Committee on Women in the Services." As the reader may have noted, the list is almost endless, over 100 pages, but just to narrow the field, the writer will extract a few of the most memorable examples.

- JOVIAL—Jules Own Version of the International Algorithmic Language
- NEATO—Northeast Asia Treaty Organization
- PA—Probability of Arrival
- PUK—Pivotal Unknowables
- ROAR—Return of Army Returnables
- SANO—Special Assistant for Night Operations
- SATAN—Simulation for Assessment of Tactical Nuclear Weapons
- SATIRE—Semi-Automatic Technical Information Retrieval System
- SOURCE—Stimulation of Utilization, Resources, Cost and Efficiency
- TAILS—The Army Information Logistic System

After ROAR, SANO and TAILS, perhaps the reader will be willing to skip "TIPSY," but no recounting would be complete without that pinnacle of the lexiconer's nightmare "RAMMIT!" which, in case you couldn't guess, stands for "Reliability Maintenance Inability Machine Integrated Totals." Is it any wonder that CDC will live forever in the world of lexicography?

And, what of CONARC, that prominent proboscis on the promontory? Without doubt, no greater tribute to the redactive reactions of this repository exist, than those refined by the staff officers thereto assigned, to wit:

The First Indorsement Headquarters
The Rookery
The Eagle's Nest
The Eagle's Roost
The Chicken Roost
Where the Eagles Go to Die
The Land of a Thousand Sleeping Eagles
Where the Elephants Go to Die
The Land of a Thousand Sleeping Chickens
The Sea of Tranquility
Slumberland
The Old Colonel's Home
The Old Soldier's Home
The Sleeping Giant
The Retirement Headquarters
The End of the Road
The Do Nothing Headquarters
The Largest Bird Sanctuary East of the Mississippi River.

With this enduring tribute we close, Farewell, Godspeed, good-bye, and a new Roget's to you all!

ROBERT A. WEAVER
Lieutenant Colonel, Signal Corps
Indiana, Pennsylvania 15701

Tank Destroyer is Needed

Dear Sir:

Captain Timothy O'Neill's article "Tank Destroyer for the '70s" in the May-June issue was very informative, and I find myself in agreement with many of his ideas. Since today's Army in Europe no longer has the option of attacking on all fronts in the face of a tank-heavy enemy, we must hold most of our armored forces at divisional or higher echelons to preserve a counterattack force of sufficient strength. Also, a primary role of Armor is to break through the FEBA and destroy or disrupt as much of the enemy's rear as possible (engaging with other tanks only as necessary to complete the mission). Therefore, to keep such a force intact, mobile tank destroyers must be used "on the line."

Captain O'Neill's idea of using the *TOW*/TD has certain limitations, the major one being its vulnerability to the fire of heavy weapons. Also, in short range engagements, conventional shells are just as accurate and more practical than guided missiles. One solution would be to utilize a vehicle similar to the West German Jagdpanzer *Kanone*, carrying a 90mm gun. Weighing only 25.7 tons, it can maintain a road speed of over 40 miles per hour; and since it has no turret mechanism, the vehicle's reduced height makes it a more difficult target to hit. In this manner, using the *M60* chassis to utilize standard components, more armor can be added for better crew protection, or a weapon larger than the 105mm can be substituted. As for the type of ammunition used, the tank destroyer should be equipped with very high velocity Armor Piercing, Fin-Stabilized, Discarding Sabot shot ("arrow" projectiles) for the main gun, with *TOW* missiles attached either to the roof or sides of the fighting compartment.

Finally, a tank destroyer in this configuration can be used aggressively, even in a defensive role, thus maintaining that certain drive which characterizes Armor as the Arm of Decision.

JOHN FALLOCK
Cadet, ROTC
East Newark, New Jersey 07029

Another TD Concept

Dear Sir:

I follow with interest any letters and articles in *ARMOR* on the "Tank Destroyer for the '70s" idea.

Captain Timothy R. O'Neill's *TOW*/TD, as described in the May-June issue of *ARMOR*, would utilize proven components and is indeed a step in the right direction. General I. D. White, in the July-August *ARMOR* letters column, raises some valid questions however, especially concerning the application of the *TOW*/TD concept.

The *TOW*/TD's capabilities would seem to be limited to use by mechanized infantry and reconnaissance forces. (Is the *TOW*/TD air-droppable? But then we have the *Sheridan* with all-around capability.)

We have seen what the Germans accomplished with their *Sturmgeschutz/Jagdpanzer* units during World War II without proper air, ground or even logistical support. Consider what we could accomplish with our own TD units using similar vehicles, but with the proper air, ground and logistical support. The possibilities are obvious.

Now, let's take the "second step" and develop a real tank destroyer, utilizing proven *M48/M60* tank components, and by replacing the complete turret assembly with an armored fighting compartment affixed to the hull. Displace the driver's controls to the left

and mount the main armament just to the right of center. Because of the spacious fighting compartment, a choice of main armaments (105, 120, 152/155mm) could be used, thus enabling the vehicle to serve a number of purposes as required. As a TD, this vehicle should be used in conjunction with tanks by the armored division. It could be used by the mechanized division in the infantry-support role.

DAVID F. REITSMA
Hood River, Oregon 97031

SIMFIRE System Offers Greater Realism

Dear Sir:

Captain McKnight's Article on *SIMFIRE* in the May-June issue of *ARMOR* introduces a plausible solution to the problem of making armor unit training realistic. Our field training problems are geared to exercise the tactical capabilities of commanders. The crucial engagement of one tank against another is rarely considered and at best is decided by a "controller" who chooses the victor with little regard for the crew's proficiency.

Try to view the situation from the individual crewman's position. The tank commander and driver employ their vehicle largely as directed by the platoon leader who attempts to operate in mass as much as possible. There is little actual appreciation for defilade protection, keen observation, or the capabilities of the aggressor. The commander and driver derive some satisfaction from limited maneuver and employment in formations. The gunner's and loader's duties offer no satisfaction through accomplishment. Response to fire commands is limited and boring, with no positive conclusion to the sequence. A field problem of several days duration finds the gunner and loader going along for the ride and whenever possible rotating with the driver to relieve boredom.

The initiative of the platoon leader and his tank commanders can only go so far in making training realistic. What is needed is a device or system such as *SIMFIRE* that would force each tank crew to utilize all of its capabilities in one exercise. This being accomplished it could easily be determined if one tank is successful in an engagement, which in turn decides the success of the platoon, and in turn, possibly the company.

The level of overall proficiency an armor unit has obtained is not solely determined by how well it maneuvers, performs the basics of camouflage, rangecard preparation, etc. A tank unit may do these basics excellently but be worthless if the crews are unaccomplished in the fundamentals of actual employment. Only when each crew member is proficient in his duties and the crew can effectively operate together is a tank a fighting vehicle. A system such as *SIMFIRE* could determine the true number of combat ready crews in a tank unit. Unit proficiency could then be determined from the number of actual effective vehicles and how well the commander employs them.

JOHN F. KALB
Second Lieutenant, Armor
Fort Hood, Texas 76541

Please KISS

Dear Sir:

With reference to First Lieutenant Robert E. Laird's letter, "Army Publications Need Upgrading," (*ARMOR*, July-August) I have but one major disagreement. In my four years in the Air Force, then pre-medicine studies, subsequent Marine Corps OCS and as director of three small companies today, I have always enjoyed and employed the principle of KISS (Keep It Simple Stupid).

With the avalanche of modern technology and its often complex language/terminology, I believe it all the more imperative that team leaders and organizations employ the above principle whenever possible. If the theory and academics are made intelligible, descriptive, even colorful—and let us not forget a sense of humor—I for one do not fear a lack of professionalism in the practical applications.

JOHN CHARLES LEAVEY
Toronto, Canada

The Clutchless Doohickey

Man has been successfully to the moon and back, but soldiers remain in jeopardy of losing their collar brass or suffering from Service Ribbon Droop.

Why? Because at the most inappropriate times a dumb little fastener called a clutch, better known as a "doohickey," with no warning releases itself from your brightly polished insignia and falls to the floor.

Remember those many times when you had just buttoned yourself into starched khakis, careful not to bend over too much to prevent creases from appearing in the trousers. Suddenly the irritating sound of a doohickey hitting the floor reached your ears. @#!!*.

How about the time you walked onto the platform with everything you had earned brightly hung on your blouse, and as you were about to say "Good Morning, Gentlemen," the thundering sound of a doohickey hitting the stage filled the classroom.

Oh yes, the briefing for the two star that had been rehearsed uncountable times. As you confidently got up from the chair reflecting the epitome of professional grace, one end of your nametag dropped with abandon, pointing your proud name toward the planet Mars.

No rank from Private to General is immune to the Clutchless Doohickey, the General usually just has more of them.

Immediate action or field expedience has resulted in the use of pencil erasers, cigarette filters, chewing gum, etc., to hold insignia on. None of the methods, however, keep one safe from embarrassment, anger or plain irritation.

What is desperately needed is a design for a failsafe, reliable and maintenance-free doohickey that is guaranteed to "clutch" for a minimum of 30 years of service, after which one might accept the loss of a doohickey or two.

Ed

THE COMMANDER'S HATCH

Commencing with this edition, much of the detailed information customarily published in the "Commander's Update" column will appear elsewhere in *ARMOR*, entitled "Forging the Thunderbolt" and will continue to carry advance information on items of interest to you in the field. We solicit your advice concerning how best we might use "Forging the Thunderbolt" to keep you abreast, and hopefully, ahead of new developments.

This column, "The Commander's Hatch," is intended to be, as its title implies, a view from the top of the turret at the Home of Armor and Cavalry. In it we hope to take a longer view of trends, developments and outlooks that may indicate where we currently believe we may be headed. We hope at least some of its content will elicit responses from our readers and that the ensuing dialogue will benefit us all professionally.

ARMOR, your magazine, has moved. And the move to Fort Knox will ultimately terminate a rather venerable relationship—the 85-year-old marriage of our journal and the Armor Association. Your magazine will soon be contract published by the Armor School. While many in our ranks may regret the decision that prompted this divorce, we are determined here that *ARMOR* continue in the high tradition of its distinguished past as the foremost professional military publication of its kind in the United States. With that firm resolve assured, your continued support as contributors, subscribers and readers is urged. We need the forum *ARMOR* has traditionally provided. Stimulating, authoritative, sometimes provocative, but always professional, *ARMOR* has been an essential ingredient in the vitality of our branch. Let's keep it that way.

The Armor Association today is healthy. Many are apprehensive of its future without the magazine as a *raison d'etre*. But it seems to us that the bond that drew our predecessors together in the Cavalry Association is both as strong and as important today as it was 87 years ago; perhaps even more so. And so under the leadership of its distinguished president, General James H. Polk, our Association is seeking new, imaginative ways in which to serve our branch and our Army. We are convinced that the Association is viable without *ARMOR*, and, as with the magazine, we are resolved that it continue, strength unabated, to be the rallying point for our branch. And to this end your membership, active support, participation and leadership in finding fruitful avenues for the Association's energies are urged.

Dialogue. All commanders of tank and mechanized infantry battalions, cavalry squadrons, armor brigades, divisions, and cavalry regiments Army-wide will soon find in their morning mail, letters from the Armor Center Commander soliciting their advice and counsel concerning matters of considerable importance to our branch. We hope to follow on soon with a printed offering of some developmental work in training, and thereupon solicit specific comments from the aforementioned group. The purpose of the exercise is to establish a dialogue between the classroom and the field. We judge that our product is only as useful as you, the user, find it; that we can only satisfy our mission when we are responsive to you and your requirements. And so it is imperative that we talk to one another.

As part of this dialogue, we wish to alert you to an important Armor task that the Armor Center will be working on for the next year. This task, the preparation of a monograph delineating the story of the four dimensions of Armor in Vietnam, requires the active support of all. We solicit your support now, and ask that each of you prepare to make a meaningful written contribution to Armor's growing history.

These are great times for Armor. One just has to be bullish about the future. We have at hand the large legacy of a brilliant and dedicated group of professionals who were prophets in their own time; who somehow found the wisdom to generate the combined arms team idea in our Army, and the genius to organize, equip, deploy and fight armor as a combined arms team in World War II. Their fame is legion. But too long have we basked in their reflected glory. We must move ahead; hopefully with the fortitude and audacity of that small band of heroes whose exploits now look larger than life, and whose example we must somehow meet and match.

Commandant
US Army Armor School

Forging the Thunderbolt

This column will be a regular feature in future editions of *ARMOR*. It is specifically designed to keep you abreast of current on-going activities underway at the Armor School.

Armored Cavalry Organizational Study

Recently the Armor School completed an extensive study to determine the degree of effectiveness of both the armored cavalry regiment and the divisional armored cavalry squadron. Current organizational structure of these elements is the culmination of World War II experience. In light of new technology, reduced manpower and fiscal constraints, the study entitled EUROCAV, attempts to find a cavalry structure that will remain highly mobile and insure an optimum firepower-to-man ratio. The study methodology is based on a mid-intensity threat set in a European environment.

Two different armored cavalry regimental organizations, including modified armored cavalry squadrons, were considered in the study. In August 1973, the Armor School expanded the scope of the study to include an examination of mechanized and tank battalion scout platoons, and an examination of the two EUROCAV structures in other than the European environment. The final product of the study will be refined TOEs for the mech/armor battalion scout platoon, the armored cavalry regiment and the armored cavalry squadron to be used during field testing.

Tactical Aviation Employment Guide

Training Text 17-37-9, *Ground Commander's Guide to Employment of Attack Helicopter and Air Cavalry Units*, was recently published by the office of Combat and Training Developments. The new Ground Commander's Guide is a pocket size text specifically oriented toward the non-aviator—the commander on the ground. Based on the experience gained in CDEC experiments, MASSTER testing and troop tests, the manual presents basic doctrine, tactics and techniques on how to use Army tactical aviation units. The text, which will be used as an instructional supplement in the Armor School, has been distributed to all major Army commands, test directorates and tactical units in the field.

Gunnery Training Device

The Armor School has a new training device designed for use by all gunnery classes in the Weapons Department. The device is a table-mounted trainer consisting of an internally mounted laser, a 35mm slide projector, viewing screen, power control handle, appropriate sights, reticles and controls similar to those found in the main battle tank.

The training device provides the capabilities of selecting up to 80 different scenes and simulation of firing either the coaxially mounted machine gun or the main gun. The assistant instructor can also predetermine the strike of the simulated projectile, thus facilitating training in leading targets or in the application of special gunnery techniques. An additional random burst capability allows the student to work with the device on his own, by changing the strike of the laser to positions not anticipated by the student.

The training device will be used in the conduct-of-fire classes presented within the Weapons Department of the Armor School. An additional 15 trainers are being purchased for use by the Training Center's First Brigade.

New Weapons Department Home

Skidgel Hall, the new Weapons Department Training Facility, was dedicated 6 July 1973. The new facility accommodates the entire Weapons Department staff and instructors, and therefore eliminates the need for 14 buildings of World War II vintage which the department previously occupied. It is the largest instructional facility at Fort Knox, and second in total floor space only to Ireland Army Hospital.

The building is a two-story structure with instructional facilities located on the first floor and administrative area on the second floor. There are two 150-man classrooms, seven 75-man classrooms and six large open-spaced laboratories on the first floor. The classrooms are used for conferences and utilize the most modern and sophisticated audio-visual equipment. The laboratories contain turret trainers and Air Cavalry training aids, and are used to conduct performance exercises. The second floor houses the department staff and both officer and enlisted instructors.

Field Evaluation of Doctrinal Literature

One of the occasions when the field gets involved with the School development system is in review of doctrinal literature. This occurs in the latter stages of the literature preparation process, when the final draft manuscript is sent out for worldwide review. Comments from the field indicate however, that by the time the manual gets down to battalion level for comment, most of the allotted staffing time has elapsed and the staff officer only has two or three days to review and comment on the manual. To preclude this lack of adequate staffing time we will forward copies of doctrinal literature directly to armor units of battalion size and larger. This is not intended to usurp any of the responsibilities and prerogatives of the chain of command, as these will be information copies only. Formal tasking for review and comments will follow normal procedures of dissemination through division and higher commands.

Armored Vehicle Crewman's Helmet

An engineering test at Aberdeen Proving Ground, Maryland and a service test at Fort Knox noted deficiencies in the sound attenuation and bump protection of the *DH-132* Armored Vehicle Crewman's (AVC) Helment. These were corrected and confirmed by check test. At the Development Acceptance In-Process Review on 18 October 1972 the voting members concluded that the helmet was suitable for troop use and recommended that the Gentex *DH-132* helmet be classified as Standard. DA approved type classification of the helmet as standard on 2 November 1972, and a contract for 24,665 AVC helmets was signed on 18 April 1973. Production models of the AVC helmet will be available on 15 October 1973. First priority will be the training centers (Ft Bragg, Ft Bliss, Ft Hood, Ft Knox, Ft Lewis, and Ft Riley) with second priority to Europe.

The AVC *DH-132* helmet will be a free issue item and will come in three sizes—small, medium and large. The FSNs are 8415-094-2679; 8415-094-2691; and 8415-094-2684 respectively.

Test Activities

The Army Materiel Command's Armor and Engineer Board at Fort Knox is currently conducting three Initial Production Tests which have significant impact on the Armor Community: the *M60A1* with Add-On Stabilizer, the *M60A2* and the *GOER* family. The *GOER* cargo truck, fuel tanker and wrecker, scheduled for inclusion in Armor TOEs, are nearing completion of tests designed to verify correction of earlier problems. The *M60A2*, which is also being subjected to troop testing at Fort Hood, is undergoing a rigorous schedule of firing, cross-country mileage and simulated battlefield missions.

GOER Cargo Truck

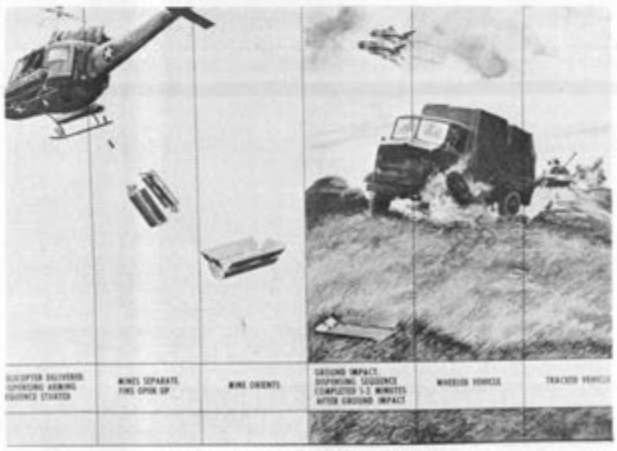
The test of the *M60A1*, designed to insure production quality, is also of interest because of pioneering techniques in evaluation of overall system effectiveness. The most notable measurement is its degree of improvement of operational/tactical effectiveness and armament responsiveness over the non-stabilized *M60A1*. This is made possible by use of the recently

M60A2

M60A1

acquired *SIMFIRE* laser hit/kill simulator (see *ARMOR*, May-June 1973), which provides precise measurement of kill-loss ratios in tightly controlled scenarios.

Also of interest to the Armor Community was the recent test of the *XM56* aerial scatterable mine system, which was evaluated in part by the instrumented scenario system being used with the *M60A1*. The air-delivered antitank minefield was tested to determine its advantages in disrupting enemy operations and supplementing hasty defense positions. This mine system will be used to rapidly create an antitank or antivehicle obstacle in any area desired and will be used by all troops having a mine-laying mission.



SEQUENCE OF OPERATIONS FOR XM56 MINE DISPERSING SUBSYSTEM

Aerial Scatterable Mine System

The diesel version of the *M88* recovery vehicle is also undergoing testing at the Armor and Engineer Board. Designated *M88E1*, the dieselized recovery vehicle is powered by a slightly modified *AVDS 1790-2A* engine which is mated to the existing transmission via a new torque converter. The auxiliary power unit and personnel heater have been replaced by diesel units. This conversion to diesel propulsion permits use of a single fuel and commonality of parts with supported vehicles. The Development Test II (Service Phase) of the *M88E1* started in April and is scheduled to end in October 1973. To date, 80 per cent of testing has been completed.

M88E1 Recovery Vehicle

Currently, the maintenance for the *M44* series 2½-ton truck is accomplished according to the established maintenance schedule. It is believed that vehicle maintenance time and costs can be reduced by applying maintenance on demand rather than on a regularly scheduled basis. The Maintenance Indicator Panel (*MIP-Mark II*) is designed to indicate the necessary maintenance requirements (e.g., when service is required or a malfunction has occurred) for the vehicle.

Maintenance Indicator Panel

The *MIP-Mark II* consists of a dashboard-mounted display panel with permanently mounted sensors. The sensors monitor and indicate malfunctions in the component areas of: fuel filter; oil filter; engine coolant level; air pressure system reservoir; air cleaner; air cleaner element; transmission temperature; transfer assembly temperature; engine oil level; engine oil pressure; fuel pressure; engine coolant temperature; generator and battery. Two *M44s* with the panel are being compared with one vehicle without for a total of 20,000 miles on each vehicle.

Tactics vs Technology:
The US Cavalry Experience

by George F. Hofmann

The opening paragraph of the chapter dealing with the tactical employment of cavalry in *The Science of War* (1905) by the noted British military historian, teacher and critic, Colonel G.F.R. Henderson, stated that one of the most interesting and momentous questions at the turn of the century was, "in what manner the cavalry of the twentieth century will differ from the 'hussars' and 'cuirassiers' of the nineteenth century." Henderson spelled out the effects of rapid firing weapons on the mounted charge; that, of the three combat arms, the cavalry had undergone the least change since the introduction of gunpowder, with the exception of Union and Confederate Cavalries, which struck a true balance between shock and dismounted tactics.

In fact, dismounted tactics of the US horse soldier extended back to the Revolutionary War. Writing on British military experiences during that war, J.W. Fortescue, author of the multivolume, *History of the British Army*, described a new method of utilizing mounted troops. The colonials leaned toward infantry mounted on horses as opposed to cavalry proper. But the British Cavalry failed to learn from their experience and succumbed to their love for display. On the other hand, the US horsemen continued to fight mounted and dismounted through the nineteenth century. Rarely used were the classical European cavalry tactics consisting of a well-executed charge blended with the cult of the "arme blanche." US Cavalrymen were conditioned by a young emerging nation with little military tradition and the expediency of meeting Indians on their fighting terms.

In 1877 the Canadian military historian, George T. Denison, in his award winning study, *A History of Cavalry*, criticized European cavalry for not learning the lessons of the Franco-Prussian War, where breech-loading rifles easily dispatched the mounted charge with the exception of von Bredow's Brigade at Vionvill-Mars-la-Tour. Denison argued for the adoption of modern firearms to replace the sword and lance.

The cavalry officers in Europe were strongly influenced by the traditions of Frederick the Great and Napoleon, which dictated that firearms were worthless with the shock tactics of the cavalry charge. Denison, like Henderson, argued that the upholders of "arme blanche" failed to learn from the teachings of the Civil War. The US Cavalry, as compared to its European counterpart, placed its main dependence on rifle fire,

and carried sabers and large caliber pistols for close combat. There were no lances, which were carried by practically all European cavalries, who held a fatal fascination for the charge "en masse." From the end of the Civil War to 1914, European military thought struggled over the proper role of cavalry. The radical doctrine of mobile firepower and dismounted tactics found expressions in England, France and Germany, but by 1914, the conservative traditional cavalry devotee was still dominant and resisted any attempt to discredit the doctrinaire concepts of the "arme blanche" and charge "en masse."

Not until World War I was underway did European cavalry learn the realities of having to fight dismounted. By then military technology far outstripped cavalry tactics, which gave way to rifle fire, machine guns, extended artillery ranges, field fortifications, airplanes and the new battlefield nemesis—the tank. It was quite apparent that the practicality of the "arme blanche" as a cavalry theory was in doubt. The shock value of horse cavalry ended on the fields of Western Europe.

Only a few troops of the four American Expeditionary Force Cavalry regiments experienced combat. The majority of the Cavalry units were assigned to remount duty.

Shortly after the war the Superior Board was convened by GHQ AEF to consider the lessons of the war as they affected organization and tactics of all US arms. The Board justified the doctrine of US Cavalry based upon the rifle as the principal weapon and indicated that the experience of the war "furnished but few reasons for change in our doctrine of the strategical employment of cavalry," which was to defeat the enemy's cavalry, break up his communications, provide flank and rear guard action, carry out pursuit and harassment and conduct reconnaissance. The Board concluded that it would be "improbable that the conditions of Northern France" would be reproduced in America and, as a result, US Cavalry would "find useful employment as in the past." Consideration was again given to possible operations in Mexico.

For the time being the horse was saved, but it was apparent to some officers that mechanization spelled the end of the horse soldier. In 1921 Major Bradford Chynoweth argued in *The Cavalry Journal* for cavalry tanks, claiming they offered a balance of mobility and firepower. Not until the 1st Cavalry Division maneuvers of 1927 was it clear that light, fast tanks might on occasion be useful to cavalry units. In 1928 the Cavalry added armored cars for reconnaissance and communication purposes to its equipment inventory. This was the beginning of augmented mechanization in the US Cavalry. But the conflict between mechanization and the horse continued. Major General Herbert B. Crosby, the Chief of Cavalry, declared that "the horse-soldier, like the foot-soldier, cannot be replaced by any machine as yet developed, nor is it anticipated that any such machine will be developed." Tanks, armored cars and airplanes, according to General Crosby, "supplement the efforts of the man and the horse but they do not replace them."

By 1930 there emerged two schools of thought among US Cavalry officers, those who hung tenaciously to the horse and those who sought a new mount. The conflict also brought into focus the meaning of the term "cavalry". The upholders of horse cavalry supported Webster's definition that cavalry was that military branch of service whose soldiers fought on horseback. The other faction, composed of younger and more far-sighted troopers, held that cavalry fought mounted and looked at mechanical vehicles to replace the horse.

One such far-sighted trooper was Major Robert W. Grow. Shortly after the war, while attending the Cavalry School, Grow came across a copy of Denison's *A History of Cavalry*. The last two chapters dealt with morale and command, and had quite an influence on the young cavalry officer. One sentence especially impressed the trooper: " . . . a cavalry general should be possessed of a strong inventive genius, and be self-reliant enough to strike out a new line and adopt reforms where he sees them necessary." During the 1920s Grow began to feel that the horse was doomed but that the role of cavalry would be more important in the future. He became convinced that the tactical principles of cavalry—firepower, mobility, daring, and maneuver—were right, but the problem was to de-

velop a mount that would execute the role of cavalry and fight.

In 1930 Grow accompanied Colonel Daniel Van Voorhis to Fort Eustis as G3 of the Mechanized Force, which was a composite of all arms of the Army. For the next 20 years Grow would become closely involved with Army mechanization and the Armored Force.

The experience with the Mechanized Force convinced Van Voorhis and Grow that the employment of a mechanized force and cavalry were similar; that cavalry through the centuries nourished mental mobility, a characteristic not possessed by other arms. In October 1931 the Mechanized Force was disbanded, and the responsibility for mechanization and motorization fell to the various arms. Thus to the Chief of Cavalry, Guy V. Henry, fell the responsibility of developing mechanization in the cavalry.

At first a Detachment of Mechanized Cavalry Regiment was established at Fort Knox and existed for eight months. On 1 July 1932, a change of designation of the mechanized detachment to Detachment, 1st Cavalry (Mechanized) constituted a commitment of major significance: the substitution of mechanical mounts for horses in an existing cavalry regiment. Colonel Van Voorhis commanded the unit and Major Grow became Executive Officer and S3. Lieutenant

Robert W. Grow as a Cavalry Captain

Colonel Adna R. Chaffee, who had joined the Mechanized Force shortly before it was disbanded, became a special duty officer at Post Headquarters. On 16 January 1933 another reorganization occurred and the Detachment gave way to the 1st Cavalry (Mechanized).

The consolidation of the regiment gave Van Voorhis and his staff the opportunity to establish some form of organization. By the Spring of 1934 the 1st Cavalry (Mechanized) included the Armored Car Troop for long distance reconnaissance; the Scout Troop for close-in reconnaissance and security; the assaulting or striking squadron of combat cars (tanks); and their holding unit, the Machine Gun Troop. The communications were carried out largely by a simple code system over voice radio supplemented by motorcycles, automobiles and hand signals.

The days at Fort Knox provided the mechanized unit, which was isolated from the rest of the cavalry arm, the opportunity to test the employment of a self-contained mechanized fighting force. During this period two German general staff officers visited Fort Knox and discussed the concepts of mechanized warfare with various officers. Commenting on the German reaction, Grow claimed that the 1st Cavalry was ahead of the Germans in tactical employment of mechanized units but with the rise of Hitler they had a better opportunity to develop and put the concepts into practical application on a large scale. It was quite evident to those pioneers at Fort Knox that the evolution of mechanization was under way, but cavalrymen as a whole failed to recognize the significance.

In May 1934 at Fort Riley two series of important maneuvers occurred. In the first series, the 1st Cavalry (Mechanized) under the command of Lieutenant Colonel Adna R. Chaffee was pitted against the horse regiments, and in the second series, the mechanized and horse regiments operated together against an outlined opponent. The results were revealing and produced a divergence of opinion.

The 1st Cavalry (Mechanized) report on the maneuvers concluded that during the exercises, mechanized cavalry in general "carried out all normal cavalry missions, such as reconnaissance, counter-reconnaissance, delaying actions, seizing and holding positions, cooperation on the flanks of battle, and defensive and offensive combat." But most important, the maneuvers established that mechanized units greatly extended the sphere of cavalry action. On the negative side, the mechanized unit proved least effective in counter-reconnaissance and defensive actions.

The report on the maneuvers by the Academic Division of the Cavalry School outlined tactical considerations which mechanized cavalry may employ for independent action. These included delaying action, seizing and temporarily holding critical terrain, general reconnaissance, limited defensive action, offensive combat, flanking operations and pursuit. Outlining the unfavorable characteristics for independent action, the Academic Division listed the problems of night operations and the lack of dismounted firepower. The same tactical problems occurred when the mechanized cavalry operated with the horse cavalry.

The report also acknowledged that mechanized cavalry operating with horse cavalry could provide an assaulting unit of great force over suitable terrain and increase the zone of action. The report in one of its

recommendations suggested that the 1st Cavalry (Mechanized) again participate in more extended maneuvers and exercises with the Cavalry School Brigade horse units in the near future.

The recommendations from the Academic Division clearly indicated that a serious attempt was being made to marry the machine with the horse. Major General Leon B. Kromer, the new Chief of Cavalry, commenting on the Riley maneuvers before the students at the Army War College, spoke favorably and optimistically of future combinations of horsed and mechanized cavalry. Speaking on future wars General Kromer stated that "as advancing tanks absorb hostile fire and enable the following infantrymen to cover the ground to the enemy with lessened casualties, so will the combat cars (of mechanized cavalry) under like conditions assist the horsed cavalry in closing with an enemy."

The Infantry Board, which also witnessed the Fort Riley maneuvers, concluded that the Cavalry did not fully appreciate the cross-country ability of track laying vehicles, nor did they take full advantage of that ability during the maneuvers. The Infantry Board also stated that "the power of the mechanized cavalry regiment for independent action is overestimated by many." In conclusion, the Board concurred with the Chief of Cavalry that "the principle role of mechanized cavalry will probably be to supplement the action of horsed cavalry in performing recognized cavalry missions."

What the reports did not stress was one important fact; that for the first time, a fully self-contained mechanized unit with largely substitute equipment was given the job of carrying out the cavalry role in direct confrontation with horse cavalry. At this point it was realized by a number of horsemen that mechanized cavalry could carry out the cavalry role and fight independently. As Grow would later state, "it was obvious to most of us that we had the right picture: a fully contained combat unit. It needed changes and equipment but all the elements were there."

The 1st Cavalry (Mechanized) returned to Fort Knox and in the Fall of 1934 was provided with a mechanized battalion of two firing batteries equipped with 75mm guns. By the end of the year the Cavalry had plans for mechanizing another regiment (13th Cavalry) and combining it with the 1st Cavalry (Mechanized) to form the 7th Cavalry Brigade.

According to General Kromer there was no common understanding of cavalry, as there was of infantry and field artillery. The Chief of Cavalry admitted that "in no era of history has science placed at the disposal of military men such possibilities for increasing mobility ....." When discussing the fundamental tactical principles of cavalry the Chief accepted the augmentation of horse cavalry through mechanization but emphasized that horse soldiers, by taking advantage of terrain and making efficient use of 50 caliber antitank weapons, could successfully engage mechanized units.

In October 1937 Brigadier General Van Voorhis, who was Commanding General of the 7th Cavalry Brigade (Mechanized), presented a lecture on mechanization at the Army War College and acknowledged the "wide divergence of opinion within our Army as to a suitable mission for American mechanization." General Van Voorhis further stated that the strength

General Chaffee confers with subordinates during winter training at Fort Knox, 1939-40.

of mechanized units lies in the power of maneuver and firepower therefore requiring prompt and quick decisions, "and to develop this faculty one of the greatest problems which confronts us is making the mobility of the mind equal the mobility of the machine."

The War Department policies in 1938 governing mechanization and the tactical employment of mechanized units did not share the perception of General Van Voorhis. The policy stated that "the greatest value of mechanized cavalry lies in its ability to conduct distant reconnaissance and to create an initial success ... which will form a basis for further action or exploitation by the higher commander." Influenced by the reports from Spain, the War Department acknowledged that the combat arms will fight in their traditional roles. General Malin Craig, Chief of Staff and a former Chief of Cavalry, strongly felt that the bulk of military operations "must be carried out by

the traditional arms: That well-trained infantry and artillery form the bulk of armies. Air and mechanized troops are valuable auxiliaries."

In March 1938 General Kromer retired at a critical time. The Chief had finally accepted the mechanization of the Cavalry arm and according to Grow (assigned to the Office of the Chief of Cavalry between 1936-40) "could have made Cavalry the mechanized arm had he been supported by the General Staff and senior officers in his own branch."

During General Kromer's tenure as Chief, Grow drafted a proposed organization of a mechanized cavalry division. General Van Voorhis naturally agreed but, because of possible financial restriction and problems of control, preferred a two regiment mechanized cavalry division. On the other hand General Kromer supported a three regiment division, but General Van Voorhis would not change his position on the two regiment composition. Brigadier General Walter Krueger, Chief of the War Plans Division, opposed the proposed mechanized cavalry division because of its anticipated size, and reminded the Chief of Cavalry that the mission of cavalry was reconnaissance and security. Apparently at this time Van Voorhis began to have doubts about complete cavalry mechanization and thought about a separate mechanized force.

By the end of 1938 it was apparent that the fate of Cavalry as a combat arm was in jeopardy. The conflict was over the proper mission of cavalry—auxiliary roles or battle roles. The latter role found strong support from the Fort Knox forces, while the Army in general supported the auxiliary role, which placed the Cavalry as adjuncts to the other combat arms. Only strong Cavalry leadership and perception on the future role of mechanization could have saved the combat arm from extinction. The new Chief of Cavalry, Major General John K. Herr, supported the establishment of a mechanized cavalry division, but not at the expense of converting horse units. Since Army expansion was not forthcoming and budget limitations existed, it was highly unlikely that an additional mechanized cavalry unit would have been created.

Another problem which came to the surface was the question of the location of a mechanized cavalry school. Grow held the view that there should be one school, a cavalry school at Fort Riley. But Van Voorhis and Chaffee opposed a mechanized school at Riley, and gave endorsement to a mechanized school at Fort Knox. The two school development, according to Grow, had the potential of developing a strong wedge in establishing a separate combat arm.

Two weeks after the disasterous charge of the Pomorska Cavalry Brigade (mounted lancers) against German panzers in Poland, General Herr stated that "it seems obvious that the machine can not eliminate the horse . . . " General Chaffee, on the other hand, called for the rapid expansion of mechanized cavalry at the expense of existing horse cavalry.

On 25 May 1940, the Chief of Cavalry, responding to the German blitzkrieg in Western Europe, agreed to sacrifice the majority of the horse units but then changed his mind and refused to mechanize. He could not free himself from the mesmerizing influence of the horse. Mechanization passed the Chief of Cavalry by; the forces at Fort Knox finally prevailed and won the acceptance of a new combat arm, the Armored Force.

Perhaps if General Herr had taken a strong position for complete mechanization of the Cavalry there would not have been an Armored Force but instead Mechanized Cavalry Divisions. General Herr was very bitter over the demise of the Cavalry and did not hide his resentment over the loss of the horse soldiers.

What was the lesson of this historical example? First, it is apparent that history repeats itself. Seldom do tactics and organization keep pace with improvements in technology. The spirit of cavalry—mobility, firepower, daring and maneuver—is still valid today, but it is the nature of technology and its effect on tactics and organization which is changing. The inertia of a conservative military class will continue to exist, but the military leader who tactically integrates the spirit of cavalry to changes in weapon technology will prevail.

GEORGE F. HOFFMANN, US Army veteran and historian, graduated from Xavier University with a Master of Education degree and from the University of Cincinnati with a Master of Arts in American History, concentrating on military and diplomatic history. Currently he is preparing a book length history of the 6th Armored Division.

The Grow quotes and references used in this article are taken from "Ten Lean Years," an unpublished manuscript based on General Grow's personal diaries. The references for other primary sources used in the article may be obtained by writing to the author c/o ARMOR *Magazine.*

Satory IV

by Christopher F. Foss

The Fourth Annual Military Equipment Exhibition held at Satory, near Paris, France from 4 to 8 June demonstrated to the world that France is determined to maintain the lead in the export of equipment for land combat. Displayed at the Exhibition were virtually all weapons used in land combat, including tanks, self-propelled guns, armored cars, mechanized infantry combat vehicles, trucks, mortars, towed artillery pieces, missiles and rockets, small arms, engineer equipment, and of course, radio and communications equipment.

The Exhibition consisted of a static display of vehicles, exhibition halls with equipment displayed and a cinema showing films of the equipment in action. In the afternoon, there were demonstrations of the vehicles on the road and across rough country. Amphibious vehicles also showed their capabilities in the larger water areas available at Satory. Satory is the home of AMC (Atelier de Construction d'Issy-les-Mouli-neaux), where French armored vehicles are designed and their prototypes built.

Represented at the Exhibition were 150 companies such as Panhard, Saviem, Berliet, Hotchkiss-Brandt and the French Government's own GIAT (Groupement Industriel des Armements Terrestres) and its 11 industrial centers. The GIAT has increased its exports considerably over the past few years. For example, in 1967 its exports were worth 100 million francs; in 1972 this figure had risen to 750 million francs. In addition, such companies as Panhard export most of the vehicles they build. Thus, new developments in the French armored vehicle industry are of great interest to the professional armor soldier worldwide.

THE AMX30 FAMILY

The *AMX30* is now firmly established in the French Army and export orders have been received from eight countries. The basic vehicle weighs 39.5 tons and has a road speed of 40 miles per hour; it has a crew of four and is armed with a 105mm gun. A 12.7mm or 20mm gun is mounted to the left of the main armament and can be elevated independently; a 7.62mm machine gun is mounted in the commander's cupola. At the rear of the turret are four smoke dischargers. Apart from the basic *AMX30* there are now the following variations in production or under test:

AMX30S—This is in production for a customer in the Middle East (reported to be Libya and/or Saudi Arabia) and has the following modifications to the basic vehicle: sand guards fitted to either side of the track; an engine which develops only 620hp at 2,400rpm; a modified gearbox (slight decrease in gearbox ratios); and air conditioning equipment fitted. Its performance is similar to that of the basic *AMX30*, except that it has a maximum speed of 37 miles per hour.

AMX30 Antiaircraft Tank—This vehicle is at present undergoing trials. It is basically an *AMX30* hull fitted with the complete turret, guns and radar system fitted to the earlier *AMX13* antiaircraft tank. It is armed with two 30mm guns and four smoke dischargers. Two spare gun barrels are carried.

Roland Weapon System—This was one of the newer vehicles at Satory. It consists of an *AMX30* upon which a new superstructure has been built complete with a turret with two Roland missiles and the radar system. Eight additional missiles are carried inside the vehicle. This carrier has a crew of three and weighs 36 tons.

155mm GCT Self-Propelled Gun—This is an *AMX30* chassis upon which has been mounted a new turret bearing a 155mm gun. The gun has a range of 23,500 meters and has an automatic loading system enabling it to fire eight rounds per minute. The gun has a traverse of 360 degrees and an elevation of minus five to plus 66 degrees. A total of 42 rounds of 155mm ammunition is carried. A 7.62mm machine gun and four smoke dischargers are also fitted. The vehicle uses a crew of four and weighs 45 tons. It is now undergoing trials and a few pre-production models are being built.

AMX30 Recovery Vehicle—This model has now been in production for several years and is designed not only to carry out repairs to other vehicles but also to carry out engineer work. It is fitted with a winch, a crane and a dozer blade at the front. The vehicle car-

The AMX30 Antiaircraft Tank is fitted with a turret armed with two 30mm guns and the DR-VC-IA radar. The guns have an effective range of 3,000 meters and can fire 650 rounds per minute per barrel.

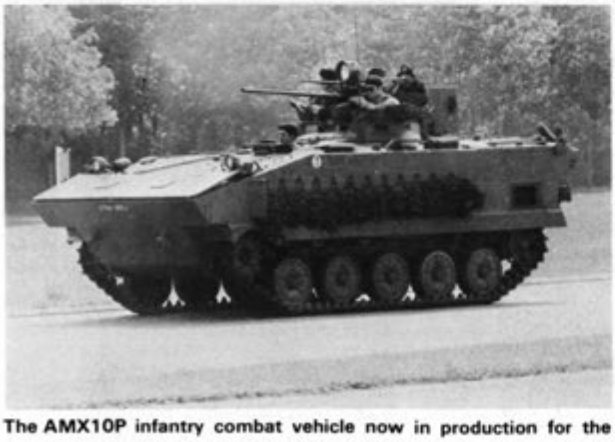
The 155mm GCT Self-Propelled Gun is mounted on an AMX30 chassis. It is currently undergoing test by the French Army.

The AMX30 Recovery Vehicle now in service with the French Army.

AMX30 fitted with Pluton tactical nuclear weapon system.

American M20 utility vehicle fitted with AML90 turret mounting a 90mm gun, a 7.62mm machine gun and smoke dischargers.

The AMX VCI, which is now being replaced by the AMX10P.



The AMX10P infantry combat vehicle now in production for the French Army.

ries a crew of four men, weighs 40 tons and is armed with a 7.62mm machine gun and smoke dischargers. It can also be fitted with a snorkel.

Pluton Weapon System—This vehicle will enter service with the French Army in 1974. The *Pluton* missile weighs 5,000 pounds, is 25 feet long and has a range of 120 kilometers. The missile system is fitted to an *AMX30* chassis. A Berliet 6 x 6 truck contains the *IRIS 35M* computer for data processing.

AMX30 Bridgelayer—This was not shown at Satory, although it is now entering service with the French Army. It consists of an *AMX30* chassis that can launch and recover a 72-foot long, Class 50 bridge. It has a crew of three and weighs 47 tons complete with bridge.

OLDER VEHICLES

Many countries have vehicles in service with out of date guns, and thus the French have determined that there is a market in supplying new guns for old tanks. The GIAT showed examples of the *M47* fitted with the 105mm gun of the *AMX30* and the *M20* armored car fitted with the turret of the *AML90* armed with a 90mm gun.

A more interesting vehicle was the modified *M24 Chaffee*. This vehicle had been fitted with a new 90mm gun, a 12.7mm coaxial machine gun and a 12.7mm antiaircraft machine gun. The engine has been replaced with a GMC *6V-53T* diesel complete with a new Allison *MT650* transmission. The bow machine gun has been blanked off. Optional equipment includes new tracks, new shock absorbers, new radios, infrared or passive night driving and fighting equipment and a laser rangefinder. The *Chaffee* work was carried out by the Thune-Eureka A/S of Oslo, Norway. The Norwegian Army may have their *M24s* rebuilt with the 90mm guns and other modifications.

LIGHT TANKS AND AMX13 VEHICLES

Creusot-Loire had some of the *AMX13* family on display, including the basic *AMX13* tank, the *AMX13* recovery vehicle and the *AMX VCI*. The emphasis was on more modern vehicles, however.

The *AMX10P* is now in production for the French Army. The basic version weighs 15 1/2 tons and has a crew of 11, consisting of a commander, a driver and nine infantrymen. It is armed with a turret-mounted 20mm cannon, a 7.62mm machine gun and smoke dischargers. The vehicle is fully amphibious, being propelled in water by water jets. It is fitted with an NBC system and passive night driving and fighting equip-

ment. It has a maximum road speed of 40 miles per hour.

Also shown was the *AMX10PC* command vehicle version, which has similar performance to the *AMX10P* but carries a crew of six and is fitted with additional radios, tables, generator, etc. One of the prototypes of the mortar-towing vehicles of the series, designated the *AMX10TM*, was also shown. It has a crew of six and tows the Hotchkiss-Brandt 120mm *MO-120-RT-61* mortar. Special racks inside the vehicle hold 60 rounds of mortar ammunition. The vehicle is also fitted with a turret mounting a 20mm cannon and a 7.62mm machine gun.

Shown on the test track was the *AMX10RC*, which uses many of the components of the *AMX10P* series. The *AMX10RC* has six road wheels, a weight of 16 1/2 tons and a maximum road speed of 50 miles per hour. It is armed with a turret-mounted 105mm gun as well as a 7.62mm machine gun and four smoke dischargers. Special features are its NBC system, laser rangefinder and passive night fighting and driving equipment (light intensification). It uses a crew of four, is fully amphibious and is propelled in the water by water jets, a capability it demonstrated favorably when put through the paces of the amphibious demonstration. The *AMX10RC* is currently under test and could possibly replace the heavy *EBR* armored car or the *AMX13* light tank presently used by the French Army.

PANHARD

Panhard has now sold over 4,000 of their *AML* and *M3* armored vehicles in the last ten years, the majority of these having been exported to a total of 30 countries. Panhard showed the complete *AML* and *M3* series, as well as a mockup of the new *M8*, the prototype of the new *M4* and also released details on the entire *M4*, *M6* and *M8* series.

AMLs—Models displayed included the familiar *AML90* (90mm gun), *AML S530* (two 20mm cannons), *AML60-20* (60mm mortar and 20mm gun), *AML60-7* (60mm mortar and 7.62mm machine guns), *AML30* (30mm cannon and 7.62mm machine guns) and of course the many versions of the highly successful *M3 VTT*(APC). There were two new versions of the *M3* shown. The first was fitted with a *T20* turret which mounted the 20mm *H621* cannon. The second was the *M3 VDA*, which was shown at Satory for the first time. It consists of the basic *M3* hull on which has been fitted a new turret mounting two 20mm guns, a radar system, a *P56T* Galileo computer sight and stabilizers on the outside of the vehicle. It exists as a pro-

The AMX10P mounts a 20mm cannon and a 7.62mm machine gun.

The AMX10RC uses AMX10P components and is armed with a 105mm gun.

The antiaircraft Panhard M3 VDA features two 20mm guns.

The AML90's 90mm gun has a practical range of 1,500 meters.

The AML90 with flotation kit extended.

The AML90 equipped with the Panhard-designed flotation kit.

The AML30 is armed with a turret-mounted 30mm cannon and carries 200 rounds of ammunition for the gun.

The AML60-7 mounts a 60mm breech-loaded mortar.

totype and is clearly superior to the earlier Panhard *S530* antiaircraft vehicle. The radar of the *M3 VDA* has a detection range of 1,000 to 8,000 meters.

M4—Panhard has been working on a new series of armored vehicles for some time. The first of these was the demonstration *M2*, an 8 x 8 vehicle shown at Satory in 1971. There are three other vehicles in the new series: the 4 x 4 *M4*, the 6 x 6 *M6* shown in model form this year and the 8 x 8 *M8* shown in full scale mockup.

The *M4* is powered by a Berliet diesel engine, which gives the vehicle a maximum road speed of 50 miles per hour and a range of over 600 miles. It is fully amphibious, being propelled in the water by two propellers. It is fitted with hydropneumatic suspension, enabling the height of the vehicle to be adjusted and can also be fitted with an NBC system.

M6—The *M6* was shown in model form only. It is amphibious and is fitted with hydropneumatic suspension. The vehicle's top speed is 50 miles per hour, the range is over 600 miles and weight is 13 tons fully loaded.

M8—This was shown as a full scale mockup fitted with a 105mm turret-mounted gun. Loaded weight is 14 tons, maximum road speed is 59 miles per hour and the range is over 600 miles. The *M8* features hydropneumatic suspension and a top water speed of five miles per hour.

The vehicles in this series have many interchangeable components, including engines, gearboxes, suspensions and electrical systems. They can all be fitted with a wide range of armament up to 90mm (*M4* and *M6*) and 105mm (*M8*). They can also be powered by a wide variety of engines.

The *M4* was developed by Panhard under a program laid down by the French Army under the direction of the DTAT and is in competition with the Saviem 4 x 4 and 6 x 6 vehicles. Both the Panhard and Saviem vehicles may be used not only as combat vehicles, but also as APCs, load carriers, command posts, etc. They are also similar to the 4 x 4 and 6 x 6 vehicles under development for the West German Army.

SAVIEM

Saviem released details of two new "Front Armored Vehicles," one, a 4 x 4 and the other, a 6 x 6. Both have the same dimensions and the same mechanical components. They are powered by 240hp diesels, which give them a road speed of 56 miles per hour and a range of over 600 miles. Other features are similar to those of the Panhard vehicles and include amphibious capability, front mounted winch and an NBC system.

Although not shown at Satory, the Saviem 6 x 6 vehicle is currently undergoing testing by the French Army.

Various roles are envisioned, including load carrier, armored personnel carrier, missile vehicle, ambulance and recovery vehicle. A wide range of armament may be fitted, including a 20mm cannon. These vehicles are currently under test.

BERLIET VEHICLES

The Berliet *VXB170* (previously known as the *BL12* when the prototype was built in 1968), has been under test and has now entered production for the French Gendarmerie in the version known as the antiriot vehicle. It is similar in appearance to the American *Commando* vehicle. The *VXB* has four-wheel drive and is powered by a Berliet 8-cylinder diesel engine, which gives it a maximum road speed of 53 miles per hour and a range of over 450 miles. It can carry 12 men under armor. The antiriot model is fitted with an obstacle clearing blade and can also be fitted with various types of armament.

Orders for other variations of the *VXB170* are expected, as negotiations are underway with several countries. Three other versions of the *VXB* have been developed:

- The *VTT* armored personnel carrier, armed with various turrets or mounts with 7.62mm machine guns, as well as command, cargo and ambulance versions.
- The *VRL* light reconnaissance vehicle, armed with various turrets or mounts including 12.7mm machine guns and a 20mm cannon. A command vehicle version and an antitank vehicle mounting guided missiles will also be available.
- The *VLC* light combat vehicle, armed with turrets mounting various combinations of 7.62mm, 20mm, 12.7mm, 60mm mortar, and one version with the 90mm turret as fitted to the *AML90*.

The four wheel drive Berliet VXB was designed primarily to fill the requirement for an antiriot vehicle for the French Police.

EMD developed RAPACE radar system fitted to an AMX30.

The Crotale SAM system is now in production for the French Air Force.

The 21 rockets of the RAP14 system have a range of nearly 10 miles.

OTHER ITEMS

Among other interesting systems displayed at Satory was the Electronique Marcel Dassault *RAPACE* radar mounted on an *AMX30*. This system carries out surveillance through 120 degrees, 5,000 meters deep and provides both visual and audible warnings of targets. It can also align the turret to the target. CNIM showed their *RAPI4* multiple rocket system, along with a scale model of the system mounted on an *AMX* chassis. Also shown was a 6 x 6 truck mounting two *Exocet MM38* missiles complete in their launching boxes; a system intended for coastal defense. The *ACRA* 142mm missile, which is fired from a gun, was exhibited, although there have been reports that development of this system has been slowed. The missile has a total weight of 57 pounds and a range of over 3,000 meters.

CONCLUSIONS

It can easily be seen from this brief outline of Satory 1973 that the armored vehicle development projects currently underway in France are many and varied. As has been asked before, how many of them will ultimately see production? Regardless of the answer to that question, it must be said that France is making a determined effort to sell her Army equipment and is succeeding in many parts of the world.

CHRISTOPHER F. FOSS from Portsmouth, England has been interested in modern armored fighting vehicles for some years. His first book, *Armoured Fighting Vehicles of the World*, was published in 1971. He has contributed articles on AFVs to *Defence, Military Modelling* and *Armies and Weapons* and has authored a number of articles in the famous *Profile* series. Another book by Mr. Foss, *Jane's Pocket Book of Modern Armoured Vehicles*, is due out in February.

Unit Awards for Vietnam Service

The following is a listing of unit awards for Armor and Cavalry units for service in the Republic of Vietnam. These units are listed in Department of the Army Pamphlet 672-3 dated January 1973, and are in addition to those units listed in the September-October 1972 issue of ARMOR.

PRESIDENTIAL UNIT CITATION

Unit	*General Orders*	*Period or Date of Action*
1st Bn, 5th Cav	DA 12, dtd 1968	2-3 Oct 1966
3d Bn, 5th Cav	DA 16, dtd 1972	10-21 May 1969
3d Sqdn, 5th Cav	DA 3, dtd 1969	19-20 Mar 1967
1st Bn, 7th Cav	DA 70, dtd 1969	9 Aug 65-13 Nov 65, 17 Nov 65-19 May 69
Trp F, 8th Cav	DA 60, dtd 1969	31 Jan-31 Mar 1969

VALOROUS UNIT AWARD

Trp C, 3d Sqdn, 4th Cav	DA 39, dtd 1970	1 Jan-22 Feb 1969
2d Bn, 8th Cav	DA 39, dtd 1970	6 May 1969
Trp C, 1st Sqdn, 9th Cav	DA 37, dtd 1970	1-31 Oct 1967
Trp D, 1st Sqdn, 9th Cav	DA 37, dtd 1970	1-31 Oct 1967
Trp A, 3d Sqdn, 17th Cav	DA 1, dtd 1969	31 Jan-25 Mar 1966

VIETNAMESE CROSS OF GALLANTRY WITH PALM

HHT, 7th Sqdn, 1st Cav	DA 52, dtd 1971	15 Dec 1969-10 Oct 1970
Trp A, 1st Sqdn, 4th Cav	DA 21, dtd 1969	12 Jul 1965-16 Oct 1968
Trp C, 3d Sqdn, 4th Cav	DA 43, dtd 1970	1 Jan-31 Mar 1969
2d Bn, 7th Cav	DA 59, dtd 1969	9 Aug 1965-19 May 1969
2d Sqdn, 17th Cav	DA 24, dtd 1972	2 Dec 1969-8 Jan 1971

Attack Helicopter Survivability

by Captain Woody W. Turnbow

For the tanker or mechanized infantryman who slams grill doors, bangs hatches and gets a bigger hammer, there exists an inherent misgiving about the reliability and survivability of any piece of equipment marked with the self-confessing "NO STEP." There, thinks the man who will fight protected by armor plate, is a toy. There is a machine that cannot stand the test of combat.

Current doctrine, however, assigns attack helicopters the mission to "Disrupt and/or destroy enemy forces through the use of mobile firepower." How can this be? How can a piece of machinery, so fragile that its operators and maintainers must be careful where they step, possibly survive in a combat environment?

The answer to that question has evolved from tested concepts. The fact that the helicopter can survive has been concluded from field experiments in both the United States and Europe. Attack helicopters will survive by using most of the same survival techniques used by tankers and infantrymen. Armor and Infantry long ago learned that they could dramatically increase their chances of survival on the battlefield by working together for mutual support. Attack helicopter doctrine states: "Attack helicopter missions are not normally accomplished alone; helicopters will be integrated into the combined arms team with other maneuver elements." This integration is initiated at the very beginning of the planning phase. Attack helicopters are not merely called forward when a need or opportunity for them arises; they are assigned missions by the overall commander as a part of his normal operations order.

Tanks, infantry, artillery and attack helicopters will work together to destroy enemy elements that include a variety of threat weapons. They will add to the enemy's confusion by increasing the number of targets facing him and by slowing his reaction time, since the existence of more than one type of threat requires a division of attention and an establishment of priorities. Ground fighting elements will of course add their fires to help suppress the enemy's antihelicopter capability. The air defense umbrella provided by supporting and organic air defense units accompanying the tanks and infantry will assist attack helicopter units in the area to survive against high performance aircraft. Friendly artillery will be used to degrade the enemy's surveillance capability.

Another technique used by tankers and infantrymen to increase their survivability is standoff from

enemy guns. The infantry, using indirect fires and recently developed antitank weapons, strives to defeat the enemy well forward of friendly positions. Tankers appreciate the *M60* series of tanks for having a greater effective range than comparable threat tanks. Attack helicopters also use standoff. Current weaponry allows attack helicopters to engage targets at ranges up to 3,000 meters. Weapons development programs are currently oriented toward finding ways to increase the standoff range even further.

Perhaps the most important technique for survival of attack helicopters is the concept known as "Nap-of-the-Earth" (NOE) flight. This foreign sounding term closely parallels the concept of the infantryman who "keeps down." It describes one of the reasons tank designers strive for vehicles with lower silhouettes. The infantryman who stays low, the tank with a low profile and the attack helicopter flying nap-of-the-earth are all presenting a smaller target profile which is more difficult to detect and hit.

An attack helicopter will approach its target, not at high speed, but slow enough to be able to weave between trees. The pilot will generally try to fly with only the top half of the aircraft exposed above the treetops. By remaining that low, the helicopters will operate in the same ground environment as tanks and infantrymen. By flying at NOE altitude, an attack helicopter not only decreases the time an enemy has to engage it, but also negates much of the enemy's surveillance and fire control radar because the helicopter is low enough to be lost in ground clutter.

Nap-of-the-earth also includes the concept known to tankers and infantrymen as "fire and movement." Attack helicopters would no more fly across a battlefield without deviation or variation than an infantry unit would march en masse, standing upright, to their objective.

The tank unit moves forward taking advantage of cover and concealment offered by the terrain. An attack helicopter unit similarly moves from one defilade position to another defilade position until it is close enough to engage the enemy. The tank unit, when enemy fire or degree of danger requires, moves by bounds, leaving a portion of the unit in an overwatch role. The attack helicopter unit also moves by bounds when forced by similar circumstances. This is why the ability to hover for long periods of time is one of the more important design requirements for attack helicopters. This allows helicopters to remain hidden behind a hill until they pop up, engage and then, like tanks, back off and move to a different firing position. The attack helicopter can be armed with *TOW* missiles, miniguns and 2.75-inch rockets with various warheads. The portion of the unit in

overwatch can therefore provide more immediately responsive firepower for the portion of the unit moving forward than could a tank unit of similar size.

Techniques of survival against air attack are also included in the nap-of-the-earth concept. The infantryman or tanker tries to prevent enemy aircraft from observing him by the use of camouflage. An attack helicopter, painted a subdued color and flying against a background of vegetation, is extremely difficult for the crew of a high performance aircraft to see. Because the helicopter is flying among the trees, it will cast practically no shadow. A fighter pilot, flying above the battlefield, will find the top view of an attack helicopter thousands of feet below small indeed. If seen and engaged by aircraft, the attack helicopter, like the tank, will not remain motionless or continue to move in a straight line. It will zig and zag in an attempt to dodge out of the target area and to induce target fixation in the attacking pilot. The attack helicopter is not likely to be boxed in by tight terrain as is the tank.

Attack helicopters using low intensity, Vietnam-type tactics, appear to many of us non-aviators to be as suicidal as today's infantry advancing on line like Frederick's Grenadiers, or modern tanks rolling steadily and unhaltingly forward like the "armored landships" of Cambrai. Attack helicopters will survive on today's battlefield, and will do so by using techniques familiar to the tanker and infantryman. Techniques for attack helicopter survival evolve in the same manner and for the same reasons as techniques for ground unit survival. The fragile, "no step" machine is a great step forward in our capability to wage mobile warfare and a great partner to the other maneuver elements.

CAPTAIN WOODY W. TURNBOW was commissioned in 1965 as a Distinguished Military Graduate from Midwestern University. Captain Turnbow completed the Armor Officer Advanced Course in 1969 and has served with tank battalions in both CONUS and USAREUR. He is currently assigned to Combat and Training Developments, US Army Armor School.

Actions and Orders

by Cadet Craig L. Smith

No one will question that today's Army officer must be a master of the profession of arms. Such mastery is the crux of the problem of training and leading a volunteer army, and it is therefore our obligation to provide training to help each young officer become the master which the profession demands.

But is today's training fulfilling this goal? Perhaps not as effectively as possible. Although the need was long ago established to train officers who possess the ability to make split-second decisions in fast-moving combat situations, our training frequently falls short for lack of an effective means of simulating such situations. Our tactical classroom problems are typically dry and limited. I'm sure we've all experienced the stultifying techniques of "tissue issue" where the students are presented with one printed tactical problem after another. Situation after situation, solution after solution—doesn't it seem to be endless, tiring and meaningless after the limited objective of the program has been attained?

The true need of junior officers or NCOs, after receiving their basic foundation in tactics, is practical application of their newly gained knowledge. Further, this practical application, in addition to cementing in place the principles and facts transferred by the lecture or conference technique, should be interesting for both instructor and student. Interesting training is the key to meaningful training and long-lasting, practical retention of techniques demanded of the modern officer. But what is the solution? Just as it is easy to lose true appreciation for a problem, so too is it easy to conceive a solution that is much more complicated than need be.

In designing the training system, the characteristics of the system must first be identified. A good system must be:

- Simple—to insure that it is the necessary techniques which are taught and not complicated system rules which result in a loss of training time.
- Mobile—to facilitate ease of use for the instructor and permit rapid changes of situations in order to maintain the interest of the student.
- Realistic—to present a true representation of the difficulties facing the junior leader in combat, especially in the aspects of noise, confusion, and multiple demands made on him. In short, it must be a system which requires a minimum amount of training time and money but at the same time yields a maximum amount of actual learning. Sound ideal? This system has been found.

It is a simple, cheap, effective and highly interesting system which appeals to the imagination and in-

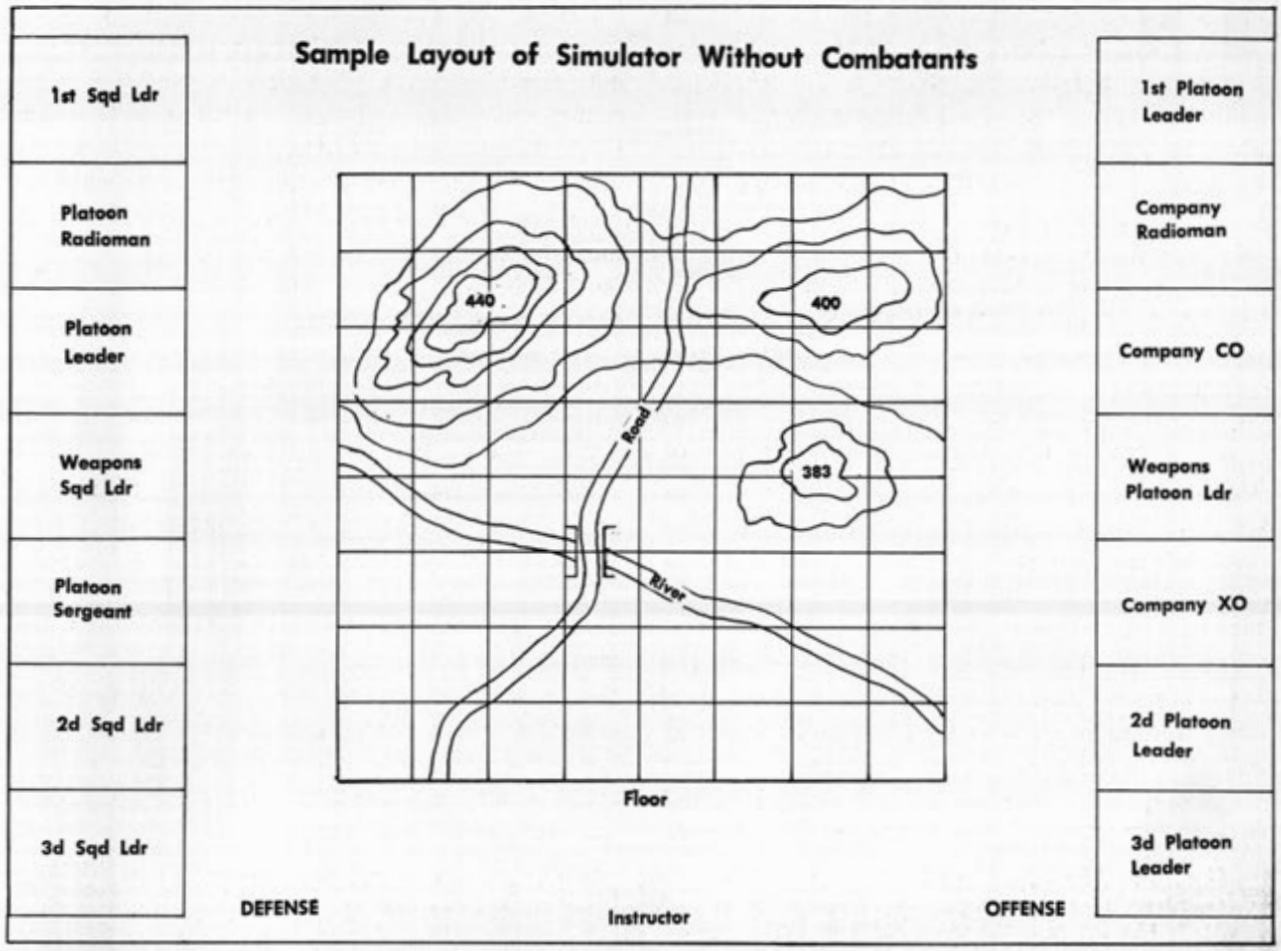
genuity of the young leader. Such a system was refined and adopted by the New Mexico Military Institute at Roswell, New Mexico, three years ago. The school has maintained one of the country's highest Honor Military School Ratings for the past 63 years. It has an active ROTC program of 150 cadets and a corps of approximately 1,000 cadets.

Colonel George B. Robbins, the Professor of Military Science, named the simulator "Actions and Orders." Colonel Robbins and Major Roy Cole (Retired) were of great assistance in the modification and adoption of this system. The hundred-plus cadets in MS IV, who experienced both the age-old program of paper-situations-followed-by-paper-solutions in MS III and the new program in the last quarter of their MS IV course, unanimously agreed that the latter was more realistic, more interesting and tougher. But most important, they felt they had learned more in those three weeks than in any other course.

The concept of this system is what is important. The actual problem can and should change, but the idea of seeing formations and exactly what results from tactical movement is the main teaching goal.

In our system, a company commander and his staff (or any other size unit) were visually separated by dividers so they could not see each other. However, everyone could see a simple terrain board or floor layout. This layout was a blowup of a map with foam rubber mountains and other moveable terrain features. Its mobility allowed complete freedom for the instructor to easily prepare any situation in which he or the class was interested. The staff members' only means of communication was via radio or wired telephones; this necessitated correct radio/telephone procedure and added to the realism.

The instructor acted as an observer and conducted a critique (with the class) after its completion. He was able to monitor all conversations. A public address system was used to produce loud distracting battle sounds and to simulate the influx of conversations into the unit's communications net. In this manner, the radio/telephone operator had to distinguish messages for his unit from messages for other units. The operator would then relay those messages to the Commander. It was then the Commander's job to choose his course of action and issue timely and responsive orders to various subordinate elements. This involved having the operator send a message to one or more of his platoon leaders and then insuring that the mission was carried out. Then the platoon leader had to decide



how he would accomplish the mission (formations to be used, concept of operation and action upon completion of the mission).

As the students developed proficiency, they practiced calling for tactical air or artillery. The key was to practice, greeting different situations with timely and correct orders administered by a competent and functional staff. Added to this were the distraction of a dark room pulsating with a strobe light and the realism of seeing orders carried out on the terrain board. The result was an atmosphere of tension and trial similar to combat. Such other refinements as pitting units against each other would further add to the realism and competitiveness.

This is the atmosphere most students are begging for. It was achieved through a system which has proved to be highly conducive to learning and, just as importantly, it puts into perspective all the skills related to conducting tactical operations. The hundred-plus cadets who tried this system were enthusiastically impressed with the amount of practical learning achieved in only a short span of minutes.

Simulators such as these can be set up anywhere, anytime. They could be part of a regular training program; they could be used as a game in dayrooms to re-enact historical battles or to predict the outcome of future encounters; or they could be used in a commander's competition program between his units at a field day. There are as many uses for this handy yet deceptively effective system as you, the master in a profession of arms and the trainer of your unit, can imagine.

CADET CRAIG LINDSLEY SMITH graduated from the New Mexico Military Institute and was named to *Who's Who in American High Schools*. He entered the US Military Academy in 1971.

A New Look at Aerial Reconnaissance

by Captains James R. Riser & Gale D. Nellans

An airmobile division is being used to exploit an enemy force that has been maneuvered into retrograde operations. Since rough terrain and man-made obstacles have made pursuit by mechanized infantry difficult, observation helicopters have been dispatched to determine where the enemy line of defense will be prepared. Flying at high speed close to the earth, an *OH58 Kiowa* sights small protrusions in a road and a partially camouflaged concrete box in nearby brush.

The helicopter, equipped with a television video camera, takes a low oblique, panoramic shot of the area where the enemy defensive positions are sighted and slowly pans over the road containing the unidentified protrusions. Utilizing the video camera's plug-in microphone the operator narrates what he observes.

Viewing the tape ten kilometers behind the FEBA less than 30 minutes later, the ground commander calls upon intelligence specialists to assist in identifying the objects in the road. Order-of-battle equipment specialists and unattended ground sensor personnel determine that the protrusions are seismic monitors of vehicular traffic.

The positive use of television video tape (TVT) in tactical operations is illustrated clearly by examples such as this. TVT coverage of the battlefield can assist the ground commander in evaluating enemy and topographic conditions accurately and quickly.

Upon return from Vietnam, the 101st Airborne Division initiated a video tape training program in an effort to provide a near real-time information gathering capability for command post and field training exercises. Due to its versatility, the Sony *AVC-3400* Video Camera was selected. The system essentially consists of a video recorder and playback unit (with the capability to stop the image on the monitor screen), video camera and a nine-inch black and white television monitor. It is a self-contained, portable video system with automatically regulated light and sound sensitivity, a zoom lens and a highly sensitive microphone enabling the recording of both audio and video simultaneously. The equipment can be operated from an electrical outlet or the self-contained rechargeable battery pack that provides for 45 minutes of continuous operation.

The video tape system was obtained in November 1972 from the Combat Arms Training Board at Fort Benning, Georgia and was tested by the G2 Air Section in conjunction with the Surveillance Platoon, 163rd Aviation Company, 101st Aviation Group. The

camera has been utilized in an *OH58 Kiowa* observation helicopter flying at an altitude of 200 feet at approximately 90 miles per hour. TVT provides a wide angle video shot of the area under reconnaissance and the camera has a zoom capability which can provide greater detail of specific point targets under evaluation.

Testing revealed that approximately 12 to 16 hours of combined ground and air training was required for an operator to become proficient with the video camera. Camera operator training included filming route and area reconnaissance missions, reconnaissance of landing zones, motor march coverage and detection of overhead camouflage. Each of these missions requires different filming techniques and the varied training proved a valuable aid in the writing of the program of instruction for the system.

Units request TVT support by submitting a completed TAC Form 246 (Joint Tactical Air Reconnaissance/Surveillance Request) to include the location of the post-mission briefing, to the division G2 air. If the mission is approved, the surveillance platoon receives the tasking directly from the G2 air and the requesting unit is informed of the time over target. Immediately after the mission is flown the aircraft sets down at the designated briefing location, where the ground commander and his staff receive a visual reconnaissance of the objective area, taken only minutes before, without having to leave the assembly area.

TVT has been used extensively on several division field training exercises as a supplement to existing aerial reconnaissance assets. During Quick Eagle III, a combined brigade FTX/division CPX, TVT was utilized to aid in the planning of company- and battalion-sized airmobile assaults. Inadequate topographic map coverage of several recently acquired off-post training areas resulted in TVT being heavily relied upon.

In one particular instance, an infantry battalion was given the mission to air assault into an objective for which the only available maps were very poor quality black and white reproductions. TVT proved invaluable in the planning of the mission, particularly in locating helicopter landing zones. After the operation, ground commanders expressed their appreciation of the timeliness, effectiveness and flexibility of the video tape system. Many of the assault helicopter pilots in-

The videotaped briefing can be presented to the ground commander and his staff moments after it is filmed, thus allowing immediate response to rapidly developing situations.

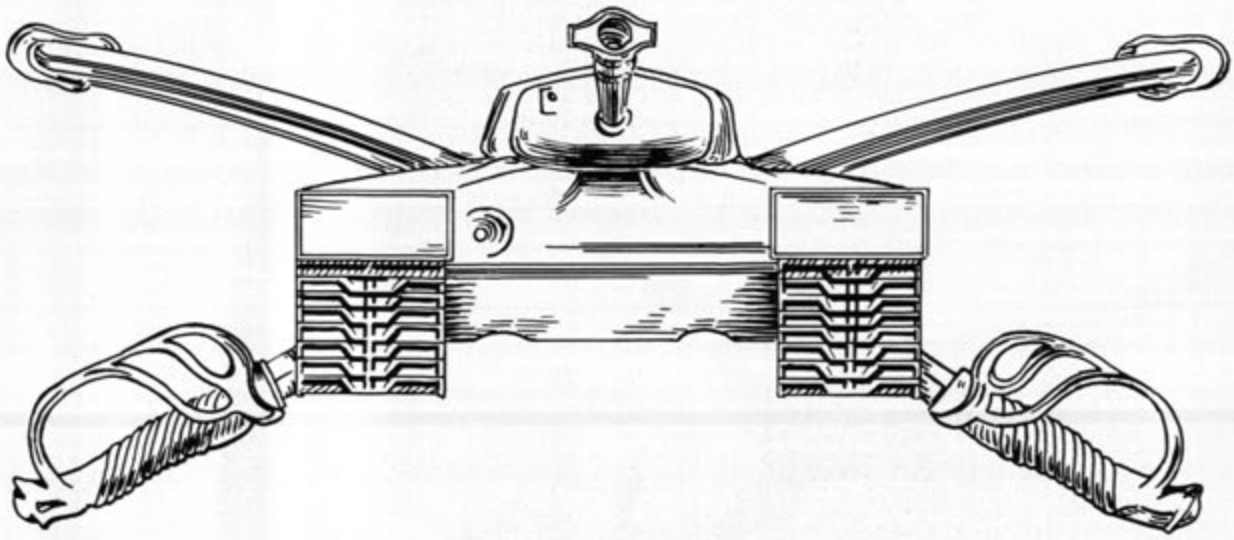
volved stated that TVT enabled them to locate their checkpoints for low-level approaches much more easily.

TVT has generated many favorable comments within the 101st Airborne Division. Its use in an aerial reconnaissance role provides the ground commander with a new dimension in intelligence, lending a familiarity of the area of operations that was previously unattainable. As its motto states, the 101st Airborne Division has a "rendezvous with destiny;" perhaps TVT will play an important role in the keeping of that rendezvous.

CAPTAIN JAMES R. RISER received his commission in 1967 upon graduation from the ROTC program at Pennsylvania Military College. He is a graduate of the Air Force Combat Air-Ground School, the Military Intelligence Officer Advanced Course and the Ranger Course. Captain Riser is currently assigned as Assistant G2 Air, 101st Airborne Division.

CAPTAIN GALE D. NELLANS holds a master's degree from Purdue University. His military schooling includes the Aerial Surveillance and Reconnaissance School and the Counter Guerrilla Warfare School. In Vietnam he served as a district advisor, instructor and staff officer. He is now a platoon leader of the Imagery Interpretation Platoon, 101st Airborne Division.

The Armor Heritage



The following descriptions refer to the art on pages 32 and 33, drawn by Phil Sheridan.

Tank Corps—1917
This front view of a French tank was not liked by the Tank Corps members and was soon replaced. Worn from December 1917 until the Spring of 1918.

Tank Corps—1918
The second, and the more common World War I tank insignia, it was officially proposed in February 1918 and approved on 14 April 1918.

Tank Corps—World War I
An unofficial insignia made in England for US Tank Corps members during World War I.

Infantry (Tanks)—1921
When the Tank Corps was abolished, those early tankers assigned to the Infantry were authorized this insignia from October 1921 to February 1923.

Armor
The present insignia was authorized in 1951 and consists of the front view of the M26 tank superimposed upon the old Cavalry insignia.

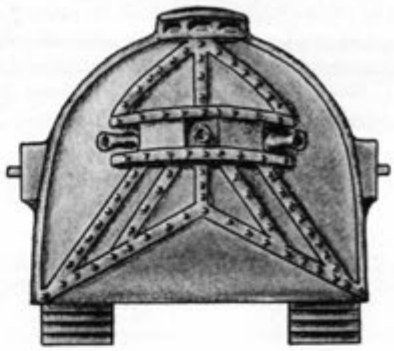
Tank Destroyer Forces
Prescribed 13 March 1943, this collar insignia was officially rescinded in November 1947, as the branch had been abolished.

Infantry (Tanks)—1923
First worn in 1923, the official authorization was withdrawn 10 years later although men wore this insignia unofficially as late as 1943.

Armored Force
Established by War Department Circular Number 56, 25 February 1942, it was replaced by the current Armor insignia.

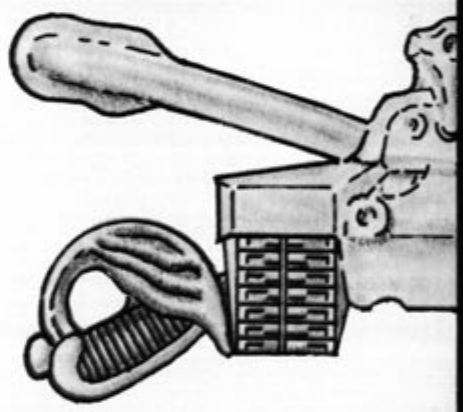
The Cavalry portion of "The Armor Heritage" will appear in the November-December issue of ARMOR.

The Armor

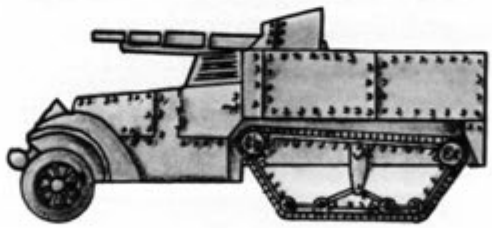


TANK CORPS—1917

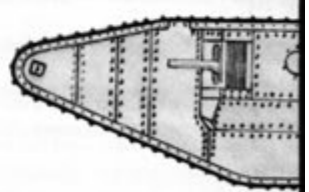
WWI TANKS (UNOFFICIAL)



PRE

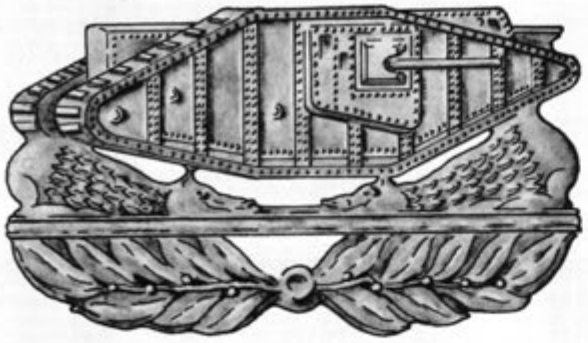


TANK DESTROYER FORCES



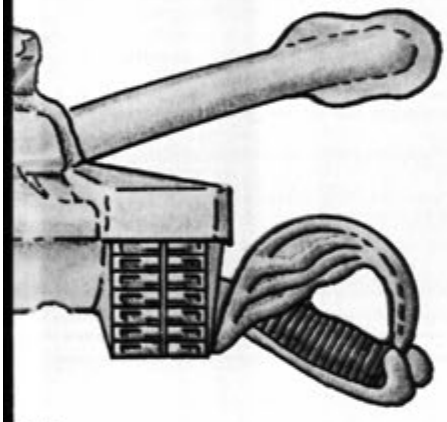
ARMORE

Heritage

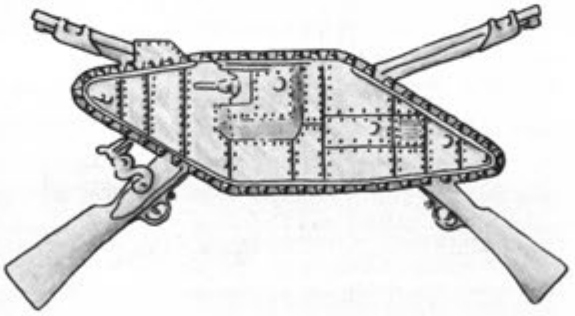


TANK CORPS—1918

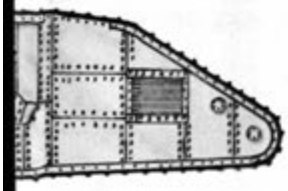
INFANTRY (TANKS)—1921



ENT

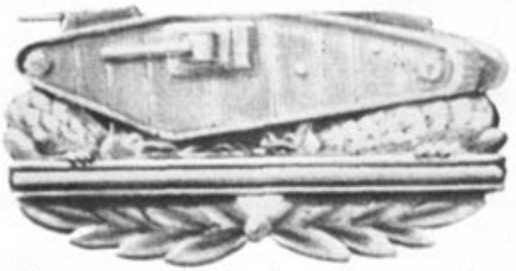


INFANTRY (TANKS)—1923



FORCE

A Day in the Life of a Tanker



Following is an excerpt from the personal account of Sergeant Carl Rosenhagen, Company "C" 301st Heavy Tank Corps. Mr. Rosenhagen is now a resident of Dayton, Ohio and an active member of the World Wars Tank Corps Association.

Our thanks to Mr. David A. Pyle, another World War I tank sergeant, for providing us Sergeant Rosenhagen's account, along with other interesting papers.

Friday evening, it was still daylight; three of our boys from the 13th Crew, "C" Company took a walk through the woods where our tanks were hidden and camouflaged. In a little while they came back, one of them carrying a black cat that they had come upon in the woods. Jokingly, the remarks were, "Well, a 'black cat' on a Friday night for the 13th Crew sure portended good luck for the 13th Crew."

The next day we started out to take our place in the battle lineup. We stopped at a tank park or repair center, and the English mechanics mounted large fascines, or large octagon squirrel cages about eight feet in height, made of very heavy timbers and metal facings, on our 29-foot-long tanks being used in this engagement. These tanks could not cross the 12-foot by 12-foot antitank trench the Germans had at the point where we were to go over the top. The 35-foot tanks could not be stopped by any trench; but the 29-foot tanks would nose down into the trench or against the other side of the trench and there was no way for it to crawl out. By dropping this large fascine or squirrel cage into the trench, the front end of the tank would not get below ground level, and could get across any trench.

I drove the tank after we left the repair center, and after dark we got into a couple of bad mustard gas attacks. It was sure a hardship driving with a mask on. The manual labor required to drive a tank over rough territory with the heat of the motor and confined space inside made you perspire profusely. With both hands and feet working, it was next to impossible to keep the nose clips from slipping off, and the gas burned terribly around your face and eyes; and to breathe through the mouthpiece and see where you were going was really brutal punishment. It was impossible for the driver not to breathe in part of the gas.

We finally came to a halt to load up with gasoline, or petrol as it was called. Aviation gas was used and it was passed in two-gallon tins from man to man down the line to the back end of the tank. It was put in the outside armored fuel tanks which were divided into three compartments. The refueling area was just a short distance from the front lines and was well-illuminated by German flares. Artillery and machine gun fire was heavy, causing several deaths and injuries in our battalion. After refueling we were briefed; then it was time to go.

Zero Hour was 5:55 a.m. The artillery of both sides sounded as though the end of the world was here, and the chattering of machine guns sounded like thousands of crickets. We had a hermaphrodite tank, that is, machine guns on one side and a six-pounder Hotchkiss gun on the left side. I had turned the driving over to Sergeant Barnard of Kokomo, Indiana, and was in the observation tower standing on a platform over the transmission taking care of anything that might happen and picking out targets for the gunners. Before we came to the antitank trench, we ran into about 20 machine guns corralled together, firing against the right side of the tank. The whole inside of the tank seemed to be on fire from the sparks of the armor-piercing bullets around the gun slots; and through the other slots our gunners had to see their targets. It was so intense that one gunner laid back away from his gun, and I jumped down and took his place. Private Adams, "Wooden Shoe Adams" as he was called, from Indianapolis, I believe, looked up from the gun he was on, and his face was a mass of blood. Seeing we could not cope with these machine guns, I pounded on the motor cowling, which was how we attracted the driver's attention, and put up my fist for a left turn. He must have had his window or flap wide open, because he turned to the right, directly into those machine guns, and was badly hit. They hollered for first aid, and I jumped to him and said, "For God's sake, Barney, keep on driving until we get through this mess." And brave Barney did, turning the tank around where we were able to knock out the machine guns. We got Barney out of the driver's seat, and I resumed driving. This happened, I believe, in the first 30 or 40 minutes, or shortly after 6 a.m. We were in a bad fog and smoke screen, and I remember seeing a fascine on one of our tanks get knocked off or fly to pieces from a direct hit, and I thought, "Those boys are in a bad way for that antitank trench."

Our six-pounder gun was manned by Corporal Gagnon and Private Evans. They had made short work of the machine gun nest, firing caseshot out of the muzzle of the gun at the Germans who were not over 30 or 40 feet away from us.

The artillery fire on both sides was terrific, and from

September 1918

what some English officers told us, it was the worst since the 1st Battle of the Somme, which was the world's greatest artillery engagement on record up until then.

By this time the smoke screen and the fog had worsened. There were some dummy tanks made of papermâché and wood, which had donkies inside them. These were used to draw antitank fire so that our observers could spot enemy antitank guns. We had come to the antitank trench, and I removed the nuts on the chains holding the fascine and teetered the tank plenty, but the chains snagged somehere, and the fascine would not drop. I headed into the trench at an angle and we bogged into the side of the trench. I worked and worked, stabbing into the side of the trench, while dirt and stones and everything just kept rolling on top, making it seem that getting the tank out would be an impossible job. The German infantry made it even tougher on our right side without a six-pounder gun there. Being down in the trench, I guess, saved us from their artillery.

Having torn so much of the top of the trench away, we finally came out on a bias. I swear we were tilted sideways at a 45 degree angle. I was looking for the tank to turn over on its side, but we lurched out. How, I don't know. Before we had gotten to the antitank trench, we had trouble with our own infantrymen of the American 27th Division who were running in front of our tank, cutting us off from helping them against the German machine guns. Smoke and fog was so heavy now, we could not even see any of our infantry anymore; but, as we had a timetable to get to Le Catelet, we continued on.

We got to the outskirts of Le Catelet, and it was lighter here, but we saw no supporting infantry. We stopped at the edge of the crossroads, and the boys opened the doors to let some fresh air in. Lieutenant Dunning and I were looking at the map we had spread between us, when I looked up and, in the gloom, I could make out some men running toward us. I thought they might be our own men, and when Lieutenant Dunning grabbed the machine gun between us, I grabbed his hand saying, "Don't fire—they are Englishmen." But I was mistaken. When Dunning went to fire the gun, it jammed; not even a shot came out. A German pushed his rifle into the front window on Dunning's side, and shot a piece out of his nostril. I dropped into gear and gave the tank a leap, as Dunning used his Colt Automatic. I had, in the meantime, hollered to the men in the back to close the doors. We had a little commotion for a few minutes, swinging the tank around to get the Germans off the side machine guns so that our six-pounder could get to them. Our six-pounder crew was really good and made short work of them.

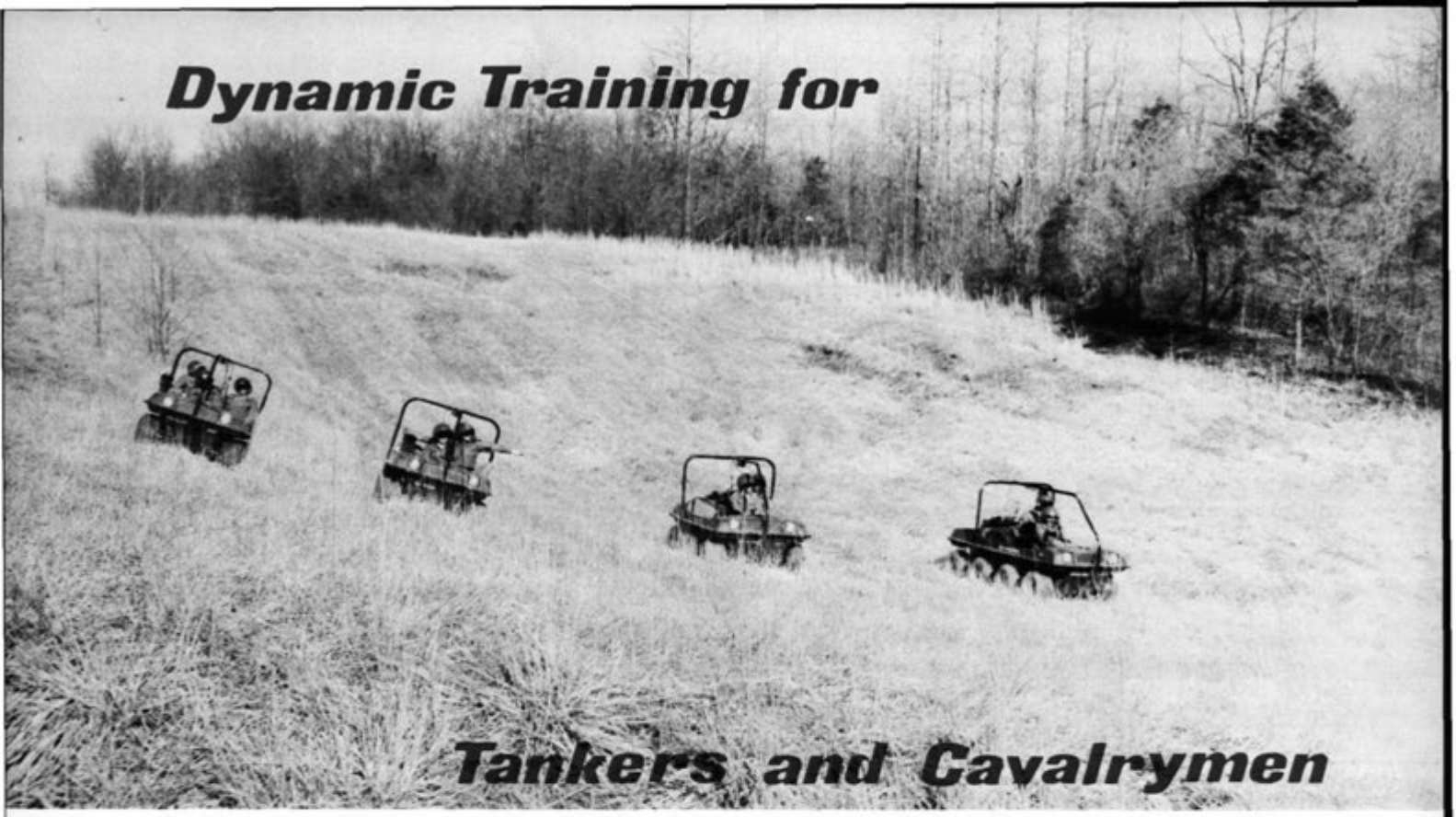
After this we drove the reverse direction from the way we had come by compass, which had been about northeast; we were now taking a southwesterly course, hoping and watching for our infantry. We came to an abrupt ending of the terrain and thought it must be a stream or a gully. Visibility was nil, and after talking with Lieutenant Dunning, I teetered the tank; and that good old fascine we had cussed dropped off. I remember seeing it drop straight down, how far I don't know. We backed up from there and followed along the bank until the terrain changed.

Then a shell hit us on the right rear and tore a hole in our back end, busting our main water line running up to the motor. In no time, steam filled the tank so bad I don't know how any of the rear crew lived through it. We had our front windows open, gasping for air. We came to the bottom of a ridge 10 or 15 feet high and tried to climb it, but the motor conked and knocked so bad and would not pull anything, even in the lowest gear. I shoved the gear into reverse and backed onto the level. There were two terrific explosions outside of the tank, and then a shell hit us on top. I believe the motor casing saved us; we had a big plop inside, and we caught fire. The whole tank seemed to be on fire. I climbed through Lieutenant Dunning's seat, the only way I could get out, and came along the motor, by the six-pounder, over the transmission; then I saw the lower door open on the right side and I slid out. In the smoke and fog I could see two of our boys running away. I hollered to them and they came back. Lieutenant Dunning got his face burned getting through and out of the tank. I was lucky, as I kept my head buried in my arms and only lost some excess hair off my head.

The four of us ran for some small trenches we could see ahead. German machine guns were firing a barrage, and we laid there concealed by the fog and smoke, seeing only the fire coming out the barrels of the machine guns. We crawled on, and suddenly, about 11 o'clock that morning, the fog and smoke screen started to lift. We jumped into some shell holes. We could then make out our tank about 800 or 900 feet away. Lieutenant Dunning and I were in the same shell hole, not very big. Didn't see the other two boys until later that night. Our tank was burning and blowing up all afternoon with smoke belching out. German planes were flying right over our heads, but they must not have seen us lying below. I think the Germans figured we never got out of the tank.

For this particular action on the Hindenburg Line, 29 September 1918, Lieutenant Dunning received the British Military Cross, and Sergeant Rosenhagen received the British Military Medal.

Dynamic Training for Tankers and Cavalrymen



by First Lieutenant Stephen N. Magyera

While the Armor Community continues to discuss future development of the new Main Battle Tank and the Armored Reconnaissance Scout Vehicle, we need not be idle in the development of new approaches to training proficiency. Are we to face the threat of massed enemy tank formations with limited copy sophisticated weapons systems (super weapons) alone? As the Germans discovered in 1944 and 1945, technical advantage is not enough.

Consider the proven adage, "A tank is only as good as its crew." As mounted soldiers, we will have an important and ongoing training requirement to fulfill. As such requirements multiply, so will the need for proficiency and flexibility in these roles. Financial and ecological considerations will increasingly limit our time on tracks in maneuver areas. In essence, tomorrow's trooper will have to do more with less.

But how? Current fiscal austerity and limited access to maneuver areas have severely limited training for mechanized troopers. The Gorman Board for Dynamic Training may have a viable solution to some of our problems—the Combat Vehicle Simulator (CVS). Currently undergoing troop testing coordinated through the Armor School, and military potential testing at the Armor and Engineer Board at Fort Knox, the CVS can be an effective training aid to troopers worldwide. Prior to fielding, such matters as maintenance, reliability and system effectiveness must be considered and tested. But the CVS, *as a concept*, should bear close scrutiny.

Company grade officers should familiarize themselves with the concept and plan for the possible fielding of such a device in the near future. Assuming that a suitable CVS will be identified and fielded, a creative and open-minded commander can make maximum use of the CVS as a training aid to augment tank and cavalry training in battle drill, scouting, mounted land navigation, and command and control exercises. While currently envisioned as a leader trainer, imaginative commanders may find countless uses for the CVS.

The CVS currently being tested is an eight-wheel, low ground pressure, all-terrain vehicle (ATV) capable of admirable cross-country performance. Currently commercially produced and sold for use by sportsmen, this lightweight ATV may provide a practical and enjoyable CVS. While older soldiers may recall using jeeps in the CVS role, the key points to consider which preclude use of the jeep in this role are economy, cross-country mobility and low ground pressure—the latter to limit maneuver damage. Current plans specify contractor maintenance to be provided for the CVS, so this training aid will not present an additional maintenance burden to your unit. Whatever form the final CVS takes, it will incorporate these advantages.

As any imaginative leader can see, the applications of such a vehicle as a trainer for tankers and cavalrymen are virtually limitless. While not a substitute for solid training with tracks, the CVS can augment such training with rewarding results. Presume a given

situation: You anticipate a unit ATT in one month's time and your maintenance and support requirements preclude your training for more than eight days prior to the test. In addition, high operating costs and limited access to training areas that will accept tracked vehicle maneuver damage limit your actual track maneuver time to only two days. Is this enough to get your unit ready? Static instruction will help, but *there is no substitute for mounted training.*

The CVS can be employed in a motor pool or off-road area to conduct mounted tactical training (i.e. battle drill). Limited access is no longer so great a restraint when the low ground pressure CVS is employed. Maneuver damage and operating costs are low. The novelty and handling responsiveness of CVS will be major factors in gaining and maintaining troop interest. Most importantly, in a well-supervised and monitored training program, you can correct deficiencies before you go to the field to train with your tracks.

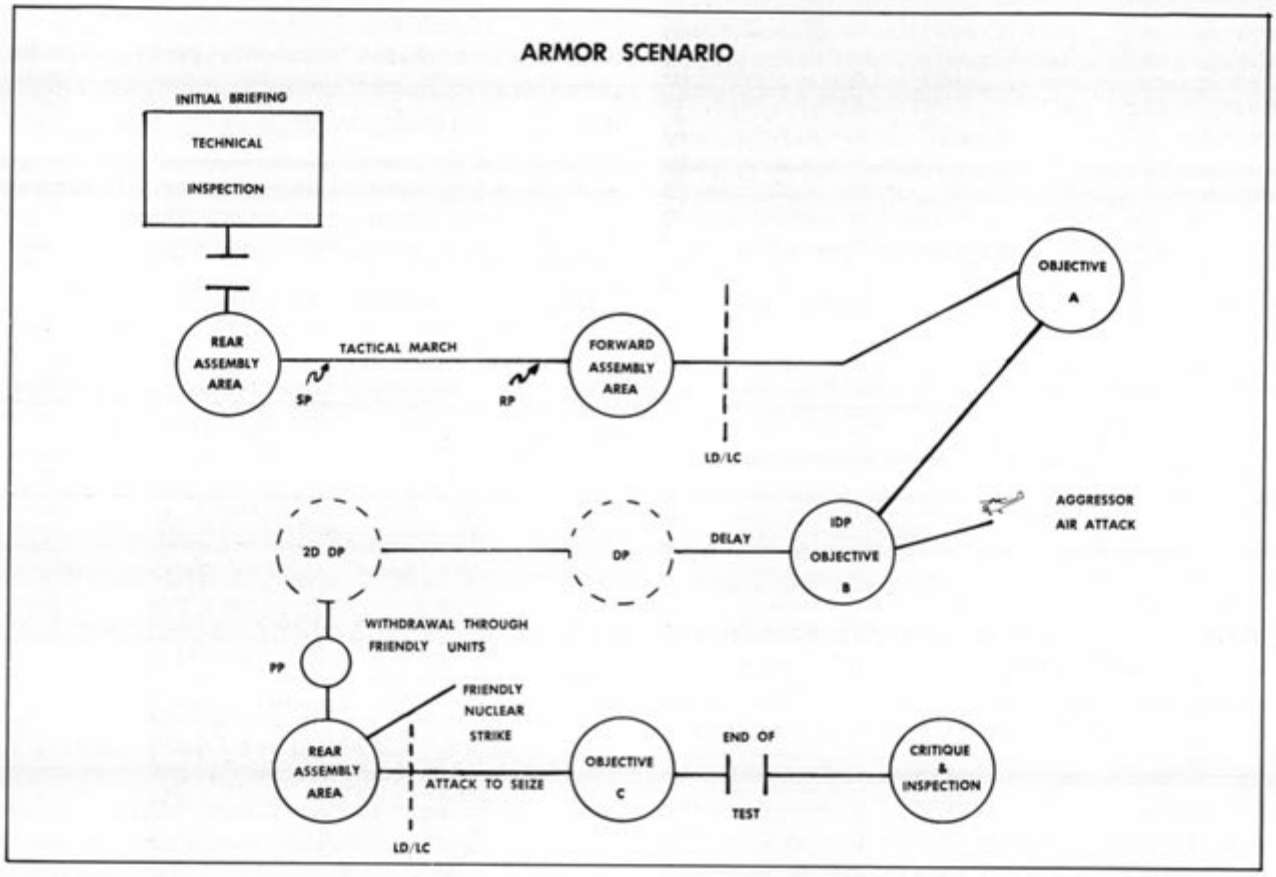
The organization and conduct of your training program will, quite naturally, be dictated by your situation and training requirement. However, the CVS lends itself well to several ongoing training requirements. Let's consider the situation previously cited. You anticipate a unit ATT in one month's time. You have a requirement to conduct a great deal of training in a relatively short time span and, while a portion of your training can be effectively conducted in the classroom, your time on tracks is severely limited.

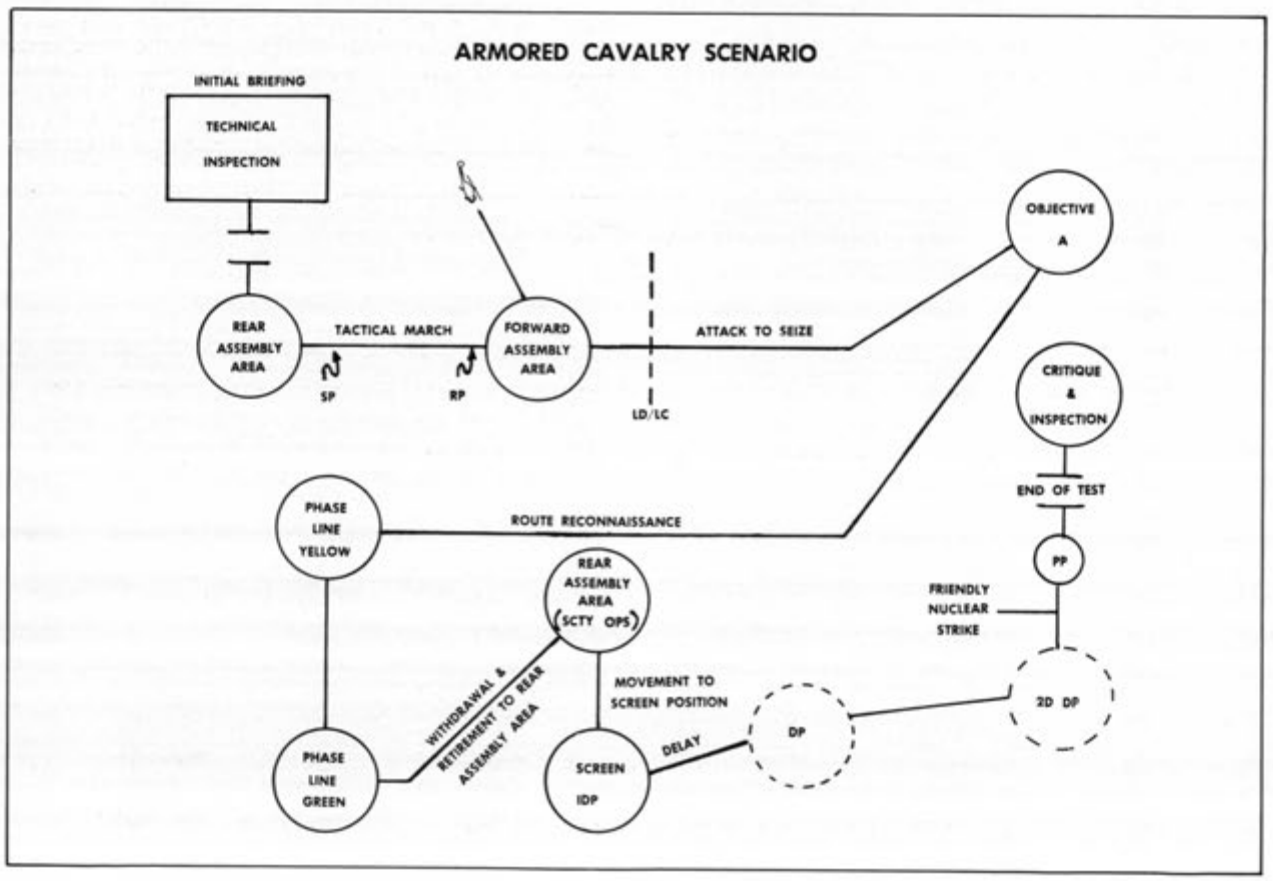
Battle formations, land navigation and leader training can be taught in static fashion, but are greatly improved by practical application. Structure your training schedule to split your instruction time in these areas into static and practical training. The battle formation, land navigation, and mounted command and control techniques can be taught and then applied before you go to the field in your tracks. Beginning with the basics, you can employ the CVS in your motor park.

As your unit gains in practical experience and you achieve a higher degree of proficiency, secure a training area (the CVS maneuver damage is minimal compared with tracks) and use your CVS vehicles. Scouting, passage of lines, the delay and many more operations can be most effectively taught mounted in the CVS. A local farm or park could possibly be used as your area of operations.

Once your training, static and mounted, nears completion, bring it all together in an exercise mounted in the CVS. As a guide, two of many possible applications are shown in the accompanying diagrams. Plan for a comprehensive exercise with the greatest possible realism. These exercises can be a valuable indicator of your unit's achieved level of training. By the time you get to use your tracks, you've completed your static training and practical application. Keeping your unit's weak points in mind, you can employ valuable time on tracks to train in these deficient areas as well as in those areas where training can only be accomplished on tracks. It does not require a great deal of imagination to see the possible applications of the CVS to mechanized infantry roles as well.

As an extra training benefit, think of the CVS in terms of mission-oriented adventure training. While the Infantry has little trouble finding funds to support back-packing adventure training in terrain appreciation and orienteering, troopers can't do it in tracks. The old restrictions block the way. The CVS provides an excellent opportunity for the creative-minded


ARMOR SCENARIO
INITIAL BRIEFING
TECHNICAL
INSPECTION
REAR
ASSEMBLY
AREA
TACTICAL MARCH
SP
RP
FORWARD
ASSEMBLY
AREA
LD/LC
OBJECTIVE
A
2D DP
DP
DELAY
IDP
OBJECTIVE
B
AGGRESSOR
AIR ATTACK
WITHDRAWAL THROUGH
FRIENDLY UNITS
PP
FRIENDLY
NUCLEAR
STRIKE
REAR
ASSEMBLY
AREA
ATTACK TO SEIZE
OBJECTIVE
C
END OF
TEST
CRITIQUE
&
INSPECTION
LD/LC


ARMORED CAVALRY SCENARIO
INITIAL BRIEFING
TECHNICAL
INSPECTION
REAR
ASSEMBLY
AREA
TACTICAL MARCH
SP
RP
FORWARD
ASSEMBLY
AREA
ATTACK TO SEIZE
LD/LC
OBJECTIVE
A
CRITIQUE
&
INSPECTION
END OF TEST
PP
FRIENDLY
NUCLEAR
STRIKE
2D DP
PHASE
LINE
YELLOW
ROUTE RECONNAISSANCE
REAR
ASSEMBLY
AREA
(SCTY OPS)
WITHDRAWAL &
RETREEMENT TO REAR
ASSEMBLY AREA
MOVEMENT TO
SCREEN POSITION
DELAY
DP
PHASE
LINE
GREEN
SCREEN
IDP

trooper to bypass these restrictions to more practical and effective training. You can organize extended field problems, terrain appreciation and orienteering exercises and do it mounted in the CVS. Such exercises, interspersed with imaginative outdoor menus and extras can be a significant contribution to unit morale and professionalism within today's restrictive cost parameters. The cruising range, payload and cross-country responsiveness of the CVS eventually identified will make it a fun vehicle. It can provide an answer to some of the multi-faceted training problems that plague today's mounted soldiers.

Experience dictates that there will be several areas requiring command emphasis in regard to the CVS concept. While your high-spirited young troopers might be overly enthusiastic and attempt to push this vehicle to its ultimate or breakdown, senior NCOs may, at first, be skeptical. An initial briefing as to the purpose and employment of the CVS with the correct measure of command emphasis will help to clear the air. But you must sell this concept! Adequate prior planning and well-supervised conduct of CVS tactical operations and adventure training will convince the "Doubting Thomas" that a higher standard can be enjoyed.

As a concluding and most important note, remember that the CVS cannot and should not substitute for training on tracks. But when you cannot use tracks, the CVS will provide a viable training alternative.

FIRST LIEUTENANT STEPHEN N. MAGYERA received his Regular Army commission through the ROTC Scholarship Program. A graduate of Fordham University, he attended the Armor Officer Basic Course at Fort Knox in 1971. Formerly a Service Test Project Officer at the US Army Armor and Engineer Board, Lieutenant Magyera is currently the Executive Officer of Headquarters Company, Armor and Engineer Board.

Armor Association Sabers

Armor Association sabers were presented to two distinguished cadets during ceremonies at the United States Military Academy. The sabers were presented by Academy Superintendent, Lieutenant General William A. Knowlton, in commendation for the cadets' efforts in academic study, physical education and military leadership. The Armor Association is pleased to congratulate these young men and extends to them a sincere welcome to Armor Branch.

Lieutenant Richard M. Saunders graduated second in his class and was the first cadet from the Class of 1973 to be commissioned in Armor Branch. After completing Armor Officer Basic and Ranger School, he will report to the 1st Squadron, 3d Armored Cavalry Regiment at Fort Bliss.

Lieutenant William S. McArthur, who graduated fourth in his class, was the second cadet to choose Armor Branch. After completing Armor Officer Basic and Officer Maintenance Orientation at Fort Knox, he will report to 4th Battalion, 68th Armor, Fort Bragg.

The Neglected CO

By
Captain Alphonso H. Pearson

The Armor unit company commander, a manager as well as a tactician, has been unduly neglected in the area of formal training for his job—management. At no other level of command is there such a lack of formal training. Except for the Officer Candidate School graduate, the newly commissioned Armor officer attends the Armor Officer Basic Course. This course prepares the second lieutenant for an initial duty assignment as a platoon leader. Likewise, the Armor Officer Advanced Course prepares the officer for command and staff duties at the battalion/squadron level. Officers identified for higher level command are trained at the Command and General Staff College and the Army War College. Nowhere on the Army's ladder of progressive formal training for the Armor officer is there a course to prepare the future Armor unit company commander for the duties he will assume. Is there a need for such a rung in the Armor officer's educational ladder?

In examining this gap, we must consider training in and application of unit administration, maintenance management, training management, military justice and human relations. Basic to this study is our understanding of the Armor officer's career development pattern. An Armor officer's career is divided into four phases: the basic military development period (0-8 years); the intermediate professional development period (9-15 years); the advanced contribution and development period (16-23 years); and the major professional contribution period (23-30 years). The ultimate objective of this developmental pattern is to obtain the maximum contribution in key command and staff positions at the highest levels through application of the officer's professional and technical competence, devel-

"He must have a working knowledge of Armor materiel and the techniques of commanding troops."

oped through training and duty assignments in earlier periods. Company level command falls in the basic military development period; thus our study is limited to the first phase of the Armor officer's career development.

The Department of the Army considers the basic military development phase as a very critical period in an officer's career. It is during this period that the officer develops lasting traits, attributes, standards of performance and a sense of duty which will influence his contributions throughout his years of military service. Except for the OCS graduate, the Armor Officer Basic Course is the beginning of the basic military development phase. From this shallow beginning, the officer is to move through a period in which he should become well-grounded in tactics and the technical requirements of Armor. He must have a working knowledge of Armor materiel and the techniques of commanding troops.

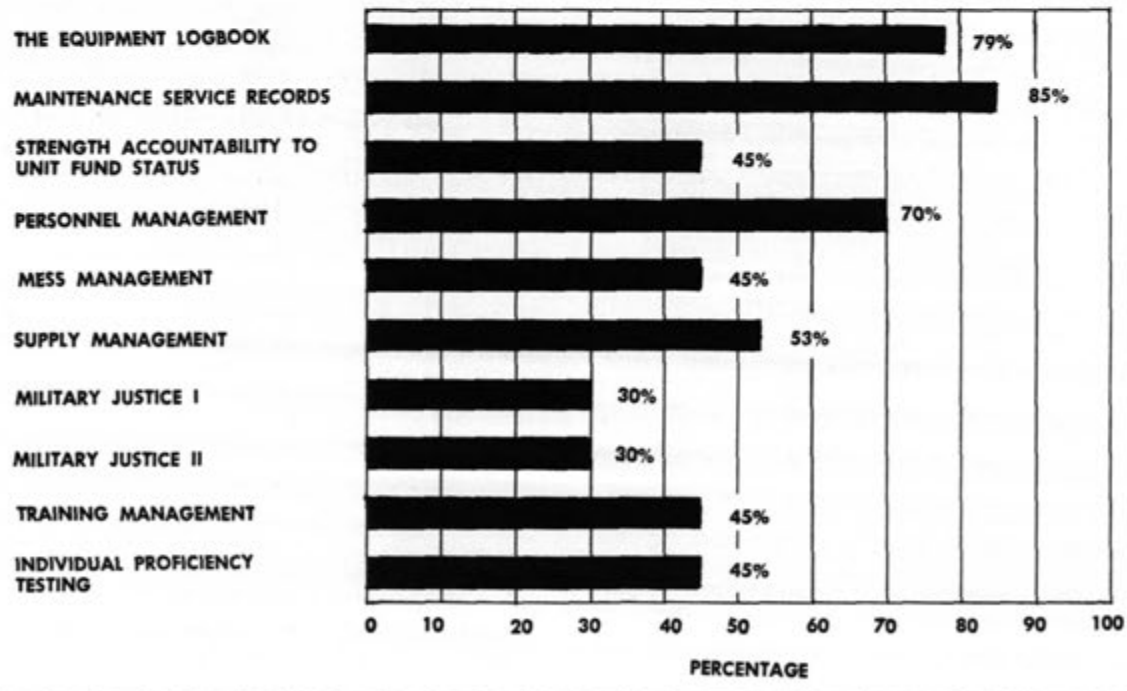
If the basic military development phase is as critical as it is purported to be, then should the total training for company command be a matter of on-the-job training? Does the Armor Officer Basic Course give the officer a firm foundation upon which unit level training can build a knowledgeable, competent company commander? General Bruce C. Clarke, in his *Guidelines for the Leader and the Commander*, posed the following question of the on-the-job trained company commander, "Can he juggle at the same time all the balls of training, maintenance, tests, administration, inspections, property, communications, messes, supply, athletics, marksmanship, discipline and public relations?"

To properly analyze the foundation on which the Armor company commander must build knowledge and competence, we must look at the training he receives in the basic course. Unit administration, maintenance management, training management, military justice and human relations are considered in the analysis.

Unit administration is an area in which the commander spends a great deal of his time. It is in this area that the commander provides for the welfare of his men through the proper management of personnel, mess, supplies and unit funds. The current program of instruction for the Armor Officer Basic Course (AOB) allows one hour of formal training to provide the newly commissioned lieutenant with a firm background in unit administration.

Does one hour of formal training give the officer a strong enough foundation upon which unit level training can build an efficient company commander? Of the 121 Armor officers with Armor command experience attending the Armor Officer Advanced Course 1-73 (AOAC 1-73), 45 per cent failed the AOAC 1-73 entrance diagnostic examination in unit strength ac-

AOAC 1-73 Entrance Diagnostic Testing Failure Rate Among Former Armor Unit Company Commanders in Small Unit Administration



countability; 70 per cent failed in personnel management; 45 per cent failed in mess management; and 53 per cent failed in supply management. In a survey conducted among captains attending AOAC 1-73 to determine their adequacy of preparation for command (hereafter referred to as the Pearson Survey), 77 per cent of the 89 captains with Armor command experience surveyed felt that they were inadequately prepared in unit administration.

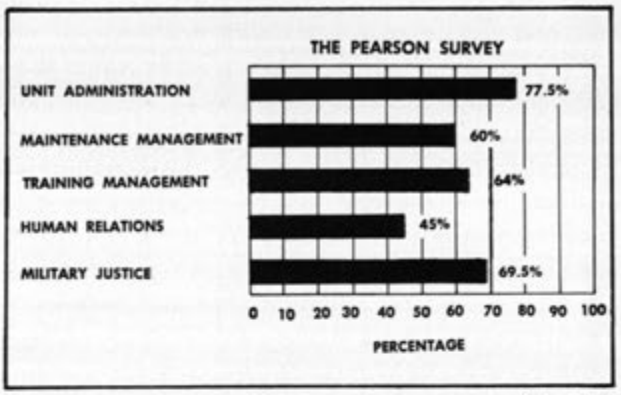
Equally inadequate is the Armor unit company commander's knowledge of maintenance management procedures. The effective Armor unit must be able to "move, shoot, and communicate." These unit abilities are dependent upon the commander's ability to manage maintenance operations. Included in these operations are: establishing a sound, workable maintenance program; training subordinates in preventive maintenance; insuring the availability of publications, tools, and test equipment; allocating sufficient time for the performance of equipment maintenance; insuring the proper maintenance of records; and inspecting equipment. The Armor School gives the incoming officer 32 hours of formal training in maintenance management.

To properly assess the adequacy of training given to the Armor officer in maintenance management, we must ask ourselves two questions. First, does the Armor School allocate sufficient time to formally train the officer? Secondly, is unit level training profound enough to train this officer well enough that he may competently "juggle" all the balls of maintenance management at the same time?

". . . such a deficiency in the leadership structure often resulted in a total disintegration of the Army's credibility in the eyes of the soldier at the working level. . ."

A study conducted by the Armor School's Automotive Department dealing with the Army's maintenance system concluded that few commanders at company level possessed detailed knowledge of the forms and records being maintained by their equipment operators and maintenance personnel. The Armor School further stated that such a deficiency in the leadership structure often resulted in a total disintegration of the Army's credibility in the eyes of the soldier at the working level.

In addition, the results of the AOAC 1-73 entrance diagnostic tests revealed the Armor unit company commander's lack of detailed knowledge of maintenance management. Seventy-nine per cent of the 121 former Armor unit company commanders failed the test on the equipment logbook, and 85 per cent failed the test on maintenance service records. In the Pearson Survey, 60 per cent of the 89 former Armor unit commanders surveyed stated that they were inadequately prepared for command in maintenance management.



Just as important as maintenance management training is the Armor officer's education in training management. The Armor School presently has no time allotted for training in this area in AOB. The Army's decentralized training policy places the weight of training management on the shoulders of the company commander. The commander must be able to make a competent estimate of the training situation, establish a sound training program and establish unit training priorities in executing the program. These tasks more than justify the need for formal training; nevertheless, the incoming Armor officer does not receive any background training in this area.

Does unit level training bridge the training management training gap? The Pearson Survey revealed that 64 per cent of the 89 former Armor unit company commanders surveyed felt they were inadequately prepared for command in this area. In the AOAC 1-73 entrance diagnostic testing, 45 per cent of the former armor unit commanders failed the test in training management.

Similarly, this deficiency exists in the administration of military justice. Under the system of military justice, the company commander is quite a powerful person. He is authorized to impose the following punishments upon enlisted men under his command:

- Restriction for 14 days.
- Extra duty for 14 days.
- Correctional custody for seven days.
- Forfeiture of seven days of pay.
- Detention of 14 days of pay.
- Reduction in grade (E-4 and below) one grade.

Additionally, he may recommend an offender for court-martial at one of the several levels of courts in

the military justice system. With this authority, the company commander directly influences the life of every man under his control; indirectly, he also influences the lives of dependents of personnel under his command. Correctly administered, this authority is a plus for the commander; incorrectly administered, he can cause more problems than he will ever rectify. The on-the-job trained Armor company commander receives six hours of formal training in military justice in AOB—quite a shaky foundation on which to place such a magnitude of authority, is it not?

In 1971 the Chief of Staff, General Westmoreland, became so concerned by commanders' criticisms about the inadequacies of military justice that he appointed General Matheson to conduct a survey of the system. General Matheson found that the system was a reasonably good one and was working well, but that the small unit commanders were grossly ignorant of how its procedures were to be applied.

". . . the advanced course is not designed to train officers for company level command duties. . ."

The Pearson Survey revealed that 70 per cent of the 89 former Armor unit commanders felt they were inadequately prepared for command in the area of military justice. The AOAC 1-73 entrance diagnostic test showed that 30 per cent of the 121 former Armor company commanders failed the test in military justice.

In today's Army, with its myriad of cultural and social backgrounds, the company commander is faced with the ever present problem of racial harmony within his command. Inclusive in promoting racial harmony are providing the opportunity for physical and intellectual growth of all members of the command; facilitating meaningful participation of minority groups in various aspects of Army life; adjusting differences in cultural needs of minority groups; training junior officers to be aware of the Army's racial atmosphere, and how to improve it; and creating an awareness of the inequities among soldier groups and fostering attitudes which support rather than distort the Army's objectives. To perform these sensitive duties, the Armor company commander should have a profound appreciation for human relations and the debilitating effect of racial disharmony on the combat effectiveness of his unit.

Are four hours of formal training plus unit level on-the-job training sufficient training to equip the Armor unit company commander with the necessary intellectual tools to perform this all important task. Indications are that the Armor unit commander lacks the needed training in this area for his position. The Pearson Survey showed that 45 per cent of the 89 Armor company commanders surveyed felt inadequately prepared to carry out their responsibilities in human relations.

In an *ARMY* Magazine article on race relations in the Army today, Brigadier General Harry W. Brooks, Chief of the Equal Opportunities Division, Office of the Deputy Chief of Staff for Personnel, states that despite the Army's progress in human relations, the correction of leadership deficiencies in race relations remains the primary hurdle. He further states that these deficiencies can be corrected through education; and that, "evidence from the field indicates that there is a definite relationship between the number of hours of effective race relations training and a reduction of racial tension."

It is understood that the Armor Officer Basic Course simply introduces the new lieutenant to the Army's doctrines and techniques; however, we must point out here that while the basic course introduces the officer to the Army at platoon level, the Armor Officer Advanced Course prepares him for duties at battalion and higher levels. Therefore, the training received in the basic course must serve as a foundation upon which on-the-job training must build a company commander. The indications are, however, that the training requirements in management for the Armor company commander are not being met.

It is true that not all Armor unit company commanders are graduates of only the basic course. To the contrary, some commanders are graduates of the Armor Officer Advanced Course. The frightening fact, however, is that approximately 70 per cent of the students attending the advanced course have already commanded a company. Although 30 per cent of the students attending AOAC have not commanded a company, and probably will be placed in a command position immediately following graduation, the advanced course is not designed to train officers for company level command duties.

An overview of command responsibilities will help shed even more light on the amount of training that must be accomplished, at unit level, between AOB and the assumption of company-level command. These responsibilities can be capsulated into two areas—accomplishment of the unit's mission, and providing for the welfare of the unit's members.

To effectively and efficiently accomplish the unit's mission, the commander must first be a skillful manager of available resources. In personnel management,

he must be able to productively employ every available man in a manner that best uses the individual's qualifications and skills. Equipment availability must remain high at all times. Maximum use must be made of available facilities to train and educate members of the unit. Unit funds must be managed. To place each available asset into its proper perspective, the commander must know how to make wise use of the available time.

"A pre-command course could be established at division level."

Imperative to the accomplishment of the unit's mission is the commander's skill as a functional manager. Functional management is a process of supervising on-going work. The effective commander must know the art of supervision. Included in this art are counseling, motivating, rewarding and punishing. In order to perform as a functional manager, the commander must have a working knowledge of the theory as well as the practice. The practical aspect of functional management may well be learned on the job; however, teaching the theory is a matter that should be in the hands of experts. Otherwise, there is no assurance of continuity of training.

Just as the Armor company commander needs to be a trained manager, he should also be trained to provide for the welfare of his men. Fulfilling the needs of the many different personalities of a unit requires the commander to be a manager of human beings. The welfare of human beings goes beyond physical needs; it delves into the mental and spiritual needs of the soldier—a sense of belonging, educational improvement, job satisfaction, religious expression and security. The armor officer should be trained in these functions and not allowed to make costly and unnecessary blunders that may ultimately lead to the discredit of the Army.

In a study to determine the suitability of the Army's officer schools (*The Haines Report*), the Department of the Army stated that moving the advanced course forward or inserting another course between the basic course and the advanced course is impractical. The Department further stated that training for company command must therefore be accomplished at unit level. However, it is quite clear from the evidence already presented that unit level training is not effectively preparing young Armor officers in the techniques and doctrines of managing armored companies.

Yes, experience is the best teacher, but exactly how much is the Army willing to spend to have hundreds of Armor captains educated in a hit-and-miss on-the-job training program? The Armor unit company commander, a first-line manager, occupies one of the most important positions in the Army's chain of command. It is time to train this important link to effectively and efficiently perform those duties that are inherent to a company command.

In view of the fact that it is impractical to move the advanced course forward, perhaps a pre-command course could be established at division level. This course should be designed to prepare the prospective Armor company commander for command in unit administration, maintenance management, training management, military justice and human relations. A division level course would be most practical because of the availability at that level of all the expertise and facilities necessary to conduct a meaningful program of instruction in the areas identified.

This pre-command course should not exceed one month in duration. However, it should be of adequate length to give the prospective company commander detailed knowledge in each of the areas noted above. The course should be conducted on a quarterly basis. Officers selected to attend the pre-command course should be captains who have been identified as prospective company commanders. Assumption of command should come within 60 days of completion of the course.

Why send highly untrained captains to companies to learn their jobs at the expense of the unit? While the new commander is learning his job, the unit goes into a state of limbo, creating a period of little or no productivity. Let us train that neglected CO and put him in full command of his unit from the instant he receives the guidon.

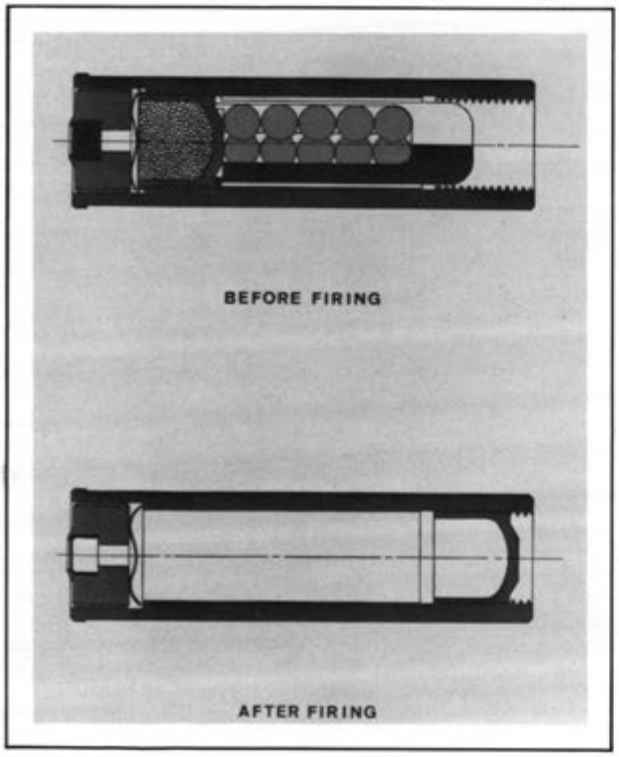
CAPTAIN ALPHONSO H. PEARSON received his commission in 1968 from South Carolina State College. He has served with the 210th Aviation Battalion in Vietnam and the 6th Armored Cavalry Regiment at Fort Meade. Captain Pearson completed the Armor Officer Advanced Course in 1973 and is now serving with the ROTC Instructor Group at South Carolina State College.

THE QUIET GUN

by Captain John J. Strange

During the Vietnam Conflict, many operations led to tunnel complexes which the enemy had carved out of the earth for hospitals, storage sites, command posts and any other use imaginable. Usually, the "tunnel rat" is the man called to explore and clear the inside of these tunnels. Rather quickly, he discovered that the *M16*, *M79* and other relatively bulky weapons were of little value.

The "rat" needed a small, handy weapon that would provide a high assurance of hitting an obscure target without the benefit of time to aim each shot. Shotguns were tried because they offered a broad shot pattern. Pistols of various calibers were tried because of their small size and ease of handling in confined spaces. However, shotguns were too unwieldy and noisy, and the pistols did not provide the necessary accuracy.



The requirement for a weapon meeting the needs of tunnel rats was passed on to the Land Warfare Laboratory at Aberdeen Proving Ground. The result was the LWL Tunnel Weapon, later renamed the Quiet, Special Purpose Revolver (QSPR).

The QSPR is a .44 caliber magnum which has been modified by the substitution of a smooth bore and stub barrel. Further, the cylinder has been rebored to receive special multipellet shells. Weighing only two pounds, the weapon has an effective range of 50 feet, a maximum danger range of 1,400 feet, and a muzzle velocity of 750 feet per second. The cylinder contains six chambers.

But the unique feature of this revolver is the special cartridge—the only type ammunition that can be used with the weapon. The shell consists of a nickel-steel case .523 inches in diameter and 1.87 inches in length. The casing contains anvil, primer, propellant, piston, sabot and 15 high-density pellets.

When the trigger of the revolver is pulled the hammer strikes the firing pin, which in turn, strikes the anvil. The anvil is then forced into the primer causing it to fire and ignite the propellant charge. This provides the necessary pressure which would expel the projectile portion of the normal revolver cartridge.

However, in this cartridge the propellent pressure forces the piston forward, expelling the pellets and the sabot from both the cartridge and weapon. The sabot, because of its size, shape and material construction, rapidly falls away giving the pellets almost a muzzle action effect. The piston slows and finally stops as it expends its energy shearing the threads at the forward end of the shell casing. As the piston seals itself to the end of the casing, it also seals the primer and propellant gases and all resulting pressure. Thus, the sound, smoke and flash are greatly reduced. The sound of firing, in fact, is slightly louder than that of the hammer striking the main body of the gun.

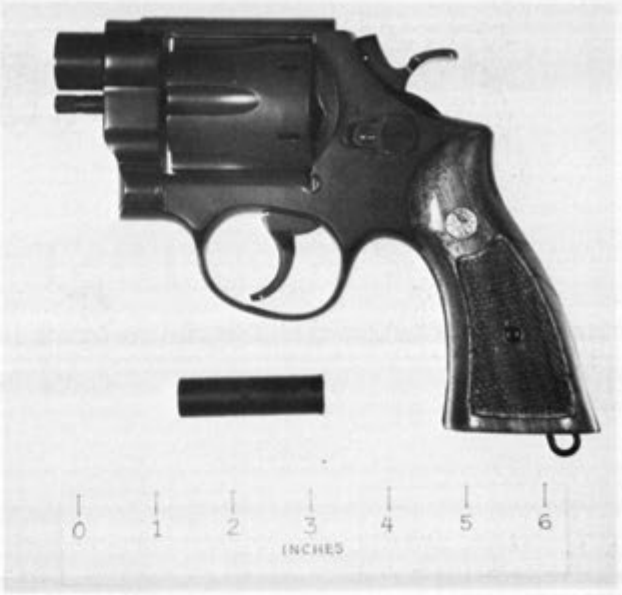
Since this ammunition is basically a prepackaged shell and barrel, it could be more dangerous than standard type ammunition if treated incorrectly. To reduce this danger factor, the ammunition is packed in containers with 1/8-inch steel walls which would contain the pellets upon accidental firing.

Unlike the .45 caliber pistol, the QSPR may not be disassembled by user personnel. The weapons must be turned into ordnance for repairs. Cleaning of the weapon is made simpler by the fact that no gaseous residue is released from the cartridge. Thus, user maintenance consists simply of cleaning the weapon of excess dirt, and lubrication to insure smooth operation.

After manufacture of the initial product, a number of test revolvers were sent to the Republic of Vietnam for field evaluation under combat conditions. The 1st Infantry Division, 25th Infantry Division and the Americal Division evaluated the weapon in tunnel, ambush, and search and destroy operations. Their reports indicated that, even though the weapon had misfired a number of times, it was well accepted. Especially noted were its handling ease and quiet firing action.

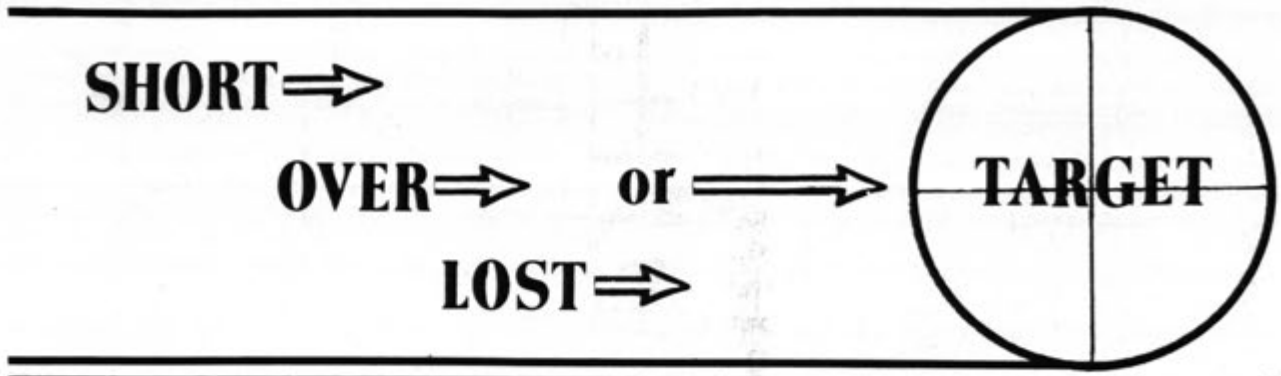
After the initial field evaluation, changes to both the cartridge and gun were submitted to eliminate the misfire problem. The improved design was then sent to the manufacturer for construction of the new model.

Although originally designed to fill the requirement for an effective tunnel weapon, the Quiet, Special Purpose Revolver was renamed to more broadly describe its adaptability to other situations. Even though its use is essentially limited to a soft target category because of its minimal penetrating power, the weapon does possess unique characteristics that offer advantages in special situations. Smoke, flash and sound are practically eliminated. Thus, the QSPR is the perfect weapon for a situation where little noise is desired. Because of the shotgun effect of the shell, if offers the firer increased capability to hit a target without taking precise aim.



It is fairly safe to state that this weapon will not be issued to every unit. However, due to its unique features, the QSPR could be an ideal second weapon for selected personnel in long range reconnaissance patrol units, Infantry units and Special Forces. Whatever method of issue is decided upon, the Army now has a weapon that offers capabilities like no other revolver or pistol.

CAPTAIN JOHN J. STRANGE received his Infantry commission in 1967 and was initially assigned as a platoon leader with the 5th Infantry Division. He later served with the 1st Infantry Division in Germany as a company commander. Captain Strange was reassigned to the Armor School and graduated from the Armor Officer Advanced Course in 1971. He is currently assigned to the Command and Staff Department of the Armor School.



PART I – PERSONAL DATA (*Read paragraph 3-2a AR 623-105*)

a. LAST NAME – FIRST NAME – MIDDLE INITIAL	b. SSN	c. GRADE	d. DATE OF RANK (Year / Month / Day)	e. BRANCH (Basic / Control)	f. SP

g. UNIT, ORGANIZATION, STATION AND MAJOR COMMAND

PART II – REPORTING PERIOD AND DUTY DATA (*Read paragraph 3-2b, AR 623-105*)

a. Period Covered From (YEAR / MONTH / DAY)	Thru (YEAR / MONTH / DAY)	RATED DUTY DAYS	b. NONDUTY DAYS	b. Reason for Submitting Report	c. RATER
		d. NONRATED DUTY DAYS	OTHER DAYS (a + b Total)		INDORSER

d. EXPLANATION OF NONRATED DUTY DAYS AND/OR OTHER DAYS (*As Required*)

PART III – DESCRIPTION OF DUTIES (*Read paragraph 4-3d, AR 623-105*)

a. Principal Duty Title

d. Special Career Program Position Designation

PART IV – PROFESSIONAL ATTRIBUTES (*

a. RATER *Complete each question. Explain *No and *Needs improvement responses in Par*

1. Has this officer demonstrated moral and character strength?
2. Did this officer demonstrate technical competence appropriate to
3. Did this officer state, as appropriate, his honest opinions and
4. Did this officer seek responsibility?
5. Did this officer willingly accept full accountability for
6. Is this officer emotionally stable under stress?
7. Is this officer's judgment reliable?
8. Did this officer maintain effective two-wa
9. Did this officer demonstrate concern f
10. Did this officer contribute to the p
11. Did this officer subordinate hi
12. Did this officer's personal
13. Was this officer innov
14. Did this officer de
15. Did this officer
16. Did this of

b. RATER E

Comparative Self-Analysis

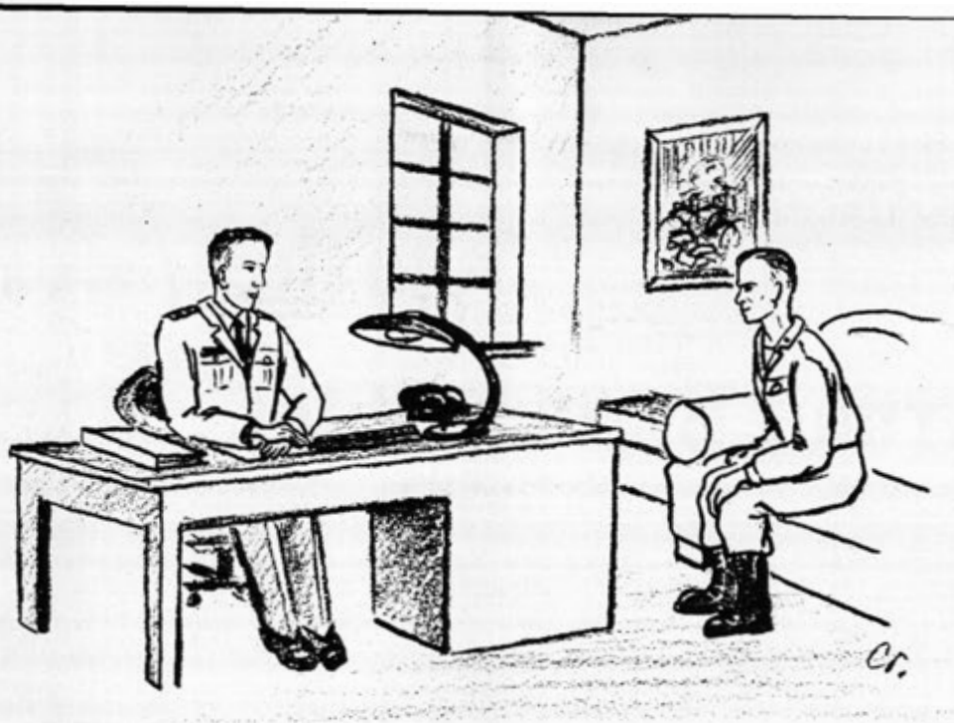
A Better Approach to Counseling

By
Major
Francis J. Cummings

Most officers who have received Officer Efficiency Reports realize how rarely rating officers comply with the spirit of AR 623-105, which requires adequate guidance and counseling of rated officers. And, anyone who has written OERs understands why—counseling is difficult at best, and *good* counseling is most difficult because it requires adequate preparation and forethought. You may say, "I counsel every day with on-the-spot advice and correction." True, perhaps, but is this daily "counseling" intended to serve the longer range needs of the individual officer (or the Army), or is it crisis-oriented toward current problems?

Every officer has a basic need and an inherent right to know in greater detail those areas in which he excels as well as those in which he falls short of his commander's expectations. Genuine counseling, in its most effective form, places the burden upon the rater to "lay it on the line"—*but*, in such a way as to encourage self-improvement without shattering self-confidence. The tricky part is frequently the selection of a suitable technique which satisfies the counseling needs of both the rated as well as the rating officer.

One of the more effective approaches to the problem of professional counseling is the use of a simple, two-step comparative self-analysis technique. As step



one, the rated officer meets briefly with his rater who provides him with a blank OER form and instructs him to complete it as honestly as he can based upon his own assessment of his performance during the specified rating period. Allowing for sufficient time for critical self-evaluation, the rater schedules a second meeting for the formal counseling session. This second meeting should ideally be scheduled during less hectic periods and should provide for sufficient time for open-ended discussion. During this session the rated officer returns the requested OER draft and, in turn, is provided with a draft OER based upon what the rater would have submitted in an official OER had one been due.

Differences in perception of the same performance become instantly apparent, providing easy identification of areas requiring more concentrated effort to eliminate possible misunderstanding or to more clearly delineate the rated officer's responsibilities. While widely divergent evaluations may occur infrequently, I have found that most officers with a good feel for their individual tasks and talents come much closer to their rater's views than one might initially suspect. From time to time, one may even find a young officer who consistently underestimates his own worth. The effect of a more favorable rater evaluation is often the only tonic he needs to regain his self-confidence and become a top-notch officer.

Areas showing a significant difference between rater and ratee scores thus become areas for further discussion and greater concentration by both officers. The rated officer strives to improve deficient performance and the rater strives to insure that adequate guidance and counseling is provided. Working together both officers can help even a good officer become better. And certainly nothing precludes the use of the same system adapted to the Enlisted Efficiency Report for counseling enlisted men. It is especially effective with junior noncommissioned officers. Comparative self-analysis is a viable counseling technique for use with all ranks.

Counseling techniques are like Social Security numbers—everyone has his own. But, if yours isn't working as well as you'd like, or maybe you feel it's time for a change (or, perhaps, a start), you might consider the benefits of the comparative self-analysis approach to counseling. Try it, you'll like it—and so will those you rate, because for many it may well be the most meaningful counseling they have received in their military careers.

MAJOR FRANCIS J. CUMMINGS was commissioned through the ROTC program at the University of Connecticut where he earned his BA degree in history. Major Cummings, who also holds a master's degree in political science from Kansas State College, served as a senior advisor and province operations officer in Vietnam. He currently is assigned to the Office of the Inspector General of the 1st US Army.

from the Armor Branch Chief

Colonel John R. Byers

As this is my first opportunity as Armor Branch Chief to address a large portion of the Armor officers, I would like to offer a few thoughts concerning my own and the Branch's responsibilities to the Armor Community.

In Armor we spend a great amount of time in maintenance training and operations; we pride ourselves on our ability to keep our units rolling, and we're very good at maintaining our vehicles, aircraft and equipment. But sometimes, in the hurly-burly of overcrowded schedules, we may tend to forget or overlook the equally important job of the maintenance of men. We must remember that taking care of our troops—all of our troops—is one of our primary objectives. Supporting, improving and looking after Armor officers is Armor Branch's part of that mission.

An effective Branch operation is essential to the fulfillment of that mission, but we do not intend to place office efficiency above the needs of individuals. You come first. It is my sincere hope that no one seeking assistance from this office will ever be lost in administrative shuffles, and we'll take great pains to be sure it doesn't happen. While our normal working day is filled with assignment requests, records jackets and statistics, we know that each file represents a man—a fellow soldier with a family, personal problems and career aspirations. And we intend to handle each file as such.

We'll do the same for your letters and calls. We'll do our best to answer your queries fully and we'll make every effort to be scrupulously honest with you. We can't forecast the future or read the minds of selection boards, and we may not be able to help in every case—maybe no more than sympathize—but we'll try. That's why we're here—to serve you.

We've moved. MILPERCEN (and Armor Branch) is now located in the Hoffman II Building on the south side of Alexandria, Virginia. Please drop in for a visit. You can see how we work and we can explain in detail the ways in which we can assist you. If you can provide us with at least three days' advance notice of your visit, arrangements can also be made for you to review your official TAG file (TAG is also located in the Hoffman Complex). Come see us; the coffee's always hot.

Can Branch Contact You?

Autovon is a convenient and inexpensive means of maintaining contact. In order to speed this process even more, we would appreciate having your office extension on your current Preference Statement in Item 8a. In addition, there are times when we may need to contact you while in leave status enroute to a new CONUS or oversea assignment. An unanticipated assignment opportunity may arise or a potential hardship situation may develop where, by communication with you, the best interests of Branch and your career could be served expeditiously.

Officer Requisitioning

Have you ever called Branch, asked to go to "Fort Somewhere" or overseas to the "Umpteenth Armor" only to be told that there is no requirement there for a lieutenant colonel, major, captain or lieutenant? In some cases, your call may have been prompted by a letter from a friend who wrote that they are short five majors with no replacements on the way. An explanation of the officer requisitioning system and where Branch fits in should assist in your understanding of why both parties are being completely honest.

Quarterly, Department of the Army determines a Projected Requisition Authority (PRA) for the major commands. As defined in AR 614-185, the PRA is a single source document which allocates officers in accordance with established priorities and approval authorizations and provides the basis for validation of requisitions. The PRA fluctuates because it is tied to variables such as the force structure, Army strength and priority of the command. Major commands submit personnel requisitions to Department of the Army using the grade, branch and number limitations prescribed by the PRA. Department of the Army vali-

dates those requisitions which conform to the PRA and forwards them to the various career branches. Armor Branch is responsible to fill validated requirements on time with the best qualified officers available. However, we simply cannot assign an officer without a validated "requirement."

There are not enough officers available to fill all TOE/TDA positions worldwide. The PRA provides for an equitable distribution of the shortages. Additionally, Branch does not make pinpoint assignments. Therefore, the final distribution of shortages is essentially at the discretion of the major commanders.

Initial Entry Flight Training

Flight school quotas for FY 74 were received at Armor Branch in April and applications are now being processed for those company grade officers who meet the prerequisites outlined in AR 611-110. Since the Branch received an average of six allocations for each class, a significant number of vacancies now exist and interested personnel are encouraged to apply early. Questions should be directed to LTC Wolfe, Aviation Assignments.

Air Cavalry/Attack Helicopter Commander's Training Course

Effects of the Air Cavalry/Attack Helicopter Commander's Training Course have already been felt in the field. The Armor School's thorough and professional presentations of conventional employment techniques and concepts have proven to be a valuable experience for those officers who have attended. Unfortunately, a tacit misconception apparently exists concerning attendance prerequisites. Any officer, first lieutenant through lieutenant colonel, even though not an aviator, who is programmed for an assignment affiliated with the training of Air Cavalry or Attack Helicopter units is eligible to attend. The officer who is not an aviator is particularly encouraged to attend in order that he might gain a better appreciation for proper aircraft employment. Course length is 30 days and quotas are now being received for FY 74.

White House Fellows Program

The White House Fellows Program offers a unique career opportunity for young officers between the ages of 23 and 36 years. Each year the President's Commission on White House Fellows selects approximately 15 to 20 individuals from industry and the military to serve for a one-year period as special assistants on the White House staff or with cabinet officers. Since the program began in 1965, 12 Army officers have been chosen as White House Fellows.

Competition for the 1974-75 program began on 15 August 1973. Army personnel desiring to participate must first request permission (through channels) to compete, in accordance with AR 621-7, "Acceptance of Fellowships, Scholarships, or Grants." Upon receiving approval to compete from the Department of the Army, individuals should then submit their White House Fellows application directly to the Commission on White House Fellows, The White House, Washington, DC 20500. Official application forms and full particulars may be obtained by writing to the Commission. The deadline for the submission of applications for the 1974-75 program is 15 November 1973. Final selection of winners will be made in May 1974 and the year-long Fellowship begins in September 1974. Interested Army personnel are encouraged to submit their "request to compete" to Department of the Army by 15 October 1973.

Correction

Due to an inadvertent typographical error, the following erroneous information appeared in the July-August edition of "From the Armor Branch Chief" under *Overseas Company Grade Assignments:* "Officers serving in Germany on an initial tour who are voluntarily extended in Germany can expect reassignment to a CONUS TOE troop unit." This sentence should read: "Officers serving in Germany on an initial tour who are voluntarily extended in Germany can expect reassignment to an involuntary short tour or CONUS training center." *ARMOR's* apologies.

It is with a deep sense of personal loss and sadness that we must inform the Armor Community of the death of Mrs. Ruth Carmichael on August 6, 1973. Perhaps best known to Armor aviators, Mrs. Carmichael served with Armor Branch for the past ten years, and was instrumental in the organization of our flight training programs. Her personal and sincere concern for the officers she served, her willingness to cheerfully devote long hours to her work and her loyalty to Branch and the Army will be sorely missed. We extend to her family our most sincere sympathy.

ARMOR BRANCH DIRECTORY

CHIEF
COL John R. Byers
325-7832

PERSONNEL ACTIONS & EDUCATION SECTION

ADMINISTRATION SECTION
Mr. Fred Benegalia
325-7843

SECTION CHIEF
LTC Don A. McKnight
325-7845

LOSSES
MAJ Fred W. Greene
325-7845

GAINS
MAJ Tommy A. Baucum
325-7845

MILITARY & CIVIL EDUCATION
SENIOR EDUCATION
MAJ William F. Streeter
325-7837
JUNIOR EDUCATION
Mrs. Agnes Burns
325-7837
INITIAL FLIGHT TRAINING
Mrs. Louise Brown
325-7839

PLANS, PROGRAMS, & PROMOTIONS
MAJ William G. Yarborough
325-7839

ASSIGNMENT SECTION

SECTION CHIEF
LTC Marvin G. O'Connell
325-7832

FIELD GRADE ASSIGNMENTS
LIEUTENANT COLONELS
LTC William A. Fitzgerald
325-7835
MAJORS
MAJ Donald F. Borden
325-7836

COMPANY GRADE ASSIGNMENTS
CAPTAINS
MAJ Edward W. Shaw
325-7841
LIEUTENANTS
MAJ John R. Archer
325-7841

AVIATOR ASSIGNMENTS
LTC Rodney D. Wolfe
325-7839

NEW ACCESSIONS
Mr. James Harrison
325-7841

Armor Branch is located in the Hoffman II Building on the south side of Alexandria, Virginia. Plenty of free parking is available adjacent to the Hoffman Complex. Address all correspondence to: HQDA (DAPO-OPD-AR), 200 Stovall Street, Alexandria, VA 22332.

enlisted personnel notes

ATTACHMENT PENDING REQUEST FOR COMPASSIONATE REASSIGNMENT

CONUS installations continually report numerous cases of servicemen on leave from both oversea and CONUS stations requesting attachment for the purpose of submitting requests for compassionate reassignment. In many cases these servicemen state that their unit commanders, first sergeants or unit personnel specialists have recommended that they come home on ordinary leave and then report to the nearest Army installation to be attached in order to apply for compassionate reassignment. In too many instances such action is ill-advised, and most individuals become upset when a CONUS installation refuses to accept them in an attached status. Additionally, they may have compounded their problems by incurring large round trip travel expenses; especially from oversea units.

Department of the Army policy, as specified in AR 614-200, permits servicemen on leave in CONUS to be attached at CONUS installations *only* in cases where a *bona fide* emergency situation exists which meets the criteria prescribed in paragraph 1-21, AR 614-200. In all other instances the best guidance is that the serviceman should initiate his request for a compassionate reassignment in his assigned unit. If the emergency situation existed prior to the serviceman's departure, then logically he should have been placed on emergency leave.

If an emergency situation continues or is identified after the serviceman departs his unit on ordinary leave, and his continued presence in the immediate area is essential to the solution to the problem, three courses of action are open to him. First, the serviceman may contact his local Red Cross chapter and request assistance in getting an extension of his emergency or ordinary leave. The Red Cross will verify the emergency situation and contact the serviceman's unit with a request for the desired leave extension. Secondly, if a compassionate reassignment is deemed appropriate, the serviceman may report to the nearest Army installation (US Army Reserve and National Guard Advisory Groups are excluded) and request attachment and assistance in processing a request for compassionate reassignment. In this second course of action, the emergency situation must also be verified by the Red Cross or other substantiating documentation in order for the serviceman to be accepted in an attached status. Finally, the serviceman may submit his compassionate reassignment application directly to Headquarters, US Army Military Personnel Center, 200 Stovall Street, Alexandria, Virginia 22322 (ATTN: DAPC-EPA-C), while in a leave status.

Authority to submit compassionate reassignment applications through CONUS Army installations or directly to HQ MILPERCEN is not intended as a means to circumvent the chain of command. Accordingly, disapproval authority for compassionate reassignment applications submitted by servicemen on leave or attached at other than their assigned duty stations is the commander of that Army installation, activity or unit. Any commander receiving compassionate reassignment applications from other than assigned personnel may:

- Return the application to the individual, advising him that no *bona fide* emergency exists and that he may submit his application through his unit commander upon return to his assigned unit.
- Disapprove the application if it does not meet the criteria prescribed in paragraph 1-21, AR 614-200.
- Recommend approval of the application and forward it to HQ MILPERCEN (ATTN: DAPC-EPA-C).

AWARD OF PROFICIENCY PAY

Effective 1 July 1973, there is a change in the procedure for soldiers who qualify for receipt of both categories of proficiency pay—Termination Shortage Specialty and Superior Performance.

- Termination Shortage Specialty is authorized at the rates of $75, $50 and $25.
- Superior Performance is authorized at the rate of $50.
- A soldier is authorized to receive only one category of Proficiency Pay.

The change is spelled out in DA Message DAPC-EPP-E 311605Z, May 1973, "Award of Proficiency Pay" and concerns soldiers who are eligible to receive both categories of pay. As long as the Termination Shortgage Specialty category is at the rate of $50 or more, and the soldier is eligible for the Superior Performance category ($50), his records will reflect receipt of Termination Shortage Specialty. However, once the Termination Shortage Specialty category drops below the $50 rate, the soldier may receive Superior Performance Pay as prescribed in the cited message.

How Would You Do It?

US ARMY ARMOR SCHOOL PRESENTATION

SITUATION

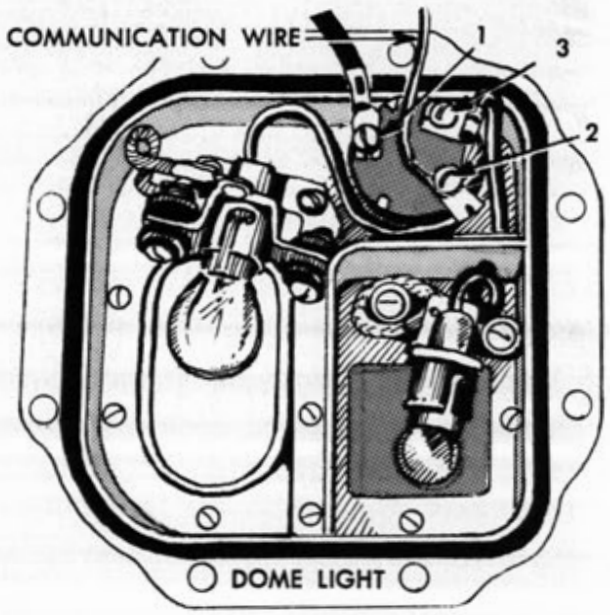
You are a Platoon Leader in Company B, 4th Battalion, 37th Armor. Your platoon of M60A1 tanks has been in pursuit of an enemy tank platoon for the past 2 hours. During a recent engagement your tank was hit on the right front of the turret. The hit slightly wounded the gunner and damaged the main gun relay, machinegun firing relay, and the emergency firing device. Your company commander notifies you that the enemy is preparing to attack your position.

PROBLEM

With the tank's primary and alternate firing devices inoperative, you are unable to fire your main gun; thus your platoon stands to lose 20 percent of its firepower. You must get your tank operating again. *How would you do it?*

SOLUTION

You know the gun has an electrical device and that there are 24 volts currently in the turret circuits. What is needed is an alternate means for firing the main gun. You decide to use the dome light on the turret roof to the left of the tank commander's position since it has a switch that can be used as a trigger. The switch has 3 contacts: (1) an electrical lead-in, (2) white light contact, and (3) red light contact. Tell the driver to turn off the master switch and remove the dome light cover. Cut 4 feet of communication wire from the wire that is supplied with the AN/GRA-39. Connect one end of the wire to the white light contact point and remount the dome light cover.



To get current to the gun, run the current through the igniter cam. To do this first remove the access cover plate on the gunner's recoil guard, unscrew the electrical lead from the firing safety relay on the igniter cam, and connect the other end

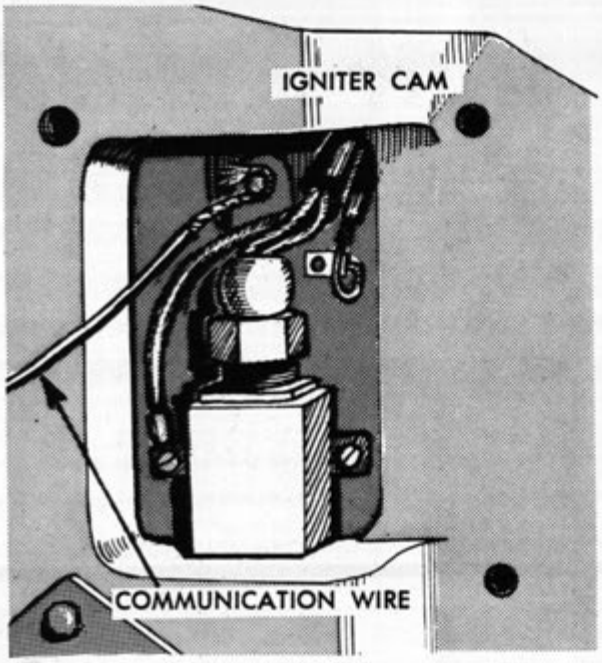
AUTHOR: CPT WILLIAM C. CUSEO USMC

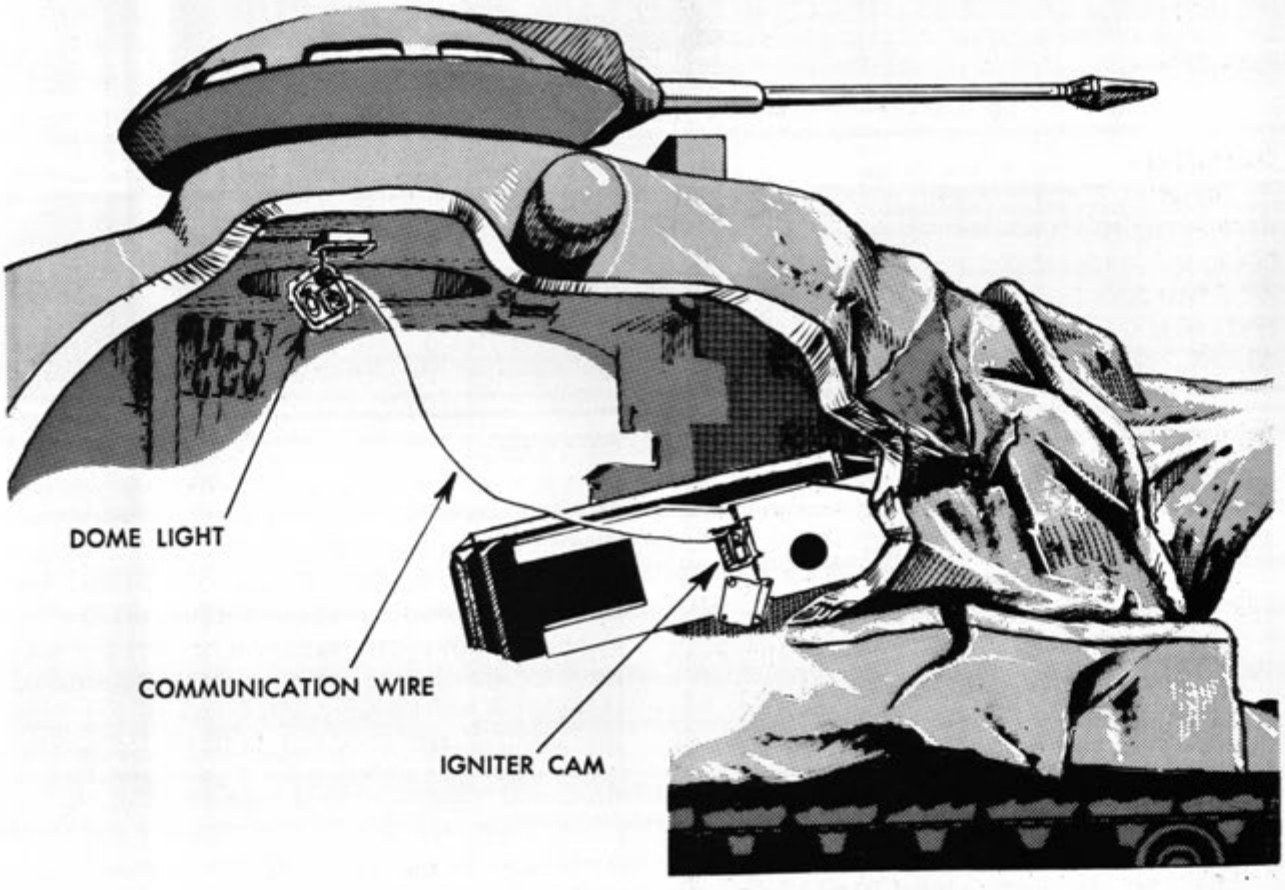
ILLUSTRATOR: MR. LARRY D. ELMORE

of the communication wire to this firing contact. Have the driver turn the master switch *on*. To fire the main gun place the dome light switch in the *off* position and load the main gun. Lay on the target using the range finder. To fire the main gun simply depress the lock on the dome light switch and move the switch to the white light position.

DISCUSSION

This technique not only solved the problem of firing the main gun, which can be accomplished by using other power sources in the turret, but also allowed you as a tank commander to control the laying and firing of the main gun. This field expedient firing circuit bypasses the loader's safety switch; however by using the white light lead on the dome light the lock on the switch acts as a safety.





NEWS NOTES

LTG SENEFF ASSUMES 5TH ARMY COMMAND

Lieutenant General George P. Seneff, III Corps and Fort Hood Commander, will become commander of the 5th US Army replacing Lieutenant General Patrick F. Cassidy who is scheduled to retire at the end of September. General Seneff's replacement at Fort Hood will be Major General Allen M. Burdette, currently commandant of the Aviation School, who has been nominated for appointment to Lieutenant General.

After one year of enlisted service, General Seneff attended the US Military Academy, graduating and receiving his commission in Field Artillery in 1941. He later transferred to Armor Branch and served during World War II with the 14th Armored Division in Europe.

LTG George P. Seneff Jr.

Among his many assignments, General Seneff has held a number of aviation-related positions including that of Director of Army Aviation from 1965 to 1966. He later served as commanding general of the 1st US Army Aviation Brigade and US Army Vietnam Aviation Officer.

General Seneff came to Fort Hood as Deputy Commanding General of MASSTER in 1970. He was promoted to Lieutenant General and assigned as Commanding General of III Corps and Fort Hood in 1971.

BG HOMER S. LONG JR. BECOMES ARMOR SCHOOL ASSISTANT COMMANDANT

Brigadier General Homer S. Long Jr. is the new Armor School Assistant Commandant replacing Major General George S. Patton who has been assigned as Director, J7 US European Command. General Long has been at Fort Knox since August 1971, serving as Deputy Commanding General of the Armor Center and Fort Knox.

During World War II General Long served as an enlisted infantryman with the 100th Infantry Division in Europe and won an appointment to the US Military Academy. He graduated in 1949 as an Infantry Second Lieutenant. After transferring to Armor, he attended the Armor Officer Advanced Course in 1956 and remained for a tour with the Armor School Staff and Faculty.

BG Homer S. Long Jr.

From 1960 to 1964 General Long served in Europe with the 4th Armored Division in several positions including commander of the 2d Medium Tank Battalion, 66th Armor, since redesignated 4th Battalion, 35th Armor.

Reporting to Vietnam in 1968, General Long served as Commander, 2d Brigade 25th Infantry Division and as G1, II Field Force. Upon leaving Vietnam, he served two years with the Office of the Chief of Staff as Deputy Secretary of the General Staff before coming to Fort Knox.

COLONEL DAVID K. DOYLE COMMANDS 3D ARMORED CAVALRY REGIMENT

Major General C. J. LeVan, Post Commander of Fort Bliss, presents the 3d Armored Cavalry Regiment guidon to Colonel David K. Doyle, who assumed command of the regiment from Colonel Walter W. Plummer. "Vaya con Dios" (Go with God) were Colonel Plummer's parting words as he said good-bye to the Regiment of Mounted Riflemen during ceremonies at Armstrong Field on 24 July. He has been reassigned as Deputy Secretary of the General Staff in the Office of the Chief of Staff. Colonel Doyle, the 54th Colonel of the Regiment, comes to Fort Bliss from an assignment with the Office of the Chief of Staff.

COL Doyle receives 3d ACR guidon from MG LeVan.

COL Plummer, 53rd Colonel of the Regiment, bids farewell to MG LeVan, Fort Bliss Commander.

1ST SQUADRON, 6TH ACR REDESIGNATED 2D SQUADRON, 3D ACR AT FT BLISS

"Bear your colors proudly," were Colonel Walter W. Plummer's words as the 1st Squadron, 6th Cavalry became the 3d Cavalry's 2d Squadron in ceremonies at Armstrong Field, Fort Bliss on 25 June. The 1st Squadron, 6th Cavalry, which is the oldest cavalry regiment with 13 battle streamers, will not become extinct, however. Its colors have been transferred to a new unit under the 1st Cavalry Division (TRICAP) at Fort Hood.

PORTRAIT OF GENERAL ABRAMS ADDED TO PATTON MUSEUM

Veterans of the 4th Armored Division, a unit distinguished by action during the Battle of Bastogne, recently presented a portrait of General Creighton W. Abrams to the Patton Museum. General Abrams served as a battalion commander of the 37th Tank Battalion, 4th Armored Division, and led this unit in a sweep through Europe during World War II.

Major General Donn A. Starry, Commander of Fort Knox, accepted the painting on behalf of the museum from Colonel Kenneth R. Lamison representing the 4th Armored Division Association.

PRODUCT-IMPROVED LEOPARD FEATURES NEW TURRET

The product-improved *Leopard* tank (right) features a welded turret utilizing spaced armor, which will improve ballistic protection 100 per cent over the original *Leopard* (left). In addition, the following technical improvements have been made:

- A new track with 2,500 mile life-expectancy.
- Add-on stabilization.
- A thermal shroud for the main gun.
- Steel armor aprons.

The product-improved *Leopard* is currently being introduced to German armor units. (Photo courtesy of *Soldat und Technik.*)

LIVING HISTORY EXHIBITIONS HELD AT PATTON MUSEUM

There is something more for the summer tourist to see at Fort Knox besides a distant view of the Gold Vault. The Patton Museum has begun a "Living History" program which has provided an interesting and educational experience for post visitors and assigned personnel and their families. Once each month from June through September, historic armored vehicles, with full crews in authentic uniforms, drive to the site of the new museum and, after being described individually by a narrator, blank fire their machine guns and main guns. At the conclusion of the demonstration visitors are allowed to inspect the vehicles at close hand and discuss them with the crews.

Keeping the vehicles in top running condition has been a major concern along with the task of restoring other vehicles to add to the display. To date the vehicles restored and demonstrated are: 1918 Ford Tank: *M20* armored car; *M5* half-track; *M4A3E8 Sherman* tank; *M7* self-propelled 105mm howitzer; *M24 Chaffee* tank; and the British *Centurion* tank. The museum staff plans to restore and add a German *Panther* tank to the demonstration by the spring of 1974. Dates projected for next year's demonstrations are: 9 June, 4 July, 3 August and 2 September.

Restored M5 Halftrack

Visitors inspect a restored M24 Chaffee tank at the close of the Living History Demonstration.

Restored M4A3E8 Sherman Tank

the tarpaulin

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

TAKE COMMAND

MG William J. Maddox Jr, Ft Rucker . . . **LTC Reid A. Barrett,** 3d Bn, School Bde, USAARMS . . . **LTC William Bartlett,** 3d Bn, 32d Armor, 3d Armd Div . . . **LTC Albert S. Britt III,** 4th Bn, 68th Armor, 82d Abn Div . . . **LTC Richard L. Feeney,** 2d Bn, 66th Armor, 2d Armd Div . . . **LTC Dale E. Hruby,** 1st Bn, 33d Armor, 3d Armd Div . . . **LTC Harry Johnson Jr,** 4th Bn, 63rd Armor, 1st Inf Div . . . **LTC Bobby L. Moore,** 10th Avn Bn, 9th Inf Div . . . **LTC Albert S. Rydell,** 1st Bn, 13th Armor, 1st Cav Div . . . **LTC Clyde N. Sedgwick,** 1st Bn, 73d Armor, 2d Inf Div . . . **MAJ Donald J. Fritche Sr,** D Trp, 3d Sqdn, 8th Cav, 8th Inf Div . . . **MAJ Kermit E. Larson Jr,** 155th Avn Co (Atk Hel), Ft Ord.

ASSIGNED

MG Frank B. Clay, OSD . . . **MG George S. Patton,** Dir J7, USEUCOM . . . **MG William E. Shedd III,** JCS . . . **BG Hugh J. Bartley,** JUSMMAT . . . **BG Richard G. Beckner,** JCS . . . **BG Vincent DePaul Gannon,** HQ USAREUR . . . **BG Judson F. Miller,** I Corps . . . **BG Wallace H. Nutting,** DCSOPS, DA . . . **BG William L. Webb Jr,** 8th Army . . . **COL Claude M. Adams,** Res Com Pers & Admin Ctr . . . **COL Walter G. Allen,** DCSLOG, DA . . . **COL William F. Coad,** Canadian War College . . . **COL Neal Creighton,** 7th Army Tng Ctr . . . **COL Charles M. East,** ARMISH MAAG . . . **COL Thomas G. Foster,** Naval War College . . . **COL Robert B. Gough,** ARR 8, Rocky Mt, CO . . . **COL Harry A. Heath,** HQ USAREUR . . . **COL James H. Hetherly,** Readiness Gp, Ft Hamilton . . . **COL George H. Isley Jr,** Ft Knox . . . **COL Birtrun S. Kidwell,** ASCFOR, DA . . . **COL Ross F. Mayfield,** USAINTS . . . **COL Corwin A. Mitchell,** USAARMS . . . **COL Hubert Ogily,** USAAVSCOM, Granite City, IL . . . **COL Chester C. Sargent,** ARR 9, Presidio of San Francisco . . . **LTC James P. Bergen,** DCSPER, DA . . . **LTC William R. Blakely,** HQ USAREUR . . . **LTC James Bradin,** Sec of Armor, Ft Knox . . . **LTC Joe A. Brown,** AFEES, Detroit . . . **LTC James G. Campbell,** ODCSCD, TRADOC . . . **LTC Andrew L. Cooley Jr,** DCSOPS, FORSCOM . . . **LTC Jeremiah M. Counihan,** Rock Island Arsenal . . . **LTC Sammy T. Cox,** ODCSCD, TRADOC . . . **LTC Doctor Crants,** ARR 2, Ft Dix . . . **LTC Phillip Daves,** ARR 6, Ft Knox . . . **LTC Thomas B. DeRamus,** DSCOPS, FORSCOM . . . **LTC Philip W. Dixon,** Stu Det, MDW . . . **LTC Bernard Doneski,** J3 OJCS . . . **LTC George T. Dramis Jr,** Ft Knox . . . **LTC Walter C. Evans,** DCSPER, FORSCOM . . . **LTC John G. Fowler,** S&F, C&GSC . . . **LTC Bobby F. Griffin,** USAARMC . . . **LTC Philip J. Haan,** MASSTER . . . **LTC Thomas Harkins,** Univ of So Mississippi . . . **LTC Robert Hodges,** Korea . . . **LTC James D. Johnson,** G3, 2d Armd Div . . . **LTC John L. Johnson,** OAV-CofSA . . . **LTC Raymond Jones,** HQ 6th Army . . . **LTC Robert E. Kelso,** HQ 5th Army . . . **LTC Donald Kemper,** Korea . . . **LTC Adolph Kotulan,** ARR 6, Ft Knox . . . **LTC Robert Lanphere,** Thailand . . . **LTC Ralph L. Lehman,** Armor and Engineer Board, Ft Knox . . . **LTC Robert Lemons,** Stu Det, MDW . . . **LTC Shaun T. Malloy,** Liaison Officer, British Army Staff College . . . **LTC James McLaughlin,** Army Adv Gp, Air University, Maxwell AFB . . . **LTC Marvin Morrison,** ACSFOR, DA . . . **LTC James Neighbors,** ARMISH MAAG Iran . . . **LTC Clifford Neilson,** DCSOPS, DA . . . **LTC Fred W. Pierce,** ARR 9, Presidio of San Francisco . . . **LTC Donald E. Pike,** Engineer Ctr, Ft Belvoir . . . **LTC Charles Poole,** HQ USEUCOM . . . **LTC Joseph D. Ryan,** MILPERCEN . . . **LTC Edward S. Rybat,** JUSMAGTHAI . . . **LTC Richard H. Schuessler,** DCSOPS, FORSCOM . . . **LTC Robert Springman,** USAIMA, Ft Bragg . . . **LTC Robert Thompson,** S&F, National War College . . . **LTC Clyde C. Tilly,** USATCI, Ft Polk . . . **LTC John E. Toye,** Ft Hood . . . **LTC Grady H. Tumlin,** CENTO . . . **LTC Patrick Vitello,** Stu Det, 3d Army . . . **LTC Ronald Walker,** Davison Airfield, Ft Belvoir . . . **LTC Allen S. Wilder,** HQ 1st Army . . . **LTC Billy J. Wright,** OTIG, DA . . . **MAJ Charles Abbey,** Northern Michigan Univ . . . **MAJ Darwin Arnold,** Germany . . . **MAJ Winfred Barthmus,** JUSMAG Korea . . . **MAJ Oliver Becker,** HQ, III Corps . . . **MAJ Jerry Burcham,** 82d Abn Div . . . **MAJ Arthur**

T. Carey, Germany . . . **MAJ Langley Chavis,** AFEES, Oklahoma City . . . **MAJ Clare Cheatham,** Germany . . . **MAJ Claude L. Clark,** 2d ACR . . . **MAJ Larry C. Cogan,** Ft Leavenworth . . . **MAJ James Cooksey,** Ft Knox . . . **MAJ Dennis V. Crumley,** USAARMC . . . **MAJ Lynn A. Daubenspeck,** Madigan Med Ctr, Ft Lewis . . . **MAJ Robert N. Daws,** Ft Leavenworth . . . **MAJ George Derrick,** OTIG, DA . . . **MAJ James W. Dobyns,** North Georgia College . . . **MAJ Joe G. Driskill,** OCofSA . . . **MAJ John E. Dunlop,** HQ EUCOM . . . **MAJ David A. Dunn,** ARR 6, Ft Knox . . . **MAJ Harold Earwood,** HQ 3d Army . . . **MAJ Richard Edwards,** Stu Det, 5th Army . . . **MAJ Philip Entrekin,** University of Arizona . . . **MAJ Jackie Eppard,** ARR 8, Rocky Mt, CO . . . **MAJ Robert Ferriani,** Res Com Pers & Admin Ctr . . . **MAJ Albert G. Folcher,** S3, 11th ACR . . . **MAJ Frederick Franks,** OSA . . . **MAJ John B. Frazee Jr,** ROTC Rgn II, Ft Knox . . . **MAJ Robert C. Goff,** 2d Bn, 64th Armor, 3d Inf Div . . . **MAJ Raymond M. Haney,** Redstone Arsenal . . . **MAJ Lester Helmke, Jr,** ROTC Rgn IV, Ft Lewis . . . **MAJ Joseph Hodges,** ARR 6, Ft Knox . . . **MAJ Rudy H. Holbrook,** HQ, VII Corps . . . **MAJ Gary Hoogenhous,** ARR 7, Ft Sam Houston . . . **MAJ Pleasant Huddleston,** ARR 2, Ft Dix . . . **MAJ Michael Hughes,** CDEC, Ft Ord . . . **MAJ Charles Jolley,** Germany . . . **MAJ Kenneth M. Jordan,** 2d Armd Div . . . **MAJ William Kaler,** MILPERCEN . . . **MAJ Lester Kerfoot,** ACSFOR, DA . . . **MAJ Roy Kimerling,** AFEES, Manchester, NH . . . **MAJ Walter F. Kyle,** Prairie View A&M, TX . . . **MAJ Graham MacArthur,** MAAG China . . . **MAJ Thomas Maxson,** ARR 6, Ft Knox . . . **MAJ Don W. Mayhew,** DCSOPS, USAREUR . . . **MAJ Coleman J. McDevitt,** HHT, 2d Sqdn, 17th Cav, 101st Abn Div . . . **MAJ Charles McLaughlin,** Germany . . . **MAJ James T. McWain,** SOUTHCOM . . . **MAJ Charles S. Merrian II,** MAAG China . . . **MAJ David P. Miller,** Ft Knox . . . **MAJ Wayne R. Miller,** Jr ROTC Rgn II, Ft Knox . . . **MAJ David G. Moore,** C&GSC . . . **MAJ James C. Mullett,** Ft Lewis . . . **MAJ Charles Nason,** USAREC, Ft Sheridan . . . **MAJ Garrett Noyes,** ARR 1, Ft Devens . . . **MAJ Robert A. Pate,** University of Miami . . . **MAJ James Patterson,** ARR 5, Ft Sheridan . . . **MAJ Richard Peterson,** USAARMS . . . **MAJ Robert Phillips,** DCSPER, DA . . . **MAJ Doug Pritchett,** Ft Benning . . . **MAJ Robert Rackley,** OJCS, **MAJ Virgil L.J. Ray,** Ft Sill . . . **MAJ William Riddel,** TAGCEN, DA . . . **MAJ Chandler Robbins,** HQ EUCOM . . . **MAJ Dominic W. Ruggerio,** S3, 1st Sqdn, 6th Cav, 1st Cav Div . . . **MAJ James Scarboro,** EUCOM . . . **MAJ Sam A. Scavo,** 9th Inf Div . . . **MAJ Herman Schmidt,** College of William and Mary . . . **MAJ G.P. Schurtz,** HQ USAREUR . . . **MAJ Jack H. Sentell,** 4th RD, Ft Sam Houston . . . **MAJ Bob Shambarger,** ARR2, Ft Dix . . . **MAJ William N. Simpson,** 5th Bn, 68th Armor, 8th Inf Div . . . **MAJ Robert Sloane,** 2d Royal Tank Regiment, Munster, England . . . **MAJ Douglas W. Smith,** Ft Leavenworth . . . **MAJ Paul D.J. Smith,** Ft Stewart . . . **MAJ John D. Sterrett III,** HQ USARPAC . . . **MAJ William Streeter,** MILPERCEN . . . **MAJ William Strunck,** ARR 3, Ft Meade . . . **MAJ Ralph Talbot,** DIA . . . **MAJ Jerry M. Thiels,** Ft Hood . . . **MAJ Roger Trickler,** Germany . . . **MAJ Donald Vickery,** 7th Sqdn, 1st Cav, Ft Knox . . . **MAJ Joseph Waddell,** Germany . . . **MAJ A.H. Walters,** 4th Bn, 35th Armor, 1st Armd Div . . . **MAJ Ernest K. White,** 1st Bde, 1st Armd Div . . . **MAJ Bobby G. Willey,** 1st Inf Div . . . **MAJ William Yarborough,** Armor Branch, MILPERCEN . . . **MAJ James Zimmerman,** St Marys University, TX . . . **CSM Arnold E. Orr,** 1st Inf Div . . . **CSM Donald R. Shipman,** 1st Bn, 81st Armor, 1st Cav Div . . . **SGM William A. Connelly,** Ft Bliss.

AND SO FORTH

The Combat and Training Developments building at Fort Knox was recently renamed **Sinclair Hall,** in honor of **Colonel Christopher B. Sinclair,** who died with six other men in a helicopter accident 16 May at Fort Knox. Colonel Sinclair was the commander of Combat Developments Command—Armor Agency at the time of his fatal accident . . . When the **1st Cav Division's Horse Cavalry Platoon** lost two mules and 21 of its 27 horses because of a worming treatment, offers of help and horses poured in from innumerable sources. Due to the generosity of the various individuals and organizations since the initial death on 19 July, the show will soon be on the road again with a complement of 30 horses, according to 1st Cav Div Information Officer Major John Grabowski . . . Among recent additions to the **Patton Museum** was one of the original experimental *Cheyenne* attack helicopter models. The helicopter will be held in the study exhibit at the old museum building until suitable display area is constructed at the new museum . . . **1st Plt, Co C, 3d Bn, 33d Armor** set a number of 3d Inf Div records in qualifying all five of its tanks with distinction. Platoon leader, **1LT William B. Boyers** led his tank crew to an individual tank record of 2,630 points while the platoon amassed an average of 2,256 points . . . **3d Bn, 32d Armor, 3d Armd Div** has won the USAREUR tank gunnery title for the third year running, qualifying 50 of its 51 tanks, with 36 receiving distinguished ratings . . . Distinguished Graduate of Motor Officer Class 73-12 was **1LT Larry J. Lust;** Honor Graduates were **2LT Ronald L. Rehm** and **1LT Ronald E. Strossner** . . . Distinguished Graduate of Motor Officer Class 73-13 was **2LT Gregory O. Crew;** Honor Graduates were **CPT Dennis A. Drake** and **2LT Karl W. Zart** . . . Distinguished Graduate of NCO Advanced Class 73-2 was **SFC Willis H. Zeinert Jr** of Ft Hood; Honor Graduates were: **PSG Louis Koches Jr; PSG Jesse W. Flippo; SFC Howard L. Fisher;** and **SFC George D. Proctor** . . . Distinguished Graduate of NCO Basic Class 3-73 was **SGT Dale E. Ledoux;** Honor Graduates were: **SP4 Herman L. Kuhnhausen; SP4 Terry L. Rich; SGT David D. Roberson;** and **SP4 Robert M. Edwards** . . . **SSG David R. Dalton** of Co C, 1st Bn, 8th Cav, 1st Cav Div, was recently named III Corps NCO of the Quarter . . . **CPT Robert C. Held** of the 78th Res Tng Div has been nominated as an "Outstanding Young Man of America" . . . *ARMOR* Magazine's Promotion Manager, **PFC Steve Walker,** recently copped 2d place in the Fort Knox post golf championship. Top man in the four-day tournament was **MSG Stu Smith.**

CLARKE OF ST. VITH: The Sergeants' General
by William D. Ellis and Colonel Thomas J. Cunningham Jr. (USA-Retired) Dillon/Liederbach, Inc. 350 pages. 1973. $9.00.

A word about the significance of St. Vith. Because of the drama of the airborne division being cut off there and the day to day suspense of the battles of the rescuing armored columns, Bastogne has become the symbol of the obstinate, gallant and ultimately successful American defense in the Battle of the Bulge. But there were other crucial actions; the shoulders of the German penetration were held by tenacious infantry actions at Monschau in Belgium and at Echteranch in Luxembourg, and at St. Vith, the German timetable was held up for at least six days.

Even with the perspective of time, it is hard to judge objectively the most significant of these actions from the standpoint of the defense. More reliable would seem to be the judgment of the offense—that of the senior German commanders involved in the Ardennes Offensive, who nearly all point to loss of time at St. Vith as being one of the primary causes for the failure of their attack. They had not expected American troops to get there to defend it and had planned to control its road net by the evening of 17 December. But Bruce Clarke did get there ahead of them on the 17th, did take charge and did begin to set things right by organizing a scratch force of lost units, stragglers and brave men seeking a leader to follow, while he waited for his own CC"B" to fight its way to the front. He did organize a defense with this heterogeneous force and did hold on till the morning hours of the 23d. It was a proud action by American Soldiers, and an outstanding example of leadership and resourcefulness by General Clarke. In a conversation I had with him after VE Day, General William M. Hoge, who had commanded CC"B", 9th Armored Division on General Clarke's right flank in the St. Vith salient, had nothing but praise for General Clarke's personal actions and conduct of the defense of St. Vith.

Each war brings to prominence its share of senior military men who become known to every household in the nation either as a hero or as a failure. There are others, more junior, equally deserving of the plaudits of their countrymen as the galaxy of heroes, but upon whom publicity seems to turn its back; and they remain comparatively unknown outside their own profession. These men do not go totally unrewarded. They usually are the object of either the respect or jealousy of their fellow professionals, while soldiers pay them the high compliment of seeking to serve under their command in combat. Such a man is General Bruce C. Clarke, and this is his story.

from the bookshelf

Bruce Clarke is a complex person who once said to me, "I can't look at something which seems wrong without trying to do something to make it right." That statement typifies one of his two dominant characteristics; a compulsion to take hold of anything he sees that needs doing and do it and the urge to take charge—to take command—of any endeavor with which he associates himself. He is a man who believes strongly in himself; who possesses to a marked degree that characteristic vital to the man who will command troops in combat—the moral courage to make tough decisions and stand by them.

Something of an egoist whose preoccupation with his own thoughts and ideas tends, to a disconcerting degree, to give the impression of a disregard for others. Nevertheless, a public-spirited citizen who, in official retirement, continued to give unstintingly of time and talent (usually without remuneration) not only to his beloved Army and Country but to youth activities and public service organizations. A trainer of others, an organizer, a doer possessing the knack of recognizing a good idea, whatever its source, and of adopting it as his own and acting upon it. A man more concerned with being correct than being popular which, ironically, helped make him successful and, in the brotherhood of combat, popular. But this is more than the story of Bruce C. Clarke—it is a story of combat, of the exploits (mostly laudable) of average American Soldiers and their junior leaders in Europe in World War II.

In the summer of 1945 General George S. Patton held a series of seminars with representative commanders, from the rank of corporal to major general, from units of the divisions which had served in his 3d Army. He introduced each seminar with a typical Patton monologue the gist of which was that he had studied the art of war all his life and, while he had found many texts on how to be a field marshal, he had never found one on how to be a squad leader or platoon commander. Now he intended to correct that situation by writing such a book based on the material which would be supplied by answers to questions he would ask during the course of the seminars.

General Patton's untimely death prevented completion of his project. It is probable, however, that he would agree that much of what he would have written is contained in the accounts of the exploits, recounted here, of General Clarke's commands in Europe (CC"A" of the 4th Armored Division across France and CC"B" of the 7th Armored Division in the Battle of St. Vith), for General Patton respected Bruce Clarke as much as Clarke admired Patton. Clarke was one of the most competent and successful combat leaders of US troops in Europe in World War II.

True enough, he had good men and units well trained in the 4th Armored Division, but, as a battalion commander, chief of staff and a combat commander, he had a great deal to do with the selection of key personnel and the training of both men and units of that division. On the other hand, when he joined the 7th Armored Division he found in CC"B" an organization accustomed to mediocrity and, in six weeks, helped turn it into a proud, competent band of professionals who, at St. Vith, successfully engaged in one of the epic battles of the war where it earned a Presidential Unit Citation.

His Non-Commissioned Officer academies span the Army in Europe, the Continental United States and Korea. He set up the postwar Army school system.

All in all this is a story of a man, of combat and of American Soldiers that contains much of value for any young man, especially one who might be contemplating a career in the armed forces of his country.

Brigadier General Hal C. Pattison
USA-Retired

The above review is excerpted from the Foreword to Clarke of St. Vith *with the permission of the author and publisher.*

UNDER THE GUNS: New York: 1775-1776

by Bruce Blivens Jr. Harper & Row. 395 pages. 1972. $10.00.

Colonial soldiers had been fighting the British for over a year before the Continental Congress finally announced that the basic issue between the antagonists was total dissolution of their previous connections. This book is a snapshot of New York during the time that critical decision was being made. In that sense it is perhaps a microcosm of the larger experience of all the colonies.

But New York was a special case. It was, to many in the 18th Century, a New World Corinth; commercial, sinful, wicked. Its traffic jams were a visible nuisance to dwellers and visitors alike. There was political acrimony over the problem of rent control and inflation. Its Royal governor, William Tryon, was extremely popular with many colonials. Its merchants grew rich selling to the British. Citizens resisted being called to serve, some defected to the enemy. In its harbor stood various elements of a British fleet. In its streets militiamen mustered reluctantly, and after Bunker Hill, the Continental Army and George Washington moved down from Boston to aid its defenses.

A fascinating account of an episode from our colonial past. Its lesson may be that we haven't learned much, or that things don't change. On the other hand it bears a larger message; one of men who dedicated themselves to a cause they considered right, and who made the hard decisions that had to be made, as best they could muster the wisdom to make them in the face of considerable adversity. They did, indeed, leave us a large legacy.

Major General Donn A. Starry
Fort Knox, Kentucky

THE LION AND THE EAGLE

by Basil Collier. Putnam & Sons. 499 pages. 1972. $12.95.

Basil Collier is well known for his *Battle of Britain* and other histories. Unfortunately, this large and expensive volume does not measure up to past performances. While the book alleges to be an account of Anglo-American strategy from 1900-1950, it actually proceeds on the level of day-to-day tactics, parliamentary fittle-tattle and battlefield antidotes. At the same time, using the broadest of brushes, the author often paints over significant details and issues—the Korean War gets one half a page, a post script is added to cover the Suez Canal fiasco, and the Cold War period from 1945 to 1950 is dismissed in only 12 pages.

Falling short of his prologue promise to delve into the replacement of England by the United States as the leader of the free world bloc in an orderly fashion, Collier gives us, in order, what could well be a series of articles only nominally tied together. This shortcoming is magnified by an organization which takes the reader on a world tour from paragraph to paragraph.

While purporting to be Anglo-American in scope, the reader who expects to find out anything about the development of American strategy will be disappointed. Only British strategy is examined in any detailed manner. The treatment of personages is, likewise, most pro-British.

Although well-written in sections, the overall effect is one of confusion. The book is neither a history of the victories of the Anglo-American martial efforts nor a good description of the grand design of the Atlantic brotherhood. The volume does a little of both without accomplishing either.

I recommend your reading time would be more gainfully spent elsewhere.

Brigadier General Thomas W. Bowen
Director of Intelligence Support, ACSI

THE KENNEDY PROMISE: The Politics of Expectation

by Henry Fairlie. Doubleday. 364 pages. 1973. $7.95.

In these days of Watergate, Henry Fairlie presents his view of another presidency that is thoroughly fascinating, regardless of your alignment on the Kennedy family. The author establishes clearly that he is a Brit with no love for the throne. He views the Kennedys as a family with royal, if not imperial, pretentions and weaves his book around this point.

Fairlie's theme is the "burden and glory" of the Presidency, as propounded by JFK. John Kennedy perceived the world as a place of near constant crisis and confrontation, in need of deliverance. This was the theme of his campaign and his presidency for the 1,000 days. National leaders are bound to excite their people to high levels of national purpose when they see the need to do battle. Witness Churchill in 1940. Fairlie depicts Kennedy in 1960 in the same role, but without a real cause. It is Fairlie's charge that JFK perceived crisis and generated expectations to keep the American public always on its toes, waiting to be led to the next challenge. This leads to a sense of national fatigue and frustration, with the disaffected often taking to the streets.

The author presents a multitude of unhappy realities of the Kennedy methods. They are related with eloquence despite his obvious bias. The American people were repeatedly excited to expect so much, where the government was not able to deliver. Thus, the government was vastly overextended. Perceived crises did not materialize (the nuclear imbalance was a great campaign issue in 1960, only to be quietly dismissed after the election when the superiority of the US was reaffirmed).

Fairlie pounds away at the imperial pretentions of the Kennedys. In pre-election 1960, JFK speaks of his view of the Presidency in the '60s as the "preservation of civilization." In his view, the President "represents all people who want to be free." Robert Kennedy, as late as 1968, spoke of the role of the US in pursuit of the "moral leadership of the planet." These are heady ideals based on lofty aspirations. But the struggle for fulfillment produces inevitable frustration.

Fairlie contrasts these ideals with the Kennedy record at home. JFK had clearly defined four different national issues as the most important domestic priorities. Civil Rights was not among these. It was Lyndon Johnson who took up that mission.

Fairlie highlights characteristics of the Kennedy administration that make interesting comparisons in these days of Watergate. JFK is remembered for the brilliance of his cabinet. But upon examination these were men of individual brilliance, of the same cloth. They shared the same deep convictions and were not prone to serious internal contention. There was little opportunity for any adversary proponency to produce clearly defined options. This reasoning closely follows the theme of David Halberstam's *The Best and the Brightest*.

Kennedy had little patience with views which did not complement his own. We are told that he could be sold easily on anything which was presented "clearly and with assurance." He displayed a deep distrust for the bureaucracy, especially The Department of State. He wanted things done with a swiftness that was possible only from small groups that often did not reflect the thought and depth required by the great issues at hand.

The author deals very deftly with his topic. He is no Kennedy lover, but his analysis of the Kennedy method is done

with respect and good taste. There is even a touch of nostalgia. He often speaks of the "Unfinished Presidency." The world, and even Mr. Fairlie, will always speculate on what might have been. This book is well worth reading.

Colonel Clyde H. Patterson Jr.
DCSOPS, USAREUR

THE AMERICAN WAY OF WAR: A History of United States Military Strategy

by Russell F. Weigley. MacMillan. 584 pages. 1973. $12.95.

Professor Russell F. Weigley of Temple University, author of the authoritative *History of the United States Army*, has written a particularly timely account of the evolution of United States military strategy and policy. Part of the excellent *MacMillan Wars of the United States* series, this book comes at a time when the whole strategic doctrine of the United States is undergoing a fundamental review in the wake of the Vietnam War.

Taking Clausewitz's dictum that war is "an act of violence intended to compel our opponent to fulfill our will," Weigley analyzes two kinds of war—general war that seeks the overthrow of the enemy, and limited war that seeks limited political end. Two kinds of supporting military strategy are also analyzed—"the strategy of annihilation which seeks the overthrow of the enemy military power and the strategy of attrition, exhaustion or erosion."

With the exception of the American Revolution, when American means were limited, US strategy has generally been that of annihilation—usually stated in more genteel terms as "total victory" or "unconditional surrender." This strategy was reinforced by the American penchant for turning its wars into *jihads*—holy wars to stamp out absolute evil. The usual tactic was to ignore a long series of provocations—as in 1914-1917 or 1939-1941—until the threat became so clear, so unequivocal that a national crusade could be launched. With the advent of atomic weapons, however, "total victory" was no longer a viable goal, since after a nuclear holocaust it might prove to be the victory of a howling desert.

But Americans also reject "limited wars." Somehow a national crusade for total victory has been more acceptable to the American people than a pragmatic limited war for limited political ends. How such a strategy of annihilation can seem to be the *preferred*, humanitarian, moral form of war is only one of the paradoxes brought to light in Weigley's book.

Take, for example, the practice of attacking an enemy's civilian base. Critics of American bombing in Indochina would hardly conceive of such attacks as humanitarian, but it is out of humanitarian concerns that such tactics grew. Weigley traces the roots of such tactics to the American Civil War. The Industrial Revolution had so perfected arms and munitions that the direct clash of contending armies produced frightful casualties on both sides. In the first month of Grant's 1864 Wilderness Campaign, for example, the Army of the Potomac suffered 55,000 casualties, while Lee's Army of Northern Virginia suffered 32,000. While such a strategy of attrition might eventually prove successful for the North, the appalling costs lent force to attempts to find a better means. Casting about for a psychologically paralyzing method for destroying the enemy's will to fight, the solution was Sherman's famous (or infamous) March to the Sea. "If the people raise a howl against my barbarity and cruelty," said Sherman, "I will answer that war is war, and not popularity-seeking. If they want peace, they and their relatives must stop the war."

The stalemate in trench warfare in World War I seemed to emphasize this lesson. The casualties were again appalling. "On the ground, of some 65,000,000 men mobilized into all the armies which fought the Great War, almost 9,000,000 died and 22,000,000 were wounded in battle." Visionaries such as Douhet, his disciple Billy Mitchell and Alexander De Seversky claimed that air power, in a single decisive Napoleonic stroke, could so paralyze enemy will that such enormous losses could be avoided, and wars could be brought to a rapid and conclusive end. These then were the humanitarian roots of the bombing of Dresden, Tokyo, Hiroshima and Nagasaki, to say nothing of Hanoi and Haiphong.

But today, strategy is in revolution. Since the advent of the nuclear age, the United States has been shifting its definition of strategy to the use of military force, not for war, but for the deterrence of war. "Combats for the object of war," the classical Clausewitzian definition of strategy, has been called into question, not only by nuclear weapons, but also by the inconclusive nature of conventional wars in the nuclear age. The inability of nuclear powers to focus because of the nuclear standoff has caused the inordinate power of the weak to frustrate great power ambitions. The frightful costs to all parties of the Vietnam War appear to have negated "Wars of National Liberation" as political acts, and the latest attempt at "usable combat," International Terrorism, appears severely limited in its ability to achieve political ends.

In the complex and contradictory world of today, when summitry and détente are inexorably intermingled with containment and the nuclear balance of terror, the problem of how to at once deter potential adversaries while assuring the American public and foreign allies is a formidable one. The perspective of Professor Weigley's excellent *The American Way of War* is a good beginning.

Lieutenant Colonel Harry G. Summers Jr.
DCSOPS

WEST POINT: America's Power Fraternity

by K. Bruce Galloway and Robert Bowie Johnson Jr. Simon & Schuster. 448 pages. 1973. $10.00.

The peculiar penchant for finding monsters and ghosts upon whom to pin frustrations continues unabated with Bruce Galloway's and Bob Johnson's *West Point: America's Power Fraternity*.

We have come full circle. In the aftermath of the Korean War, the right wing fostered the myth of Communist conspiracy, fueled in large measure by professional anti-Communists and by apostates who denounced their former beliefs with self-serving "confessions." They erected symbols of their faith—"pinko" college professors, "commie-symp" reporters and other such stereotypes. It can be argued that these myths and symbols became self-fulfilling prophesies as the New Left of the 1960s actually did attempt, in some measure, to "overthrow the United States by force and violence," to fulfill the apocalyptic visions of the Right.

Now, in the aftermath of the Vietnam War, it is the turn of the Left to trot out their own set of myths and symbols. Apostate militarists like Lucien K. Truscott IV (in *Saturday Review* and *Village Voice*), Robert B. Johnson (in *Playboy*), Tony Herbert (in *Soldier*) and Ed King (in *Death of the Army*) attack their former beliefs for fun and profit.

Like the professional anti-Communists of 20 years ago, they serve up the same self-serving exposés in the same tone, the same format, with the same techniques of guilt-by-association, distortion and innuendo. Like their mirror-images, there is a grain of truth in their charges, but again,

like their right-wing counterparts, this grain is so overfertilized by the surrounding rhetoric that it never has the chance to develop into a reasoned analysis.

Bruce Galloway and Bob Johnson, with the assistance of Kansas City's Louis Font, have erected as their symbol the "West Pointer." Johnson and Font are both graduates of the military academy, and both resigned over the issue of the Vietnam War. Their moral imperative to prove the righteousness of their choice, and the immorality of the system they denounced, is the meat of *West Point: America's Power Fraternity*.

As a "mustang," a Regular Army officer who received a direct commission from enlisted status, I must admit that they have chosen an attractive symbol. No one is more arrogant, pompous and overbearing than a brand-new West Point Lieutenant—unless possibly a "preppy" looking down his nose at the Public School 92 graduate who lacked the advantage of Groton or Exeter. But after several years of service the differences tend to melt away. Most officers have something more to be proud of than where they went to school, and the middle-aged "professional West-Pointer" is as tiresome and pathetic as the middle-aged "professional-fraternity-brother."

These analogies were purposely drawn, since, as proof of their allegations, the authors have quoted liberally from *Assembly*, the alumni magazine of the Academy; and *Assembly* is as full of boosterism and as inane as most other alumni magazines. Dredging up old grads from George Armstrong Custer to Omar Bradley to Douglas MacArthur to William Westmoreland, they attempt to prove their rather contradictory thesis that West Point is a third-rate engineering school that at the same time controls the military, civilian industry and civilian government. Their paranoia stretches plausibility beyond the breaking point. To blast in the same breath Warren Hearnes and Nicaragua's Anastasio Somoza because both were graduates of the class of 1946 is to sink to depths even Joe McCarthy did not plumb.

There is another side to being a West Pointer. As a friend lamented, the worst possible fate is to be a WASP West Pointer. When you don't get the promotion you deserved, when you don't get the choice assignment you'd been eying, you can't blame your religion, you can't blame your race or ethnic background, you can't even blame your school. You are forced to find fault within yourself, and that is a burden that is almost too much to bear.

On its merits, this book should be allowed to sink into the obscurity it so richly deserves. But there is a danger in this and similar ideological attacks on the military. Like their right-wing counterparts, they may evoke self-fulfilling prophesies; an isolated military insulated from civilian society is neither in the nation's nor the military's best interests. What is needed is constructive criticism to bring the military into civilian society, not destructive criticism to drive it out.

Lieutenant Colonel Harry G. Summers Jr.
DCSOPS

Colonel Summers is a regular reviewer for the Kansas City Star *and currently has the China Desk in the Politico-Military Division, DCSOPS.*

TWICE THROUGH THE LINES

by Otto John. Harper & Row. 340 pages. 1972. $8.95.

The mysterious German superspy Reinhard Gehlen, about whom so much has recently been written (*The General Was A Spy, Gehlen: Spy of the Century*), and who has himself authored memoirs (*The Service*), hated Otto John, a liberal German who was one of the few survivors of the Hitler assassination attempt of July 1944. Gehlen's animosity stemmed from John's damaging testimony in the 1948 trial of Field Marshal Erich von Manstein. The testimony against the German strategist resulted in an 18-year prison sentence for Manstein. Gehlen, a long-time worshipper of Manstein, thereafter opposed John at every outing. Unable to prevent Otto John from being appointed to head West Germany's internal security service in 1950, Gehlen enjoyed a moment of sheer pleasure when John defected to the Russians in July 1954. Gehlen's explanation for the incident was simply, "Once a traitor, always a traitor."

Otto John subsequently returned to the West in 1955, was tried, convicted and sentenced to four years' imprisonment. While confined, John penned the autobiographical account of his experiences, *Twice Through The Lines*. He didn't defect, he asserts, but was drugged and kidnapped by secret service agents of the Russian KGB. Forced to do their bidding until he was able to engineer an escape, the central figure of this study enjoyed freedom in the West for one day before he was arrested by West German authorities and sent to trial for treason. His inability to convince the court of his innocence led to imprisonment and a continuation of this cold war controversy.

Whether Otto John was kidnapped or voluntarily defected to the East may not be known until additional information is released by the Russian or East German authorities. Nevertheless, Otto John's account, though stilted and tedious in spots, has a ring of truth about it and should be read by spy *aficionados* as counterpoint to the Gehlen studies.

Lieutenant Colonel John G. Fowler Jr.
Command and General Staff College

WELLINGTON, PILLAR OF STATE

by Elizabeth Longford. Harper & Row. 472 pages. 1972. $10.00.

With *Wellington, Pillar of State*, Elizabeth Longford, mother-in-law to the 7th Duke of Wellington, completes her two-volume biography of Britain's greatest 19th Century military/political leader. In this second labor of adoration, Mrs. Longford with expected prejudices, retells the Iron Duke's extensive career as an enduring, unassailable national hero from his victory at Waterloo in 1815 until his death in 1852 at the age of 83.

For Army officers, *Wellington* possesses one eminently successful officer's answer to an intriguing question of professional significance: how does the military commander utilize his national esteem when he is only 46 and has already accomplished the penultimate in a military career? Operating in the same constitutional environment and schooled in the same political-military tradition as Marlborough, Washington, Grant and Eisenhower, Wellington similarly devoted his post-military career to serving his nation in its highest offices. Moreover, Wellington, like his fellow national military heroes, was unable to escape the seemingly endless difficulties of the transition from the highly structured, personal relationships of the military to the shifting and provisional loyalties of national politics.

The Iron Duke's political predilections were heavily influenced by this transitional experience; he thus evolved into much more of a conservative politician than his political utterances and actions during his military career would have suggested. The Duke of Wellington, however, lived in the socially revolutionary mid-19th Century, and the political career of a highly conservative, universally acclaimed, living national legend in this volatile period in history provides interesting and enlightening reading.

Captain Henry J. Lowe
US Military Academy

ARMOR REGULARS

Items now available from:

USAARMS
Book Dept.
Bldg. 2426
Fort Knox,
Ky. 40121

Payment must accompany all orders.
Please add 10% for postage and handling.

Windbreakers

Green nylon windbreakers with gold Armor or Cavalry insignia. Specify size, Armor or Cavalry and zippered hooded or snap-button non-hooded. S, M, L, or XL. **$7.95**

Lighters

Old Bill lighters by Zippo.
$4.95

Stetson Cavalry Hats

Available with general officer, officer, warrant officer, or enlisted cord. Specify hat size and cord type.
$17.50

Regulation US Army Saber

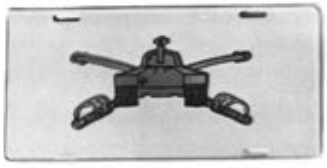
$45.00

SABER LETTER OPENER

$8

Beautifully designed, silver with black handle, 11" long.

License Plates



$2.00 each

Cavalry—gold crossed sabers on red and white field
Armor—gold branch insignia on yellow background

AFV PRINTS NOW AVAILABLE

M60A1
INK AND WASH—18" x 24" . . . $9.95
Limited Edition
(2,000) signed
and numbered
by Artist
Roy Minegawa

TANK PRINT PORTFOLIO
INK AND WASH—9" x 14" . . . $9.95
6 Prints—MARK I
RENAULT FT117
TIGER I
PANTHER V
M4A3E8

The Cavalry Journal ARMOR

1885–1973

United States Armor Association

88th Anniversary Issue

UNITED STATES ARMY
THE CHIEF OF STAFF

12 December 1973

SUBJECT: The 197th Anniversary of Armor

TO THE OFFICERS AND MEN OF ARMOR

I take distinct pleasure in extending the congratulations of the United States Army as you celebrate the 197th anniversary of your branch on 12 December.

From your distinguished forerunners -- the Cavalry, the Tank Force, and the Armored Force -- you and the Nation have inherited an enviable record of success in battle and a professional esprit second to none. To that legacy you have added your combat victories in Korea and Vietnam and your success in meeting all the challenges with which you have been faced in peacetime. As you cross new frontiers, manned by volunteers, armed with the latest weapons, and mounted on increasingly capable vehicles, your professionalism and readiness will continue to be a most important part of the Army's contribution to our national security.

The men and women of the Army join me in saluting your past achievements and in wishing you continued success.

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

ARMOR

the Magazine of Mobile Warfare

Volume LXXXII | November-December 1973 | No. 5

ARTICLES

FEATURES

DEPARTMENTS

ON THE COVER . . .

Commemorating the 88th Anniversary of the US Armor Association is the traditional "Old Bill" by Frederic Remington, which appeared on the cover of the *Cavalry Journal* for nearly 40 years. Beginning on page 8 is a history of the Society of the Mounted Arm.

ARMOR Magazine is published bimonthly by the United States Armor Association, 4401 Vine Grove Road, Fort Knox, Kentucky 40121, 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.

MEMBERSHIP DUES (including ARMOR): $6.50 one year, $12.00 two years, $18.00 three years. Active or associate membership is open to all active, reserve, retired or honorably discharged members of the U.S. Armed Forces.

SUBSCRIPTION RATES: Individuals not eligible for membership, unit funds and institutions may subscribe to ARMOR. **Domestic:** $6.50 one year, $12.00 two years, $18.00 three years. **Foreign:** $8.00 one year, $15.00 two years, $22.50 three years. Single copies $1.50.

CORRESPONDENCE: All correspondence should be addressed to ARMOR. Post Office Box O, Fort Knox, Kentucky 40121 (Telephone: Autovon 464-2257 or Commercial (502) 624-2257).

POSTMASTER: Second-class postage paid at Fort Knox, Kentucky and at additional mailing offices.

ARMOR may be forwarded to persons in the United States Service whose change of address is caused by official orders (except to APO addresses) without payment of additional postage (158.4 Postal Manual).

letters to the editor

Service Schools Require Dialogue With Field

Dear Sir:

I believe the entire Armor Community will endorse the efforts of General Starry in expanding the professional dialogue from within. There are untold numbers of brilliant ideas manifested in the routines of virtually every Armor unit and we should seek to share our success. "Commander's Hatch" can be the vehicle for the cross-pollenization of success. It can also close the gap on what to me is a community problem: Keeping the service school tuned to contemporary problems.

Perhaps the greatest single source of irritation to a service school instructor is the inability to speak (with authority) on the current problems encountered by units in the field. This problem is generated by:

- The incumbent instructor's loss of contact with the field after 60-90 days. This problem is compounded by a time differential; that is, by the time the instructor is subject matter qualified (a minimum of six months), he has lost touch with many contemporary problems.
- The limitations of the instructor's personal experience and professional background that determines his ability to debate the merit of doctrine.
- The student's natural right to challenge doctrine (the system) when empirical evidence shows that old problems simply get older, with no guarantee that workable solutions are available or are being sought. A credibility gap is created by the fact that the instructor has no ready reference of the current problems in units, the problem-solving techniques tried and failed, and most importantly, the successful problem-solving techniques. Yes, we have lessons learned, and yes we have after-action reports, both generally insufficient in scope and numbers.

Most significantly, there is a disturbing lack of one-to-one communication between the professional soldier and his branch school. It is my view that such communication is required to provide the service school with the multiple stimuli needed to seek solutions to contemporary problems. An individual who has served, for instance, on the USAARMS Faculty for one to two years is as doctrinally current as is possible. Indeed, he is the defender of doctrine, fielding challenge after challenge from the student body. In order to deal intelligently with the complexities of problem-solving in the contemporary military environment, and more to the point, to enable the instructor to offer sound and specific techniques for solving current problems, the instructor must be able to draw upon the knowledge and the techniques manifested in the total community. The question is, how to best establish the lines of communication for such a "link up."

Major General George S. Patton, in an address to faculty members on 21 July 1973, specifically cited the need for the faculty to "continue to travel" as a key point in keeping a receptive attitude to promote research and problem-solving. Under General Patton's leadership, the Armor School "went to the field." Such trips are of proven value in identifying key problems and obtaining feedback on the perceived success of the institution, but they are necessarily limited because of cost and staffing. Often those significant but small and irritating problems that beset the young officer and noncommissioned officer, dealing with every professional discipline, do not surface. They are problems that must also be offered to the professional faculty for consideration. Who is in a better position to address all problems objectively, free from the press of events, than the qualified staff and faculty of the service school?

This critical problem is not a deficiency in the system. Systems provide the medium for communication but do not communicate—people do. It seems to me that the solution can be found in part, in the expanded dialogue that was characterized by General Starry. He offers a forum that demands that the professional soldier have a sense of urgency about problems and solutions, and be motivated to share his experience with his comrades. I believe this to be a *fundamental* responsibility for every career soldier. If the response were overwhelming, there is a chance that many timely offerings might go unpublished simply for lack of space. A simple administrative procedure could be instituted whereby *ARMOR* Magazine would route each bit of communication to the appropriate USAARMS office for consideration. The result would be a quantitive increase in the ideas and innovations that would be available to the service school instructor, all the while providing a stimulating forum for the entire community through the "Commander's Hatch."

I am simply surfacing an old issue at a time when the community is offered a vehicle to adequately address it. I see a need, today more than ever. We must communicate regularly and freely. Communication intended specifically for the USAARMS faculty does not have to be polished, edited and formal. It can take the form of a telephone call, a short note or a personal visit. I have tried to imagine the stimulating inquiry that would result if each officer and NCO would identify the problem he believes to be most difficult, or the solution he found most workable, and describe it in a short communication to the appropriate service school or to *ARMOR* Magazine for inclusion in "Commander's Hatch." If this were done, let us say *monthly*, perhaps instructors could begin offering more solutions than problems. The Armor Community would be substantially enriched.

Oh yes, our address is: US Army Armor School
ATTN: *(Appropriate Department)
Fort Knox, KY 40121

*Automotive Department
Army Maintenance Management Department
Army-Wide Training Support Department
Command and Staff Department
Communication-Electronic Department
Leadership and Educational Development Department
Deputy Commandant for Combat and Training Development
Weapons Department

JOSEPH E. DREW JR.
Major, Armor
Fort Knox, Kentucky 40121

Armor Association Future

Dear Sir:

I would like to address the question of the future of the Armor Association as raised by General Polk in the July-August edition of *ARMOR*. Perhaps the future of the Association will be guaranteed by pointing the organization in a new direction. It appears to me that here is a chance to realign the Association without losing sight of our goals—the dissemination of professional knowledge and promoting the esprit of Armor.

During the past decades, the Association has become completely involved in the publication of *ARMOR* Magazine. While this is an excellent method of distributing information, it is not all-inclusive. A chapter organization could be established to accomplish both goals of information dispersion and fostering esprit. While this idea has drawn some doubts as to the ability of the membership to promote and support such a project, it has its merits. Interest can be directly related to involvement. The formation of a three-level Association allows all members to share directly in the activities of the Armor Association. The local chapter, completely responsive to its membership, serves as a focal point at the lowest level.

The Regional Committee serves as a collection point for information from local chapters and would assist in the dissemination of information from the National Association. In addition, the Regional Com-

mittee would serve as a focal point for Active, Reserve and National Guard chapters along with all Association members not part of a chapter. Such action would allow close contact of Association members.

The Regional Committee would consist of a representative from each of the chapters within that region. This committee would also sponsor a regional convention annually. Such conventions would allow members in Germany, Korea or on the West Coast to attend a meeting of true professional value.

The National level of the Association would continue to provide guidance for the entire Association as well as services such as a guest speaker program and the circulation of *ARMOR* Magazine to all members. Such services would round out the goal of disseminating information.

There are inherent problems with a chapter organization, such as possible fragmentation of the organization. However, with the strong support of the local membership and the *dedication* of all concerned, it provides a method to enhance professional involvement and perpetuate our 88-year-old Association.

EARL R. EDMONSON
Captain, Armor

Fort Knox, Kentucky 40121

Captain Edmondson has been selected to further study the future of the Association while attending the Armor Officer Advanced Course this year.

The Editor

Vietnam Armor Monograph

Dear Sir:

An Armor Center task force has been formed at Fort Knox to research and write the story of Armor in Vietnam. The story will relate the growing realization of armor value and utility on the Vietnam battlefield and the evolving deployments and employments. Armor in Vietnam includes Armored Cavalry, Air Cavalry, Tank and Mechanized Infantry units from the United States, Republic of Vietnam and other Free World countries.

For the successful completion of this project by 1 July 1974, the help and cooperation of all who have served in Armor and Armor-related assignments is urgently needed. Particularly needed are accounts of personal experiences, photographs and/or yearbooks. Cassette tapes can be sent to those who wish to record rather than write their recollections. Please contact the Task Force by phone (Autovon 464-1333/6244/5831/2052) or by letter: Headquarters, US Army Armor School, ATTN: ATSB-Monograph, Fort Knox, Kentucky 40121.

GEORGE J. DRAMIS JR.
Lieutenant Colonel, Armor
Task Force Director

Fort Knox, Kentucky 40121

105 vs Missile

Dear Sir:

The conclusion of the most recent Arab-Israeli conflict is bound to bring forth loud cries both for and against the continuing development of missile-firing tanks. Personally, I am against the missile-firing tank concept and would like *ARMOR* readers to consider a couple of the advantages of the 105mm main gun system.

First, in both the 1967 Arab-Israeli conflict and the 1973 conflict the Israeli Army has proven the overall effectiveness of the 105mm gun in tank warfare. While using a variety of tanks, the Israelis have substituted the 105mm gun in those vehicles that were not originally equipped with that system. The vast numbers of destroyed Egyptian and Syrian tanks should speak loudly for the demonstrated characteristics of the 105mm gun system. Of course, as in any weapon system, the proficiency and training of the crew cannot be overlooked to improve the effectiveness of that system in combat.

Second, the development of the missile-firing tank, with its inherent complex systems and cost, runs counter to two major problems faced by the US Army today: budget restraints and the lowered standards for enlistment. The tremendous cost per vehicle to simply have an armor-protected missile carrier seems a waste of money when the same missile system could be carried on an APC type vehicle and perform the same task. Also, the development of such a complex system at a time when the Army is lowering its standards for enlistment will no doubt lead to many problems in weapon employment and maintenance.

I may be overly critical of the new systems; however, I hate to see a battle-proven system scrapped for one that is too costly, too complex and most important, unproven in battle.

ROBERT L. COOCH JR.
Captain, Armor

Fort Knox, Kentucky 40121

Return of the Pickle

Dear Sir:

I liked your spread on the Armor Heritage (September-October *ARMOR*) very much. For the past few years I've seen an increasing number of black Stetsons and crossed sabers around the home of Armor? Even the signs are now painted red and white.

Now I see black berets everywhere; the true symbol of tankers worldwide. I hope *ARMOR* will endorse the return of the "Pickle Tank" for the tanker's collar and leave the cavalryman to his sabers.

AN OLD TANKER

Radcliff, Kentucky 40160

THE COMMANDER'S HATCH

Commandant
US Army Armor School

Several times in years past the Army has indulged in programs of decentralization. One such drive is in progress at the moment. On each occasion, including the current instance, there has been considerable confusion concerning what the term *decentralization* means; how the process it purports to describe is supposed to work, and how decentralization, especially decentralization of training, is implemented at various echelons. It has been more than interesting to find little, if any, codified wisdom on the subject. While much use is made of the word, presumably because it is in vogue, nowhere could be found a set of guidelines defining the term and setting forth concepts, intent or implementing philosophy. So this column addresses itself to that problem. There is full realization that what follows may not be universally accepted; hopefully those who disagree will come forth to be counted, and from the ensuing dialogue all may learn.

The idea of decentralization is but one part of a broader concept; that of the mission-type order. Everyone knows that a mission-type order need have only three fundamental ingredients:

- What is to be done; what the commander issuing the order expects to have accomplished.
- What is not to be done; what controls, limits, or constraints the commander issuing the order considers necessary to invoke and impose on what his subordinates do, primarily for the purpose of coordinating their actions.
- What the task is to be done with; what resources the commander issuing the order assigns to subordinates for task accomplishment, and what support subordinates can expect from outside their assigned resources.

Note the absence of the word *how*. The fundamental difference between *what* and *how* is the key to understanding the mission-type order concept and the idea of decentralization. At each level there is a built-in tendency to prescribe more and more of how the job should be done; to embellish the order as it works its way down to company, troop and battery. All too often a broad mission-type order issued at a higher echelon becomes a detailed "how to do it" by the time it reaches the bottom.

Interestingly enough, decentralization, although integral to the mission-type order concept, has historically been plagued in execution by considerable ambiguity in statements of what is to be done, not done, and done with. And so one frequently finds a greater or lesser degree of abrogation of responsibility by commanders who, in the name of decentralization, dump the whole load on the company, battery or troop commander. Many times the same commander who tends to overspecify in his orders can be found bending over backwards to avoid specifying anything in his training directives, because training is decentralized. It is this dichotomy which most clearly reflects the confusion over decentralization, and has several times occasioned its abandonment.

Decentralization is delegation of responsibility and authority for executing a mission to the lowest level of command which has, or to which can be made available, the requisite resources to accomplish the mission.

If the mission is training in order to maintain a satisfactory state of readiness, then decentralization means delegation of responsibility and authority for planning, programing and executing training to the lowest level of command having the necessary personnel, equipment, fuel, ammunition, spare parts, and planning, programing and executing expertise to accomplish the training mission.

Planning involves devising ways to achieve specific goals; programing involves rationalizing goal-achieving plans to fit within resource contraints; both describe *what* is to be done. Executing involves devising *how* to do *what* is programmed.

- If a readiness goal is a satisfactory level of tank crew gunnery proficiency;

- Then a plan might prescribe *quarterly* crew qualification course firing in order to achieve the goal;
- But, a program might provide for *annual* qualification firing based on range, ammunition, fuel and other constraints;
- And execution would involve training crews in an orderly progression so as to enable them to qualify annually.

Generally, battalions and squadrons are the lowest level at which a commander can fully plan and program; both have the requisite staffs, both are full tactical, administrative and logistical entities. The company, battery or troop cannot plan or program in the sense that these terms are used here; they have neither the staff, the resource management capability, nor the expertise. The company executes programs. If decentralized training works properly, the company, battery or troop commander need only figure out *how* he is going to conduct training; *what* he is to do must be fairly clearly spelled out for him. If decentralized training works properly, there is no need for a training staff at company level. The company commander attends a weekly programing meeting with the battalion S3, at which time S3 and company commanders iron out coordinating details for two or three weeks hence, and make last minute changes based on what the company commanders feel need be added to or deleted from their already laid out training programs. The battalion, not the company, publishes training schedules, schedules describing *what* is to be done, schedules precise enough about what is to be done that all that remains is for the company commander and his platoon leaders to figure out *how* they are going to do it.

When the time comes to test platoons and companies, these tests are designed and administered by the battalion. Many will argue that conduct of platoon tests by the battalion commander is not decentralization. It is our premise that this is the essence of decentralization. The battalion commander decides *what* is to be tested based on *what* training he has required in his training program. Then, since only he has the requisite resources to conduct a comprehensive test, and since good testing requires standardization, he provides resources, specifies *what* is to be done, and scores *how* it is accomplished. This is his measure of how well the company and platoon commanders have done their part of the job—the *how* of training. Properly applied, decentralization breeds better leaders, but at the same time requires better leadership on the part of those responsible for their upbringing. It requires of the battalion commander and his staff the utmost in professionalism, planning and programing expertise, good management of limited resources, and a complete willingness to accept mistakes, set them aright and proceed. Of the company, battery and troop commander, decentralized training demands the utmost skill in the details of how to train men. Empathy, perception, initiative, imagination and creativity are his especial purview, for it is through the process of development and application of these qualities that the fine junior leaders of today become the splendid battalion and brigade commanders of a few years hence.

This is the 88th Anniversary of our Association. Despite an urge to write glowingly of its long distinguished history, I deliberately elected to write of a professional matter, a legacy of our Branch, reflected so dramatically in the professionalism of our Association and in the pages of its journal. I can only wish for us all, and for our beloved country, that 88 years hence, my successor several times removed will write of decentralization—for it will still be a problem I'm sure—and do so with the same professional satisfaction and pride that are mine as I note that the philosophical bias of the mission-type order and all it portends was invented here. It is still basically alive and well, even though now and then we may sense a need to sharpen our focus on it.

Forging the Thunderbolt

Since the last discussion of resident training conducted at the Armor School in the March-April 1973 issue of *ARMOR*, we have seen a continous change to the professional development courses. As you all know, the primary requirement for a peacetime army is to train and maintain a condition of readiness. In this respect, the Armor School not only trains students for duty positions but also "trains the trainer." This latter requirement is vital, and our courses emphasize this concept. Important to this concept is the self-paced instruction available at the USAARMS Individual Learning Center (ILC). The ILC complements platform instruction and advance sheet information with audio-visual lessons.

Evolution to a peacetime army always causes some realignment within former concepts of training. The current emphasis is to slow down and do it right. This has significantly changed the instruction to reflect the importance of learning more thoroughly the basic and critical skills, knowledge and attitudes required for unit operations. For instance, in the Armor Officer Basic (AOB) Course, we now train the student in 12 weeks to be a platoon leader in both tanks and cavalry with added emphasis on equipment, maintenance, resource management and training guidelines. He learns the role of the platoon leader in company operations and management so that he is fully prepared for troop duty.

Currently, there are 13 resident courses being taught at the Armor School with a total FY 74 programed input of 9,100 students. These courses are categorized into "professional development" and "skill development" courses. A breakout of these categories is as follows:

Professional Development

- Armor Officer Basic (AOB) 12 weeks
- Armor Officer Advanced (AOAC) 38 weeks
- Noncommissioned Officer Basic (NCOB) 12 weeks
- Noncommissioned Officer Advanced (NCOA) 12 weeks
- Senior Commander Orientation Course (SCOC) 1 week
- Senior Commander Orientation Course-Reserve Component (SCOC(RC)) 1 week

Skill Development

- Air Cavalry/Attack Helicopter Commander Training Course (AC/AHCTC) 4 weeks
- Motor Officer (MO) 8 weeks
- Senior Officer Preventive Maintenance (SOPM) 1 week
- Track Vehicle Mechanic (TVM) 8 weeks
- Turret Mechanic (TM) *M60A1* 8 weeks, 1 1/2 days
- Turret Mechanic (TM) *M551* 9 weeks, 1 day
- Turret Mechanic (TM) *M60A2* 13 weeks

Three skill development courses have recently been eliminated. They are: the Special Officers' Leadership Course which was primarily designed for training allied junior officers; the Aeroscout Observer Course because the position is only identified as an augmentation in TOE units; and the Junior Officers' Preventive Maintenance Course which is now included in the MOS 0600 Motor Officer Course.

As was discussed in the March-April issue, the Senior Commander Orientation Course (SCOC) is much sought-after and has generated tremendous interest

Army-wide. This is the only Department of the Army course of its kind; it is designed to orient designee battalion and brigade commanders in today's command realities of contemporary problems—race, drugs, alcohol and military justice as well as administration. A recently submitted change to the program of instruction expands SCOC to two weeks and includes increasing practical exercises in preventive maintenance and logistics management as well as leadership. The SCOC features seminars and guest lecturers from DCSPER, MILPERCEN, Command Information Program, the Combat Arms Training Board and the Judge Advocate General Corps, in addition to incumbent brigade and battalion commanders with their sergeants major.

The present Senior Officer Preventive Maintenance Course (SOPM) is being expanded to include other aspects of logistics such as supply, transportation and financial management. This new course, the Senior Officer Preventive Logistics Course (SOPL), two weeks in length, will use the same training approach, stressing common item indicator inspection techniques. The present SOPM will be retained on a limited basis for Marines and allies. It is expected that these two new courses will be programmed for FY 75.

The Motor Officer Course (MOS 0600) is the first USAARMS course to have received a complete second generation systems engineering. The course remains branch immaterial and provides the student considerable practical exercise in maintenance management as well as the traditional "hands-on" work with vehicles and records. This redesigned course should be fully implemented by the third quarter of FY 74. The Motor Officer Course has been applauded by commanders and recent graduates as the finest kind of preparation for troop duty in the combat and support arms. The graduates of this course are fully equipped to design an annual maintenance program compatible with the schedule of training and activities of any battalion.

A new education program, designed for faculty development, has been originated by Dr. Charles W. Jackson, USAARMS Educational Advisor. This program is designed to provide a systems engineering background with practical exercises for the development of our Staff and Faculty. In addition to the methods of instruction (MOI) courses for officers, enlisted men and civilians, three new courses have been developed in this program to keep our Staff and Faculty abreast of the latest technology in the field of education.

One course of high impact is the two-week Instructional Technology Workshop, which provides USAARMS instructor students with a working knowledge of the techniques required to develop student-oriented instruction in audio-visual lessons, programed texts and conventional methodology. The second course is the 20-hour Training Supervisors' Course which provides instructor supervisors with a knowledge of the organization, mission and functions of the Armor School staff elements and an understanding of the responsibility for supervising the development, presentation and administration of instruction. The last faculty development course, which is in the final stages of development, is the Systems Engineering Workshop, the purpose of which is to provide students with a working knowledge of systems engineering techniques in the design of instruction. This last course will provide USAARMS with the qualified personnel resources to complete systems engineering for armor proponent MOS training as well as resident instruction.

COMMANDERS
INFORMATION OFFICERS

ARMOR needs and wants . . .

- A copy of your unit newspaper.
- Releases with photos on awards of DSCs to Armor people.
- Notice of assignments of field officers and sergeants major to key positions at battalion level and up.
- Results of military competitions.
- Articles, releases and photos of unit activities worldwide.
- All photos of armor, armored cavalry and air cavalry units. We are building archives which will be very valuable in the future.

Having weathered changes from saber to revolver, horse to horsepower, and Cavalry to Armor, the United States Armor (nee Cavalry) Association celebrates its eighty-eighth year of service to the mounted soldier with further change in view.

A History of The US Armor

The period from 1881 up to the Spanish American War has been called the United States Army's Renaissance. In that span of years the foundations of American military professionalism were laid down. This was no precise and planned development, but a groping evolution that materialized from and overcame what has been called the Army's Dark Ages—the period from the Civil War up to 1880, when declining strength, inadequate appropriations and pay, inefficient organization, wide dispersion, a provincial existence, and a hostile society, all combined to reduce the Army to such a low estate that a rising sentiment for reform and position was inevitable. It was a sign of the times when, on 9 November 1885, a group of Cavalry officers at Fort Leavenworth met to form the U.S. Cavalry Association, for the "professional unity and improvement, and the advancement of the cavalry service generally."

The measure of the mounted officers' thirst for status and professional development is evident in their decision to organize an association in the face of many obstacles. Cavalrymen were scattered about the country from the Division of the Atlantic to the Division of the Pacific. In an Army numbering less than 27,000 officers and men, there were but 10 regiments of cavalry, containing as potential members of the Association only 424 officers. The regiments were split into small detachments and parcelled out over a remote frontier, charged with such assorted duties as fighting Indians, controlling them on reservations, guarding and operating stage lines, safeguarding settlers, protecting railroads, restricting the depredations of desperadoes, and keeping watch over labor disputes—in sum, a police force rather than an army.

Under these circumstances an officer had little hope of finding an opportunity to acquire leadership experience through the command of sizable units (although Cavalry officers in particular gained self-reliance in the very fractionalization of their units, which placed a full load of responsibility on officers serving in small isolated commands and far removed from their superiors). And campaigns of a size comparable to that of 1876, when George Armstrong Custer was overwhelmed at Little Bighorn, by 1885 were highly unlikely. For even though General George Crook was actively campaigning in Arizona Territory against Geronimo and his Chiricahua Apaches, and Wounded Knee was yet five years in the future, this was the twilight of Indian uprising. Field service aside, the officer corps had little more than the peacetime alternative—the exercise of theory to promote professional qualification.

The creators of the Cavalry Association took their problems into account in organizing their society. To contend with the matter of dispersion they established not only the headquarters at Fort Leavenworth, but branches at West Point and in Indian Territory at Fort Reno. They demonstrated a fine touch for the cultivation of higher authority and an alertness to extra-military considerations by conferring honorary membership on the Commanding General of the Army, General William T. Sherman; on Lew Wallace,

soldier, lawyer, governor, diplomat, and author of *Ben Hur;* on Philip St. George Cooke and William S. Harney, distinguished retired general officers; and on two ex-generals of the Confederacy, Fitzhugh Lee, who became governor of Virginia as the Association was being launched, and "Fightin' Joe" Wheeler, then a member of Congress from the State of Alabama. To these were added John Codman Ropes, distinguished military historian of the day, and Professor Jean Roemer, vice president of City College of New York and author of *Cavalry, Its History, Management and Uses in War.*

In the matter of active officership of the Association, the founders elected a Medal of Honor winner, Major Abraham K. Arnold, then of the 6th Cavalry, as president, and Captain Theodore J. Wint of the 4th Cavalry as secretary. The membership would turn to the general officer ranks for Arnold's successor, setting a precedent that holds to this day. But more on the presidents later.

Fort Leavenworth offered auspicious surroundings for the development of professional activity. Here in 1881 Sherman had established the School of Application for Infantry and Cavalry, a great stride forward in the building of a military educational system for the Army. It had been Sherman who sent Emory Upton to Europe and Asia to study the workings of foreign armies, and Upton had confirmed the place of the service school in the development of a professional officer corps. With their mature professionalism, European armies were the object of careful scrutiny in America, where military professionalism was yet in the formative stages. It is not surprising, therefore, that many of the papers presented and discussed in early Cavalry Association meetings turned on the European scene.

The early months of Association activity are somewhat vague due to a paucity of records. A general lack of a sense of history on the part of successive administrations, not limited to the early years, has permitted the dissipation of much valuable archival material. The saving feature has been the society's publication, which today constitutes a priceless record.

The first issue of the *Journal of the U.S. Cavalry Association* came from the steam press of Kecheson and Reeves at Leavenworth, Kansas, in March of 1888. The preoccupation of the American military with European armies is evident in two articles: "Some German Ideas on Cavalry Gathered from 'Conversations on Cavalry'—Prince Kraft de Hohenlohe-Ingelfingen," and "The French Cavalry; Its Organization, Armament, Remount Service, Schools, Instruction, Drill and Tactics." A great debate of the period—whether the mounted soldier should be armed with saber or revolver, or both—runs through several articles. Other items discuss remounts, a new type field artillery piece, and devices to assist the cavalryman in firing the pistol and carbine efficiently from the back of a horse.

Equally interesting with article content is a list of Association members appearing at the back of Volume I, Number 1. There is Captain Myles Moylan, who commanded A of the 7th Cavalry with the Reno battalion at Little Bighorn. Captain H. W. Lawton, who rendered conspicuous service in bringing Geronimo to heel, and who would die a lieutenant general while serving against Filipino insurgents, was a member. Soldier-author Charles King, progenitor of the Ernest Haycox school of literature, is there. There are Lieutenants W. C. Brown and J. V. S. Paddock, whose names are inscribed respectively in the history of the Sheepeater War in Idaho and the Milk River engagement in Colorado, in 1879. Rufus Fairchild Zogbaum appears—artist and author, faithful delineator of military and naval subjects. And there is Major, Brevet Colonel, Guy V. Henry, holder of the Medal of Honor for action at Cold Harbor in '64, and severely wounded at the battle of the Rosebud with Crook in '76: Guy V. Henry, who retired a major general, and whose son, the late and equally distinguished Major General Guy V. Henry, Jr., served the society of the mounted arm as member, councilman, president, and honorary president throughout a long and full life.

Publication of that first list in March 1888 apparently gave the organization a shot in the arm, for the membership jumped from 182 to 310 by June and was pushing 400 in November on the third anniversary of the Association. Joining up were Frederick W. Benteen, Winfield S. Edgerly and E. S. Godfrey, all of the Benteen battalion at Little Bighorn; Samuel B. M. Young, Adna R. Chaffee, J. Franklin Bell, and John J. Pershing, all destined to be Chiefs of Staff of the United States Army; James Parker, another Medal of Honor recipient and a future Association president

Association.....by William Gardner Bell

The Presidents

Major
Abraham K. Arnold
1885-1887

BG
Wesley Merritt
1887-1908

BG
William H. Carter
1908-1914, 1917-1921

BG
James Parker
1915-1917

MG
Willard A. Holbrook
1921-1924

MG
Malin Craig
1925-1926

MG
Herbert B. Crosby
1927-1930

MG
Guy V. Henry
1930-1934

MG
Leon B. Kromer
1935-1938

MG
John K. Herr
1939-1945

(1915-1917); and Camillo C. C. Carr, Jacob A. Augur and Ezra B. Fuller, future editors of the *Cavalry Journal*.

In 85 years of publication, 31 officers have held the editorial chair of the Magazine of Mobile Warfare, as it is sometimes called today. Fifteen have been West Pointers, and eight went on to become general officers—Carr, William H. Carter, Charles D. Rhodes, Robert C. Richardson, Jr., Karl S. Bradford, Oliver L. Haines, Charles S. Kilburn and Fenton S. Jacobs. Of these, Carter, who won the Medal of Honor in Arizona in 1881, holds the distinction of having served the Association in both editorial and executive capacities: he was editor as a captain in the period 1892-1897, and president as general, from 1908 to 1914, and again from 1917 to 1921.

Six of the 25 presidents to date of the mounted society were Chiefs of Cavalry, encompassing the full period of existence of that office from 1920 to 1942—Major Generals Willard Holbrook, Malin Craig, Herbert Crosby, Guy Henry, Leon Kromer and John Herr. One of these, Malin Craig, was Army Chief of Staff from 1935 to 1939, bridging the tours of Generals MacArthur and Marshall. The trend in presidential rank has been upward through the years, from major to four-star general, with some fluctuation in recent times within the levels of general officer rank. All of the top officers of the Association have made significant contributions to the professional society. But it is the second president, Brigadier General Wesley Merritt, who deserves a large share of credit for the success, indeed perpetuation, of the Cavalry Association.

A West Pointer, Class of 1860, Merritt graduated into the Civil War, rising to become a general before the age of 30. Assuming the presidency of the Association in 1887, Merritt was retained by the membership for a 20-year tenure, until his death in January 1908. His great contribution was to give prestige to the organization in the critical years of consolidation. He was largely instrumental in boosting the society over the hurdle caused by the Spanish American War, when all officers except the vice president were at the front, resulting in a single issue of the *Journal* in 1898, four difficult numbers in 1899, and a complete suspension of operations in 1900 and 1901. In an inspirational letter to the membership, Merritt in April 1902 threw his weight behind continuation of the organization and its

magazine. "I have been told," he wrote, "by more than one officer whose advancement in the cavalry service has been marked, that much of the success was due to the influence of the studies induced by the Cavalry Association."

The studies to which Merritt referred, those papers presented before various groups of members and as articles in the *Journal*, ranged over a field of subjects of logical interest to the military man, and particularly the mounted soldier: tactics, techniques, training, weapons, doctrine, equipment, organization, horsemanship and horsemastership, education, personalities, and history, to mention some major areas. Discussions were lively and detailed. In the *Journal* for July 1903, for example, 30 officers discoursed on the Johnson bridle bit. To stimulate such professional interest the Association in 1897 had launched an essay contest. Back of a requirement that essays be based on assigned subjects lay a plan to publish a history of the American Cavalry. Although this never materialized, the professional activity engendered by the annual contest inspired the preparation of much good material for the magazine. In the 1903 contest, for instance, a board composed of Generals J. H. Wilson and Fitzhugh Lee and Colonel Arthur L. Wagner (the latter the noted educator at the Leavenworth school), judging material on the basis of historical accuracy, professional excellence, and literary merit, awarded top

MG
Isaac D. White
1946-1947

MG
Ernest N. Harmon
1947

MG
Hobart R. Gay
1947-1949

LTG
W. D. Crittenberger
1950-1953

LTG
John H. Collier
1954

GEN
Williston B. Palmer
1955-1957

GEN
Willard G. Wyman
1957-1958, 1960-1962

LTG
George W. Read Jr.
1958-1960

GEN
Bruce C. Clarke
1962-1964

MG
Donald W. McGowan
1964-1966

LTG
Frederick J. Brown
1966-1967

GEN
John K. Waters
1967-1969

LTG
W. H. S. Wright
1969-1970

BG
Hal C. Pattison
1970-1972

GEN
James H. Polk
1972-

The Editors

1LT
Otto L. Hein
1888-1890

CPT
C. C. C. Carr
1890-1892

CPT
William H. Carter
1892-1897

1LT
Thomas H. Slavens
1897-1898

MAJ
Jacob A. Augur
1898-1899

1LT
Charles D. Rhodes
1899

CPT
Lewis C. Scherer
1902-1904

CPT
Matthew F. Steele
1904-1905

honors to Captain James G. Harbord for his treatise on "The History of the Cavalry of Northern Virginia (Confederate) During the Civil War." As Harbord's advancement in the service would be marked (he was to rise to Deputy Chief of Staff of the Army), he serves as a case in point in confirmation of General Merritt's remark on the value of Association studies with relation to professional advancement.

With the close of the Spanish American War the United States Army embarked on what has been called the second phase of its Renaissance. In its sphere, the Cavalry Association moved forward. Its gathering professional strength is evidenced in many ways in this period, and not least by the October 1902 membership list which carries the names of Generals Arthur MacArthur, Leonard Wood, and Tasker Bliss. It was at this time, too, that the *Journal* got a face-lifting from an unexpected source.

Frederic Remington, whose pen and brush contributed so materially to the enduring historical record of our Western frontier, was a life member of the Cavalry Association. In 1898 Remington visited the camp of the 3d Cavalry at Tampa, Florida, where the regiment was staging for the Santiago compaign. The artist, on his way to cover the war in Cuba for *Harper's Weekly*, was a close friend of Captain Francis H. Hardie, who commanded Troop G of the 3d. During the visit Remington's attention was drawn to one of G's noncommissioned officers, Sergeant John Lannen. A superb rider and an imposing figure, the soldier impressed Remington as the perfect example of a cavalryman. He made several rough sketches of Lannen.

From these roughs Remington later made two finished sketches, which he presented to the Cavalry Association in 1902, as the *Cavalry Journal* was resuming publication. His excellent drawing of a frontier cavalryman appeared on the front cover of the *Journal* in January 1903. It was to hold this position for almost 40 years, until July 1942, and through the years would acquire the label "Old Bill." The second sketch, of a cavalryman riding away from the viewer at a gallop, appeared on the back cover and as a tailpiece inside the magazine for many years. But it was the front cover sketch that had feel, character, authenticity. Always a branch of great *esprit* and highly conscious of history and tradition, the Cavalry took the Remington masterpiece to its heart. It appears to this day in the professional magazine of the mounted arm, a trademark of mobility in war.

As the impact of the Army's renaissance and the Cavalry Association's example became increasingly felt, other branch associations and magazines began to appear on the military scene. Many officers of Infantry, Artillery, and other services had joined the

Cavalry Association, drawn by a community of professional interest. Inevitably a desire for greater concentration on branch affairs intruded, and the various specialists took steps to form their own organizations. The year 1892 saw the creation of the Coast Artillery Association and magazine. Infantrymen launched an organization in 1893 and a journal in 1904. Field Artillerymen put their society under way in 1910, and between 1920 and 1946 the services lined up—Engineers, Ordnance, Quartermaster, Transportation, Signal and Chemical. These organizations and their "trade journals of war" over the years have rendered a clear service to the Army and the nation.

With the 20th Century came mechanization. Its application to military purposes had broad implications, especially for the Cavalry arm. As the tank moved onto the battlefields of World War I its element of protection was in the ascendant, for it was designed to break the trench stalemate by overcoming the machine gun and barbed wire. Yet it was an augury for the future when General Pershing placed the Tank Corps under the command of a cavalryman, Brigadier General Samuel D. Rockenbach, longtime member of the Cavalry Association and a contributor to the *Journal's* pages as far back as 1894. One of his younger officers was Captain George S. Patton, Jr., who a quarter-century later in another global conflict would do so much with this machine which he helped introduce to the battlefield. Incidentally, the careful researcher in the *Cavalry Journal* may trace the career of Association member Patton through articles under his byline ranging from lieutenant to general and spanning three decades.

World War I brought another crisis in Cavalry Association affairs. The secretary-treasurer-editor, retired Lieutenant Colonel Fuller, in poor health but carrying on, was awaiting replacement. But as Fuller noted in the July 1917 issue of the *Journal*, "everybody who can wants to go to war, and those who can't don't want the job." He suggested that it might be better to suspend operations as had been the case at the turn of the century. But he got out three more issues, and with the April 1918 number the *Cavalry Journal* went into suspense for two years, with 1919 a complete blank.

As it had on the occasion of the other interruption, the *Journal* came out of this one with a new face. Old Bill still graced the cover, but page size was expanded and layout revamped. Major Robert C. Richardson, Jr. moved into the chair as replacement for Fuller. And now the Association's base of operations was moved to Washington, D.C. The organization had need to be on the scene in the Nation's Capital, for its future, inextricably interwoven with the future of the

CPT
Herbert A. White
1905-1907

LTC
Ezra B. Fuller Jr.
1907-1918

MAJ
Robert C. Richardson
1920-1921

MAJ
Jerome W. Howe
1921-1924

Photo
Not
Available

CPT
George A. Moore
1924

LTC
W. V. Morris
1924-1927

MAJ
Karl S. Bradford
1927-1928

Photo
Not
Available

MAJ
K. G. Eastham
1928

MAJ
Oliver L. Haines
1928-1931

LTC
George M. Russell
1931-1935

CPT
Charles S. Miller
1935-1937

MAJ
Charles S. Kilburn
1937-1940

MAJ
Fenton S. Jacobs
1940-1942

COL
Edwin M. Sumner
1942-1948

COL
Wesley W. Yale
1948

COL
Clause O. Burch
1948-1950

MAJ
William G. Bell
1950-1953

LTC
William H. Zierdt Jr.
1953-1960

LTC
T. J. Cunningham Jr.
1961-1964

LTC
Eugene M. Dutchak
1964-1967

COL
O. W. Martin Jr.
1967-1971

MAJ
Robert E. Kelso
1971-1973

LTC
Burton S. Boudinot
1973-

Cavalry, was by no means definitely assured. As Major LeRoy Eltinge put it in the April 1920 revival issue, "the Cavalry of the Army emerged from the World War in poorer condition than any arm of the service." Indeed, there was much to be done.

That issue opened fittingly enough with an inspirational message to the Cavalry from General John J. Pershing, designed to carry the arm through critical times. The theme running through the number was hopeful: *the future of cavalry lies in its mobility.*

It was in this period that the Army, recognizing the real contribution of the unofficial professional associations and journals to the profession of arms, authorized the assignment of active duty personnel to the editorial-secretarial posts; the task up to this time had been carried out in their spare time by a small number of highly dedicated officers. Under the new arrangement the organizations rightfully retained their freedom of operation, although in the '30s they lost the revenue of advertisers when Congress wrote into the appropriations bill a rider prohibiting publications run by active duty staffs from taking paid advertising—a far cry from those years in the '80s and '90s when the *Journal* carried a lively advertisers' section; when the ads were oozing with testimonials and even the Post Chaplain at Fort Leavenworth was delighted to give his endorsement to Woodley's *Sans Pareil,* the Great Army Remedy for the Preservation of the Hair!

At the close of World War I the thinking with respect to employment of the tank was still far from clear. There was indecision as to which of the ground arms should have cognizance over development. The

Tank Corps was dissolved and tank development placed under the Chief of Infantry. The general theory of mechanization, however, was assigned to the Cavalry. Few professionals yet saw the possibilities inherent in armor—that Cavalry might logically inherit armor, and that armor possessed the classic cavalry characteristics of mobility, firepower, and shock action, and therefore the capability of carrying on the cavalry role. Daniel Van Voorhis, Adna R. Chaffee, Jr., and a few more spoke out. But the horse had an attraction to the heart as well as the head of the cavalryman, and even at the time in the '30s when the 7th Cavalry Brigade (Mechanized) was formed, it was generally considered to be a professional hazard for an officer to identify himself with the new medium. Few cavalrymen were prepared to trade the horse for the tank and perhaps compromise their careers. Among those who stepped to the new field, however, were two future presidents of the mounted society, I. D. White and Willis D. Crittenberger.

Through these years of growing pains the Cavalry Association gave some attention to mechanization through the pages of the *Journal*, but more to horses. Gradually the article had taken the place of the paper of earlier times. The Association became essentially its magazine, and there through the '30s many of the big names of World War II put in an appearance, and not all were cavalrymen: Jonathan M. Wainwright, Lucien K. Truscott, Joseph W. Stilwell, Maurice Rose, Robert W. Grow; and in 1931, Major Dwight D. Eisenhower, authoring an article on "War Policies."

As war flared once again in Europe, the crisis developing in the Army over the Cavalry role deepened. Events came to a head with a rush. In 1940 the Army bypassed the traditional ground arms by organizing an Armored Force, while at the same time in the Cavalry famous horse regiments were partially and then completely mechanized. In 1942 the offices of the Chiefs of the Combat Arms (Cavalry, Infantry, Artillery) were abolished. As a crowning blow to the Cavalry, the famous First Cavalry Division was dismounted and sent to the Southwest Pacific as a foot unit.

A hint of the struggle attendant upon these events is apparent in the words of Major General John K. Herr, last Chief of Cavalry (1938-1942), and president of the Cavalry Association from 1939 to 1945. The quotation is from his book, *The Story of the U.S. Cavalry* (Little Brown & Co., Boston, 1953), written with Edward S. Wallace and published not long before his death:

"What caused this sudden and extreme action? It was probably a combination of factors. The great successes of the German panzers (which nobody denied) over the good roads in the flat country of northern Europe had their effect on the extremely motor-conscious American public and its tendency to rush *en masse* to extremes. The horse was dead! Long live the motor! Thus reasoned many people who had never tried to cut cross country, between the hard roads, in their shiny, chromium-plated, streamlined pride of the Detroit production line and knew nothing about the use of horses. That there was influence brought to bear by certain industries which would profit heavily by the production of the enormously expensive tank and other mechanized vehicles is almost certain. Then, there was the ever-eternal green-eyed monster of jealousy which had been aroused in the breasts of the other services, especially among soft and inactive officers behind desks, over the color and glamour attached to the cavalry, over the good times which officers of that branch enjoyed in their sports at all the cavalry posts, and over the certain indefinable social prestige which the man on horseback, the cavalier, the *hidalgo*, the gentleman, has always had over the man on foot. All these influences combined, and amidst the excitement at the outbreak of war, managed to eliminate what they called an archaic branch."

Whatever the reasons, the horse departed the Army, and the mounted arm was beset by internal divisions that threatened its professional base. The Cavalry Association suffered as well, and partly by its own hand.

With the U.S. Army at its wartime peak in strength, the *Infantry Journal* soared to well over 100,000 subscriptions exclusive of the Overseas Edition. Not so the *Cavalry Journal*. Against a potential represented by 16 armored divisions full of cavalrymen, a cavalry division, many armored cavalry groups and squadrons, and many separate tank and tank destroyer units, the *Cavalry Journal* reached a subscription peak of little more than 7,000. This can be attributed to a failure to break with the past and step out resolutely to embrace the new medium—armor—which had absorbed the great percentage of branch members. As German *Panzer* forces lashed out across European battlefields, Russian horse cavalry galloped across *Cavalry Journal* pages. Armor and mechanization got some space, but a provisional platoon of horse-mounted soldiers in the Italian campaign was likely to receive equal attention with the exploits of an American armored division. And there was continuing attention to foreign horse cavalry, horse breeding, and equestrian sports. The Association lost many sincere professionals from its membership rolls.

In World War II the Cavalry Association and *Cavalry Journal* met a war which did not put operations at least temporarily on ice. But in clinging to the past the Association came close to sealing its own doom. The low point was late 1947, when subscriptions dropped

to around 1,800. One step of importance had recently been taken which might redeem a bad situation. In mid-1946 a small group of professionals had rallied round and put the organization in tune with realities. The name was changed to U.S. Armored Cavalry Association. The magazine became *Armored Cavalry Journal*. Content increasingly reflected the new order.

In all fairness it must be noted that all service journals suffered a share of the difficulties growing out of the postwar ebb. The league-leading *Infantry Journal*, feeling the subscription pinch, in the late '40s put forward a merger proposal which in essence suggested the liquidation of the Associations and journals of Cavalry, Field Artillery and Coast (Antiaircraft) Artillery, with all assets to be turned over to a new organization and magazine of Armywide implication and title, based on the Infantry Association's existing plant and staff, with some minor representation of the other three organizations on the essentially honorary governing body. By 1953 the two Artillery organizations had joined this Association of the US Army in the *Combat Forced Journal* (today *Army*). The members of the Armored Cavalry Association voted down the proposition, seeing it as a sub-merger and desiring to retain a strong voice in behalf of their branch. The Association position was admirably represented by Lieutenant General Geoffrey Keyes in high-level meetings with advocates of a merger of the several combat arms magazines and societies. From initial negotiations in 1948 through *ARMOR's* November-December 1973 editorial and later reaffirmation by Executive Council resolution, the mounted organization consistently supported the concept of an Army-wide Association while maintaining a firm stand in behalf of branch societies and journals. A sentiment for perpetuation, it may be noted parenthetically, was not unusual for an organization with a lineage such as that of the mounted society. Many military families may be traced through the history of the mounted organization and the pages of its publication, from distinguished father to distinguished son. The Cavalry family tree is liberally sprinkled with the accomplishments of several generations of Henrys and Howzes, Holbrooks, Reads, Polks and Pattons, to note a few examples.

Mid-century will go down in the history of the society of the mounted arm and its publication as a time of reaffirmation. For it was then that Congress passed the Army Organization Act of 1950. The legislation made of record an evolution which had been in process for several decades: *"The Armor shall be a continuation of the Cavalry."*

The steps remaining to be taken were obvious, and the Association's Executive Council moved immediately to implement them. On the heels of the legislative action, the Armored Cavalry Association became the US Armor Association. The magazine became simply *ARMOR*. The July-August 1950 issue came out redesigned from cover to cover, setting a style which won for the publication national certificates of award in the 1951 and 1952 Magazine Shows sponsored by the American Institute of Graphic Arts. New features, top authorship and first-class material greatly enhanced the magazine's reputation.

In 1952, breaking the precedent of 25-member annual meetings in one room of Washington's Army and Navy Club, the Association moved to Fort Knox, the Home of Armor, for its annual professional deliberations. The business session in Theater No. 1 was attended by as many officers as had been on duty in the 10 regiments of cavalry existing in the Army when the society was launched at Fort Leavenworth 66 years before.

The election of General White to the presidency in 1946 had been a sign of the times so far as the Association and its magazine were concerned. For he was the first of a sextet of presidents, including Generals Ernest N. Harmon, Hobart R. Gay, Willis D. Crittenberger, John H. Collier, and George W. Read, Jr., who, while career members of the Cavalry arm and horsemen all, commanded armor on World War II battlefields or served on top staffs having direction over armored units. This development in the transition from horse to horsepower was carried a step further in 1955 when the Association elected General Williston B. Palmer as its head—the first officer with armor background whose basic branch before World War II was other than Cavalry. This was repeated in 1962 when General Bruce C. Clarke, a distinguished World War II combat commander of Armor, was elected president of the Association. In 1964 Major General Donald W. McGowan, an Army National Guard officer, succeeded General Clarke, and the five most recent presidents—Lieutenant General Frederic J. Brown, General John K. Waters, Lieutenant General W. H. S. Wright, Brigadier General Hal C. Pattison, and General James H. Polk—have assumed the post as retired military officers.

Although Old Bill served the Association long and

well as an informal emblem, the time arrived, inevitably, when a distinguished lineage and a sense of history combined to prompt a more formal Association symbolism. In January 1969, some 84 years after its founding, the Association adopted a Coat of Arms. Old Bill is still there in image, atop a design that incorporates features representing organizations, equipment, weapons, elements, roles, and colors that glorify the mounted arm's past, inspire its present, and challenge its future.

The 88th Anniversary of the mounted society coincides with some new developments that have great import for the Armor Association and its journal. In a recent policy decision, the Army announced that active duty military personnel may no longer be assigned to professional but unofficial military branch associations. Such a step had been long in the offing; over the past several decades, through a gradual process of transition, consolidation, and voluntary relinquishment, the staffs of a number of professional societies and journals had been civilianized. Each move in this direction—prompted by multi-service, industrial and commercial considerations—left the remaining organizations more unique, exposed and vulnerable. A decision to withdraw active duty staffs became almost inevitable, especially in the light of post-Vietnam retrenchments with increasingly tight restrictions on the use of personnel and funds.

Counterbalancing these considerations were the very valid reasons, still recognized by the Army, that led to the assignment of military personnel to branch associations in the first place: the demonstrated contributions made by these organizations and their journals to the profession of arms.

The Armor Associations's Executive Council met in the early months of 1973 to consider how best to sustain the Association's very appreciable professional role within the framework of the Army's policy. Discussions followed with representatives of the Department of the Army and the US Army Armor School, and a plan was developed that would permit the uninterrupted publication of *ARMOR* as the essential first step. Thus in July 1973, the Armor Association and *ARMOR* closed out fifty-three years of operation in the Nation's Capital and moved into new quarters provided by the Armor School at Fort Knox, Kentucky.

ARMOR Magazine will soon become an official publication of the School. The November-December 1973 issue (which you are reading) is an anniversary issue. Effective early in 1974, the magazine will become an official Army publication with a status similar to that of *Infantry*, published by the US Army Infantry School at Fort Benning, Georgia.

The future role of the Armor Association is yet to be delineated as of this writing. Association officials see it as one of continued service along professional lines, and the form and substance of that service will be under close deliberation in the coming months. Certainly the Association, with 88 solid years behind it, may look to that future with hope and confidence. For after all, this is the society of the mounted trooper, the horse soldier, our indispensible tanker, our armored cavalrymen, and our evolving air cavalrymen.

The sense of all this has perhaps never been put more effectively than by a non-cavalryman. Writing from Tokyo a quarter of a century ago in observance of the *Cavalry Journal's 60th Anniversary* of service, General of the Army Douglas MacArthur said: "During these decades no other branch has experienced greater change in weapons, in technique, and in tactical requirement. Discarding the horse and the saber to keep pace with the increasing tempo and violence of modern war, the cavalryman speedily adjusted himself to armored mechanization and commensurate firepower, firmly to hold his historic role of the far-flung and rapid movement echelon. In this he demonstrated with striking clarity that the invincible *esprit* which has characterized his past yet carries him to the vanguard of every advance, an irresistible force toward victory."

General MacArthur's glowing tribute to the past represents a fitting challenge for the future as the society and journal of the mounted arm adjust to new conditions.

LIEUTENANT COLONEL WILLIAM GARDNER BELL, AUS-Retired, a member of the Association since he was commissioned in Cavalry in 1943, served as Associate Editor of the *Armored Cavalry Journal* from 1947 to 1950 and was the first Editor of *ARMOR* from 1950 to 1953 and concurrently the first Secretary-Treasurer of the US Armor Association. Now a historian in the US Army Center of Military History, he compiles and edits the annual Department of the Army Historical Summary. He is also the author of the Indian Wars chapter in the Army's official volume, *American Military History*.

A New Breed of CATT

by Captain Thomas J. Konitzer

The modern-day cavalry soldier has come a long way since the days of saber drill and horsemanship. His mount has evolved from an uncomplicated four-legged steed to a most complex amalgamation of machinery and electronics designed to produce the most efficient use of firepower, mobility, and shock effect. Today's young trooper must be trained to operate and maintain this outgrowth of technology. This educational process begins in Advanced Individual Training (AIT). Given the requirement to conduct in-unit AIT, how is it best accomplished? How can the unit best accept a varying and unpredictable trainee input? How can standards best be maintained while the "unit of choice" enlistee makes the transition from a permissive society to a disciplined environment? How can the conflicting requirements of a quality product and unimpaired unit readiness be resolved?

These questions pose a challenge to any commander. Based upon experience gained with in-unit AIT at Fort Lewis, Washington, the 3d Armored Cavalry Regiment believed that a new approach was required. The decentralized concept demanded quality instruction and support that many units inherently could not provide. The Decentralized AIT Program also proved to be debilitating to unit readiness and resulted in an uneven product through fluctuating standards. The 3d ACR believes that it has successfully confronted the challenge of in-unit AIT with a new breed of RCATT.

MISSION

The Regimental Combined Arms Training Troop (RCATT) is a provisional unit structured to accommodate virtually any type of training program the command may envision. In the 3d Armored Cavalry Regiment, this presently encompasses three major areas of concern. First and most important is the Advanced Individual Training Program for the "unit of choice" enlistee. Here RCATT's primary mission is to receive, motivate, train and produce qualified combat arms and maintenance enlistees to fill vacancies within the Regiment. A second mission of providing contin-

Lieutenant Thomas Gaylord (RCATT Executive Officer) teaches "History of Armored Cavalry" in traditional Cavalry uniform.

uous refresher training and new equipment orientation for the troopers of the Regiment has materialized concurrently with the AIT concept. A third program of instruction, now being developed by RCATT to offset the shortage of middle-management noncommissioned officers within the Regiment, is a Junior NCO leadership/preventive maintenance course.

ORGANIZATION

The Combined Arms Training Troop's unique organization is predicated upon a 20-man cadre which received the necessary support by tasking Regimental assets. Quality instruction, personnel control, and high standards of discipline are effected by this small specially selected cadre. Five MOS platoons (rifle, tank, scout, indirect fire and maintenance) under the supervision of a platoon leader and two noncommissioned officers, provide an identifiable chain of command and MOS instruction for in-unit training.

Programs of instruction for eight Military Occupational Specialties (11B, 11C, 11D, 11E, 13A, 63A, 63B, 63C) can be taught at any one time. Control over personnel assigned or attached to RCATT is vested in the troop commander through UCMJ authority. The unit is dependent upon the Regimental Headquarters Troop for Class I and II support; training support (vehicles, equipment and assistant instructors) for RCATT is provided by the armored cavalry squadrons and the air cavalry troop. This type of support allows imaginative and productive training limited only by the availability of Regimental assets.

IN-UNIT AIT

The 3d Armored Cavalry Regiment has two formal Advanced Individual Training programs in addition to MOS producing on-the-job-training. The combat arms and maintenance programs of instruction both are designed to produce a disciplined, motivated and productive trooper, knowledgeable in those areas that pertain to his duties in a unit.

Students in Combat Arms Training can testify to the fact that there is no idle time in RCATT. The newly arrived trooper begins training as soon as possible, with the maximum delay being one week. Following in-processing (two days maximum), he is ready for the first three blocks of instruction, each three weeks in length. Particularly noteworthy is the structuring of a trainee chain of command at the start of each class. This not only assists the cadre in their span of control, but it also identifies and develops potential leaders for the Regiment.

During Common Subject Instruction the groundwork is laid for general and MOS subjects. Here the student is enrolled in correspondence courses which relate to his MOS and is also introduced to the assistance which can be provided by the Regimental Education Center. Those troopers without a high school diploma are encouraged to enter the GED Program. If of age (18 years), the trainee is tested for a military driver's license after receiving the Defensive Driving Course. Other common subjects include small arms familiarization and qualification, basic communications and the fundamentals of armored cavalry radios, TAMMS and map-related subjects.

The general and MOS subjects blocks of instruction may be received in any order after Common Subjects, dependent upon scheduling. The Common Subjects block is structured so that a new arrival may

RCATT		AIT TRAINING CENTER	
11D MOS (9 weeks)		11D MOS (7 weeks)	
$228.60	MPA	$134.54	OMA
8.05	OMA	941.12	MPA
209.38	Ammo	116.96	PEMA
$446.03	Total to train one 11D	180.08	Ammo
		$1372.70	Total to train one 11D

receive the first three weeks training in any sequence. In this manner RCATT is able to accommodate a weekly input of a variable number of trainees and yet have a maximum of one week delay before the start of training.

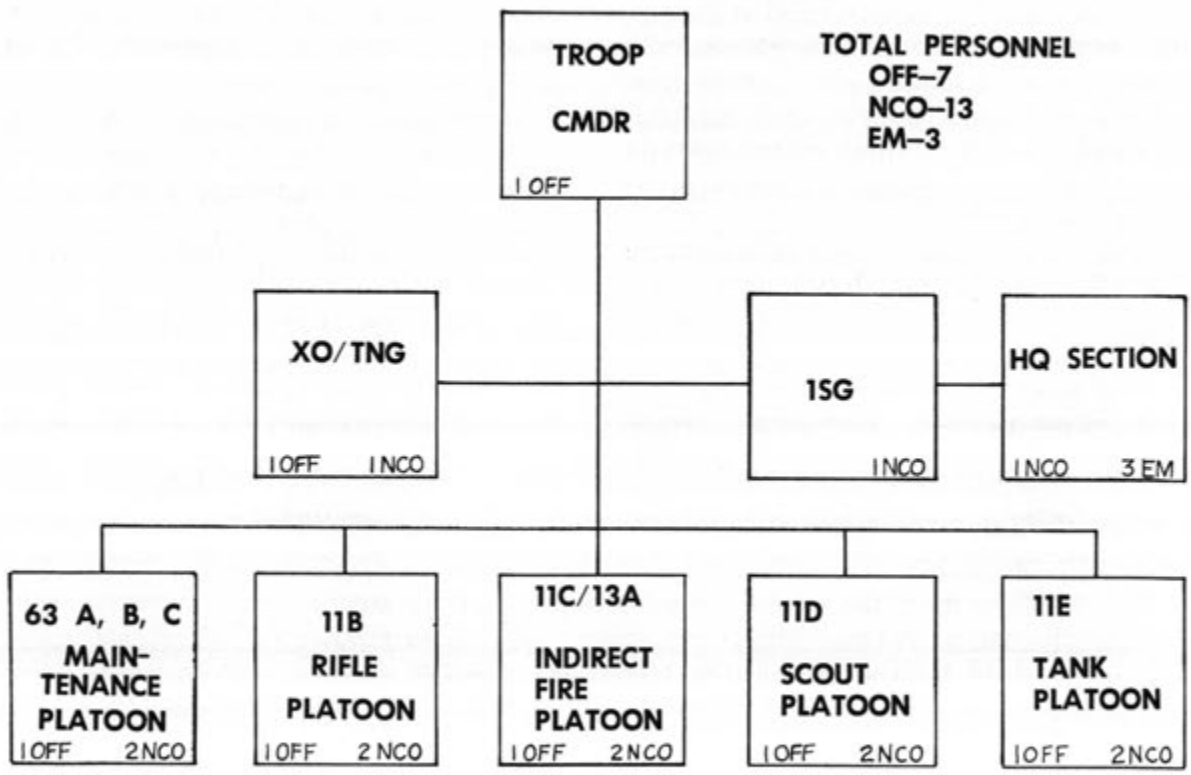
During General Subjects the student receives confidence building instruction that is highlighted by a four-day Recondo exercise. This instruction is presented by the aerorifle platoon of the air cavalry troop and encompasses mountain and helicopter rappelling, orienteering, desert survival instruction, night navigation, hand-to-hand combat and survival, escape and evasion exercises. Other instruction such as Drug Abuse and Race Relations/Equal Opportunity, demolitions, CBR, mechanical training on weapons and character development courses round out the three weeks of General Subjects.

MOS Subjects consist of three weeks of core material that prepare a trainee for tactics and field firing of crew-served and vehicular-mounted weapons. This training is accomplished through the MOS platoons. The platoon leader and his two noncommissioned officers are responsible for insuring quality instruction, monitoring support requirements and controlling the trainees.

Upon completion of each block of instruction, performance examinations are administered to insure successful completion and thorough understanding of desired courses. Slow learners are identified as early as possible in order to receive additional assistance during the nightly peer group study halls. Individuals who do not satisfactorily complete a block of instruction can neither proceed to the next block nor graduate until completion standards have been met.

The product of nine weeks of challenging, imaginative and demanding training is a disciplined, motivated and productive cavalryman qualified in a Combat Arms MOS. From RCATT, the new graduate is

REGIMENTAL COMBINED ARMS TRAINING TROOP



Colonel David K. Doyle, Commander of the 3d ACR congratulates a recent RCATT Honor Graduate.

assigned to a unit within the Regiment and guaranteed 16 months of stabilization. As a result of RCATT identifying and eliminating undesirable trainees, the units within the Regiment can normally be assured of receiving a soldier with fewer personal and administrative problems.

The Maintenance AIT program of instruction differs from the Combat Arms Training in that the mechanic receives four blocks of instruction taught by the Post Education Center. The prerequisites are the successful completion of the TAMMS Course, PLL Course, Wheeled Vehicle Mechanic's Course. Driver's Training, General Military Subjects and on-the-job training are also required for completion of the maintenance training. The maintenance platoon leader schedules classes, monitors instruction, and controls and supervises the trainees. As with the combat arms AIT program, a peer group leadership structure is established in each platoon among the trainees to develop responsibility and identify potential leaders.

NEW EQUIPMENT TRAINING

The new equipment/refresher training program is a second mission that RCATT is capable of performing. Programs of instruction have been prepared and are available upon request to Regimental units on the *M551 Sheridan, M561 Gamma Goat, M114A1E1* and *XM41* conduct of fire trainer. In addition, upon completion of AIT, all 11E personnel programed for assignment to the armored cavalry troops receive two weeks of *M551* crewman training. If vacancies exist within a class, troop commanders may provide fillers for either refresher training or basic vehicle orientation. All those who successfully complete this block of instruction receive an R8 suffix to their MOS.

LEADERSHIP/PREVENTIVE MAINTENANCE

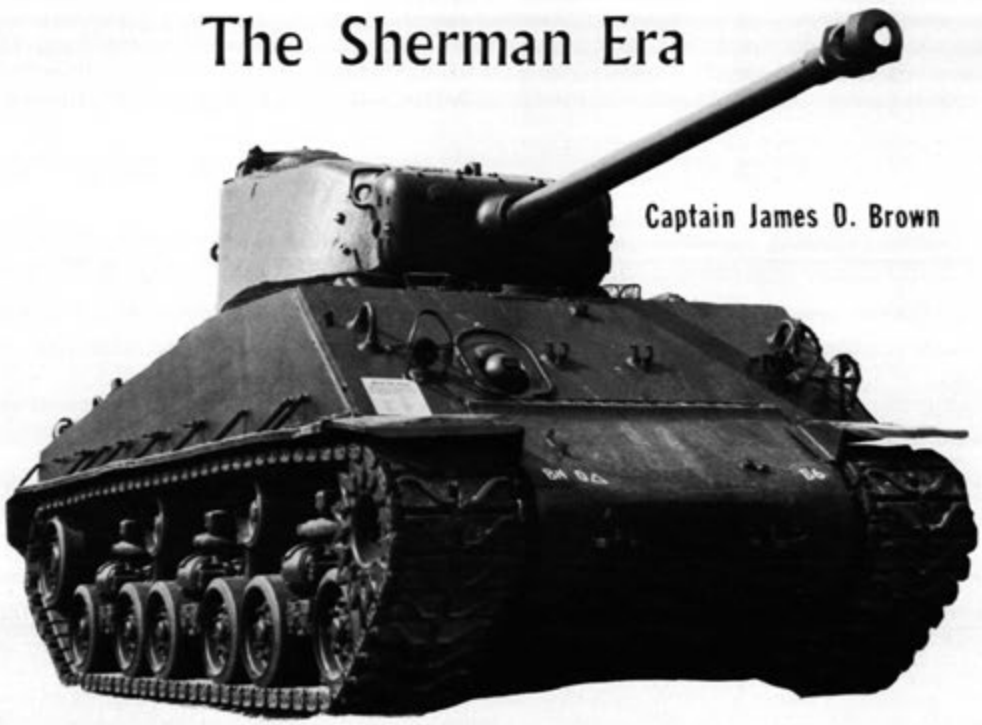
A new program of instruction being developed by RCATT is a Junior NCO Leadership/Preventive Maintenance Course. The need for this program arose as a result of the shortage of middle-management NCOs within the Regiment. The training program incorporates basic leadership principles with maintenance refresher training. Daytime maintenance instruction, with emphasis on hands-on training, and night leadership seminars will gainfully employ the student during this live-in school. Performance examinations will be administered at the beginning and end of the course in order to ensure competence and measure improvement. The student's leadership potential is evaluated as well as his ability to convey maintenance and general military instruction to his peers. Areas of consideration for the maintenance instruction encompass vehicle, communications, and weapons preventive maintenance checks and services. TAMMS, PLL and property accountability will also be covered. The product of this program is seen as a more effective armored cavalry leader who is better able to set maintenance standards.

The basic concept of RCATT is built on the foundation of professionalism, unit pride and discipline. This is the spirit of the Cavalry. This is what we strive to instill in our students. From the traditional Regimental accolade to the distinctive kelly green helmet liners, the Regimental Combined Arms Training Troop constitutes a fresh approach to achieving a combat effective unit.

CAPTAIN THOMAS J. KONITZER graduated from the College of St. Thomas in 1965 and was commissioned in April 1967 from Ordnance Officer Candidate School at Aberdeen Proving Ground. Captain Konitzer received his flight wings in 1968 after completing rotary flight training, and served in Vietnam with the 1st Cavalry Division. Currently he is Troop Commander, Regimental Combined Arms Training Troop.

Medium Tank Doctrine—

The Sherman Era



Captain James O. Brown

The best antitank weapon is another tank. This basic tenet of antiarmor doctrine, only recently challenged by guided missile advocates, has served commanders well for many years. Indeed, most tankers now serving cannot remember a time when their basic mission was not the neutralization of enemy armor. Few realize that as recently as the beginning of World War II, tanks were considered ill-suited and, in any case, too valuable to engage in head-to-head combat with enemy tanks, and were instead reserved for the traditional cavalry mission of penetration and disruption of the enemy rear area.

Nowhere is the evolution of US medium tank doctrine more clearly mirrored than in the *M4* tank, the *Sherman*. This tank, in development during the Army reorganization of 1940, was to be the first of a new breed of medium tanks. Prior to the reorganization, the Chief of Infantry had proponency for "infantry tanks," while the Chief of Cavalry exerted control over "cavalry tanks." Subsequent to June 1940 Army Ground Forces delegated proponency for all tanks to Chief of Armored Forces, who concurrently assumed responsibility for development of a new doctrine of employment for these weapons.

The advent of German "Blitzkrieg" served notice on the world that tanks could no longer be efficiently employed as heavy weapons to implement conventional tactics. In response to this revolutionary change in employment of armored troops, Armored Force Command set about to formulate a new set of tactical and strategic guidelines and to educate armor leaders in their new roles. American entry into the war thus caught Armored Forces with neither a tested set of tactics nor a mature medium tank with which to implement them. The tactics and strategy were, perforce, learned on the battlefield, with the *Sherman* serving as the primary classroom.

The *Sherman*, a mainstay of US and Allied armored formations throughout the war, was built in a multitude of versions. In reponse to the changing demands of armored warfare, it was eventually given a more powerful engine, wider tracks, improved suspension, thicker armor, a more powerful gun and a powered and stabilized turret. While the *Sherman* was never equal to individual combat with first-line German armored vehicles, these product improvements, along with the massive production maintained throughout the war, earned this tank the distinction accorded by many experts as "the tank that won World War II."

Three main trends were responsible for the evolution of US medium tank doctrine, with concurrent upgrading of *Sherman's* capabilities. These trends were characteristic of the development-counterdevelopment cycle of wartime equipment and tactics and were closely interrelated. They were:

- Appearance of armored antitank formations to supplement towed guns in the German Army.
- Realization of the need for armor-piercing guns on US tanks.
- Introduction by the Germans of heavily armed and armored tanks designed to engage a variety of hard and soft targets.

The first of these trends was initiated by a demand by Hitler, on 28 September 1941, that a high-velocity gun be developed for the *Sturmhaubitze III*. The *Sturmhaubitze* (literally—assault howitzer) had appeared in 1934 as a fully armored self-propelled gun to support blitzkrieg tactics of armored infantry formations. It was originally a *Panzer III* medium tank chassis mounting a low-velocity 75mm gun firing high explosive shell. The vehicle, developed to Hitler's requirement, was first fitted with a 75mm *L/43* medium velocity tank gun designed for high-explosive armor-piercing shell. Though it was not at the time recognized as such by US forces, the dual-purpose *Sturmgeschutz III* (literally—assault gun) was the first of a line of increasingly specialized *Panzer-Jaeger* (tank hunters) developed by the Germans. Its presence on the battlefield signified not only an increased German antiarmor threat, but more importantly, the need for an armor-defeating capability then lacking in American tank guns.

The 75mm gun, as fitted to the *Sherman* in the original configuration in February 1941, was designated the *M2*. This was an American version of the famous "*French 75*" field gun of World War I fame. Its armor-piercing capabilities were modest at best; it could be depended on to penetrate not more than 60mm of armor at 30 degrees and 500 yards. By the time this tank reached front line units, however, the German first line medium tank, *Panther*, carried 120mm of frontal armor. It can be clearly seen that, insofar as antiarmor capabilities are concerned, the American primary medium tank was obsolete when it left the drawing board.

A high velocity 76mm gun was available as early as August 1942. However, the command of Army Ground Forces, which included the Armored Force Command as well as Tank Destroyer Command, maintained that such a weapon would encourage tank crews "to go gallivantin' off chasing enemy tanks." As a result, the first 76mm tank gun was not fitted until February, 1944. This failure of US planners to provide for an armor-busting tank gun until late in the war was caused in part by overconfidence in the capabilities of the Tank Destroyer.

The Tank Destroyer Command, formed in July 1940, had the mission of engaging enemy armor, thus freeing friendly armor for other action. Several Tank Destroyer configurations came into service, the most common being a 75mm *(M1897)* gun mounted in a halftrack carrier. Although well suited to defensive operations, the half-tracked Tank Destroyers could not keep up with tanks cross-country. On more than one occasion, friendly armor was forced to halt its advance to wait for Tank Destroyer elements to deal with the enemy.

The half-tracked Tank Destroyers were severely limited by their light armor and lack of overhead cover. Air-burst artillery and light mines could effectively separate the Tank Destroyers from the tanks. Later developments, which culminated in the *Sherman*-based *M36 Jackson*, partially remedied mobility

This StuG III is typical of the SP "tank hunters" used against the Allies.

problems, though the *Jacksons* still went without overhead cover in order to accommodate the converted 90mm antiaircraft gun in their turrets.

Dependence on the heavily armed Tank Destroyers is well illustrated by the following account by Sergeant Francis W. Baker, a tank commander with the 66th Armored Regiment. This incident has been extracted from a report prepared in 1945 by Major General I. D. White, the Commanding General 2d Armored Division (Hell on Wheels), for General Eisenhower.

"On the morning of November 20, 1944, I was tank commander of a *Sherman* medium tank mounting a 76mm gun. The Germans staged a counterattack with infantry supported by at least three *Mark V* [*Panther*] tanks. Ordering my gunner to fire at the closest tank, which was approximately 800 yards away, he placed one right in the side which was visible to me. To my amazement and disgust I watched the shell bounce off the side. My gunner fired at least six more rounds at the vehicle, hitting it from the turret to the track. This German tank, knowing that I possibly would be supported by a tank destroyer, started to pull away. I was completely surprised to see it moving after receiving 7 hits from my gun. At this time a tank destroyer mounting a 90mm gun pulled up to my right flank; motioning to the commander, he acknowledged that he saw the tank. With one well-placed shot he put it in flames. Traversing to his left he also put another one in flames."

The second major trend in the evolution of the *Sherman* was a partial alleviation of dependence on the Tank Destroyers by the introduction of a long-barrelled, high-velocity 76mm gun for the *Sherman*. In the face of increasingly powerful German tanks, the relative unsuitability of Tank Destroyers for offensive action and erosion of confidence in ability of the *Sherman*, the AGF relented in late 1943 and permitted procurement of the *M1* 76mm formerly cited, but neither the gun nor the HVAP ammunition it used against enemy armor were available in the numbers needed. The following comments (again from the report prepared for General Eisenhower) are typical:

"Our tank crews have had some success with the HVAP 76mm ammunition. However, at no time have we been able to secure more than five rounds per tank and in recent actions this has been reduced to a maximum of two rounds, and in many tanks all this type has been expended without being replaced."

Major Paul A. Bane Jr.
XO, 3d Bn, 67th Armd Regt

The following is an extract of the cover letter of General White's report:

"I feel that many criticisms made by tank crews would not appear had we been equipped with a larger

Half-tracked 75mm Tank Destroyers like this could not stand up to the panzers.

proportion of *M4A3E8* tanks for operation "Grenade". Only two or three tanks of the type actually saw combat. During this operation, only 29 percent of our medium tanks mounted 76mm guns, and only four rounds of HVAP ammunitions were available. Incidentally, rounds of this type expended in this operation have not been replaced. However, the 76mm gun, even with the HVAP ammunition, is not effective at the required ranges at which we must be able to engage enemy armor."

The HVAP ammunition which was in such short supply enabled the 76mm *Shermans* to penetrate 133mm of armor (30 degrees) at 1,000 yards. The *Panther's* thickest armor was its 120mm mantlet, while the *Tiger I* carried 110mm and *Tiger II* presented a target 185mm thick. *Sherman* crews soon learned to avoid frontal shots altogether and to maneuver for flank shots against the relatively thinner sides and stern. While performance was only marginal against the latest German armored vehicles, the *Sherman* 76mm gun at least gave American crews a fighting chance.

Though not able to meet the heaviest German panzers in head-on battle, the high-velocity "76" was a step in the right direction. In particular, it pointed the way for future development along lines of heavier, more self-sufficient tank guns and away from dependence on the Tank Destroyer concept.

Even before the first reverberations of US 76mm tank guns had been heard, the third major influence in American medium tank philosophy was taking shape in the introduction of advanced German models in medium and heavy tanks. The *Tiger I*, *Panther* and *Tiger II* were modern designs which were designed, from the tracks up, to stalk and destroy the most heavily armored targets. Even the *Panther*, at 45 tons, the lightest of the three, was proof against point blank 76mm

fire against its front slope:

"It was 0200 and the moon was out. Woods on both sides made visibility poor. We were moving down the road in a *Sherman* with 75mm gun, firing all weapons, when we saw a German *Mark IV* tank 20 yards away back off to permit a German *Mark V*, 35 [thirty-five] yards away, to fire on us. We fired an AP at the *Mark V* and hit him on the front slope, left side, and it bounced off. He then hit us twice. The first shot hit just below the drivers hatch, went through two layers of sandbags, the armor plate, and exploded inside. The second shot hit slightly below the first with the same effect. The tank behind us, a *Sherman* with 76mm gun, fired upon the *Mark V*, hit him on the front part of the turret and the AP shell bounced off. The *Mark V* then hit the 76mm tank on the front plate, just to the right of the driver, went through a single layer of sandbags and pierced the armor plate."

William J. Marchesi
T-Y, Gunner 66th Armd Regt

This incident, a further extract from the *Eisenhower Report*, illustrates how far US medium tanks had fallen behind in the gun versus armor race.

If the *Sherman* gun was ineffective against German armor plate, its own armor was no more adequate in turning German shot. As opposed to the 80mm of bow plate carried frontally by the *Panther* (150mm by the heavier *Tiger II*), the *Sherman* was protected by a glacis only 50mm thick. *Sherman* crews made up the difference through a variety of extemporized schemes. A common field modification was a layer of steel track blocks welded over the glacis and covered in turn by a layer or two of sandbags lashed in place. Even such heavily burdened vehicles were still easily penetrated at extended ranges by the 75mm and 88mm tank guns of the *Panthers*, *Tigers* and *Jagdpanthers*. The following incident is typical:

"About 4 March [1945], I was a gunner on a *Sherman* with 75mm gun. We were in a defensive holding position about 300 yards from the Adolf Hitler Bridge. Visibility was good. We were hit by a Jerry tank, of unknown type, probably a *Mark V* [*Panther*] in the track. It broke the track. The second shot hit the front plate just above the bow gun, piercing the sandbags and the armor plate, and exploding inside. There was about two feet of sandbags in front of the armor plate. The third shot hit the turret gunshield, pierced it, and entered the turret. The fourth and fifth hit in the same place and each pierced the gunshield and entered the turret. The tank was set afire and burned completely."

Corporal Raoul O. Barrientes
Gunner, 66th Armd Regt

An interesting attempt to provide greater armor protection was the *M4A3E2* version of *Sherman*, some of which saw action in Northern France after D-Day. These vehicles, 254 in all, were modified by addition of applique armor to bring all hull surfaces to a minimum of 100mm thickness and the turret to 150mm. These vehicles, known colloquially as "Jumbos," compared favorably with the *Tigers* in armor protection but were, however, still armed with the low-velocity 75mm gun. The lessons of battle having gone unheeded, it was expected that armor-defeating chores could be handled by Tank Destroyers while Jumbo waded in to render infantry support firing 75mm HE shell. Jumbo's 45 tons were too heavy for its suspension, and additionally it suffered from reduced mobility and agility. More seriously, its heaviest armor was easily penetrated at ranges in excess of 2,500 yards by the 88mm *L/71* gun carried by *Tiger II* and *Jagdpanther*. It proved to be more trouble than its moderate firepower was worth, and this experiment in heavily armored mediums was not further pursued.

Three Jacksons and a Sherman in action in a snowy Belgian Field

A Jackson moves past a vanquished Panzer IV. Note track grousers.

As vehicle modifications added more and more weight, the narrow track and low-speed suspension became less and less adequate for cross-country operation. The problem came to a head in the soft, muddy soil of northern Europe in the fall and winter of 1944. The following report, written by a troop commander in the spring of 1945 typifies the conditions encountered:

"The *Mark V* [*Panther*] and *Mark VI* [*Tiger*] in my opinion have more maneuverability and certainly more flotation. I have seen many cases where the *Mark V* and *VI* tanks could maneuver nicely over ground where the American *M4* would bog down. On one occasion I saw at least 10 *Royal Tigers* counterattack against us over ground that for us was nearly impossible."

Charles A. Carden
Staff Sergeant, Platoon Sergeant
66th Armd Regt

"On 17 November 1944, 2d Bn, 66th Armd Regt jumped off on an attack with the mission of securing Ederen, Germany. Upon moving into Ederen, I had the opportunity to compare the flotation of our *M5A1* and *M4* against the German *Mark V* tanks. Upon entering the town, my tank paralleled the track left by the German *Mark V* tanks. I was very much interested in the capabilities of the two tanks cross-country. I dismounted to compare the tracks of the German with those of my own. I noticed the German tank had sunk into the soft ground approximately two inches, and those of my own tank, the *M5A1*, had sunk about 3 1/2 to 4 inches. I also noticed the impressions left by an *M4* medium tank and noted that it had sunk about 5 or 6 inches. This was very interesting to me, as the German tank weighing 45 tons was three times heavier than mine, weighing 15 tons."

First Lieutenant Harold A. Shields
A Co, 66th Armd Regt

Fortunately, US authorities had noted mobility problems in the sandy, desert fighting in North Africa and again in Italy. The solution was found in a wider track, which reduced ground pressure by 32 per cent. Grousers, which were added as a bolt-on modification, further lowered ground pressure, but the *Shermans* never did attain parity with the *Panther*.

The *Sherman* continued in active service with US divisions until the mid-1950s, and remains in service with several present-day armies. The versatility of the *Sherman*, which enabled it to make the evolution from the plodding infantry support tank to a wide-ranging, powerful tank-buster, is a tribute to the foresight of its designers. That the potential of this tank was not exploited much earlier in the war is attributable to the brand of unimaginative, high-level leadership which allowed firmly entrenched doctrine to prevail over the needs and capabilities of troops in the field.

The problem of the best antitank weapon was not solved with the *Sherman*, nor is it solved today. The question still evokes lively discussion in the circle of combat arms soldiers. Whether the "ultimate" antitank system depends on artillery, mines, missiles, or some as yet undeveloped weapons, the lessons learned during World War II evolution of medium tank doctrine and equipment into present main battle tank philosophy will weigh heavily. It is certain that the main battle tank, with its proven combination of firepower, armor protection, ability to occupy terrain and staying power unsurpassed by any weapon now available, will continue to be the key to US antiarmor doctrine in the forseeable future.

CAPTAIN JAMES D. BROWN was commissioned as a Distinguished Military Graduate from the University of Santa Clara. Captain Brown has served as platoon leader, executive officer and company commander of tank units in the 3d Armored Division and as an advisor with IV Corps in Vietnam. He is currently assigned as S4 Committee Group, USATCA.

CAVALRY AT CANNAE

by Captain Kelly M. Morgan

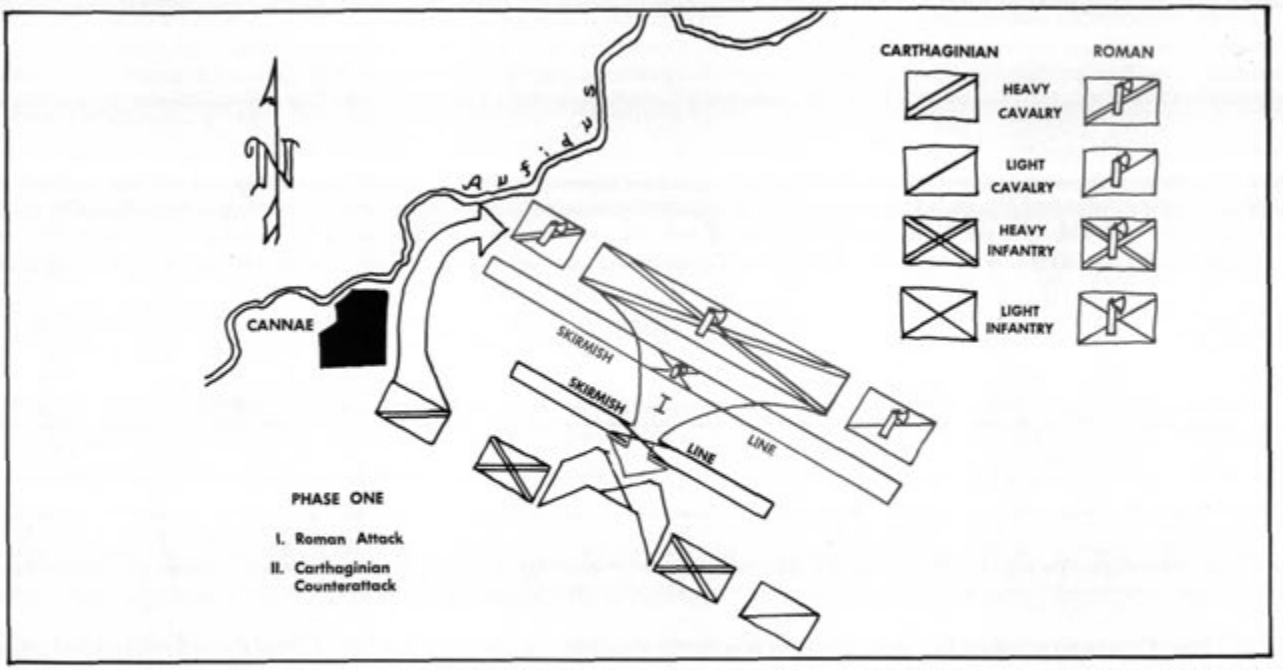
An American commander may one day face a superior force in Europe or Asia, and will have to rely on the maneuver of highly mobile forces in order to achieve a tactical advantage. Our contingency plans envision this, which accounts for our tank-heavy forces in Europe, and our development of the air-mobile concept. Even if the manpower odds were equal, we would still rely on mobility and speed to gain the best battlefield position, in order to win the decisive victory and to conserve our manpower. Since we must condition our thinking to mobility versus overwhelming numbers, it is both interesting and instructive to draw parallels from history. The Battle of Cannae, during the Second Punic War, offers an excellent case in point.

An 85,000-man Roman army was moving against Hannibal, the Carthaginian invader of Italy, in the summer of 216 BC. Hannibal had won recent victories at Trebbia and Lake Trasimeno, but Rome has raised a new army and hoped to drive Hannibal's force off the continent. The new Roman forces were commanded jointly by a plebian consul and prominent Roman businessman, Gaius Terentius Varro, and by a patrician consul, Aemilius Paulus. They commanded on alternate days, which violated the principle of Unity of Command, and the weaker commander, Varro, was in charge on the morning of the battle.

Hannibal only had 50,000 men, made up of the many different nationalities under the rule of Carthage, but the army was well led and disciplined. Hannibal's Army had a high proportion of cavalry, which was used by him much as modern armor is employed today. His heavy cavalry, made up of Spaniards, Gauls and Africans, was used for mobility and shock action, like tanks. The light cavalry of Numidians, on the other hand, was used as a security and "economy of force" unit, much like modern armored cavalry. It might also be noted that elephants were used from time to time, as a psychological weapon, to strike fear into the hearts of enemy infantrymen who had never seen such beasts. But the elephants had died of disease during the trip over the Alps and the campaigning that followed, and none were present at Cannae.

Rome relied primarily on infantry, and the legion was the principal army unit. It numbered from 5,000 to 6,000 infantrymen, with a small force of cavalry for flank security. The legion was subdivided into maniples, company-sized units, and was either heavy foot, armed with spear and sword, or lightly armed skirmishers. The legion usually attacked in two lines of heavy infantry maniples, with the third line of maniples in reserve. The skirmishers were forward of the heavy foot initially, and cavalry rode at either flank. In open battle order, it was superior to most infantry of the day.

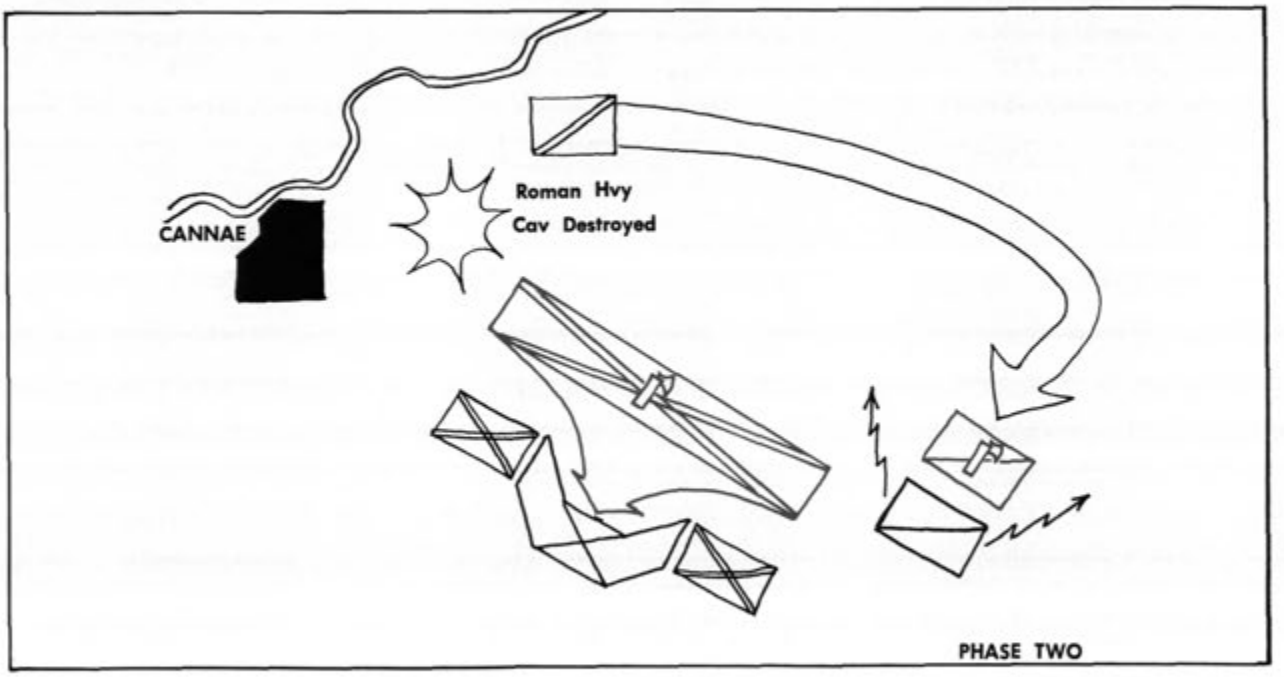
Accounts differ, but it appears that Hannibal camped on the north side of the Aufidus River, not far from the Adriatic. He planned to use his mobility to defeat the Roman army, but found the terrain on the north side of the river unsuitable. He therefore moved

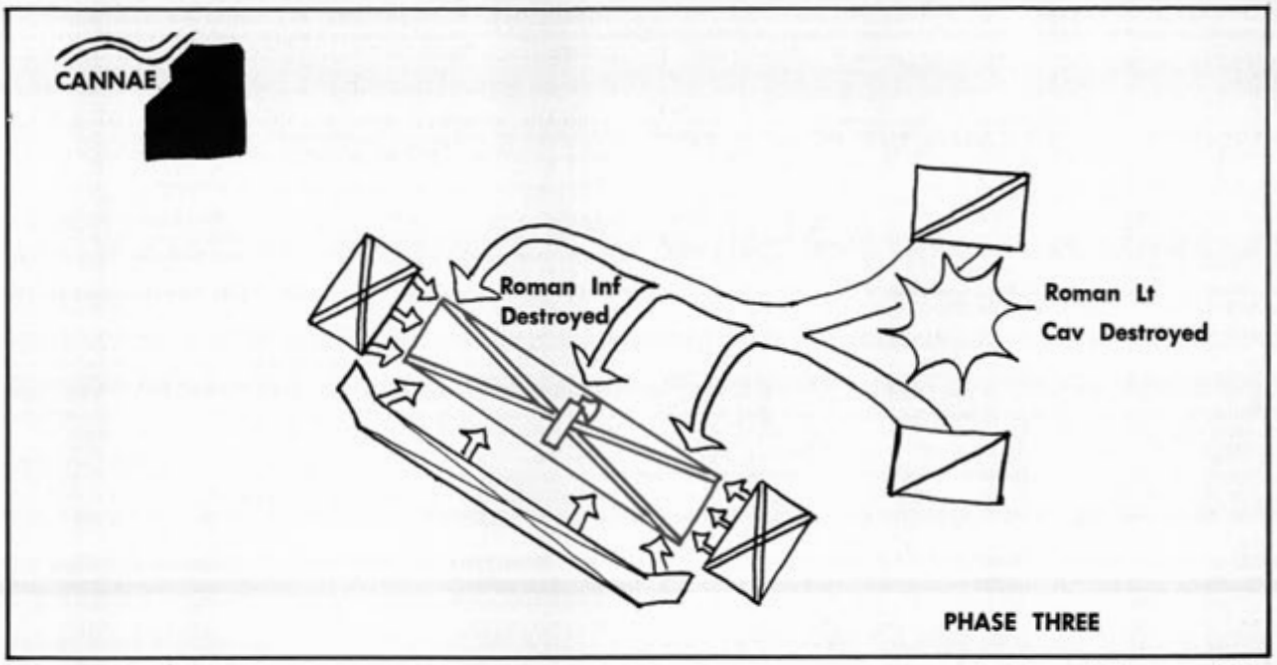


to the south side of the river as the legions approached, and selected a slight elevation overlooking the plain of Cannae. The old town of Cannae, by the south bank of the river, was used to anchor the left flank of the Carthaginian Army and to canalize the attacking Romans toward the center of the Carthaginian line. The Adriatic would be to the rear of the Romans after they crossed the Aufidus, and they would have to form their attack formation on a flat plain ideally suited to mounted warfare. Both armies were across the river by 2 August, and during the early morning hours of 3 August, they formed their respective battle formations in the darkness.

As first light broke on the morning of battle, Hannibal saw that powerful Roman army moving forward toward him, in perfect alignment. The infantry was flanked by heavy cavalry on the Roman right flank, light horse of the allied cavalry wing on the left, and the skirmish line of stone slingers forward. Hannibal then ordered all of his heavy cavalry to the Carthaginian left flank to oppose the Roman right. This so weighted the Carthaginians that they outnumbered, on this flank only, the Roman heavy cavalry. The Spaniards, Gauls and Africans took up station near the town of Cannae, and waited. They were to be the counter-attack force and would rely on the principles of mass and surprise at the decisive point in the battle.

In the center, Hannibal had placed his light infantry





of Libyans and Gauls, and to either flank, on slightly higher ground, he had placed his heavily armored African infantry to anchor the line. In front of this formation was a skirmish line of stone slingers.

To the right flank, Hannibal sent his light Numidian horsemen to serve as an "economy of force" unit, and to hold up the advance of the Roman allied cavalry wing. Hannibal then positioned himself near the center where he could best control the battle, and waited with his couriers and liaison officers as the legions advanced. On the Roman side, the Consul Verro had packed his legions into a phalanx, rather than the open order that insured flexibility. Also, he had positioned himself on the left flank with the Allied cavalry wing, where he could not control the battle, and had placed the other consul, Paulus, on the right.

The Roman formation pushed through the Carthaginian skirmish line in good order and, with a mighty crash of metal, charged into the center of the Punic infantry, pushing back the lightly armored Libyans and Gauls. These light infantrymen were the fixing force in Hannibal's battle plan, and it was of paramount importance that they hold for as long as possible and at the same time, draw the bulk of the Roman infantry to them.

As the center started to fall back slowly, trading space for time, Hannibal signaled the commander of the heavy horse on the left flank to counterattack. From their position outside the town of Cannae, the Spaniards, Gauls and Africans advanced at the gallop, straight for the heavy cavalry on the Roman right flank. Hannibal and his subordinate commanders never lost sight of the principle of the offensive, and now they intended to steal the enemy's initiative. The counterattack was executed with such force and violence, and so surprised the Roman cavalrymen that they could not turn in time to meet the threat. Consul Aemilius Paulus, who tried to rally the Roman horsemen, was killed after losing his mount (He was buried with military honors by Hannibal after the battle). The vicious Spaniards did not let up the momentum of their attack until the surviving Roman heavy horsemen were scattered from the field, some trampling their own infantry in their haste to leave the battle. The fighting soon spread up the south banks of the Aufidus to the Adriatic shore, as fleeing bands and individuals were hunted down and killed until the Roman heavy cavalry was no longer an effective fighting unit.

On the other end of the line, the Numidian light horse of the Punic right flank moved against the allied cavalry on the Roman left. Using their speed and fighting as an "economy of force" unit, the Numidians gave the Spaniards time to finish off the heavy Roman cavalry on the other flank.

Attesting to the high state of discipline in the Punic mobile arm, the cavalry commander was able to round up his Spaniards, Gauls and Africans, and regroup shortly after their victory over the Roman right flank. Accounts differ as to whether this commander was Hanno or Hasdrubal, but both men were able cavalry leaders. In any event, he had accomplished a major breakthrough, in much the same way as modern armor forces, and he intended to exploit his advantage. The distance to the area of battle where the Numidians were holding off the Roman allied cavalry was several kilometers. It was hot, as the sun was now high in the sky, and the troops were tired from their recent

fight. Still, they knew their forces would be the decisive factor for Carthage on this field of battle, and this made them eager for more action and the final victory.

When they finally reached the rear of the far flank, a second charge was ordered, this time into the rear of the Roman allied cavalry wing. Thus, the Roman allies were caught between the Carthaginian heavy cavalry and the Numidian light horse, who had been holding up their advance. The two Carthaginian cavalry forces then came together, and the Roman allied cavalry wing between them ceased to exist.

Meanwhile, the Roman infantry had forced the Carthaginian light infantry a good ways back, and the legionaires were pushing hard. They were so sure of victory that they did not notice the heavy African infantry anchoring the line as they turned inward on the tightly packed maniples, nor did they notice the ground shaking under the weight of charging hoofs, for the Carthaginian cavalry had regrouped again and now charged into the rear of the Roman Legions. The slash of cavalry weapons sent thousands of legionaires to the ground. Others turned to meet the charging horsemen, but, trapped on all sides by infantry and cavalry, they could not break out. The fight lasted for many hours. When it was over even the battle-hard Punic warriors were appalled at the ghastly sight of the slaughter they had wrought.

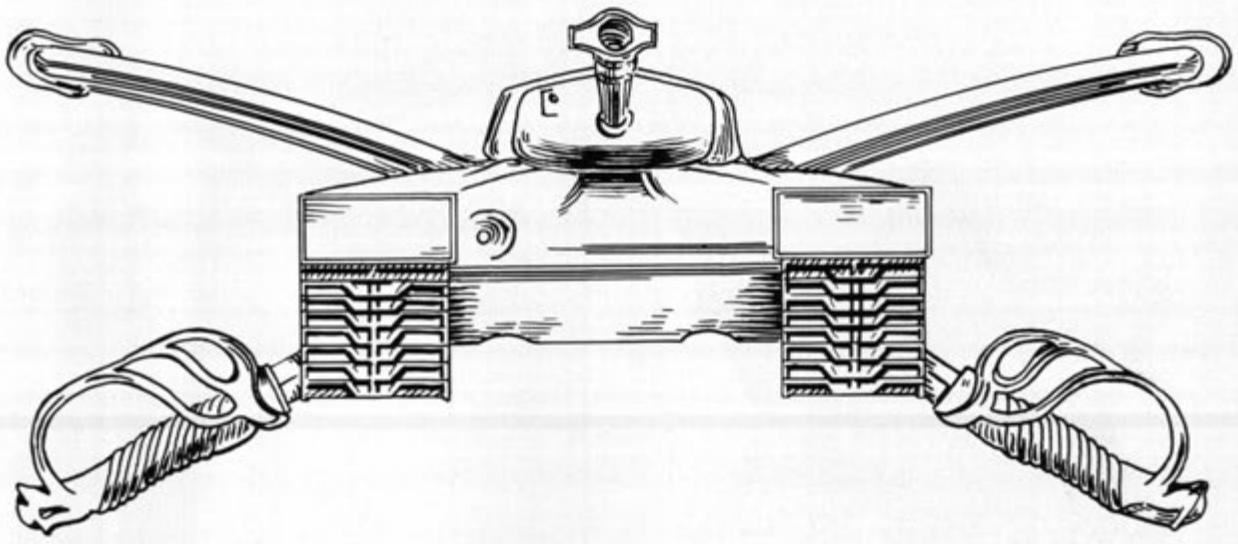
Cannae is often called the classic battle of double envelopment, but it was also much like a modern mobile defense, and thus, of importance to armor and mechanized commanders. Hannibal was outnumbered more than three to two, yet he let the enemy attack him on ground favorable to the Carthaginians, canalized the attacker, used his infantry as a fixing force, and counterattacked with a highly mobile shock unit. His counterattack force used mass and surprise, and unity of command was evident. The Light Numidian used economy of force to buy time for the heavy cavalry, and to keep the Roman light cavalry out of the fight in the center of the line. The result was calamitous for Rome. Fifty thousand legionaires and their officers were dead on the field of battle. Three thousand more were prisoners. Consul Paulus, a score of tribunes, and others of high social and military rank were among the slain. Consul Varro survived the battle, only to become the scapegoat for Roman defeat. Hannibal's losses were six thousand killed and wounded, which was relatively light compared to Rome's losses.

Years later, at the battle of Zama (202 BC), Roman Consul Scipio Africanus defeated Hannibal on African soil, but only after Rome had modernized the infantry tactics of the legion, learned to use the reserve as a counterattack force, and increased the size of the cavalry. This made the legion more flexible, and the cavalry added much needed mobility to the Roman attack formation. The lessons of Cannae were not lost on the Romans, and paid dividends at Zama, where the mobile arm was again decisive, although this time for Rome.

Whether it be 216 BC or 1973 AD, well-trained, highly mobile forces such as armor and cavalry, in the hands of an imaginative commander, will always be the combat arm of decision. The past is our example. The future is our challenge.

CAPTAIN KELLY M. MORGAN, commissioned from The Citadel in 1964, joined the South Carolina Army National Guard after leaving active duty in 1966. He has served as scout platoon leader, tank platoon leader and company commander with the 1st Battalion, 263d Armor.

The Armor Heritage



Dragoons—1851
One of many variations worn before the Civil War, this particular set of crossed sabers is modeled after an item in the Smithsonian collection.

Regiment of Mounted Riflemen
The upright trumpet was the branch insignia worn until the Regiment was consolidated with the Dragoon and Cavalry Regiments.

Mounted Riflemen (Dragoons)—1833
An unauthorized but widely worn gold embroidered insignia worn by Dragoon officers on their forage caps before and during the Mexican War.

Cavalry—1917
The enlisted cap insignia was worn by NCOs of the Cavalry Regiment that received more World War I campaign streamers than any other.

Armor
The present insignia was authorized in 1951 and consists of the front view of the M26 tank superimposed upon the old Cavalry insignia.

Cavalry—World War II
Once again officially worn, this size insignia has been in use from the 1930s to the present, whether authorized or not.

Cavalry—1870
Worn from the Civil War until 1896, the crossed sabers and regimental number were stamped from sheet brass and fastened to the cap by wires soldered to the insignia.

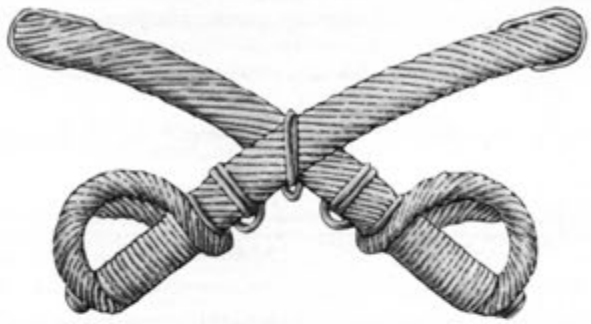
Armored Car Squadrons—1924
The "AC" on the Cavalry insignia was established in 1924. Only part of the 1st Squadron was activated in the Regular Army, and the insignia was rescinded 10 November 1941.

Machine Gun Squadrons—1917
Authorized in December 1917, these squadrons were disbanded in 1928. Armored Car Squadrons generally replaced these units.

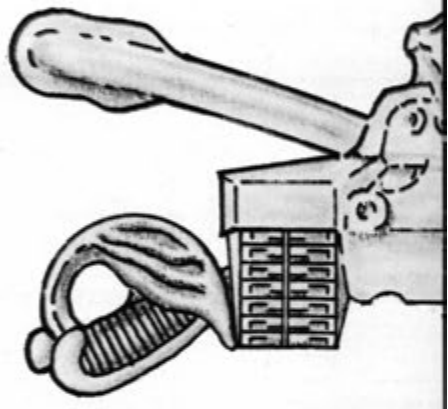
The Armor portion of The Armor Heritage which appeared in the September-October issue, as well as the Cavalry portion appearing here is available as a reprint from *ARMOR* Magazine. Cost is 50 cents each. Please enclose payment with order.

The Armor

MOUNTED RIFLEMEN
(DRAGOONS)—1833



DRAGOONS—1851

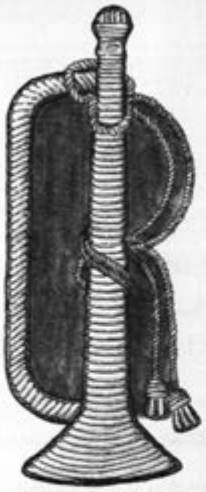


PRE

CAVALRY—WWII

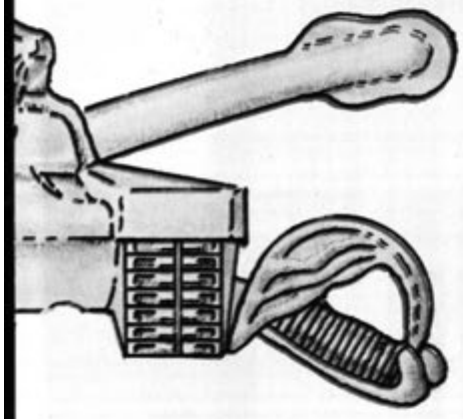
ARMORED CAR—1924

Heritage

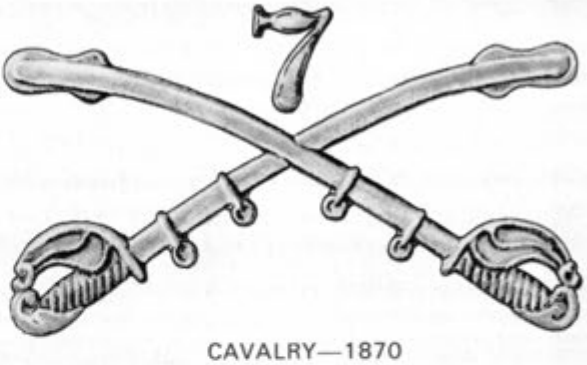


REGIMENT OF
MOUNTED RIFLEMEN

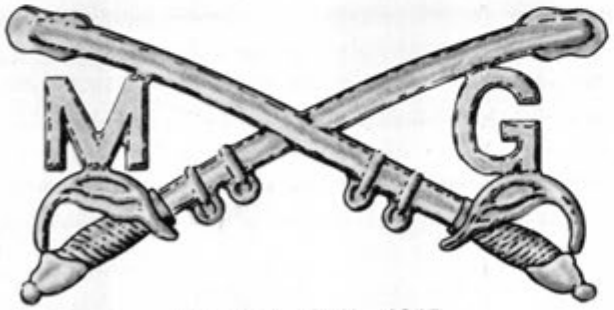
CAVALRY—1917



ENT



CAVALRY—1870



MACHINE GUN—1917

ARE WE FLOGGING A DEAD HORSE?

by Colonel George G. Eddy Jr

Horse flogging has been condemned for a long time. It is considered cruel and debilitating, and it certainly antagonizes the horse. An animal responds because a beating is painful and he would prefer it to cease; moreover, he is a captive. The rider must exercise some care because he might kill the horse; at this point, continued flogging will not produce any response except perhaps by aroused associates or a superior. Of those who may be present, many will remain just spectators. Just before the horse expires, it is possible, but not certain, that someone in the vicinity may intervene to prevent further abuse. Certain authorities may even be called upon to enforce appropriate remedies. Unless prompt action is taken, the odds are that the horse will end up maimed or in an early grave.

The modern steed, clad in armor and with a mechanical propulsion system, might otherwise be known as a tank. The tank's life is often in danger too, and consequently requires protection from its enemies. Frequently, the "enemy" turns out to be those one normally might expect to be its friends. These individuals are known as crewmen, often referred to as operators or users.

For years the Army has been struggling to solve a very basic problem: how to get its soldiers to take care of the Army's equipment. I can recall my father as a lieutenant and company commander at Fort Lewis in the 30s, trying to keep his FWD trucks operational. Here we are in the 70s and we still have not solved the care and maintenance problem. Having served a tour as the maintenance battalion commander in an armored division, I remain impressed with how little progress we've made.

True, we have some rather complex and sophisticated equipment in today's modern Army. There are those who contend the cause of our care and maintenance problems resides in the equipment itself. While I agree there is some validity in this claim, I am convinced we still need to solve the basic problem of the individual user/operator's role.

There is always a training problem and the associated turnover of personnel adds to the difficulty. Additionally, the introduction of large numbers of newer models or new items causes training headaches. Difficulties and delays in obtaining necessary spare parts and manuals do not make the tasks easier. All this is recognized, but what do you say when you observe operators using equipment without the slightest familiarity with an available manual? Have you ever had the Christmas season joy of trying to assemble and operate a build-it-yourself toy for your son without being able to find the "even-a-child-can-do-it" instruction sheet? While you may make a fine start, and brimming with confidence you plunge ahead, the end result may bear only faint resemblance to what the designer had in mind. If a friend joins you, have you noticed how quickly he gives advice and rarely hesitates to lay his own hands on your machine? Quick to apologize when he breaks a critical component, he is equally quick to depart and leave you with the pieces. After all, it is yours, and your responsibility is it not?

Perhaps this is where the Army has its biggest

task—trying to develop a sense of individual responsibility on the part of the user for the equipment in his hands. Too many interpret far too liberally the concept of "ownership" in the phrase "the Army's equipment." Since the individual soldier does not own or take the truck home when he leaves the service, it is hard to convince him of his responsibility.

Excluding latent defects and poor design as causes of engine failures in Army vehicles—wheel and track—why do some engines fail after only a few hours of operation? Answer: abuse or neglect, due to ignorance or outright indifference. The ignorance is a result of improper training and supervision, and the indifference is an absence of any feeling of responsibility.

Thus, while it is established we should concentrate on the equipment operator or user, the results are not encouraging. These show up in unit deadline rates and reports of survey.

Engines usually fail because:

- They run out of oil.
- The wrong kind of oil is used.
- Filters are not changed.
- Oil and water radiators get plugged up and cease to function.
- Someone forgot to put antifreeze in the radiator.
- Radiators run out of water due to leaks or other causes.
- They are over-stressed.

When the evidence shows the engine failure was due to neglect, it is rare indeed for a surveying officer to reach a finding of gross negligence. Few men ever pay for an engine. As a matter of fact, I do not recall a single instance where this happened during my time in the division. I believe that a healthy respect for the possible pecuniary liability resulting from negligence—caused damage would contribute substantially toward better operator care. It would also stimulate an increased interest in learning specifically how to use and maintain equipment placed in the user's hands. In other words, the operator would start reading the pertinent manuals *on his own initiative.* The benefits resulting from this positive attitude would have widespread ramifications of the kind we seek.

Results of indifference may be illustrated by the accompanying inspection report. This inspection involved three "frozen" engines in *M114* vehicles in a divisional unit and testifies to the lack of even the most elementary operator maintenance. The inspection of the first engine revealed the following:

- For the lubrication system, it was found that the quantity of oil was adequate. The quality of oil was very poor in that it was quite dirty and heavily carboned. The oil filter was blocked with foreign materials to the point of being no longer serviceable. The oil pump did pump oil, but only when operated by hand. The lubrication system, though substandard, probably was not the primary cause of this engine failure.
- Inspection of the cooling system revealed that the radiator was blocked with foreign materials (dirt,

leaves, rags, etc.) to the extent that its cooling capacity was reduced by approximately 50 per cent. The water pump was serviceable. The thermostat functioned properly when placed in hot water. Only 22 quarts of engine coolant—water and antifreeze—were in the engine, rather than the 35 quarts required.

- Based upon the above-cited information, it appears that the engine failure resulted from the severely reduced cooling capability of the engine.

Inspection of the second engine reflected this: The lubrication system indicated, again, a lack of operator attention to this engine. The engine lubricant was adequate in volume, but inadequate in all other aspects. The oil was quite dirty, hydraulic fluid had been mixed with the oil (per cent by volume unknown), and the oil filter was clogged to the point of being unserviceable.

Report on the third engine brought this to light:

- The lubricating oil, mixed with a small amount of water and antifreeze was in the proper volume. The oil filter was clogged to the point of being unserviceable. The oil pump did work.
- The cooling water was down to less than 20 quarts (there was no antifreeze in this engine). The water pump appeared to be serviceable although some "play" or looseness could be detected in the pump bearings. This engine had no thermostat and its radiator capacity had been reduced by 75 per cent through the accumulation of foreign material blocking the cooling fins.
- It is also worthy of note that the engine log book contained a new DA Form 2408-2, Lubrication Record; the DA Form 2408-2 indicated that the oil filter was changed on 17 Nov 65 (signed Roger Clark); while the DA Form 2408-3, 2d Echelon Maintenance Record, indicated the last oil filter change as having been made on 11 June 65 (signed J. Eason). It was further noted that the new DA Form 2408-2 contained the signatures of a number of persons, but was apparently written by only one person, even though this DA Form 2408-2 was not marked "True Copy."

Horrible examples? Yes. Not typical? Unfortunately, my experience indicates that this does represent a situation that is widespread. In this instance, the affected battalion commander, following his review of the inspection, exhibited little interest in the conditions cited—although the evidence was irrefutable. This unit has the highest deadline rate in the division. Not because the personnel were less trained or of lesser caliber than other similar units, but because of almost complete indifference to basic care and routine maintenance. This attitude permeated the entire unit, starting with the battalion commander.

The maintenance battalion provided what I consider to be "massive" assistance. This took the form of specially organized teams who literally moved in and spent weeks concentrating strictly on their assigned unit. Repeated efforts to effectively assist the prior commander were completely nullified by his indifference. He was interested only in "the mission."

While the majority of commanders were genuinely concerned about their deadline rates and getting prompt support by the pertinent Direct Support Unit, the problem of basic operator care prevailed. The engine inspections represent only one piece of the problem. Similar conditions existed with every other piece of equipment: generators, radios, weapons and fire control instruments. Concerning the latter, the division once found itself in a near critical state just prior to tank gunnery, due to damaged electron tubes in the *M36* scope and the lack of replacement tubes. A contributing factor was poor design, but this does not justify basic carelessness which had, in fact, created a serious condition. These fragile tubes, costing over $100 each, were damaged by improper insertion in the scope. They were damaged also by blows, dropping and operator fiddling, which occurred under the guise of "adjustments." The result: considerable number of tanks "out-of-action" for night firing to the extent that the division, corps and army commanders personally were much disturbed. This was a problem that involved all the divisions and armored cavalry regiments.

Since it is established that abuse occurs, it is necessary to devote attention to possible remedies. Essential elements come quickly to mind:

- A sound and continuing training program for operators and their leaders at all levels.
- Assignment of individual responsibility for specific equipment.
- A sound functional organizational structure for

performing maintenance.

- Assignment and development of qualified maintenance supervisors or leaders.
- Periodic system for evaluating quality of operator maintenance.
- Periodic status reports for management analysis and action. They should be dramatic and eye-catching, but brief and simple.
- Payment for damage due to negligence.
- Rewards for notable accomplishments.
- Disciplinary action for proven abuse of serious magnitude.

But these elements already exist, at least on paper. Why doesn't this scheme do the job? The answer is simple: while basically sound, these elements are not effectively applied. The accomplishment of these tasks is largely perfunctory. What is lacking is the sparking of interest and desire. Easily said, something else again to achieve.

But really, what this amounts to is one of the fundamentals of leadership—motivation of men. Underlying this is the vital component—pride. A man must feel he is doing something worthwhile, and when he does it well, he expects some kind of recognition. He also knows when he has done something poorly, and he expects some kind of admonishment. If nothing happens he loses respect for his supervisors and all interest in applying himself. In short, his desire to do what is required will be heightened by the actions of his supervisors.

One of the best stimulants is competition where a challenge is encountered. There are few who will not respond if the competition is properly managed. The objectives must be feasible and the rewards appropriate. The rules of the contest must be simple, easily understood and scored, and fairly applied. Winning an award must be difficult but reasonably possible. While it may sound redundant, both the "judges" and the "competitors" must really know what they are doing. Both must do their homework.

With regard to competition, the program established a few years ago by the Berlin Brigade constitutes an excellent example of what can be done. Due to the impetus by the Berlin Brigade commander, and further stimulated by his personal inspections and frequent spot checks, a comprehensive program was developed and implemented in a relatively short time. Based on pertinent manuals, details were worked out by the ordnance officer and published as an official directive. The conclusion of the first cycle of competition was highlighted by widely-publicized ceremonies officiated by the commander personally. Since its inception, the interest by commanders at all levels quickened and soon permeated the command. Improvements in operator maintenance and in overall materiel readiness resulted, and as this competition was intended to be of a continuing nature, there was a valid basis to conclude that the interest level could be maintained with normal effort.

Knowledge, in the areas of operation and inspection, must be acquired about each major piece of equipment in the organization. Since the commander is not expected to be an expert mechanic or supply clerk, he should receive some help from the maintenance battalion. Not only should the battalion repair his equipment and supply necessary repair parts, but it should also provide technical assistance.

When necessary to solve special problems, tailor-made assistance is in order. This is over and above the small contact teams that should be formed by the maintenance battalion to support a move with each maneuver and artillery battalion.

Moving up from the battalion to the level of the division commander who is concerned with all elements of his command, and continuing with the proposals for problem solutions, the following appears pertinent:

Assist the maneuver battalion commander by providing:

- Direct support maintenance contact teams from the maintenance battalion who support and move with each battalion. The teams are oriented to support a particular battalion.
- Periodic but special classes of instruction for com-

manders in such subjects as establishment and maintenance, and material readiness such as given by the US Army School, Europe.

- Have the maintenance battalion periodically visit each brigade to demonstrate results of typical equipment abuse to brigade and battalion commanders and suggest cures. Start out with communication items. Other good candidates are small arms, generators and instruments.
- Have the Maintenance Assistance and Instruction Team and van visit each brigade area periodically to inspect, repair and instruct as needed.

Require each battalion commander to brief the brigade commander every two weeks on his deadline situation based on his 2406 reports and Prescribed Load List status. He should report the age of his requisitions and the number of zero balances. This would also add emphasis to getting the 2406 reports submitted on time by all, as well as insure a personal review by the battalion commanding officer. The supporting direct support unit commanding officer should be present. Attention would also be directed to cleaning up the "old dogs" and reconciling records between the customer and direct support unit.

Require each brigade and DIVARTY commander to present a simple briefing monthly on his status of maintenance to the commanding general, both assistant division commanders, the commanding officer of the support command, the commanding officer of the maintenance battalion, the supporting direct support unit commander and the G4. Basis for the briefing: *Preventive Maintenance Guide for Commanders*, which outlines a simple way to portray downtime, availability of equipment, etc.

Have the Maintenance Assistance and Instruction Team concentrate more on maintenance management and operations over a period of time, perhaps a quarter, to get at the cause of maintenance problems as reflected in unit deadline rates and prolonged non-availability of equipment. Never be satisfied with the "lack of parts" lament. If equipment is properly maintained, the need for parts is small. Emphasis should be placed on how maintenance is organized, and the qualifications of those in supervisory positions. The Maintenance Assistance and Instruction Team should also look critically at Prescribed Load List management, and survey equipment downtime, availability, etc., for at least the last quarter. By all means, this team should be stimulated to raise its head above the engine oil dipstick level. See *Preventive Maintenance Guide for Commanders*.

Have each brigade set up a system of awards for best maintained Prescribed Load List, best maintenance record by company and battalion, most-skilled second echelon diagnostician, etc. Engines with best operational records deserve special mention, not forgetting generators. The Maintenance Assistance and Instruction Team could monitor this overall effort to help insure "honesty" and could serve as the division judge in determining the best Prescribed Load List in the division, etc. This would be done once a quarter. G4 should devise the system for the division as a whole, based on advice from Support Command. Awards would be presented, as appropriate, by the brigade commander, the assistant division commander and the commanding general. Lots of publicity is in order.

Require G4 to screen thoroughly all Reports of Survey to insure that responsibility for damage is clearly established and appropriate action is taken to require those who cause damage to actually pay for the damage. How else can we instill a sense of responsibility? I strongly suspect it is rare indeed for anyone to pay for an important piece of equipment damaged by neglect or carelessness. How many have bought a $134 electron tube for the *M36* scope? How many Article 15s are administered for equipment abuse? Each brigade commanding officer and separate battalion commanding officer should pay close attention to this matter.

Preventive maintenance seems to be largely a matter of attitude or desire. Assuming the presence of basic knowledge and ability, an individual normally accomplishes a task because he has to or because he wants to. Somehow, some way, we have got to concentrate harder on making our Army a "want-to" Army second to none.

COLONEL GEORGE G. EDDY JR. (USA-Retired) holds an MBA in industrial management from the University of Michigan and is a graduate of the Industrial College of the Armed Forces (Defense Management) and Command & Staff College. Colonel Eddy commanded the 126th Maintenance Battalion, 4th Armored Division in Europe, and later the US Army Ammunition Depot, Miesau, Germany. He is currently teaching courses in the College of Business Administration at the University of Texas while completing requirements for a PhD in management.

THE ARMY WIFE'S HERITAGE

by Mrs. Ruth Ellen Patton Totten

You ladies have had your inconveniences and troubles and, to put it mildly, the ladies of the old Army had theirs. They faced, for their times, what you face in yours. It is hard to be a good Army wife because you *do* share so much of your husband's life. It's hard to be a young lieutenant's wife, living in a strange place with no money, no family close by, and no old friends to lean on. It's hard to be an in-between wife, sweating out orders, the children's schooling, hardship tours, promotion, and always—separation. It's hard to be a senior officer's wife, watching your dear one grow greyer and wearier, while putting more and more of himself into the Service—his religion as well as his career. And it's hard to realize that in a few years he will be back in the civilian life he chose to leave more than a quarter of a century ago with all the re-adjustments and inadequate pension; and knowing that the final acknowledgement of a lifetime of service is, for all, the flag-draped coffin, the volley and the bugle's lonely farewell. But the rewards are very great. You are living in the company of heroes and heroines who have chosen to practice a life of service to their country. Some of you may not elect to stay with us, but from your experiences of fellowship you will always be part of us. You belong to a select group of Americans of whom there are no finer people.

In World War I the Army suddenly increased overnight into a legion. Up until then, everyone had known everyone else. Of course the men in the Cavalry and Artillery knew each other better than those in other branches because they were always competing against each other in horse shows. The Infantry was so big that it didn't need any other friends. The Tank Corps had gone underground and was about to emerge as the Armored Corps. The Air Corps took the stiffeners out of their caps and were terribly clannish, gung ho, and

developed all the worst mannerisms of the mounted branches. The engineers, as usual, lived in the thin, clear atmosphere of higher thought and burned with a hard gem-like flame, and everyone was very respectful to them. There were few generals, most of whom were characters and so were their wives; colonels were old and so were their wives.

Then, in 1942, bang! The war started shaping up. The man I had married as a first lieutenant in 1940 was now a lieutenant colonel, with his own battalion of armored field artillery. My sister's husband, who was a second lieutenant in 1934, was now a full colonel. The whole scene had changed. All the old colonels who had looked so settled to us—Van Voorhis, Flint, Wainwright, Patton, Rose, Gaffey, C.L. Scott and Chaffee—took a new lease on life and became active, hard-nosed and extremely capable generals; but how thinly they were spread over the growing Army. My sister and I were together for a few days, getting ready to send our husbands off to war and wondering how to do it. Mother had already sent father off, and as I looked around at all the young, anxious faces of our friends, I said to my sister, "Where is all the Old Army? Do you remember how it was when we were kids?" (All the older wives helped the younger wives, had so much good advice, and knew how to cope with every situation.)

My sister said, "I guess we're the Old Army now; it's up to us."

So now I want to welcome you to this glorious society of Army wives and introduce some of its members. There are not many names. The ladies didn't brag or complain because they were afraid if they did they would not be allowed to come along for the ride. The stories are mostly taken from the journals of the husbands, fireside tales, and from my mother-in-law and her friends.

The ladies of the old Army rarely spoke for themselves, with the exception of Elizabeth Bacon Custer, who wrote three enchanting books about her life on the plains with General Custer. As for the rest, their stories must be told by others. Captain Randolph Marcy, author of *The Prairie Traveler*, a guidebook for crossing the plains, frequently wrote about the lady he always referred to as "my dear wife." There was also General Hugh Scott who wrote much about his Mary Merrill.

It is only right to start out with Martha Washington, the "Mother of our Country." It doesn't seem that she had it too rough, when you read that she came in her coach with her servants to stay with George whenever he was near enough. However, we have to remember that she and George were settled, elderly people, enjoying the well-earned comforts of a long life, when he answered the call of the drum. She had to contend with his letters, one remarking to her that "it is well that war is so terrible, else we should become too fond of it," and that he "had heard the bullets whistle past his ears, and there was a merry sound to them."

In order to understand the ladies who followed the guidon and drum, we must first understand something of the Army of their day.

The United States Military Academy, a school for engineers, was founded in 1802. At that time a young officer, upon graduation, had to leave the grey walls of the school, get on a horse, and head west with a traverse and a pad of paper. His job was not only to map the vast American continent, but to fight her enemies as well.

Captain Marcy's *The Prairie Traveler*, published in 1809, tells, among other things, what to wear when crossing the great plains, what supplies to carry, how to make pemmican (a dried meat), what to drink (always carry whiskey and be sure there are no dead animals in the water supply), how to treat snake bites (pour whiskey down the victim's throat until he becomes insensible), and how to recognize hostile Indians from a safe distance. The intrepid Mrs. Marcy went right along with her husband, or stayed as close as possible. In 1840 she was waiting it out in Fort Smith, Arkansas. She had just read Captain Marcy's epitaph in the Fort Smith paper, when he walked through the door. He had been on a mapping party and had become so badly lost that he and his group had to resort to eating their horses—sprinkling gunpowder on the flesh to take the place of salt and pepper, and finally ended up eating rattlesnakes. Marcy amused himself by introducing himself to the mourners who had come to comfort his dear wife. He does not remark on what her feelings were at that moment, but does give two vignettes of her dauntless, intrepid character.

The first account involves several Indian chiefs who were paying him a ceremonial visit. To make small talk (which was difficult with Indians) he brought out some of his wife's embroidery. One of the chiefs was so charmed with her handiwork that he grabbed Mrs. Marcy and sent his friend to get one of his squaws to give to Captain Marcy as fair exchange for his wife. Marcy related that his "dear wife was completely calm withal, finally demonstrating the impracticality of the exchange by removing her false teeth, which the rigors of life on the plains had made a necessity for her some years previous." The chief, upon realizing that Mrs. Marcy would not be able to chew his buckskin wearing apparel to the "flexibility and silken smoothness required, relinquished her with many gestures of

regret and goodwill."

Captain Marcy's second anecdote further attests to his wife's fortitude.

Mrs. Marcy kept the only barnyard turkeys on Fort Smith. She had brought the setting eggs with her from New Orleans. Marcy is very coy in relating how she brought them to camp, mentioning that "the corsage of my dear wife bulged, on arrival, in rather more than a modish way." One night, while her husband was off on duty, Mrs. Marcy heard a commotion in her fowl yard and ran out to find what she thought was a large dog running off with one of her turkeys. She brained the animal with an iron skillet and put the bird back in the pen. When Marcy returned that night, he remarked to his wife that he was amazed to find such a well-grown specimen of prairie wolf lying in the yard. He skinned it and made her a little hat and muff.

Traveling west was a desperate affair in those days. The trains went no further than Louisville. From there, travel was by flatboat to New Orleans—soldiers, officers, wives, children and horses all together. From New Orleans the real trek began, by horseback and wagon, covering at the most 15 miles a day through strange and often hostile country. After the War Between the States, when the real western expansion began, the officers found they could buy condemned Army ambulances at Leavenworth, Kansas, and fix them up as traveling coaches. In such a coach it took six weeks to get from Leavenworth to Santa Fe, but it was preferable to train travel. The trains had no conveniences. The passengers had to get off periodically to eat at various makeshift places, while the trains took on water. The farther west, the worse the conditions. Male passengers would shoot game from the windows of the train and, in some cases, use the open windows as latrines.

Travel by coach was not much better. The nightly stops at so-called "inns" were nightmares of community sleeping, bed bugs, and rations of bacon and bread with an occasional egg. If the ladies wanted toast, they learned to ask for burned bread, because toast, on the frontier, meant half a loaf of bread fried in lard. One lovely lady, following her husband west, brought with her a year's supply of tea. She stopped at one of these inns and asked the landlady to fix her a badly needed cup of tea. Half an hour later that worthy came back and said, "I done 'biled' those greens and I done 'biled' 'em, an' I done change the water three times, an' they are still too bitter for anyone in this territory to eat."

FORT LEAVENWORTH MUSEUM

Fort Leavenworth in the 1800s

The presence of women was increasingly scarce as the frontier pushed westward, and the women who made the trip were deeply respected. Whatever their calling, whatever brought them to the frontier, their courage and hardiness could never be questioned. Mrs. Custer wrote that she found out years after she left the border, that the escort officers who accompanied her on her many dashes to be with the general had orders to shoot her if the wagon was attacked by Indians and the odds seemed poor.

When traveling through hostile country, all the women were instructed to lie on the bottom of the wagons and under no circumstances to show their faces. The sight of a white woman by the Indians was quite enough to start a running fight, as the Indians attached a great deal of status to capturing one. Often when a white woman was captured, she was put through a gang rape and then, to use an Indian phrase, "thrown away" on the plains. Some of these women survived and turned up at camps in terrible condition. Mrs. Custer writes of one of these women who came crawling into their camp, naked, on her hands and knees. She was quite mad and couldn't remember who she was. An even worse fate awaited women taken into Indian camps. The squaws were jealous and tortured them without quite killing them. At the siege of Fort Phil Kearney, the commander assembled all women and children in the powder magazine. A powder train was laid, and he ordered the first sergeant to fire it if the Indians came over the wall.

In 1867, at Fort Buford, in the Dakotas, the commanding officer wrote to Washington, DC for reinforcements after his Indian scouts told him there was going to be a big uprising. He heard no word from Washington, and he and his 80 men held off 3,000 Indians for two days. His wife was the only woman on post, and when it became obvious that the garrison would soon be overpowered, he shot his wife and then himself. As he lay dying, he heard the cavalry bugles sounding the charge.

In addition to the ever present danger from Indians, the great westward movement carried with it a fringe of desperadoes, criminals and escaped convicts. Army men had to be ready to shoot, and shoot to kill to protect their families.

In spite of the hardship and danger they lived with, the Army ladies endured. Each wife had a servant or servants and orderlies who proved to be a great help since everything had to be done from scratch. An Army medico, named Dr. Glisan, wrote in his journal: "while officers of the Army do not need their wives to be cooks, but as educated gentlemen they should marry elegant and refined women, if they marry at all, these ladies ought to have some practical knowledge

of that most essential part of housekeeping and cooking so as to supertend the preparation of meals and, in rare emergencies, be willing and able to try their own delicate hands at the culinary arts."

The matter of food and drink was a preoccupation. In the early days, around 1843, the pay scale of a private soldier started at five dollars a month. Twenty per cent of the enlisted men were drunks. Since there were no organized sports, there was not much else for the soldiers to do. The ration of government whiskey to the Army was 72,535 gallons for approximately 6,000 men per year. The rest of the ration consisted of salt pork, navy beans, flour, tea, sugar, biscuits and grease, and sometimes dried vegetables. The troops had their own cattle which were butchered daily, but the meat was so lean that six pounds a day were needed to feed a soldier. Of course, there was plenty of wild game, but all the journals mention how tired the troops became of wild animal meat. The nomadic Indians ate any wild fruit there was, and as a result the troops found nothing but pecans and mesquite pods. Indians also robbed field mice of their caches of seed. The troops caught on to this, but unlike the Indians who left some for the mice, they took every bit, and the supply gradually ran out as the mice starved or moved away. (This was the sort of thing that Dr. Glisan thought the ladies should try their hand at!)

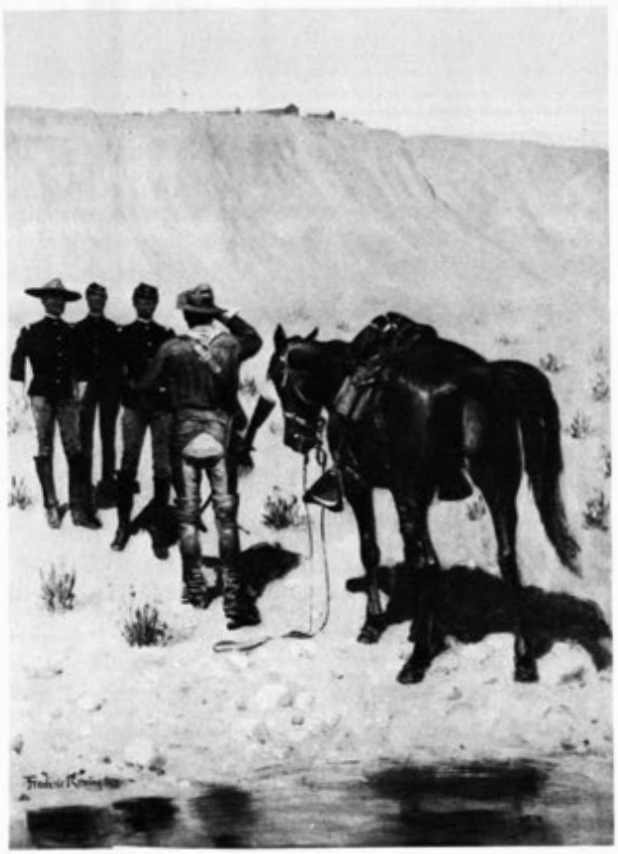
In the far west, wheat went for 75 cents a bushel, apples were 25 cents apiece, and pears and peaches were higher—at a time when a dollar was worth a dollar. The big debauch came if a trader turned up with a can of honey and you paid 10 cents to lick a knife that had been dipped in the can. Eggs were 75 cents a dozen, so most of the ladies kept hens, and those who could kept a cow for milk and butter. And imagine—no onions, tomatoes or greens of any kind.

More problems arose for wives who began to set up housekeeping. Those lucky enough to get quarters—either log houses, adobe houses or tents—had all sorts

of homemaking tricks. Since all they could conveniently carry in their ambulance carriages were rolls of material, these had to do for spreads for cots, curtains, and covers for cushions stuffed with hay. Four Army blankets sewn together made a rug. Packing boxes with curtain fronts served as bureaus. Boxes were also converted into window seats, and walls were papered with pages from the Army-Navy Journal and magazines from home. Some women pasted ferns on the window glass to give the illusion of coolness. The ladies occupied themselves thinking of amusements for the men, and in the winter tried to vary the monotony of the terrible campaign rations used during the summer marches. Of course families sent food packages, but the mail was slow and unreliable.

It was a hard life. In addition to poor rations, hostile Indians, no medical care to speak of, range fires, flash floods and northers (when it got so cold that a soldier would be detailed to ride around the picket lines all night whipping the horses to keep them moving so they would not freeze to death), there was always some epidemic. The westward path of the American Army is marked by hundreds of little grave stones, surmounted with crudely carved lambs or doves and the names of infants and little children.

But there was a brighter side. Mrs. Custer says, "No one can comprehend how carelessly and enjoyably Army people can walk about with empty pockets, knowing that it is but a matter of 30 days 'til Richard shall be himself again." She was, of course, referring to pay day.



She also speaks for the Army women in her dedication in *Tenting On The Plains* when she says of Custer, "to him, whose brave and blythe endurance made those who followed him forget, in his sunny presence, half of the hardship and danger." And again, after saying sadly, "No sooner than you are together than there comes the ever present terror of being divided again," she writes to Custer, "Remember, I am not afraid of Indians or anything else if you are at the end of the trip."

The men were gone all summer on campaign, and the great day of the year was when they returned, sunblackened and lean. Some were so changed and hardened that there were many stories like that of the officer who had come home late one night from a long foray. He was awakened the next morning by a pair of very small hands beating on his chest, and a small boy shouting, "You S*O*B, get out of my mother's bed!"

When the men got back, the fun began. There were balls, picnics, charades, glee clubs, amateur theatricals and even current events clubs. These discussions were probably quite out of date, as the mail delivery took from one to four months, but it was a noble effort. Riding was a sport that the ladies could enjoy, but they were cautioned not to go far from camp. Naturally the men outnumbered the women, and "the card of a good dancer" was filled out before she left for the hop. How any pretty woman kept her poise while queening it on the western posts is hard to understand. In fact, the officers and men became so gallant that while hunting they refused to shoot buffalo cows or female deer.

One group of ladies of the old Army that is hardly ever touched upon constituted what was called "suds row." Somewhere, on every Army post, was a line where the married soldiers lived, and where their wives eked out their miserable pay by doing laundry. Some of them were married and some were not, but they deserve as much respect for their fortitude as do the officer's ladies. In "A Daughter of the Regiment," Kipling glorified the wives of the branch enlisted men—we need another such writer for our armies.

Another appreciative husband, General Hugh Scott, wrote the dedication of his book, *Some Memories of a Soldier*, to his wife: "To Mary Merrill Scott, who has followed the fortunes of the United States Army all of her life on both sides of the world; has cheerfully given me her aid and counsel during all of the changes of mortal life; has brought up a family of children who rise up and call her blessed; who has suffered hardships in her youth in the Indian country unequaled by any woman of her time, and with whom I

General Guy V. Henry

am now growing old after a delightful life together of 47 years."

Mrs. Scott earned that praise. In 1880, the Scotts arrived at Fort Totten, Oklahoma to build their own quarters. Mrs. Scott went East to her family to have her first child and returned with the infant to Fort Sill, Oklahoma, where Scott had been transferred. She spent seven days and nights on the stage, which made very slow headway through the gumbo mud. The baby was teething and went into violent convulsions, and the passengers advised her to lance his gums. She did this with a knife borrowed from a tobacco-chewing rancher, which they sterilized with a match. When she finally reached Fort Sill, Scott was out chasing Indians. He had not received her letters and was not expecting her. The quarters in which he was living had a hole four feet deep in the kitchen floor, and the roof was so bad that when it rained, someone had to hold an umbrella over the cook.

Health conditions on post also left a lot to be desired. In 1883 Mrs. Ambrosia Taylor, the wife of the post surgeon at Fort Sill, died of dysentery. The surgeon blamed her death, as well as ever-present cases of typhoid and diptheria, on a gully in back of the post which contained 135 tons of garbage, trash and manure, put there by order of the CO to prevent erosion. The CO was very annoyed when confronted by this theory since he understood it was considered wholesome to have a certain amount of manure in close proximity to the quarters to attract the flies away from the kitchens. Captain Taylor, however, persisted and eventually won the CO to his side.

In addition, the water supply on post was brought daily from Medicine Creek in a wagon and poured into uncovered barrels on the back porches. To remedy this unhealthy practice, the surgeon fixed up a spring which had been used by the Indians, built a spring house and had the water piped to the quarters in iron pipes made from old telegraph poles. He named the spring "Ambrosia Spring" after his late wife. In 1887, when Lieutenant Hugh Scott was in temporary command of the post, he decided that the taste of the spring water from Ambrosia Spring left something to be desired, so he cleaned out the water tank which had been up for three years and found a two-foot layer of dead pigeons in the bottom.

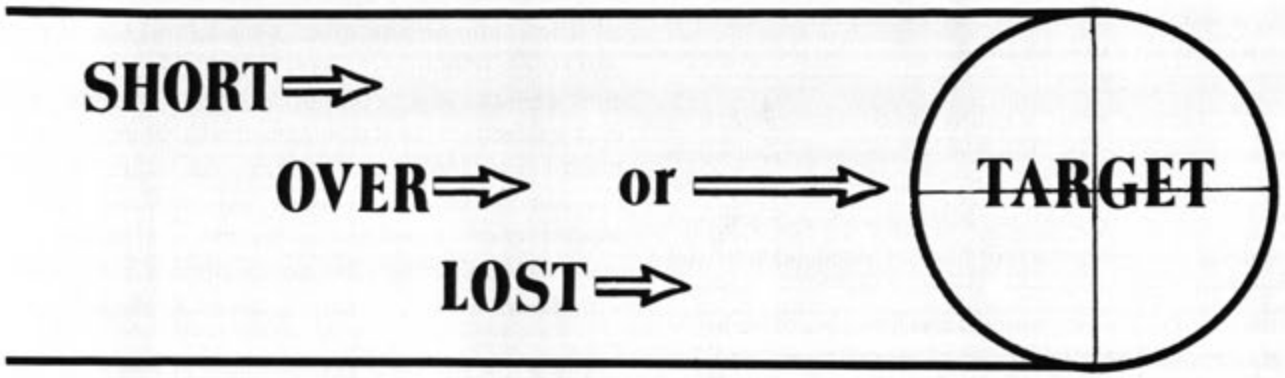
There was another formidable great lady of the old Army in my own youth—Mrs. Guy V. Henry. Mrs. Henry was tall, imposing, beautiful and had a whim of steel. General Henry was pencil thin, totally silent, and everyone was scared to death of him. I was at their quarters one day for lunch and saw the general pick up a small glass next to his plate and chug-a-lug the contents, making an awful face.

I said, "My Goodness, Miss Mary, what is that the General is drinking?" And she answered in her parade-ground voice, "Blood my dear, but don't you dare tell the lieutenants' wives!"

Poor General Henry had to drink raw beef juice for his anemia.

This has been just a skimming of the surface of the stories of the old Army. The old Army was no better in its ways than ours is today, and no worse. The second-rate women disappeared below the surface; the great ones left the echoes of their gayety and courage. They were great people, and their daughters and goddaughters are among you today. I could go on forever, but we are making our own legends in the new Army all the time.

MRS. RUTH ELLEN PATTON TOTTEN, widow of Major General James W. Totten and daughter of the late General George S. Patton Jr., is a frequent lecturer to college audiences and military wives groups on subjects ranging from military heritage to witchcraft. The author of *The Rolling Kitchen,* Mrs. Totten is currently working on a book dealing with the Army Wife and a history of the Patton family.



This department is a range for firing novel ideas which the readers of ARMOR *can sense and adjust. It seeks new and untried thoughts 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!!

Armor Defense Against Flame

by Sergeant First Class Jack N. Downing

Recently an officer at the German Armor School requested information on US Army doctrine concerning "Armor defense against flame." Not having a ready answer, I quickly thumbed through FM 20-33, Combat Flame Operations, and the more frequently used armor field manuals. Other than one short paragraph covering individual protection for the soldier on the ground, the subject is not mentioned. Dismayed, I look harder. FMs, US Army Armor School Programs of Instruction, *The Armor Leader's Guide*, HumRRO publications concerning duties of tank crew members, back issues of *ARMOR* Magazine; all yielded nothing. Based on this limited research effort, it seems that we tankers simply do not address the subject.

Is this as it should be? Does the enemy's flame potential during the offense pose no real threat to armor? Or are flame-producing weapons so devastating to armored vehicles that there is just no way to defend against them? Since Armor doctrine contains so little on the subject, there seems to be support for the argument that the offensive flame potential of eastern European nations has escaped our attention. During the Korean and Vietnam Wars we concentrated on offensive employment of flame-producing weapons. Armor has participated fully in the development of better weapons and more sophisticated techniques of employment. But we have done little to prepare ourselves against employment of such weapons by a sophisticated enemy in a conventional war.

Since fire creates such an intense psychological reaction in those threatened by it, our counter-flame training effort might well concentrate on armored vehicle crew protective measures and reaction drills while under flame attack. Several combat examples show the effectiveness of flame against armored vehicles whose crews are not adequately trained in counter-flame techniques.

RUSSIAN FIRE BELT

"A barrier about a quarter of a mile in length of burning hay, straw, brushwood, and other materials was put in the way of fascist tanks. In some places the fiery bulwark reached the height of ten feet and burned fiercely for two and a half hours. Coming against this wall of fire, the enemy armored machines changed their route, thus exposing themselves broadside to the Soviet antitank guns; 25 of 40 enemy tanks were fastened to the spot." (Major N. Cherkinov, "Incendiary Bottle and Fire Belt Field," *Field Artillery Journal*, November 1942).

SOVIET TANKS IN BUDAPEST

"One evening I saw a column of *T-34's* with their turrets closed moving gingerly up a narrow street in the center of the city, the Sip Utca. Halfway up the street and hidden by a corner, two Freedom Fighters, young men of about 21, were hiding in a doorway with a supply of Molotov Cocktails and a single bazooka. As the first Russian tank came abreast of them, they flung a gasoline bomb under its tracks.

"The result was chaos. The leading tank caught fire, and the crew started to open the turret in order to escape. As they did so, the man who had thrown the Molotov Cocktail leapt onto the back of the burning tank and slipped a hand grenade inside the half open turret. At the same moment, he fell, killed by a burst of fire from Russians in an armored car at the rear of the column which was firing furiously in all directions.

"The confusion now grew as the following tanks in the column tried to reverse back down the street. Their guns were too long to turn in the narrow street, so the only protection the Russians had was from the twin machineguns mounted in the armored troop carrier at the rear of the column where, nevertheless, a burst from hidden snipers on a nearby roof killed or wounded several Russians before the melee could be sorted out." (Anthony Terry, "Soviet Tanks in Budapest," *Ordnance*, March-April 1957).

These are two interesting examples of flame being used against armor, because in one case, flame was used by the Russians, and in the other, against them. There are numerous other examples of the ways that flame has been used to stop armored vehicles. But what we need are ideas on how armored vehicles can continue their missions, during and after a flame attack. Armored vehicle crews must be well informed on the effects of flame. This knowledge alone can help prevent panic and permit rational responses while under attack. There are three basic types of flame producing weapons which can be employed against armor: fire bombs, Molotov cocktails and flame throwers.

FIRE BOMBS

Fire bombs are perhaps the greatest threat because aircraft are the most difficult opponents for armored vehicles to neutralize. They use their speed and maneuverability to create surprise effect. The element of surprise can multiply the shock effect of the flame. These bombs, using thickened fuel, create a fireball

which burns intensely for about five seconds. The effects include a blast of flame and hot gases. Secondary burning lasts about five minutes. Fire bombs are very effective against armored vehicles especially when massed in the attack, in column, in defensive positions or in built up areas. The intense heat will exhaust oxygen supplies within armored vehicles and cause suffocation, burns and shock. Burning fuel clings to the vehicle, creating hysteria among crew members. Thick smoke blinds personnel in the vehicle. This often causes tank crews to abandon the protection of their vehicles and expose themselves to small arms fire.

MOLOTOV COCKTAILS

Molotov cocktails are constructed using a fuel and oil mixture, normally in a glass container or bottle employing a cloth wick. Molotov cocktails are the favorite weapon of guerrilla forces against armor. They are employed by throwing, preferably on the engine compartment of armored vehicles. The burning mixture seeping into the engine compartments can stop most armored vehicles. It often causes fuel tanks to explode. The thin fuel and oil mixture can also leak into the turret, causing fires and exploding ammunition.

Tanks are vulnerable when faced by guerrilla forces employing Molotov cocktails. Guerrillas exploit certain recurring weaknesses:

- Limited visibility (visual deadspace) of buttoned-up crew members.
- Isolated or unsupported tanks, in wooded or built-up areas.
- The tank's weapon deadspace (sides and rear).

FLAME THROWERS

Flame Throwers may be less frequently employed against armored vehicles since they are themselves highly vulnerable. When successfully employed their effects can be the most devastating. Their relative accuracy and ability to place a considerable amount of burning fuel on the target increases their effectiveness in built-up areas and defiles. Lack of a fireball decreases the initial shock effect, but the concentration of fuel increases burning time and intensity.

It seems highly advisable to develop doctrine to teach our tank crews counter-flame techniques in training such as:

- A definite type of formation to go into when fire-bomb attack by aircraft is imminent.
- What evasive action to take when under attack (Turn vehicle in opposite direction of flight of aircraft. When in burning area, exit perpendicular to the flight direction, etc.).
- Once armored vehicle has cleared the burning area, what does the tank crew do? (Stop, open turret hatches if closed. TC maintains air security. Loader checks to see if there is any burning napalm on outside of tank or engine compartment. Gunner and driver observe for enemy ground troops, etc.).
- Perhaps it is possible to install special equipment in the tanks. One idea suggested by a German officer was to equip tanks with oxygen bottles: the oxygen to be released immediately upon flame attack by aircraft with fire bombs or guerrillas with Molotov cocktails. This could possibly replenish the oxygen in the crew compartment long enough for the vehicle to clear the burning area.

These are only a few thoughts on the subject. But what can we teach tank crews? The question is, "What are we doing about armor defense against flame?"

SERGEANT FIRST CLASS JACK N. DOWNING entered the Army in 1948 and served with various armored units in the US and Germany as a tank commander and platoon sergeant. From 1966 to 1968 Sergeant Downing was an instructor with the Antitank and Missile Committee at the Infantry School at Fort Benning. He is currently assigned as the US Army Armor School Liaison NCO at the German Army Armor School, Munster, Germany.

from the Armor Branch Chief

Colonel John R. Byers

Commander's Responsibilities for Aviators

Have you ever stopped to wonder why so many of the Armor officers you meet around various posts wear flight wings? Currently, close to 50 per cent of our captains and about 25 per cent of the field grade ranks are rated aviators. Those large percentages are a direct result of the fact that Armor now has proponency not only for armor and cavalry units, but also air cavalry and separate attack helicopter units.

On occasion we have heard the comment that a particular officer isn't acceptable for a key command or staff job because he has had too many flying assignments and insufficient ground duty. Assignments to both ground and flight duties are vital to the total development of the competent Armor aviator. If a man has already demonstrated managerial ability, we shouldn't presume he can't hack a tough ground job because he's had more flying time than the average bear. We owe him a chance to prove his ability, not only in the air, but also on the ground.

A large number of Armor aviators want ground assigments. They seek duty in branch-material non-aviation jobs which will broaden and deepen their branch qualifications. We at Branch share this same sentiment, and believe it is essential that they be placed in responsible ground assignments. While they are aviators, they are Armor officers first.

Housing Problems

The current on-post housing shortage in some areas has forced many Armor officers to purchase homes in communities surrounding their particular duty station. We at Armor Branch are aware that such an investment is both sizeable and long term in nature. And because of the many legal complications and headaches associated with the sale of a home, it is our desire to keep such officers stabilized at least two years and preferably three, unless the officer volunteers for earlier movement. However, we are daily presented with critical personnel requirements that simply must be filled with competent officers. In some cases, this has caused the transfer of personnel sooner than was originally anticipated or desired. The response of the officers concerned has been extremely gratifying, and all have shown a great deal of understanding. We would ask for your continued understanding, and for our part, we will try to keep you stabilized as long as possible.

Check Your ORB

Have you recently made an audit of your ORB (Officer's Record Brief)? Was it correct? Did it have all the current entries? Armor Branch cannot overemphasize the accuracy of your ORB. It and your OER file are the two primary items reviewed by DA selection boards, and these boards often use the ORB for preliminary screening before they begin the laborious drill of digging through the TAGO files for the final selections. That means that your promotions, chances to command a battalion or brigade, or go to a Senior Service College may well be determined by that first scrutiny of your ORB. It must be right.

Unfortunately, too many of them are not right, and many of the missing or wrong items are extremely critical. One Rhodes Scholar is credited with only his BS degree. One battalion commander is credited with commanding only a headquarters company. And even the former Chief of Assignments right here in Armor Branch supposedly spent the last part of his tour in a Medium Truck Transportation Company!

During the annual audit of your ORB, check it in detail. Look at your date of rank, your MOS, your academic level both military and civilian, your awards and decorations, and especially your duty assignments. Check the whole thing.

If you find an error during the audit, in coordination with your Personnel Officer, mark corrections on the ORB in red ink, following the instructions in AR 640-2 and AR 640-2-1, and get it in to MILPERCEN. Branch can make some minor changes if we see an ob-

vious error, but we're restricted to just a few parts of the ORB. Most changes must come from the field, and that's you. The importance of the ORB to your career increases daily. Make sure it's right.

Promotion Outlook

"When can I expect to be promoted?" This is a question frequently asked, and one we are all quite naturally concerned with. The slowdown in promotions that began in early 1970 was the result of a number of factors that will likewise affect future promotion programs. Three major considerations are:

- The degree and rate of strength changes.
- Grade limitations established by Congress.
- Retirements.

As you know, the rapid expansion of the Army which occurred in order to meet Vietnam requirements caused promotions to all grades to be accelerated. This, coupled with recent increases in pay and other benefits, has caused a reduction in projected field grade vacancies, thereby impairing upward mobility in our rank structure. In order to maintain promotion momentum, some promotion policies are being changed. One change, already implemented, is the revised secondary zone promotion system. Effective with the most recent Colonel and Lieutenant Colonel boards, the authorized rate for secondary zone selection was raised from 5 to 15 per cent of the total list quotas (Note: This is not a mandatory rate, but only the authorized maximum). In addition, secondary zones of consideration are designed to afford all officers the opportunity to be eligible for secondary zone consideration at least twice.

Looking ahead as far as we can, we see that although Time-In-Grade (TIMIG) for most ranks continues to increase, the Time-In-Service (TIS) for promotion to field grades remains quite favorable and better than pre-Vietnam days. The following graph depicts the current projection (All TIS and TIMIG figures shown on the graph reflect annual average only and should not be related to individual cases.)

Washington Armor Ball

Tankers and cavalrymen in the Washington, DC area will celebrate the 197th birthday of Armor and Cavalry with a birthday ball at the Bolling Air Froce Base Officers Club on 18 January 1974. Brigadier General Julius W. Becton, a former Branch Chief and currently the Deputy Commanding General of Fort Dix, will be the Master of Ceremonies. All Armor officers past, present, and future are invited to participate. For information about reservations contact Major T.A. Baucum, HQ DA (DAPC-OPD-AR), 200 Stovall Street, Alexandria, Va. 22332 (202) 221-7845.

SELF HELP

Post Daily Bulletins often encourage self help programs. Recently, family quarters occupants were offered paint to touch up where needed. One story goes that an "occupant" entered the housing office and requested on the proper form two gallons of white latex, one quart of white enamel, and one gallon of enamel—Forest Green.

"What is this paint to be used for?"

"My Basement."

"Basements may not be painted unless they have been painted before."

"I am aware of that."

"Why do you want Forest Green."

"Because that's what color the stairs are."

"They are supposed to be Deck Grey."

"But they are already green. I only want to touch up."

"Deck Grey is the approved color."

"OK, Please change to that on my form."

Occupant drives to Post Engineer for approval. Occupant then drives to a specific building to obtain brushes. With a latex roller and two brushes, occupant is directed to the paint warehouse.

"Here is my approved request for paint."

"Wait here please"—

"Here is your latex and white enamel. We don't have any Deck Grey. You will have to call in for a change."

"What color do you have?"

"Forest Green."

Ed

enlisted personnel notes

ENLISTED ARMOR BRANCH PROVIDES CENTRALIZED CAREER MANAGEMENT

The US Army Military Personnel Center's Enlisted Personnel Directorate recently reorganized its Armor Branch into four sections, so that soldiers in MOSs 11D and 11E receive more personalized career management at Department of the Army level. Armor teams are arranged as follows:

Team 1—Responsible for professional development and career management of E8s and E9s.

Team 2—Responsible for professional development and career management of E7s.

Team 3—Responsible for professional development and career management of E6s.

Team 4—Responsible for professional development and career management of E5s and below.

Lieutenant Colonel Robert Harris, Branch Chief, credits the reorganization with greater flexibility in managing the careers of Armor troops. "When an assignment manager sends a soldier to school, that same manager will program him for a follow-up duty assignment which will allow the soldier to apply his new knowledge to his job. Or, if a soldier is on an enlisted promotion list, we can more easily plan to assign him to a position of higher responsibility which will match his new grade. Both of these procedures are a result of the reorganization and the improved system of management it affords the soldier."

The enlisted Armor Branch maintains MILPERCEN Career Management Files (CMF) on all senior NCOs (E6-E9) and refers to them when making career management decisions. These files contain a copy of the soldier's Form 20, past EERs, MOS test scores, the most recent preference statement, an official photo and other pertinent personnel actions which may be needed to properly assign the soldier. They differ significantly from the Official Military Personnel File (OMPF) kept at Fort Benjamin Harrison on all enlisted personnel in that MILPERCEN CMFs are used strictly for making career management and assignment-related actions, while the OMPFs are used by Department of the Army selection boards, such as for promotions and advanced MOS schools.

Enlisted personnel are invited to visit the Armor Career Branch in MILPERCEN's Hoffman I Building, Alexandria, Virginia, for branch counseling and to review their MILPERCEN CMFs, according to Colonel Harris. "And if one of our Armor troopers finds it easier traveling to MILPERCEN's Alexandria site rather than to Fort Harrison to review his OMPF, all he has to do is give us about two weeks' advance notice of when he expects to be here so we can have his official file sent to us from Fort Harrison. That way, he'll be taking advantage of the type of support and service we of the Armor Branch want to give all soldiers in the Armor Career Field."

What can the soldier do to help his chances for promotion? "Make your record look good," answers Colonel Harris. "We receive many letters from servicemen wanting to know why they weren't selected, but in most cases the soldier can analyze the reasons himself; he knows what's in his file, what his MOS test scores are, what his education is, and if there are any significant adverse actions in his record.

"We give evaluations when we reply to the letters, but they are purely personal, because we don't know what the DA selection board was basing its decisions on. However, experience indicates MOS test scores appear to be an important factor, and we know soldiers are continually expected to improve their military and civilian education. Jobwise, they should also stay in their own field, seeking duties commensurate with their rank. If a soldier's file indicates that he is "average" in comparison to his contemporaries he probably will not be on the next list for promotion or advanced schooling.

"When it comes to making assignments, we study the EERs very carefully, especially the rater's appraisal of a soldier's characteristics and his promotion potential. We also note if the rater's comments support the blocks he checked."

Depending on the needs of the Army, every effort is made to assign Armor soldiers in the primary MOS (PMOS), but if there isn't an opening, branch managers look to his secondary MOS (SMOS). Each soldier is required to have a SMOS.

According to Colonel Harris, soldiers may acquire a SMOS in nearly any Armor MOS; the only fields with an overage are 11D and 11E for E9s. Those who already have an SMOS are reminded to keep the SMOS test current.

Currently, most Armor oversea requirements are for Europe, with volunteers being given preference in choice of assignments. The only restrictions are the minimum time requirements of one year in CONUS before being reassigned to Europe or three years in CONUS between Korean tours. Foreign service tour extensions are normally approved, provided the request is submitted at least five and no more than ten months before the soldier's DEROS date. The most important consideration for foreign service tour extensions is if the soldier is performing duty in his primary military occupational specialty (PMOS) or a shortage secondary MOS in which he is qualified.

Presently, approximate turnaround times (time in CONUS between oversea tours) for Armor soldiers are:

E5—21 months

E6—21-24 months

E7—28-30 months

E8—27 months

E9—36-plus months.

Colonel Harris offered some advice to career-oriented servicemen: "Soldiers in grades E3-E5 should take both their PMOS and SMOS tests at the earliest opportunity. It also helps if they are selected by their field commander to attend Basic NCOES.

Senior NCOs are selected to attend Advanced NCOES by DA selection boards meeting at Fort Harrison. Advanced NCOES is an important criteria for future assignments as a First Sergeant.

and it appears that the best route to Sergeant Major is through experience and successful performance in First Sergeant positions.

CONDUCT AND EFFICIENCY RATINGS DELETED FROM FORM 20

Effective 15 September, Conduct and Efficiency Ratings will no longer be rendered on enlisted personnel's Form 20s. Conduct and Efficiency Ratings have been used primarily to determine eligibility for the Good Conduct Medal and various types of discharges.

According to HQ MILPERCEN, the reason for the change was the frequent conflict between the Conduct and Efficiency Rating and the Enlisted Evaluation Report (EER). Both systems judged an individual's duty performance for the same period of time, but often the rater reported different scores; for example, the serviceman might receive "excellent-excellent" Conduct and Efficiency Ratings, but only "good" ratings for the same period covered by the EER.

Enlisted personnel will now be rated only by time periods on the EER, instead of both Conduct and Efficiency Ratings and EER assessments. Where the words "conduct" or "efficiency" appear on the Form 20, they will be lined through and replaced with "BP YR/MO" (beginning period, year, month).

Good Conduct Medals will still be awarded as directed, based on an individual's performance, but without reference to the Conduct and Efficiency Rating previously entered on the Form 20.

EVALUATION OF MILITARY LINGUISTS

Military linguists who have not had their language proficiency evaluated within the last two years are reminded that this is required by AR 611-6. Linguists must be tested biannually, either with a written or tape-recorded test to retain their proficiency level.

The testing will be as near as possible to the date of the initial or most recent Enlisted Evaluation Report. Language proficiency questionnaires are to be prepared and submitted following the testing, or when an individual attends the Defense Language Institute, or at any time attains language proficiency.

STATEMENT OF CIRCULATION

U. S. POSTAL SERVICE
STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION
(Act of August 12, 1970: Section 3685, Title 39, United States Code)

SEE INSTRUCTIONS ON PAGE 2 (REVERSE)

1. TITLE OF PUBLICATION: ARMOR
2. DATE OF FILING: 18 September 73
3. FREQUENCY OF ISSUE: Bi-Monthly
4. LOCATION OF KNOWN OFFICE OF PUBLICATION *(Street, city, county, state, ZIP code) (Not printers)*: PO Box O, Fort Knox, KY 40121
5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHERS *(Not printers)*: Same as #4
6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR
PUBLISHER *(Name and address)*: The United States Armor Association, same address
EDITOR *(Name and address)*: LTC Burton S. Boudinot, U.S. Army, same address
MANAGER EDITOR *(Name and address)*: 2 LT James F. Stangle, U.S. Army, same address
7. OWNER *(If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)*

NAME	ADDRESS
The United States Armor Association	same address
An unincorporated, non-profit, educational and scientific association. ARMOR is its journal. No paid advertising accepted.	

8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES OR OTHER SECURITIES *(If there are none, so state)*

NAME	ADDRESS

9. FOR OPTIONAL COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES (Section 132.121, Postal Service Manual)

39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."

In accordance with the provisions of this statute, I hereby request permission to mail the publication named in item 1 at the reduced postage rates presently authorized by 39 U. S. C. 3626.

(Signature and title of editor, publisher, business manager, or owner)
N/A

10. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 132.122, Postal Manual) *(Check one)*

The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: ☒ Have not changed during preceding 12 months ☐ Have changed during preceding 12 months *(If changed, publisher must submit explanation of change with this statement.)*

11. EXTENT AND NATURE OF CIRCULATION	AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS	ACTUAL NUMBER OF COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE
A. TOTAL NO. COPIES PRINTED *(Net Press Run)*	10,157	10,527
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS AND COUNTER SALES	288	50
2. MAIL SUBSCRIPTIONS	8,844	8,802
C. TOTAL PAID CIRCULATION	9,132	8,852
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS 1. SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES	266	284
2. COPIES DISTRIBUTED TO NEWS AGENTS, BUT NOT SOLD	0	0
E. TOTAL DISTRIBUTION *(Sum of C and D)*	9,398	9,136
F. OFFICE USE, LEFT-OVER, UNACCOUNTED, SPOILED AFTER PRINTING	759	1,391
G. TOTAL *(Sum of E & F—should equal net press run shown in A)*	10,157	10,527

I certify that the statements made by me above are correct and complete. *(Signature of editor, publisher, business manager, or owner)*: JAMES F. STANGLE, 2LT, ARMOR, Managing Editor

PS Form 3526 July 1971

ARMOR OFFICER SCHOOL SELECTIONS

USA COMMAND AND GENERAL STAFF COLLEGE

August 1974—June 1975

CPT Adams, Ronald E
MAJ Bagdonas, Edward
CPT Ball, Francisco Jr
CPT Ball, Michael G
MAJ Barnes, Michael V
CPT Barrington, John E
CPT Bartosik, Harry J
CPT Beasley, Lonnie S Sr
MAJ Bellamy, Mark L
MAJ Bouault, Louis L
CPT Branch, David D
LTC Bratisax, Roland J
CPT Brinkley, William
MAJ Brown, Jerry H
MAJ Bruner, Edward F
CPT Clark, Wesley K
CPT Clarke, Bruce BG
MAJ Cogan, Larry C
MAJ Coomer, William O
MAJ Curl, William W III
MAJ Daugherty, William
MAJ Daws, Robert M Jr
CPT Dehncke, Rae W
CPT Deter, Daniel E
MAJ Di Caprio, Anthony
CPT Dickinson, Paul W
CPT Duckworth, Walter L
MAJ Foster, Edward
CPT Freitas, William F
MAJ Garrott, Robert W
CPT Giddings, Warren P
CPT Grant, Arthur V
CPT Halvorsom, Colin O
MAJ Hamilton, George A
MAJ Hartjen, Raymond C
MAJ Hertel, Herbert C
CPT Hollowell, Paul C
MAJ Hollwedel, George C
MAJ Holtry, Anthony K
MAJ Howell, Neil T
CPT Kelsey, John S
MAJ Kosevich, Richard S
CPT Kyle, Frederic A
CPT Logan, Robert B
CPT Louis, Geoffry R
MAJ Luff, Gary M
CPT Lyons, John K
CPT Maggart, Lon E Jr
MAJ Marcinkowski, Garrett
CPT Martin, Jay B
CPT McArthur, Colin L
MAJ McLaughlin, William H
CPT Menix, Wilbert R
CPT Mullen, Orlin L
MAJ Otis, Malcolm D
MAJ Parrish, David H
MAJ Pattison, William C
CPT Peters, Donald J
CPT Prothero, Michael B
MAJ Roller, Barry J
MAJ Schmidt, Charles L
MAJ Sloan, John N
MAJ Smith, John E
CPT Smith, Thomas A
CPT Sporcic, Vincent L
CPT Spruill, Mathias A III
MAJ Terrell, Douglas R
CPT Thompson, John C
MAJ Vaughan, Robert P
MAJ Vejar, Ray J
MAJ Vogel, Robert A
MAJ Vossler, Herbert C
MAJ Wagner, Hans
CPT Walker, Glenn D Jr
CPT Weaver, John M
CPT Webster, George K
MAJ West, William A
MAJ White, Ernest K
MAJ Whitsett, Richard D
MAJ Wilkinson, Robert H
MAJ Wrockloff, George E
MAJ Wright, Michael L
CPT Wyrosdick, James D
MAJ Young, Robert S

ARMED FORCES STAFF COLLEGE

Class 56, August 1974—January 1975

MAJ Born, Howard P
MAJ Cargile, James P
MAJ De Hart, Wallace K
MAJ Funk, Paul E
MAJ Henn, Karl M
MAJ Hicklin, William L
MAJ Montgomery, Thomas
MAJ Racine, Armand E
MAJ Schieman, Robert J
MAJ Waddell, Decatur F

ARMED FORCES STAFF COLLEGE

Class 57, February 1975—June 1975

MAJ Anjier, Louis J
MAJ Hill, Howard D
MAJ Laughman, Gary F
MAJ Lyons, Sidney E
MAJ Marek, James A
MAJ Murdock, Benton D
MAJ Porter, Norman A
CPT Stubbs, William P
MAJ Volta, Donald H

AIR FORCE COMMAND AND STAFF COLLEGE

August 1974—June 1975

MAJ Whitworth, William

MARINE COMMAND AND STAFF COLLEGE

August 1974—June 1975

MAJ Grogan, Timothy J

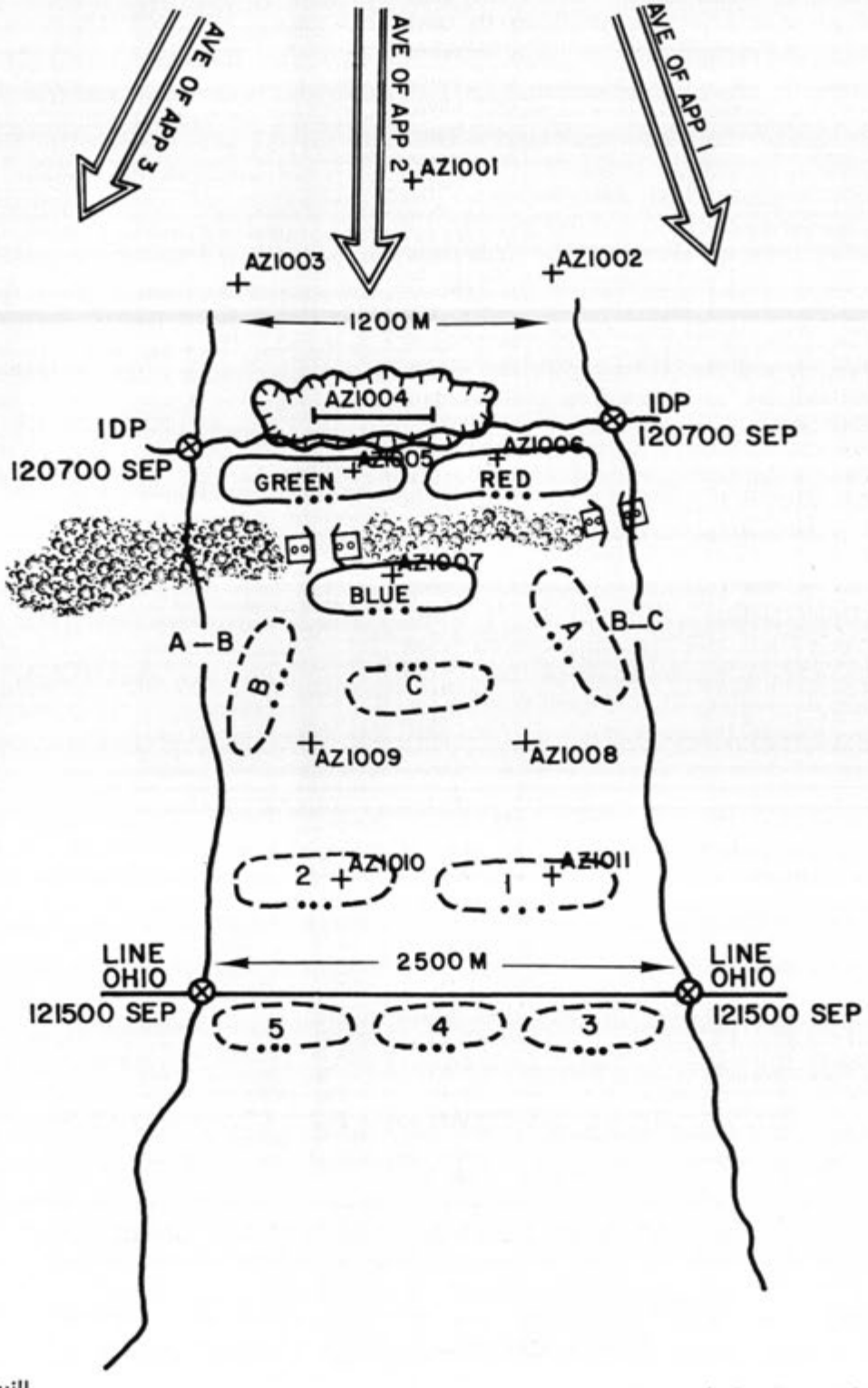
NAVAL COMMAND AND STAFF COLLEGE

August 1974—June 1975

CPT Chesarek, William D
CPT Michlik, Martin J
MAJ Middaugh, Thomas R

How Would You Do It?

US ARMY ARMOR SCHOOL PRESENTATION



Author: SFC Guill

Artist: Larry Elmore

SITUATION

You are the commander of Team B, Task Force 2-14 Armor. Your team consists of 2 tank platoons and 1 mechanized infantry platoon. The mechanized infantry platoon is occupying position GREEN. One tank platoon is on position RED and the other is on position BLUE. (See sketch map.) At 0600 hours 12 September an estimated reinforced enemy tank regiment launches a massive attack in the task force sector. The enemy's main attack is launched against Team C on your right flank, and aerial observers report to the task force commander that the enemy force is attempting a penetration of Team C, and envelopment of the remainder of the task force. At 0700 hours aerial observers report that Team C has been penetrated and that your team is in danger of being enveloped on the right flank. Based on the situation and information available, the task force commander orders you to begin your move to line Ohio. In order to gain maximum delay in your sector, maintain contact with the enemy, and avoid decisive engagement on position, how would you do it?

SOLUTION

Order the platoon in depth at position BLUE to move to platoon supplementary position Alfa to cover your right flank. (See annex A.) Order the platoon on position GREEN to move to position BLUE, closing the lane in the minefield as it passes through. Fire smoke and high explosives on target AZ1003 to assist his movement off position. Order the platoon on position RED to hold position, increase fires, and be prepared to move. When position BLUE is occupied move elements on position RED to position 1, closing the lane in the minefield as it passes through. Move elements on position BLUE to position 2, Alfa to position 3, 1 to position 4, and finally 2 to position 5. Report to the task force commander you are on line Ohio.

DISCUSSION

Although you have contact to your teams front the situation is critical on your right flank in Team Cs sector. To protect your right flank while displacing your platoons, position Alfa fills the bill while still maintaining your forward disposition and primary sector of responsibility. Upon starting your delay to line Ohio, the employment of successive intermediate positions, natural/artificial obstacles, and preplanned fires will ensure maximum delay in your sector and the maintenance of enemy contact throughout your delay. Position Alfa should be the last withdrawn if possible thereby ensuring flank protection. The right portion of your sector should not become heavy as this would cause a gap between you and Team A on your left. An equitable distribution of forces throughout your sector while continuing to delay, and the proper application of available fire support will assist in avoidance of decisive engagement on your positions. Timely and accurate spot reports are essential to both you and your task force commander.

Note. The previous discussion is not the only solution to the problem as changing enemy situations may dictate slight variances to the solution.

DISTINCTIVE COLORS—CAVALRY YELLOW

The first distinctive cavalry uniform was a blue coat with white facings, prescribed for the Light Dragoons in 1779. This was changed in 1782 to red facings with white linings for the "American cavalry." In 1799 the cavalry wore a green coat, with white linings and facings, the white being changed to black the following year. During the early part of the nineteenth century the cavalry ceased to exist, and it was not until 1832 that the nucleus of our present mounted service was organized as a battalion of Mounted Rangers, enlarged to a regiment of Dragoons the following year. Dragoon officers wore an orange sash from the very beginning in contrast to the crimson sash worn by all other officers. The facings, however, were yellow until 1851 when they were changed to orange.

In the meantime a regiment of Mounted Rifles had been organized which had yellow facings at first, then emerald green. In 1855 two cavalry regiments were created with yellow facings and in 1851 the designations of dragoon and mounted rifleman disappeared, all becoming cavalry with yellow as the distinctive color, which has ever since been retained.

From *Orders, Decorations, and Insignia,* by Colonel Robert E. Wyllie.

NEWS NOTES

NEW METHOD OF TRANSPORTING BRIDGE-ERECTION BOATS

The US Army Armor and Engineer Board has been tasked with testing the development of a boat "cradle" as a new method of transporting 27-foot bridge-erection boats. Presently the boat is transported in two sections by two 2 1/2-ton trucks.

In a recently conducted engineering and service test of a ribbon bridge on the Skagit River in Washington State, the Board found the current method of transporting the boat unsatisfactory. Launching and retrieval of the boats was difficult and time-consuming, requiring a 20-ton crane to lift and couple the two boat sections for operation.

The boat cradle, which transports the boat as a unit, was designed and mounted on a standard, but modified, *M821* bridge transporter five-ton truck by the US Army Mobility Equipment Research and Development Center at Fort Belvoir. The modified transporter can support a fully assembled bridge-erection boat and is equipped with a hydraulic boom for launching and retrieval operations.

The Armor and Engineer Board will continue its Development Test II until November.

VEHICLE DEVELOPMENT CONFERENCE TO BE HELD IN CALIFORNIA

"Vehicle Developments for the Modern Armed Forces" will be the theme of a technical meeting sponsored by the American Defense Preparedness Association (formerly American Ordnance Association) at the US Naval Postgraduate School in Monterey, California on 6 and 7 February 1974. This meeting will present military requirements for combat and tactical vehicles. Project managers will deliver presentations on the ARSV, the Mechanized Infantry Combat Vehicle (MICV), the *XM1* main battle tank; and the new Family of Engineer Construction Equipment (FAMECE). Requirements for new materials and vehicle components and requirements for vehicles supporting the *SAM-D* Missile System will be discussed.

Papers will be presented by research and development personnel from both industry and military services. This meeting is specifically designed to be of interest to: advance systems planners; directors of research, development, engineering and production; systems designers and engineers; test and evaluation programers; weapon systems project managers; and to those concerned with the formulation of long-range objectives. For further information, contact the American Defense Preparedness Association, Suite 819, 740 15th Street NW, Washington, DC 20005; phone (202) 347-7250; in Pasadena, California (Wednesday, Thursday and Friday) (213) 681-8021.

BRITISH ARMY EVALUATES "TOPLESS" TANKS

The 2d Royal Tank Regiment in West Germany has been examining the virtues of ten Swedish *S-Tanks*. The evaluation is part of a design study for a new tank for the 1980s.

The "turretless" *S-Tank* is unique in design and opera-

tion and seems to fascinate tankers worldwide. Whether it is a tank destroyer or a tank, primarily defensive or offensive in nature, is the question. In any case, its low silhouette, speed and agility make it a difficult target. Being "topless" is what seems to bother the hard-core tanker.

GERMAN SOLDIER GRADUATES FROM 1ST ARMD DIV NCO ACADEMY

The 1st Armored Division NCO Academy, located at Katterbach, Germany, has taken up the task of showing German soldiers just what it takes to be a US Army NCO. Sergeant Manfred Gildemeister was the "guinea pig" for the idea. He is a signal NCO from the 101st Jager (Hunter) Battalion, 4th Jager Division, stationed north of Bamberg.

Sergeant Gildemeister found the five-week school difficult, particularly with the language barrier. "There are many times that I don't understand what the teacher is saying and I must ask him to repeat himself." With the morale-boosting assistance of his American counterparts, Sergeant Gildemeister not only graduated from the Academy, but finished third out of 66 in the field of map reading.

Because of the initial success of the program, which is intended to promote better German-American understanding, additional German students will attend the NCO Academy in the future.

MEMORIAL PLAQUES PRESENTED TO ARMOR SCHOOL CHAPEL

Chaplain (Major) Glenn L. Myers (left) explains the Armor School Chapel memorialization program to the School Brigade Commander, Colonel Robert E. Ley. Begun under the leadership of Major General George S. Patton, former Assistant Commandant of the Armor School, the project included the presentation of memorial plaques by units which served in Southeast Asia. Shown is a plaque honoring the Military Assistance Command, Vietnam, an organization to which Colonel Ley was assigned. The back wall of the chapel is covered with small brass plates in memory of individuals killed in Vietnam who had previously served on the Staff and Faculty of the Armor School. A few individual plaques have also been presented to the chapel and are displayed on the walls.

BY THE NUMBERS

The Combat Arms Training Board and Army Research Institute are running tests on a new tank targeting method based on a number system used by the Infantry. In Infantry training maneuvers, numbers are worn on the helmets, and a soldier whose number is called out by an "enemy" soldier is declared "dead."

The tank method, which is being tested by the 4th Infantry Division at Fort Carson, was developed by B Company of the 1st Battalion, 77th Armor. It is basically the same as the Infantry system, except the numbers are painted on tanks and are large enough to be seen up to 1,200 meters away. The tank commander locates an "enemy" tank through his rangefinder. He then points his main gun directly at the tank and calls in its number and the range at which he sees it to a controller. When a kill is made, the destroyed tank stops, turns its turret to the rear and throws out a yellow smoke grenade.

FOR EASY LISTENING

This "experimental" vehicle allegedly provides a "listening" capability for the tank company. According to the "designer," it can also be utilized in the anti-personnel role and has been known to spit huge balls of fire. Actually, the shot here was "staged" by Staff Sergeant Karsten A. Dittmer, an instructor with the Armor School Weapons Department.

the tarpaulin

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

TAKE COMMAND

COL Merritte W. Ireland, 3d Bde, 3d Armd Div . . . **COL Richard D. Lawrence,** 1st Bde, 1st Cav Div . . . **COL Robert E. Ley,** School Bde, USAARMS . . . **COL Thomas P. Lynch,** 2d Bde, 1st Armd Div . . . **LTC Ronald E. Craven,** 4th Bn, 35th Armor, 1st Armd Div . . . **LTC Aleksander Einseln,** 15th Bn, 4th Bde, USATCA . . . **LTC Nathan M. Pulliam,** 7th Sqdn, 17th Cav, 1st Cav Div . . . **LTC William C. Sanders II,** 5th Bn, 33d Armor, 194th Armd Bde.

ASSIGNED

BG Thomas W. Bowen, DCofS, Intel, HQ USAREUR . . . **COL DeForrest Ballou,** OSD . . . **COL William J. Beckwith,** ARR 9, Presidio of San Francisco . . . **COL Robert F. Callahan,** ARR 2, Ft Dix . . . **COL Frank P. Connelly,** DIA . . . **COL Edward F. Corcoran,** CofS, 1st Cav Div . . . **COL Harold R. Dunn,** HQ USARAL . . . **COL Earl W. Fletcher,** CofS, MASSTER . . . **COL William D. Gillis,** USA Supply Ctr, Philadelphia . . . **COL Lewis J. Gutting,** ARR 7, Ft Sam Houston . . . **COL Richard J. Haas,** Res Comp Pers & Admin Ctr . . . **COL John R. Hendry,** HQ 6th Army . . . **COL Ivan H. Howitz,** OTIG, DA . . . **COL Birtrun S. Kidwell,** USACAC, Ft Leavenworth . . . **COL John D. Kinsey,** Ft Lewis . . . **COL Noel D. Knotts,** 8th Army, Korea . . . **COL James A. Manning,** STRATCOM, Ft Richie . . . **COL Linwood B. Mather,** OJCS . . . **COL Paul B. McDaniel,** 2d Armd Div . . . **COL Robert S. McGowan,** CATB, Ft Benning . . . **COL Donald F. Packard,** HQ TRADOC . . . **COL Orville L. Parker,** Senior MTC Advisor, Richmond VA . . . **COL Wendal L. Prince,** TECOM, Aberdeen . . . **COL Abram V. Rinearson,** CDEC, Ft Ord . . . **LTC Richard V. Anderson,** USA Engr Ctr . . . **LTC Robert S. Antowiak,** Stu Det, 1st Army . . . **LTC Cyril W. Appel,** USAARMS . . . **LTC Cecil Crawford,** Ft Hood . . . **LTC Edward H. Day,** Stu Det, 5th Army . . . **LTC Barney Forbes,** ARR 5, Ft Sheridan . . . **LTC Edward W. Gale,** C&GSC . . . **LTC Lewis H. Ham Jr,** MAAG Uruguay . . . **LTC Theodore Hammer,** USA Sig Sch, Ft Monmouth . . . **LTC Vaughn Hormann,** Camp Drum NY . . . **LTC Richard E. Hoyt,** ACSFOR, DA . . . **LTC Robert G. Laabs,** Ft Hood . . . **LTC John F. Lehmann,** HQ 5th Army . . . **LTC Tom L. Lindholm,** ARR 8, Rocky Mt CO . . . **LTC Lawrence Lipscomb,** National Guard Bureau . . . **LTC Luther R. Lloyd,** OJCS . . . **LTC Alexander Macdonald,** OTIG, DA . . . **LTC Robert McCarthy,** Knox College, Galesburg IL . . . **LTC Thomas McKitrick,** USAARMC . . . **LTC Marvin Meyers,** Lake Superior State College, MI . . . **LTC Charles Miller,** Korea . . . **LTC Thomas Miller,** HQ USEUCOM . . . **LTC George Persons,** Off of Res Comp . . . **LTC Donald Pulsifer,** ACSFOR, DA . . . **LTC William Robinson,** USA Sig Sch, Ft Gordon . . . **LTC David Rowlands,** Ft Buckner . . . **LTC Billy Slusher,** Cameron State College, Lawton OK . . . **LTC Harold Solseth,** 4th Inf Div . . . **LTC John H. Vanzant,** University of Delaware . . . **MAJ Terrence Alger,** ROTC Instr Grp, Fargo ND . . . **MAJ Fabricio Barrera,** SOUTHCOM . . . **MAJ Richard A. Bell,** ARR 9, Pesidio of San Francisco . . . **MAJ Richard Bosserman,** Thailand . . . **MAJ Clinton B. Boyd,** Germany . . . **MAJ James G. Camp,** Computer Sys Cmd, Ft Belvoir . . . **MAJ Anthony Carbone,** Germany . . . **MAJ William Carver,** ARR 7, Ft Sam Houston . . . **MAJ Donald Church,** Korea . . . **MAJ Benjamin Covington,** USAARMC . . . **MAJ Charles Davis,** Germany . . . **MAJ Leslie Deloney,** Ft Meade . . . **MAJ John A. Dennis,** Germany . . . **MAJ John M. Dowds,** Germany . . . **MAJ James Dutcher,** USAARMS . . . **MAJ Hewell Fleming,** OTEA, Ft Belvoir . . . **MAJ Jerry Fleming,** USAARMC . . . **MAJ Albert Fournier,** FAA Eastern Rgn, Jamaica NY . . . **MAJ William Frusciante,** Germany . . . **MAJ Robert Gilman,** Thailand . . . **MAJ Takio J. Goshi,** HQ USARJ . . . **MAJ James Harding,** Army Elem, Atlantic Cmd . . . **MAJ James Hennegar,** Turkey . . . **MAJ William Hicklin,** University of Wisconsin . . . **MAJ Ronald A. Hofmann,** G5, 3d Inf Div . . . **MAJ Terrill C. Hope,** Arlington Hall Station . . . **MAJ Jimmie Hughes,** OCRD 11, England . . . **MAJ Patrick Johns,** Korea . . . **MAJ Robert Johnson,** ARR 3, Ft Meade . . . **MAJ Leonard Jones,** Defense Language Inst . . . **MAJ Victor L. Kim,** Germany . . . **MAJ Kenneth Kimes,** Germany . . . **MAJ Roy Kimerling,** 1st RD, Ft Meade . . . **MAJ Stanely Kraus,** USREDCOM, Macdill AFB . . . **MAJ Nicholas Krawciw,** Germany . . . **MAJ Jerry V. Lape,** Ft Clayton CZ . . . **MAJ Jeffrey Larson,** Ft Hood . . . **MAJ Jerry Leadabrand,** Kearney State College, NE . . . **MAJ Gary Loban,** Ft Hood . . . **MAJ James M. Lyle,** AFEES, Manchester NH . . . **MAJ Clarence Matzeder,** Virginia Polytechnic Inst . . . **MAJ George Moffitt,** University of Southern Mississippi . . . **MAJ Frank Norwood,** HQ USARJ . . . **MAJ John H. Nugent,** University of South Dakota . . . **MAJ James Peterson,** SOUTHCOM . . . **MAJ Francis Pierce,** Germany . . . **MAJ Michael Pierce,** Germany . . . **MAJ James R. Roane,** Ft Clayton CZ . . . **MAJ Albert Rodriquez,** DIA . . . **MAJ Harold L. Rose,** USREDCOM, Macdill AFB . . . **MAJ Kenneth Rubin,** ARR 6, Ft Knox . . . **MAJ John M. Sanaker,** Germany . . . **MAJ Robert Sanzotera,** University of Wisconsin . . . **MAJ Timothy Scobie,** Army Elem, PACOM . . . **MAJ John L. Shen,** Germany . . . **MAJ Denis Simmons,** Germany . . . **MAJ Charles Slade,** Germany . . . **MAJ Frederick Stanley,** HQ 3d Army . . . **MAJ John W. Stipe,** HQ TRADOC . . . **MAJ Geoffrey Templeton,** HQ CIDC . . . **MAJ Edward Thielen,** Ft Benjamin Harrison . . . **MAJ James W. Tyler,** Germany . . . **MAJ Jack E. Walker,** United Nations Forces, Korea . . . **MAJ Terrence Wallace,** Farleigh Dickinson University . . . **MAJ Vaden K. Watson,** USATCA . . . **MAJ James V. Wells,** HQ TRADOC . . . **MAJ Carl Wesneski,** HQ CENTAG . . . **MAJ Maurice Winter,** AFEES, Ashland KY . . . **CSM Richard L. Divine,** CSM Ft Hood.

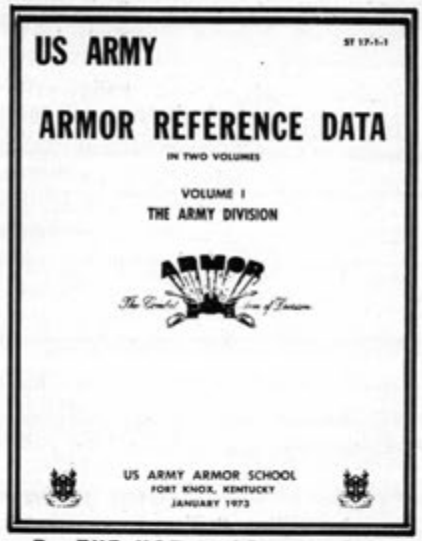
AND SO FORTH

The **1st Cav Division's 227th Aviation Bn** was named as the Outstanding Aviation Unit of the Year at the recent meeting of the Army Aviation Association of America. The battalion has been involved in a number of emergency and rescue missions during the past year, including assistance during the Managua earthquake disaster. **MAJ Theodore J. Dolloff,** the commander of **Company D of the 227th** was named Army Aviator of the Year for his performance during the Managua disaster . . . Another first for the **Women's Army Corps**: two WACs were among the 1st Inf Div contingent traveling to Germany for the recent Reforger V exercise. The pair, **2LT Eugenia Thornton** and **PFC Connie Kalvick,** were assigned to the USAREUR—VII Corps Press Center during the exercise . . . According to **Dr. Erwin Thurbs,** the battle tank is the world's biggest sex symbol. The psychiatrist claims that it is also one of the most difficult symbols to interpret since it possesses characteristics of both

sexes . . . **The Ground Surveillance Radar Section of Combat Support Company, 2d Bn, 32d Armor, 3d Armd Div,** led by **SSG Charlie L. Pallett,** was the only section within the division rated as combat ready with distinction during recently conducted ATTs . . . The **Support Command of the 1st Armd Div** took first place overall in the second annual division track and field competition. Eleven new records were established in the two day event . . . **MSG James L. Richardson,** acting sergeant major of the **2d Sqdn, 17th Cav, 101st Abn Div,** is credited with saving the life of another soldier during the recent Quick Eagle II FTX. MSG Richardson, upon encountering the soldier who had been knocked unconscious while working on a high tension wire, restored the victim's breathing by pounding with his fist on the soldier's chest.

WANTED

For : HISTORICAL FILES



By: THE HOT LOOP, USAARMS
(ADDRESS BELOW)

ARMOR REFERENCE DATA

ALIAS: Reference Data for Armor Units (ROCAD-ROCID)
ALIAS: Reference Data for Armored Units

DESCRIPTION: The following issues are currently in custody: 1955, 1957, 1964, 1965, 1967, 1968, 1969, 1970, 1971, 1973. All others are still sought.

If you have information concerning this document, write the
Chief
Prom Tng Materials Development Branch
Army-Wide Training Support Department
US Army Armor School
Fort Knox, Kentucky 40121

UNITED STATES ARMY IN THE KOREAN WAR—Policy and Direction: The First Year
by James F. Snabel. Office of the Chief of Military History, US Army. 443 pages. 1972. $8.75.

The third volume to be published in the official Army history series of the Korean War, *Policy and Direction: The First Year*, meets the same high standards set by the earlier two volumes and, in fact, the World War II series as well.

The United States has an unbroken record of entering wars from a condition of unpreparedness. The Korean War was certainly no exception. Following World War II, the United States had rapidly demobilized the most powerful military machine ever assembled, once again following a national practice of long standing. The Army found itself hard-pressed to accomplish its post-war mission of occupation, and thus had little ability left over to expend any significant effort on combat readiness. *Policy and Direction: The First Year* lays out for the military student the condition of the Army, the situation in the Far East, and the prevailing military and national attitudes at the time the North Koreans chose to strike their southern neighbor.

The course of the war itself during the initial months has been well described in *South to the Naktong, North to the Yalu: June to November 1950*. This volume, as its title suggests, deals with the problems of high command and logistics. There are a myriad of lessons to be learned. In each of our wars, it has been the final months or years that have led to victory and demonstrated the might of American arms, hence, generating the interest and the books. Yet it is the first months that invariably provide the real challenge to those in the business of developing policy and planning the direction of future efforts. *Policy and Direction: The First Year* describes well the challenge faced within the Far East Command itself and in Washington. It is a recounting of an effort to overcome the condition of the Army and respond to the challenge of a new war, an effort usually unnoticed by both the military historian and the student of military history, whose attention more often is focused on the tactical aspects of the war.

Policy and Direction: The First Year is well-written and easy reading compared to the reports from which much of the material was drawn. If the author can be faulted at all, it is for the anti-MacArthur flavor that appears throughout the volume. Whether a MacArthur fan or not, the reader cannot help but notice the innuendos when the Washington-MacArthur conflict is discussed. It is a disappointment in an otherwise straightforward and unemotional analysis of the challenging first year of the Korean War.

Colonel Philip L. Bolte
Army War College

from the bookshelf

THE CAUSES OF WAR
by Geoffrey Blainey. The Free Press. 278 pages. 1973. $7.95.

An accepted truth of modern strategists is that the advent of nuclear weapons negated all previous military experience. In the nuclear era, the old lessons no longer applied. A case in point is "Wars of National Liberation," which were thought to have sprung full-blown from the brow of Nikita Khrushchev in 1960. Professor Geoffrey Blainey of the University of Melbourne, Australia knocks these assumptions into a still-relevant cocked hat with his historical study of the causes of war.

Examining the period 1823-1937 he finds 31 wars—one-half of the important international wars of the period—began with civil disturbances. In 26 of these 31 wars the fomenters of civil disturbance had ties with an outside country which ultimately came to their assistance. Religious links, racial links, nationalistic links, ideological links were as much an inducement for intervention as the "Communist" links of Khrushchev's "Wars of National Liberation." As Professor Blainey states, "One conclusion is that the study of history offers essential clues towards an understanding of war. Nuclear weapons have not drastically altered international relations. In each generation during the last two and a half centuries many men thought their own era was unique and therefore could learn little from the past; but their belief was disproved. . .One unexpected result of examining a long line of wars and many eras of peace is to observe the old ancestry of most of the viewpoints and arguments which are held widely in the nuclear age."

Take the viewpoint of one modern strategist, Professor Klaus Knorr of Princeton, who eloquently argues that, since wealth is primarily a function of internal development rather than external conquest, military forces are obsolete in the nuclear age. Professor Knorr's very persuasive arguments are blunted somewhat by the discovery that they were very much in vogue in the 1850s. Examining what he calls the "Manchester" creed that industrialization and trade had negated war, Blainey quotes the Encyclopaedia Britannica for 1911. "War is becoming, among progressive peoples, to be regarded merely as an accidental disturbance of that harmony and concord among mankind which nations require for the fostering of their domestic welfare." As Blainey further notes, "Three years later, when the world crisis called for these progressive people to stand and be counted, thousands stood and enlisted." The "Manchester" theory of peace "was like the montebank's diagnosis that shepherds were healthy simply because they had ruddy cheeks: therefore the cure for a sick shepherd was to inflame his cheeks."

Other popular theories of war fall before Professor Blainey's reasoned and thorough historical analysis. The "war-weariness" theory of Toynbee and others, the delinquent theory (idle hands are the Devil's workshop), the scapegoat theory (declare war to divert attention from domestic ills), the various economic theories, the accidental war theory, the theory that war is caused solely by ambition (a theory of rivalry, not of war) . . . all these and more fall before Blainey's examination of the historical facts. He faults those who cling to such myths with the observation that "their master key having failed to unlock the mystery, they discard the mystery and keep the key." Many such explanations "appear to be acts of faith rather than reasoned arguments. Deep faith is often satisfied with shallow evidence." Some explanations he finds especially ludicrous. Saying "the breakdown of diplomacy led to war . . . is rather like the argument that the end of winter led to spring: it is a description masquerading as an explanation." Better, Blainey concludes, to say that the breakdown of war led to diplomacy.

What, then, *are* the causes of war? Professor Blainey concludes his book with

some 33 axioms bearing on this question. Two of these axioms will illustrate the clarity of his approach. "In deciding for war or peace national leaders appear to be strongly influenced by at least seven factors: I. military strength and the ability to apply that strength efficiently in the theatre of war; II. predictions of how outside nations will behave if war should occur; III. perceptions of whether there is internal unity or discord in their land and in the land of the enemy; IV. knowledge of forgetfulness of the realities and suffering of war; V. nationalism and ideology; VI. the state of the economy and also its ability to sustain the kind of war envisaged; VII. the personality and experience of those who shared in the decision." Also, "Wars usually begin when two nations disagree on their relative strength, and wars usually cease when the fighting nations agree on their relative strength. Agreement or disagreement emerges from the shuffling of the same set of factors. Thus each factor is capable of promoting war or peace."

The relationship of war and peace, and the relevance of military power is emphasized by Professor Blainey. "The brotherhood of nations tends to be hierarchical and opportunist. Peace depends directly or indirectly on military power. While we observe the role of military power when it dramatically breaks the peace, we tend to ignore its role when it ends a war or preserves the peace." It is interesting to note that *Red Star*, the Soviet armed forces daily, recently acknowledged "the growing military might of the Soviet armed forces" and concludes "the stronger the military power of the Soviet armed forces . . . the more secure is peace on Earth"—the Soviet version of the Fort Leavenworth Command and General Staff College motto, "Ad Bellum Pace Parati." It is disturbing to note that Professor Blainey found that when there was a clear-cut hierarchy of power, peace was assured. Contrary to popular opinion, when there was a "balance of power" war was more likely. Paradoxically the relative decline of the US and the USSR, the end of the bipolar era, and the emergence of West Europe, Japan and China as potential world powers may have precisely the opposite effect than what we anticipated.

"The Causes of War" is a thoughtful and thought-provoking examination of the interrelationship of war and peace. Professor Blainey's analysis from "the Swedish crossing of the narrow seas into Denmark in 1700" to "the Indian invasion at the head of the Bay of Bengal in 1971" has lessons that we ignore at our peril.

Lieutenant Colonel Harry G. Summers Jr.
DCSOPS

A SECRET WAR: Americans in China, 1944-1945

by Oliver J. Caldwell. Southern Illinois University Press. 1972.

The title, *A Secret War: Americans in China, 1944-1945*, is a misnomer for the content, purpose, or value of these peripatetic reminiscences of Oliver Caldwell, a middle level but knowledgeable OSS Intelligence administrator in China at the end of the Second World War. While tangentially providing some fascinating anecdotes, personality sketches and landscape description, from the preface forward, Professor Caldwell is obviously more interested in explaining and analyzing the failures of US wartime and post-war Far Eastern policy, the grist for the books of many other "old China hands."

Caldwell maintains that both before and during World War II, American policy makers knew far too little about China and consequently supported the wrong faction in the Chinese Civil War. While most Americans view this period in Chinese history as essentially a fight between the forces of Mao Tse-tung, ostensibly Communists, and the Kuomintang, led by Chiang Kai-shek, Caldwell reminds his readers there existed a third party, the Left Kuomintang. The author proposes that the Left Kuomintang, erstwhile liberal democrats, professed a political philosophy that would have made any regime they established more beneficial to America's interests than a China governed by the other two factions.

By reviewing the political, social and economic views of Chiang, Caldwell builds a respectable case for a conclusion that Chiang was a fascist who for philosophical reasons could not hold China and, if he had, would have been almost as inimical to America's interests as eventually the Communists were. The Left Kuomintang alone, Caldwell attempts to prove, advocated a philosophy that from an historical perspective could have both fulfilled the deeply embedded hopes and aspirations of the Chinese people while making it possible for the US to realize finally the goals of the Open Door Policy.

If this were all the author had to say, his book would fail to advance the frontiers of knowledge about US wartime foreign policy in China; however, Caldwell helps substantiate his case by adding an important piece of new information to the body of knowledge on American wartime Far East Policy.

In 1944 the Left Kuomintang communicated through Caldwell a major initiative to get US military and political support for a coup against Chiang. Furthermore, this proposal was taken seriously by Roosevelt and was the subject of Cabinet discussion and decision. Chiang crushed the Left Kuomintang in the mid-1920s, and the validity of the author's criticism of Roosevelt's failure to act on the Left Kuomintang's proposal rests perilously on the calculation that within the Triad, an organization of the most powerful Chinese secret societies, the Left Kuomintang had again acquired sufficient strength by World War II that the US could expect the Left Kuomintang, with American support, not only to overthrow Chiang but defeat both Mao and the Japanese.

Given the unquestionable power but impenetrable secrecy of Chinese secret societies, this critical calculation, while fascinating, is beyond proof, and consequently Professor Caldwell's thesis never rings completely true.

Captain Henry J. Lowe
US Military Academy

THE MYTH OF THE MASTER RACE: Alfred Rosenberg and the Nazi Ideology

by Robert Cecil. Dodd, Mead & Company. 266 pages. 1972.

Alfred Rosenberg is the enigma of the Nazi experience. Hanged at Nuremburg, he was the only one of those tried and executed who was close to Hitler when the Party formed and was still prominent at its fall 25 years later. Born and educated in Russia he became the scourge of the Slavs. Of impure ancestry he became the high priest of racial purity. His anti-Semitic creed found its most effective expression in the SS, yet Himmler was his arch enemy. Posted to the highest position in occupied Russia, he shrank from the duties which flowed logically from the creed he had preached so long.

But Rosenberg is representative of a yet deeper enigma—that of the Germans themselves. For many, the myth of the Aryan master race was more than a myth; yet within a few short years a cultured, industrious, orderly people lived where the master race had dwelled. The Thousand Year Reich was a political, social and military image unequalled in history, yet it was overtaken by the German penchant for and predilection with national self-de-

struction. Robert Cecil provides no solutions to these enigmas, but his scholarly, searching study of Rosenberg's role in developing the Nazi ideology is essential for anyone who seeks to understand the role played by the ideology itself in bringing Hitler to power.

DAS

UNCLE SAM—The Last of the Big-time Spenders
by William Proxmire. Simon and Schuster. 275 pages. 1972. $6.95.

An argument which addresses the reordering of national priorities is bound to be popular reading in the current environment of political, economic and social change. Senator Proxmire's highly readable book argues the thesis that the President is reordering national priorities, but that he is reordering them in the wrong way. The writer spares no level or branch of government in his contention that frills, fat and waste are prevalent. He is particularly critical of the Executive Department, but he is quite willing to point out errors, omissions and waste which is at least tacitly condoned by his own legislative compatriots.

Senator Proxmire attacks waste in government where he sees it. He finds cost overruns in military procurement contracts and congressional "lame duck" junkets equally unappealing. His wrath falls particularly hard on the Defense Department budget, however, and foreign aid expenditures. He argues that present foreign aid is a "perversion of intent" and a corruption of the idealism of the Truman Era. High levels of expenditure for defense particularly draw his ire. While admitting the need for some defense expenditures, he argues that a constrained defense budget within a $70 billion ceiling is a realistic goal.

Throughout his work, the Senator exhibits an underlying fear. Like de Toqueville, he seems to argue that "the main evil of the present Democratic institutions of the United States arises . . . not from their weaknesses, but from their overpowering strength." His programs, as proposed in his book, suggest that the strength of the Executive Department can and should be curtailed.

Senator Proxmire's program includes a $70 billion ceiling on defense spending. He advocates cutting waste, implying that the Army Corps of Engineers public works projects are the epitome of the federal boondoggle. Spending for future space exploration is another target for budget pruning.

This work is an argument for a point of view, not a balanced analysis of issues and priorities. Eminently readable, *Uncle Sam* serves to perpetuate the sinister, cynical legend of the "military industrial complex." Senator Proxmire's obvious talents and acknowledged ability as a legislator would be better demonstrated in a more even-handed approach to the problems of federal priorities.

Lieutenant Colonel William F. Burns
Army War College

THE WINTER WAR: The Russo-Finnish Conflict, 1939-40
by Eloise Engle and Lauri Paananen. Scribners. 176 pages. 1973. $7.95.

Why the Russo-Finnish War hasn't attracted more attention by military historians must puzzle even the most casual reader of twentieth-century history. Overlooked and slighted as an insignificant sideshow against the backdrop of war on a world scale, the engagement is worth studying, however, on its own merits.

It was perhaps the greatest mismatch in history since David met Goliath; the results were equally as astounding. Although Russian might eventually wore down Finnish right, the planned ten-day Russian operation stretched into 105 days through the heroic determination of the Finns and the skillful adaptation of tactics to weather, terrain and enemy forces. Even Nikita Khrushchev admitted that the Russian misadventure onto Finn soil resulted in a "moral defeat" (*Khrushchev Remembers*, 1970) for Russia. According to the Russian leader, more than one million Russian soldiers were killed in action during the Finnish War (the Finns suffered some 80,000 casualties); Russian materiel losses were correspondingly high in what must be regarded as one of the most costly military operations in modern history.

The Engle-Paananen account of that "winter war," drawn for a general audience from periodicals, earlier published works, and some two dozen eyewitness accounts, contains numerous, fascinating vignettes of warfare: the use of tanks in heavy snow, ski-troops as guerrilla and main forces; proper uses of the principles of surprise; the importance of camouflage; and studies in leadership and innovation at the small-unit level. For example, one German General Staff study of the Russian Army during the conflict concluded that Russia was "no match for an army with modern equipment and superior leadership," an assessment which figured in later German strategic planning—much to its regret.

Not a definitive study of the war (inadequacies include diplomatic, economic and even military considerations: German, Russian and Allied), this effort, hopefully, represents a beginning of unlocking the secrets of events too long neglected.

Major John G. Fowler Jr
Providence College

SPY TRADE
by E. H. Cookridge. Walker and Company. 278 pages. 1972. $6.95.

The theme of this book centers around the active barter of individuals between the East and the West. The Eastern or Communist countries get the best of the deal because they use Western compassion and humanitarian values for meeting their nefarious ends. The East captures rather minor agents or innocent civilians and trades them for high quality spies who are jailed in the West. In doing so, the East insures that their agents spend a minimum amount of time in jail and receive an honorable return to their homeland, both of which are great inducements for recruiting. The Communists then use these agents as instructors for training other spies.

About one half of the book is concerned with the Gary Francis Powers—Rudolf Inanovich Abel exchange. Colonel Abel, according to the book, was the most resourceful agent the KGB ever placed in the United States; thus, he was a high price to pay for the return of an obscure pilot named Powers. The book relates how James Brit Donoven and Herr Wolfgang Vogel became involved as mediators and eventually as experts in the intrigue of spy swapping.

One of the most interesting cases discussed was the background, method of operation, and capture of Alfred Frensel, a member of the German Parliament who was caught after he betrayed NATO secrets. The Soviet method of operation is explained by the discussion of how Henry Houghlin and Ethel Gee of England were set up by Gordon Lonsdale and the Krogers and later blackmailed into assisting a spy ring in England. An amazing statistic provided is the prosecution of spies in West Germany which increased from 1,799 in 1950 to 8,234 in 1959 and is still a most significant figure.

Lieutenant Colonel Carl M. Putnam
HQ, FORSCOM

Armor Magazine Index-Volume LXXXII, 1973

TITLES

AUTHORS

NEWS NOTES

FROM THE BOOKSHELF

ARMOR *the Magazine of Mobile Warfare*

U.S. ARMY ARMOR SCHOOL ▲ Post Office Box O, Fort Knox, Kentucky 40121
Telephone (502) 624-2257

FROM THE EDITOR

On 14 November 1973 *ARMOR* Magazine completed its move from temporary to permanent quarters here at Fort Knox. Our *house*, Building 4401, is the most attractive and adequate facility the magazine has ever had. The staff is very pleased to be settled after six months of operations like a mobile command post.

Your September-October issue was late. There were many reasons for this, but more important, we did not drop an issue despite the turmoil caused by our moves. With our typesetter and printer still in the Washington, DC area, you may find this issue a bit late in reaching you also.

We are presently waiting for contract negotiations to be completed for printing the magazine locally. The first issue to be printed under this new contract for the Armor School will be the March-April 1974 issue. The January-February issue will be the last edition paid for entirely by the Armor Association.

We have worked out a plan under the present subscription rates for the Armor Association to continue to distribute *ARMOR* to your door. The Armor School will distribute two free copies of each issue to every Armor Headquarters worldwide, from division to company/troop. This includes both National Guard and Reserve units as well. There will also be other recipients of free copies and I will publish the list as soon as it is firmed up.

I feel confident that our Armor Association members will remain faithful subscribers as well as the many loyal friends of our branch professional journal.

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.