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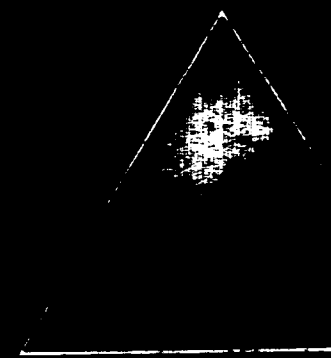
THE HISTORY OF THE

ARMOR



THE ARMOR ASSOCIATION MEETS

at the Hotel Waldorf-Astoria, New York, on the 15th of the month. The meeting was held in the grand ballroom of the hotel, and was attended by a large number of the members of the association. The program of the day was most interesting, and included a luncheon, a business session, and a social hour. The luncheon was served in the grand ballroom, and was most delicious. The business session was held in the afternoon, and was most profitable. The social hour was held in the evening, and was most enjoyable. The meeting was a great success, and we are sure that it will be remembered for many years to come.



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ARMOR

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LETTERS to the EDITOR

Mobility's Encroachers

Dear Sir:

In the July-August issue you raised a question: a name for the soldiers of our Arm. I am glad to know that you consider the question important. My experience bears this out. Morale is the sum of many factors not the least of which is loyalty to one's branch. There is no step more important in basic training than to instill in the heart of a soldier an intense pride in his unit. This is closely related to, and a part of, pride in his branch. The collective name by which soldiers of a branch are known is no small element in the problem.

I deeply regret the decision that substituted the name "Armor" (a mechanical device applicable to all arms) for "Cavalry" (a name signifying the mobile combat arm). The nomenclature has become further confused by employing the term "Armored Infantry" for soldiers who fight mounted (as well as dismounted). Soldiers who fight in tanks and in all other vehicles which accompany tanks on the battlefield are mounted soldiers. Mounted soldiers are cavalrymen in the true sense of the word. Mounted soldiers are "troopers." The Department has seen fit to retain the designation "cavalry" for certain regiments designated for reconnaissance roles although these regiments have long since adopted iron horses. Nevertheless it is recognized that their role is mounted. The same recognition should be accorded those elements of divisions whose role is mounted combat. "Tankers," "Armored Infantry," "Mechanized Cavalry"; they are all mounted soldiers, they are all cavalrymen, they are all troopers. If we accept the premise that role in battle determines branch of service (not some mechanical device), then too our "armored" divisions as well as our "cavalry reconnaissance regiments" are Cavalry units.

There are still some who propose the retention of Cavalry in the form of very small units equipped with horses and mules (primarily pack animals) for use in restricted terrain. I fully concur with their proposal to use animals where appropriate but I deeply deplore the implication that Cavalry has passed on (notwithstanding the Act of Congress). Cavalry lives today more invulnerable than ever because battlefield mobility has reached an all-time importance. The role in battle always performed by Cavalry is performed today by modern troopers—soldiers who close with the enemy mounted.

The tremendous expansion of our forces in World War II accompanied as it was by the development of "armor" for all branches of the service resulted in a confusion of terms. At the same time the substitution of mechanical for animal transport both on and off the

battlefield added misunderstandings. This became most apparent in confusing the type of mount with the role in combat. To add to the confusion some refused to accept the evolution of Cavalry and doggedly demanded the retention of horses to perform impossible tasks, so that the War Department was forced to create a new Arm which wasn't new at all—it is the old Arm re-mounted. Many new faces appeared, most of whom came from Infantry, Artillery and Engineers. They brought with them many of the traditions of their former branches which were absorbed by the revitalized Cavalry now masquerading under the name of Armor. But as the dust of World War II settles and we can look back more calmly on that scene, we see all too plainly that the role of the mounted arm as played on the fields of Central Europe was merely a modernized cavalry role with "armored" soldiers re-enacting the part of traditional cavalymen—troopers, if you please.

I suggest the retention of the name, which denotes a "way of fighting," which distinguishes the combat soldier who closes mounted with his enemy (not a piece of steel, designed as a shield) — the name Cavalry for the branch and Troopers for its soldiers.

MAJ. GEN. R. W. GROW
Army Attache
Moscow, Russia

A Kind Word

Dear Sir:

I find your publication interesting and most informative. The timely articles are ably presented and contain much worthwhile material. It is undoubtedly the best service magazine I have seen and is of particular value to the armor and infantry officer. The excellent studies on combat operations

here in Korea help to establish beyond any possibility of challenge the fact that effective utilization of armor, even under the most adverse conditions of terrain and climate, is always possible provided initiative and imagination are present in the combat leader.

LT. COLONEL LESTER BELLER
Asst. Secy. Gen. Staff, 8th Army
APO 301

Armor Combat Badge

Dear Sir:

The Infantry has its Combat Infantry Badge, the Medics have their Combat Medics Badge, the Artillery has a proposed Combat Artillery Badge, and what does Armor have? I can answer this as well as any Armor man can also answer it, *nothing*.

The tank companies and the tank battalions are all either integral parts of infantry regiments or attached to the infantry divisions. With this close association with the infantry it is only natural that Armor is working in a close support role. Also we often find ourselves leading task forces which move many meters behind enemy lines. When the tanker returns from these missions he finds that his infantry teammates who haven't already received their Combat Infantry Badge are lined up and have it presented to them.

What does the tanker get? Nothing for him because he can't qualify for the Combat Infantry Badge, and Armor has nothing to give him.

I firmly believe that a distinctive badge for Armor is a must. It would be a definite boost to the morale of all tankers in Korea. Also it would show our brothers in arms that Armor also has its distinctive badge.

I think you are the people to start the ball rolling and am counting on you to keep it rolling.

LIEUTENANT WILLIAM Q. JOHNSON
Tank Co., 32d Infantry Regt.
APO 7

One of Our Functions

Dear Sir:

Enclosed please find a check for the renewal of my subscription to our wonderful magazine.

As a reservist I have found this magazine invaluable to me in keeping abreast of the latest trends and developments in armor. Now that I'm on E.A.D. I know that our magazine will even be of greater value.

LIEUTENANT WILFRED BAUMANN
Co. C, 33d Medium Tank Bn.
Ft. Knox, Ky.

Dear Sir:

As a subscriber to ARMOR of only one year, I find that your magazine is an excellent periodical dealing with mobile warfare. As a member of a reserve artillery unit, ARMOR provides a much needed link between me and my own branch. This magazine is a must for all reservists who desire to keep up on the latest developments in Armor.

I am inclosing a check for \$8 with which to renew my subscription for two years.

LIEUTENANT ROBERT P. BAUGHMAN
Norman, Okla.

• ARMOR is pleased to have this assurance of the fulfillment of its mission and departs from its policy of not printing self-praising comment as a reminder to those in the reserve components who may see the magazine only occasionally that here is a rallying point for their part-time military interests. The reason ARMOR does not indulge in the printing of letters of comment praising the magazine lies in the fact that this space is considered a part of the medium of professional discussion which is our publication, and should be utilized for comment on subjects remunerative to the reader. In addition, so great a number of these letters are received that the entire quota of space each issue could be devoted to them. All this does not mean that affirmative comment is not appreciated. It is, and it adds up to a part of the inspiration behind this magazine.—Ed.

Old Bill Turns Up

Dear Sir:

The lost is found! Your editorial in the September-October 1951 issue, recently read, seeks the whereabouts of Remington's pen and ink sketch "Old Bill." To the best of my knowledge I have the front view sketch; I know nothing about the hind sight. "To the best of my knowledge" is used advisedly, because: (1) it has always been my understanding that the picture I have is either the original or a duplicate copy of the picture which my father, Louis C. Scherer, received from the artist, and (2) this picture was carefully packed away in my household things when I last went overseas.

If ARMOR requires the use of the picture, I would be more than happy to loan it (as soon as I can get at it), provided that I can have positive assurance of its safe and early return, somewhat under the same arrangement that it was once previously loaned to the Cavalry Journal for remaking the cover plate. I believe that there was no question of ownership at that time.

I am not prepared to donate the picture to an office file or to a museum of the future. Nor do I intend to sell it. I would be willing to donate it to an existing suitable museum when my family and friends no longer enjoy the lively reminiscences which "Old Bill" evokes. Have no fear that he will lack for a good home and admirers once we set up housekeeping again. I don't know what you think of him, but I've never thought of him as much of an office man or as a museum piece. He's always looked most at home with several horsefies talking over old times, with the aid of a couple of short beers and an occasional "Up Garry Owen." But then, I may be wrong. I will say though, when I showed him the first Cavalry Journal where he didn't make the cover, I thought that there was a look of foreboding on his face. I haven't been able to ask him what he thought

about ownership claims coming up after fifty years of undisturbed possession.

COLONEL KARL L. SCHERER
Armed Forces Staff College
Norfolk, Va.

Dear Sir:

My brother, Col. Karl L. Scherer, has sent on to me his letter to you in reply to your editorial on the Remington sketch in the September-October issue. While I feel that he has covered the situation and am in accord with what he has said, I wish to add what I know of the picture's history, particularly since I was once the owner of it.

The pen and ink sketch of the mounted soldier was in my father's possession when I first saw it and was seen, no doubt, by those who visited our home. The artist and my father were friends and I was told that Remington at some time around the turn of the century gave the sketch to my father and that when my father later became editor of the Journal he decided to use it on the cover of the magazine and asked permission of the artist to do so.


This would account, perhaps, for the entry in the Association meeting proceedings in 1903.

I recall that my father told me that the Association had borrowed the sketch on what I thought was more than one occasion to have new plates made. When he gave me the picture after his retirement in 1928 he reminded me that it should be made available if the Association wanted it for this purpose again. The sketch was one of my prized possessions from that time until I transferred from the Cavalry in 1935. I then passed it on to my brother who was still a Cavalryman. During the period I had the sketch it was seen by many persons familiar with it, including, I am reasonably certain, several members of your present Council. No question of ownership was raised then, nor had it been during my father's lifetime.

COLONEL HARRIS F. SCHERER
Headquarters Seventh Army
APO 46

• ARMOR set out on the search for Old Bill with visions of the poor fellow lost in some attic, unknown and unrecognized through the years. With Association records as the only documentation to come to light after a long and careful search, it was somewhat disconcerting to have the answers to a difficult question appear so close to home. ARMOR (and certainly the Remington Museum and historians) is gratified to round out an interesting story on a subject of such general interest to the branch, and trusts that, in its enthusiasm to promote the history and tradition of the mobile arm, no reflection was cast where none was intended.—Ed.

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Dates: See bottom of contents page.



THE COVER

The appearance of the Chief of Staff of the United States Army in a major address before the Armor Association was an auspicious occasion for the organization of mobile warfare and for the arm. General Collins' remarks were at once a tribute to Armor's past, a confirmation of the present and an inspiration for the future. His presence with a notable gathering of branch members was an honor appreciated by the mobile team.

Louisville Courier Journal

Reconnoitering

Col.
Abraham
Arnold
1885-1887



Brig. Gen.
Wesley
Merritt
1887-1907



Brig. Gen.
William
Carter
1908-1914
1917-1921



Brig. Gen.
James
Fisher
1915-1917



Brig. Gen.
Willard
Holbrook
1921-1924



Brig. Gen.
Malin
Craig
1925-1926



Brig. Gen.
Richard
Crittenberger
1927-1928



When the 63d Annual Meeting of the United States Armor Association (continuation of the United States Cavalry Association) opened on January 11th at Fort Knox, the fifteenth president in the history of the professional organization of mobile warfare was presiding.

In this issue bearing the report of the largest meeting in the Association's history it seems appropriate to look back over the years and round up for the membership some of the story surrounding the group of distinguished soldiers who have served in this important post—for few of us have been around long enough to know the tale at first hand.

On November 9, 1885, when a group of forward-looking cavalry officers got together at Fort Leavenworth, Kansas, to put under way this first of the combat arms associations, our branch was quite small and its members were scattered around the country. However, a home base was set up at the Service School at Fort Leavenworth, and Colonel Abraham K. Arnold was elected the first President.

The wide distribution of cavalymen and the somewhat more restricted communications of the time inspired the establishment of branches of the Association at West Point, New York, and Fort Reno, Indian Territory. Each of these was presided over by a Vice-President and Secretary.

The practice in the early years of meeting was for the members to assemble and read original papers on various military subjects, which were taken under discussion by the membership. Distribution of this material resulted in the publication of the first journal to serve as the medium to reach all members. *The Journal of the United States Cavalry Association* was launched in 1888.

General Wesley Merritt became President of the Association in 1887, a post he was to hold until 1907. His 20-year tenure is the longest period of all in the position.

Undoubtedly several mathematically inclined members have been scratching their heads over several things by now. For example, the Association was organized in 1885. That makes it 66 years old this past November. Why is this the 63d Annual Meeting? The magazine was put under way in 1888. That makes it—let's see—64 years old. Then how come this issue is the first of Volume LXI? And if the present President is the fifteenth, why do those two sets of seven photos line up to such a balanced fourteen?

All of this is an interesting story. To take the last item first, a check of the captions next to the photos on this page will show that General Carter played a return engagement. Like Cleveland, he had split terms.

The matters of meetings and volumes are based in the same reason. The Association simply ran into difficult times occasioned by something with

The Association Presidency

which we're all familiar—war. Not much over a dozen years of age, it came up against the Spanish-American War. The result—all members busy with primary duties requiring the sacrifice of annual meetings and publications for the years 1900 and 1901. The first World War produced another blank year in 1919. Thus we have three years deducted from the 66 years of organization, to make 1951's Annual Meeting the 63d. And three years chopped from 64 since the appearance of Volume I, Number 1, leaves us with LXI.

The Spanish-American War lapse brought a crisis in Association life, and it was only a strong letter from General Merritt, written at sea, and the efforts of a few members that kept things going.

It is interesting to note that six of the Association Presidents were Chiefs of Cavalry—Generals Holbrook, Crosby, Craig, Henry, Kromer and Herr. One of these, General Malin Craig, was Army Chief of Staff from 1935 to 1939, succeeding General MacArthur and preceding General Marshall.

Only one of the Presidents served a tour as Editor of the magazine. General Carter, who served the split term in the Presidency, as Captain Carter held the post of Editor-Secretary from 1892 to 1897.

The Presidency of the Association is an important position. Elected by the membership from among the senior professionals of the mobile arm, the President's guidance and prestige are reflected throughout the organization. The contribution made by the fourteen men whose pictures appear on this page is immeasurable. As a group they represent the tradition, the mission and the accomplishments of their arm over a substantial period in the history of the United States Army.

The demands on the time of these soldiers are well known to all. Their efforts on behalf of the Association are an indication of their high interest in this special field and a tribute to their qualities of leadership.

The Association is fortunate again in having Lt. General Willis D. Crittenberger as its President for 1952. His career in the mobile arm is in concert with everything the Association stands for. Of special significance has been his lengthy association with the development of mechanization in the United States Army.

Through sixty-six years the members of the Association have set a high standard in the selection of their Presidents, establishing a precedent to inspire the organization through the coming years.

The Editor

Brig. Gen.
Guy
Henry
1928-1924



Brig. Gen.
Leon
Kromer
1925-1928



Brig. Gen.
John
Herr
1929-1945



Brig. Gen.
I. D.
White
1946-1947



Brig. Gen.
Ernest
Herrman
1947-

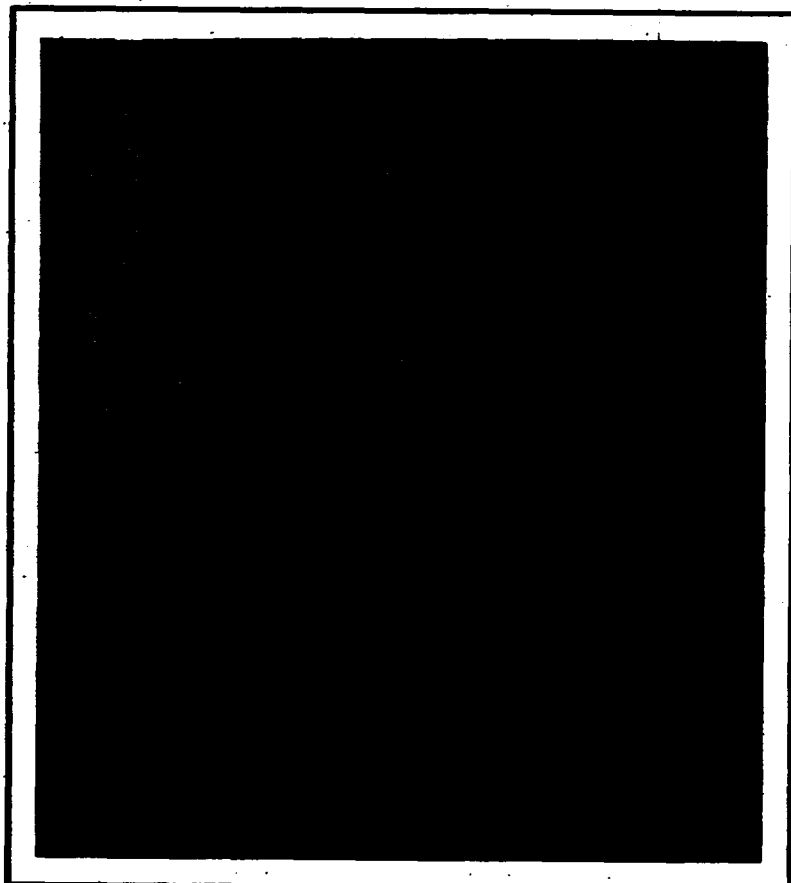


Brig. Gen.
Robert
Guy
1947-1949



Lt. Gen.
Willis
Crittenberger
1950-





Photos by U.S. Army

Armor personnel from around the country joined the great concentration of branch members at The Armored Center at Fort Knox on January 14th for a truly memorable gathering of the mobile arm—the 63d annual meeting of the United States Armor Association. The largest assemblage of members in the history of the professional organization of mobile warfare was on hand for a program climaxed by the address of the Army's Chief of Staff. Two thousand officers heard General Collins give the official and intimate story of our tank program in these very critical years

address of

GENERAL J. LAWTON COLLINS

United States Army Chief of Staff

PERHAPS the two most important military tactical developments—aside from the use of atomic power—of warfare in our time are the extensive and often decisive roles played by air power and armor. Yet the ancient arms of infantry and artillery have not been superseded primarily because modern battle is so complex that no single arm can win a decision.

Victory is won only by a proper combination of various powerful weapons—primarily infantry, artillery, armor, and air properly supported by the other arms and services. It is as important to recognize the importance of the battle team as it is to recognize that much of the success of the team depends on the support it receives.

Bearing in mind, then, that our emphasis must always be on the battle team, I should like to talk to you today about the member of the team closest to your hearts—Armor.

I have an exceptionally warm spot in my heart for armor because I had the great privilege of having the 2nd, 3rd, and 5th Armored Divisions under my command in the VII Corps for extensive periods from Normandy to the Elbe, and the 7th, 8th, and 9th were with us at one time or another.

As a matter of fact, it was the great tradition established by our Armor during World War II that motivated me to press for the establishment of "Armor" as a basic branch of the Army. As most of you know, there had been a tendency in recent years after we had armor units organic in the Infantry Regiment and in the Infantry Division, to amalgamate armor and infantry so closely as to lose the designation of "armored division."

I personally opposed this. I felt we would always need armored divisions. So long as there is ground to move on we will need troops specially trained, equipped, and organized to combine rapid mobility and great shock action. I know of no new weapon or concept which will lessen our need for armored units.

As you know our postwar emphasis on armor led to the assignment of a tank battalion as an organic unit of the standard infantry division, and a tank company as an organic unit of each infantry regiment. This means

before

The United States Armor Association

that our infantry divisions now have 140 medium tanks, or more mediums than we had in our light armored divisions during the early stages of World War II.

One of my first acts as Chief of Staff was to appoint the Department of the Army Armored Panel to button up all the loose ends of the tank program. As you know our current tank program, in large measure, is based upon their findings.

Not only do I welcome this opportunity to tell you something about the Army's tank program, but I am happy to have been invited to address such a fine assemblage of leaders. In my opinion, the successful operation of armored forces requires great qualities of leadership—bold action, swift movement, and skillful maneuvering.

Since I have mentioned leadership, I should like to take a moment to pay tribute here to one of the great leaders of World War II—Major General Maurice Rose of the 3rd Armored Division.

In March 1945, my VII Corps, in the First Army, had captured Cologne and with the V and VI Corps to the south were closing in on the broken German forces west of the Rhine. The VII Corps was given the northern section of the Remagen bridgehead and was told to attack to the east. I decided to crack the German line directly with armor instead of planning to make a break-through first with Infantry. The 3rd Armored was to lead out over the whole Corps front, followed on the right by the 104th Division and on the left by the 1st Division. I ordered the 3rd to proceed rapidly to the east by-passing resistance as far as practicable, leaving it for the infantry divisions to clean up as they followed.

Our general plan for the 3rd Armored was to give it successive objectives, with no particular time schedule but with the distant objective of Marburg.

The attack jumped off on the 25th of March. The 3rd Armored ran into considerable resistance in the form of German armor, road blocks and mine fields, but on the 28th, after four days of operations, Marburg fell into our hands. Then the First Army changed our direction of advance from east to north: we were ordered to advance to Paderborn to join with elements of the American Ninth Army which

had crossed the Rhine to the North.

As usual, the 3rd Armored was to lead the way but, as the front was too great for one division, we decided to give our Corps Cavalry, the 4th Cavalry Group, a narrow zone to the west of the 3rd Armored.

On the night of 28-29 March, I gave instructions to General Rose, who had assembled his principal subordinates at Marburg, to seize Paderborn, one hundred miles to the north, with a minimum of delay. Without



Major General Maurice Rose "... was one of our great armored division commanders; one of those great leaders who were always up front. I think he exemplified the true spirit of armor."

batting an eye, he coolly announced to his commanders that the 3rd would be in Paderborn the following night.

At dawn the next day, the 3rd Armored roared to the attack. It encountered only light resistance at the start, but by afternoon had run into suicide groups from the crack German tank training center at Paderborn, equipped with Tiger tanks and Panzerfausts. Night called a halt to the furious engagement, but not until the 3rd Armored and the 4th Cavalry Group had driven 90 road miles almost to the outskirts of Paderborn—so far as I know, the greatest single day's advance against opposition for any unit in the American Army.

About dusk that night, one of General Rose's task forces, about to enter Paderborn, was hit by one of the skill-

ful German tank detachments from Paderborn. In characteristic fashion, General Rose was with one of the leading elements of this column, which was cut off by the Germans. He was killed that night.

I have difficulty, even now, concealing my emotions when I talk about Maurice Rose. He was one of our great armored division commanders; one of those great leaders who were always up front. I think he exemplified the true spirit of armor.

I could go on and on about General Rose and the 3rd Armored and the other commanders and other armored units of the VII Corps, but I want to tell you something of our tank program. As you remember, at the end of World War II, the nation reverted to a peacetime economy. Production was stopped on military goods and concentrated on civilian products. Army appropriations were drastically cut and the reduced budget permitted only limited funds for research and development and almost none for production. The budget for research and development on all types of automotive equipment, of which tanks were only a part, averaged about \$5,000,000 a year. When this is compared to Chrysler's R & D budget of \$25,000,000 for the same period, you see how little we had. So as to best utilize those funds which were available, development was concentrated on major components, such as engines, transmissions, tracks, and armor plate.

During this same period our small budget permitted only limited progress in the development of new tanks. A new light tank was designed to mount the same caliber gun as was used on our World War II medium tanks, and design studies were prepared on medium and heavy tanks. The alternative was to spend all of our money on the development of only a few complete vehicles, which might be obsolete before we had to use them. Such a program would have meant a new fleet of vehicles made up of wholly unproven components or a new fleet that differed from World War II models only in the "trim." We felt that a program of that nature would have been shortsighted, and we chose a more basic and longer range solution.

You are all familiar with our decision to build a family of three tanks—a light-gun tank, a medium-gun

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tank, and a heavy-gun tank.

When the Korean war broke in June 1950, we had no light tank in production, and the tooling for our World War II model had been disassembled or reconverted to civilian production. No medium tanks were being produced but we were modernizing some 800 of our Pershings by equipping them with a newly developed 810 HP engine. In the medium field, the T42 was well along in the design stage. The new heavy was still only on paper.

Our problem then was to decide which tanks should be placed in production, since it had become obvious that our stock of World War II models and our reconverted Pershings would not see us through this period of emergency. No matter which models we chose we would have to retool and set up new facilities.

There were some advantages in going back to World War II models. They had been thoroughly tested, and industry knew how to build them. The disadvantages were that they did not have the fire power, maneuverability, and armor protection which we knew we could give in our new tanks. But, we knew if we went into production on our new designs, we would have many troubles in the final development stages. Each of them had many unproven components which had been insufficiently tested or had not been tested at all.

After a careful review of all the factors, we decided that since the prototype of the light tank had undergone extensive testing we could afford to gamble on it. In the medium field we were not in so fortunate a position. However, we still decided to go ahead and use the new high velocity 90mm gun. To keep the gamble to a minimum, we decided to take the newly designed turret and mount it on the chassis of the combat proven General Pershing. This combination, now known as the M47, was placed in production late in the summer of 1951.

We were also forced to take other gambles. Since twelve to eighteen months' lead time is required from the time a contract is let until the first tank comes off the production line, we decided to forego the normal procedure of building pilot models for engineering and service tests. We felt that if any deficiencies occurred they could be corrected in the early phases of pro-

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duction, or modified later before issue to troops.

It is history now that we did find some serious deficiencies in both the new light and medium tanks. And, as was expected, they were generally confined to the turret components. Early tests revealed fifteen major deficiencies in the medium tank and about the same number in the light tank which would have to be corrected before these tanks could be considered suitable for general issue to troops.

Most of the deficiencies could not have been foreseen and were to be ex-



"It is history now that we did find some serious deficiencies in both the new light and medium tanks ... During the period that we have been working to correct [them], both lights and mediums have continued to roll off production lines ... We are still a year ahead of the time schedule we would have been on had we waited for complete test and development ... it has been worth the gamble."

pected in the production of untested vehicles. In the light tank, for example, two unusual deficiencies existed. One was an engine failure, the other a torsion bar failure; both were traced to manufacturing errors. Changes in personnel since World War II had created critical shortages of certain types of skilled workers, and the deficiencies emphasized the importance of adequately training the workman in the plant.

All of the deficiencies which I have referred to have been corrected in the vehicles now coming off the production lines. The modifications of the medium tanks are now being tested at Camp Irwin, California, and the light tanks are to be tested at Camp Drum, New York, the latter part of this month. It is our belief that the

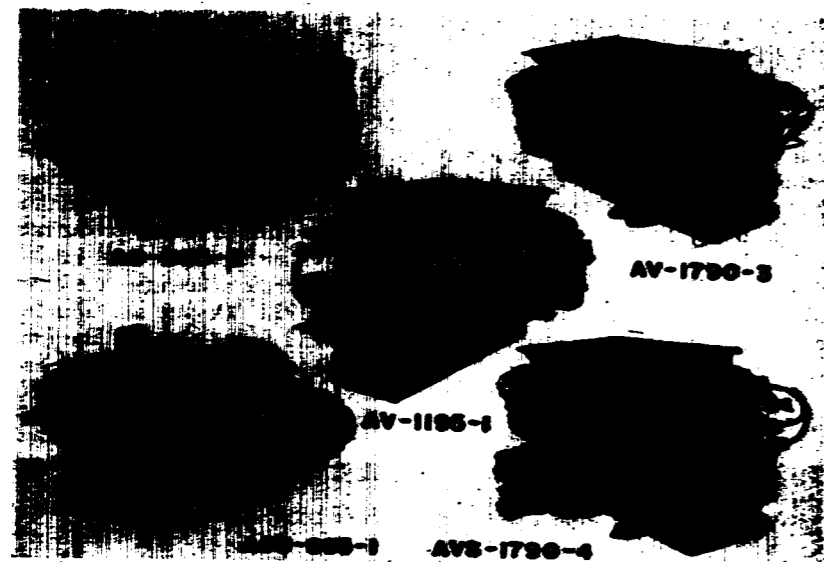
outcome of these tests will further prove that our new tanks are better than anything we have had before and more than a match for their Soviet counterparts.

During the period that we have been working to correct the various deficiencies, both lights and mediums have continued to roll off production lines. We anticipate the early models will have their deficiencies corrected by July 1952. Despite our troubles, we are still a year ahead of the time schedule we would have been on had we waited for complete test and development before going into produc-

tion. In other words, it has been worth the gamble.

As for our heavy tank program, it has not had as high a priority as the light and medium programs. However, limited production of new heavies is scheduled to begin early this year. Initial testing of the pilot is being conducted at Aberdeen right now.

I think one of the greatest advances in our tank program is increased standardization. During World War II our medium tanks were powered by six different types of engines. In addition our cargo tractors and self-propelled artillery were powered with still another type. The supply, maintenance, and training problems were terrifically complex and demanded simplification.



"We took steps to develop a family of engines and transmissions that could be used in all types of military vehicles . . . This is . . . paying great dividends."

We took steps to develop a family of engines and transmissions that could be used in all types of military vehicles. As you know, this action is already paying great dividends. We are using the same power plant that is in the new light tank in ten other vehicles. The power plant that is used in the medium tank is used in four other combat vehicles. This standardization of components results in savings in development and testing costs and reduces the spare parts required in the pipeline and by the different echelons of maintenance. It cuts down the number of engines on which mechanics must be trained. This saves training time which in turn reduces training and administrative staffs and increases the number of men available for combat units.

And these new 810 HP military air-cooled engines which we have standardized are almost as cheap as the 500 HP liquid-cooled commercial engines we used in World War II, and our studies prove that the cost per horsepower is 10-25 per cent less than the World War II engines. Some of the air-cooled engines do use more gasoline which is a logistical drawback, but we are making modifications which will reduce gas consumption with those engines.

Many other components have been standardized too, and many additional economies will result. For example, our tank companies and battalions equipped with medium tanks will use the same type carburetor in the tanks

and in tank recovery vehicles. This means only one spare carburetor is required where two were formerly needed. Since the unit cost is \$175.21, it is a simple problem in arithmetic to determine the over-all Army saving.

From time to time there have been statements to the effect that our tanks are no match for the Russians'. Results obtained in Korea prove otherwise. Our Patton tanks in action there have been more than a match for the Russian mediums. Even our old M4 Sherman tanks held their own with the tanks and self-propelled guns employed by the enemy thus far.

It is not generally understood why



"Our mediums have defeated Soviet mediums in every tank engagement . . ."

our armor in the early stages in Korea comprised only light tanks, which had to combat Soviet mediums at a great disadvantage.

If our occupation forces in Japan had had medium and heavy tanks they would have ruined not only the bridges but the roads as well. The cost of renovation would have been prohibitive. Consequently, we fared badly in tank engagements until we could get our own mediums into action. Since then, however, they have defeated the Soviet mediums in every tank engagement to date.

The technical problems like those encountered with our new tanks can never be completely eliminated when development and production overlap. And there are other problems inherent in a speeded-up production program. I have already mentioned the shortage of experienced industrial workers in the tank plants. The manufacturer also has been beset with a shortage of casting facilities, critical materials and machine tools, to mention only some of the major difficulties.

There are relatively few foundries in the United States capable of turning out large turret and hull castings, and those foundries that are available require additional facilities. The Army has been making strenuous efforts to activate new sources for these castings and it now appears that we will be in a position in the near future to award contracts to other companies to supply the needed castings.

In general, the availability of production materials is improving considerably under the Controlled Materials Plan and due to expansion of basic material sources. However, there are a few critical materials, such as nickel, which remain in short supply and which must be carefully allocated by the National Production Authority. While it is not expected at this time that a shortage of these materials will delay production, the close margin on which our program is operating leaves no reserve to meet unforeseen problems which might arise.

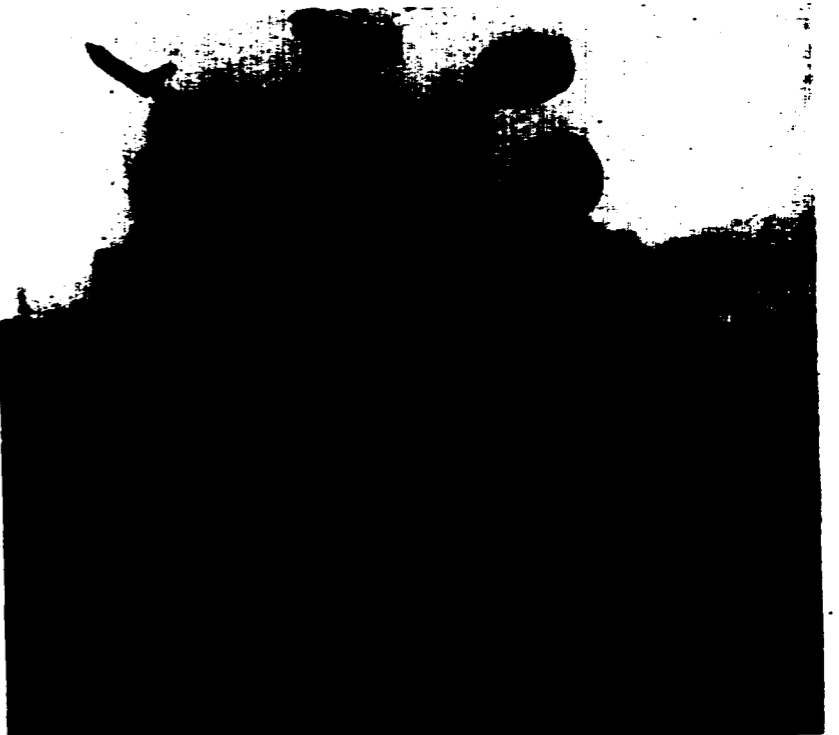
Few of us fully appreciate the magnitude of our program to obtain the strategic raw materials needed for our tank production. In each M47 tank there is a striking and thought-provoking example of the size and complexity of that program. Each tank requires:

- 1,915 pounds of chromium of which 99 per cent of the ore is imported.
- 950 pounds of manganese of which 92 per cent is imported.
- 520 pounds of nickel of which 92 per cent is imported.
- 100 pounds of tin of which 78 per cent is imported.
- 6,512 pounds of bauxite (the ore of aluminum) of which 65 per cent is imported.
- 1,484 pounds of copper of which 29 per cent is imported.

And there are many other examples, which are equally as impressive.

The availability of machine tools will also continue to be a key factor in our efforts to meet production objectives. While the Army has made maximum use of governmental reserves and is diverting machine tools from lesser important programs, the only real solution to the machine tool problem lies in the delivery of new tools from the machine tool industry. It appears as though it will be at least another year before any appreciable supply can be expected from this quarter.

To give you some idea of the coordination required in producing a tank, let me quote you some figures on the number of separate contractors involved in furnishing different assemblies and supplies for the new light tank being produced by the Cadillac Corporation. The prime contractor has let contracts to 3,000 dif-



"In the Army . . . there is a more important element [than equipment]—the man. To you, officers of all ranks, I look to uphold your heavy responsibilities of leading the finest person in the world—the American soldier."

ferent subcontractors who, in turn, have let contracts to an additional 9,000 firms. The chain of manufacture and supply for this one tank alone reaches 24 states.

We hope our tank program is now on a firm production basis. There were difficulties, but we knew there would be, and we met them. We took some risks, but they were calculated ones, and they have paid off. We resisted the temptation of immediate production gains in order to establish a firm basis for a balanced long-range tank program, and I am still confident that it will pay off.

I think Korea has proven again that our concepts and doctrines are sound. Our experiences there have confirmed the need for organic armored units with our infantry divisions. Even though Korea is not considered good tank country, our commanders at all levels have lauded the accomplishments of our tank units and have emphasized the importance of armor in the ground combat team. I think the Army's current thinking on armor was reflected in last year's budget which allocated more funds to armor than to any other single Army item.

I have talked at such length about

hardware this morning that I fear that there may have arisen a misconception in the minds of some—that equipment is everything. In the Army, however, there is a more important element—the man.

We cannot expect too much of machines alone. The finest equipment in the world is literally worthless without technicians trained as soldiers—hardened, seasoned, and highly skilled in its maintenance and operation.

Once the soldier is trained to his weapon, he becomes a part of a highly developed combat team of infantry, artillery, armor, and air. These battle teams are the most difficult, the most complicated of all teams to create. They must be capable of operating on unfamiliar ground, in darkness as well as in daylight, amid incredible confusion, danger, hardship, and discouragement. The leadership of such teams is of the utmost importance; it requires judgment, intelligence, courage, integrity, and resourcefulness.

To you, officers of all ranks, I look to uphold your heavy responsibilities of leading the finest person in the world—the American soldier.

The Sixty-third Annual Meeting of The United States Armor Association

"It is the first time, as far as I know, that the Chief of Staff has addressed us. It is the first time we have gathered in the field and the first association of the occasion with the on-the-ground development of the arm."

Thus spoke Lt. General Willis D. Crittenberger, President of the United States Armor Association, in opening the 63d Annual Meeting of the organization of mobile warfare, held this year at The Armored Center, Fort Knox, Kentucky, on January 14.

Four hundred and five active members of the Association were on hand in Theater Number 1 when the meeting was called to order. In addition, another 843 were represented by proxy, for a total voting strength of 1,237. This was the largest attendance in the entire history of the Association. The total representation was the most surprising in view of the fact that hundreds of the members around the world were in no position to respond to the call for the meeting.

A distinguished group of Armor representatives was present at the meeting, including Lt. Gen. Willis D. Crittenberger, Commanding General of First Army; Lt. Gen. Edward H. Brooks, Commanding General of Second Army; Lt. Gen. Geoffrey Keyes, Weapons System Evaluation Group; Maj. Gen. I. D. White, Commanding General of The Armored Center and School; Maj. Gen. John H. Collier, Inspector of Armor in the Office of the Chief of Army Field Forces; Maj. Gen. D. W. McGowan, Commanding General of the 50th Armored Division, NG; Maj. Gen. Albert Sidney Johnson, Commanding General of the 49th Armored Division, NG; Maj. Gen. Bruce C. Clarke, Commanding General of the 1st Armored Division; Brig. Gen. R. E. S. Williamson, Commanding General of the 3d Armored Division and Brig. Gen. Arthur Walk, Assistant Division Commander; Brig. Gen. John C. Macdonald, Chief of Staff of The Armored Center, soon to command the Armored Combat Training Area,

Camp Irwin, California; Col. William J. Bradley, Chief of the Armor Career Management Section; Col. William P. Withers, President of the Armor Development Board; Major William G. Bell, Secretary of the Armor Association and Editor of ARMOR magazine; and commanders of many armor regiments and battalions, Regular, Reserve and National Guard, plus the many branch members, of all ranks and all types of Armor assignments, troop, staff and school.

Major General I. D. White, Commanding General of The Armored Center, host to the meeting, opened the day's program with a word of welcome, and the introduction of General Crittenberger. The President requested that the members of the Executive Council join him on the stage, and the meeting was called to order.

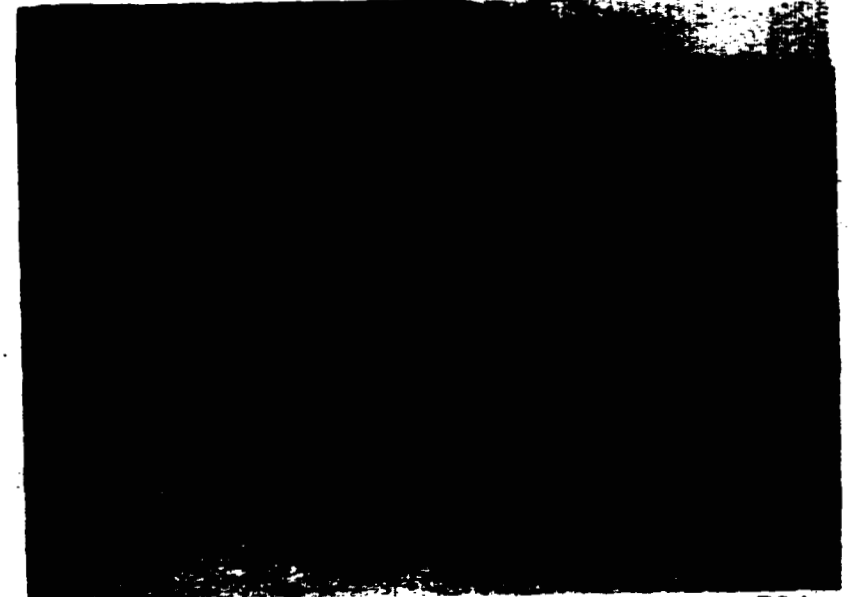
During the year the Council and a special committee of Armor officers at Fort Knox made a study of the Constitution of the Association. The results of that study indicated that a

complete revision was necessary and might better be submitted to the membership for consideration and approval by means of a motion of adoption rather than through involved attempts at amendment.

The proposed revision of the Constitution was made the first order of business of the meeting in view of the liberalization built into the Membership Article. Discussion of the revision led to a vote on the motion to adopt, showing 1,237 in favor, including a unanimous action on the part of all present, as against 11 opposed to adoption, all proxies.

The reading of the minutes of the previous meeting of the Association was unanimously dispensed with, and the Secretary then read the Annual Report, covering the financial and general affairs of the Association. These appear elsewhere in this issue of ARMOR.

Some discussion arose with respect to the details behind the Association sponsorship of a mounted service museum and a history of Cavalry. Colonel F. J. Gillespie, who originated the point of discussion, moved that no funds or effort be expended for these projects unless all agencies that contributed to the development of the mounted service were consulted. The motion, which failed to be seconded, was put to a vote, without objection, to be rejected 1,219 to 18. Colonel Gillespie was referred to the details of the museum project appearing on page 18 of the March-April 1951 issue, which answered his questions.



U.S. Army
The Chief of Staff with some of the senior Armor officers present. Left to right—Maj. Gen. Johnson, Brig. Gen. Williamson, Maj. Gen. McGowan, Lt. Gen. Crittenberger, Gen. Collins, Lt. Gen. Brooks, Lt. Gen. Keyes and Maj. Gen. White.

The next order of business was the election of officers. General Crittenberger turned the meeting over to Major General D. W. McGowan, Chairman of a Nominating Committee which included also Colonel William J. Bradley and Colonel Herbert H. Frost—one member representing the Regular establishment, one the National Guard and one the Reserve. A slate was submitted for consideration. Nominations were opened, and Colonel C. W. Abrams was entered from the floor, to be placed on the

slate in substitution for a Council member of the previous year. A motion to close the nominations was seconded and the slate was unanimously carried. The distinction and strength of the governing body augurs well for the coming year.

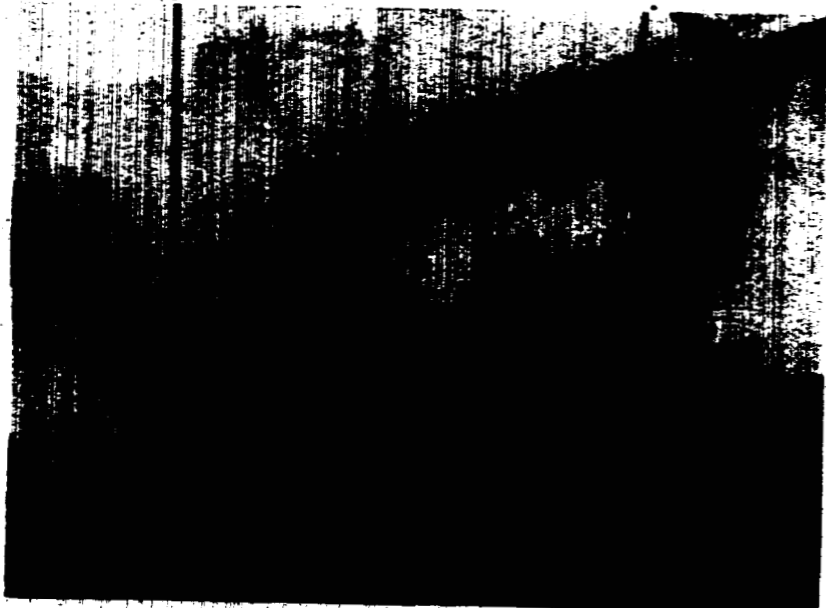
Colonel Gillespie then proposed that the Association entertain the possibility of sponsoring a movement to use the name "armor" in place of "armored" in relation to such designations as the armored division, the Armored Center, the Armored School,



U.S. Army
Gen. Collins, escorted by Gen. White and Gen. Crittenberger, entering Sadovaki Field House, and delivering his address.



U.S. Army
At a press conference on his arrival at Fort Knox, Gen. Collins answers some questions concerning the armor picture.



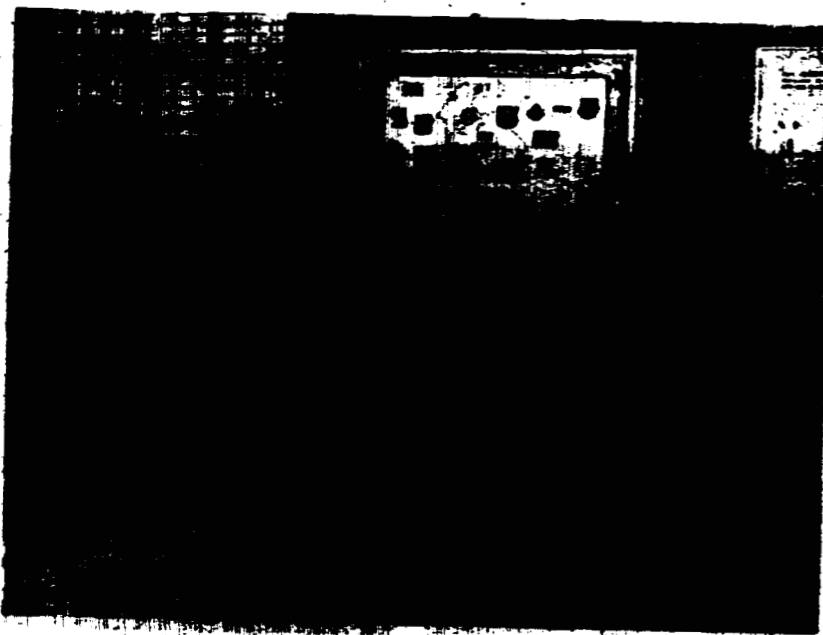
U.S. Army
General Collins riding the lead M48 of a section manned by Weapons Department crews demonstrating the Armored School Tank Crew Proficiency Course.

etc. Colonel Thomas D. Roberts moved that the Executive Council study the proposal to sponsor the redesignation. The motion was seconded and passed.

Discussion of a combined magazine as against a branch magazine, proposed by Colonel Louis Hammack, resulted in an overwhelming response in favor of maintaining an independent publication.

The appreciation of the large meeting available to the greatest number of members was expressed by several members and the President extended the thanks of the Association to General White, The Armored Center, School and Board. The business session of the 63d Annual Meeting of the Armor Association was then adjourned.

Army Field Forces Board Number



U.S. Army
Discussing the Armor story at the Association meeting at Fort Knox. L to R—Gen. McGowan, Gen. Clark, Gen. Crittenger, Gen. White and Gen. Collins.

2 took over the program following the adjournment of the business meeting. Colonel William P. Withers, President of the Board, discussed the latest developments in the combat vehicles line, highly interesting technical background for all tankers.

The Armored School then entered the program with a presentation on the subject of "Trends in Armor," given by Lt. Colonel Edwards of the Command and Staff Department. The material, which represents School thought along general lines appears in article form elsewhere in this issue.

Attention now switched from Theater Number 1 to Sadowski Field House. Upwards of 2,000 officers converged upon this point to fill the building to capacity for the feature event of the Association's 63d Annual Meeting—the address of the Chief of Staff of the United States Army.

General Collins was received with full honors upon his arrival at the Field House, where smartly turned out troops, band and artillery were formed for the firing of the salute and inspection. The Chief of Staff, accompanied by The Armored Center commander then entered the Field House to pass an impressive 3d Armored Division Honor Guard and move down the center aisle to the front of the house as the assemblage stood at attention.

In introducing General Collins General Crittenger took note of "his well known interest in Armor, his broad experience with it on the battlefield, and the highly important post he holds in the defense of our country and the free world" and of the fact that "his presence here, in his very busy schedule, is an indication of the recognition he accords Armor's place in modern combat." Concluding his introduction of the Chief of Staff, General Crittenger asserted that "the United States Armor Association, in its Annual Meeting is entirely conscious of the honor he does us, and of the vital import of his views on a subject that is of such compelling interest to all of us."

The significance of General Collins' remarks is evident in the wide coverage accorded them in the press. His address appears as the lead article

ARMOR—January-February, 1952

in this issue of ARMOR, where it may be studied by all members of the using arm as the official story in our field of primary interest, thus receiving the full attention that it deserves. Touching upon such key matters as the family of tanks concept, the need for the armored division, the role of the tank in the future, and the importance of Armor's role in the ground picture, his remarks are an inspiration to the Armor Branch.

The afternoon portion of the program moved to the field where the Weapons Department opened the session with a demonstration of the Tank Crew Proficiency Course. The initial crew through the course was composed entirely of lieutenants attending the Officers Course at the Armored School. Using live ammunition, they ran the course to take under fire all possible types of target, including air and ground. Visitors, including General Collins, rode standing in the bed of a 2½ ton truck immediately behind the tank to observe the course. A second round was made with a Weapons Department crew manning the Patton.

From here the action moved to a point several miles away for a demonstration by Board Number 2 of all types of vehicles. Light, medium and heavy tanks, personnel carriers and trucks were demonstrated, including the firing on targets at appropriate ranges. Various new engineer devices were displayed and described and visitors were able to look over the many vehicles. Much of the Board presentation was in the classified area.

A closed conference attended by General Collins and senior Armor officers took place in late afternoon, at which some of the more highly classified material was covered.

In the evening the official dinner topped off a day whose success was assured by the hospitality and arrangements of Major General I. D. White and The Armored Center, and the many agencies and individuals who contributed to the program.

The 63d Annual Meeting of the United States Armor Association was an epochal event and an outstanding success. The members of the organization of mobile warfare look forward to carrying on the precedent next year and in years to follow.

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MEMBERSHIP IN THE ASSOCIATION

(See Page 18)

Membership in the United States Armor Association is of four classes:

Active	Junior
Associate	Honorary

ACTIVE: The key phrase concerning your eligibility, as stated in the constitution is . . . "assigned to, detailed in or serving with." Officers of any branch and all components whose status meets one of the above provisions, are eligible for active membership. This includes assignments to troop units, The Armored School, The Armored Center, The Armor Board, a staff assignment. It includes all retired personnel whose commissioned career was in the mobile arm.

ASSOCIATE: All present and former commissioned officers, warrant officers and noncommissioned officers of the Armed Services are eligible for this class of membership. Although not entitled to vote or hold office, associate members are entitled to attend meetings, take part in discussions, and receive book department benefits and other membership privileges.

JUNIOR: This is a special class of membership at a special military student rate to assist in furthering professional careers. The students in such schools as West Point, VMI, Valley Forge, Culver, The Citadel, Texas A & M, and so on, are open for this membership. The junior member may also attend meetings and take part in discussions.

HONORARY: The Executive Council selects persons distinguished in military, naval or air service, or in learning, to honorary membership.

Every Armor officer should be an active member of his branch Association. Regardless of whether ARMOR magazine is readily available through unit subscription or by other means, the Armor officer should be an active member and contribute his strength and assistance to the organization in its aims and purposes, while receiving the benefits of professional association in return, as well as a personal copy of the magazine.

Anyone may subscribe to **ARMOR**

THE NEW COUNCIL

The Association's governing body for 1952 represents the field of armor. All components of the Army are included. The honorary officials have served distinguished careers. A president intimately identified with armor tops a list that includes the commanders of two armored divisions, a combat command and two regiments; the present and a former Armored Center and School commander; the Inspector of Armor; the commander of the Armored Combat Training Area; the Chief of the Armor Center Management Section; a distinguished legislator who maintains an active interest in armor; and others in key staff assignments, whose records in armor speak for themselves.—Ed.

Honorary President

MAJ. GEN. CUY V. HENRY, RET.

President

LT. GEN. WELLS B. CRITTENDEN

Honorary Vice-Presidents

GENERAL JACOB L. BEVERS, RET.

LT. GEN. ALVIN C. GILLEM, RET.

LT. GEN. GHOFFNEY KEYES

LT. GEN. EDWARD H. BROOKS

MAJ. GEN. HERBERT H. HARRISON, RET.

Vice-Presidents

MAJ. GEN. ROBERT R. CAY

MAJ. GEN. ALBERT HERBERT JOHNSON, NC

COL. HERBERT H. PROST, USAR

Secretary-Treasurer

MAJ. WILLIAM GARDNER HILL

Additional Council Members

MAJ. GEN. I. B. WHITE

MAJ. GEN. JOHN H. COLLIER

MAJ. GEN. BRUCE C. CLARKE

BRIG. GEN. JOHN C. MACDONALD

BRIG. GEN. HARRY SEMMES, USAR

BRIG. GEN. PAUL M. BOWEN, RET.

COL. CHRISTOPHER W. ABRAMS

COL. WILHELM J. HENLEY

COL. HERBERT T. CHERRY

COL. JAMES O. CURTIS

COL. WILHELM C. BOLVEN

COL. PAUL B. HARKINS

COL. BRAD P. JOHNSON

COL. HERBERT GUYTON LANGE, JR., USAR

COL. JAMES H. FOLK

ANNUAL REPORT

To the Members of the United States Armor Association:

Submitted herewith, as required by the Constitution, is the report of the Secretary-Treasurer-Editor for the year 1951, covering the general affairs of the Association and its publication:

GENERAL

The Association

The passage of the Army Organization Act and the outbreak of war in Korea came in the same month of 1950. Both were of great significance to the mobile branch of the ground forces, and both guaranteed the importance of the year 1951 to the United States Armor Association and to mobile warfare.

The Association was ideally suited as a result of its constitutional aims and its professional standing, to promote certain adjustments arising from the change of branch name. The consequent change in Association and Journal names made necessary a general dissemination of information, a maintenance of continuity, a perpetuation of history and tradition, the elimination of certain differences, the fusing of elements and the selling of innovation. The Association's publication was the primary carrying instrument.

The opening of 1951 brought the new branch insignia. Full coverage was given through the magazine of the Association, and advance insignia were procured and one set presented by the President of the Association, on behalf of the membership, to the Commanding Officer of every tank battalion in the Army, including those in Korea.

As a further contribution to the solidarity of the arm, a cable went forward from the President to the Commanding Officer of each tank battalion in Korea, expressing on behalf of the entire membership of the Association a message of confidence and pride in the excellent performance of duty of those battalions, and their contributions to the high standards of U. S. Armor.

With an eye to the professional grounding of the specialists in mobility, and in order to perpetuate the highly valuable history and traditions of the mobile arm, the governing body has considered several proposals as appropriate Association projects, among them the establishment of a mounted service museum, and the publication of a history of cavalry. These are in preliminary stages only, and will be presented to the membership in due course when some sort of working base should be set down.

During the year a special committee of Armor officers made a detailed study of the Constitution of the Association. Although fundamentally sound, the 66-year-old document required a revision beyond its periodic amendment to make it a thoroughly workable instrument in terms of today. A proposed revision was presented to the membership with the call for the annual meeting, to be a subject for vote at the meeting.

In the belief that a substantial library at Association Headquarters is a professional necessity, and can be of great service editorially and to the entire membership, the Secretary put under way during 1951 a campaign to enlarge the very small existing library, in which many gaps exist along the lines of material on mobility. As an adjunct to this, the editorial reference file of standard reference

works was built up during the year. The library expansion will continue in the coming year. Thanks are due the several individuals who responded with a contribution of books.

A badly needed dressing up of Association Headquarters in Washington, begun in 1950, was completed in 1951. In the equipment line, the 19-year-old graphotype machine, used for cutting all addresses, was replaced by a new machine at year's end. All in all, the Association's physical establishment is in excellent shape for future operations.

The Magazine

The Associations of the ground combat arms by their very nature consist primarily of their magazines. This is particularly so of those such as our own, with an active duty staff and no paid advertising. Lacking procurement responsibilities, and with no tie to the industrial area, the using arms center their attention upon their primary function. The magazine is the tie for a membership scattered around the world.

Nine issues of ARMOR have come from the press. With the first of these the editor attempted to set a high standard and establish for the magazine a recognition and reputation, first in its special field and mission, after that in every related area. That has been the theme behind the last nine issues, and it is intended that it be projected into the future.

In an attempt to further that aim, several issues of ARMOR were entered in the Magazine Show of 1951, sponsored by the American Institute of Graphic Arts. The first issue of 1951 placed, being selected by a distinguished panel of judges as superior on two counts.

Proceeding from presentation to content, each issue has been carefully drawn with respect to balance. Effort has been made to maintain perspective, so that the war in Korea, for example, is covered, but not to the exclusion of the long-range bases of our subject—training, doctrine, research, equipment, organization, tactics, history, tradition and the many things that go to make up the whole.

Editorial policy, it may be noted, has been insistent with respect to the armored division and the medium tank. Teamwork has been emphasized above all else. Armor's interests have been voiced. Accomplishments affecting Armor have been appreciated. Mobility has been the theme, and it has been related to various parts of the world and to other countries and armies. Comment from all grades, top to bottom, has been offered, and authorship has been select and diverse.

The subscription trend has been steadily upward. The support of commanders in the field has been most gratifying. Promotion has been active, and a total of 2,341 new subscribers in 1951 has resulted in a net gain of 1,524 as against 780 for 1950, and has brought the paid circulation of the magazine over the 5,000 mark for the first time since 1945, with the number of copies ordered on the last issue of 1951 equalling that of the issue of mid-1944, at the height of World War II.

Comment within and outside of the military indicates that ARMOR stands up well with any magazine in the field. To maintain that standing, and in fact advance it, will require the maintenance of present rates for membership-subscription, and the continuation of such ex-

FINANCIAL REPORT

UNITED STATES ARMOR ASSOCIATION
1951

CASH RECEIPTS & EXPENDITURES

Department	Receipts	Expenditures
ARMOR Magazine	\$21,506.19	\$15,672.41
Book Department	2,773.01	1,893.40
Rent & Sub-Lease	423.00	1,834.47
11th Armored Division Association	1,542.99	143.92
Income from Securities	151.00	
Office Furniture & Equipment	100.00	910.95
Maintenance (Office Machinery)		130.20
Council Meeting Expense		73.75
Miscellaneous	54.54	606.54
Insurance	1.76	34.02
Salaries		2,041.60
Taxes:		
Social Security		72.00
Withholding		316.80
D. C. Sales		1.40
D. C. Personal Property		23.29
Stationery & Postage		1,511.85
Office & Shipping Supplies		728.87
Telephone & Telegraph		540.55
Janitor Service		99.00
	\$26,554.49	\$26,753.02
Bank Balance (1 January 1951)	409.72	
Bank Balance (31 December 1951)		309.19
TOTAL RECEIPTS & EXPENDITURES	\$27,044.21	\$27,044.21
Total Assets		\$ 9,565.15
Total Liabilities		950.00
NET VALUE of the Association (31 December 1951)		\$8,615.07

penses as color throughout the magazine, art work, varnished covers, high grade stock and liberal illustration.

The Book Department

The sale of books through the Book Department represents the only source of income for the Association other than the principal one of membership-subscription. Book publishers grant varying discounts for their publications ranging from 10 to 40%. The average is probably somewhere in the neighborhood of 25%.

The Book Department is able to supply any book in the English language, if available. But book business is very light as a whole. The additional means available to the Association for correcting this involve the most important elements of operation—time, money and personnel. Very close to the maximum use of these three ingredients obtains at the present time.

A discount, prepublication price advantages and postage payments are offered members as an inducement to use the book service. Thus they help themselves while helping the organization. The degree of value of the book business to the Association should be evident to all.

SUMMARY

In the light of its mission, the Association is carrying out its responsibilities. Its financial condition is sound and improving. Accomplishments resulting from expenditures in the last 18 months are such that 1952 should find a gradual strengthening of the financial base with no sacrifice of the carrying out of all responsibilities.

The Armor Association is a recognized professional organization in a highly important field. The end of 1951 discloses a remolded and welded organization of sound reputation, with great potential to fill a definite need. There should be no limit to the year ahead.

CONSTITUTION & BY-LAWS OF THE UNITED STATES ARMOR ASSOCIATION

CONSTITUTION

ARTICLE I. Name.

The name of this Association is THE UNITED STATES ARMOR ASSOCIATION.

ARTICLE II. Headquarters.

The headquarters of this Association is Washington, D. C., or such other place as the Executive Council shall determine.

ARTICLE III. Object.

1. The aims and purposes of this Association are to disseminate knowledge of the military art 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.

2. There shall be no capital stock, and no distribution of profits to any officer, member or other person, but the entire income of the Association from all sources shall be applied and used in the conduct of its activities and in furtherance of its object as set forth in Article III, subparagraph 1.

ARTICLE IV. Membership and Qualifications for Membership.

1. Members of the United States Armor Association are classified as follows:

- a. Active Members.
- b. Associate Members.
- c. Honorary Members.
- d. Junior Members.

2. The qualifications for membership are as follows:

a. Active members: All general officers of the Regular Army or Army of the United States; and all officers and warrant officers assigned to, detailed in, or serving with Armor shall be eligible. Excepting general officers, any change in official status from any one of the above described conditions will serve to terminate Active membership on the last day of the calendar month within which the change has occurred, and the individual concerned shall assume the status of Associate member.

b. Associate members: Those transferred from Active membership and all other present and former commissioned officers, warrant officers and noncommissioned officers of honorable record in the military, naval or air service, shall be eligible. Such members shall not have the right either to vote or hold office; otherwise they shall have the privileges of members.

c. Honorary members: Persons distinguished in military, naval or air service or learning shall be eligible upon election by a majority vote of the Executive Council. Such members shall not be subject to the obligations of active or associate members nor entitled to the right either

to vote or to hold office. Otherwise they shall have the privileges of members, including the privilege to attend meetings and to engage in discussions.

d. Junior members: Students of the Service Academies, Military Schools and ROTC institutions shall be eligible. Annual dues shall be at a reduced rate as determined by the Executive Council. Such members not to be entitled to vote or hold office; otherwise they shall have the privileges of members.

3. The ruling of the Executive Council on all applications for membership shall be final.

4. Membership in this Association may be terminated for cause at any regular or special meeting of the Association upon concurrence of three-fourths of the members attending said meeting; but only after the member concerned has been advised by written notice of said proposed action at least twenty days prior to such meeting, which written notice shall have been mailed to his address of record retained in the office of the Association, and only after said member has been given an opportunity to be heard at said meeting. Said member will be given an opportunity to be heard at said meeting if the member indicates his desire to the Secretary-Treasurer prior to said meeting.

5. Active members only shall be entitled to hold office and to vote. Each active member shall have one vote which may be cast either in person or by duly executed proxy.

ARTICLE V. Officers and Their Election.

1. The officers of the Association shall be as follows: President, First, Second and Third Vice-President, Secretary-Treasurer, Editor and fifteen (15) elected members of the Executive Council.

2. The President, the three Vice-Presidents, and the fifteen (15) elected members of the Executive Council shall be elected by secret written ballot at the annual meeting of the Association. A plurality of the votes cast shall be requisite for election.

3. The Executive Council which initially shall consist of the President, the three Vice-Presidents and fifteen (15) elected members shall appoint the Secretary-Treasurer and the Editor before the close of the month in which the annual meeting is held. Upon appointment, the Secretary-Treasurer and the Editor shall become members of the Executive Council.

4. The terms of all officers shall begin immediately after their election or appointment and shall continue for one year or until their successors have been duly elected or appointed.

5. The Executive Council shall manage the business and property of the Association consistent with law and this constitution; shall have power to make and amend the by-laws for its own government, which by-laws shall not be inconsistent with law or this constitution; and shall have the power to provide in the by-laws for the appointment of such other officers, agents and/or employees as it

shall deem necessary and proper, and to prescribe their duties and compensation.

6. If a vacancy occurs in the office of the President, the unexpired term shall be filled by the First, Second or Third Vice-President, in order. If a vacancy occurs in any other elective office, it shall be filled by election at the next business meeting of the Association. The President may, however, make an interim appointment pending said election of a successor.

ARTICLE VI. Meetings.

1. The annual or regular meeting of the Association shall be held in January of each year.

2. Special meetings may, and upon the written request of twenty (20) members, shall be called by the President at other times.

3. One month's notice of regular and special meetings shall be given. Such notice shall be deemed to have been given when published in an issue of ARMOR at least one month before such meeting, and a copy thereof mailed to each member at his address of record retained in the office of the Association.

4. Five per cent (5%) of the active membership of the Association, present in person or by proxy, shall constitute a quorum for the transaction of business, provided that at least ten (10) active members are present in person.

ARTICLE VII. Amendments.

1. This constitution may be amended or repealed by a vote of two thirds of the active members of the Association present in person or by proxy at a duly called meeting of the Association, provided that the notice of such meeting shall contain a notice of intent to amend or repeal as well as a copy of the proposed amendment or repeal. Recommendations for amendment or repeal shall be presented to the Secretary-Treasurer in writing signed by not less than ten (10) active members of the Association at least two months before the date of the meeting at which the proposed amendment or repeal is to be considered.

BY-LAWS

ARTICLE I. Object.

1. In furtherance of its aims and purposes, this Association shall publish with such frequency as may be determined from time to time by the Executive Council, a professional and scientific journal to be known as ARMOR, and shall conduct a book department for the sale of books, maps and periodicals to its members and to the general public.

2. The object of this Association may be further promoted by such other lawful means as the Association or its Executive Council from time to time shall deem appropriate.

ARTICLE II. Membership.

1. For the determination of eligibility for active membership in this Association, the designation "officers and warrant officers assigned to, detailed in, or serving with Armor" shall include the Regular Army, the National Guard and the Organized Reserve Corps.

2. Any person desiring to become an active or associate

member shall make application to the Secretary, which application shall set forth facts establishing his eligibility and be accompanied by the payment of at least one year's dues, the amount of which shall be determined from time to time by the Executive Council. The applicant's eligibility appearing, the Secretary may grant the membership.

3. All active and associate members shall receive the Journal, ARMOR, without cost other than the annual dues. All honorary members shall receive the Journal, ARMOR, without charge. Junior members shall receive the Journal, ARMOR, at the special membership fee.

4. Any member may withdraw from the Association at the end of any current year by tendering his resignation; and membership shall lapse *ipso facto* upon failure to pay the annual dues; but such withdrawal or lapse shall not operate to relieve any such member from liabilities said member may have incurred prior thereto as a member of the Association.

5. Any person or organization may become a subscriber to the Journal, ARMOR, upon the payment of a subscription price equivalent to the annual dues of the Association, and all such persons who are not regularly admitted and entered as active, associate, junior or honorary members shall be considered merely as subscribers.

ARTICLE III. Officers.

1. The office of Secretary-Treasurer and Editor may be held by one and the same person.

2. The duties of the officers shall be such as usually pertain to their respective offices. The officers may receive such compensation for services performed as these by-laws may prescribe.

ARTICLE IV. Executive Council.

1. The President shall *ipso facto* be the chairman of the Executive Council, and in his absence the First, Second or Third Vice-President, in order.

2. In the event all four of the above officers are absent, the senior council member present shall act as chairman of an Executive Council meeting.

3. Two-thirds of the members of the Executive Council shall constitute a quorum for the transaction of business.

4. A majority vote will govern in all matters acted upon by the Council.

5. The chairman of the Executive Council will provide any or all of the following subcommittees when the Council deems them necessary to carry out the provisions of the Constitution and By-laws:

- a. Nominating committee.
- b. Auditing committee.
- c. Editorial policy committee.
- d. By-laws committee.

6. It is desirable that a number of the members of the Executive Council be residents of the vicinity of the headquarters of the Association.

ARTICLE V. Amendment.

These By-laws may be amended or repealed by a majority vote of the members of the Executive Council.

The Adjustment to Atomic War

by MAJOR LAMAR McFADDEN PROSSER

WITH monotonous regularity, civilian publications have been brandishing the threat of atomic warfare and predicting a revolution in the technique of battle which will follow the development of "fantastic new weapons." Opinions have been expressed by Movie Stars, Senators, Five Star Generals, and the man-in-the-street, and all have been respectfully published, each new headline adding to the general confusion.

It is held by some civilian analysts that military men are slow to appreciate the potentialities of the new developments and even (so help me) underestimate the power of atomic weapons. This feeling is probably the result of the fact that no responsible military man has published a careful analysis of the actual effect of mass-destruction weapons on traditional ground operations. Our professional journals have been rightly reserved and, while little of the wild, hysterical speculation has been circulated in them, neither has there been sufficient sober appraisal of the real changes which have been wrought.

If we take the accepted principles of war and study each in the light of the increased destructive power of our new weapons, we should be able to cast the shadow of the future before us. Most nonprofessional writers state flatly that the principal of mass and concentration of effort is no longer practical. And certainly, the great destructive power of the fantastic new weapons will result in greater dispersion both in offense and on defense. But in ruling out the principal mass,

these writers seem to have neglected one fundamental truth.

THERE CAN BE NO MILITARY DECISION UNLESS A SUPERIORITY OF FORCE CAN BE PRODUCED AT SOME POINT ALONG THE LINE OF CONTACT. If the weapons of the attacker and the defender are equally powerful—and we must assume they will be—then local superiority is only attainable by concentration. This statement in no way rules out the possibility of maneuver and it does not restrict us to purely frontal attacks. For what does a commander gain by maneuver? He seeks to create a situation in which the tactical advantage of position, in effect, strengthens his local superiority of force.

Concentration Still Applies

Thus, a larger military unit is often defeated by a smaller when the smaller can produce at some point on the field a local superiority of force. Attacks may be delivered from more than one direction in order to reduce the number of troops concentrated in one locality, yet it is inescapable that local superiority of force can only be achieved by superiority of weapons and more effective maneuver or concentration (or combinations of these, of course). It would be unwise to base our planning on any assumption except equality of weapons and capability for maneuver. We are left, whether we like it or not, with the conclusion that the theory of CONCENTRATION still applies, atoms or no atoms.

Commanders, then, must have forces which can be widely dispersed but at the same time have the capability of rapid local concentration. No matter how indirect our objectives,

there comes a time when the force must assemble its power to overcome that of the enemy. It is inconceivable that a force carefully dispersed on the defensive can be successfully attacked by forces equally dispersed—if their weapons are equally powerful. This capability of rapid concentration will be necessary in order to destroy the enemy or to secure a penetration—possibly as a follow-up to atomic weapons used against the enemy—or to block and eject an enemy penetration or infiltration of our own position.

While thus concentrated the troops offer the most profitable target for mass destruction weapons. Therefore, the concentration must be accomplished quickly, with a decisive blow delivered as rapidly as possible, followed by immediate dispersion in order to reduce the time of vulnerability. SPEED OF MANEUVER will become the vital element in ground action. In traditional warfare, the great danger has always been the defeat of forces in detail while they were too widely separated to be mutually supporting.

The danger now lies in the opposite; the greater danger being too great a concentration for too long a TIME. Forces must concentrate only at the critical moment of the action and disperse rapidly thereafter. At this critical moment, and only then, should the force offer a profitable target for atomic weapons. The swiftness of the concentration must introduce the element of SURPRISE and so reduce the danger of atomic annihilation. In all the foregoing our artillery and tactical air support by counter-battery, radar-interference, and close support bombing, will attempt to isolate the point of conflict. This support will be launched at the

very moment of concentration to increase surprise and to screen the concentration, thus increasing SECURITY. Time and the CLOSE COOPERATION and COORDINATION of all forces are essential.

Wide dispersion of the ground forces and the requirement of maximum coordination and cooperation brings up the question of communication and CONTROL. A commander whose forces are widely separated and whose only chance of success lies in rapid maneuver of his units must have adequate means of contact and vehicles of dependable trafficability. The need for MOBILITY is obvious and trafficability implied here is the complete cross-country ability of the entire force.

If the preceding observations are sound, it can be seen that all the old, fundamental principles of war are still applicable. CONCENTRATION of effort, DISPERSION in defense, SPEED of maneuver, SURPRISE, the element of TIME, COOPERATION and COORDINATION, CONTROL, MOBILITY and SECURITY are still essentials. Far from sweeping away these truths of war, the scientific discoveries of the present era simply indicate a shift of emphasis. The Principles of War remain constant. The application of these principles changes to fit each new situation. And, though the weapons are just as fantastic as advertised, war will continue to be fought along fairly familiar lines. The development of artillery and the tactical use of aircraft did not make concentration impossible, though they increased the need for dispersion. Our new, more powerful weapons carry this trend further, but tactical concentration will continue to be used because, between forces of equal or near equal strength, no decision is possible without it.

As the new weapons become more controllable, both in the sense of accuracy and in destructive power, this trend will be accelerated.

We should concern ourselves now with the problems of reorganizing our forces in order to meet the new emphasis. All now seems to hinge on mobility. The speed of maneuver now demanded may require that all ground forces be mounted. The assembling of regiments of foot soldiers is much too time-consuming and

would certainly reduce the possibility of surprise and increase the time of vulnerability. To mount the infantry in trucks (so-called motorized divisions) is to remain road-bound, and this would be fatal. The answer seems to be tracked vehicles. Whether or not these vehicles should also be armored, introduces problems too numerous to be settled without experimentation. But that all troops will be mounted in tracked vehicles appears to be inevitable.

In order to achieve the measure of control now required, all ground forces will have to have superior communications similar to those now employed by Armor.

Heavier Tank Proportion

Since individual fighting elements (vehicular crews) will be widely dispersed, long range weapons capable of neutralizing the intervening space seem to be indicated. This may call for more machine guns per hundred yards of front than we have hitherto felt necessary since the fire of individual riflemen, widely dispersed, would not be dense enough to stop a determined enemy. It also calls for the heavier fire power of tank weapons and a heavier proportion of tank to infantry units.

Huge supply depots, long lines of communications and the "fatal disproportion of supply to combat vehicles" must be eliminated. The suc-

cess of the Berlin airlift indicates that air supply might be a possible solution though, admittedly, the scale of such an operation would be almost as fantastic as the weapons themselves.

The mere announcement of the development of these new weapons creates an extremely novel situation. In the use of other shocking developments in weapons and warfare such as gas, the tank, the V-Bomb and the Atomic Bomb (the nature of the latter was not known) the maximum use was made of the surprise and the shock of their sudden commitment in the field. Now, as a deterrent to the Communists, we have other new weapons, and in doing so, we have partially neutralized their shock-power. Since the fact that they exist is known, it would perhaps be wise to publish sufficient details of their nature to permit commanders of troops in training to allow for them in tactical problems. Neither gas nor tanks nor the V-Bombs achieved their maximum effect, when first committed, because the commanders of the using troops understood too little of the weapons put into their hands. Little more than this can be derived from the facts now known.

From what is already known, however, it is possible to say definitely that Armor will have an increasingly important function as ground forces adjust themselves to atomic war.

Mice Partially Disable an Armored Division

Legend has it that mice once destroyed a German archbishop; official records reveal that mice almost destroyed a German armored division. A teletype sent on 4 December 1942 by the German Army High Command to Army Groups A, Don, B, Center, North, and D reads:

An armored division in the East recently was ordered to park its tanks in heated shelters. Without anyone noticing it, a large number of mice made their nests in these shelters. In the course of time the mice gnawed on the electric wiring of the tanks and thereby caused a great number of them to be temporarily nonoperational. This was not discovered until the division was suddenly alerted for action, with the result that 30% of the tanks had to be left behind for repairs.

Care will be exercised that such an occurrence does not happen again and especially that tanks and other motor vehicles are constantly checked to determine if they are operational. Subordinate units will be instructed accordingly.

The official copy of the teletype has two pencil comments in the margin: 1. "Charges will be preferred against the responsible commanders" and 2. "Soviet mice!"—LT. COL. M. C. HELPFERS.

Major Lamar McFadden Prosser is the Unit Instructor of the 14th Medium Tank Battalion, Solon, California.

SOVIET ARMOR TACTICS

Although Russia was our ally in World War II, her military affairs were characterized by a certain amount of obscurity. The readily accessible information on Soviet armed forces was little more than a controlled dissemination of carefully selected generalities. As a result, it would not be farfetched to say that enemy Germany knew more about the Russian army than did ally America—for Germany learned the hard and elemental way—on the field of battle. Be that as it may, the postwar period brought with it the lowering of an Iron Curtain which blotted out the Russian military scene to the point where information is difficult to come by. Military history remains one of our more valuable sources of information on the armies of the world. It has been a subject of increasing importance in recent times. For example, no war in history has been so well recorded as World War II. The analysis continues, covering both sides. The United States Army's Historical Division, in its mission of recording a complete, definitive and objective history of the war, has made use of the services of former enemy personnel to add perspective. Qualified former German military men have been engaged in making studies of various actions and campaigns. Of great interest are those projects concerning small unit tactics and the tactics of individual arms. Armor—Russian Armor—has been the subject of one of the studies. ARMOR, through special arrangement with the Office of the Chief of Military History, offers here by those who know the subject best the first of a series of small unit actions detailing Russian armor tactics.—THE EDITOR.

RUSSIAN TANKS VS ATTACKING GERMAN TANKS

Several weeks after the German invasion of Russia in 1941, the 3d Armored Division reached the Dnieper River north of the town of Slobin and prepared to attack across the river.

On the 6th of July, the commander of the armored regiment in reserve was assigned the following mission (in extract):

Infantry Division X, attacking toward Slobin from the southwest, has contacted strong hostile forces, and its northern wing is bogged down about four kilometers southwest of the town. The armored regiment will immediately launch an attack in the direction of Slobin, destroy the hostile forces believed to be there and thus relieve the infantry fighting southwest of the town.

An armored regiment was composed of two armored battalions, each consisting of about 40 tanks ready for action.

The terrain in the direction of Slobin was generally open, gently rolling farmland. The day was dry and sunny.

The armored regiment set out for Slobin immediately, with the First Battalion leading and the Second Battalion echeloned to the right rear in the movement, in order to meet the Russian troops estimated to be south of the town, thereby relieving the pressure on the German infantry.

The First Battalion ran into weak infantry resistance and an artillery battery some three to four kilometers in front of the town, and was moving over this and preparing to push into the city when it received destructive tank fire from Russian tanks cleverly concealed among the outlying houses, farmyard entrances and barns. These tanks had held their fire until the last possible moment. At the same time, the crew of the artillery battery, which had been by-passed and left unguarded, took advantage of the situation to spring to their guns, turn them around and shell the tank battalion from the rear.

As a result of this surprise attack, 22 German tanks were put out of action, and were, for the most part, total losses.

In the meantime, the Second Battalion, in feeling to the right, had

moved up the opposite side of the railroad from its sister battalion. Upon hearing the distress signal by radio, it was unable to advance locally due to the high embankment on which the railroad was laid at this point. It therefore continued its course south of the railway and moved into the city. The first armored company to penetrate the northwestern section of the city was able to destroy 25 Russian tanks out of about 30, suffering no loss to itself. The Russian force had not expected an advance from this direction and attention had been occupied with the battle going on with the First Battalion to its front.

Lessons

The Russian method here was one that can be most successful in cases where tanks with inferior weapons are manned by disciplined and well trained crews. Gunnery and trickery were qualities particularly natural to them. The surprise saves forces and can lead to success where the enemy acts incautiously.

The German unit was careless as a result of previous success. Insufficient reconnaissance preceded the attack. An armored unit should be accompanied by armored infantry on independent missions. In this instance

ARMOR—January-February, 1952

by OSKAR MUNZEL

Oskar Munzel, author of these first four actions in this series, was a Generalmajor in the German Army during World War II, and fought during World War I on the Russian front as a platoon leader from 1917 until late 1919. Remaining in Germany's postwar army of 100,000 men, he went on to specialized training at Dresden in 1926 and at the Berlin War College in 1931-33. Promoted Oberstleutnant in 1940, he was assigned to the Russian front in 1941 as commander of a panzer battalion. On the first of January in 1942 he was promoted Oberst and given command of a panzer regiment there. In the following year he was placed in charge of the training courses at the Panzer Forces School at Weensdorf, and during the same year was appointed Chief of Panzer Troops School I at Bergen-Fallingb. He was promoted to Generalmajor in late 1944 and went on to assignments in the field forces which included acting panzer divisional commander and commander of a panzer brigade on the Eastern front, and commander of a panzer training force and a senior commander on the staff of O8 West on the Western front.

The following remarks, prefatory in nature, are those of the topic leader, Hermann Burkhardt Mueller-Hilberand, former Generalmajor in the German Army, whose writings have appeared in ARMOR on several occasions.—TAM EBBRON.

If the reader attempts to extract essential characteristics of the Russian conduct of war from these examples, he will conclude that the conduct of war and of the Armored Command was extremely diverse and that actually nothing "typical" can be determined. In one place, unwieldiness appears, in another a high degree of flexibility. Here is a clear-cut design of command, there an astonishing waste of strength.

In order to reach a conclusion, one must be cognizant of the development of the Russian Armored Command during the war. It assumed a privileged position in the Russian Army at that time, received excellent officers and enlisted personnel replacements and its tanks were well constructed.

In 1941, the Armored Command was in the midst of reorganization and of conversion of armament. In place of outmoded and light tank types came medium types, especially the T-34. Until then, the Armored Command's major mission had been the support of the infantry, and now it was to be converted to operational use, more or less corresponding to the German view of tank utilization. In this condition, it was caught up in the German offensive and suffered heavy losses from which it was never again completely to recover during the whole war. The degree of training, especially in the subordinate command and in the mastery of weapons on the part of the individual crews, with some exceptions, remained quite low. The performance of the Armored Command was also negatively influenced by its limited radio equipment. To a certain degree, on the other hand, this lack of training was equalized by the fact that the Russian soldier, as a result of his affinity for nature, brought along with him into the Army skill in utilizing the advantages of terrain and of craftiness.

The German soldier who has learned to know the manner of fighting of the Russian Armored Command has no doubt that the Command, since the end of the war, has earnestly set about to remove deficiencies and today has achieved a degree of training high enough to allow it to fully utilize such possibilities as exist in its armored equipment.

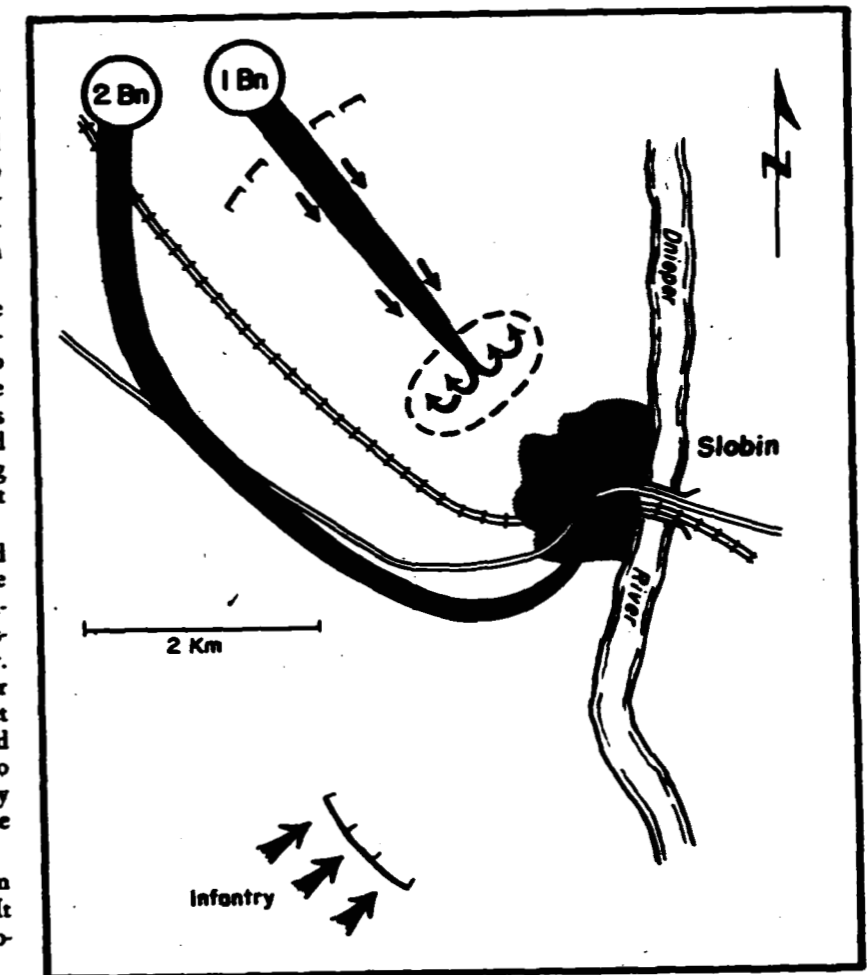
they would have taken care of the by-passed artillery battery and its personnel. A battery of self-propelled artillery would have been an asset to the attacking battalion. Smoke screening is often the sole means of protection in a situation such as the German force encountered here.

The Russian force made a mistake in failing to secure its flank. As a result, the Second Battalion, contrary to its original intention of leaving the city to the infantry further south, was able to penetrate the objective and achieve great success while bringing relief, however delayed, to the First Battalion.

Had the Second Battalion followed the First, its presence would have eliminated the Russian artillery battery from the picture, and needed assistance would have arrived sooner. Thus, in obscure situations it is better to advance in depth in order to meet any possible surprises with unfettered forces, rather than to advance on too wide a front where contact can easily be lost and both sections of a force simultaneously pinned down.

Whatever the situation, close-in security should never be neglected. It must remain within range of the protective fire of rear elements.

ARMOR—January-February, 1952



WINTER COMBAT FOR ROUTES AND VILLAGES

In January of 1942 the German front in Russia ran approximately 50 kilometers east of Kursk on a north-south line. Exhausted German infantry divisions were employed in broad sectors, occupied and kept under surveillance only at strong points.

German troops were experiencing the bitter Russian winter for the first time. Deep snow covered the ground, and temperatures dropped to 30° below zero. A sharp wind swept across the plains.

The terrain east of Kursk was undulating. Observation was extensive, as there were no woods. The monotony of the rolling landscape was interrupted only by a great number of villages, most of them spread over large areas.

Movement off roads and on the ridges was hampered by heavy snowdrifts. The German troops, not yet familiar with such conditions, had to fight the forces of nature. Car, truck and tank motors failed frequently, as did the mechanical weapons. Shortage of wood hampered the construction of positions. The defense was concentrated on the defending of villages.

With superior numbers, the Russians exploited their greater experience and acclimatization in winter conditions by weakening the German front through minor attacks and local

gains of territory.

In the sector of one division, the Russians skillfully reconnoitered a boundary position between two regiments and succeeded in breaking through with armor and infantry along the highway leading to Kursk. An armored formation of about twenty-five T-34s with mounted infantry broke through and dashed in the direction of the city, where a railway and highway vital to German supply ran parallel to the front.

The villages along the highway leading to Kursk, containing only supply troops and trains, were quickly captured by the Russian tanks.

On the second day they met quickly rallied German security forces about 10-15 kilometers in front of Kursk. Attempts to close the gap in the main line on the front with weak local reserves failed. Additional Russian forces, about two to three infantry battalions, partly on trucks, trickled through the gap. They kept the villages along the road occupied.

A weak German armored battalion of about 22 tanks, released from another sector, advanced into this area. In a surprise raid they recaptured the weakly occupied village of Vybolsova on the enemy's supply route, and the flow of Russian forces was stopped.

The German armored battalion

made thrusts from Vybolsova to east and west, harassing the Russians and halting the flow of supplies for the forces further west. In addition, the German force in the town succeeded in obtaining reinforcement in the form of an 88mm antiaircraft gun and a battalion of replacement personnel.

Three days after the German seizure of Vybolsova, the Russians attacked the village along the road from the west, using infantry and a few tanks. They were repulsed.

On the following day snow fell in dense flurries. Suddenly the Russians, coming across country from east and west simultaneously, made a surprise break into the city with heavy infantry forces. Tanks aided the advance from the west. Exploiting their cross-country mobility—their road clearance was greater and their ground pressure less than those of German tanks—the Russian tanks swept across country through terrain considered by the Germans to be tankproof.

Inadequate security measures made the surprise possible. The unseasoned young German infantrymen, unequal to the demands of combat in the East, cooperated poorly with friendly tanks and were defeated. The German tanks, inferior to the Russian in weapon effectiveness and mobility, were almost completely destroyed.

Lessons

The operation indicates the importance of supply roads, most of which had to be made passable and maintained so for winter use.

The two-pronged Russian attack on the village of Vybolsova worked excellently. It was timed precisely, either by radio, undetected telephone lines, or civilians still in the village.

On the other hand, the operation demonstrates that an extensive advance, especially in winter, must be prepared in detail, and must be constantly reinforced. An armored formation, operating alone, can achieve only temporary success.

The German thrust into the Russian flank to halt the supply flow was proper. The enemy could not ignore it. Tanks without supplies soon become worthless.

Combining an unseasoned infantry battalion with an armored unit for such an independent mission was wrong. Such a unit becomes a liability for armor.

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AN INFANTRY REGIMENT IN DEFENSE AGAINST ARMOR SUPPORTED ATTACKS IN WINTER COMBAT

Following heavy defensive fighting in December of 1941, the 203d Infantry Regiment had withdrawn within its division sector, and had moved into a new defense position in front and on both sides of the village of Berestovaya, a settlement of stone houses which formed the nucleus of the defense.

A captured order indicated that an attack could be expected in the area by a force from the Russian Second Army, comprising three infantry divisions, one cavalry division, one armored brigade, and independent artillery units. Advance would be along the Lissichansk-Artemosk road, with the object of achieving a breakthrough.

The 203d Infantry Regiment was composed of three battalions, an infantry gun company and an antitank company. Each battalion was composed of three rifle companies and a heavy weapons company. All units were understrength.

The terrain was undulating and almost bare of woods, with many villages in the area. Snow covered the ground and temperature was about 15°.

Between the 18th and 22nd of December the enemy deployed his forces before the new position of the 203d Infantry. The German outposts were forced back on the position. Obviously the Russian attack was impending. In the evening of the 22nd, the Russians, in approximately battalion strength, attacked the 2d Battalion's position for the first time. Although the attacks on both sides of the road from Lissichansk were stopped by the defensive fire, farther westward a strong point of the 6th Company was overrun. Elements pushed forward into the village almost to the battalion command post. At that point the battalion reserve was committed and the positions restored.

On 23 December, several attacks in company to battalion strength along both sides of the road were repulsed by the 2d Battalion. As darkness fell, the Russians repeated the attacks east of the road. After brief artillery preparations on the 7th Company positions, they attacked with approximately two

battalions supported by ten tanks. At two points near Reference Point 205.0 the tanks and infantry overcame German strong points and broke into the front. Artillery fire concentrated on the tanks forced them to retreat. The Russian infantry, losing its support, made no further headway. The German reserve battalion was committed, repulsed the Russian infantry, and remained in the village position.

On the 24th several attacks on the road and, for the first time, on the left flank of the 1st Battalion, were repulsed. No tanks were committed on this day.

On Christmas morning the Russians again attacked east of the road with about two battalions of infantry. They were stopped by artillery fire. Shortly afterward they attacked the 1st and 3d Companies from draws northwest of the village. Both of these attacks, supported by mortars and carried out by one to two companies, could have been repulsed. But around 1400 hours, while a sharp east wind was blowing, ten to twelve tanks suddenly emerged from the draws and advanced against the western part of the village. Accompanied by infantry, they advanced slowly, in groups, covering the German strong points with fire. The edge of the village lay under artillery and mortar fire.

It was 1500 hours when five tanks

with infantry entered the position of the 1st Company, which was defending more than 1000 meters of front with only 40 men. The Russians entered the village and several tanks, separating from the infantry, struck south toward the railroad embankment. After two tanks had been shot out of action by AT guns, they were turned back.

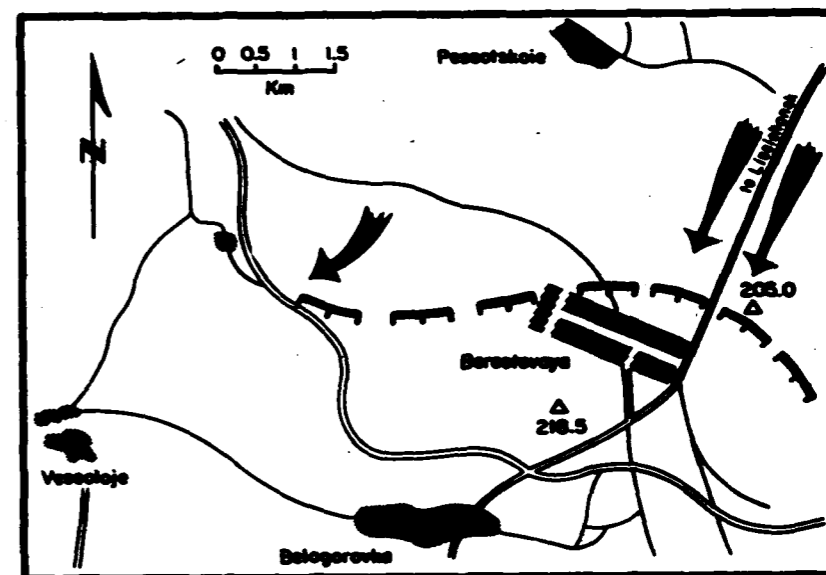
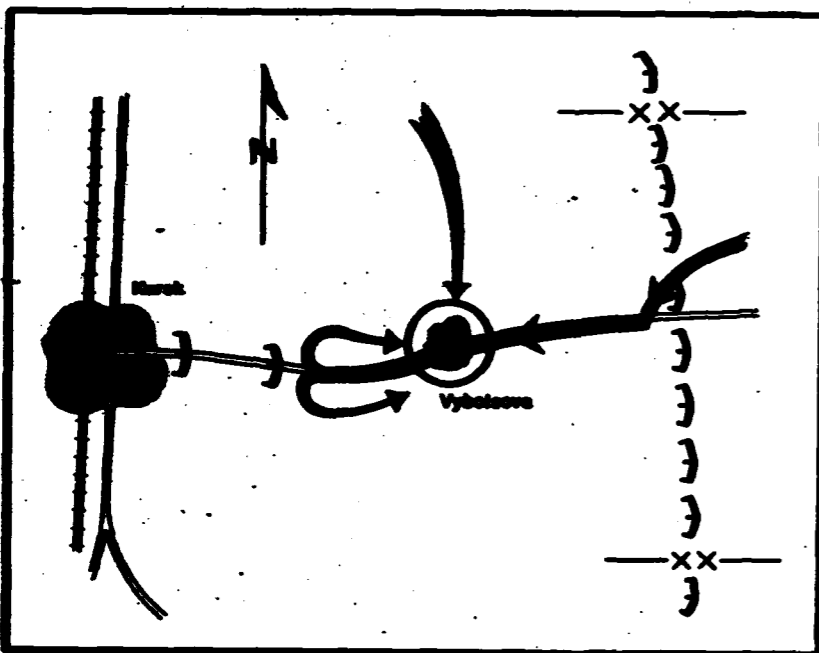
In a counterattack, the 10th Company cleared the village again. The staffs of the 3d Battalion and the 9th Company were also pulled forward from Belogorovka and employed. By 2100, the Russians, fighting tenaciously, nevertheless were beaten and the line of resistance reoccupied.

Losses necessitated a reorganization of the 203d Regiment, and all three battalions were assigned adjoining positions, each keeping one company in reserve.

Before daylight on 26 December, the Russians began heavy attacks in the area between the village and the railroad to the west.

Seventeen tanks approached the right flank of the 1st Battalion, accompanied by two to three battalions of infantry. The positions of the 2d Company were smashed by the tanks and the Russians reached the railroad embankment, where they were stopped by effective artillery fire.

Farther to the east, tanks appeared in front of Hill 218.5, a conspicuous knob. An 88mm antiaircraft battery south of it shot one tank out of action before being smashed itself. On Hill 218.5, which offered no cover, the



German troops could not hold their positions in the face of tank fire, and were withdrawn to the railroad south of the hill.

There was no contact between Regiment in Belogorvka and the 1st Battalion; the situation there remained obscure until evening. A divisional reserve battalion and a cyclist squadron were assigned to the regiment. With the Russians again entering the western part of the village, toward noon the combat team received permission from the regiment to abandon the village.

Intervention by bomber planes brought no appreciable relief, since the target area could not be ade-

quately defined due to the confused combat situation.

At noon the divisional reserve battalion and five assault guns were turned over to the commander of the 2d Battalion, who exercised command in the village. Thereupon he decided to continue to hold the village.

Around 1600 hours, Russian infantry supported by a few tanks attacked the 2d Battalion from along the road. Again two strong points were lost at Hill 205.5, and the Russians broke in. A German counterattack by the reserve battalion, supported by the assault guns, eliminated the penetrations and restored the lines by midnight. There was no contact, however,

with the right flank of the 1st Battalion, as they had not reoccupied their old positions.

At dawn on the 27th the attacks were repeated with the same strength as the preceding day. Through the gap between the 2d and 1st Battalions, strong Russian infantry supported by at least twenty tanks attacked the village and the 1st Battalion positions along the railroad embankment. At the latter point, eight newly committed antitank guns were overcome by the tanks—the 37mm AT gun was not adequate against the T-34. The embankment was captured. Only the left flank still clung to it.

At about 1100, after vigorous prepara-

tion by artillery fire, the Russians launched more tank-supported attacks against the village from northwest and west. The infantry were in approximately regimental strength. The enemy reached the center of the village and was again thrown back in a counterthrust. But other forces, also tank-supported, enveloped the village from the west after a sweeping move to the south. At 1400 the Russians again broke into the village from the west with infantry and tanks, and later in the afternoon, from the east. The German forces abandoned the village during the night, withdrawing to the embankment line.

At this point Russian losses had

been severe, and although attacks were continued the following days, their force had been blunted and a breakthrough prevented.

Lessons

This action is characteristic of winter combat, which highlights the importance of villages. The troops stick to them and defend their winter quarters with tenacity.

The Russian command showed, as it did in the majority of instances in this phase of the war, an astonishing dispersal of its attacking forces. This dispersal also applied to tanks. In this action they were used to accompany the infantry attacks. On the whole,

without accompanying tanks the Russian attacks were stopped by fire.

The seizure of the German village could have been accomplished more easily if the Russians had, from the beginning, tried to envelop it. A thrust to the dominating Hill 218.5 would have cut off the village from its supplies and thus rendered its defense ultimately impossible.

The excellent cross-country mobility of the Russian T-34 tanks permitted them to accompany the attacks in spite of the rather deep snow. They were able to maneuver well in the terrain in contrast to the German assault guns, which were hampered off the roads and had to be wary of drifts.

WINTER COMBAT BETWEEN TANKS AND INFANTRY

In the course of the winter battles of 1941-42, the Russians attempted to recapture the city of Khar'kov from the area east and southeast of the city. Severe cold prevailed and the snow was deep, especially in low places.

At the end of January, in the midst of heavy snow flurries, the Russians moved in close formation with vehicles along the road from Brigade-

rovka into Borshechevoe, where a German battery fired on them. Thus the month ended, giving way to a quiet 1st of February.

On the 2nd the Russians fired upon the German advanced strong points with 100mm and 122mm shells, while undertaking a reconnaissance in force against Strong Point No. 3 with two companies, against Strong Point No.

4 with a strong platoon, and against Strong Point No. 5 with one and a half companies. The attacks were repulsed.

During the small hours of the next morning there was strong artillery fire of all calibers and penetration in the direction of Taranushin. It was repelled at Strong Points Nos. 2, 3 and 5 with the aid of dive bombers.

On the 4th of February the Russian attacks continued. German defense faced east and north, contact with the unit on the left having been disrupted. An infantry platoon reinforced by four tanks was ordered to establish contact along the road Yakovenkovo-Volokhovo Yar. As a result of flanking fire from the valley of the Balakleyka River, the thrust stopped halfway. The platoon disengaged itself when darkness fell and brought in thirty prisoners.

In early morning of February 5th there was another Russian thrust against the strong points, which was fought off. The advance was westward from a northeasterly direction. Heavy concentrations at Taranushin were attacked by dive bombers.

A night attack against the northern part of Yakovenkovo was repulsed. On the afternoon of the 6th, another attack supported by a few tanks, succeeded in penetrating the village, but was eliminated in a counterthrust.

Renewed attacks by heavier forces were fought off on the 7th, with the Russians trying to break through at other points, hitting the right flank. Attacking forces were assembled in large draws and ravines and in patches of forest south of Borshechevoe and ad-

vanced with a ski battalion to the vicinity of the road, where defensive positions were prepared. Meanwhile, German forces were reinforced by a second battalion.

Early next morning strong Russian reconnaissance patrols advanced to probe for weak spots around the southeastern part of Yakovenkovo. In late morning the new German battalion attacked out of this area and restored the former MLR. Tank attacks by the Russians against Strong Point No. 5 with five tanks were beaten off.

Two days of quiet followed, and the weather turned warmer and thawing set in. Exploiting this weather, the Russians attacked with one battalion and eleven heavy tanks. The strong points were rolled up and lost. A counterattack by inferior friendly tanks was ineffective. A perimeter defensive position was set up around Yakovenkovo. The situation was critical. Four heavy tanks fired upon the village and retired under the fire of a quartet of friendly tanks. Toward noon of the 12th of February there was increasing enemy artillery fire on the German-held town, reinforced by rocket shells, antitank and mortar fire and at night by fire from regular Russian recon patrols at the outskirts of the village.

Before daybreak of the 13th the enemy started an attack from a Y-depression, with one battalion breaking, with loud huzzas, into the northwestern section of the village. Counterattacks by two companies in close combat destroyed the enemy.

On the 14th of February four heavy tanks fired upon the village, and an

attack with armor support was launched by the Russians at mid-morning. It was repulsed, as were attacks made the following day. The Russians then discontinued their attacks.

A report by the Wehrmacht High Command had this to say: A division in the area southeast of Khar'kov, in extremely heavy defensive battles between 10 January and 7 February 1942, has repulsed 142 attacks from six infantry and two armored divisions. The enemy lost six thousand dead, twenty-seven tanks, fourteen guns, eighty-two mortars and two airplanes.

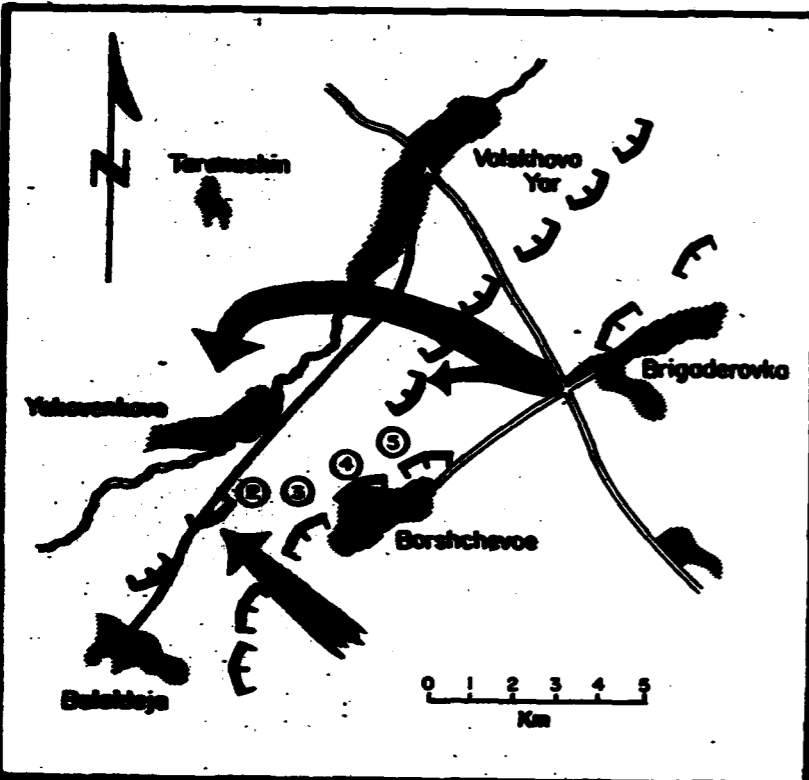
Lessons

Winter combat in extreme cold requires special measures. It consists of probing, wearing down, thrusting. Villages play a more important role. It teaches that a tough army which does not lose its nerve will not be vanquished.

Reconnaissance operations in force by the Russians usually mean that something is going to follow within the next twenty-four hours.

In deep snow, tanks must remain on high ground. The Russians often launch a few tanks as decoys for anti-tank fire, then attack with heavy elements. A tank thrust against a village is not tactically sound unless it proceeds under the protection of artillery fire and with accompanying infantry.

For tanks, broad tracks with their resulting distribution of ground pressure are of great advantage in winter combat, a fact which the Russian tank industry has taken into account.



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BATTLEFIELD TANK RECOVERY IN KOREA

A tank costs a sizable piece of money these days. To get our money's worth out of it requires the maximum use. Thus our battlefield recovery, although far from being a glamorous undertaking, becomes a highly important operation. Here is a picture story of a recovery operation by the 70th Tank Battalion in combat in Korea.

The object of the pictured recovery operations, a medium tank, M4A3E8 had, as the favorite expression of soldiers goes, had it! The tank, along with three of its fellow tanks, had been in an infantry company's patrol base perimeter one memorable night when the Chinese decided to liquidate patrol base and tanks. During the ensuing fight, in which three Chinese companies were soundly thrashed, this tank slipped off in a rice paddy while maneuvering in the darkness for a better firing position. The gasoline tanks were full, since the tank had been refueled the evening before, and gasoline began pouring from the gasoline cap air-vent hole. The Chinese swarmed over the mired tank and were promptly shot off by one of the other tanks covering his helpless buddy. At this point some nameless Chinese qualified for the Peoples Great Big Hero Award with Sickles, Oak-leaves, and Birch (Posthumous). He exploded a pole charge on the rear deck of the tank igniting the gasoline, after which he departed to commune with his ancestors through the courtesy of a .50 caliber machine-gun slug. The tank burned and the crew bailed out after activating the fire extinguishers. The extinguishers had little effect on the fiercely burning gasoline and the ammunition exploded. The crew made their way back to the remaining tank of their section without molestation by the Chinese, thanks to the accurate gunnery of the covering tank which had rendered all Chinese in the vicinity not only supine but completely disinterested in the night's festivities. After the tank had cooled off (it took a couple of days) it was recovered, since some parts, mainly tracks and suspension system, were still in usable condition. The maintenance platoon of the 70th Tank Battalion (Heavy) undertook the job.

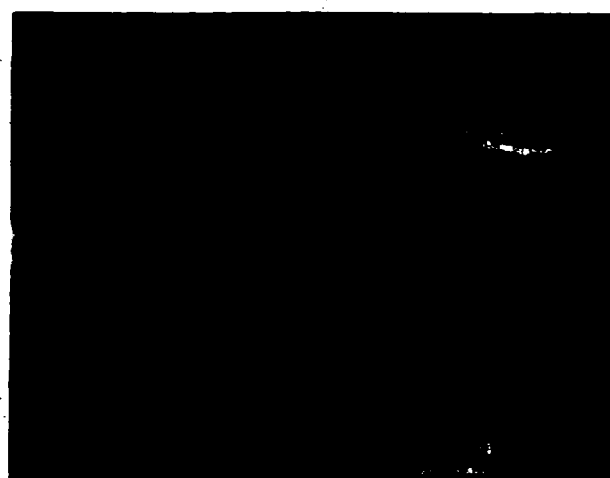
After removal from the rice paddy, the turret was traversed by winch and the tank was towed to the Battalion Maintenance Area. Here it was turned over to a Recovery Company for transport to the rear areas for salvage and possible rebuild. Who knows, this tank, or parts thereof, may yet see another battlefield.—LT. COL. CARROLL MCFALLS, JR.

Additional caption data: Major Roger J. Toyne

Photos by SFC William Darden

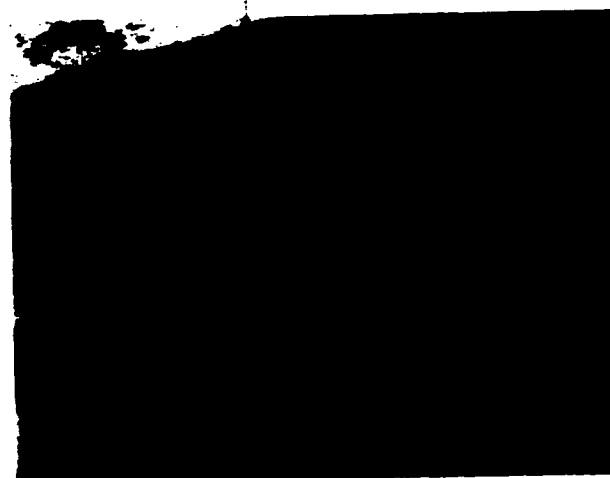


View of a burned out tank of Company A, 70th Tank Battalion, mired during a night action and knocked out by Reds.



The fire leaves the engine compartment a mass of melted metal with exploded .50 caliber ammunition boxes outside.

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Surveying the recovery problem. Members of the maintenance platoon pass a towing cable around the tank turret.



View looking through the commander's hatch into the burned out fighting compartment. Gun and recoil guard visible.



Towing cable is attached to snatch block and M32 winch cable is passed through block, for lifting sideways pull.



A second M32 is attached to the front of the tank in an attempt to pull the tank forward, but all to no avail.



As one M32 exerting the forward pull is not enough to do the job, an M4A3E8 medium tank is hooked to it in tandem.

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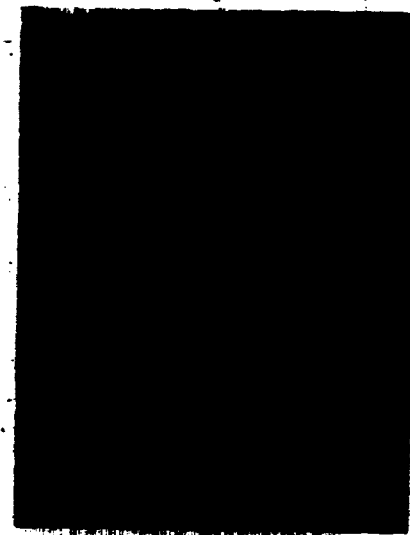
All together ... Heave! Teamwork and know-how pay off as the tank is pulled out of the hole and headed for salvage.

29

Training Tank Crews

by COLONEL L. L. DOAN

The tank is a complex and potent weapon whose operation requires the ultimate in teamwork on the part of crew members. The tank is a specialist who must know mechanics, maintenance, communications, gunnery and tactics—things to which the American soldier, by virtue of his national background, is most adaptable. One thing ties the whole together—training! Here's one story of how it's done.



Some of the personnel on the course.

DEEP in the heart of Texas at Fort Hood, home of the 1st Armored Division, Major General Bruce C. Clarke has built into his Individual Tank Combat Course all the experience of his years of training armored soldiers and armored units. The possessive pronoun is used advisedly, for every detail of this course, from the selection of the terrain through the many problems of construction to the finished course were personally planned and supervised by the General. Without exception, every Armor Officer who has seen this course has commented that this is the finest training course of this type an armored division ever had.

The course, 5000 yards from start to finish, presents eight different situa-

Colonel L. L. Doan commanded the 2nd Armored Regiment of the 3d Armored Division in the European Theater in World War II. He is now Assistant Division Commander of the 1st Armored Division at Fort Hood, Texas.

tions to the crew. Each is a realistic one. The targets are all operated by concealed range personnel in bunkers. The movement of the tank is observed by the target operators through periscopes, so that each target is made to appear at the proper time as the tank progresses around the course. Service ammunition is used and hits are scored. As soon as the tank has moved on to the next target, the scores are telephoned in to the Control Officer so that when the crew returns to the starting point, dismounts, and assembles for the critique, they see their complete scores posted on the large score board.

The course is laid out with a crushed stone and gravel, all-weather tank trail. The tactics are built into the course. This permits the tank commander to devote his entire attention to developing the teamwork of his tank crew. Each member of the crew learns his individual duties and at the same time learns to coordinate his actions with the other members



Relief map for briefing at the start.

of the crew. If any one member fails, it is immediately apparent to the others that the crew must function as a well drilled, well coordinated team. Each crew runs the course until it has qualified.

Each tank has a conducting officer riding on the rear deck as it goes through the course. This officer grades the tank commander on his selection of firing positions, his fire orders, and the speed with which each target is engaged as it appears. He notes the control the commander exercises over the crew, the steadiness of the driver, and the manner of performance of each crewman. He also functions as the Safety Officer.

Usually the course is assigned to one company for a day. The using unit moves out to the nearby bivouac area the night before, so that it is on the course and ready to go soon after the first light the next morning. The bivouac is tactical with predawn stand-to rigidly observed. The first tank is on the course and ready to roll

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The .50 caliber has been mounted forward for tank commander to fire on targets.

as soon as it is light enough to shoot. Tank follows tank through until nightfall. Concurrent training is held for the remainder of the company during the day and a good unit can put 20 crews through in a day.

After each crew has loaded its tank with ammunition, boresighted its gun and completely checked the tank to see that it is ready to go through the course, the tank is moved to the "Ready Area." The crew then dismounts and reports to its Conducting Officer in the critique area. Stands are set around the 18' by 30' cement relief map on which the course is pictured. The conducting officer first gives them the general situation. "Your tank company is the right flank guard of a battalion attacking from Gatesville southeast towards Killeen. Your tank fell out due to damage caused by enemy fire. You were given instructions to proceed individually along the company route and catch up with it as soon as your vehicle was repaired. You have been told that there may have been small enemy elements by-passed and that you may run into enemy, including tanks. Repairs were made and you have reached this point." The Control Officer then points out the position of the tank on the terrain map.

Following the briefing, the tank crew returns to the tank, mounts, and moves to the "Ready Line." Here the Conducting Officer mounts, directs the tank to move forward fifty yards, halt, and half-load all machine guns. As soon as ready, the tank is ordered to move out.

When the tank reaches point "A," the first targets appear to the left of the trail—six silhouettes come up.

They are mounted in German type holders so that when they are hit they drop down. The bow gunner, or "Bog" fires at them while the tank continues to move.

On reaching point "B," a silhouette of a plane is released from a cliff and slides down a wire and disappears to the left of the path of the tank. The tank commander takes it under fire with his .50 caliber machine gun.

The tank again moves out and on reaching point "C" a silhouette of a truck appears moving along the left front. It is mounted on a sunken track and moves about 100 yards before it disappears in the brush. It is fired on at about 400 yards by the coaxial .30 caliber machine gun.

On reaching point "D," the silhouette of a tank appears. The tank commander stops his tank and takes this target under fire at about 700 yards range. The target is visible long enough for the tank commander to get off two rounds providing the first round is off in 15 seconds and the

next round follows in 10 seconds. Again moving out, six silhouettes appear on the right at point "E" which are taken under fire by the "Bog."

As the tank approaches point "F," a charge explodes under a clump of trees to his left front at about 400 yards. The tank commander reconnoiters the area by fire from his .50 caliber machine gun and continues on to assist the infantry. He observes their tracer and moves into a full defilade position at "G." The tank commander fires HE adjustment (three rounds) at a point in the edge of the woods at a range of 500 yards as designated by the rifle fire and knocks out the AT gun position. He decides the area is heavily held so he backs his tank down behind the hill from his firing position, and swings around to the right to find a covered approach in order to by-pass this area. The tank follows the trail towards "H."

At point "H" the tank comes out in the open and is fired upon from the left flank by an enemy tank which is moving out. The tank commander swings his tank to face the enemy and fires two rounds of shot at approximately 500 yards range. This enemy tank is a silhouette on a sunken track, as before. This completes the course. The tank is now two miles from its starting point.

After guns are cleared and the muzzle is elevated, the Safety Officer gets in the tank. He completes his check, the tank commander then buttons up and follows the trail, crossing the creek on a treadway bridge, around to the starting point for the critique.

The next tank starts the course as

At left the aerial target completes its run after coming under fire of this .50.

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next round follows in 10 seconds. Again moving out, six silhouettes appear on the right at point "E" which are taken under fire by the "Bog."

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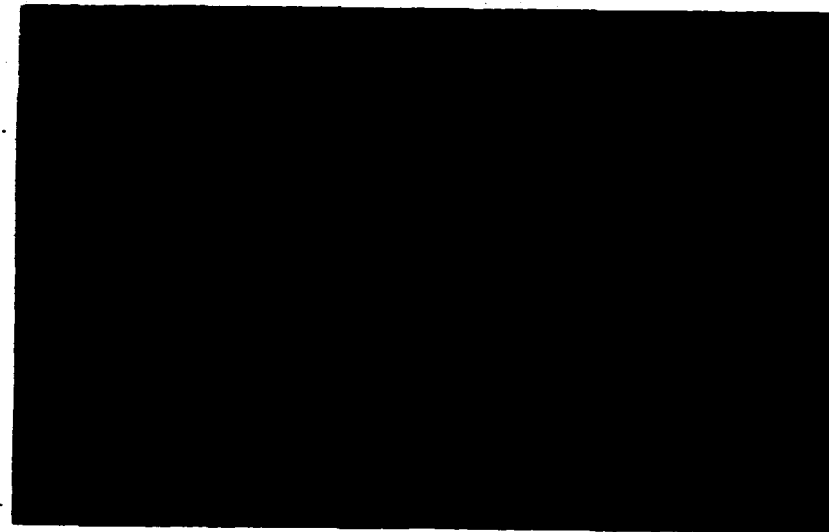


At left the aerial target completes its run after coming under fire of this .50.

seen as the preceding tank fires at the last target.

At the critique the conducting officer reviews the orders and actions of the tank commander and the actions of the crew in each situation. He points to the score board and indicates the number of rounds used and number of hits and grade awarded on the fire orders and number of seconds it took to get off the first shot and any other pertinent comments for each situation. He awards a grade of "satisfactory" or "unsatisfactory" on each phase. At the completion of the critique he informs the crew of their overall rating. A very high standard has been established so that the crew which earns a "satisfactory" rating must have proven that it is in fact a well-trained tank crew capable of surviving in combat. When a crew achieves a rating of "Excellent" and passes the achievement tests in driving, maintenance and communications the crew members are awarded certificates as Tankers.

Every item of appointment and construction in the course has been directed toward presenting a series of realistic situations to the tank crew. The silhouette targets are an excellent example of this. The basic idea was borrowed from the Germans and has been improved upon so that these targets rarely fail to function properly. An operator, concealed in a bunker, observes the approach of the tank through his periscope. At the proper moment he pulls a lever which,



Critiquing the run with crews whose marks appear on the large scoreboard.

through a cable on pulleys, raises the silhouettes to a vertical position. They are held in this position by the sear of a trigger-like mechanism. The impact of a bullet on the plywood, heavy-rubber, fabric backed silhouettes moves the target just enough to release the sear. This, in turn, releases a spring which pushes the target forward and down. The gunner thus knows instantly when he obtains a hit. The airplane silhouette operates by gravity, sliding down a cable. Some experimentation was required to decide on the right size for this target so that it would have the realistic appearance of a low-flying plane. The tank commanders soon become very proficient at hitting this target with their .50 caliber machine guns. All

the mounts for the .50 caliber MG on the tanks in this division have been moved to a forward position on the turret and the tank commander can operate this gun from his usual position in the turret.

The truck and tank targets are mounted on small cars which run on steel tracks. They are pulled along by a cable which is operated by a motor and windlass. The rate of movement of the target can be regulated for any speed up to 12 miles per hour.

The purposes of this Individual Tank Combat Course are outlined on a large board alongside the score board in the critique area.

The Range Detail required to operate this course includes a Range Officer, a Range Sergeant, four NCO's in charge of bunkers, with six men and an Engineer Detail to set out the explosives and two vehicles with drivers for the Range Detail. In addition, an infantry squad is detailed weekly for their part in the course. The unit using the course provides a Control Officer and Assistant, three Conducting Officers and a telephone operator. In addition, they provide a 1/4 ton truck with radio and driver.

General Clarke has incorporated in this course the best features of the many courses he has seen during his long experience with armor. In addition, he has added many ideas of his own. Without a doubt, this is the finest Individual Tank Combat Course for training tank crews that has yet been developed.

TRENDS IN ARMOR

A Presentation of The Armored School to the Annual Meeting of the Armor Association

THROUGHOUT time, armies have constantly striven to produce in a weapon or arm a combination of three fundamentals—fire power, mobility, and protection. Armor provides all three.

Any misgivings as to the role of armor have been dispelled by the record of armor in World War II and again in Korea. The lessons learned during these encounters give conclusive evidence that our basic armor concepts of tactics and techniques are sound and realistic. Changes in tactics and techniques are generally made necessary only because of changes in the types of terrain on which we must fight.

Armor, having proved its value in present-day fighting, can look forward to playing a prominent role in any future war.

To qualify this statement, let us analyze the present-day situation and see what it reveals.

First, in any future war we will likely fight a *numerically superior enemy*, one that will, in all probability, be well trained and equipped and have available a great quantity of mechanized equipment.

Second, on the basis of our national policy, we will never start a war by attack—our action therefore will be *defensive* until our offensive power has been developed.

Third, we will probably be faced with *partisan* and *guerrilla activity* on a larger scale than we have heretofore experienced.

Fourth, we are now in an *atomic age* and are confronted with new mass destruction weapons.

Based on these facts, why, then, do we make the statement that armor is destined to play a prominent role?

To explain this, let us look in more detail into what the tasks of armor probably will be. We can, for purposes of discussion, tie together the first two points of numerically su-

perior opponent, and initially a defensive type action.

Assuming we must fight on the defensive, perhaps for months or even years, we must not allow our army to generate a defensive mentality. To do so is to play into the hands of an aggressive enemy. Although the reason for defending a place or area is to gain time or to prevent the enemy from occupying it, such a defense must also always aim at containing as many enemy troops as possible. In doing this, the enemy's main offenses are hampered and our own operations assisted. Therefore our defensive operations should be in the form of offensive-defense operations.

In the offensive-defense, armor seems to have a major role. In this type of action, success is based on utilization of a highly mobile team using a spiderweb type defense—a system which aims at netting, weakening, slowing up, and eventually immobilizing the attacker, backed up by the counterattack which aims at the enemy's defeat and destruction.

Let us examine how armor might operate in the defense:

There are two main problems in defense—stopping the initial attack, and stopping the forces following the initial attack.

The job of holding the defensive system will fall mainly to the infantry division with its organic armor.

The main armor strength should be concentrated under central control in rear of the defensive system since their best role is the counterattack against such enemy forces as succeed in breaking through that system.

Enemy attack of our defensive system can only win real victory, if in addition to his penetration his combat teams can so clear the way through the gap created that his normal infantry divisions can be passed through the defense system. Therefore, a major objective of the defense should be

to separate the enemy's armor forces from his infantry and to prevent the penetrating force from being reinforced or supplied. A second requirement is to gain time, delay, and if the enemy's penetrating force cannot be fully halted, cause them to fight and expend ammunition. This will greatly assist our own tanks when we meet the enemy in the counterattack.

To achieve this objective, the defensive system is based on strong points established in depth designed to disintegrate the attacking force. The strong points are so organized that they can fight independently even when surrounded. The attacker is thus forced to fight a number of separate battles, his supporting fire and attacking units dispersed, making his attack less effective. Further, these strong points must be so organized that they form pivots of maneuver for counterattack. Thus the static fire of the strong points and the mobile fire of the counterattacking armor combat teams are combined. This type of defense then becomes an offensive one, and advantage is taken of every opening given by the enemy. This would apply whether armor is operating alone or in conjunction with infantry units.

Similarly, in the face of any enemy who leans toward mechanization, we must build within our forces an offensive type weapon as well as a defensive type weapon. Again, we have proven that the tank embodies these features which, when coupled with its tremendous fire power, mobility, and resultant shock action, make it a potent, key member of the counter-attack force.

For its own passive defense against long-range enemy artillery fires or air attack and against atomic attack, the armored division can capitalize upon its mobility by dispersing over a wide area. Its communications and training permit it to be rapidly massed into a

FIRST ARMORED DIVISION



TANKER AWARD

HAVING QUALIFIED AS A TANK GUNNER, DEMONSTRATED PROFICIENCY AS A TANK CREWMAN, SHOWN THE ABILITY TO MAINTAIN A TANK AND ITS WEAPONS, AND HAVING PARTICIPATED IN THE INDIVIDUAL TANK COMBAT COURSE AS A MEMBER OF A CREW THAT RECEIVED A RATING OF EXCELLENT, IS HERE BY DESIGNATED AS A TANKER

Major General, U. S. A.
Commanding

The award inspires each tanker to turn in his best effort for his team.

powerful force to accomplish its mission, and when its mission has been accomplished, again dispersing, presenting a noncommittal target to the enemy.

While conducting normal offensive operations, if forced by the dictates of the situation to defend itself, the armored division will, because of extended frontages involved, normally adopt a mobile defense. Generally, the same concept as applied to defense on a broad front obtains.

Whether conducting a defense itself or when acting as the reserve element of a larger force engaged in defense on a broad front, the inherent characteristics of the armored division contribute much to the successful accomplishment of the mission.

Another thought to overcome enemy numerical advantage is by insuring that our armor is capable of maintaining superior fire power.

Assuming that the equipment on both sides is equal in quality and one side has a greater number of weapons than the other, then the side with greater number of weapons will also have greater potential fire power. But the principle to be considered is that in comparing comparative strengths, we must think in terms of weapon-power and the sound application of the potential fire power it represents, and not in terms of numbers of pieces. Therefore, we must insure that our personnel are capable of getting the most from their weapons. As outlined by the Army Field Forces Board No. 2 speaker previously, these weapons are being provided armor units. It is up to us to train the personnel.

The third point mentioned earlier was the role which partisan and guerrilla activity will play in future war. In considering this problem we must include the possibilities of aerial introduction and resupply of forces capable of guerrilla activity, because every indication points toward the perfection of this capability. How will this activity affect armor?

The action in Korea has reemphasized for us the effect of guerrilla activity in our operations. Further, any operations which we may be forced to undertake in the future in any of the world's potential battle areas will probably find us confronted by a similar situation. Whether the persons carrying out guerrilla tactics are iso-

lated bands of by-passed enemy troops or organized guerrilla forces makes little difference. The net results will be the same—a threat to rear area installations and troops, and insecure supply lines.

The answer to this threat is as old as warfare itself. SECURITY. Security is the responsibility of each commander at each echelon. Security is a perimeter requirement, and its provision must be continuing both as to time and disposition. Every combat unit must provide for itself the necessary degree of security against guerrilla forces.

The armored division is particularly well organized and equipped to secure itself against guerrillas, both by defensive and offensive measures. If proper attention is directed to the normal security measures employed by the armored division, the effects of guerrilla activity will be, to a great extent, nullified.

When the armored division is in corps reserve, poised as the main striking force of the corps, we believe that guerrilla activity can have little effect on the accomplishment of any mission assigned the division. True, if guerrillas are active or known to be present in the corps area, additional security requirements exist; but again, if the proper security measures are employed, the capabilities of the guerrilla will be minor.

When the armored division has been committed deep into the enemy's rear areas, and guerrillas are active or by-passed enemy bands are known to be present in the area, additional security requirements exist. It will be necessary to provide security detachments for supply convoys and to provide additional security for trains elements. When the lines of communication become overextended to the point where the security requirements interfere with the accomplishment of the mission, aerial resupply may be instituted, vertically enveloping the guerrilla or by-passed bands of enemy. Aerial resupply may be instituted for many other reasons as well.

As for the impact of the tactical use of atomic weapons on armor, which is our fourth consideration, it appears that armor is the ideal basis from which to perfect the new defensive and offensive measures which will be required for survival on the atomic

battlefield and to carry the fight to the enemy. Armor is an ideal weapon to use in transition to the offensive phase.

Atomic explosions offer a new problem in that they will cause destruction covering a sizable area. This is possible with conventional weapons, but the time elements differ.

The coverage is instantaneous with "A" weapons, whereas with conventional weapons it requires hours or even days. Such an explosion will obviously require individual protective measures far advanced over those now in use. You are aware of the recent tests conducted in Nevada in which various items of equipment were exposed to atomic blast. It is gratifying to note the relative immunity of armored vehicles as compared with other types of equipment. Picture, then, if you will, the advantages offered if ground personnel in battle were mounted in fully mobile armor vehicles whose characteristics would protect them from blast, heat, and radiation.

Add to this protection the element of mobility. The use of atomic weapons will multiply the value of mobility. Mobility will be essential for rapid dispersion should the enemy employ atomic weapons. Again, mobility will be essential for subsequent rapid concentration of the dispersed units at decisive points for attack.

The inherent fire-power characteristic of armor will be available to carry the fight to the enemy to follow up friendly use of atomic weapons, or to counterattack following the enemy use of atomic weapons. This factor is of utmost importance since any tactical use of atomic weapons should logically be in conjunction with a ground attack.

Another factor considered of great importance concerning use of atomic weapons is the psychological effect. Again armor offers the best defense now available because of the individual's knowledge that he is protected from direct effects, his weapons will be immediately available, and he can move. Add to this picture the delivery of atomic weapons by tactical air, artillery, or guided missile. Such capabilities can provide this type of support for armor to any distance conforming to the speed of armor.

Fundamentally, then, armor is the best force for the atomic battlefield.

In conjunction with tactical use of atomic weapons, armor appears to be the ideal teammate.

Now let us see how we can improve armor so as to better cope with future war. The requirements include the provision of better guns, improved motors with less fuel consumption, and increased cross-country mobility.

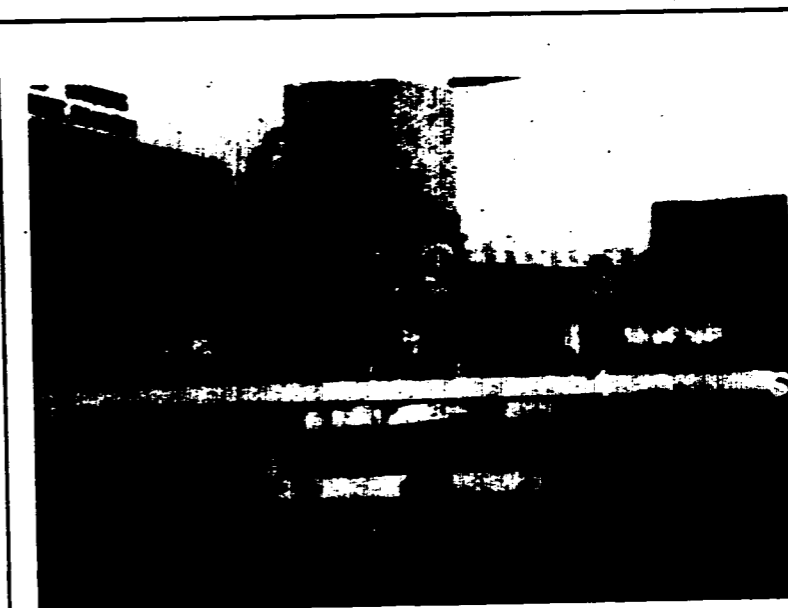
In increasing the cross-country mobility of armor, more full-track vehicles must be added to the armored division. The present-day armored division is not in the full sense armored; some nine-tenths of the vehicles are of the wheel type. This means that the present armored division has only a small armorhead with a long wheel-tail. Thus the head must separate from the tail when an obstacle is reached, because most wheeled vehicles do not have the cross-country mobility of full-track vehicles. This situation is being partially corrected by addition of an armored personnel carrier. Thus the final armored track element will be added to the tank-infantry-artillery-engineer team. Further, this type vehicle may be used for supply transportation, completing the picture.

Of course, the use of track vehicles for supply would create problems, but another solution may be in the use of aerial resupply by helicopter. The development of helicopters capable of carrying up to 20,000 pounds and the ability of these vehicles to operate without conventional landing fields makes the possibilities for their use unlimited—not only for resupply purposes, but for reconnaissance, troop transport, evacuation, communication, and delivery of pods containing maintenance shops and hospital operating rooms to wherever they are needed.

Finally, we say that because of the characteristics of armor it is an indispensable element in fighting the type of war of today and in the foreseeable future.

The need for armor is a vital need, and it is urged that consideration be given to providing more actual armor type units in the Army. The ratio of armor to infantry in the Army today is small. The amount of armor we have today would not be sufficient to equip even one type field army.

Armor has a battle role that is totally unique, a role that cannot be fulfilled adequately by other type units through mere hasty adaptation.

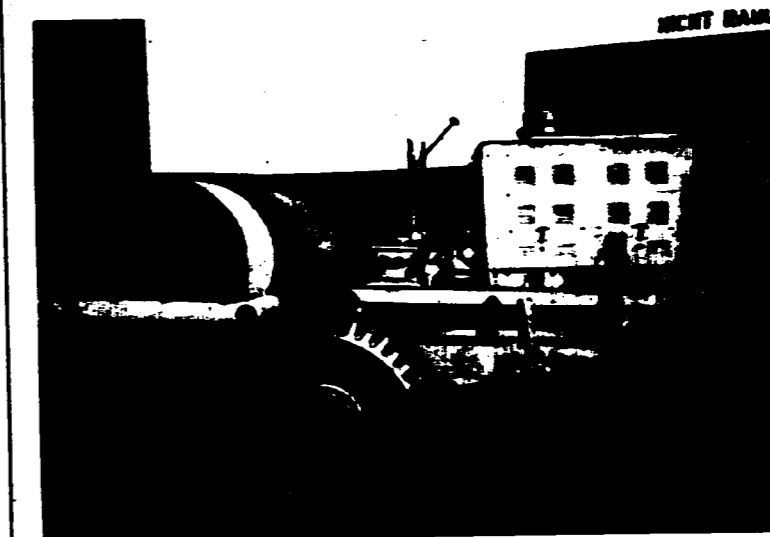


The inventive genius of Sfc Anderson M. Nunnally has made tank weapons firing at moving targets a reality for tankers of the 6th Armored Cavalry Regiment in Germany. With the help of the 8th Ordnance supply, Sgt. Nunnally secured a salvaged GMC 2½-ton engine and transmission, and a chassis from an M-10 trailer. With a few other parts, the rest was a cinch for the Service Company N.C.O., the chief welder.



6th Armored Cavalry Photos

Sfc Nunnally has ten years in the service. During World War II he served as a welder for the 71st Regiment, of the 44th Division.



The target puller tows a sled on which is mounted a six-foot target, and will operate over any type of terrain. Tank firing is thus very effective.

Cooperation in COUNTERTHRUST

by LIEUTENANT THOMAS W. STOCKTON

ON D-minus-1 I moved my 3d Platoon of the Tank Company, 2d Battalion, 6th Armored Cavalry Regiment, across the road to join the British battalion, Grenadier Guards, to which I had been attached. The British battalion and our 2d Battalion were attached to the British 2d Division, forming the Aggressor Forces for Operation Counterthrust.

The 3d Platoon was a pretty self-sufficient unit, with two gas trucks, a radio repairman, a mechanic and an aid man. We carried enough supply to see us through.

Having made a prior recon with Lieutenant Colonel Tom Butler of the Grenadier Guards, to see how we could best tie my tanks into his bivouac area, I now ran my 9D tracer huts down at the heels in placing the tanks and putting out security. We were under radio blackout and a tank platoon leader has no vehicle under 46 tons to wander around in.

I reported to the battalion commander, who briefed me and gave me a copy of the operations order for D-Day. Communications, an immediate problem, was solved by giving the Guards an AN/VRC-3 radio from one of the tanks. The colonel carried this in his jeep.

First Lieutenant Thomas W. Stockton graduated from the United States Military Academy in 1942. He attended the officer basic course at Fort Riley and Fort Monmouth. His first combat assignment was the one about which he writes in this article. Recently he reported and received an assignment in a Reconnaissance Platoon—in E Company, 6th Armored Cavalry Regiment—in Europe.

We jumped off into Blue-land the following morning. The Guards were "lorry borne," and we made good time. In march order I followed the Command Group, which followed number 2 and number 3 Companies.

First objective of our force was 10 km. off, and we took it without a fight. Number 3 Company passed to the lead with our group right behind.

Up Against Resistance

About 5 km. further down the road 3 Company was stopped by infantry and AT guns in strong positions. Colonel Butler called Captain Radcliffe of 3 Company and me forward, directing me to put one section of tanks in the woods on the west of the road to cover by fire the withdrawal route of the enemy. The other section was to carry 3 Company into the woods east of the road and support their attack onto the objective.

We loaded all the infantry we could carry and made the two miles to the woods in short order. Here the infantry de-tanked and hit the trees, with our tanks 50-70 yards behind. Captain Radcliffe rode my tank, which kept him in a good position to control his platoons. The infantry reconnoitered tank paths through the woods, and we hauled up 50 yards short of the open on the far side of the woods.

We took a quick look at our objective from there, and spotted two socked up Centurion tank crews in the village. Captain Radcliffe decided to swing left with his infantry through a long neck of trees, assaulting due west onto the objective while the

tanks supported by fire from their present positions.

Failing to contact my other section, I went to work on the two Centurion tanks of the Blues, while 3 Company went onto the objective in 30 minutes. My section got credit for two Blue-land Centurions, while the other picked off two AT guns and some two dozen withdrawing infantry.

After taking the objective I moved my platoon forward and placed it to cover likely areas of armored counterattack. Since we poor platoon leaders have no jeep, I put another two miles on my boots checking positions. I was a little late getting to one of my tanks, with the result that he was knocked out when he inadvertently outran his cover and gave a Centurion a neat side shot at 800 yards.

An umpire decision prevented further movement forward on that route so Colonel Butler ordered me to leave one section with Radcliffe and to take the other to the 2 Company area 3 miles back and attack on another route. Tanks led on this next move with infantry following in trucks. Major Rasch (2 Company CO) stopped me after 5 miles of road motoring, complaining that I was outrunning his trucks! I obtained permission to move the tanks another 500 yards to a point from which I could recon the area to the front while infantry closed up. (Oh for a jeep!). Upon arrival at this point I was dismounted and searching the area to the front when I picked up a Centurion about 300 yards off moving behind a line of trees straight for us.

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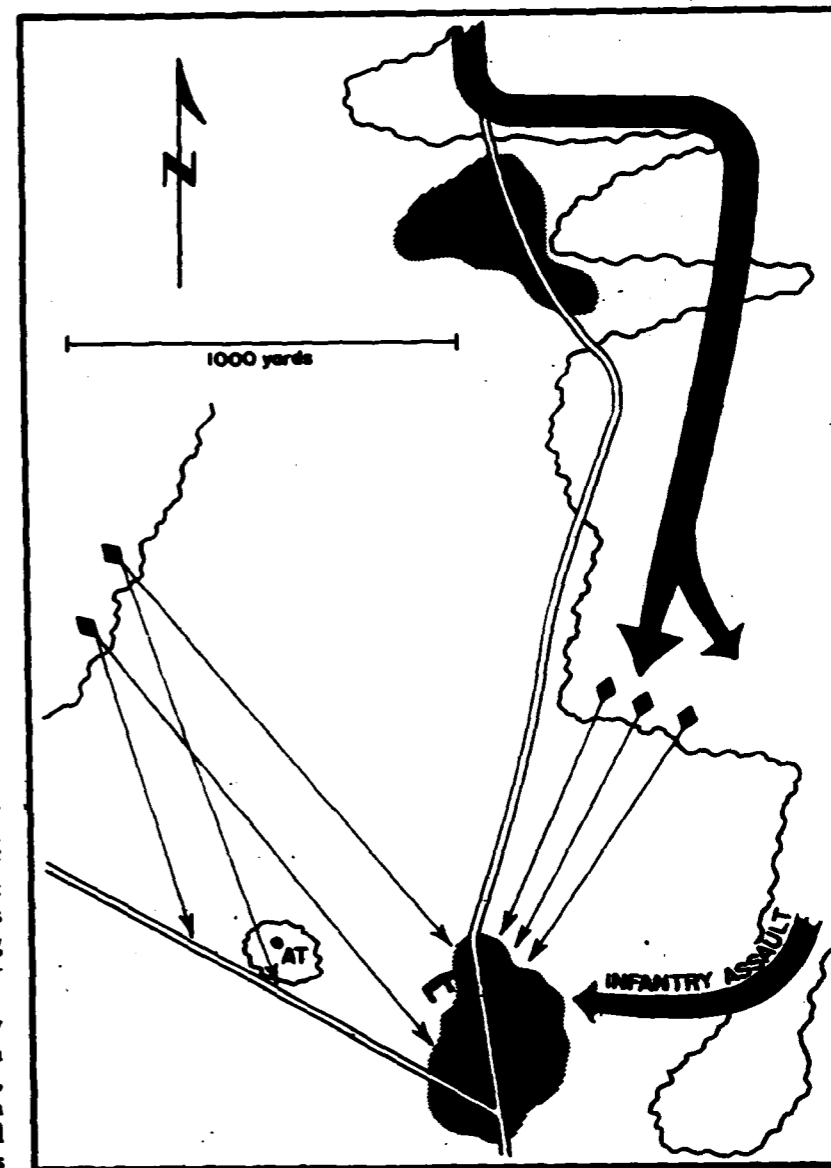
In the late Fall one of a series of large scale maneuvers took place in Europe. Known as Operation Counterthrust, it included both American and British troops. Here is one view of that maneuver from the platoon and company operating level. It is a story of Allied cooperation in the important area of the Western defense.

I moved my tank up and knocked it out at 200 yards range. Our infantry-tank attack which followed foiled an attempt by a Blue-land tank company to ambush us as we advanced. If we'd been five minutes later they'd have swallowed 3 M-26s and at least one third of the infantry. The old "speed and violence" which they preach at Knox sure paid off there. We made another 2000 yards that day until enemy build-up finally stopped us still 3 kilometers short of our objective for the day, but we'd made 30 kilometers since daybreak and my boys had experienced three types of attack: (1) tanks following infantry (going through woods), (2) tanks supporting infantry by fire and joining for reorganization after assault, and (3) tanks leading infantry.

We pulled back at dusk and were assigned a sector in the Guards perimeter—800 yards of woodline overlooking 1200-1400 yards of open country to the front. The position was ideal because we were tied in with infantry on three sides and had beautiful fields of fire to the front, completely covering the tank approaches. Checking range cards, begging for and receiving a squad of infantry for outposts (tankers cannot spare the men), and getting my gas trucks forward for blackout refueling finished the first day in "enemy" territory.

D-plus-1 started with 3 Company in the lead in trucks and my platoon right behind. After moving three miles, the head of 3 Company was torn up by HE fire coming from a small woods. On my hand signal, the tanks

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hit both sides of the road, putting mixed HE and smoke into the woods when, so ordered over the 508. When we had started to lay in the fire so the infantry could de-track and reorganize, I realized that I'd put my boys right out on the "pool table." Try as I might I couldn't find even "road wheel defilade," and there was no vegetation higher than a turnip anywhere but 1000 yards to the rear. The infantry still had to get back! Another quick prayer to the ghost of George S. and with strong reliance on the WP screening effect, I had my tanks zigzag when moving back out of and into position. This isn't necessary when you are firing from hull defilade and can drop out of sight between positions. With "pool table" terrain, however, your only chance is to shoot 1 or 2 rounds at most, give "driver reverse, right, steady, reverse left, steady stop, move out right, steady, left, driver stop, gunner, smoke," etc., and just that fast. I was thankful for two things. That driver of mine was good, and I'd trained my drivers to put her in reverse the moment they stop in a firing position.

In the middle of this Captain Radcliffe came back with the poop. Enemy infantry and tanks in the woods

—his doughs were now under cover and trucks still in action had gone to the rear. I sent tanks under my platoon sergeant SFC Bondura back to a woodline—still no cover, but at least a little concealment.

Captain Radcliffe and I talked the situation over and he decided to attack on both side of the road, main effort on the right, tanks to follow 100 yards behind the infantry, firing on the objective. After my quickly acquired knowledge of that pool table country, I had no desire to slow my tanks to the speed of a walking man, so I talked him into a Fort Knox "approved solution." Tanks would fire from woods and join infantry when they assaulted with attempt to arrive on the objective with infantry. To his credit, Captain Radcliffe agreed to this, although he could have easily stuck me out in the open.

The coordination and cooperation really paid off. With tanks in fire positions 10-15 yards back of the edge of trees, we opened fire as infantry crawled out of their holes to go forward. About 10 minutes later a green flare went up (predetermined signal that infantry had started assault). We took off in an 1800 yard dash which put us in those woods in two minutes

flat. Infantry had just entered the woods, which were only 100 yards deep. So well timed was our assault that the tanks overran two enemy personnel carriers that were timing their withdrawal to the advance of our infantry.

I had covered reorganization in my order back in the firing position, so the tanks were able to find hull defilade positions covering counterattack routes in minimum time. It was a good thing, too, for we'd just completed re-camouflaging about 15 minutes after the assault when four Centurions attacked from our right rear. We had two guns on them when they broke cover and in short order swung another into its alternate position which covered the area. Umpires gave us credit for two Centurions and the others withdrew.

We learned something about camouflaging in that action. Although we spotted the Centurions (they were moving) and they didn't see us (stationary) it was nearly impossible to see their panzers when they stopped. Even while looking right at them and knowing they were there, we had to convince ourselves that they were tanks, not bushes. I remember so well because Colonel Butler made some polite suggestions concerning the camouflaging on my tanks. At that point I shamefacedly set about putting this straight as 3 Company moved on into town to clear it of enemy. I was hoping to give my boys some experience in village fighting with the tank-infantry team, but Colonel Butler was afraid to "risk" us in town with that good tank country off to the right. So we sat as a sort of rear guard and reserve while the infantry made things hot in town. Needless to say we used the time for refueling, camouflage, maintenance, CAMOUFLAGE, restowing OVM, chow, shaving and CAMOUFLAGE.

When 3 Company cleared town, Captain Radcliffe came back to tell me we would organize just forward of town for the night. A quick check with Colonel Butler gave me the information that I'd have to split the platoon again—one section with each rifle company for the defensive perimeter that night. Then followed two hours of reconnoitering for positions in each of the two company areas which would cover the sectors, yet place my 2d section in such a manner

that I could communicate with Sergeant Bondura.

Captain Radcliffe was good enough to lend me his DR (dispatch rider) with motorcycle, otherwise I never would have accomplished the job without running tanks all over Northern Germany. By nightfall I could have torn limb from limb the character who left a jeep off the Tank Platoon TO&E. When the DR, Sergeant Thomas, and I finished we went back to the platoon. I gave the tank commanders a quick order and we were off with the DR leading the way through town. I pulled the first section off to the left and Sergeant Thomas led the second section to the 2 Company sector. When we got in position I checked Bondura's positions with the help of the DR, established communications, and coordinated with Major Rasch, 2 Company CO.

The only difference in the nightly routine was a conference with a lieutenant from the Royal Engineers. In crossing a bridge marked 7 tons with the three 1st section tanks, I noticed that the bridge sank six inches. I asked the Engineer to check it, since the other two tanks would have to cross it in the morning. An hour later he reported that the damage was slight and he figured the bridge at 24 tons. I asked him if he thought my tanks, which were not point loads and tipped the scales at a scant 46 tons, could make it with a "risk crossing." Unfamiliar with that term he finally agreed when I described the procedure—3MPH, one vehicle at a time, no stopping or turning.

After an uneventful night I moved to the bridge and radioed the 2d section across. The tanks made it all right, driving the piers another six inches into the mud. My men claimed that would just make the bridge stronger! The Engineer and his CO rechecked the bridge with the result that it was classed as a 12 tonner. We were told it would be unsafe to cross again. Those bridge cards are fine, as are military postings on bridges, but if possible an Engineer is the man to see. Though unfamiliar with our terminology and methods, the lieutenant was still able to call that one down to the last tank that could safely cross.

We coiled up off the road and waited for our place in column in

compliance with the order issued at midnight. We were behind Command Group again and clicked off 6 miles in a half hour. When the leading truckborne infantry hit a blown bridge, they called me to see if I could get around. In five minutes we found a road only 300 yards out of the way which by-passed the bridge. Within 10 minutes the column was moving again. Never put up an obstacle that can be readily by-passed, especially if it's not covered by fire.

One of the infantry companies went on to clear Roger town and the column waited for the outcome. I

The art of war is subjected to many modifications by industrial and scientific progress. But one thing does not change, the heart of man. In the last analysis, success in battle is a matter of morale. In all matters which pertain to an army, organization, discipline and tactics, the human heart in the supreme moment of battle is the basic factor.—Du Picq.

coiled my platoon off the road and joined Colonel Butler for a quick "Order Group" (Operation Order). I was to move into a position to fire on the bridge over the Aller River which was our main objective. Our mission—to prevent the enemy from blowing it as they were driven out of town. I got in position and it was ideal. We were still 1000 yards north of forward elements in Roger Town which was another kilometer east of the bridge. We were behind a small stream with hull defilade and trees to the front provided concealment. We started to fire on both abutments and 300 yards up the road on both sides. With our range of 800 yards, no one would have been able to blow that bridge from 0840 hours on. We really thought we had the war won until we learned that the bridge had been blown the night before at 0230. Nevertheless it had been an excellent opportunity to train the platoon in the infantry-tank team in attack of a bridge.

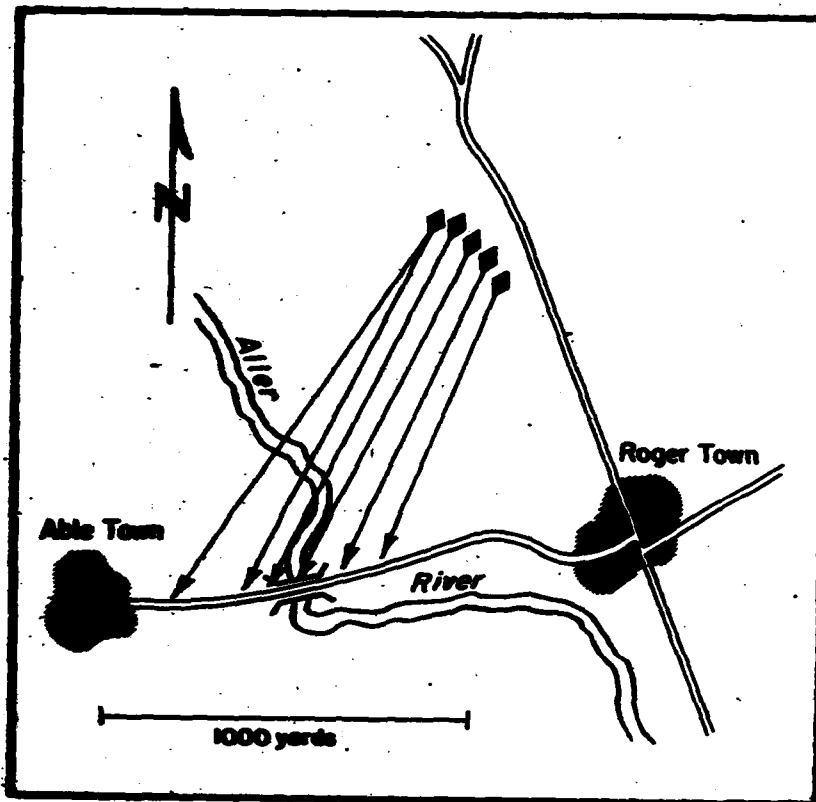
Later in the day we got a chance to support a river crossing. The Grenadiers had managed to cross on a fishing schooner and were attempting to seize Able Town on the far shore, which contained a major crossroad. I switched my loaned-out 300 radio to Major Rasch who was in command of the attack force across the river, and he gave me targets and times over that set. We were in positions in Roger Town with alternate positions for all tanks. Although we got credit for 7-9 Centurions, the attack was not successful due to an enemy tank battalion and infantry battalion in the town.

General Eisenhower drove up just as the attack was launched and watched our support fire and infantry jump off. Our communications with the infantry worked fine. Although their radio procedure was a little different from ours and they were working with a foreign set, we were able to understand messages and get on target in minimum time. I guess a tank platoon and infantry battalion just wasn't enough in this case regardless of the cooperation and communication.

We pulled back from our forward positions and were setting up a roadblock when the word came to rejoin our parent company. Under cover of darkness we rejoined just in time to attack on another front and seize a crossing of the same river five miles West before midnight.

We had a busy three days, but we'd learned several things—(1) in an outfit like ours the platoon leader needs a jeep, and bad. Lack of one costs us time and communication and vehicular casualties; (2) much valuable practical work with varying terrain, situations, etc., convinced us that they may "throw the book away" when combat starts, but they better have it memorized when they do. Not that we, or any other unit, can use one given solution for each given problem, but the Knox poop is a fine guide to go by; (3) in the tank-infantry-artillery team, teamwork counts; (4) adequate communications are made up of equal parts of proper procedure, constant maintenance, prearranged plans and ingenuity.

Next time they want someone to work with infantry, especially British infantry, we won't hide, we'll volunteer.



The question of German rearmament and her position in Europe, coupled with closer identification of the civil and military areas in America as a result of her position of world responsibility, makes this story of recent experience in Germany's history of interest to all

Reichswehr and Republic

by LIEUTENANT O. W. TRABER, JR.

ONE of the problems raised by the current issue of rearmament in Germany concerns the rise of militarism in that country. More than any other in this world, the German nation has been commonly cited as the illustration of the dangers of a military orientation. Is this identification valid? A tracing of the patterns of purpose and method of the German military leaders during the period of the Weimar Republic offers some interesting background.

This question has particular relevance to the problems of our own country today. There is a similarity of circumstances between the civil-military situation in the United States today and in the German states of past history. This similarity rests in the continual identification of the military forces with the very existence of the nation in the face of external dangers. The military forces were critical to Germany's ability to form a national state. Germany is located quite literally on the crossroads of Europe. Migrating waves of people, from the East and the West, have crossed her territory. Conquering armies have used these same routes, preceding or accompanying these migratory groups. Strong land armies had to be consolidated under a central authority before the influence of a central government could be extended over the German principalities. To-

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day, the position of the United States as a leader of the free world in its fight against communism seems to be increasingly dependent upon military force. Perhaps from German experience we can observe facets of civil-military relations valuable to us in our new responsibilities.

The example chosen is especially relevant for three reasons. In the first place, Germany is essentially a Western nation. True, she has not fully experienced all the chapters of the development of our traditions; but in many ways she is more like the Anglo-Saxon states than is France. Secondly, the government of Germany during the period covered by this paper was a democracy in the sense in which we understand the word. The Weimar Republic has been aptly described as the "Tull flower of Wilsonian liberalism." It was a liberal government, though differing from others in many respects, such as not having experienced a real fight for democracy and lack of practice in popular participation. An examination of these differences is beyond the scope of this paper. The third relevant factor is that the period covered is recent enough to see the army as a modern, highly rationalized organization. Elements of personal leadership were not nearly so essential to this Reichswehr as during earlier times. This army was as calculating and coolly efficient, if not more so, than any other before or since. The concept of total war, with all that phrase implies, was at the very base of their plans for the future.

Accepting the relevance of these studies, this article will be framed by

the following questions: First, what were the motives of the leading figures of the Reichswehr prompting their actions during this period? What did they see as the role of the army in stabilizing the German state, educating her young men, or influencing the politics of the government? Also, what were the attitudes of these leaders toward the republican form of their government?

The second question concerns the methods employed by these men to secure their aims. Were these attempts through means we would accept as proper, or ethical? Or were they the ruthless actions of power seekers, scorning the idea of a higher civil authority?

II

The history of the conditions surrounding the army during the time of the Republic generally follows the roles of four men. These four are each a complex of personal traits; they are not stereotypes, but their traits do combine in a striking way to illustrate reasonable conjectures concerning German military leaders as formed in American minds.

In Germany of late 1918, the conditions of the government fitted the word "chaotic" very well. After the fall of royal authority, and an actual, if not bloody, revolution, with the catastrophic defeat of the armed forces, little better would be reasonable to expect. Under the terms of the armistice in November 1918, the Wehrmacht moved back across the Rhine in superb order. But upon reaching their home areas, the mili-

tary formations largely disintegrated. There was little left of an effective military force. A "Free Corps" of militant irregulars sprang up to carry the fight to the Poles, menacing Germany from the East, and the Bolshevik Revolutionary Guards attempting to seize power throughout the nation. This Free Corps was encouraged and loosely directed by Noske, the minister for military affairs. These formations were oriented to the right, at least to the right of the Reds. This need not have been intentional, for the trained military skills at this time were the virtual monopoly of the right wing sympathizers.

The man who directed this withdrawal of the German Army was General Wilhelm Groener. He had succeeded General Ludendorff as First Quartermaster General (Chief of Staff) of the Army. He moved his headquarters to Kassel, where it immediately set to work planning the new Reichswehr. Groener was a most interesting personality. He was one of the few real liberals in the history of the German armed forces. It was he who had made the army recommendation favoring an armistice, thereby drawing upon himself the censure that should have been Hindenburg's, no longer effective as commander-in-chief. He had also favored abdication of the Kaiser as the preferred alternative to opposition to the revolution sweeping the country. Following this, he had the famous telephone conversation with the leader of the Majority Social Democrats, Friedrich Ebert, forming an alliance with Ebert's interim government. In this he exchanged the support of the high command for the government's promise to suppress the bolsheviks, then attempting to seize power through their Workers' and Soldiers' Councils. The assent by Ebert to the terms of this agreement gave the Reichswehr an autonomy from the start of the Weimar Republic. The nature of the agreement fitted in with Groener's conviction that the army had the right to define the best interests of the state and act accordingly. In June 1919, Groener saw the futility of further warfare and argued strongly for acceptance of Versailles' terms by the government. The result to him of this series of recommendations was a vulnerability to severe abuse from many quarters, especially within the

army. He was called an opportunist, a traitor to the Kaiser and deserter of the army, accusations which were to shadow him during the rest of his life.

The policies advocated by Wilhelm Groener were motivated primarily by Reason of State. He saw this as far more critical than the feudal ideas held by the majority of his officers—ideas of loyalty to the Kaiser, and professional honor. The effect of this concept can easily be seen in the points previously listed. Above all he was determined to save the unity of the state, with its unity and stability protected by the army. Part of this policy of unity was the idea that the army assumed a position above the squabbles of parties and factions. The army would be a magnificent rock about which the turbulent seas of politics would tumble. Another facet of this unity was seen in his strong attempt to retain universal military service. Such universal service would instill in the new generation a personal discipline, physical and moral health, and above all, the idea of selfless service to the German state. To secure this concession, he sought to instruct the delegate of the Foreign Office to the peace talks, Count Brockdorf-Rantzau, in the tactics to be utilized. In this move he was quite unsuccessful; the Allies were adamant.

After seeing the majority of his policies accepted by the German government, General Groener retired from the army. This was not, however, the end of his public career. Later he was to perform capably as Minister of State Railways, a job similar to the one he did in uniform during the war. It is interesting to note the names of two of the officers on his staff when he retired, von Schleicher and Hammerstein, two more of the principal characters of this sketch. This staff was busy preparing the plans for the new Reichswehr, plans which were to be put to such good use by the next important figure, General Hans von Seeckt. A primary vision behind these plans was that of total war. This idea fitted in neatly with the well known "stab in the back" theory to be advanced later. Realization of total war brought with it the need for popular support for the armed forces, both to maintain the esprit of conscript formations, and, more earthily, to allow easier passage

of the huge budgets required by modern mechanization. We shall see later how strongly this latter need impressed one of the figures to be discussed.

The successor to General Groener was General Hans von Seeckt. He is rightly acclaimed as the builder of this magnificent fighting machine. The army that he fitted to the frame of the Versailles treaty was notable for its high morale and superb technical skill. It was truly an army of leaders. The indirect effect of the Treaty of Versailles is unmistakable in the quality and composition of this force. The limit of 100,000 men meant that none but top quality soldiers need be accepted. This quality was aided by the uncertain conditions on the civil front during this period. Also, the matériel restrictions imposed at Versailles aided a swing away from the tactics of Ludendorff to a better appreciation of the inherent capabilities of infantry. Finally, limits on size and matériel avoided civil-military friction over a large defense budget.

Another facet of this limitation was the collaboration with Russia, undertaken soon after the end of the war. This collaboration reflected both the technical limitations of Versailles and the belief of many Germans that an eastern orientation would be more beneficial to the state than one directed toward the West. Many military observers were impressed by the inherent strength of Russia's spaces and manpower, the danger of her nearness, and the complementary nature of German industry and Russian resources. Von Seeckt considered the politics of the Reds as no more important than those of the Weimar Coalition when placed alongside the higher mission of a strong military machine. Russia was an area in which the forbidden tank men and pilots could be trained, and that was the critical consideration.

The implications of Reason of State took a somewhat different direction with von Seeckt than they did with Groener. He saw this concept as demanding as strong an army as possible to defend the Fatherland. This meant technical skill and undivided loyalties. Risk of internal dissension precluded military resistance to the Kapp Putsch of 1920. Technical skill required the Russian collaboration, but all of the relations between governments re-

quined by this move were handled by the War Ministry to maintain internal and external secrecy; this would avoid arousing political parties favoring alliance to Versailles, nor would the Allies be able to exert as much pressure on the Foreign Office on an international matter that the latter didn't handle. Thus even this "political" activity was made out to be purely military, emphasizing even more the independence of the Reichswehr. Von Seeckt saw political parties as unstable, divisive influences, to be avoided by his officers. Political isolation was maintained, not simply political neutrality. Service to the state, as physically represented in the person of their military leader, was the focus of the loyalties of these subordinates. This political isolation was to cause serious difficulties at a later period because of the naive reactions of junior officers to the absurd Nazi promises. They were unable to see the implications of the Nazi claims to super-patriotism and desire for a larger war potential. They missed completely the direction of Nazi dreams and aspirations, falling spell-bound before the demagogues of the Nazi movement.

In 1928, the long-time Reichswehr minister, Otto Gessler, resigned in the face of a scandal over naval accounts, and Groener was called from retirement to take his place. The considerations of this choice merit discussion. Gessler's being a professional soldier commended him strongly to the President of the Republic, Hindenburg, serving to indicate the degree of influence of the old Marshal in political affairs even at this early date. Secondly, the Social Democrats seemed likely to come to power after approaching elections, and a minister was wanted who could effectively plead with them for heavy new-construction funds. This estimate proved well founded, for the Social Democrats formed the new cabinet, and remembering Groener's liberalism and his actions in 1918, retained him in office. These circumstances probably gave Groener an unduly high estimate of his personal influence, especially upon Hindenburg and the high command, accounting for his later inability to forecast trouble brewing. The policies followed during his tenure seem to be very much the same as those mentioned before. His opposi-

tion to Hitler and his private army was continual and sincere, though delay over plans to disband the latter made effective action more dangerous. The postponement was caused by Groener's strong desire to eliminate the breeding grounds for such an organization by adopting universal military service to properly indoctrinate the young men, and formation of a large sports organization to take most of the unemployed youth "off the streets." When he was obliged to act by increased Nazi disorders (he had also become minister of the interior) he found the army and the President no longer in sympathy with his program, and was forced out of office.

When Groener became Reichswehr minister, he immediately installed his protégé, Kurt von Schleicher, in the job of political liaison officer with the army, the other ministries and the parties. Schleicher had a personal authority as well as ideas of his own. He was a former messmate of Hindenburg's son, Oskar. As the President had grown older, the influence of a circle of intimates upon his decisions became more pronounced; through this son, Schleicher was a member of the circle. It is one of the tragedies of the Republic that as the President became mentally weaker, the role of his office in the conduct of government grew so essential.

Schleicher was undoubtedly the most politically minded general in the Reichswehr. He and Groener agreed upon the desirability of Bruening as Chancellor some months before this took place, though their influence on this choice is unknown. Schleicher also conspired with others to attain the removal of the leader of the powerful and arch-reactionary German National Party in order to form a more dynamic right-wing faction. Later this idea developed into a plan to reorient the political base of the government away from the old parties and toward interest groups such as religious organizations and trade unions. It was on the issue of dissolution of Hitler's *Sturm Abteilung* that Schleicher split with his chief. His reasons for this are not clear, for he was not a Nazi, and later tried to rally the army against this danger after Hitler became Chancellor.

With the fall of Groener, and the Bruening Cabinet, Schleicher reluctantly assumed the post of Reichswehr

minister. After von Papen, Schleicher was Chancellor for two months before being dismissed by the President in favor of Hitler. A year later, he was murdered by the Nazis incidental to their purge of the S. A. leaders.

Schleicher also felt the guiding hand of Reason of State. This was the view he shared with Groener in seeing Bruening as capable of forming a cabinet less shaken by factional squabbles. But to him the calls of this concept were unique, for he seemed to emphasize above all the need for strong popular support for the Reichswehr. Strong popular support meant a strong popular government. Undoubtedly he supported Groener's alliance with the Social Democrats in 1918. As the leading social forces in Germany moved to the right, Schleicher moved with them, probably without realizing the true nature of the Nazis. This would explain his support of Bruening as the man most likely to form a strong government, his attempts to build a strong right wing party, and his initial willingness to tolerate the Nazis. His change of heart may have come with a realization that the Nazis' ideas of popular support were rather radical to say the least, including a revision of the role of the army that could not be made compatible with his long-time views.

General Hammerstein is of importance to this paper not because he was a key figure in the political activities of the Reichswehr during this time, but because he was so far from being politically inclined. His position was the same as that held by Groener and von Seeckt at earlier dates: chief of staff, actually military commander of the *Wehrmacht*. He was a capable, courageous military leader. His selection was carefully made by Groener, who passed over Schleicher in the choice. Illustrative of his political courage are instances such as his defense of Schleicher's name after the latter's murder, and his presence at Groener's funeral in 1936 after the Nazis had denied military honors. Yet he failed to raise any serious obstacle to the overwhelming of the Republic, and then the army, by the Nazis. His attitude was apparently one of complete subordination in political matters to the judgment of the political leader of the Reichswehr. Groener described this

aply when he wrote that this "non-political soldier follows his friend Schleicher like a well-trained hound." Fighting was his business, political affairs were Schleicher's. Building and directing a strong army was his task as the military chief; he would defer to anything the minister said about political matters. The direct weakness of this attitude—perhaps inherited from that of von Seeckt—was that this military chief did not defer to Schleicher as a member of a higher political authority, but to Schleicher as a political authority himself. The isolation of von Seeckt was gone; only the political artlessness remained. The root of this difficulty is deeper, for the outward form of deference of the military to top civilian control is accepted as basic to western democratic thought. The question is whether such an arrangement is as workable under conditions of a basic division of ideas concerning the nature of the civilian government itself and an absence of any tradition of civilian political supremacy. Though the first condition is in a sense characteristic of France, the call to defend the Republic has had immense popular appeal when the chips were down. In a much more direct way, both of these conditions plagued the German Republic. Not only was there a considerable sentiment of disgust among the army officers over republican politics, developing into a yearning for a more stable, authoritarian form, but there was an even more basic lack of appreciation of the nature of constitutional government itself. It is important that, in civilian-military relations, the generals realize that the war minister knows and obeys the law, and equally important that the reverse be true. If it did happen that an American Defense Secretary required an unconstitutional act of his military chief, it does not follow that the general would obey. This certainly could not have been said for General Hammerstein.

III

How does this brief narrative serve to clarify the questions presented in the introductory section? First, let us summarize the motives of the military leaders. The predominant motive of all seemed to be Reason of State, though this took form in a number of different concrete policies. To Wil-

helm Groener, it required that a unity be attained by the state. By placing the army above the reach of political differences, it was to serve as a stabilizing influence, always ready to restrain the excesses of the various factions. The good of the state dictated the less abstract policies of capitulation to the Allies in the face of a hopeless military situation, and of avoidance of force in countering the popular revolution of 1918. Von Seeckt saw service to the state as the concept around which to rally the loyalties of his men. Reason of State meant to him personally the strengthening of the military forces of the nation by all practicable means, including political isolation and collaboration with the Russians. Schleicher showed his bias by emphasizing the aspect of popular support for the Reichswehr required by the advent of total war. The strongest elements of the social structure were the places to look for this popular support. Thus he followed the trend of the voters from the leftist Social Democrats in 1918 to the radical right Nazis in 1932. Finally there is the non-political soldier Hammerstein, who seemed to feel that the determination of this Reason of State was better left out of the hands of the military, not a really proper topic of discussion among true members of his class of experts.

It will be useful at this point to classify the methods utilized in pursuit of the implementation of these aims. The first method was by direct contact with the other officials of the government, such as the Groener-Ebert and Groener-Brockdorff-Rantzau incidents. This capitalized on the native respect for an expert as well as the traditional deference to the Reichswehr in defense matters. In the run of such relations, the normal sources of friction between the civil-military officials over the budget were settled by the limits of Versailles. A second source of external influence grew from the position of the President of the Republic. This position was never that of a mere figurehead, and when it was filled by the senior soldier of the nation, the relations between the Reichswehr and the President became quite close. This relationship was especially influential when the government-by-emergency-powers emerged, for then the Chancellor depended for his tenure upon

the toleration of the President. Under a less important class would come the influence exerted by the Reichswehr upon the choice of cabinets, with military pressure favoring the strongest coalition regardless of domestic policies, except those harming the military. A fourth influence, latent and usually unintentional, was created by the hesitancy on the part of the government to ask the Reichswehr to take action against disorderly rightist groups. The most serious failure by the army in this respect occurred during the time of the Beer Hall Putsch in 1923. The federal commissioner, equipped with summary powers, failed to comply with orders from Berlin that were opposed by the rightist Bavarian government. This man was General von Lossow, commanding the federal troops in Bavaria; the orders were to suppress Hitler's newspaper. The impasse only came to a solution when the monarchist rightists in the government realized that the monarch favored by rightist Hitler was neither William II nor Crown Prince, but Adolf. Similarly, von Seeckt had opposed armed resistance to the rightist Kapp Putsch in 1920, though for much more valid reasons than Lossow advanced three years later.

The positions of each of these military leaders had fundamental weaknesses. Groener's emphasis on the abstract idea of the German state allowed his followers to avoid a commitment to the more concrete form of the government of that state. Von Seeckt was even more aloof toward the political affairs of the state, inducing an indifference to political affairs so well emphasized later by Hammerstein. Finally, Schleicher's attempts to gain mass popular support for the Reichswehr served largely to discredit the constitution and the government in the eyes of the army. None of these men seemed to desire to control the affairs of state, yet the policies of all of them contributed to the inability of the government to exercise such control. The picture may well have been different had more sincere "republicanism" been felt in the high command, ministry and officer corps. These leaders were not likely to say, as General Bradley did recently, "I am loyal to my country, but I am also loyal to the Constitution."

HOW WOULD YOU DO IT?

AN ARMORED SCHOOL PRESENTATION AUTHOR: CAPT CHARLES G AMES ARTIST: PFC WILLIAM T DICKEY

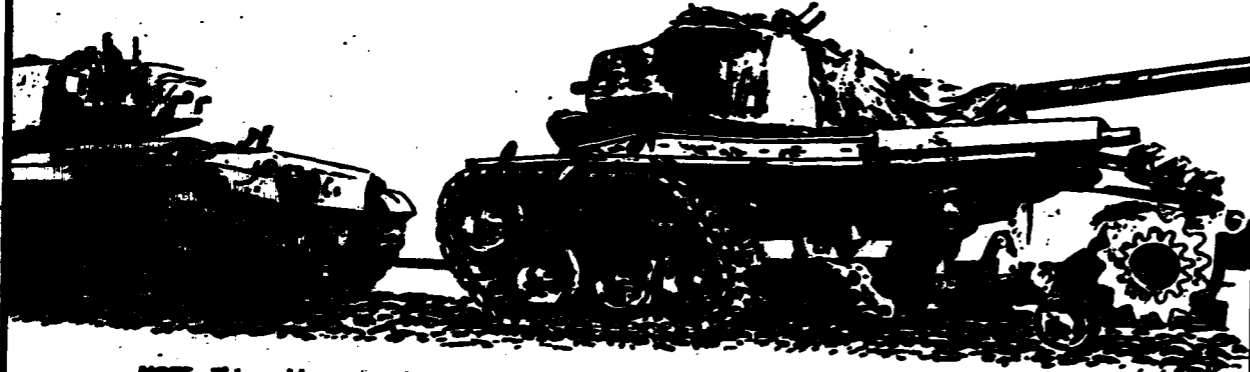
SITUATION 1. One of your platoon of M-46 tanks is damaged by enemy mines. Damaged are the three rear road wheels, the auxiliary idler, the two rear support rollers, various mounting brackets, and shock absorbers on one side of the tank. The disabled tank must be evacuated to the rear using the minimum number of the remaining platoon tanks. The type of terrain over which the vehicle is to be evacuated has a mixture of soft, muddy, rice paddy and hard road. What would you do to accomplish the evacuation in the best possible way?



SITUATION 2. During a road march one of a platoon of M-46 tanks fails to make a turn and upsets on its side just off the shoulder of the road. The road is only 20 feet wide, is bounded on one side by a sheer cliff 50 feet high and on the other side by a 45-degree slope covered with large rocks and trees; it would be impossible to get any of the remaining vehicles off the road. Because of the rough terrain, the disabled tank would have to be on the road before it could be released from any hook-up that righted it. Realizing that it would be impractical to use self recovery, you, as a motor officer, decide to take the M32 recovery vehicle to recover this tank. How would you do it with the least amount of delay? The equipment you have consists of the tow cables and pioneer tools from the platoon tanks, and the M32's own equipment which includes two snatch blocks. You of course also have available such natural facilities as logs and trees.

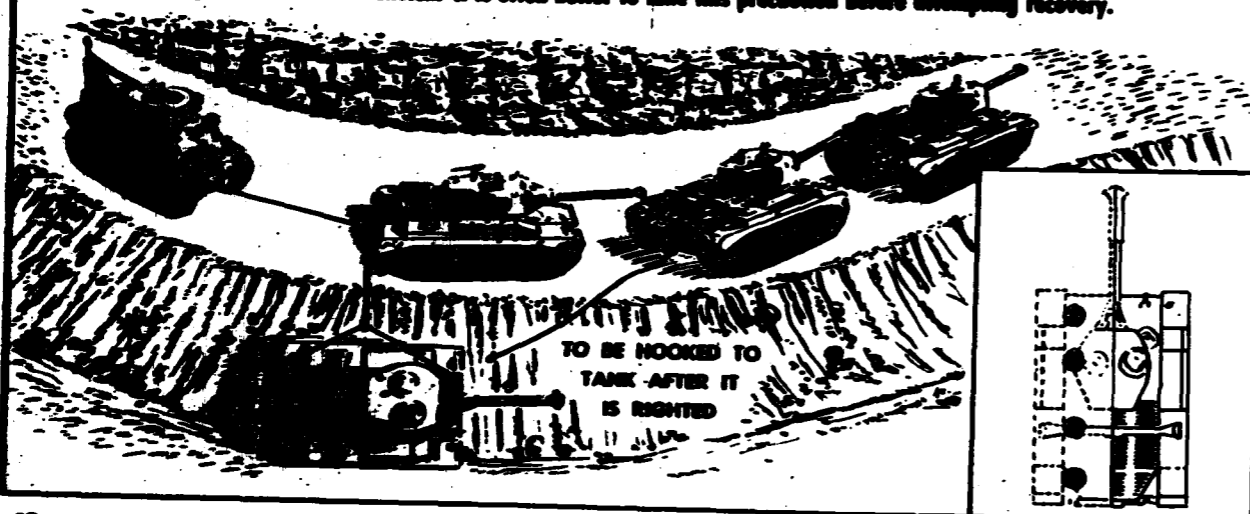


SOLUTION 1. To make the truck back-up shown in the solution picture, you have to remove the middle support roller and the damaged road wheel arm and mounting bracket of the fourth road wheel. You also have to break the tank at the proper place to hook it up around the remaining road wheels and support rollers. To break a tank under combat conditions, where time is a major factor, it has been found practical to remove the center guides and wedge nuts and place a ½-pound block of TNT on the open side of each end connector. One ½-pound block is usually sufficient to blow off or loosen the end connector so that it can be removed. The TNT will not damage the tracks or pins. The chief advantage of this type of connection lies in the increased traction furnished by the partial tank permitting towing by one tank. Moreover, towing a tank any distance over hard ground on the road wheels alone destroys their rubber tread and renders them unserviceable.



NOTE: This problem was submitted to The Armored School for use in training by Major Ralph C. Woodrow, who is S3 of the 64th Hvy Tk Bn, 3d Inf Div, in Korea. There the problem is common and is successfully solved in the manner described.

SOLUTION 2. Using one platoon tank as an anchor, fasten a snatch block on the rear lifting hook of the anchor tank. Run the winch line from the M32 through the snatch block on the anchor tank and to the tow cable that is attached to the two lifting hooks on the upset tank. Engage the winch and upright the tank. By fastening two or more tow cables together and using one or more of the remaining platoon tanks, the tank can be pulled up on the road. The M32 would have to pay out its winch line slowly as the upset tank is pulled forward. In case the anchor tank slips to the side, it would have to be anchored by digging logs in as shown by the inset on the sketch. It is often better to take this precaution before attempting recovery.



TO BE HOOKED TO
TANK - AFTER IT
IS RIGHTED

FROM THESE PAGES

60 Years Ago

The importance of shock action of cavalry has of late years been much underrated, and attempts have been made, with more or less success, to lead up to the idea that the charge with the saber is a thing of the past, and that in coming wars cavalry will have to depend for its success on fire action, and not as heretofore on the charge, to produce its effects in battle.

If we admit this to be true the troopers of the future will be nothing more nor less than mounted infantry, no matter what other name they may be given. This is the logical conclusion of abandoning the saber as the principal weapon for cavalry, or making it secondary to the carbine or the revolver; for it is but reasonable to suppose that when possible, arms will be used under those circumstances in which the greatest effect can be derived from them, and as the most ardent advocate of fire action for cavalry will scarce claim that they can be used with anything like the same precision and effect on horseback as on foot, it follows that to use them to the best advantage the men will have to be dismounted; consequently the troops which depend on their fire action will have to fight on foot.

The Shock Action of Cavalry

LT. J. Y. MASON BLUNT

50 Years Ago

To students of the art of war the introduction of gunpowder as a propelling force in engines of war stands out as the most prominent event in the evolution of that science. It was, indeed, a red-letter day on History's calendar. "The art of war, which until now has found its advantage only in superior numbers, or in the great personal strength and fiery courage of the warrior, became a science; and the most skillful usually carried away the victory from the merely brave."

It would be interesting to trace in detail the development in firearms, beginning with the bombards—made in France as early as 1328—and ending with the most recent productions; but such is quite beyond the scope of this paper. Confining ourselves, therefore, to the last fifty years, it will be remembered that within that period the muzzle-loader has been replaced by the single-shot breech-loader, which in turn has given way to the magazine rifle; and today many of the European powers are considering the advisability of adopting an automatic magazine rifle.

The Automatic Small Arm

LT. AUBREY LIPPINCOTT

10 Years Ago

TOTAL WAR is ghastly! We and our Allies are now confronted by a sinister, unethical enemy of coalition whose Nazi-Fascist-Jap imbued methods of waging warfare are particularly contemptible, repugnant and repulsive to our civilized minds.

The Axis gangster nations have replaced the international *Rules of Land Warfare* by total despicable **RUTHLESSNESS**, under the guise of military audacity and sagacity.

The United States was still pleading for peace in patience and good faith, still offering Japan honorable friendship when the Tokio government, making plans for a surprise attack upon an unsuspecting friendly populace, struck without warning. It indubitably was premeditated! *Thus, the treachery was complete.*

In total war we fortunately know what to anticipate. Since this war apparently is to be total we also know how to wage it. If we must accept the *gasman's*, we can! It includes the effective employment of every known weapon, sabotage, and subterfuge. Thus far, the use of lethal gas by our enemy has been the only exception—probably through fear of retribution. Yet, unfortunately, its employment still is within the realm of possibility. Its main value obviously is in surprise action. Training in anti-gas measures, therefore, must be stressed continually—for animals as well as for personnel, both military and non-military—and also in its offensive utilization.

We must *always* be alert and remember that when our totalitarian, barbaric enemies realize that ultimate defeat is inevitable, they will resort to *any* means to further their despotic objective. We wisely should acquire a *total war perspective*.

Total war, as we understand it, implies the force of arms, strife, mass-starvation, brutality and national hostility in every detail.

We shall not forget! We cannot forget!

Total War

EDITORIAL COMMENT

25 Years Ago

Several years ago, a cavalry officer of the Reserve came to Fort Riley and attended the Reserve Class at the Cavalry School. This officer had perhaps always been a good cavalryman, but it is certain that he left Fort Riley strongly imbued with the teachings of the school and enthusiastic as to the possibilities that have been opened for the use of cavalry as a result of the World War. Subsequently, he conceived the idea of a competitive test in "The Combat Leadership of Small Cavalry Units." The January, 1924 issue of the **Cavalry Journal** announced a prize essay contest to determine the best plan for carrying out this idea.

Fourteen essays were received. The judges were of the opinion that none was in itself complete, yet many contained excellent suggestions which later served as a basis for the plan actually decided upon.

In the fall of 1924, boards were convened at The Cavalry School, and a test was prepared as had been desired. In the spring of 1925, this test was successfully conducted within the 2nd Cavalry. The prize of \$1000.00, donated by the sponsor of the idea, was won by the platoon from Troop F, 2nd Cavalry, Lieutenant J. W. Wofford, commanding.

The object of the test, as announced, was to encourage and test the training, courage, and physical development of men and mounts and the combat efficiency of the units. The test was divided into two phases: the first, an individual test for both officers and men; the second, a test of the unit as a whole. Only rifle troops of the 2nd Cavalry were eligible to compete. These were permitted to enter one platoon each, consisting of two rifle squads, one machine rifle squad, and platoon headquarters. The winner was to be that platoon scoring the highest number of points in both phases combined.

The 1926 Cavalry Leadership Test for Small Units
CAPT. W. B. BRADFORD

THE BOOK SECTION

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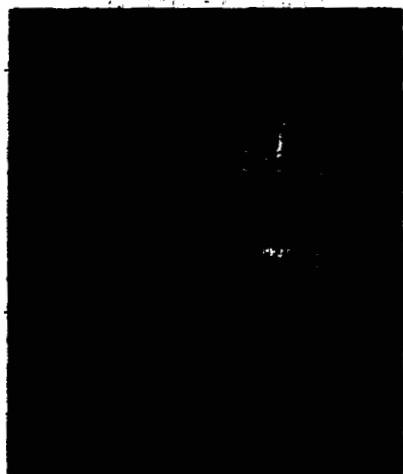
THE GREATEST AMPHIBIOUS OPERATION IN HISTORY

CROSS-CHANNEL ATTACK. U. S. Army in World War II; The European Theater of Operations. By Gordon A. Harrison. Government Printing Office, Washington, D. C. \$5.25.

Reviewed by
J. F. C. FULLER

In this new volume of the *United States Army in World War II* is described with clarity and impartiality what its author rightly claims to be "the supreme effort of the Western Allies in Europe." Therefore it is the most important of the European series, an importance enhanced by the fact that, because both Allies are sea powers, should they together become involved in yet another European conflict, the high probability is a repetition of their grand manoeuvre.

The Author



Gordon A. Harrison is a former newspaper reporter, and instructor at Harvard University. Holder of a Ph.D. from Harvard, he served in a combat situation with Third Army during World War II, taking part in the campaign.

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The scorn from out of which it germinated was, that though in 1940 Germany held the initiative on land, she was unable to wrest it from the British on the sea, and because she failed to do so, she was compelled to over-extend her armies. Actually, every new conquest made by her indirectly added to British and later on to American sea power, until by 1944 her garrisons in Western and Southern Europe were so stretched that at no single point on the vast circumference of her initiative could they

FEATURE REVIEWS
EXCLUSIVE WITH
ARMOR

w withstand an adequately prepared and determined overseas assault.

The point to note is, that from the moment Germany struck at Russia she automatically placed herself between two fronts: the unconquered British sea front and the to be conquered Russian land front. Russia was not her first front. Russia was her second front, a front altogether subsidiary to the first because strategically the first was directly unapproachable. From the start and increasingly so as the war deepened, the first front pinned down vast numbers of German soldiers who might well have tipped the scales in Russia.

Though inescapably the idea of a cross-Channel invasion was precipitated by the Dunkirk disaster, it was not until the Japanese assault on Pearl Harbor brought the U. S. into the war that it took concrete form at the "Arcadia" Conference, which opened at Washington on the last day of

December, 1941. The decisions arrived at were remarkable, and out of them sprouted the whole course of Western strategy: Germany was to be worn down by bombing, Russia assisted, the northern coast of Africa won, and a return to the continent made across the Mediterranean, either "from Turkey into the Balkans, or by landings in Western Europe," as "the prelude to the final assault on Germany itself." All sprang from "Arcadia," and the rest was, as Mr. Harrison aptly says, "a problem of tailoring an ideal strategy to the changing political and military shape of a war in which the enemy at first had the initiative."

This changing shape was largely governed by events in Russia and North Africa. Were Russia to accept a negotiated peace, the might of Ger-

Continued on page 52

The Reviewer



J. F. C. Fuller, planner in the tank field and in the concepts of armored warfare, is one of the leading military analysts of the day. He is the author of many books, including *Armored Warfare* and *The Second World War*.

ARMOR—January-February, 1952

THIRD ARMY FROM THE MOSELLE TO THE SIEGFRIED LINE

THE LORRAINE CAMPAIGN. U.S. Army in World War II; The European Theater of Operations. By Hugh M. Cole. Government Printing Office, Washington, D. C. \$10.00.

Reviewed by
CYRIL FALLS

This is the first volume so far published dealing with the European Theater of Operations in the series "United States Army in World War II." If the rest proves as good it will be excellent. Official military history never makes light reading. Maj. Gen. Harry J. Malony says that one of the objects of the Department of the Army is "to help enlarge the thoughtful citizen's concept of national security" in this series. I hope it will succeed; but I expect the chief appeal to

The Author



Hugh M. Cole taught military history at the University of Chicago prior to World War II. During the war he served as Third Army and Deputy ETO Historian, is now a member of the staff, U.S. Army's Historical Division.

ARMOR—January-February, 1952

be to the professionals and then to veterans of the Third Army.

Yet this sort of history can be decently and lucidly written. Dr. Cole's work is. It is also as frank as can be expected. When troops fall below their best he says so. When commanders set them virtually impossible tasks he clearly implies that this has been the case. He records adverse German criticism. I feel, however, that he is a little too discursive and that a gentle pruning would have improved the work by making it more vivid.

The maps are clear and handsome. As regards the photographs, I regard some just as pleasant embellishments, but the obliques taken from the air are first-class features. They have a genuine tactical significance—for the student the next best thing to a visit to the ground.

A mark of good military history is that, while the enemy's situation may be described more briefly than that of one's own side, it should always be made equally clear. Here this need has been amply met. The period is interesting from this point of view. Hitler had realized the danger from the west. He had created a number of new divisions and provided numerous fortress troops. He had turned over to the west brand-new Panzer brigades equipped with Panthers, though he would have been wiser to put the new armor into the skeleton Panzer divisions. The human material was often poor, but some of the crocks fought remarkably well.

On top of all this the Third Army faced many rivers which soon flooded into wide sheets of water. There were the forts of the Metz-Thionville region, the Maginot Line, and beyond

them the West Wall. On the other hand, the Third Army had generally about a two to one numerical superiority, better and far more numerous artillery, more shell, more armor, strong air support when weather permitted, whereas the troops seldom saw a German aircraft.

At the beginning of September, 1944, the Third Army, with two big bridgeheads over the Meuse, faced the Lorraine campaign with a belief that its progress to the Rhine was going to resemble that which it had made since the break-out. General Patton's confidence was shared by General Eisenhower. In fact, amid the floods, the Lorraine mud, the forts, and the pillboxes, a new type of warfare developed. Progress was slow, painful, and costly. When the German Ardennes offensive brought

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The Reviewer



Cyril Falls is Chichele Professor of the History of War at Oxford University. He is Military Correspondent of The Times, London, and contributor of the weekly column "A Window on the World" to The Illustrated London News.

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CROSS-CHANNEL — Continued.

many could be turned westwards. Should, however, Britain be overwhelmed in North Africa, the Middle East might be lost. These two possibilities set up stresses and strains, Russia pulling one way and Britain the other. But assistance of either depended on American shipping, which at the time was lamentably short.

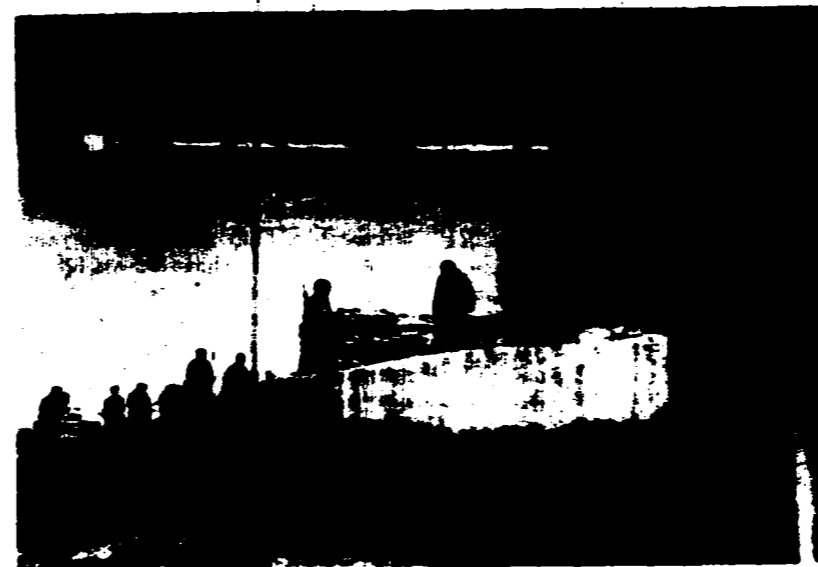
Next, in June, 1942, the crushing defeat sustained by the British in Libya pushed the project of the invasion of North Africa to the fore. Mr. Churchill was its protagonist, and though General George C. Marshall opposed it, on July 25 President Roosevelt decided that it should be made. Thereupon the planning for a cross-Channel attack, known as "Roundup," came virtually to a standstill.

The North African invasion was an unqualified success, so much so that new stresses and strains at once set up between the two Western Allies. These led to another conference, one of the most important of the war, and when on January 12, 1943, it assembled at Casablanca, the shape of the war had again greatly changed. In Russia, Germany had shot her last bolt, which meant that a Russo-German peace was now highly unlikely. This shifted the dominant allied problem from a political question onto the inherent strategic differences between the two allies. It is important to fathom them, for when differences spring from deep-rooted causes, history is apt to repeat itself.

What were these causes? That Britain is an island power, and America a sea-girt continental power. Whereas the smallness of the former has always made her chary to commit herself fully in a continental war, the vastness of the latter instinctively urges her to do so. We British are the exponents of the indirect approach and look upon war as a business; you Americans are the champions of the knock-out blow, and you look upon war as a crusade. These differences explain the wrangle at Casablanca. The American perspective was Napoleonic—seek out the enemy's main army and destroy it; the British was Frederickian, a balancing of forces, and therefore more opportunist. As General Bradley has so well said: "...



... where the Westwall is prepared for defense ...
Captured German Photo



... where the Westwall is prepared for defense ...
Captured German Photo

having once entered the Mediterranean, the British were reluctant to leave it. Whatever that sea lacked in military advantage it offered in political opportunity.

The deciding factor in this wrangle was, however, neither strategy nor politics, it was landing craft. Sufficient could not be produced for a cross-Channel attack before 1944. A half-measure was, therefore, decided on, namely that a cross-Channel planning

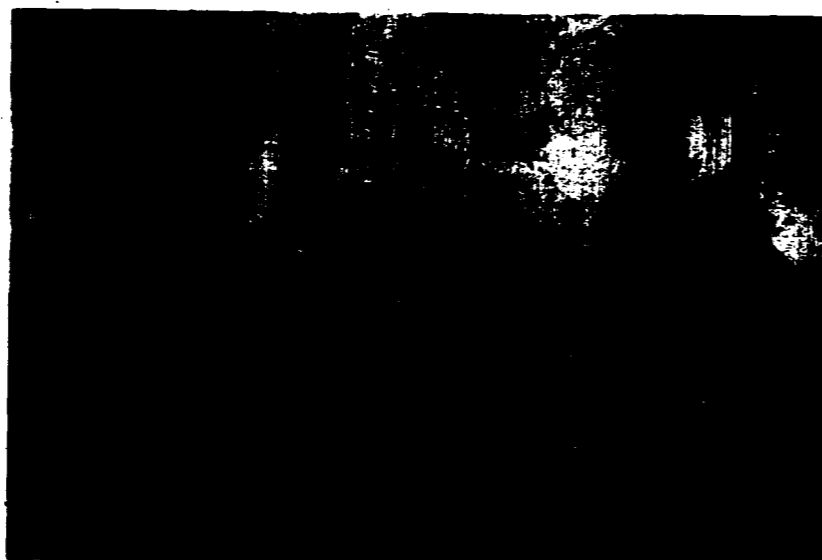
staff known as "Cossac," should at once set to work, and that, directly Africa was conquered, in order to draw German forces away from Russia, Sicily was to be invaded.

The cross-Channel project now passed into its preliminary planning stage, but before it had gone far, the rapid conquest of Sicily and the fall of Mussolini once again changed the shape of the war and re-precipitated the Anglo-American wrangle. Italy

was now to be invaded, and the forces needed for it called for a reduction of the build-up of "Overlord," as the plan of the invasion of North-western France in 1944 had by now been named.

This new wrangle centred, not on whether "Overlord" should or should not be carried out, but on the date of its launching. As Mr. Harrison explains it: "The British said in effect, 'How can we tell what we should do

six months or a year hence until we know how we come out of the next month's action?' The Americans retorted, 'How do we know whether next month's action is wise unless we know where we want to be a year from now?' The argument was as unanswerable as that of which comes first, the hen or the egg? Again it led to a half-measure: "Overlord" was not cancelled, but somewhat vaguely postponed while Italy was conquered.



... for the invasion of the European continent ...
U.S. Army



... for the invasion of the European continent ...
U.S. Coast Guard

At length a full message was reached and through an extraordinary misunderstanding of Soviet strategy and aims. In October, at a meeting of U. S. and British military and diplomatic representatives with Russia at Moscow, the American General John R. Deane became convinced that there were signs that Russia might prefer an intensification of the campaign in Italy, or the launching of an invasion of the Balkans, to the "Overlord" project. Next, on November 28, at the Teheran Conference, this possibility was raised, and Stalin's answer was an emphatic "No!" North-western France was Stalin's choice, not only because it was strategically the right spot, but also politically the most distant from the Balkans!

With the appointment, on January 14, 1944, of General Eisenhower to the command of the Allied Expeditionary Force, the travail of "Overlord" ended: from then on there was no going back.

The first step the Supreme Commander took was to widen the frontage of the initial assault from three to five divisions, in order to bring the Cotentin within the invasion area. As this demanded additional landing craft, not only had the date of the invasion to be postponed for a month—a most unfortunate necessity, as it meant the loss of thirty days good campaigning weather—but every other maritime operation then in progress had to be crippled by the surrender of landing craft. Finally, June 4 was fixed upon as D-day.

From here, which brings the reader to less than halfway through this vastly instructive volume, space prohibits me touching upon more than three salient points.

The first is that, as the Battle of Cambrai in 1917 may be said to have introduced sea warfare on land, the invasion of Normandy, as also all previous invasions in which landing craft had figured, may be said to have introduced land warfare at sea. The tactical change was startling. Hitherto overseas invasions had been so difficult and risky that they were seldom attempted. Now, with the aid of landing craft, which tactically spanned the old gap between ship and shore, they became, comparatively speaking, so easy that throughout the war not a single one failed.

Continued on next page

CROSS-CHANNEL — Concluded.

The second point is: whereas in the past cavalry was employed to search out, find, picket, fix and immobilize the enemy, and also to raid his communications and rear services, in order to prepare the way for the infantry battle, so today, in order to guarantee the success of an overseas invasion—a land battle launched from the sea—it is incumbent on the cavalry of the air to do exactly the same. On this vitally important question I commend to the reader the whole of Chapter VI for careful study.

The third and last point is that throughout the latter half of this volume one fact again and again hammers at the attention of the reader. Though in no previous war had science and industry played so important a part, as in all past wars it was man and not the machine or weapon who triumphed—the thinker, the planner, the administrator, the commander, the leader, and finally the fighting soldier. Further still, among these many types of men who go to make up the battle, as always, the unaccountable and incalculable one is the hero, that intrepid and fearless man—a Captain Omer C. Weathers, a Corporal John D. Kelly or a Private Ralph G. Riley—who does something God-given.

Since history should be a laboratory and not a museum, what is the leading lesson of this volume? If I read Mr. Harrison aright, because the oceans and the seas girdle the land, it is the might and majesty of sea power.

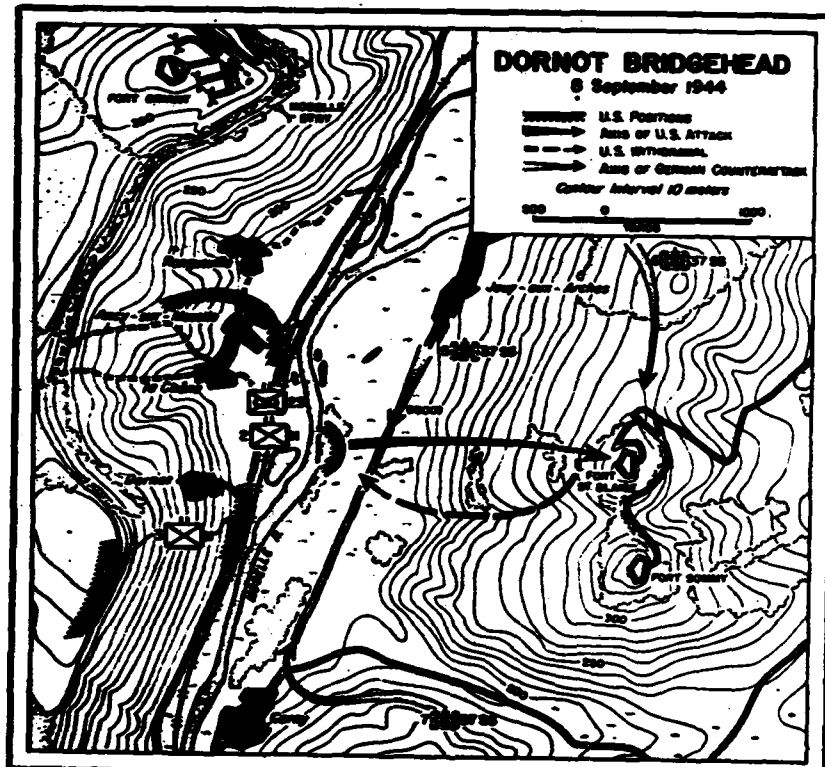
It was sea power which enabled the Western allies to draw on the resources of the entire world outside the enemy countries, and thereby sustain themselves during the war. It was sea power which deprived their enemies of essential raw materials, and therefore hastened their defeat. It was sea power which lashed Hitler on the southern shore of the English Channel and compelled him to over-extend his armies by occupying hundreds of miles of coast lines. It was sea power which enabled Russia to hold the field, and ultimately, as described in this volume, it was sea power which enabled the Western Armies to cross the Channel to Normandy. Sea power was the grand catalyst of victory.

LORRAINE — Continued.

the advance to a stop the Third Army had fought its way through to the West Wall, but that obstacle remained unbreached.

Dr. Cole is discreet in dealing with the great controversy on "wood-front versus narrow-front" strategy—"The versus Monty"—but gives the essential considerations. Of course Patton thought himself as ill used as did Montgomery. I incline to the view that the so-called subordination of the role of the Third Army to the offen-

great thrust through the West Wall at Aachen have been expedited, enlarged, and maintained on a fuller gasoline allotment at the most critical stage of this advance? What would have been the effect of a more generous treatment of General Hodges upon the use of the slender German reserves? (The Third Army can hardly be said to have drawn off directly opposition from the First, but it did exercise an important effect by causing divisions ordered north to remain where they were, or anyhow in retarding their departure.)



XX Corps crossing of the Moselle River.

sives farther north was not a major factor in slowing down its progress. The hold-ups at the beginning of September and in the last week of the month were very brief. I imagine that logistic overstrain would have been hampering anyhow in the first period, and in the second the Third Army was able to get on with some short-range operations which could not have been avoided anyhow.

A more subtle question is how far the Third Army's slightly limited but still very big role prejudiced the advance to the Ruhr, but it is one that is very difficult to answer. Could the

I will say only that, with what I hope are common-sense reservations, I remain an unrepentant believer in the narrow-front doctrine. In case this should be set down as due to national prejudice, I add that, in my view, it would have been well if the British 21st Army Group had cleared the Antwerp approaches, a godsend to the whole supply situation, before attempting the "Market Garden" operation for the jumping of the water lines on the axis Nijmegen-Arnhem.

A reviewer can, and ought to, be even franker than the frankest official historian, though he should also be

humbler, since his knowledge is far inferior. Bearing both considerations in mind, I will deal with the most unhappy incident recorded in the book, the underestimation of the Metz defences. It may have been legitimate optimism to regard Metz-Thionville as an "intermediate" position. It was less excusable that the Third Army should have been reduced to the use of road maps because, after all, long before the invasion everyone expected to get to the Rhine. These are small matters by comparison with the bludgeoning tactics—carried out with a light and battered bludgeon.

To me it seems that the 5th Division was mishandled, not by its commander but by the XX Corps, put in under an adventurous plan, with inadequate information, and then blamed for not accomplishing the practically impossible. If the troops got a bit shaken by the end of the affair, it was excusable; but in fact their morale remained good and they did well later in the campaign. It must be admitted that this rough lesson was absorbed, as such lessons always are in the United States Army.

I experienced a genuine sentimental pleasure in finding that there was not a trace of propaganda in the reputation of the 4th Armored Division, and it is to be judged here in conditions more difficult than those of the "swanning" of 1945. Much of the work it had to do was on heavy ground with all too much fortification about. How brilliant it could be in better conditions was shown in September east of Arracourt and north of the canalised Sanon.



General der Panzertruppen Hanso Ecard von Manteuffel.

THE ARMY'S HISTORY PROGRAM

Cross-Channel Attack is the seventh volume to be published in *THE U. S. ARMY IN WORLD WAR II*, a 90-odd volume comprehensive narrative history being prepared by professional historians under the supervision of the Office of the Chief of Military History. Within the series itself, a nine-volume subseries on The War in Europe is being prepared, of which *Cross-Channel Attack* is the second to be published, having been preceded by *The Lorraine Campaign*.

The History of THE EUROPEAN THEATER OF OPERATIONS

prepared under the direction
of H. M. Cole

The Cross-Channel Attack

Breakout and Pursuit

The Lorraine Campaign

Siegfried Line Campaign

Southern France and Alsace

The Ardennes

The Rhineland and Central
Germany

The Supreme Command

Logistical Support of the Armies

were lucky that the United States had got them to give. It seems that as matters became stickier, in every sense of the word, the armor got more and more split up and "tied to the infantry." This is a horrifying state of things to the experts like Guderian, whose book I have been reading, but it was the same thing with the Ger-



General George S. Patton,
Third Army Commander.

mans. Rigidly fixed principles cannot be adhered to in such matters. Adaptation to circumstances is the only unchanging adage.

Bad weather and the switching of Brig. Gen. Weyland's fine XIX TAC to attack on the Brest defences robbed the Third Army of a great deal of close air support. As one comes upon instances of the XIX TAC's intervention, however, one realizes how overwhelmingly effective it was and how disheartening it must have been to the Germans, who were likewise handicapped by longer-range air attacks on troops in movement and supply lines.

Thus both sides suffered from restrictive gasoline shortage for different reasons, though the Germans were the worse off. As an elderly soldier I find some quiet amusement in the fact that in such a case the only units—here German units—which can move at all are those moved by animal traction. The old horse could sometimes shift a German infantry division, but when you stall on gasoline you stall thoroughly. Dr. Cole also tells us that the unhappy German infantry had to march because there was no gasoline for its trucks—and therefore did not get "trench foot."

My last word must be about a few of the magnificent actions of United States troops: Stories like that of the Dornot bridgehead over the Moselle, the rout of the 11th Panzer Brigade at Juvelize, the capture of the Illange forts, the defence of Distroff, the XX Corps' passage of the Sarre—these and other incidents deserve to be accorded an honorable place in the annals of the United States Army.

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