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ARMOR

THE JOURNAL OF THE

ARMY OFFICERS

AND ENGINEERS

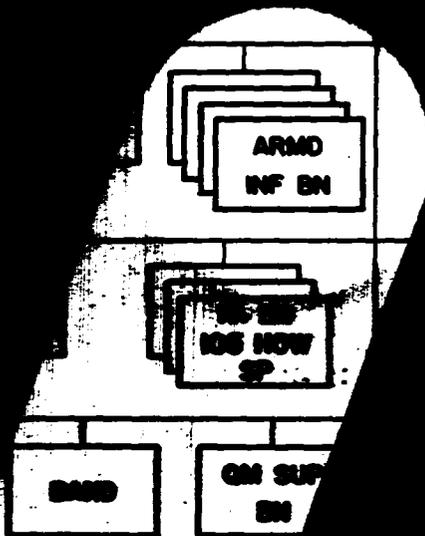
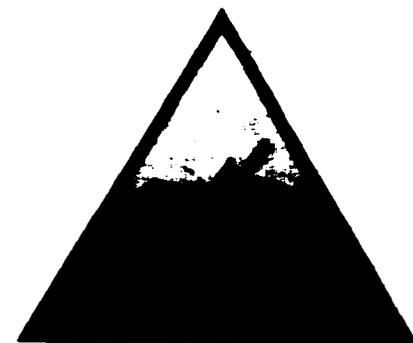
The Walker Bulldog



FOR ARMOR—A NEW LIGHT TANK

Unveiled and christened during a recent visit by President Truman and top Army officials to Aberdeen Proving Ground, the T41 light tank weighs 25 tons, mounts a high velocity 76mm gun, has automatic stabilization, an air-cooled engine and a top speed in excess of 40mph. It is on order with GM's Cadillac.

MARCH-APRIL, 1951



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ARMOR

Continuation of THE CAVALRY JOURNAL

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Volume: LX

MARCH-APRIL, 1951

No. 2

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LETTERS to the EDITOR

The Record Shows

Dear Sir:

In the November-December, 1950 issue of ARMOR, an article by Lt. Col. Pickett stated that the M4A3 tanks were not capable of coping with the Russian-made T-34. He also inferred claims of destruction of enemy tanks by friendly air forces were not borne out.

Since I have personally examined over 300 knocked-out T-34's and have records on over 500, I believe I am entitled to claim knowledge on both points. I have witnessed many tank versus tank fights on all sectors of the front and in the September-October advance, so I can assure you that the M4A3 in the hands of our tankers has not failed to demonstrate its superiority over the T-34. This does not mean that we do not desire to improve our medium tanks, because they must be improved to cope with modern tanks.

The greatest proportion of determinable kills was due to air action.

COLONEL WILLIAM P. WITHERS
Armor Officer
Eighth Army

Korea

• For additional details see "Report From Korea" on page 23.—Ed.

Dr. Bush Again

Dear Sir:

During recent months renewed publicity has been given to vaunted new antitank weapons which will supposedly make the tank obsolete as a weapon of war. For example, Dr. Vannevar Bush, one of the nation's foremost scientists and a former chairman of the nation's Research and Development Board, in an address on 5 March 1951 carried by the Mutual Broadcasting Company, commented on this matter. One of his statements is quoted here:

... Relatively small recoilless antitank guns mounted on a jeep or handled by four men can put a heavy tank out

of business, with a high probability of doing it before the enemy can get off his first shot, even at ranges of 1,500 to 2,000 yards. ...

Dr. Bush went on to discuss the tactical use of atomic weapons, stating that a well defended line including land mines, antitank obstacles, artillery and other weapons would force the enemy to mass a "huge concentration of armies, artillery and tanks—the kind of thing the Nazis did in 1944 just before the Battle of the Bulge."

"But with A-bombs in existence," he continues, "this becomes a very different matter. An A-bomb delivered upon such a concentration by an airplane, or possibly by the use of a gun or guided missile, would be devastating. In its presence, concentration of this sort would not make sense."

Dr. Bush is one of the outstanding scientists in America today, and his opinions cannot be cast aside lightly. However, Dr. Bush in his writings has tended to emphasize the defensive qualities of new weapons while passing over the offensive qualities. As Armor is principally an arm of mobility best used in the attack and counterattack, serious consideration should be given to the offensive qualities of all new weapons. Use of the atomic bomb in conjunction with offensive action will greatly reduce the necessity for concentration. As a line is fixed and an alert enemy might be expected to know the location of vital defense areas, a well trained, highly mobile force can move into the area and attack with little warning. Dr. Bush failed to mention the fact that, while the Germans knew the location of our lines prior to the attack at the Battle of the Bulge, we did not know the exact location or size of their concentrations.

The tank with its armor plate is the least vulnerable of ground weapons to atomic explosions. Infantry in the open might be destroyed over an area many times greater than the area in which

tanks would be destroyed. Likewise, jeep-mounted and ground-implaced recoilless weapons with their four men crews would in many cases be put out of action, while tanks remained operative. While in some cases an atomic explosion over a force in process of breaking through a fortified line might completely destroy unprotected personnel, many tanks would be able to continue with the mission.

In new antitank weapons, the tank has formidable opponents. However, any light sight with range finding equipment which can be carried on a jeep or by the crew of a ground weapon which will allow hits at 1,500 to 2,000 yards can be carried equally well on a tank, so that small antitank weapons, while having no real advantages over the tank, have the disadvantages of no armor plate and limited mobility. Tanks must continue to overcome and evade antitank weapons with fire power and mobility. It is possible that tactical use of atomic weapons with tank units may greatly overbalance the deterring effect of new antitank guns.

MAJOR GARTH STEVENS
Hq., Armed Forces Special
Weapons Project

Washington, D. C.

• Major Stevens expounds some related ideas in his article "Tank Defense Against Atomic Attack" on page 28.—Ed.

A Bit of a Twist

Dear Sir:

This is with reference to the article "Napoleon's Sidelights" by Doctor Roger Shaw, which appeared in your November-December issue, 1950.

In this article, Dr Shaw states "Hofer was captured. . . . He passed through Meran, then Bozen (now Bolzano) down through the magnificent Brenner Pass and was finally locked up in Mantua."

The French Deputy Chief of Staff, Lt. Col. Robert Fauveau, French Occupation Forces in Austria, who read this

article with great interest, desires to inform the author that his geographical portrayal of the route indicated is inverted. In order to proceed to the towns mentioned, one must first go through the magnificent Brenner Pass.

Your magazine enjoys great popularity within the headquarters here, and although my basic branch is Infantry I desire to keep abreast of the progress and developments of the allied branches.

MAJOR ROBERT WARD
U.S. Liaison Officer
Liaison Mission, U.S. Forces Austria
Innsbruck, Austria

Some Questions on Tanks

Dear Sir:

Perhaps you or your associates can answer some of the numerous questions which have posed themselves to me since I read my first issue of ARMOR (July-Aug. '50).

1. What is the difference between the vertical volute spring suspension of the M3-M4 medium tank series and the suspension on the M4A3E8? When was the track widened?

2. On page 37 of the Sept.-Oct. issue is an alleged Patton M46 on the 40% grade. It has a double-baffle gun and double lugs for lifting on the front deck. I thought both were single on the Patton and had depended on this difference for identification.

3. Are any details available yet on the new British Centurion?

SAMUEL BERLINER III
Cedarhurst, N. Y.

• M3-M4 series had the same suspension when put into production. With continuing development by R&D, this suspension was improved for the M4A3E8, a horizontal spring suspension, accompanied by wider track, in 1945. Patton tank is an improvement of the Pershing, thus changes in outer appearance are few. Patton can be identified by outside exhausts, bore evacuator sleeve on gun tube. Major change is inside tank, i.e., new engine, etc. For details on Centurion, see page 32.—Ed.

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Rates: See bottom of contents page.

ARMOR



THE COVER

On February 17, President Truman, accompanied by Secretary Pace and General Collins, visited Aberdeen Proving Ground to see some of the Army's latest weapons. At an impromptu ceremony on the Munson Test Course, it was decided to name and release general information on the new light tank, the T41. With the Commander in Chief deferring to the Secretary of the Army, and the Secretary to the Chief of Staff, General Collins made the announcement: Honoring the late General Walker, the T41 tank became the Walker Bulldog.

BOOK DEPARTMENT

WHAT YOU SHOULD KNOW ABOUT BIOLOGICAL WARFARE

Biological attacks could be made by enemy forces or by secret agents. The attacks could be aimed at people, animals or food crops.

But:

Biological warfare is no secret super-weapon. There are defenses against it and you should know what they are.

THE OFFICIAL GOVERNMENT
BOOKLET

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When we dashed off an editorial squib last issue decrying the fact that the movie makers were overlooking a real bet in films on armor action we had no idea we'd be taken up so quickly. Before we could say M4A3E8 we were involved! We had to open our big mouth. . . .

It seems that some months ago, even as we were negotiating for the John Wayne article and mulling over the tie-in editorial item, both of which appeared in the last issue the J. Arthur Rank organization, British film producers, were on location on the Continent, retracing the path of the famous Guards Armored Division with a tank-action story by Terence Young, who had recognized the stuff in armor, had written his story, and was on hand to direct it.

The title of this first film based on armor—"They Were Not Divided." When the J. Arthur Rank organization approached us on the subject of the Armor Association being the honored guests at the American Premiere, we thought it was an excellent idea. We jumped into the details.

Since we're trying to forget that two-week period of negotiations within which fell two week ends and a holiday and within which fell invitations . . . lists . . . programs . . . admission cards . . . telephone calls . . . yes . . . no . . . telephone calls . . . bands . . . searchlights . . . color guards . . . telephone calls . . . no . . . protocol . . . ding-a-ling . . . yes . . . bells . . . why we'll just not even mention it. Taking it from there, this is how things went.

On the last day of February at eight o'clock in the evening two great searchlights lighted up the front of the Playhouse theater on 15th Street in the heart of the Nation's Capital. A forty-piece unit of the United States Army Band under Assistant Director Loboda greeted the first nighters.

A distinguished group of guests included Secretary of the Army and Mrs. Frank Pace and senior British and American military officials of the three services. The Armor Association was well represented by members and their guests from the entire Metropolitan Washington area and from as far distant as the 3d Armored Cavalry Regiment at Fort Meade, Maryland.

Reel Photos

A dozen members of the Women's Army Corps acted as usherettes, several of them dressed in the new WAC uniform now being tested. A twenty-piece concert unit of the United States Army Band, conducted by Lieutenant Herbert W. Hoyer, entertained as the house was filling.

The formal program was opened with the posting of the British and American colors and the playing of the National Anthems. Jay Carmody, Movie Critic of *The Washington Star* and Master of Ceremonies for the program, greeted the guests and introduced Lieutenant General Willis D. Crittenberger, President of the United States Armor Association.

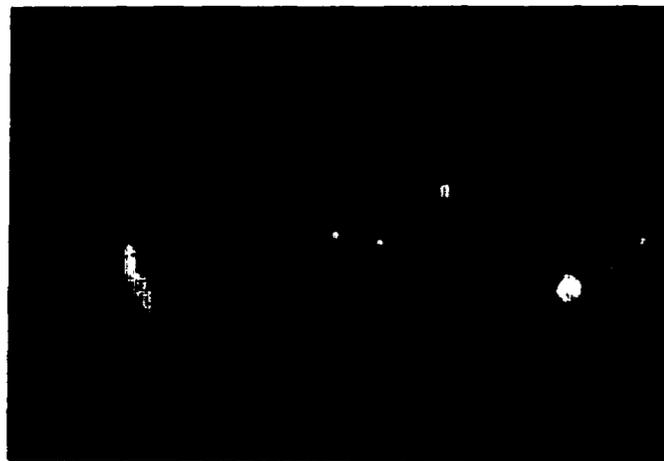
General Crittenberger spoke on the significance of seeing a film on armor action and Allied cooperation at a time when British and American forces were once again fighting side by side on another battlefield. He then presented to Kenneth Bates, representative of the J. Arthur Rank organization, a scroll commending the film company for its production of a film portraying armor action and

American-British comradeship in World War II. The curtain raised, the house lights dimmed for "They Were Not Divided."

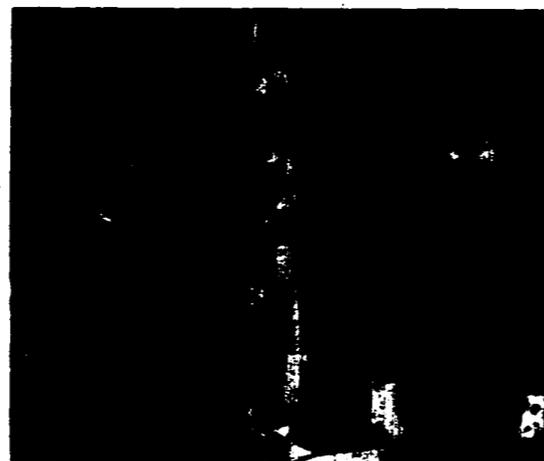
We don't profess to be a movie critic. We only know what we like and don't like. And we came out of "They Were Not Divided" with the thought that it takes more than a story idea and the tanks to make a film. The idea and the tanks were there, and both were fine. But the story never fleshed out. It seemed to lack heart and warmth, and never reached any heights. We were disappointed. You take it from there.

It has come to our attention that several American companies are now looking over tank stories. That cheers us. We're most interested to see what Hollywood will do. And there's one thing we can tell you. Should the occasion ever arise again . . . well, . . . we've learned a few things about premieres!

The Editor



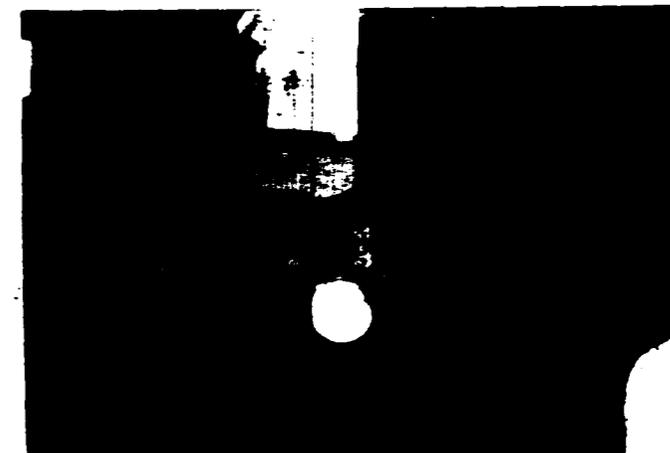
Powerful searchlights lend atmosphere to Capital film premiere.



MC Jay Carmody of the "Star" greeting the guests.
ARMOR—March-April, 1951



Gen. Crittenberger presents scroll to Kenneth Bates.
ARMOR—March-April, 1951



The U. S. Army Band greets the British-American first nighters.

ARMORED CARS

Their Past and Their Future

by RICHARD M. OGORKIEWICZ



The emphasis on tracked vehicles has left the wheeled armored vehicle in an uncertain position. Convinced of its value, France and Britain continue development, but most activity elsewhere seems to center on the past-to-present period. Have the light tank and the airplane banished the armored car from the modern battlefield?

RECENT events have provided yet another example of the fluctuations in the fortunes of armored vehicles, whose popularity periodically rises and falls with the changing conditions and theaters of operations. But perhaps in no case are these fluctuations more marked than in that of the wheeled armored vehicles. From widest possible use in large-scale mobile operations or in the deserts they have several times disappeared almost completely during periods of positional warfare. Now once again their future is far from clear or certain.

The development of wheeled combat vehicles began half a century ago, when the first attempts were made to

use the autocar for military purposes. They were originally conceived as highly mobile carriages for the then newly developed machine guns or as fast reconnaissance vehicles. At first slow, the development, including armoring, was greatly accelerated by the early fluid stages of the First World War. But with the onset of trench warfare came an end to their effective use on the major fronts and the stage was left clear for the appearance of the first tracked armored vehicles

Richard M. Ogorkiewicz, born in Poland, educated in England, is engaged in lecturing and research in mechanical engineering at the Imperial College of Science and Technology in London. He has long studied the development and employment of armored vehicles.

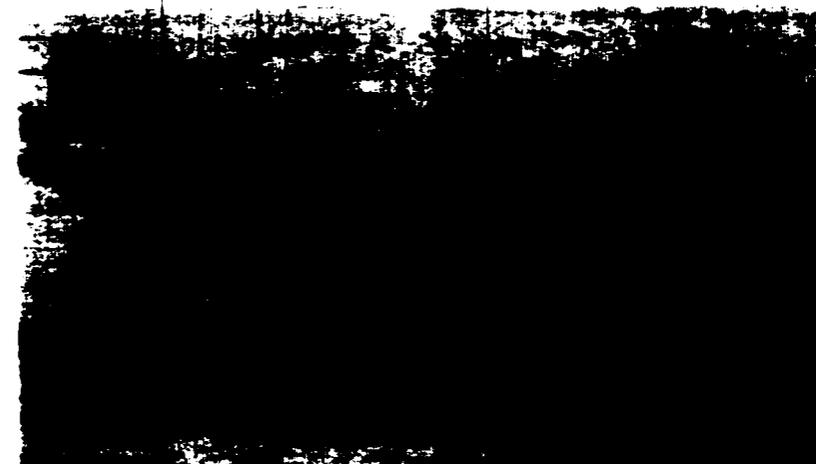
ARMOR—March-April, 1951

—the British and French tanks of 1916 and 1917.

However, armored cars were used with success in the deserts of the Middle East and in many minor roles. As a result, the armored car emerged out of the war with an established reputation in some fields to balance their shortcomings in others. Since they were based on well tried commercial chassis, they were reliable, quiet and fast on roads—advantages armored cars still enjoy today—which made them particularly useful for long-distance reconnaissance and raids. These characteristics and armor protection made them equally useful for police work in troubled areas. They were also often used to support mounted units, many armies following the example of the French, who gave all the tanks to the infantry and the armored cars to the cavalry.

The chief shortcoming of the armored car was—and generally still is—its poor performance off the roads. This, like its good points, was in part due to the use of conventional, commercial chassis. Various improvements, such as short rubber tracks instead of rear wheels (as on the French Citroen-Kegresse and U.S. half-tracks), the development of six-wheeled trucks, improved pneumatic tires, during the twenties all added to improve the cross-country performance of what were essentially standard trucks.

For the sake of the obvious economic advantages of using standard



From the past—the U. S. La Salle Armored Car.

U.S. Army

commercial chassis, disadvantages in other respects had to be accepted. These were reflected in the type of vehicles produced, such as the M1 Armored Car of 1931 and other contemporary designs. They were large, with front engine and no front wheel drive, had hard springing and low ground clearances. However, since contemporary tracked vehicles still had many of their own troubles to overcome, these features did not handicap the armored cars too heavily.

The initial cost of such armored cars was one of their main attractions and a great advantage over the tanks. The latter required special manufacturing facilities and were consequently expensive to produce as well as to run. With an armored car

things were very much simpler: given a sufficiently strong chassis, some steel plate and the facilities of a small workshop, "armored cars" could be built without difficulty.

When time and resources allowed, more elaborate designs were, of course, produced. But time and time again improvised armored cars have appeared in minor revolts and in full-scale conflicts: England after Dunkirk and more recently Palestine provided numerous examples. And when conditions were favorable even improvised cars could be used with considerable effect, often in the role of a poor man's tank.

It is interesting to recall that the development of the U.S. Cavalry armored and scout cars in 1927-28 began with just such improvisations. Armored Car T1 was a standard Pontiac phaeton fitted with an armor shield and a machine gun.

However, with the demand for more powerful equipment with better cross-country performance and the simultaneous improvements in tracked vehicles, the position of the armored cars was seriously challenged. British Carden-Loyd light tanks, Christie tanks (T1 Combat Car, T3 Medium Tank and others) with independent suspensions, Vickers-Armstrong short pitch cast manganese steel and the U.S. rubber bushed tracks mark the steps in the development of faster tanks with more durable tracks. This greatly increased track life, as compared with earlier types and speeds of 30 mph. or more, made it possible for the new tanks to compete with armored cars in roles in which previ-



The U. S. 6-wheeled Armored Car M1. Early 1930s.

U.S. Army

ARMOR—March-April, 1951

ously they would have had little chance of success.

As a result, from about 1932 onwards armored cars began to be replaced by tanks both in fighting and reconnaissance roles. In the U.S. and French Armies, for instance, wheeled armored vehicles were confined to scouting only. Similar changes were taking place elsewhere.

In face of such formidable competition from light tanks, armored car designs had to improve considerably, particularly as regards cross-country performance. This implied greater ground clearances, improved flotation tires, more flexible suspensions and, above all, all-wheel drive. Together with this came demands for reduced over-all dimensions, improved layout with engine at the rear and so on. For such vehicles adapted commercial chassis would no longer do and the new armored cars were more specialized and hence more difficult and expensive to produce.

All the improvements and its inherently superior road performance enabled the armored car to avoid complete extinction. It managed to retain partly its position, mainly in the field of medium- and long-distance reconnaissance. But, on the whole, in the years immediately before the Second World War attention paid to it was small.

In the British Army, for instance, no armored cars were to be found either in the armored division or in the mechanized reconnaissance regiments of the infantry divisions. Shortly before the war a new 4x4 6-ton Guy

armored car was introduced but the only vehicle which was to be produced in quantity was a small Daimler Scout Car.

After the 1940 campaign in France the position altered considerably. First the urgent demand for quantities of armored vehicles in the immediate after-Dunkirk period produced a whole crop of improvised armored vehicles. These ranged from light reconnaissance cars on passenger car chassis to flamethrower armored cars and even self-propelled 4-inch naval guns on eight-wheel trucks.

A more favorable view was also taken of the properly designed armored cars, partly in the absence of a satisfactory light tank at that time. As a result, after 1940 an armored car regiment became the reconnaissance element of British armored divisions. The shifting of the scene of land operations to Africa in the following two years favored further increased employment of wheeled armored vehicles.

The exceptional opportunities in the desert not only favored the large-scale employment of existing types and fostered many improvised types, but led to the development of considerably heavier armored cars intended for combat. Up to that time British development was concentrated on maneuverable, short wheel base 4x4 armored cars of between 6 and 8 tons. Such were the Guys, Humbers and Daimlers—the last armed with a 40mm gun, being by far the most advanced and successful. From about 1942 onwards, considerably heavier

types began to appear: the Chevrolet built 14-ton 4x4 Staghound (T17E1); the 14-ton A.E.C. armed with a 57 or 75mm gun; an even heavier model, the 25-ton 8x8 Boarhound (T18E2), built to British specifications in the United States.

These vehicles, however, arrived too late to be used in North Africa and the changed conditions in Italy and then in Normandy forced the armored cars to assume a much more modest role. The swing of the pendulum not only eliminated all the special "desert" cars, but in 1943, in preparation for D-Day, the Armored Car Regiments of British armored divisions were replaced by Armored Reconnaissance Regiments. These were based on fast medium tanks—the 40 mph 30-ton Cromwells armed with 75mm guns. After the Normandy breakthrough the armored cars got another chance and reappeared again at divisional level, having spent the intervening period in corps reconnaissance units.

The only wheeled vehicle which was little affected by all these changes was the Daimler Scout Car. A very successful prewar design, which was to have been used by the French as well as the British, it was a turretless, completely armored 4x4 vehicle only 4 feet 10 inches high and weighing only 3 tons. It carried a crew of two and one machine gun and was used throughout the whole war for scouting and liaison work.

While Britain and the British Commonwealth made the most extensive use of wheeled armored vehicles during the Second World War, both as regards quantity and variety of purposes, it was the Germans who initially used them most. Apart from the Russians they also had the largest number.

Their two main types were a light 5-ton 4x4 car, and the 9, later 12, ton eight wheeler. For their time both were well designed, though the heavy 8x8 car was rather complex, and had fair cross-country performance. On the light vehicles the armament, consisting of coaxial 20mm gun and machine gun, was very sensibly mounted to permit elevation for anti-aircraft fire. Together with motorcyclist riflemen the armored cars constituted the reconnaissance battalions of the early Panzer and motorized divisions: there were 48 in the former and 24 in the



German Light Horch Pz. Sp. Wg. (M6).

Captured German Photo

latter, in the ratio of one heavy to three light cars.

The two elements worked successfully together in the early Blitzkrieg campaigns, as in France for instance. However, the weather and the excellent road network favored them there. In the much more difficult conditions in Russia the motorcyclists found the going very heavy and had to exchange their mounts for the 4x2 Volkswagen cars. The armored cars fared somewhat better, but like all wheeled vehicles frequently found the conditions very trying. Also, for units which were expected to fight for their information their fighting power proved inadequate. An attempt to remedy partially the latter was made by re-arming the eight wheeled armored cars with short 75mm guns. But nothing was done about a really new and improved wheeled vehicle—and there certainly was room for improvement. Instead they were gradually replaced by 3-track vehicles, with excellent cross-country performance, and in the end the Germans were tending toward fully tracked vehicles. Light tanks in fact, which they neglected after the Pz.Kpfw.II. No doubt a special wheeled armored vehicle, with limited fighting power, did not appear worth the trouble in the circumstances, though the existing armored cars continued to render useful service, particularly in screening and delaying operations.

Compared with Russian tanks practically nothing has been heard about Russian armored cars, although considerable numbers existed at the outbreak of the Second World War. This, however, is not surprising when one bears in mind the terrain and the type of car used. Both main types, the light BA 20 and the heavy BA 10, were adaptations of standard truck chassis with engine in front and no front wheel drive and consequently all the limitations of that class. The Germans did not even deign to include the BA 20 in their 1941 anti-tank instructions and the only point worth noting about the BA 10 (apart from the absence of reverse gear) was the armament. Its 45mm gun made it for a long time the most heavily armored car in the world.

Since the usefulness of such armored cars was very limited they were replaced by light tanks and when these in turn failed to stand up to the requirements, most of the reconnaissance and similar duties were performed by the T-34 medium tanks, on which Soviet production concentrated. The T-34 had by far the best cross-country performance and since it was mainly close-range battle reconnaissance the power of a medium tank was highly desirable. With its high mobility the T-34 performed successfully most tasks hitherto entrusted to armored cars—including security police well behind the lines—but very

often it was a rather wasteful method. So perhaps partly for that reason in the later part of the war the Russians introduced a light 3-ton 2-man armored car, the BA 64, which, more recently, has also been used in Korea.

Unlike the other major powers, the United States had no armored cars at all—not counting a few obsolete vehicles—when the war began. The only wheeled armored vehicle used was the M3A1 Scout Car. A conventional and rather large front-engined 4x4 vehicle with open top, it was a carrier for dismounted action as much as anything else and it formed the main equipment of the early reconnaissance units. The heavier element when required—as in the reconnaissance battalions of the armored divisions—was supplied by light tanks of which there was one company to three reconnaissance companies—a feature characteristic of U.S. wartime organization.

But useful as it was, by the time it went into action the M3A1 Scout Car was neither sufficiently maneuverable nor adequately armed for mounted reconnaissance. In 1943 the need therefore arose for a new vehicle to take its place.

Although armored cars were officially dropped in 1937, as a result of the lessons of the German Blitzkrieg campaigns, in Poland in 1939 and in France in 1940, and of the early British operations in the Western Desert, there was a revival of interest in wheeled armored vehicles. This led to the appearance in 1941 and 1942 of several experimental armored cars, such as the 13-ton 8x6 T13, the 6x6 T17 and T19, and the 8x8 T18. However, none of these was adopted by the U.S. Army, except for some T17's used by Military Police, while the T17E1 was produced for Allied forces.

At the same time several wheeled self-propelled anti-tank guns were experimented with, types ranging from the 37mm gun on a 3-ton 4x4 truck to the 3-inch T55E1 on an eight-wheel chassis. Again none was adopted, but out of this class of vehicles came the M8 Armored Car, which initially, under the designation of 37mm Gun Motor Carriage T22, was intended as a light, highly mobile gun carriage capable of mass production. A low silhouette (until the .50 cal. ring mount was fitted), fast,



German 8-wheeled Armored Car with 75mm gun. Tunisian Campaign.

U.S. Army



Russian BA 20e on parade in Red Square.

Sovfoto

and, by comparison with other types, remarkably quiet vehicle, the M8 saw considerable service in Europe before the war ended and was, in fact, the first armored car used in any numbers by the U.S. Army.

Perhaps because it was the last to introduce armored cars in quantity, the U.S. Army was also the last to experience a reaction against them. Anyway, according to the Tables of Organization published after the war, armored cars were to disappear completely from armored divisions, sharing the fate of the half-tracks, whose place was also taken by fully tracked vehicles.

Yet armored cars continue to be used. Quite recently, for instance, orders were announced for new armored cars for the French and British Armies. Other wheeled vehicles are also by no means being abandoned. To what extent then, one might ask, are the frequent tendencies to abandon armored cars justified? Or, if not, in what circumstances did the armored cars fail and why, and where can they still be effectively employed?

The answer lies partly in the past development of the armored car, which has been outlined above. Partly it is to be found in the present characteristics of wheeled vehicles and in possible future trends.

During the Second World War the initial successes of the German armored cars and the even more extensive and successful employment of British cars in Africa tended to ob-

scure the limitations of wheeled vehicles. The favorable conditions in the desert not only facilitated their use but encouraged attempts to extend very considerably the field of activity. This applied in particular to attempts to reintroduce the armored car as a fighting vehicle and brought forth or perpetuated the more heavily armed and inevitably heavier types—partly at the expense of an improved, maneuverable light car.

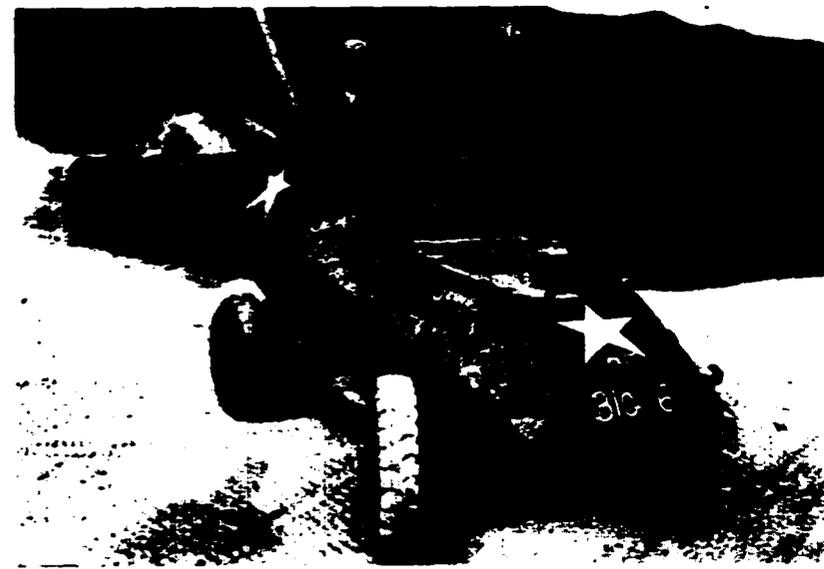
However, the size and complexity alone of a heavy multiwheeled drive armored vehicle—of 10 tons or more—which was necessary for this role

made it compare unfavorably with contemporary tracked vehicles. It is not surprising, therefore, that in more difficult terrain where the chief advantage of high speed disappeared the popularity of the wheeled vehicles fell. Such was the fate of the German armored cars in Russia and of the British in Italy and Normandy.

Also since armored cars could not, in the long run, compete with tanks in fighting power they could not remain as the principal equipment of units which were expected to fight against a well armed enemy. Thus, because reconnaissance units were expected to fight for their information or to protect the withdrawal or advance of the parent formations without the stiffening by other arms their armored cars had to be replaced by tanks.

Once started, however, the reaction did not stop at eliminating the large and heavy cars, such as the German and American eight wheelers or the British A.E.C., or at crossing armored cars off as fighting vehicles. The wisdom of such decisions can hardly be questioned. But whether there was an equally strong case against the lighter vehicles is doubtful.

It might be argued that in view of all the improvements in the design of tracked vehicles, wheeled military vehicles have little to commend them. They certainly have nothing where fighting vehicles are concerned since outstanding performance over all types of terrain is rightly, the first



Russian BA 64 Light Armored Car captured in Korea.

U.S. Army



The U. S. M8 on reconnaissance in Brittany during World War II.

U.S. Army

consideration. Track life is still short, however, and operating costs of tracked vehicles high, both in terms of gasoline and track replacement.

It seems probable that tracked vehicles will continue to be handicapped to a certain extent. The complexity and bulk of an armored, multi-wheel, cross-country vehicle of any size—with all its differentials, driving shafts, universal couplings, steering rods and so on—will in turn cancel many of the advantages of a wheeled suspension. But for the lighter vehicles the outlook is far more favorable.

Such a vehicle of 5 tons or less, can have quite a good performance without any complex drive arrangements or large silhouette. The successful operation of many wheeled agricultural and engineering tractors, and other developments, would show that except in the very extreme conditions it could operate satisfactorily. Also because of the smaller size, and hence automatically reduced obstacle crossing ability, the advantages of track

would be relatively smaller. Improved independent suspensions, large diameter low pressure tires should all contribute to improved performance. Integral chassis-hull construction and the development of lighter components, particularly engines, make possible considerable weight savings. If required, powerful lightweight weapons—rocket launchers or recoilless rifles, could easily be mounted.

Now, finally, if it is agreed that light wheeled vehicles will have many advantages over tracked ones of similar size and that it may be worth sacrificing some of the cross-country performance for the sake of simplicity and more economical operation, the question still remains whether armored vehicles of this size are really wanted.

The answer obviously lies in the number of functions which such a vehicle could perform effectively, more efficiently than others. The list is bound to vary somewhat with individual opinions but one may include in scouting, observation, liaison as

well as various peacetime and wartime duties of patrolling and policing and the functions of a light carrier. Looking back there is no lack of examples illustrating the need for equipment to carry out a variety of auxiliary but very important duties. At various times these were performed by motorcycles, Jeeps, Volkswagens, Bren Gun Carriers, scout cars, armored cars and light tanks with or without turrets. Most are still used but each has its limitations and is by no means best suited for the service into which it has been pressed. The vulnerability of the Jeep, for instance, is in many cases only too obvious and the use of tracked vehicles is often unnecessary and wasteful. On the other hand most armored cars tended to be far too heavy and large and few have had performance worthy of note.

Past limitations and shortcomings must not, however, obscure present possibilities and the failure of the armored car as a fighting vehicle must not prevent it from playing the role of a useful auxiliary. It cannot, of course, be based on any truck chassis as this would produce no better results than it did in the past. It must be regarded not as a car with armor but as an armored vehicle with a wheeled suspension—at first sight a small, but in fact a very important difference. Further, to take full advantage of its wheel drive it must be as light, simple and robust as possible, which in turn will further contribute to its being easier to manufacture and more economical to operate for long periods with the minimum of maintenance. With this in view all gadgets and frills, however attractive, and all unnecessary refinements must be eliminated from the start. It must do this if it is to avoid—which it should do at all cost—being a further burden on the maintenance units which at the moment are all too busy keeping the tracked vehicles running. To repeat, the aim should be not to produce a vehicle to compete with tanks but a type of armored car which would be a really useful auxiliary to them and which could be used in all the different roles where it is uneconomical to employ tracked vehicles.

There appears to be a definite place for a really fast, reliable and inconspicuous auxiliary, and a well designed wheeled armored vehicle should successfully fill this.

To Armor — A Personal Message From . . . the Commanding General, Armored Center

In order to utilize their combat experience in the training programs necessitated by the mobilization of American fighting power, the Army recently reassigned a number of general officers from combat commands in Korea to key training

I AM indeed happy and honored to be returning from Korea to assume command of the Armored Center and the Armored School. Though it has been over eight years since I left Fort Knox, it is like coming home to return to the "Home of Armor." In the years between, it has been my good fortune to observe the competent performance of duty of many officer and enlisted graduates of the Armored School, and to hear from them of the progressive activities continuously undertaken there.

I consider it a great privilege that my career in the Army has directed my footsteps along the path of the development of Armor—from tank school days at Camp Meade, Maryland in 1923 to duty at Fort Eustis in Virginia in 1930 during the creation of the Mechanized Force, and again at Fort Knox with the organization of the Armored Force in 1940. These periodic assignments afforded me the rare opportunity of knowing the pioneer exponents of armor in our Army and of watching the development of techniques and doctrines and organization of armored units which reached significant force in our armored divisions on the battlefields of World War II.

My recent command of the 7th Infantry Division in Korea enabled me to observe the employment of armor in that theater of operation, and what I saw served to convince me that the broad principles of employment of armor and doctrines that have been taught in the Armored School remain sound. I saw the use of tank elements as a highly mobile reserve on the Taegu front where they were used to plug gaps in the line, and to keep the enemy off balance by making demonstrations on various parts of the front. I saw the psychological effect that the presence of our tanks gave to friendly infantry, and how contagious the offensive spirit of the tanker could be for all our fighting troops. Our tankers and our tanks in Korea have done well in handling the T-34 tanks in an open fight, and have demonstrated that the Russian-made T-34 tank with its 85mm gun is no match for our American tanks. Armor in Korea has proven that although certain kinds of terrain are not as favorable as others for armor employment, our tanks can go almost any place provided the will

Mej. Gen. David G. Barr was commissioned in Infantry from OCS at Fort Oglethorpe, Ga., in 1917. His tank service began in 1923 with the Tank School at Camp Meade, Md. From school he was assigned to the 18th Tank Battalion at Meade, then the 4th Tank Company at Camp McClellan, Ala. In 1927, while serving in the office of the Military Attaché at Paris, he attended the French Tank School. Next came a tour with the 15th Tank Battalion at Benning, and in 1929 a transfer to the 1st Tank Regiment there. In 1930 he became Adjutant of the Mechanized Force at Fort Eustis, Va. Graduate of the Infantry School, the Command and General Staff School and the Army War College, General Barr in 1940 was Asst G-4 and G-4 of I Armored Corps. In 1942 he became Chief of Staff of the Armored Force at Ft. Knox. From 1943-45 he served as Chief of Staff of ETO, MTO and Sixth Army Group. Next came tours at Army Ground Forces and as Chief of our Advisory Group to China. Gen. Barr took command of the 7th Division in May 1949.



to do so and the imagination to seek out solid footing exist in the personnel operating our equipment.

The value of tanks in the exploitation has been demonstrated in several instances. One that I have in mind was the use of armored task forces to effect the link-up between the advancing Eighth Army and the forces moving south from the Inchon landing. Another instance that I was particularly proud of was the task force built around a company of the 73d Heavy Tank Battalion of my division that moved swiftly from the Inchon landing to the capture of the Suwon airfield. In this action an enemy force estimated at 15 T-34 tanks and some three to five hundred infantry troops was routed, and five enemy tanks were knocked out with only slight losses to our forces. Later, task forces built around other armored units conducted independent opera-

posts at home. Major General David G. Barr left the 7th Division to take command of the Armored Center and Major General John Church left the 24th Division for the Infantry Center command. Their rich experience will pay off in training.



Gen. Barr inspects 7th Division tankers in Korea.

tions beyond the 38th parallel in October 1950, and the speed and control of these actions elicited favorable comment of commanders and war observers alike.

Action in Korea has shown that the principles of tank-infantry employment will work, but that thorough indoctrination should come about through hard training prior to combat. Today's training programs will insure this. Infantry and tankers have learned to respect mutually the ability possessed by each. They realize that their combined abilities can only be effected through a constant cross channeling of information between elements of the tank-infantry team as to their intentions. A healthy awareness has grown that the success of both is fostered by an uninterrupted advance by both tanks and infantry, and that a halted tank becomes extremely vulnerable

especially when left by its accompanying infantry.

My belief in the soundness of the broad principles of the employment of armor remains unshaken. Armor, when used in mass, becomes a striking and destructive weapon available to the ground commander in his combined arms team, and should be so used whenever possible. In speaking of armor in this way, I feel that we should consider it more as a concept in which a properly balanced combined arms team possessing mobility and fire power is employed in sufficient mass to produce violent shock action. Armor is primarily an offensive weapon to be regarded as a thrusting weapon—a spear, not a club. Armor is the means by which tactical advantage can be taken of successful penetrations made by infantry divisions. Armor used in such exploitations can seek out objectives deep in enemy territory, destroy enemy lines of communication, capture supply depots, or link up with an airhead or bridgehead as was done in Korea.

American manufacturing know-how, and the inherent native aptitude of the American soldier to handle mechanical equipment have lent themselves to making armor in our Army a vital force. Much conjecture in recent years has been raised as to whether or not armor has outlived its usefulness. I am convinced that as long as protection for attacking troops is needed, that as long as mobility and speed of attack are required, that as long as heavy caliber direct fire guns are needed to defeat enemy armor, and a combination of fire power and mobility will be employed in mass to create violent shock action, armor will have its place in the combined arms team. Change may come, and undoubtedly we will find new weapons, ammunition, and vehicles; but the principles of armor employment—careful planning and violent execution—will still give the commander a decisive weapon of ground warfare.

It is a distinct privilege to have been assigned command of the Armored Center. I pledge to all personnel in armor that no effort will be spared here to continue to train officers and NCO's as specialists and small unit commanders who will be qualified to carry forward to greater heights the prestige and battle worthiness of armored units.

On today's battlefield it is not unusual for the foot soldier to go up against enemy tanks without the support of friendly armor. Thus our weapons development program is aimed at placing in the hands of the infantryman the physical means for victory over the tank, while our training program concerns itself with the creation of the moral strength so imperative to success in the man versus tank action. What are the odds for the man on the ground as against the man in the tank? An experienced member of the Defense Group, Department of Tactics, The Infantry School, reviews the subject of

Doughboy vs. Tank

A MODERN tank, protected by tons of steel armor plate and pouring out a tremendous volume of fire, bearing down on an infantry soldier, who has the protection of a steel helmet and is armed with a rifle, presents a picture of a pretty uneven match at first glance. But if the doughboy has the necessary courage to fight against the natural advantages of the tank and the resourcefulness to take advantage of the tank's inherent weaknesses, it is not such an uneven match after all.

In considering the infantry soldier as an adversary of a tank, it must be remembered that he doesn't fight by himself. He is part of a coordinated team. He has a variety of weapons in support of him—tactical air, armor, and artillery—which go a long way toward squaring up the odds when he comes up against a tank. And he has a variety of weapons of his own, many of which were especially designed for use against tanks, to assist him in his battle. But before considering these weapons and their employment, it would be well to make a comparative analysis of the tank and the doughboy, considering both their capabilities and limitations.

First, let us examine the characteristics of the tank which give it a natural advantage over the foot soldier.

To begin with, it has protective armor. The tank itself and the crew which mans it are practically invulnerable to the infantryman's small arms fire and the fire of his supporting mortars and light artillery.

Secondly, the tank is characterized by a great volume of fire power. Its large calibre gun plus several machine guns and the individual weapons of the crew add up to far more fire power than that possessed by any infantryman, or by any squad of infantry for that matter.

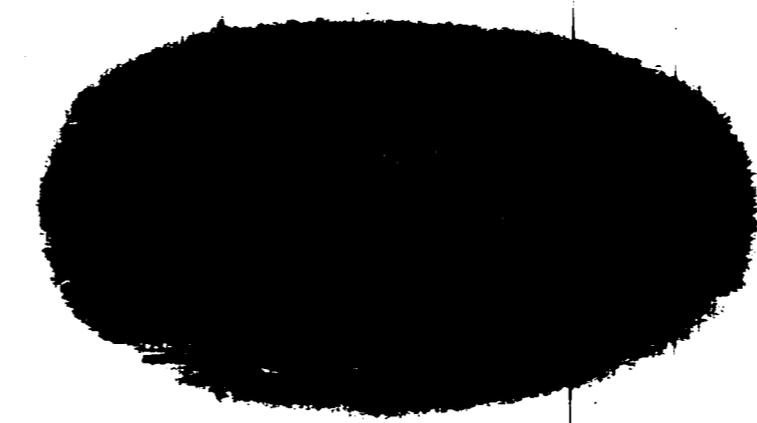
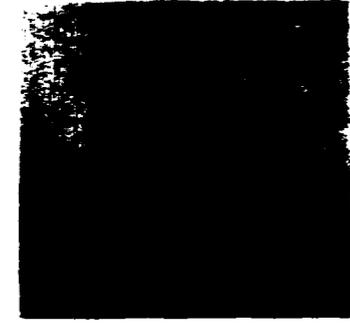
Next, the tank is mobile. It can move across the battlefield, even though it is on the receiving end of direct small arms fire and the fire of light high trajectory weapons.

Finally, all of this adds up to shock action. This huge steel monster, blazing violent death and destruction, smashing and crushing its way down against him, is bound to have a severe adverse morale effect on the man crouched in the foxhole which he has scratched and scraped into the ground to give himself some slight measure of protection.

Now take a look at the other side of the picture.

ARMOR—March-April, 1951

U. Col. Embert A. Fossum was integrated into the Regular Army, in Infantry, after World War II. During the war he served with the 28th Infantry Division as Rifle Company Commander and Battalion Executive Officer. Since the war he has served a tour with the 7th Infantry Division during its occupation of Korea, and has graduated from the Advanced Course at The Infantry School. He is now Instructor in the Defense Group, Tactical Department, The Infantry School.



by LIEUTENANT COLONEL EMBERT A. FOSSUM

The tank is big, heavy, noisy, and cumbersome. Its massive shape presents an easy target compared with that presented by a soldier on the ground. Its size restricts its operation in wooded or close terrain where a foot soldier can frequently do his best job. And swampy ground, steep slopes and boulder-stream areas which hardly impede the mobility of a man on foot may be a complete obstacle to the movement of a tank.

The element of surprise is all on the side of the infantryman. It is easy to

imagine a soldier quietly stalking a tank or silently lying in wait to ambush one. But it is impossible to conjure up a reasonable vision of a big, hulking tank, with its crashing tracks and roaring motors, sneaking up on a doughboy.

Probably the most important point of all is the tank's inherent weakness of limited vision and the existence of "dead space" against which it cannot fire at any given time. When a tank is buttoned up, taking full advantage of its armored protection, the crew

All Photos U.S. Army

inside cannot see a lot of things which are going on around it. And when the tank is buttoned up, its fire power decreases. The individual weapons of the crew members are useless then, and so is the machine gun mounted on top of the turret. While the guns mounted in the turret have a complete traverse of 360 degrees, they can only fire in one direction at any given moment. When the turret is pointed toward the left it cannot fire to the right until it is swung in that direction—a matter of a few seconds at least, or long enough for a man to fire without being fired on by the tank. Because there is a limit to the angle to which turret guns can be depressed, there is bound to be a circle of "dead space" all around the tank where the buttoned-up tank cannot fire at all. The elevation of the turret guns is also limited, in most tanks to about 25 degrees, and they can't hit anything above the line of fire. That means that a buttoned-up tank cannot hit a man on a roof or high embankment, while he can fire down on the tank.

Although tanks have a certain amount of armored protection all around, it is not of equal effectiveness in all places. So a trained infantry sol-



The bazooka is one of the infantryman's most effective weapons against a tank.

dier will remember that their armor is thickest in front and on the turret, thinner on the sides and rear, and thinnest on top and bottom, and will direct his efforts against the weaker areas. He will also work against other vulnerable and exposed parts of the tank, such as the tracks, drive wheels, sprockets, and idlers, in order to cripple or stop it. And if he gets it stopped, he has deprived it of one of its greatest advantages.

Tankers Are Aware

Obviously, tankers are aware of their own vulnerability. That is why they work as sections, platoons, and companies, providing mutually supporting fires and covering the dead spaces of one another. And that's why you will almost always find supporting infantry around them. So before the infantryman can go to work against a tank, exploiting the full potential of his antitank weapons against its inherent weaknesses, he must reduce this mutual support and as far as possible remove the protecting infantry.

He does this by calling down everything he can get against the tanks and their supporting infantry. His small arms and mortars and artillery probably won't stop tanks, but it will separate them from their infantry and it will force them to close their hatches, reducing their fire power and seriously limiting their vision. And with this accomplished, he can go to work with his antitank weapons at fairly even terms. The most effective

of these is the tank itself, and there are 22 of them in every infantry regiment. But a regimental defense area will normally be so large that this company of tanks won't be able to cover all of it, so many soldiers will have to rely on something else for antitank purposes.

For longer ranges—up to about 800 yards—there are recoilless rifles. A well-aimed shot from the 75mm and 57mm rifles against the tank's weaker areas—the flanks, rear, or track assembly—can do the job. The greatest disadvantage of these weapons is the difficulty in maintaining concealment.



Used by a courageous infantryman, a variety of grenades will stop a tank.

Their terrific back blast makes them easy to locate as soon as they have been fired. But they are light enough to be quickly displaced to new firing positions. And the crew of the opposing tanks are not in a position to see a great deal anyway if they have been forced to keep their hatches closed because of continuing fire from small arms, mortars, and artillery.

At closer ranges—up to about 200 yards—the 3.5 inch rocket launcher, better known as the "super bazooka," has proven itself to be a match for any tank that has ever come up against it. Its greatest weakness is its short range, and this can only be overcome by putting it on the shoulder of a soldier who has enough "guts" to hold fast until the opposing tank is within effective range.

For even shorter ranges, the infantryman has a variety of grenades, all of which can be effectively employed against tanks by a courageous soldier who takes advantage of the tank's limitations—its "dead spaces," blind spots, and more vulnerable areas. At about 50 yards, antitank rifle grenades can wreck a track assembly or even penetrate a tank's armor. White phosphorus rifle grenades can be used to blind a tank, or even to set it on fire. Even a small particle of white phosphorus can do a lot of damage if it can get down through the ventilating grates and into the motor of a tank. And it will burn the rubber off the tracks and set fire to accumula-

tions of grease and lubricants in the track assembly. W-P hand grenades can do the same job.

While it takes a lot of courage for a soldier to get within grenade range of a tank, it also takes a lot of courage for a tanker to remain inside that steel oven when white phosphorus, with its great incendiary potential, is exploding on it or around it.

Burning is one of the best methods of knocking out a tank. Fire on a tank can ruin its motor and cause mechanical failure of the track assembly. And when a tank is burning, the fuel or ammunition inside might blow up at any time. If the crew starts bailing out because of this danger, they offer fine targets to the man with the rifle or machine gun.

So good doughboys will fight tanks with fire when they can. Flame throwers, if they are available, can reduce a tank to a raging inferno. And if the infantryman doesn't have a flame thrower, some field expedient such as a "Molotov Cocktail" can do the job. The "cocktail," which dates back to the Spanish Civil War, is merely a bottle of gasoline with a rag for a wick. It is ignited and thrown against the tank, preferably on top of the motor compartment, with enough force to break the bottle and spread the fire. To prevent too much splash, which would dissipate the effect of the flame, the bottle should be wrapped in cloth. One good way to do this is to slip it inside an old sock.



The well trained infantryman will find the Molotov Cocktail a good item.

Another good weapon against tanks is the thermite grenade. If it can be lodged on the rear of a tank, it will burn right through the protecting armor and wreck the motor.

Still another way for infantrymen to combat tanks is with antitank mines, which are part of the basic load of ammunition of every infantry regiment. If properly placed on roads or in defiles or on any good tank approach, they can immobilize attacking armor. And if such minefields are covered with antitank and antipersonnel fires, both the tank and its crew can be finished off after it has been stopped.

A crippled or stopped tank becomes, in effect, a pillbox. And a smart antitank man will always remember this. When he gets a tank stopped he will

continue to pour in antitank fires until he is sure that it won't come to life again, and he will always be prepared to knock off the crew members if they start out the hatches.

All of the weapons described so far can best be used from concealed defensive positions or ambushes in which the doughboy waits for the enemy tank to move up within effective range. But a good soldier with an aggressive spirit—that's another way of saying "guts"—can move against the tanks, carrying his "bazooka" or grenades or flame thrower with him. That is, he can do this after he has separated the tanks from their protecting infantry and has forced the tanks to button up and stay buttoned up.

Doughboy Can Hold His Own

In spite of the admitted capabilities of mechanical warfare, the doughboy with his "tin hat" and rifle can still hold his own on any battlefield. But before he can successfully match himself against those death-dealing iron monsters which we call tanks, he must be aware of the capabilities and limitations of both himself and his opponent. He must be trained as a member of a team and know when and where to best employ the fire power of all component parts of that team. He must be alert and ingenious, seizing every opportunity and every means available to get in his "licks." And he must have courage—not foolhardy recklessness, but cool, calculating courage which will enable him to wait for his chance and then hit the tank with the right weapon in the right place at the right time.



Antitank mines planted in logical areas of tank approach will stop armor.

ARMOR—March-April, 1951

TANK MINDED ONCE AGAIN

The fighting in Korea has made the American public "tank minded" once more.

The effective employment of tanks by General Ridgway has emphasized their role in battle.

He has made the most of their mobility, their fire power and their shock.

This does not come as a surprise to those American soldiers who have fought tanks all over the world.

It simply reaffirms the confidence they have in their weapon.

But it does come as welcome news to the reader public, which had been led to believe that "the day of the tank is over."

This same public, the taxpayer, who recalled with pride the World War II battlefield achievements of the "Old Ironsides," "Hell on Wheels" divisions and others, previous to Korea had read frequent articles discounting armor.

The ground soldier in Africa, Italy, and Europe of a few years back, who always breathed a sigh of relief when he saw a friendly tank come rumbling up to support him, had been told in these intervening years that some sensational weapon would drive the tank from the battlefield.

Then came Korea.

Immediately tanks were in high demand to round

out the ground combat team, combat enemy armor.

The public knows the rest:—

"Armor Spearheads Attack."

"Tank Led Infantry Knives Through Enemy."

Scarcely a day passes that the press does not mention the exploits of American and British tanks.

And this despite the fact that the terrain of Korea is rugged, and somewhat roadless, rather than a rolling countryside facilitating armored operations.

To the experienced tanker it recalled the oft repeated bugaboo of prewar days, that such an area "was not suited for tank operation." But somehow or other when war came the tanks seemed to reach their objective.

And so, we Americans get a lift out of the part this characteristically American weapon, the tank, is playing in the combat team in far off Korea.

Our President in his declaration of a national emergency set a figure of 35,000 tanks as a possible goal for industry, if the urgency of the international situation were to require that many.

And inasmuch as war with us is a national effort, in which we capitalize on the entire resources of the country, we are gratified that the United States possesses the industrial potential of turning out 35,000

of these battle proven, fighting weapons.

In Korea, it is a practice to attach a company of tanks to an infantry regiment, or a platoon to an infantry battalion. Frequently this attachment is somewhat permanent—at least during a particular phase of combat.

This attachment permits the development of that close understanding, and camaraderie, which augurs for success on the battlefield.

The infantryman comes to know and depend on a certain nearby tank or platoon with its supporting fire power and mobility.

The tanker, on the other hand, leans on that infantry squad to help him through some tight places.

And that is where the team strength comes in.

Of course the Korean fighting is a special kind of war, and a very important one to us Americans. In it we have learned again many lessons, including reaffirmation of the close inter-support between infantry and tanks that enhances so much the combat effectiveness of each.

Based on this battlefield experience we are confident that it will continue to be the practice for divisional tank units closely to support infantry in combat.

Looking beyond Korea to possible action in

Western Europe—a completely different situation from Korea—we anticipate that full weight will be given to the value of the Armored division and combat command, when the make-up of the North Atlantic Treaty forces is determined.

There we can see the urgent necessity for the hard-hitting, self-contained armored units that knifed their way across France and Germany.

Armored units of divisional size, made up of armor, infantry, artillery, engineers, and all service components, supported overhead by tactical air.

No American can doubt the combat effectiveness of our proven United States Armored divisions. They demonstrated their worth in World War II, and they will do it again, if ever called into action.

So, while giving the fullest possible accolade to the small tank units fighting so magnificently in Korea, we must not lose sight of their big brother, the armored division, and the proven wallop he carries.

Both are essential to present-day American success at arms.

That is why the recent announcement that the famous 1st Armored Division is to be reactivated is encouraging news to those World War II soldiers who know the battlefield value of an American armored division.

ASSOCIATION TO SPONSOR MOUNTED SERVICE MUSEUM

The President of the United States on June 23, 1950 signed the Army Organization Act of 1950. Under the provisions of this legislation the branch name Cavalry gave way to the continuation name Armor. Thus, after nearly one hundred and seventy-five years of service, a name of great military significance has passed into history. But everything it signifies carries on in the field of mobile warfare.

Upon the passing of the word Cavalry from our military lexicon, the Executive Council of the United States Armor Association (continuation of the United States Cavalry Association) took under consideration a proposal advanced by Colonel Herbert H. Frost, USAR, for the establishment of a Mounted Service Museum in which would be collected those things which have been a part of the horse Cavalry, Artillery, and Quartermaster these many years—the representative uniforms, the rifles,

the sabers and pistols, the horseshoes, saddlery and leather equipment, the guidons and standards, the books, photographs and paintings; in fact, all the accoutrements of historical worth. In advancing his proposal, Colonel Frost offered as a nucleus his valuable personal collection of guns and saddles, and an extensive library.

Obviously, a Mounted Service Museum is an undertaking of some proportions. The problems of location, housing and maintenance are perhaps more difficult than the assembling of the contents.

As discussions got under way suggestions came from several sources where similar ideas were generating. Many civilians expressed a sincere interest and the idea expanded beyond the limitations of a purely military museum to embrace a National Gallery of the Horse. Colonel Jeffrey Galway, retired, presented this broad concept and in a report to the

Executive Council, indicated the wide and active interest in civilian fields.

The ideal museum or gallery would be a separate and private building in the Nation's Capital, maintained by a separate fund amassed for the purpose. Financing of the project is the key item here. Alternate possibilities would be a separate wing in an established museum, or the use of a building on a military post. A primary consideration must be a location available to the greatest number of people, a condition best fulfilled by Washington, D. C.

Undoubtedly there is much valuable material in old warehouses or records depots in military posts around the country which is increasingly in danger of discard. It is essential at this moment that any person possessing a knowledge of such archives earmark them for preservation, notifying the Asso-

ciation in order that proper steps may be taken to acquire them. In this respect, the United States Armor Association solicits the attention and assistance of post and organization commanders.

Although plans are not yet far enough along for the actual collection of historical items, the Association will appreciate hearing from those with information on the location of appropriate archives of the Mounted Service. A special committee of the Association has been appointed to make a study of the subject and to lay the groundwork. It is composed of Major General Guy V. Henry, Honorary President; Colonel Herbert H. Frost, Council Member; Colonel Jeffrey Galway, Member; and Captain William G. Bell, Secretary. All communications should be addressed to the Secretary, U. S. Armor Association, 1719 K Street, N.W., Washington 6, D. C.

for Armor—
more striking power
in the reactivation of

The 1st Armored Division

A MESSAGE FROM GENERAL CLARKE

Today, in assuming the task of reactivating and rebuilding the 1st Armored Division, I am mindful of the tremendous responsibilities that are involved. With the 1st Armored Division again in being we now have two active armored divisions. This is the same base for further armored division expansion that existed at this time in 1941. Should a need for further expansion again arise this base will once more have to carry the load and point the way for those to follow.

The 1st Armored Division was an outstanding outfit under the leadership of such commanders as Generals Magruder, Ward, Harmon and Prichard. It is with a feeling of pride that I follow in their footsteps.

We, who are charged with rebuilding the division, have one great advantage over our predecessors ten years ago. We have the advantage of their experience to draw on as well as that of many other armored division personnel trained during World War II. We shall constantly make the most of this advantage.

Those of us of the present 1st Armored Division assure those who served with it before and those who served with other armored units, that no effort will be spared to make the 1st Armored an outstanding member of the Armor family.

BRUCE C. CLARKE
Brigadier General, USA
Commanding

On February 28 the Department of the Army announced the reactivation of the famous 1st Armored Division, at Fort Hood, Texas, with Brigadier General Bruce C. Clarke as Commanding General. General Clarke served with the 4th and 7th Armored Divisions during World War II.

The 1st Armored "Old Ironsides" Division was activated at Fort Knox, Kentucky, on July 15, 1940, an experiment in a new type of organization—a self-contained fighting unit built around a nucleus of tanks. The troops necessary to form the organization were drawn from many sources.

The heart of the formation was supplied by the 7th Cavalry Brigade Mechanized, which included such seasoned units as the 1st Cavalry, 13th Cavalry, 6th Infantry and 68th Field Artillery. Completion of the organization brought the division tanks, artillery and infantry in strength. In direct support were tank destroyers, maintenance, medical, supply and engineer battalions.

To become efficient armor soldiers, most of the division attended The Ar-



Brig. Gen. Bruce C. Clarke is a graduate of the United States Military Academy, class of 1925. His long experience with armor dates back ten years to his assignment as Chief of Staff of the 4th Armored Division. In 1943 he became commander of CCA of the 4th Armored, leading it overseas. A year later he was designated commander of CCB of the 7th Armored Division. He commanded armor across France, Holland, Belgium and into Germany in the Allied campaigns. In early 1948 General Clarke was named Assistant Commandant of The Armored School. In mid-1949 he assumed command of the Second Constabulary Brigade in Germany, returning recently to command the newly reactivated 1st Armored Division.

mored Force School at Fort Knox, learning about their newly acquired tanks, half-tracks and guns. Thus a year of training got under way.

In September of 1941 the division left for maneuvers in Louisiana, a period of tough training which was later to pay off. With foul weather, night driving, field conditions and constant practice, a better division returned to Fort Knox on the day before Pearl Harbor.

Based on experience gained, a reorganization took place, and in March of 1942 the division moved out for Fort Dix, New Jersey, and staging for overseas shipment. Major General Orlando Ward replaced Major General Bruce Magruder in command.

The division landed in northern Ireland in May and June of 1942, there to undergo another period of rigid and exacting training. Mentally and physically the organization was reaching the "ready" stage.

The next step took CCB and elements of the division to England and Scotland, there to board ship as a part of the force sailing to the invasion of North Africa. On the morning of No-

vember 8, 1942 they made the landings in the Oran area in Algeria, capturing the city, a vital supply point for the North African Campaign, in a plan which included infantry landings from east and west, armor attacks from southeast and southwest, and a seaborne assault on the city's harbor. Oran surrendered on November 10. The 1st Armored Division had undergone its battle initiation.

Desert Campaign

Tunisia came next and the elements of the 1st Armored moved east to join the British Eighth Army. There followed a period of bitter fighting, some offensive, some defensive, and the history of the outfit is built around such names as Tebourba, Medjez el Bab, Ousseltia, Maktar, Station de Sened, Faid Pass, Kasserine, Sbeitla, Maknassy, El Guettar, The Mousetrap, Mateur, Ferryville, Tunis. In April Major General Ernest N. Harmon replaced General Ward as Division Commander.

Although the division did not find itself in a position to fight as such until the late stages of the Tunisian Campaign, in the Mateur area, it was laying the groundwork for other American armored divisions to follow, and was establishing the principles of tank-infantry teamwork which was to play such an important role in the future. With the close of the Tunisian Campaign the division moved to Rabat in French Morocco and another period of preparation for things to come.

1st Armored Division was represented by the 27th Armored Field Artillery Battalion and the 16th Armored Engineer Battalion in the landings at Salerno, as part of Fifth Army forces, invading Italy, on September 9, 1943. The division as a whole arrived in Italy in mid-November.

Mt. Porchia was the first of a long line of names which are geographical spots to most people but were battle scenes to men of the 1st Armored Division.

In late January the division landed on the Anzio Beachhead, to take part in all of the bitter fighting of that diversion and to join in the breakout and linkup with the main front and follow through on the race to Rome. Following the capture of the Eternal City they moved north for a return to action in late June just above Grosseto.

FORMER COMMANDERS



Maj. Gen. Bruce Magruder.



Maj. Gen. Orlando Ward.



Maj. Gen. Ernest N. Harmon



Maj. Gen. Vernon E. Prichard

High spots in division history were Pomerance and the Arno River, where the front stabilized in preparation for the North Apennines Campaign of 1944-45. Additional reorganization took place here, putting the division on the basis already in effect in most other armored divisions. Major General Vernon E. Prichard replaced General Harmon as Commanding General.

The mountain campaign of the winter period restricted the employment of the division to support in various sections of the front and many personnel gave over their specialized work to become foot soldiers for the static period.

Mobility again became the watchword as spring of 1945 brought the Po Valley Campaign. The division lanced north and northwest in the 19-day campaign which brought the end of Nazi resistance in the Mediterranean area and completed 30 months of combat for the 1st Armored Division.

Peacetime Pursuits

Designated as a part of the occupation force, the 1st Armored went on to Germany to serve a period under more pleasant circumstances. One member, Private Nicholas Minue, of the 6th Armored Infantry Regiment, had won the Medal of Honor, credited with bayoneting ten of the enemy and silencing two machine guns before he died in a one-man action in Tunisia. The 3d Battalion of the 6th Armored Infantry Regiment had received the Distinguished Unit Citation for their efforts to fulfill their difficult mission in the Oran Port. Many other members of the organization had received awards.

The division returned to the States where, after nearly six years of active service, over half of it overseas, it was inactivated in April, 1946.

Thus the 1st Armored Division amassed its own record which, in company with the honors awarded its component units in the periods of their respective histories, adds up to a heritage of which every new member of the division may well be proud.

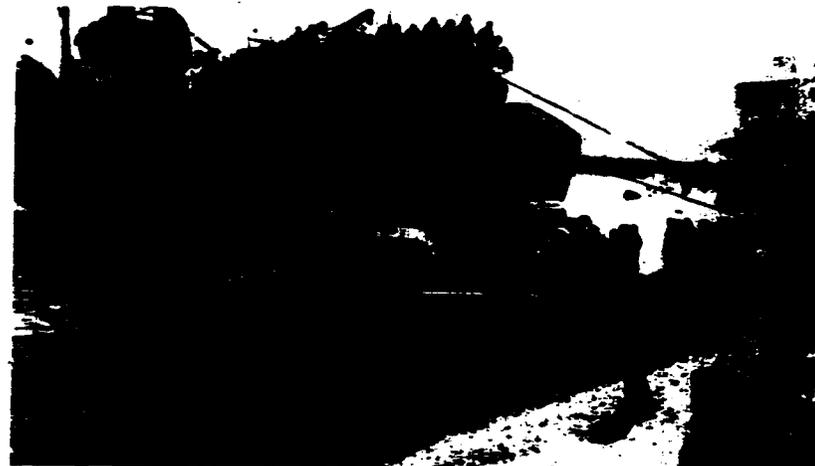
For some picture highlights in the early history of the 1st Armored Division, turn to the next page.

1st Armored Division Highlights

**EARLY
DAYS AT
FT. KNOX**



**SENED
IN THE
TUNISIAN
CAMPAIGN**



**ROLLING
ASHORE
AT ANZIO**



**CLIMBING
INTO THE
NORTH
APENNINES**

ARMOR—March-April, 1951

REPORT FROM KOREA

by COLONEL WILLIAM P. WITHERS

Armor Officer, Eighth Army



Col. Withers photographs knocked out T-34 tank. U.S. Army

IN the November-December issue of ARMOR there appeared an article titled "Tanks in Korea," in which the author stated that the M4A3 tank was inferior to the T-34 Russian-made tank. I would like to submit the following data which must be somewhat sketchy in view of the fact that security regulations prohibit extracts from Secret files.

The earliest M4A3 tanks were committed on the south flank. There were no M4A3's in action before August. In June and July M24 light tanks, mounting 75mm guns, and armored cars were the only armored vehicles in Korea. In August, one M4A3 was destroyed by three rounds of 105mm HEAT, all hitting the vertical side armor in the same place. The range was 200 yards. Another M4A3 was hit in the right final drive by an AP projectile, probably 76mm, at a very short range, under 500 yards. It was subsequently recovered and repaired. Two M4A3's were hit by AP projectiles at short range. One of these was pierced at the junction of the top deck plate with the side armor, exactly at the weld. The enemy gun was in position on a high hill, trajectory was approximately downward, 45 to 60 degrees from horizontal.

These tanks were committed to save a surrounded battalion, and the mission was accomplished successfully.

Farther to the north of the perimeter, at least one M4A3 was hit by a concealed T-34, at 40 yards range. Another M4A3 tank, 25 yards distant, was likewise hit, in the right sponson. In this action, 10 enemy T-34's were destroyed. Our loss was two tanks. The cause of our loss may be attributed to the fact that there was no ground or air reconnaissance. Personnel casualties were three men killed in the second tank and one man wounded superficially when he was blown out of the turret.

Near Waegwan, an M4A3 tank was hit on the deck, 8 inches behind the driver's hatch, which was open, by a 120mm mortar shell. The deck armor was broken, with a 3-way crack radiating from the center and pushed in to a depth of 3 inches. This

same battalion had three M4A3 tanks hit by 85mm guns, two on the front plate at a range of 50 yards. The third tank was hit on the sponson under the turret. Total casualties in these three tanks were one killed and no wounded.

I have witnessed many kills of T-34 tanks by M4A3 tanks. In one day, Friday, 13 October, one tank company encountered and destroyed 8 Russian-made T-34 tanks. Most of these were destroyed by M4A3 tanks mounting 76mm guns. Only one of the eight T-34's is known to have been destroyed by 90mm guns. At the same time, the tanks killed crews of four 120mm howitzers, one 45mm AT gun and two heavy machine guns. One tank ran over a 120mm howitzer, bending back its armored shield.

Some 500-600 Red tanks were uncovered by the September-October advance of the United Nations Forces. Over half of these have been examined by teams of experts, and the greatest number of determinable kills have been credited to airplanes. It is unwise to underestimate the value of air support. The reason for the small number credited to tanks is that the Reds do not expose the T-34 to our tanks if they can help it.

These are the conclusions of the Armor Section of the Eighth Army:

- The M4A3E8 tank has proven itself superior to the T-34 in every tank-versus-tank action.
- Logistical qualities of the M4A3E8 are excellent compared to other medium tanks. Mechanical failures which occurred have been studied and many are due to overwork. All can be corrected by proper employment, normal maintenance, and inspection before commitment.
- M4A3E8 crews like their tanks.
- United Nations Air Forces have done a fine job against enemy tanks.
- Many enemy tanks, loaded with ammunition, have surrendered, due to lack of fuel or parts.
- Our tank gunners are superb marksmen.

The above statements are made from personal observations and official records.

ARMOR—March-April, 1951

With two organic tank battalions the airborne division packs a lot of punch.

How does armor fit the pattern of airborne operations?

The Commanding Officer of the 82d's 44th Tank Battalion reviews the subject.

ARMOR IN THE AIRBORNE DIVISION

by **LIEUTENANT COLONEL JOHN F. FRANKLIN, JR.**

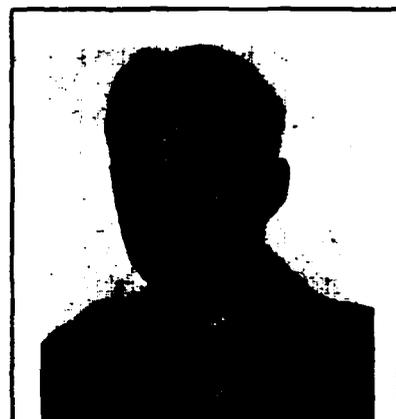
THE current airborne division, unlike its very specialized World War II predecessor, is so organized as to be the equal of the infantry division in sustained ground combat. The trend has been to make it organically equal to a standard division for normal operation with the added capability of participation with the bulk of its combat and service elements, in airborne operations. With the continued development of heavy cargo and assault aircraft it is conceivable that even the heaviest of the support units may be lifted into the Airhead in certain types of operations. Once on the ground, however, and until such aircraft are available, the organic armored elements of the division are employed offensively and defensively in accord with the same general principles as are applicable in the infantry division. Some minor departures from established practices are possible and desirable due to peculiarities of organizations and equipment. For an understanding of these a quick look at the over-all organization of the division is necessary.

Organization

The airborne division is the basic unit of combined arms for use in airborne operation. Its organization and equipment are essentially that of the infantry division, with only slightly less heavy equipment and a somewhat lower ratio of supporting units.

Its regiments, while otherwise very similar to the standard regiment, do

not include either tank or heavy mortar companies. The functions of these latter two units are combined into a support company which includes two heavy mortar platoons of four mortars each and an antitank platoon of six towed 90mm AT guns. The additional armored and antitank support



Lt. Col. John F. Franklin, Jr., graduate of the Cavalry School and Armed Forces Staff College, served in the South Pacific and OPD during World War II. He served with the Marshall Mission to China in 1946, and was with the Plans and Operations Division, Department of the Army, for a tour. For the past year he has commanded the 44th Tank Battalion of the 82d Airborne Division.

needed is supplied by two organic divisional tank battalions, in lieu of the one found in the infantry division. Also a separate antitank platoon of four towed 90mm guns is found at division headquarters.

The two tank battalions are organ-

ized under T/O & E 17-35N as Tank Battalions (Medium) and are identical to those found in standard infantry divisions and the armored cavalry group at corps level. They are separate administrative and tactical units with the normal supply maintenance, and evacuation capabilities. Each consists of Headquarters Headquarters and Service Company and three tank companies of four platoons.

The Artillery

Division Artillery consists of Division Artillery Headquarters, three towed 105mm Howitzer Battalions, one towed 155mm Howitzer Battalion and one AA (AW) Battalion. The equipment and organization closely parallels that of the ground division except that the old four gun battery is retained and the AA (AW) battalion is considerably smaller than standard.

In organization for an airborne operation the division is normally divided into an assault echelon, a follow-up echelon, and a rear echelon. The assault echelon is usually further organized for combat into combat teams and divisional units and is capable of being entirely landed by parachute. The follow-up echelon contains both service and heavy combat elements and is air landed or rejoins the division as soon as possible by land or sea. The rear echelon contains only administrative elements and joins the division when the situation permits. All elements organic to the division except the medium artillery battalion and the two tank battalions

ARMOR—March-April, 1951



Advances in air transportation and transportability will have great effect on the use of armor in the airborne division. M24 tank enters a C124 plane.

are capable of being, in whole or in part, committed in the assault echelon. These exceptions must, because of the present limited capacities of cargo aircraft, join the division with the follow-up echelon either by sea or overland. The assault echelon is extremely vulnerable to enemy armor prior to the arrival of the follow-up echelon with the organic tank battalions and medium artillery. Therefore, it has been necessary to greatly increase the antitank potential of the airborne infantry unit over that of comparable ground units who operate with the ever-present antitank support of their organic regimental tank company and divisional tank battalion.

This antitank potential is a matter of constant study and currently it is understood that proposed changes will provide four antitank companies, each of twelve guns. One of these companies would be organic to each infantry regiment and one would be at division level.

The present antitank capability, and particularly the contemplated greatly increased antitank strength, coupled with the presence of an additional tank battalion headquarters, provides the airborne division commander with much greater flexibility of command. He is immediately better able to employ armored strength in its primary offensive mission, rather than necessarily devoting any large portion to an antitank mission. It may not be necessary for the division or regimental commanders to break down tank units that might otherwise be em-

ARMOR—March-April, 1951

ORGANIZATION FOR COMBAT

Offensive Operations

With the division operating offensively in a ground role, either after the arrival of the follow-up echelon or after entrance into combat on a purely ground operation, the principles for employment of armor in the airborne divisions are identical to those in the infantry division. These principles include the purposes of offensive action, the forms of offensive action, the distribution of forces, frontages, zones and axes. However, due to the greater flexibility of command available in the existence of two tank battalions, the task organization for combat within the distribution of forces, in the airborne division as compared to that in the infantry division, will differ considerably. It may be inferred by the presence of two tank battalions in the division, that one battalion normally will be broken down with one of its companies going to each of the three regiments. This arrangement, of course, provides the airborne regiment with the same armored support as is found in the normal infantry regiment. Admittedly, it does insure that the tank-infantry teams on the individual and crew level are well acquainted and accustomed to operating together. Likewise, it is further in-



The detachable fuselage pack plane has aroused speculation over the possible adaptation of the idea of a detachable tank for airhead operations.

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Tank Defense Against Atomic Attack

by MAJOR GARTH STEVENS

WHAT will happen to tank units if attacked with atomic explosives? Will the tank be discarded as a weapon if an enemy starts using atomic bombs tactically? As atomic weapons become more plentiful, answers to these questions become increasingly important. The tank is probably the least vulnerable of ground weapons to atomic explosions, and slight changes in matériel, organization, tactics and techniques can greatly increase the effectiveness of the tank under atomic attack.

The publication of *The Effects of Atomic Weapons* by the Department of Defense and the Atomic Energy Commission has provided an authoritative reference available for analyzing the effects of atomic weapons on ground warfare. The following is a brief discussion of the effects of atomic explosions when used against tanks and tank units. An atomic weapon with an explosive equivalent of 20,000 tons of TNT is assumed.

Effects of an Atomic Explosion

An atomic explosion destroys in three ways: (1) by blast, in the same manner as any high explosive, (2) by thermal radiation or heat, and (3) by nuclear radiations. Each of these effects is deadly by itself. However, to obtain maximum over-all destructive effect against troops in the field, an enemy would probably explode the bomb about 2,000 feet above the center of the target area; the following discussion assumes such an air burst.

The blast from an atomic bomb only differs from that of other military high explosives in that it is stronger and lasts longer. Although a properly placed atomic bomb can crush any man-made structure, an enemy who would explode an atomic bomb to destroy one or a few tanks would be as foolish as the enemy who would use a

TNT blockbuster to destroy a cracker box. Since the best protection against blast is armor plate, in a large area under an atomic explosion, although buildings would be knocked down, wooded areas would be leveled, and debris would be thrown for miles, still a tank close to the ground center would have a chance of survival. Not only would the tank's armor plate protect against the initial blast, but, more important, it would protect against flying debris.

A tank next to an atomic explosion would be vaporized by the intense heat. Thermal radiation or heat would cause more casualties among unprotected personnel in a cleared area than blast and nuclear radiations combined. Yet a tank directly under the explosion would probably survive this hazard, assuming all tank hatches were closed at the time of the explosion. A tank commander with his head out of the turret would pull back a charred stub, and the crew would be killed instantly by blast and heat with the hatches open.

Nuclear radiation hazards are of two kinds; those which are nearly instantaneous, and those which are delayed and are called lingering radiations. Lingering hazards result from radioactive materials being deposited upon the tank or onto areas in which the tank must operate. An explosion 2,000 feet above the target would cause negligible lingering radiation hazards. Units could move into the area under the explosion immediately after the explosion with assurance that crews would not suffer from radiation hazards. However, no tank built carries sufficient armor plate to protect the crew from instantaneous nuclear radiation from an atomic explosion 2,000 feet away. The tank's armor plate will, however, reduce instantaneous nuclear radiation by at least half, thus giving the tank crew some protection.

The discussion so far has assumed a

high altitude burst. Such a burst will normally cause greatest over-all damage, but an enemy might well burst an atomic projectile on the ground, or allow the projectile to penetrate the earth before exploding if the target is a tank unit. While blast and heat hazards from such bursts would be greatly reduced, the lingering radiation hazard would be increased. Tanks might not only be contaminated with radioactive dust, but might be forced to move through highly contaminated areas to perform assigned missions. An underground or surface burst could thus create a substantial roadblock which would need no attendance.

Tactical Use of Atomic Weapons

An atomic weapon, like any other supporting weapon, would normally be used to best further the assigned mission of the unit. Thus, an attacking enemy would be expected to burst atomic weapons to best further the attack, and in the attack the atomic weapon would be a powerful weapon. Assume defending units to be occupying strongly fortified positions which would force the attacker through a well fortified line. Penetration of a heavily defended and mined area would require the massing of artillery at the proposed point of penetration, the use of Engineer troops to clear or mark mined areas, the use of heavy infantry attacks to open and maintain a breach, the massing of supplies, and the selection of terrain favorable for both tanks and infantry. However, with atomic weapons available, the equivalent of hours of intense artillery and air bombardment can be accomplished in a few seconds. The height of the atomic explosion can be varied so that the effects emphasized would be to clear mine fields, to level wooded areas, to remove tank barriers, and to destroy personnel over a large area.

To briefly recapitulate, let us list some of the advantages of an attack

ARMOR—March-April, 1951

There has been increasing attention on the subject of tactical use of atomic weapons. The battlefield implications with respect to armor are interesting. How would the tank fare in this kind of warfare?

supported with atomic weapons.

a. The possibility of surprise is increased. No artillery preparation is necessary. Less massing of troops for the attack is required.

b. Detonation by atomic explosion of antitank mines in limited areas greatly simplifies the mine clearing job.

c. Substantial destruction of defending personnel in critical areas greatly simplifies what remains of mine clearing and obstacle removing jobs.

Warfare in which atomic weapons would be extensively used would probably require high mobile dispersed units such as could be created from existing types of armored units. In such warfare, the tank would be of increasing importance both for offensive and defensive actions.

Protection Against Atomic Attack

Atomic warfare will require greater dispersion of units. The circular type bivouac often used during World War II would be an ideal target for an atomic bomb. However, the communications systems of armor units permit them to operate in dispersed formations, and their mobility permits rapid assembly at critical points for either defensive or offensive action.

Atomic warfare will require decentralization of supply and maintenance functions. Large units with large headquarters are tempting targets. Possibly ordnance, quartermaster, signal and medical functions now performed on the division level should to a larger extent be performed by battalions and companies. Such decentralization might result in decreased combat efficiency because of small units

ARMOR—March-April, 1951

Army to Order to Active Service 12,650 Company Grade Officers

The Department of the Army has announced that 12,650 company grade Organized Reserve and National Guard officers will be ordered into active military service by June 29, 1951, bringing the total number of captains and lieutenants ordered to duty to approximately 40,000.

Included in the order to active duty are 300 Medical Service Corps officers, 150 Women's Army Corps officers, 150 company grade chaplains, and 50 Army Field Artillery aviators in the rank of lieutenant.

The order affects 3,444 captains and 9,206 second and first lieutenants. They will report for duty between May 23 and June 29, 1951.

National Guard officers will be ordered into active service as individuals only on a voluntary basis, the Army said. No members of the Inactive Reserve will be ordered to active service under this program unless they volunteer.

The Army expects that many of these company grade officers will enter active duty voluntarily in the present emergency. Company grade Reserve officers should submit their applications direct to the Chief of the Military District in which they live. National Guard officers should submit applications through National Guard channels to the State Adjutant General concerned.

All officers will be ordered into the active military service for a period of 21 consecutive months, or such other period as may be authorized by law, unless sooner relieved. Officers will be given at least 30 days in which to close out their personal and business affairs prior to reporting, unless they desire to report at an earlier date.

Officers selected for orders into military service by Army commanders will be in the following priority:

Priority I: Qualified volunteers of the Organized Reserve Corps, and of the National Guard of the United States.

Priority II: Members of the Active Reserve only of the Organized Reserve Corps commissioned from the ROTC who were deferred from Selective Service under an ROTC deferment agreement and have had less than two years' prior active Federal service as officers.

Priority III: Members of the Active Reserve only of the Organized Reserve Corps commissioned from the ROTC who did not execute an ROTC deferment agreement and who have had less than two years' prior active federal service as officers, warrant officers, or enlisted men.

Priority IV: Members of the Volunteer Reserve.

Major Garth Stevens, Armor, is assigned to headquarters of the Armed Forces Special Weapons Project in Washington, D. C.

TRAINING PUBLICATIONS AND AIDS

by LIEUTENANT COLONEL WALLACE L. CLEMENT

HOW do we get three-dimensional training aids? "Where can I find out about the latest Armor field manuals?" Such questions as these are asked time and again, principally by officers from newly activated Armor units, who are now faced with an enormous training problem. The Armored School appreciates this problem and is endeavoring to assist in all possible ways—by resident courses, by extension courses, by providing packets of material, by providing selected units of instruction for sale through the Book Store, and by giving information on availability of training aids and publications, which is the subject matter of this article.

The first thing the new unit should know about is its training program. Training programs for all Armor units were forwarded to Army Field Forces from The Armored School last fall. Although these have not been published as Department of the Army training programs as yet, they have been reproduced by Field Forces and distributed to newly activated Armor units. These cover a 38-week period of training, including basic and advanced individual training, basic and advanced unit training, combined unit training, and field exercise and maneuver training. The programs were written for each T O&E Armor unit—for example, the tank battalion has three programs: one for the tank battalion as a whole, one for headquarters and service company, and one for the tank company.

In addition to the unit programs, two were written for tank and reconnaissance crewmen replacement training. Each program covers 14 weeks of training: 6 weeks basic individual (found in ATP 21-110N), and 8 weeks advanced. These programs are being used by training divisions charged with turning out Armor replacements.

Subject schedules were prepared at the School to supplement the 8 weeks advanced individual replacement training. Although designed for replacements, it is felt that these subject schedules can also be used to advantage by units. In fact the School has taken steps to insure that these schedules are received by Armor units through its newly initiated packet program.

The packet program is designed as an information service for newly activated or Federalized Armor units. As soon as the School learns of a new unit,

a packet is assembled and mailed free of charge. The packet includes a set of the latest Armor manuals, a set of special texts, the subject schedules for tank and reconnaissance crewmen, a book store catalog, and several other publications having training value.

Of course, there are many Army Regulations and Special Regulations which have to do with training. In fact, there are so many that sometimes an important one is missed. There are two which are especially valuable in training any unit:

SR 110-1-1, Index on Army Motion Pictures and Film Strips—this regulation lists current training films and is revised periodically to bring it up to date.

SR 310-20-3, Index of Army Training Publications—this regulation lists field manuals, graphic training aids, and Army training programs among other things. These graphic aids are available by requisition through adjutant general channels. When the training programs described earlier have been printed by Department of the Army they will be listed in this regulation.

Service school book store catalogs are a valuable reference for a unit to have. These are generally available on request. Some schools include slides and charts, as well as instructional material, and The Armored School falls in this group. Service school graphic aids supplement those Department of the Army aids that are available on requisition and usually must be purchased.

Many new field manuals are now being written and many old ones are being, or have been revised. Each service school is charged with the responsibility for writing or revising manuals within their field, under direction of Army Field Forces. While a manual is being revised or written for the first time, a special text is normally used at the school as an interim publication. Units are encouraged to inquire about the field manual program and to find out the status of the texts they need; for example, whether special texts are available at the book store in lieu of a certain field manual. Book store catalogs are difficult to keep current and more material is generally available for sale than is listed in the catalog.

The present Armor manual program is nearing completion. The publishing of FM 17-12, *Tank Gunnery*, in November 1950, made a total of 10 manuals printed of 14 which were assigned to be

The Executive of the Training Literature and Reproduction Department of the Armored School answers some of your questions.

revised or rewritten two years ago. Of the four remaining, 17-35, *Reconnaissance Battalion, Armored Division*, and 17-50, *Logistics, Armored Division*, are now being printed; 17-95, *The Armored Cavalry Regiment (Light) and The Armored Cavalry Reconnaissance Battalion*, has been forwarded to Army Field Forces for final review prior to publication, and 17-30, *Intelligence and Reconnaissance in Armored Units*, is still being written, work on it having been suspended pending publication of FM 30-5. FM 30-40, *Recognition Pictorial Manual on Armored Vehicles*, has recently been assigned to the School for revision, and it is hoped that the manuscript of this manual will be forwarded in June 1951.

Many units inquire about purchasing maps for their map reading courses. The Armored School Book Store does not have maps in stock, but information on the availability of these items can be obtained from Department of the Army Map Service, Washington 25, D. C.

Information on construction of mock-ups and models, and recommended devices is contained in FM 21-8, *Military Training Aids*, September 1950. The manual gives suggestions for construction of all types of three-dimensional aids. For procurement of three-dimensional aids, units should go through channels to contact their training aids centers. These centers, established in each Army area on 1 July 1950, have included in their mission the receiving, storing, issuing or distributing on a loan basis of all approved training devices. They may also stock training films and graphic training aids. Each center generally has three or four subcenters or workshops located at various installations in the army area.

The Army training film program has achieved greater importance in the past few months. SR 110-1-1 lists current training films; each school can give the latest information on new films being produced. Eleven Armor films are now in production. The first three to be released will probably be *Conduct of Fire, Part I—HE*; *Conduct of Fire, Part II—Shot*; and *Conduct of Fire, Part III—Advanced Gunnery*. When obtaining films from their regional film libraries, units should also inquire about the instructor's film references. These are pamphlets which are written for each film—giving the scope and recommended questions and answers for the instructor to ask when the film is over.

Veterans of Korean Combat Training Army's New Soldiers

More than 600 combat hardened enlisted men, Army veterans of the Korean campaign, are already assisting in training new units in the United States or are being trained as instructors for this purpose.

The program is in line with Army policy to make maximum use of the Korean combat experience of enlisted men who are qualified as trainers and instructors. More than 150 combat veterans have completed courses in instructor training and are now sharing their battlefield lessons with soldiers in training.

In effect since November, the program provides that enlisted combat casualties, former prisoners of war, and men returned from the Korean combat zone for other reasons be screened and the best qualified selected as trainers and instructors.

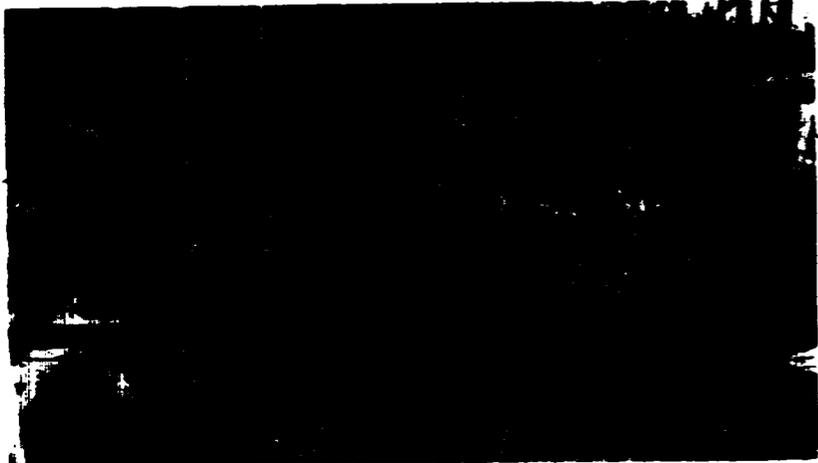
Men are selected on the basis of these requirements:

1. Have 20 or more days of battle or nonbattle experience in the Korean combat zone.
2. Be in the grade of corporal or higher.
3. Have a score of 100 or higher in specified aptitude tests, or have a high school education or its equivalent.
4. Have the necessary qualities of instructors and trainers.

The hand-picked men are sent to Army service schools for an orientation course to prepare them for their new assignment. Upon completion of the course they are retained at the school as instructors or are sent, as trainers, to a unit undergoing training.

The Infantry School, Fort Benning, Georgia, has received the largest number of combat veterans so far. More than 400 men are taking or have taken the course, while 153 combat-wise graduates are now assisting in the training of Infantry units.

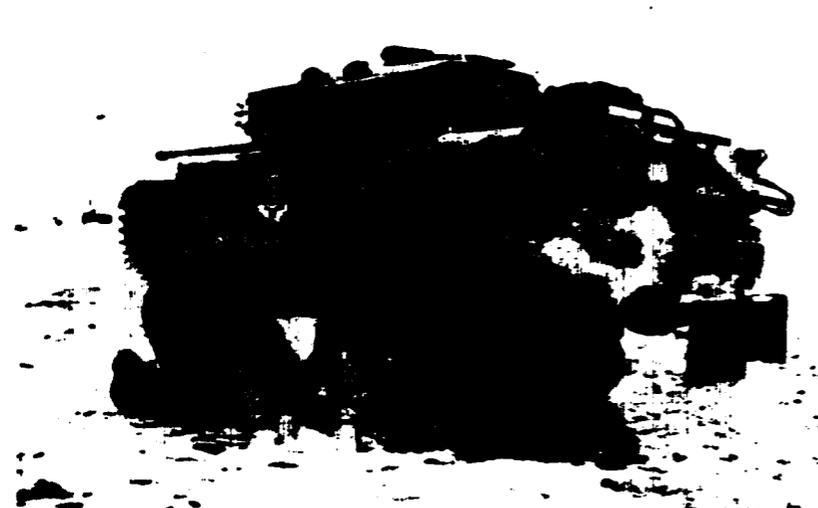
Army plans call for the use of many more Korean veterans in instruction capacities as they return from the combat zone.



A Centurion assembly line at a Royal Tank Factory somewhere in Great Britain.



A tank deser prepares positions for Centurions on the south bank of the Han.

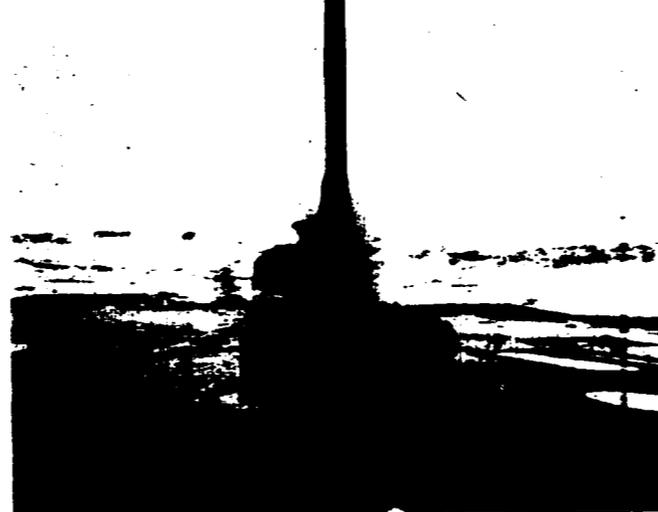


British tankers take time out for chow in the bitter Korean midwinter action.

THE BRITISH CENTURION TANK

A part of the armor story being written by the new British Centurion tank. In the King's Royal Irish Hussars, these tanks covered the Pyongyang area in December. The Centurion is a 50-ton amphibian tank. It is powered by a power adaptation of the Rolls Royce Meteor aircraft engine. It mounts an 85mm gun. On these pages are some pictures of the King's Royal Irish Hussars and their Centurions in support of U.N. operations.

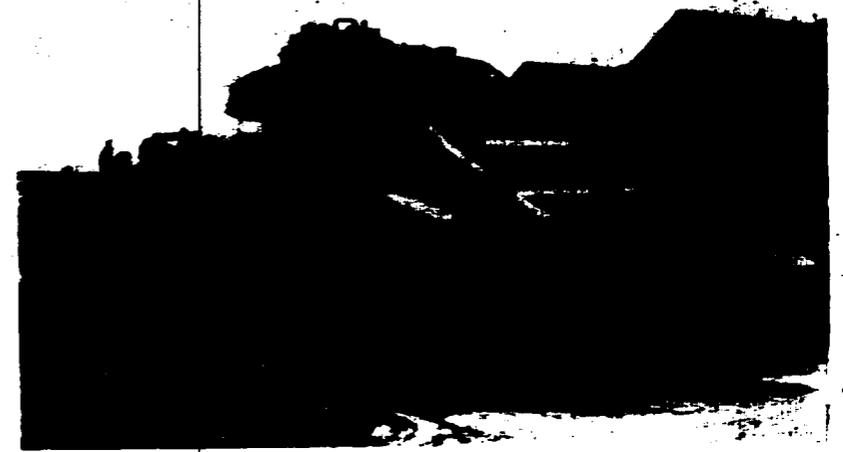
S. A. ny, Acme and Wide World



The amphibian qualities of the Centurion tank in action in the Han area.



Two sets of six launchers for close-in protection.



A Centurion is loaded onto a transporter at Britain's Royal Ordnance Factory.



Moving into position in the Han River area to give backbone to U.N. operations.



Centurion tanks cover the movements of a United Nations convey at the front.

A Survey of Soviet Armor

What is not fully understood is not possessed.—Goethe.

by **LIEUTENANT COLONEL MICHAEL S. DAVISON**

I. Introduction

WHEN Hitler's armies lunged across the borders of the Soviet Union in the summer of 1941, the Red Army became the center of hopeful world attention. It has remained so ever since with the rather significant exception that hope has been replaced by apprehension.

The remarkable performance of the Red Army in sustaining the initial punishing blows of the blitzkrieg, in applying its strategic concept of defense in extreme depth, in refraining from piecemeal commitment of its strategic reserves, in retaining its organizational unity despite initial wholesale surrenders and tremendous losses in men and matériel, and in turning imminent defeat into a final successful counteroffensive and victory over Germany's finest troops—all this bears evidence that the Nazi defeat in Russia is not to be explained away merely by a group of whining German generals passing the buck to Hitler's intuition. Acceptance of the German rationale might lead us to underestimate the true strength of the Soviet Army.

It must be understood that, from the early 1930's on, the Politburo took the threat of war seriously. The messianic vision of international communism entertained by the Bolsheviks demanded that Soviet Russia be armed against the inevitable capitalist attacks. Preparations for war were no less intense than they were in Nazi Germany. The five year plans developed the industrial base. Dispersal of industry was put into effect. The psychological preparation of the So-

viet people was commenced through propaganda and agencies for the defense training of civilians. Increased emphasis was placed on Russian nationalism or "Soviet patriotism" to give the moral driving force to total mobilization. Marxian propaganda was subordinated to national unity and patriotic appeals. The army was increased, discipline tightened, officers corps strengthened, training improved, weapons developed. All this prepared Russia for the Nazi onslaught.

As the events of 1941-42 proved, the preparations were not complete and it was the timely intervention of General Winter plus some carefully hoarded reserves which gave the Soviet Army a much-needed period of grace. Nevertheless, the foundation had been laid and the sources of strength existed. It remained for the Soviet high command to marshal and apply the strength with proper strategy, tactics, and technique. What was achieved in the armored field is the subject of this investigation.

It is necessary first to insert a word about the sources of information used for this paper. The paucity of authoritative detailed information on the current Russian scene is well known. Since there are no Soviet Congress-

sional Records or Drew Pearsons available for consultation, researchers without access to classified information are reduced to poring over the Russian press, propaganda publications, government releases, radio announcements, and belles lettres. Then by drawing on their extensive knowledge of past Soviet behavior, they can arrive at some sort of interpretation. These evaluations are then used by other evaluators, errors are compounded and realities become more tenuous. Most of the writing is on high level matters and eschews the worm's-eye view. This general field plus a clutch of propaganda articles written by Russian army officers during the war for foreign consumption represents the source material. I have a very definite feeling that my crystal ball is cloudy but I hope that more astute observers will endeavor to correct my errors and to elaborate the somewhat skimpy fabric of my presentation.

II. Tactics

A. Prewar Concepts

In 1925 Frunze succeeded Trotsky as War Commissar. Frunze was acutely aware of two fundamental facts bearing on the Soviet military strength. First, the capitalist countries enjoyed a considerable industrial head start. Until the Soviet could overcome the capitalist lead, the Red Army would be deficient in equipment at the outset of any war. Second, Russia in the vastness of her territory possessed a considerable source of strength. Space could be traded for time. But this same space afforded opportunity for maneuver on a vast

scale. There could be no static war of position because the tremendous reaches of the Russian territory would soak up troops like a sponge and still there would be room for maneuver. Thus, Frunze visualized maneuver warfare conducted by a mobile army imbued with the spirit of the offensive.¹ The new Field Service Regulations published in 1936 summed up the Russian concept as follows: "Modern technical means of reducing the defense (above all, tanks, artillery, airplanes and mechanized units, when used on a mass scale) make it possible to organize a simultaneous attack on the enemy throughout the whole depth of his position, to isolate him, to encircle him completely and finally destroy him." This was the point of departure in developing the doctrine of the various arms.

Early thinking on the employment of the tank placed it in two roles. The doctrine distinguished between tanks

B. WWI—Offense

During the course of the war a fairly consistent picture developed of Soviet employment of tanks in the assault and breakthrough of a prepared defensive position. At any rate, rather more writing has been devoted to this phase of armor in the attack than to the conduct of the "rat-race" after the breakthrough has been made.

The assault and breaching of the enemy position is a combined arms operation in which the infantry is the decisive weapon. Soviet doctrine stresses the detailed prior planning of the operation. The various units to be employed in the operation are brought together beforehand for combined training under conditions closely simulating those of the actual operation. Training is climaxed by CPX-ing the conduct of the proposed battle. Extensive reconnaissance is used

tanks accompanied by infantry on foot. The primary mission of the heavy tanks is to destroy known AT guns, to force the disclosure of unlocated AT guns, and to deal with any enemy tanks that appear upon the scene.

The second wave, following at approximately 500 yards according to one account, is composed of medium tanks each carrying some ten infantrymen. Each team of tank and infantry has been allotted a bunker, weapon position or other objective in the enemy position. The mediums pass through the first wave when the AT opposition has been eliminated. They may assist the heavies in dealing with the AT defense.

A third wave, similar in composition to the second, attacks enemy positions in depth and is prepared to exploit the success of the second wave. Infantry on foot follows the second and third waves to consolidate their

A FULL-LENGTH FEATURE ARTICLE ON FOREIGN ARMOR

for support of infantry and tanks for "distant action." The latter were to be independent tank formations employed for extended maneuver and operation against the enemy's rear areas, in particular, communications centers, reserves, and artillery positions. However, tactics and technique for the "long-distance" units were not worked out in detail. In 1941 at least half of the total tank strength was in infantry support units indicating a conservative attitude towards large independent armored formations.² That this attitude was destined to change after the war began is reflected in a statement attributed to the future Marshal of Armored Forces Rotmistrov speaking as a colonel in 1939: "Tanks must be employed in masses. The best opportunity for a tank commander is to be in command of large groups—a brigade, a corps, an army. Those are splendid instruments in an offensive. A concentration of a thousand tanks—that is the dream of every tank commander."³

¹Berchin and Ben-Horin, *The Red Army*, Norton & Co., N.Y. 1942, pp. 127-130.

²Corotneff, N., *Red Army Tanks in Winter*, The Cavalry Journal, Jan.-Feb. 1943.

³Fomichenko, *The Red Army*, Hutchinson, New York, 1945, p. 58.

to develop details of the terrain and of the enemy positions. Such information is incorporated in the training of units preparing for the attack.

The actual attack is preceded by an air and artillery preparation extending through the depth of the position. The Soviet Army delights in massive artillery preparations delivered in great weight and for a prolonged period. However, even though this is their preference, Russian military writers emphasize that the attack preparation must not be stereotyped and they offer as an alternative a rolling barrage commencing at the time of attack or an attack without preparation using artillery and air as the battle develops.⁴

Of concern to Soviet commanders is the problem of marrying-up the tanks and infantry in the initial attack position. Coordination should be such that the tanks are not held up once they arrive at the attack position. Obviously, the tanks would be the center of considerable enemy attention.

The initial wave of the attack, coming in close on the heels of the artillery preparation, consists of heavy

⁴Korolev, M., *Tank-Infantry Attack*, Cavalry Journal, Sept.-Oct. 1943.

gains, thus freeing the tankborne infantry to continue with their assigned tanks.⁵

Light tanks, if employed, follow behind the mediums and are used after a breakthrough is made to secure the flanks and conduct reconnaissance.

Once the tank-supported infantry has succeeded in breaching the enemy position, armored formations are passed through and encirclement of the enemy is sought. Illustrative of this type of action is the highly publicized November offensive in 1942 at Stalingrad which resulted in the capture of Von Paulus and his army.

In this action the XXVI Tank Corps (roughly equivalent to our armored division of World War II) passed through a breach opened by a combined arms attack and moved some 75 miles through enemy territory to a juncture with a similar spearhead. The operation was characterized by the usual detailed preparations, including hours of night driving for the tank crews across the steppes learning to negotiate ravines and gullies in the dark.

The tank corps passed through the

⁵Bandik, *Organization of a Tank Attack*, Cavalry Journal, March-April 1943.

Lt. Col. Michael S. Davison is a graduate of the U. S. Military Academy, 1939. Until 1942 he served with the 1st Cavalry Division. In World War II he commanded an infantry battalion of the 45th Division in Italy and France. A graduate of the Command & General Staff College, he has recently returned from Puerto Rico and command of the 18th Reconnaissance Battalion, is now studying economics, government and history at Harvard University and aiming for a master's degree.

infantry in two columns traveling cross country. They immediately plunged into the tremendous space of the steppe where compass navigation was required. No effort was made to maintain a line of communications to the rear. Presumably ammunition trains accompanied them and one writer specifies that German supplies were to be used for refueling.⁶ No halt was made the first night and only short ones thereafter. Once well into the enemy rear they had no compunctions about using vehicular lights at night. As a matter of fact, if one can believe the Russian military writers, this is a common practice in the Soviet armored force.

The final objective was a bridge across the Don River which was to be secured intact. This was accomplished by using an advance detachment consisting of five captured German tanks and three captured trucks transporting sixty Tommy-guns. This force secured the bridge and held off the Germans until the main body of the corps arrived.

So much for the general employment of Soviet armor on the offense. However, there are some interesting details of Soviet tank technique worth noting. The observations that follow are derived either explicitly or implicitly from articles by Russian officers written for U.S. consumption and perhaps should be well salted before swallowing.

There are repeated references to tank battles with the Germans in which the Soviet tanks attack firing their cannon as they move. The Russians call it more effective than stationary fire which they don't care for because the enemy then has a standing target at which to fire. They are singularly reticent about how they obtain accuracy with the tank gun while moving, making only this rather smug comment: "Fire from moving tanks naturally requires high skill and training of crews." This is, of course, a degree of proficiency only attainable under the dictatorship of the proletariat and quite beyond the reach of the decadent capitalist. In fact, the Soviet tanks on occasion carry the "charge" to the point where they are completely intermingled with the op-

posing tank formation. Numerous citations for decorations carry accounts of ramming German tanks in order to disable them.⁷

Another point of interest is the use of observation posts by Soviet tanks in an engagement. It would appear that the tank unit commander uses the OP as the point from which he controls the action of his units. In the early days of the war when sometimes entire battalions were without radios, control from the OP was achieved by motorcycle messenger or liaison tank. If the OP is still part of the scheme, presumably control is now by radio.

In summary, Soviet use of armor on the offense calls for a massive stroke by tank-saturated infantry followed by breakthroughs of highly mobile armored formations striving for encirclement link-ups while the mass of infantry mops up behind them. A graphic description of such an advance is given by General Manteuffel, a panzer commander in the East, when he said: "The advance of a Russian Army is something that Westerners can't imagine. Behind the tank spearheads rolls on a vast horde, largely mounted on horses. The soldier carries a sack on his back, with dry crusts of bread and raw vegetables collected on the march from fields and villages. The horses eat the straw from the house roofs—they get very little else. The Russians are accustomed to carry on for as long as three weeks in this primitive way when advancing. You can't stop them like an ordinary army, by cutting their communications, for you rarely find any supply columns to strike."⁸

C. WWII—Defense

The basic Soviet defense strategy in World War II is well known. It was essentially one of trading space for time in which to complete mobilization and the assembly of forces for a counteroffensive. It was a costly strategy because the German offensive was launched through the productive heart of prewar Russia. Some dispersal of industry had been accomplished in the five year plans prior to 1941 and transplanting of factories took place during the retreat, but the agricultural economy of the German-

occupied areas suffered great loss from the scorched-earth policy of the Russians.

In implementing their defensive strategy, the Soviet Army disposed its troops in great depth. The May 1942 issue of *Fortune* speaks of a Soviet Corps being disposed, according to the situation, on a 5 to 12 mile front with a main defense zone 9 to 12 miles in depth. While these figures are somewhat ambiguous, it is clear that defense in great depth is firmly rooted in Soviet tactical doctrine.

Large armored formations are held in army or "front" reserve for use in counterattacks against successful enemy breakthroughs. In the event of breakthrough there is no general withdrawal along the line. Units adjacent to the breach refuse their flanks. Reserve units are disposed against the flanks while others attempt to contain the point of the enemy spearhead by occupying previously prepared secondary positions. If these moves are successful, the large armored units in reserve counterattack, preferably against the flank of the breakthrough.

Within the defensive position, infantry-support tanks may be employed in dug-in positions in forward areas if other antitank means are considered insufficient. However, the preferred employment is to hold them in mobile reserve. The reserve position is selected so as to place the Soviet tanks athwart the probable line of advance of the enemy armor. The tanks are placed in camouflaged positions to cover with flanking fire the obvious tank routes through the position. When the enemy attacks, the Soviet infantry allows the enemy armor to pass through their position. The Soviet infantry then engages the enemy infantry in order to separate them from their armor. Soviet tanks ambush the penetrating enemy vehicles. A mobile reserve is maintained to either exploit or reinforce the defensive battle.⁹

Soviet defensive doctrine calls for the tanks to organize for an attack from any direction and to conduct constant reconnaissance of the area surrounding the position. This is vital where the great expanse of land and the tremendous length of the fighting front make for conditions of highly fluid and mobile warfare.

⁶Tret'yakov, B., *Tank Ambushes*, Cavalry Journal, March-April 1943.

⁷Minz, I., *The Red Army*, International, New York, 1943.

⁸Liddell Hart, *The German Generals Talk*, Morrow & Co., New York, 1948.

Armor on the defensive carefully and expertly camouflages its tanks. If the ambush system is to be used, sectors of fire and control arrangements are carefully laid out beforehand.

In the event of a daylight withdrawal, the tanks are expected to cover the extrication of the infantry. The tanks then move back by leap-frogging units to the rear. However, night withdrawals are preferred.

The underlying principle of Soviet defensive action lies in their firm conviction that a battle is never lost as long as there exists even the slightest means of resistance. By-passed units do not surrender; they fight on and, when fuel and ammunition are exhausted, the men join the guerrilla units.

D. Operations at Night

Most of the Soviet Union lies north of the 50th parallel. During the winter, major operations are handicapped by the short period of daylight. Consequently the technique of night operations became highly developed during the war, the general principle being that the infantry would penetrate the enemy defenses during the day and the tanks would pass through at night.

Such an operation requires extremely careful preparation. The Russians emphasize detailed prior planning and training by the units involved. Reconnaissance is carried out to select routes, locate obstacles, and remove mines. Drivers are taken over the selected routes at night up to the enemy positions.

For the attack moonlight nights are preferred so that the tanks and accompanying infantry can maintain their orientation. The infantry assists in keeping the tanks on course and in designating targets. Formations are echeloned in depth making movement and control easier. According to one writer, such a formation also gives the enemy an impression of much greater strength because it is more difficult to estimate at night the strength of a unit deployed in column rather than in line.¹⁰

Tank-infantry cooperation is even more important at night than in daytime. Under no circumstances, the Soviets feel, should the tanks and in-

⁹Corotneff, *Tanks in Night Combat*, Cavalry Journal, July-August 1943.

fantry become separated. Upon arriving on the objective, the infantry organizes the new position while the tanks are withdrawn to a rear assembly area.

Thus with tremendous quantities of tanks (30,000 armored vehicles per year 1943-45¹¹); and by rotation of units, the Soviet Army can maintain the tempo of its offensive around the clock.

E. Operations in Winter

The Soviet Army reckons that its armor can operate effectively for 10 months out of the year in central and north Russia. There is a period of from 6 to 10 weeks at the beginning and end of winter when General Mud commands the battlefield and tank operations are extremely difficult.

Maintenance and driving seem to be the major problems in winter operation. Formations in snow must be echeloned to avoid tracks of preceding tanks. Extra wide tracks and grousers assist in negotiating deep snow. Drivers are trained to make their turns wide and smooth. Drifts and snowbanks may be broken through at high speeds.

During rest periods or when in reserve positions, special precautions must be taken to protect men and machines. Tanks are dug-in up to the base of the turret (implying the use of TNT on the frozen ground), a trench is dug between the tracks and a portable stove set up. Tanks are covered with paulins and camouflaged with snow. Engines are turned over three to four times a day to insure easy starting. The crew gets shelter and warmth under the paulin.

Tactics in winter dictate careful terrain reconnaissance to avoid snow-filled gullies, ravines, and depressions. Ski-troopers are attached to the tanks—4 to 5 skiers per tank—to carry out forward reconnaissance in difficult or unknown terrain. In the attack armored sleighs carrying 6 to 7 infantrymen are towed by the tanks. It is claimed that this scheme had definite value in reducing infantry casualties in the opening stages of the attack by carrying the infantry rapidly into close contact with the enemy.¹²

¹⁰Speech by J. Stalin, February 6, 1946.

¹¹Corotneff, *Red Army Tanks in Winter*, Cavalry Journal, Jan.-Feb. 1943.

III. Organization

The Russians were extremely careful throughout the war to prevent disclosure of any organizational details of their army. Press releases and military articles were written with only rare reference to units below the army or "front" (army group) level. Although corps, brigades, and divisions might be named, details of their composition were not given. However, sufficient information has been assembled by various means to indicate the general scheme of armored organization. The fact that much of the information is contradictory in detail perhaps indicates that the Soviets were not inflexible in their organizational concepts and that throughout the war they adapted their formations to the experience they gained as the war progressed.

Major General Katukov, a Russian tank officer, has this to say on organization: "At the beginning of the war, the Red army tank troops were organized into divisions. Battle experience has shown, however, that these units were unwieldy and inconvenient for managing. The tank divisions have since been broken up into smaller units and re-formed into brigades that are more pliable on the battlefield."¹³ Berchin and Ben-Horin place the strength of the tank brigade at the beginning of the war at 270 tanks. They note that during the Finnish War a heavy tank brigade consisted of three heavy tank battalions, each having 35 heavy tanks and 15 light tanks. They do not mention any infantry component in the brigade.¹⁴ In May 1942, *Fortune* magazine also placed the brigade at 270 tanks. The Red Army was calculated to have 25 tank brigades some of which had motorized infantry attached to them.

General Guillaume, French Army, indicates that the tank brigade in common use during the war was composed of three battalions of 21 tanks each—again, no infantry element. In place of the armored division had appeared the armored corps. The early armored corps contained two tank brigades and one infantry brigade.¹⁵ By

¹²Katukov, M., *Soviet Tank Fighting*, Cavalry Journal, Jan.-Feb. 1944.

¹³Berchin and Ben-Horin, *The Red Army*, Norton, New York, 1942, p. 66.

¹⁴Guillaume, A., *Soviet Arms and Soviet Power*, Infantry Journal Press, Washington, 1949, p. 110.

⁶Rodin, A., *Tank Operations in the Enemy Rear*, Cavalry Journal, Jan.-Feb. 1943.

⁷Bandik, *Organization of a Tank Attack*, Cavalry Journal, March-April 1943.

WAR IN KOREA:

The Report of a Woman Combat Correspondent

by

MARGUERITE HIGGINS

NOT SINCE ERNIE PYLE has any reporter captured the hearts of the American people as has Marguerite Higgins. She is the blonde, pretty war correspondent who has done such brilliant work for the *New York Herald Tribune*. For months she has created a saga of great reporting in Korea, asking neither favor nor privilege, dodging enemy bullets with front-line troops, covering her assignment with only a typewriter and a toothbrush.

With 32 photos by *Life's*

Carl Mydans and others

\$2.75

the end of the war the normal armored corps had been increased in tank strength from two brigades to three.¹⁷ No strength or composition is given for the infantry brigade of the corps but since, in the case of the tanks, battalions are the components of the brigade, a safe assumption would have the infantry brigade consist of three battalions. Thus for each brigade of 63 tanks there would be one motorized infantry battalion. The armored corps had a total of about 200 tanks, 100 artillery pieces, 24 antitank guns, and 28 antiaircraft artillery pieces. In 1943 self-propelled guns were furnished to large armored units. By the end of the war there was a ratio of one SP to two tanks. It is not indicated whether this was in addition to or at the expense of the tank strength.

With respect to infantry support tanks, *Fortune* of May 1942 states that normally each infantry division had attached to it a battalion of 45 tanks. In the normal three division corps there was a tank brigade of 135 tanks.

The three major tanks employed were the T-34, the KV-2, and the Stalin. The T-34 medium was considered the primary exploitation weapon. Initially it was armed with a 76mm gun but this was later raised to an 86mm weapon. This was a 30-ton vehicle. The KV-2 was a 52-ton tank mounting a 76mm gun. It was designed primarily for infantry support. In 1943 it began to be replaced by the Stalin. Guillaume describes the Stalin as a 57-ton tank armed with a 122mm gun and three .30 caliber machine guns. Its Diesel engine generated 600 horsepower and it had 3.85-inch armor. Its ground pressure of 11.6 lbs./sq. in. outclassed the German Tiger with 17.7 pounds and the Royal Tiger with 12.8 pounds.¹⁸

German commanders in the East were unanimous in their praise of Soviet tanks. Rundstedt said: "The Russian heavy tanks were a surprise in quality and reliability from the outset. . . . Their T-34 tank was the finest in the world." Manteuffel, who also fought both in the East and the West, felt the Stalin tank to be the best tank he saw anywhere during the war.¹⁹

¹⁷*Ibid.*, Appendix V.

¹⁸*Op. cit.*, p. 114.

¹⁹Liddell Hart, *The German Generals Talk*, Morrow, New York, 1948.

IV. Training

The Soviet citizen entering the army is not the military innocent to be found in the reception centers of our country. In the first place he is thoroughly accustomed to regimentation, having been exposed to it from the time his mother struck him, at the age of four weeks, in the community nursery of the collective farm and went back to her allotted place behind the plow. As soon as he entered school he came under the jurisdiction of the junior affiliation of the Young Communists known as the Octobrists. He began learning how to march in formation and became acquainted with Soviet discipline. Whether he progressed from the Octobrists into the Pioneers and thence to the Komsomol (Young Communists) or failed to advance in the party auxiliary, he still would come into contact with the Osoaviakhim.

This civilian agency was designed to teach rudimentary military skills to the people such as rifle marksmanship, grenade throwing, and partisan tactics. Thus military preparedness and the art of war were to be part of the daily life of the civilians.

A second influence in the tankers' training was the MTS or Motor Tractor Stations of the collective farm system. An integral part of Russian agricultural plan is a high degree of mechanization. Tank recruits from this source had the mechanical technique and skill which is readily transformed into the specialized requirements of an armored unit.

Once in the army the individual soldier lived under a rigid training schedule based on the maxim of Catherine the Great's famous general, Alexander Suvorov—"Hard on the training ground, easy on the battlefield."²⁰ During the war an average day went something like this: reveille 0600 followed by physical training exercises, breakfast 0700, training 0800-1300, dinner 1300. Afternoon programs varied but one afternoon a week was devoted to political education. Supper was at 1700. The evening was devoted to discussion of the day's news by the political commissar. Occasionally entertainment programs were provided in the evening. At 2200 lights were out and the men in bed. Soldiers had approximately 30

²⁰Kerr, *The Russian Army*, Infantry Journal Press, Washington, 1944, p. 5.

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minutes of their own time a day.

In unit training the Soviet Army took advantage of the vast range of climate and terrain available to them in their huge territory. Conditions range from the constant cold and scanty vegetation of the far north through the more temperate area of far-reaching belts of coniferous forests to the great spread of the ocean-like steppe in the south. There are mountains and deserts, huge lakes and wide rivers, and great maneuver areas unrestricted by farms and cities.

The army takes advantage of these conditions through a device called "route training."²¹ Under this system units are constantly on the move. Detailed and exact schedules are drawn up indicating the arrival time at various training areas, the training to be performed, location of bivouacs, etc. Stress is placed on precise adherence to the time schedule. Variation of terrain and climate enhance the training. Separation from barracks life hardens the men. Tank crews learn to operate under a great variety of conditions, particularly those of difficult driving.

In the forward areas of the combat zone rigorous training continues unabated for reserve units. Conduct of special operations is emphasized—attack of fortified positions, raids, river crossings, etc.

The Russians were quick to correct their mistakes of the early period of the war. They improved and intensified their training based on the experience they had gained. General Kleist, CG 1st Panzer Army, had this to say of the Russian soldier: "The men were first-rate fighters from the start. . . . They became first-rate soldiers with experience. They fought most toughly, had amazing endurance, and could carry on without most of the things other armies regarded as necessities. The staff were quick to learn from their early defeats, and soon became highly efficient."²²

V. The Soviet Soldier

Who is the man who mans the tanks of the Soviet Army? In the camp of the most extreme Red-baiters, he is depicted as a brutish lout, a fatalistic Asiatic barbarian, raping, looting, and swilling his way across the Eurasian continent under the cynical guise

²¹Fomichenko, *The Red Army*, Hutchinson, New York, 1945, p. 42.

²²Liddell Hart, *The German Generals Talk*, Morrow, New York, 1948, p. 220.

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BALKAN CAESAR

Tito's Quarrel

With Stalin

by

LEIGH WHITE

Dealing with the Tito-Stalin dispute, which could have world-wide repercussions, this book presents some facts about American policy in Yugoslavia which will startle most Americans. Mr. White traces the strange, devious career of the man Yousip Brogh who now calls himself Tito and discusses lucidly and with authoritative detail the causes of the schism between Tito and Stalin. He shows the effect of British and American foreign policy on the present condition of Yugoslavia—and some of this does not make pleasant reading.

\$3.50

of "liberator." Less than ten years ago we were calling him a noble ally, a valiant patriot standing defiant before the Nazi scourge, fighting for his home, his family, and his country. The Kremlin says he is the superior product of a superior system, more intelligent, more efficient, and more cultured than the slaves of the capitalist warmongers—in essence, the Soviet Patriot.

Disregarding the extremes of judgment, it is evident on the record that he is a capable soldier. His very way of life has made him hardy and used to adversity. This is good because it enables him to fight without Coca-Cola, USO shows, food-service inspectors, and rear-area empires. He is accustomed to harsh discipline although it does not necessarily follow that he is always amenable to it or incapable of breaches of discipline—after all, there is a revolutionary tradition in Russia. He is young—the Soviet population has a high proportion of young people. He loves his country and his land and, as for his government, well, it may be a hard life under the dictatorship of the proletariat but the sacrifices of today will bring the perfect society of tomorrow. And even if he believes that tomorrow may be beyond his reach, it is still better to be a Soviet citizen, however grim life might be, than it is to be a capitalist slave.

In any event, in the new Soviet social hierarchy, the soldier occupies a favored spot. The Bolsheviks have made many concessions to insure that the army remains a loyal political instrument. While many of the privileges and benefits of higher social status are reserved for the officers, the soldier is not ignored. We might not think his position very enviable but relative comparisons are dangerous. What is famine to us may be a feast to someone else.

With regard to the technological skill of the average Soviet inductee, the evidence indicates that the army suffers by comparison with the West. This can be understood in terms of the industrial time-lag in Russia. General Deane noted the surprise of Russian soldiers observing the unloading of special purpose trucks at an American shuttle-bombing base when it became evident that any American selected at random could drive any of the vehicles. A Russian would require

The Cavalry Charges On

by

HANSON BALDWIN

Reprints of the column written by an outstanding military analyst and Military Editor of the *New York Times*—marking the name change from Cavalry to Armor. Truly a tribute to the Cavalry.

Printed in large-face type, superimposed over a background sketch of the famous Remington drawing of "Old Bill."

Size: 11 x 14 inches

Suitable for Framing

10¢

special instruction to be able to drive more than one type.²³ However, this gap is being closed under the influence of forced-draft industrialization and intensive mechanization of agriculture.

In Soviet Russia, in order to maintain its people at mobilization pitch and to extract maximum effort from them, the state deliberately creates and fosters an atmosphere which is designed to make each citizen feel that he is personally building the socialist state. For the Soviet soldier this means the defense of the fatherland. Daily the danger of capitalist encirclement and attack is pointed out to him in which the United States is the main antagonist. This same line was used during the war to inspire Soviet hatred of the Nazis. Added to the natural Russian love of home and land, it resulted in a battlefield performance grudgingly admired even by the Germans. The *Voelkischer Beobachter* of July 1, 1941 stated: "The Red Army men are fighting like madmen, to the point of absolute exhaustion." And again on July 4, the paper wrote: "Our army has this time met an enemy who is defending himself with persistent obduracy, regardless of losses, and who does not give up one foothold of land without an exasperating fight."²⁴

Ah yes, we say, he may fight like a bearcat but he is the product of a system which crushes initiative, penalizes independent thinking, and vitiates the power of decision. Such a line of reasoning seems logical and there is some evidence to support it, particularly in the middle grades of the officer ranks. However, the Soviet Army early recognized the need for developing non-commissioned and junior officers. Voroshilov stated, prior to the war: "Junior commanders will play the foremost and the most influential role in the next war."²⁵ Appropriate training was carried out vigorously and accounts of small unit actions during the war testify to its effectiveness. At the other end of the scale it is generally recognized that, during the war at any rate, the Soviet Army High Command encompassed such huge responsibilities

²³Deane, J. R., *The Strange Alliance*, Viking, New York, 1947, p. 210.

²⁴Berchin and Ben-Horin, *The Red Army*, Norton, New York, 1942, p. 171.

²⁵White, D. F., *The Growth of the Red Army*, Princeton University Press, Princeton, 1944, p. 365.

and played such a vital role that its major commanders enjoyed considerable freedom of action. According to Guillaume the commanders of the various fronts were men of considerable talent "for in the Red Army, as elsewhere in the USSR, advancement depends, apart from unswerving devotion to the regime, solely on the ability to get results."²⁶

VI. Conclusions

Several points appear to stand out as a result of this brief survey.

a. Early thinking on the employment of armor tended to neglect its exploitation role in independent formations in favor of its infantry-support role. During the war the trend was in the opposite direction with increased use of large armored commands.

b. Offensive operations of Soviet armor are characterized by deliberation. Emphasis is placed on detailed planning and careful rehearsals.

c. The motivating factor of the offense is the massive infantry assault, saturated with tanks and given violent artillery and air support.

d. The continuity of the attack is maintained by around-the-clock operations.

e. The conduct of the defense is marked by great tenacity and by the employment of reserves in a coordinated counterattack rather than in piecemeal commitment.

f. Organization appears to be flexible, adapted to the mission assigned and the material available.

g. Training is intensively and realistically conducted with an eye on the great variety of terrain and climatic conditions to be found in the Soviet Union.

h. The Soviet soldier is a very capable fighting man with strong patriotic motivations.

i. The gigantic space and sweep of the Soviet lands have had a fundamental effect on the development of Soviet strategy, tactics, and military technique.

j. Armor is an essential component of the Soviet combined arms team. Its employment is tactically sound and its material is of a high order. Postwar improvements can be expected to advance its performance.

²⁶Guillaume, *Soviet Arms and Soviet Power*, Infantry Journal Press, Washington, 1948, p. 105.



The Symbol of Armor

by LIEUTENANT COLONEL FRANK K. BRITTON

Behaving like Mark Twain's generation on the topic of weather, tankers for decades have only talked about Armor's distinctive shoulder patch. This author has departed from custom in reducing to writing some of the interesting highlights of the subject. Those with additional information may address the author at The Armored School.

IO be a good patch, a shoulder sleeve insignia has to have eye appeal and must be a symbol. The Armor patch qualifies in both respects.

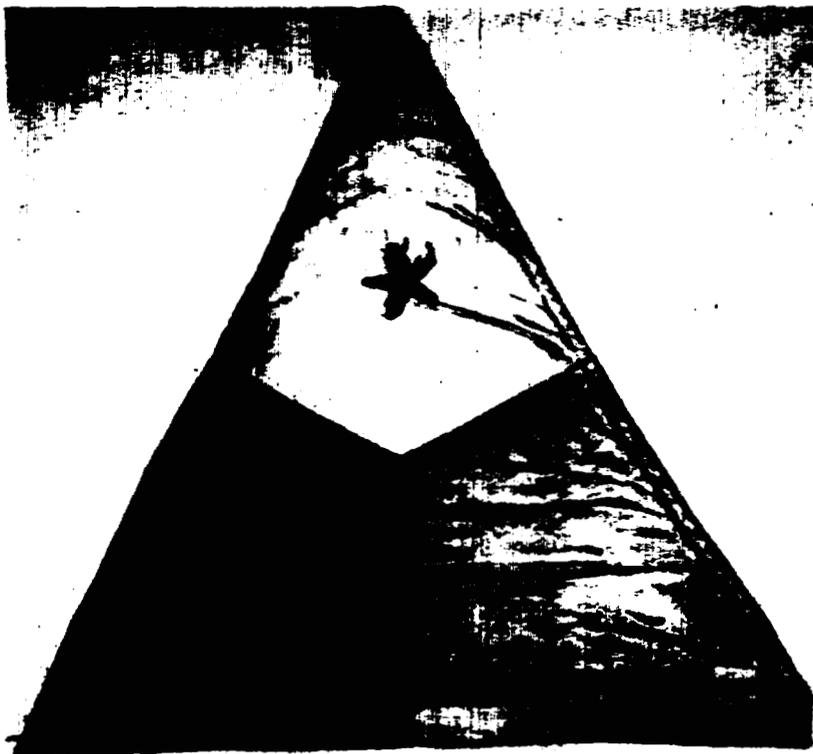
Not only does it have the necessary eye appeal, it has a variety of symbolic meanings full of significance. It has a specialized significance that appeals to a student of heraldry; it contains a variety of meanings for the historian; and it has especial significance for the exponents of a doctrine of combined arms.

Almost any soldier who wears the familiar three-colored, triangular patch with the symbols superimposed can tell you what it means. The colors are blue for infantry, red for artillery, and yellow for the cavalry—the three basic components of Armor. The superimposed figures have symbolic meanings that convey the characteristics of Armor. The tank track represents mobility and armor protection, the gun, fire power, and the lightning bolt, shock action. *Mobility, fire power, shock action*; these are the tank's triple role embodied in the striking power of Armor.

These are the immediate and striking meanings of the triangular shoulder patch. What is the heraldic significance? Heraldry is a science that grew up with the trappings of knighthood. It dealt then and deals now with *armorial bearings*, the elements of a coat of arms. Originally a coat of arms inscribed on a shield—identified the knight who bore the shield. Later, the knight's descendants adopted the shield and its bearings, with perhaps minor modifications, as a kind of family mark. They put it on family belongings, hung it over fireplaces, posted it over entrances to estates. Hundreds of shields, all different, came to be the identifying marks of numerous families. The member of a noble household or retinue who was most intimately acquainted with the meaning of armored bearings was the herald—the one who made it a business to know a knight by his shield. Thus the name *heraldry* to denote the science.

At one time, no doubt, a shield identified nobility. But the use of identifying emblems is now wide-

Lt. Col. Frank K. Britton is Director of the Training Literature and Reproduction Department of The Armored School, Fort Knox, Ky.

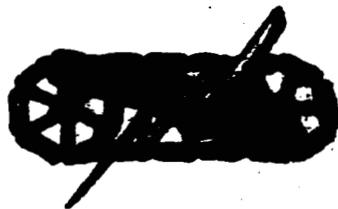


Original Tank Corps insignia was designed and fabricated at Nancy, France, in WWI, and used in St. Mihiel Campaign. As yellow was predominant, insignia was revised to equalize yellow, blue and red fields. Story has it that revision (above) was worked up in a cafe at Nancy and sewn by waitresses.

spread. The original purpose of differentiating and identifying has added to it now the purposes of decorating or of characterizing, and no field or activity is closed to the impulse to claim a distinctive mark. We see and recognize now symbols ranging from the universally recognized three balls suspended over the pawnshop entrance to so different a symbol as the cross of Christianity—from the carriage identifying a Fisher Brothers' product to the eagle on the Great Seal of the United States. You can think of innumerable others—the emblems and symbols on banners, those on trade marks of business and industry, and those on state and country seals and flags.

The main prerequisite of a seal or coat of arms is that it be decorative and that it somehow both identify and characterize what it stands for. Take as an example the cross. Its once infamous meaning to ancient people was elevated to an immortal significance by Christ's crucifixion. Now, wherever it is found, it is a symbol of the religious or humanitarian impulse. Witness the symbol of the Red Cross. But the significance of other symbols

is not so easily discovered, even though they may have been identified for long periods of time with certain activities or institutions. We recognize a pawnshop by its symbol; but what do the three balls mean? What is their historical significance? How did they come to be associated with the activity of a pawnshop? Or, what is there especially appropriate about the eagle to the United States; the bear to the Soviet Union—or the hammer and sickle? Or, more to the point, what is the especial significance of the Armor patch with its three colors and



Shoulder patch, 7th Cav. Brig. (Mech.).

the three symbols superimposed?

It was in January 1918 that the Tank Corps of the United States Army was created, with General S. D. Rockenbach its chief. At his direction not long after, Lieutenant Wharton designed the original coat of arms which hangs now in Patton Museum at Fort Knox (see figure 1). Notice that the design of the original coat of arms of the Tank Corps followed an old armorial method, a *shield* (silver) bearing a *charge* (the three-colored triangle), and a *crest* (the dragon in silver). What significance did the elements of the coat of arms have? To say that the three colors in the triangle were symbolic of the basic components of the Tank Corps is to speak with the advantage of hindsight. It is perhaps more likely that the colors stood for the Arms which *made use* of tanks or exploited them as a new weapon.

It was almost habitual for tanks to precede the infantry, after a heavy artillery barrage, in order to demolish strong points. If the tanks and infantry were successful, the cavalry would exploit the initial penetration. Thus we see cavalry, artillery, and infantry combining their efforts, using tanks as a kind of extra weapon. We might say that at this time the only element of Armor tactics made use of was that of surprise or shock action. There was no such thing as an *Armored Force* with a *tactic*, and Lieutenant Wharton's original triangle was merely singularly and fortunately prophetic of the powerful combined arms fighting team as we now know it.

There is additional evidence in this initial design, however, that Lieutenant Wharton was setting forth symbolically the belief of a few farsighted men. The triangle itself is an old heraldic element of armorial design known as a *pile*—the head of a spear. Tanks were actually the spearhead element in the engagements in which they took part in World War I, though their inherent force was vitiated, for the most part, by their employment in long, thin, and scattered lines. And the dragon at the crest of the design was also the *charge* on the coat of arms for the 1st Cavalry. The 1st Cavalry was organized during the Black Hawk War as *The Regiment of Dragoons*, and the dragoon is clearly a pun on the word dragon. Is the *dragon* on the crest of Lieutenant

Wharton's design indicative of the dominant role cavalry would later play in the Armored Force, or suggestive of the mobility of cavalry passing over into armor?

The birth of armor on the battlefield of World War I was, however, an abortive one. Though tanks helped break the inertia of trench warfare, another sort of inertia, suggestive of the "Maginot complex," settled for more than two decades over the thinking of military and political minds—except for those of a handful of men who saw the possibilities of armor resident in a tactic of combined arms. The names of Van Voorhis, Chaffee, and Patton are numbered among these. And the three-colored triangle that General Rockenbach had had made into a pennant to be carried on his personal vehicle was seen only occasionally in a tank park or motor pool (see figure 2). The relatively poor showing of tanks during the first world war is about the only excuse that influential but shortsighted men had for not developing armor to the fullest. This poor showing was due not to any inherent fault of the tanks but to their misemployment.

In the meantime the Germans, under Hitler, had also seen the possibilities in armor, developed a doctrine around it, and had put it into practice with devastating effect in Poland and France. While the Germans had been experimenting with tanks, armored forces, and doctrine (using Spain as a proving ground), the United States Tank Corps had been dissolved and the development of tanks given over to the Chief of Infantry, and experiment with mechanized theory assigned to the Cavalry. Training and practice in armor, utilizing a theory of combined arms, was effectively halted.

However, the events in Europe in 1939 and 1940 finally brought to a head the hitherto all but futile urgings of a few men like General Van Voorhis and General Chaffee: and an Armored Force was belatedly created on 10 July 1940, just fifteen days after France fell, with General Chaffee commanding at Fort Knox. It was at Fort Knox also that the 1st Armored Division was stationed, formed with the 7th Cavalry Brigade (Mechanized) as a nucleus, the 6th Infantry, and elements of artillery, engineer, signal, air, quartermaster, and medical

New Edition of Cullum's Biographical Register of the Officers and Graduates of the U.S. Military Academy

Volume IX (Supplement 1940-1950) of Gen. Cullum's *Biographical Register of the Officers and Graduates of the United States Military Academy* is now under preparation at West Point. This volume will include the records of all those graduated since 1940, to include the Class of 1950, and will continue the records of all other graduates. Since this ten-year period, 1941-1950, includes World War II and the war service of the thousands of graduates who served therein, Volume IX of the *Register* will be by far one of the most important editions yet undertaken.

Since the best source of information about a graduate's record is the graduate himself, a comprehensive form to obtain this information was mailed last fall by the Superintendent, U.S.M.A., to every graduate whose address was then known at West Point.

But in these times of sudden changes in the addresses of many officers, the Superintendent's request has probably failed to reach a substantial number of graduates whose records are needed to complete the book. A note stating his present mailing address, from any West Point graduate who has not yet received the Superintendent's request, to *The Editor, Cullum's Biographical Register, West Point, N. Y.*, will bring a form to him by return mail.

units added. This represented the first time that all the elements (though not yet in sufficient quantity) had been assembled and united under one command to form a force qualified to train and practice in an armor doctrine centered in a combined-arms tactic. The time was right for an appropriate patch signalling this new union.

It was the 7th Cavalry Brigade (Mechanized) that contributed the other part of the present Armor shoulder patch. This unit had been formed in 1933 out of the 1st Cavalry Regiment (led from Marfa, Texas, in 1931 by General Van Voorhis, then a Cavalry colonel) and about 150 men from Fort Eustis, Virginia. This brigade, later joined by the 13th Cavalry and the 68th Field Artillery, was organized expressly for training in mechanized warfare. In the shoulder patch of the 7th Cavalry Brigade (Mecha-

nized) (see figure 3), one can see the development, even under suppression, of a doctrine of armor. Designed and drawn by Lieutenant Colonel Linthwaite (then Private First Class) in collaboration with Major General Robert W. Grow (then Major), the patch was designated the official brigade insignia by General Van Voorhis, despite the War Department's indifference to repeated requests to have it designated. In a letter of 3 June 1940, General Van Voorhis explains his theory at that time of a mechanized force:

... one possessing fire power, mobility, and shock. Mobility was contained in the Cavalry element, which was then equipped with light, armored vehicles; fire power was obtained in the Artillery elements; and shock was represented by the combined efforts of the command, more particularly the power of tanks, represented by the Infantry.

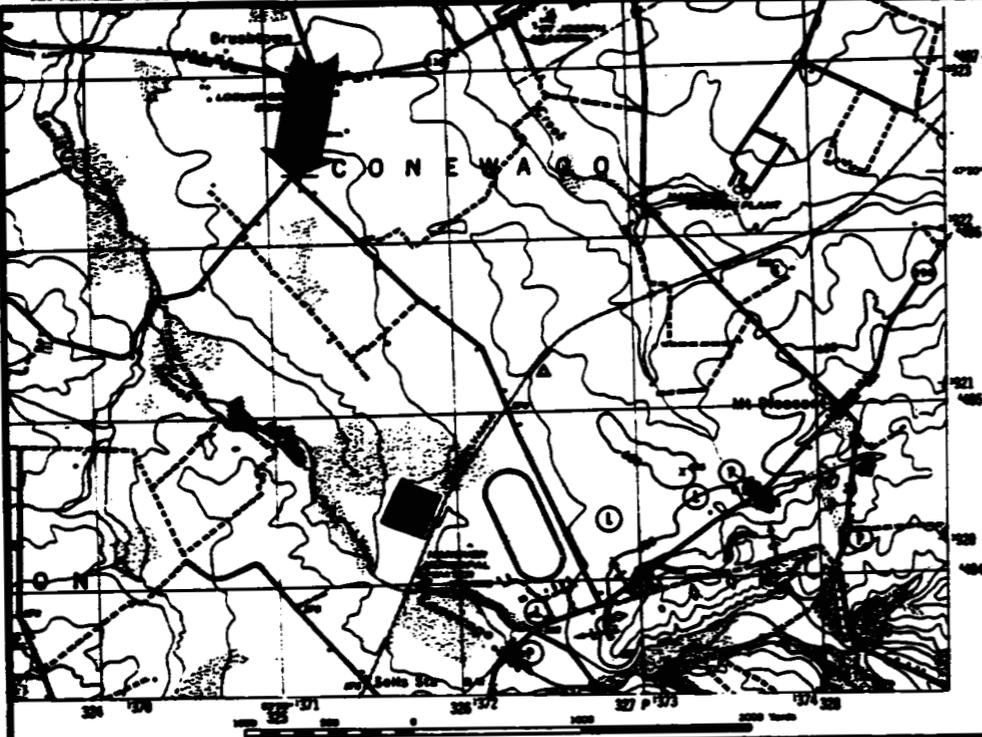
The patch symbolizes this theory with its three figures, the track, gun, and bolt of lightning on a yellow, oval background. Thus the patch served not only a decorative purpose but definitely characterized the unit which wore it.

After the formation of the Armored Force in 1940 under General Chaffee, the triangle of the old World War I Tank Corps and that of the 7th Cavalry Brigade were put together, thus giving the Armored Force patch an historical significance—definitely linking its origin with the Tank Corps and the coat of arms designed for it by Lieutenant Wharton in 1918. The function of the shield which once bore the Tank Corps *charge* was now taken over by the *charge* itself; and the triangle became the field upon which are borne the symbolic figures characterizing the mission of the Armored Force. Thus the present-day patch, designated official in November 1940 by the War Department, represents a stage in the development of combined arms theory just as surely as does Armor doctrine itself. Any of its wearers should be conscious of the continuous history its design represents, and proud of the thinking and doctrine it characterizes. It is a union of separate arms which yet preserves the integrity of those units in a new and vital *esprit de corps*.

HOW WOULD YOU DO IT?

Continued from January-February, 1951, issue

AN ARMORED SCHOOL PREPARATION AUTHOR: MAJ. V. J. FIBELI ARTIST: MAJ. W. H. COON



SITUATION:
 YOU ARE THE PLATOON LEADER, 2D PLAT, CO A, 21ST ABN IN (RENF), PART OF CCL. YOUR PLATOON, REINFORCED WITH THE 2D PLAT, CO A, 11TH ABN INF BN, IS EMPLOYED AS SHOWN ON THE ABOVE MAP TO DEFEND THE ASSIGNED STRONG POINT WITHIN THE COMPANY SECTOR. TACTICAL AIR RECONNAISSANCE HAS REPORTED THE MOVEMENT OF ENEMY FORCES FROM THE NORTHWEST TOWARD THE AREA. SENSORY PLATOON OBSERVATION POST NR 1, IN VICINITY RAILROAD CROSSING SP, COORDINATES 26888, REPORTS THAT AN ENEMY FORCE OF APPROXIMATELY 12 TANKS AND A COMPANY OF INFANTRY IS ADVANCING SOUTH FROM VICINITY LOCUST GROVE SCHOOL 25869. THE HEAD OF THE ENEMY COLUMN IS AT SJ 25864.

YOU IMMEDIATELY ORDER THE OBSERVATION POST TO REQUEST AND ASSESS ARTILLERY AND AIRCRAFT-GUN FIRE ON THE ADVANCING ENEMY FORCES. YOU ALERT YOUR REINFORCED PLATOON FOR ACTION IN THE GENERAL DIRECTION OF THE ENEMY THREAT. THEN YOU REPORT THE PRESENCE OF THE ENEMY TO YOUR COMPANY COMMANDER.

INFORMED COMPANY... FIRE MISSION... CONCENTRATION IS... IS ENEMY TANKS AND INFANTRY... WILL ADJUST.



YOUR PLATOON RECEIVES AN INCREASING VOLUME OF FIRE ON THE APPROACHING ENEMY.



UNDER COVER, ENEMY AND GROUND, RECONNAISSANCE AND TANKS TO THE REAR. THE ENEMY, HOWEVER, IS SLIGHTLY COMPARATIVELY BUT IS NOT DEFEAT. ADDITIONAL ENEMY FORCES JOIN THE ATTACK.



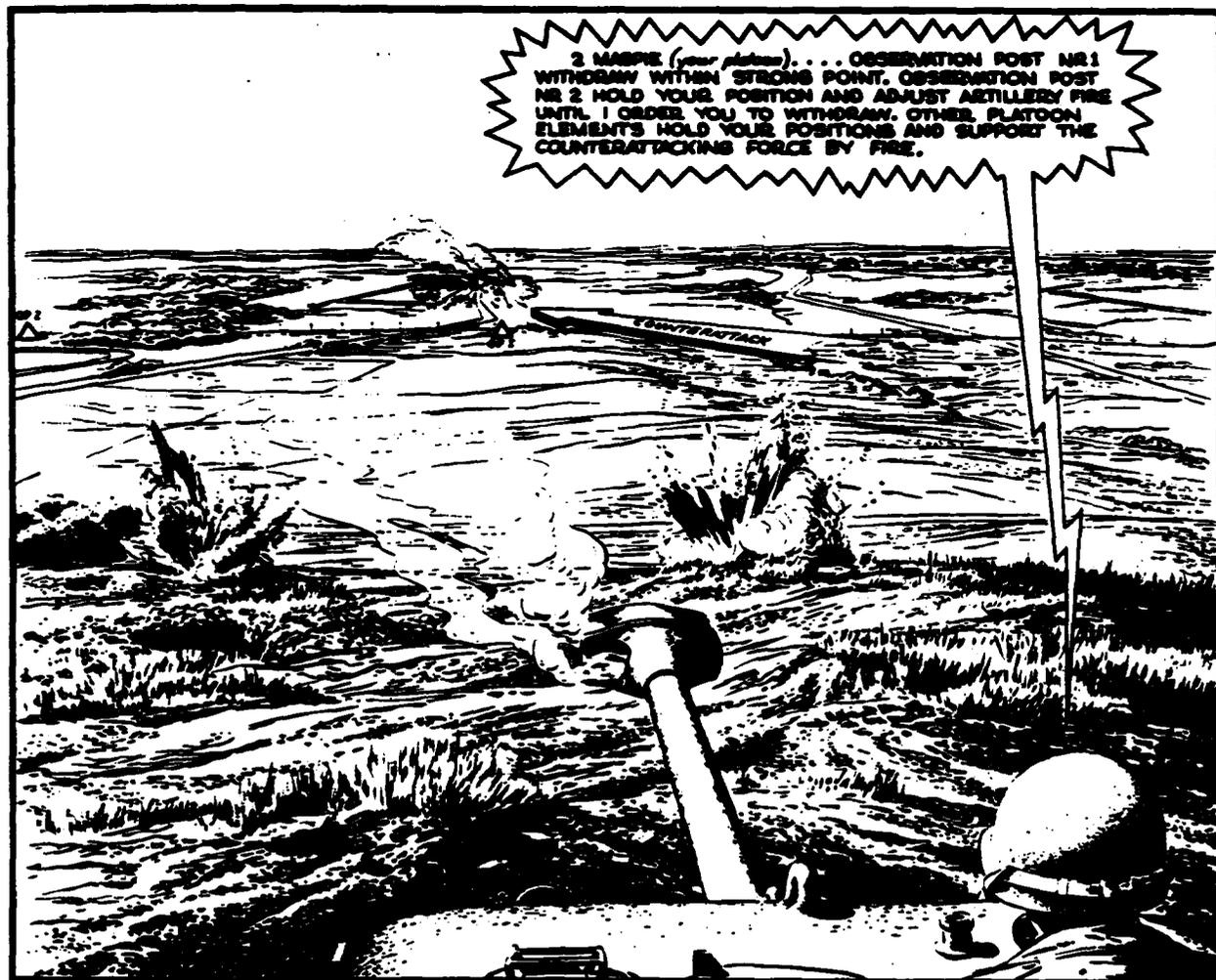
THE COMBAT COMMAND COMMANDER REALIZES THAT IT WILL BE NECESSARY TO COUNTERATTACK THE ENEMY FORCE WITH HIS RESERVE.

2 MAFPIE (your platoon)... COMBAT COMMAND IS GOING TO EXECUTE PLAN A. OBSERVATION POSTS... (?) OTHER PLATOON ELEMENTS... (?)



WHAT WOULD YOU DO???

SEE NEXT PAGE FOR SOLUTION



DISCUSSION

When the enemy approaches the outpost system of the mobile defense, the observation or listening posts give warning and maintain observation of the enemy, falling back to the strong point only on order of the platoon leader. The platoon leader reports the approach of the enemy to his company commander, calls for pre-arranged supporting fire as needed, and holds his position. The position under attack exerts every possible effort to delay the enemy force, to cause it to deploy, to stop it, and to destroy it by subjecting the enemy to increasing fires of tanks, small arms and supporting elements. Natural and artificial obstacles previously established play an important part in repulsing the enemy. The strong point holds its position until forced to withdraw, and then withdraws only on order of the next higher commander. In the event that the mobile reserve of the combat command is employed to counterattack the enemy force, the strong points support the attack by continuing to fire on the enemy.

FROM THESE PAGES

80 Years Ago

In mountain fighting, which includes Indian warfare, the cannon is but the means whereby a certain amount of destructive energy is hurled into the immediate vicinity of an enemy who is detained only by the nature of the ground, who constructs no earthworks and makes no stand for longer than a few minutes during the action. The useful energy is not that of impact, as in larger cannon, but that which is contained in the explosive shell. Were the destructive effects of impact alone intended, we have all that can be desired in the efficient small arms and machine guns of the service, and the transportation of cannon would be useless and inconvenient. Hence it is the energy of the projectile itself that we must use, and its effective distribution which we must seek by all means to secure. This distribution can be improved by—

1. Increasing the mass of the projectile.
2. Increasing the strength of the bursting charge.
3. So shaping and proportioning the interior of the shell that the energy of the bursting charge will send it into as great a number of dangerous fragments as its size will permit.

Mountain Cannon

ALVIN H. SYDENHAM
2d Lt., Eighth Cavalry



20 Years Ago

Discussions of tank actions or defense against tanks should be based on certain assumed characteristics of the future tank; for the purpose of the present discussion they are:

- a. Invulnerability to anything but a direct hit by artillery.
- b. A maneuvering speed of from 10 to 60 miles an hour on any terrain over which the tank can operate at all.
- c. A radius of action and a freedom from mechanical faults equal to those of the present automobile.

To anyone who has followed the recent developments of the track-laying or the combination wheel and track vehicle, both in this country and abroad, it will be evident that these assumptions are by no means visionary and that there will be tanks with these characteristics or with characteristics closely approaching them in our next war. It is high time for us to develop some ideas for their tactical use in both offense and defense.

In another paper the conclusion is reached that a mechanized force, as a separate arm, is a weapon of the army commander and that he will use it in attack in the direction of the main blow of his army, and against objectives well in rear of the objectives of his infantry divisions. In considering the defensive it is necessary to realize that fast tanks will also be present in the attacking divisions and corps and that defensive measures must be taken along the whole front of an army position, as well as on any exposed flank, excepting only on those portions which the terrain makes obviously impracticable for tank maneuver.

Defense Against Tanks

K. B. EDMUNDS
Lieut. Col., Cavalry

40 Years Ago

The strategical and tactical training of the division is necessary and important, but in our service it can only be attempted at maneuvers, and not always then. Although nominally brigades of two regiments are formed at the maneuvers, the cavalry is usually split up and assigned to the opposing sides. Therefore no attempt is here made to suggest a scheme for this training. Should brigade or division be formed for any maneuver camp, the officer to command it ought to be given ample notice of his assignment in order that he may work out a plan which will insure the maximum amount of instruction in the two important subjects of strategical reconnaissance and the use of cavalry masses on the battlefield.

The relative importance of training in mounted and dismounted work has not been touched upon. It is sufficient to say that the men must be well instructed in both. In our service, as is well known, we have heretofore paid too much attention relatively to dismounted training and foreign services have neglected it (except perhaps the Russian). Now, however, the indications are that we are paying more attention to mounted training while not slighting dismounted training, and that the foreign services, especially the English and German, are realizing the value of the latter and lay special stress on it in their drill regulations. So, in case of war with foreign troops, we may expect to find them well trained in dismounted action as well as mounted. As we can more than hold our own dismounted, it behooves us to put more time on mounted work, that we may be able to meet any emergency.

Instruction for Cavalry Command

T. Q. DONALDSON, JR.
Captain, Eighth Cavalry



10 Years Ago

"The armored force is the assembly under a single head of all mechanized troops in the United States Army, and combines the infantry tanks with the mechanized cavalry. In modern warfare it is the heavy cavalry of a motorized and mechanized army.

"The form of action of the armored divisions is offensive and aggressive. It sustains surprise by the speed and drive of its tactical movement. It uses its mobility to choose the most favorable directions of attack to reach vital enemy rear areas.

"Its defense is elastic and mobile and characterized by the counterattack. It does not seek to attack the strong place of the enemy. It places its strength in the weakest place in order to break through and penetrate the rear areas of the enemy.

"Once into these rear areas it fans out to cut communications and supply, and then, by dual development, drive the enemy up into the holding force of the infantry. In this maneuver the enemy has no alternative to save him from destruction.

"The only course left to him is to retreat, yet, in so doing he leaves his flanks unprotected and subsequently his forces vulnerable to destruction."

War Department Official Language

EDITORIAL

Some Pilgrim Contemporaries

by DR. ROGER SHAW

THE GREAT ELECTOR

IN the same year that the Pilgrim Fathers landed at Plymouth Rock, 1620, the greatest of all the Hohenzollerns was born. He was the eleventh of his family to become Elector of Brandenburg, and his name was Frederick William.

Unlike the first Hohenzollern Elector, Frederick, Frederick William liked his little Brandenburg. He was by nature a builder, and a subtle schemer as well. But above all, it was under his direction that that omnipotent juggernaut, the Prussian Army, was founded. His was the first great victory in Prussian military history: the forerunner of all the Zorndorfs, Waterloos, Sedans and Tannenburgs that were to follow in regular succession. Also, this extraordinary figure founded the Prussian Navy, and in the World War a German warship was to bear his name. It is barely possible (according to the gossips) that Frederick William was not a Hohenzollern. His mother was a delightful, erring princess from the Palatinate. For that matter, the sainted Franz Joseph Hapsburg (who died in 1916) may (gossips whisper) not have been a Hapsburg, but instead the grandson of Bonaparte, via *L'Aiglon*.

Frederick William was a slow, melancholy youngster. But he spent four formative years in radically "modern" Holland, and acquired a keen interest in soldiering and tactics. He liked to wear armor, and be painted in it. He was on bad terms with his father, who never gave him enough money, and even believed on occasion that his father's Electoral ministers had served him with poisoned tarts. But despite such morbid imaginings, he learned statesmanship and other things in the

Netherlands, as subsequently did Peter the Great of Russia.

At twenty Frederick William came to the little Electoral throne, with its half-million bootish subjects. The Thirty Years War was coming to a close, two-thirds of the population of Brandenburg had perished, along with their flocks and herds, and the already desolate country had been wasted by fire and sword. Berlin (population today, 4 million) was a village of a few thousand unhappy people. The "army" consisted of mercenary bands of free-companions, and groups of discontented feudal levies.

The Swedes on Top

Victorious Swedes, self-appointed champions of German Protestantism in the Thirty Years War, were everywhere—and the Swedish military machine at that time was the most powerful instrument of conquest in the world, while the Baltic Sea was a Swedish lake. Frederick William never loved the Swedes, the so-called "lions of the north." Further, like his Electoral predecessors, he had to do homage to the King of Poland for the feudal tenure of East Prussia, making a humiliating trip all the way to Warsaw for that "loyal" purpose. He tried to marry a Swedish princess, daughter of the great Gustavus Adolphus, but she turned him down. So he married a Dutch girl with French Protestant relatives. This marriage was to bear political fruit of the first basket.

Nobody in Brandenburg and its East Prussian dependency wanted a strong standing army. The feudal Junkers feared its centralizing power, while the city burghers objected to a crushing taxation devoted to military purposes. But the young Elector clamped on excise duties with a vim, tortured and executed recalcitrant

Junkers, and kept his weather eye on the splendid Swedish model, the last word in Seventeenth-Century armies.

He needed an organizer, one skilled in the Swedish ways and means, and he found him. In 1638 the Prussian army overran Austria, and this army was founded by an Austrian: Baron George Derfflinger. Frederick William was lucky to get Derfflinger. Born in 1606 within the Hapsburgs hereditary domain, he was a determined Protestant. Putting religion before nationality, the baron served with the Swedes in the Thirty Years War and rose to a colonelcy. Six years after the close of the war, he entered the service of Brandenburg and Frederick William. He became to the Elector what Steuben was to Washington: tactician and drillmaster extraordinary. Cavalry was his specialty, and he rose to become a Brandenburg field-marshal. He lived till 1695.

Another of the Elector's high generals was Frederick Schomberg, born in Heidelberg of an English mother. During his varied career, Schomberg was a field-marshal, general, or important officer in the Dutch, Swedish, French, Portuguese, and Brandenburg armies, in all of which he served with great success. Like brave old Derfflinger, he was a man of high character and constant scruples. Brandenburg loaned him to William of Orange for the invasion of England, and he was killed at the Irish battle of the Boyne, in command of an army of English, Irish, French, Finns, Danes, Dutch, and Brandenburgers. This was in 1690. He is buried in Dublin.

With the help of the Swedes, Frederick William embarked on a war with Poland in order to shake off his feudal obligations to that hectic country in the matter of East Prussia. Swedes and Brandenburgers captured

Warsaw, though they watched one another with mutual suspicion. Then he quarreled with Louis XIV of France, and aided his old friends, the Dutch, against the Sun King. Austria also came to the help of the Dutch, instructed to "run in double harness with Brandenburg like a well-behaved quiet horse beside an unbroken colt." Hohenzollerns and Hapsburgs were on the same side.

A First Victory

Louis turned the Swedes loose against the Brandenburg Elector, but they marched on Berlin. Derfflinger and the Elector defeated them in the first victory of the first Prussian army. This was in 1675, a holy day in Prussian history. We shall examine it in some later paragraphs, this battle of Fehrbellin described by Prussian historians as a struggle of Titans against Gods. But by the peace settlements which followed, European in scope, the defeated Swedes were reinstated in North Germany, to the disgust of the Elector and his Brandenburg.

Thereafter, the Elector—called the "Great Elector" after Fehrbellin field-played off Swedes against Poles and Poles against Swedes; Louis against the Holy Roman Emperor and the Emperor against Louis. Internationally, he was consumed with bitterness. He allowed Louis to take much of Alsace-Lorraine, those provinces which one of his Hohenzollern heirs was to recapture, and another was to lose again. The French Sun King had bribed, apparently, half the population of Brandenburg in order to accomplish it. And this included the Elector and Electress. The Elector was paid 100,000 livres annually, and got several raises. He could not forgive the Emperor and his allies for letting him down after Fehrbellin.

The Great Elector tried to look like Louis XIV, as did all the petty despots of the day. He wore armor, which was going out of use, and long black curls, and posed with a tall staff in the best Sun King manner. On his face was a "grand" expression, and his feet were inclined to strut gracefully. Louis called him his "dearest friend." And when Louis' other friends, the Turks, swarmed up out of the Balkans to the very gates of Vienna (as Penn was founding Pennsylvania) the Elector gave no help to the beleaguered Holy Roman Empire. So John Sobieski,

the Polish King, came to the rescue with his knightly winged lancers, saved the day, and *Kultur* triumphed over Koran. The Turks retired, leaving behind them to the Viennese cafes and lilacs. Their Janissary shock-troops mutinied, and the Sultan abdicated. Woe to Islam.

But at one important point Frederick William crossed Louis. When the Sun King expelled his thrifty and industrious Protestant subjects after severe persecution (by revocation of the Edict of Nantes), the Elector



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countered with the Edict of Potsdam. This was in 1685. All the French refugees were formally invited to Brandenburg. Some 20,000 Frenchmen came at once, bringing with them those arts and crafts in which sandy Brandenburg was so singularly lacking. Berlin became almost a French town, and to this sad day many prominent Brandenburg families have French names. The first World War's No. 1 U-boat commander was named Arnauld de la Periere. He was one of many.

Some of the French Protestants were military men, and their services proved invaluable in building up the Prussian army. They were mainly of the upper and middle classes. Frederick William also imported thousands of Dutchmen and Flemings as simple

farmers. Adept at working with dykes, they helped to drain the Brandenburg marshes and cultivate the sandy soil. They swelled the scanty Brandenburg population, and tended to outbreed the notable Slavic strain in the areas around Berlin.

But the Great Elector was not satisfied by mere colonizing at home with French and Dutch immigrants. He became interested in Africa. Everyone else was at it, so why not he? He acquired a small patch of Guinea, on the African west coast, which he fortified. It was called "Grossfriedrichsberg." Some Negroes were brought to Berlin, where they were greatly admired, but the colony was not productive. Frederick William's merchants at home were not eager to back his venture into imperialism, and he decided to enter the slave trade, from the Guinea coast to the American West Indies. But he could not hope to undersell the Portuguese and Dutch, adepts at the ghastly business, and "black ivory" was not long to be associated with the black-and-white flag of Brandenburg. The little colony gradually declined, and the Great Elector's successors sold it to the Dutch—cheap. The second Hohenzollern colonial empire of a million square miles was to be lost at the close of the 1914 World War. It was but little more profitable than that of the Great Elector.

With Colonies—A Navy

With colonies go navies, as the exiled Woodchopper of Doorn (William II) always maintained. The Great Elector agreed with this theory. But he needed an organizer, just as he had for his army. For the army he had procured an Austrian baron. For the navy he obtained a Dutch Jew.

This was a bankrupt shipowner named Benjamin Raule, a man of resource and a Seventeenth-Century go-getter. The Elector "legalized" Raule as a privateer, and in no time at all the seagoing Hebrew had seized a score of Swedish ships. This naval contraband, plus a few boats rented from the Dutch, became the Prussian navy, *pro tem*. Unlike the Prussian army, the navy did not last very long. Jutland battle in 1916 was to revive its memory. Magnificent soldiers, North Germans are by no means land-lubbers.

Nor was the militaristic Frederick William totally blind to the fine arts

and sciences. He followed the example of the current Emperor, Leopold, a most unattractive fellow with a horrible lower lip, by assembling a library of not insignificant dimensions. At the instigation of his Dutch wife, he collected Netherlands pictures and painters at Berlin. He hobnobbed with Leibnitz, the philosopher and mathematician from Leipzig. This was saving a good deal, for Leibnitz was "eminent in history, divinity, philosophy, political studies, experimental science, mathematics, mining engineering, and even *belles-lettres*." Leibnitz liked to talk about monads; he was that sort. He became first president of the Academy of Sciences of Berlin: but when he planned an invasion of Egypt for Louis XIV (in order to distract the Sun King from his vicious schemes against the Empire) Frederick William was cold to the plan. He rebuffed Leibnitz in the matter, although long afterward Bonaparte carried out the Leibnitz scheme. Bismarck, after 1870, was always delighted to keep the French happy and occupied in North Africa. In this he was brighter than the Great Elector.

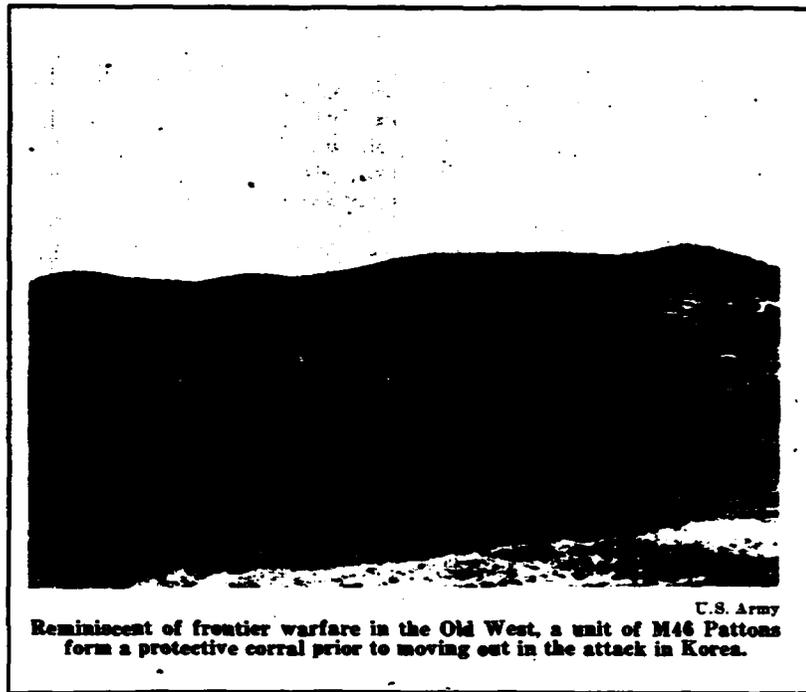
The Bulwarks First!

The Elector had a terrible temper. His numerous sons were afraid of him; the courageous Leibnitz did not like him. When a burgomaster tried to show him a beautiful cathedral and a splendid, new, wide street, he shouted for "The bulwarks first!" His primary interest, like that of most of the Hohenzollerns and unlike the breeding Hapsburgs, was in military matters, fortifications and drills and new weapons.

He died of heart-disease at 68, on the job till two days before the end. Unlike Louis XIV who surrounded himself with capable experts in all fields, the Great Elector preferred to act as his own cabinet. He disliked Ministers in general, and was impatient of their ditherings. At the time of his death he was dominated almost completely by a second wife, who was quite capable of standing up to him.

This second wife, Dorothea, had seven children in eight years without a murmur. She was fond of drinking, fighting, and baptizing. She went into the real estate business north of Berlin—and made money at it. She planted the first tree in *Unter den Linden*.

She was the none too kindly great-



U.S. Army
Reminiscent of frontier warfare in the Old West, a unit of M46 Pattons form a protective corral prior to moving out in the attack in Korea.

grand-stepmother of the "first" King of Prussia, Frederick the Great!

II FEHRBELLIN

Since it was in the Great Elector's long reign that the Prussian army was organized under an Austrian, and with the active cooperation of the Elector himself, it may be of some interest to examine the military manners of the period. For the epoch saw the dawn of modern warfare, without a doubt.

In a sense, Gustavus Adolphus, the Swedish Snow King who did not melt in hot South Germany, was the founding father of the new militaristics. He had plunged into the Thirty Years War to aid the German Protestants and rebellious feudal princes at the head of a highly trained and disciplined little army, supplemented by German and British mercenary bands. This Swedish army was considered the last word, and it so proved itself upon the German battlefields. It won repeated victories over the Emperor's armies and auxiliaries, notably at Breitenfeld against Tilly, and at Lutzen (1632) against Wallenstein. Gustavus was killed in the latter battle, but his military machine, aided by France, rolled on for sixteen years more.

This Swedish army was a national army, recruited by conscription and inspired by a novel sentiment called "patriotism." It was rigidly drilled and disciplined, behaved itself on campaign, at least in theory, and was the property of the national monarch. It was not nearly as religious as is commonly supposed, and its German and Scotch auxiliaries did not always add to its good reputation. The men were paid regularly, had a high *esprit de corps*, and employed novel weapons and tactics. They wore uniforms, and their rape-rate (considering the Thirty Years War) was quite low. In short, Sweden was the Prussia of the time, and the Prussians learned from Sweden.

This "regular" Swedish army, which rather resembled His Majesty's red-coats in the American Revolution, took the place of two kinds of army. One of these was the outdated feudal militia levy: a motley crew of embattled barons and their retainers, willing to serve for perhaps forty days per year. These noblemen were accustomed to fight in Homeric fashion, could not be properly disciplined, and were always ready to stab their monarch or general in the back. Even as heavy cavalry, they were none too efficient. Piece by piece, their armor was being discarded. Their decline had set in two centuries earlier. They

were dull fellows who considered gunpowder ungentlemanly and gunners as scum fit to be hanged.

Free Companies

These feudalists, for the most part, had yielded place to the so-called "free-companies" by the time of the Thirty Years War, and in fact long before. A free-company was a capital-venture in which the captain was organizer, quartermaster, armorer, and super-salesman. He gathered his troop together from every quarter and hired it out to the highest bidder, regardless of place or race. The French liked to hire Swiss ("no gold, no Swiss"), the Italian cities employed English or German *condottieri*, the Dutch used Germans, and as far back as Agincourt (1415) the English probably had with them some German artillery, which got stuck in the mud. The Germans themselves employed free-companions of any creed or color, and these active "internationalists" killed off perhaps three-quarters of Germany's total population during the Thirty Years.

The habits of the free-companies have been thus described: "At their approach, the peasants seized scythe and snaphance fowling-piece and drove their womenfolk and livestock to the woods. If they could catch a straggler or two of the soldiers, it was some satisfaction to bind them to a baulk of timber, and saw through wood and man together. If those soldiers caught them, they might expect to be roasted in the oven, have their finger-tips crushed, or their head corded, have a horsehair worked up and down through the tongue, or a goat set to lick the soles of feet first flayed and then smeared with rock-salt. Surely they would scream where their last coin was hidden before they were shot or stabbed and the thatch fired over them. Wherever the hosts of Tilly and Wallenstein marched in the service of their Imperial master, was left only a smoking horror. Where the army of Gustavus Adolphus encamped was a happy security, with a sternly enforced death penalty for the soldier who so much as stole an egg."

In short, the Swedish regulars were much preferable to the Emperor's free-companionships.

The unhappy Holy Roman Emperor had to depend on feudal levies or free-companions because he had no

standing army. A free-company might consist of 100 men, or 100,000. The supreme military capitalist was Wallenstein: moody, rapt in astrology, greedy for gain, a "Protestant" leader of "Catholics." There was nobody quite like Wallenstein. He was the greatest *condottiere* of all time. He rented the Emperor 100,000 free-companions for 2 million crowns. The captains raised the companies, the colonels raised the regiments, and Wallenstein raised the whole. He loaned them money for equipment, while they were his creditors for current expenses. It was an army of speculators, great and small. Wallenstein himself made the equivalent of perhaps \$12,000,000. He became so powerful that he began to "own" the Empire. It is probable that the Emperor had him murdered. And, typically enough, the job was done by foreigners. Scotchmen and Irishmen, mercenaries who belonged to the Emperor instead of to Wallenstein.

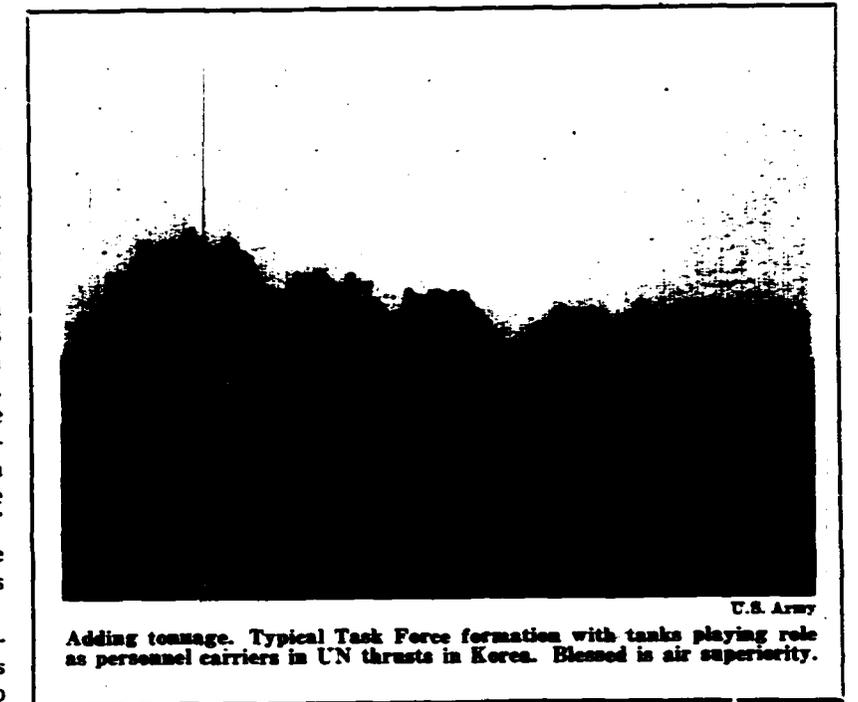
The free-companies fought none too efficiently. They formed a dense square, a veritable human fortress. Sometimes it was 50 men wide and 50 men deep, packed solid. Long pikemen would be in the front ranks to resist cavalry. Behind them were short swordsmen ready for offensive "infiltration" work. They were prepared to duck under the enemy's pikes and

stab at close quarters. At each corner of the square was a clump of musketeers who would file to the rear to reload. In battle array, several of these massive squares would be arranged checkerboard fashion. The whole set-up was extremely unwieldy.

No Shock

The "free" Imperial cavalry had learned to use pistols. They would trot up within range, shoot their guns, and trot back to reload. They had discarded the feudal lance, and avoided shock tactics. They wanted to live to fight another day. Pappenheim and Piccolomini were their greatest leaders in the Thirty Years. It was Pappenheim's troopers that killed Gustavus Adolphus. They wore black armor, and are supposed to have evolved into the "cornerstone" of the later Austrian Army.

The progressive Swedish cavalry, on the other hand, had been trained to charge straight in, with the sword, instead of playing with pistols. This was much more effective, as the Imperial armies were forced to admit. Again, the Swedish artillery was light and mobile and could be pushed into the very front line. Some of the pieces were 4-pounders, while others were made of leather, cheap to manufacture and good for a few quick shots. The bulky "Big Berthas" of the Wallen-



U.S. Army
Adding tonnage. Typical Task Force formation with tanks playing role as personnel carriers in UN thrusts in Korea. Blessed is air superiority.

stein Co. were hard to move and easy to capture. The Swedish guns, too, were cast in standard sizes, while the Imperial guns were hit-or-miss, each a lone masterpiece in itself.

To counter the Emperor's bovine infantry squares, the Swedes developed a flexible "T" formation, with the leg of the T jutting out toward the enemy. The T leg was to break up hostile charges, pikemen at the tip, musketeers behind them to deliver a lateral fire either way. The head of the T was composed of alternating groups of muskets and pikes. The T head was long, the T leg comparatively short. The Swedes employed a far higher percentage of muskets than the Imperial forces, which were more inclined to depend on push of pike. The bayonet was not to come into general use until 1700, although the French got it (to invade Holland) somewhat earlier.

The Roman legion had overwhelmed the Macedonian phalanx in the Second Century B.C. because it was more flexibly mobile. So did the Swedes, in all arms of the service, outclass the slow and static Imperial forces. But the "speedy" Swedes shot their wheel-lock muskets in the following quick way:

They bit off the end of the paper cartridge; poured the powder down the barrel; rammed the bullet home

with a wooden rod; wound up the spring of the firing-wheel with a spanner; filled the priming-pan with powder; took aim; pulled the trigger which released the spring and made a notched wheel ignite iron pyrites in the cock. The sparks from this exploded the charge. Then the wheel-lock fired. Every musketeer needed at least one pikeman to defend him while he loaded.

The Imperial cavalry utilized wheel-lock pistols. Just how they loaded these in the saddle, clad as they were in considerable armor, remains one of the mysteries of history. It was simply another phase of the whole Imperial system of turtle tactics. Old Father Tilly, "Bavarian" field-marshal from Belgium and Wallenstein's Imperial rival, was especially reactionary in military matters, having been born as far back as 1559, and having seen early service with the fixed and changeless Spaniards against the equally fixed and changeless Turks.

Grenadiers were also coming into vogue at the end of the Thirty Years, and after. These grenadiers, like those of the World Wars, did not merely stand and look tall. Their function was to throw hand-grenades, which they did with considerable effect.

Some Dutch grenadiers, pride of William of Orange, were described as follows: "Their uniform was of pie-

bald yellow and red; over this they wore a furred headgear with a pointed crown, rather like that favored by the Turkish soldier."

Such were the war lessons that Baron George Derfflinger learned in the Swedish service: that regular standing armies, carefully disciplined, are infinitely superior to "free" hirelings and capitalist bands; that harrying mobility can defeat massive stagnation; that personal dynasty, loyalty and patriotism are better assets than greed for gain. He applied these precepts to good effect. They led direct to the triumph at Fehrbellin.

French exiles were a great help to him. Between this Austrian veteran and the Gallic refugees, the Prussian army was got going. Frenchmen manned most of the artillery, constituted several regiments of infantry, and made up the gentlemen's body-guard of the Elector. General Frederick Schomberg, the Protestant Marshal ousted by Louis XIV, was a leader of Berlin's French colony, military and otherwise.

* * *

You would think, to hear about the celebrated battle of Fehrbellin, that it was a Waterloo, or Verdun, or Armageddon. As a matter of fact, it was little more than a skirmish. But then, so were Lexington and Concord, whose shots were heard (they say) around the world.

In 1675 Frederick William and Louis were on bad terms, for they had been on opposite sides in the Dutch War. Sweden was the traditional ally of France, and Brandenburg's rival in the lower Baltic region, especially in Pomerania where the tall grenadiers grow. Sweden was then politically a Great Power that had humbled the Holy Roman Empire. Her army was the model and the terror of Europe. These things we know.

Under a veteran called Wrangel, the Swedes drove at Berlin from their Baltic Pomeranian bases. Wrangel was in poor health. In the past, Derfflinger of Brandenburg had served with him. The Great Elector, then in winter quarters down south, not far from the Nuremberg home of his Hohenzollern ancestors, rushed up across the river Elbe by a series of forced cavalry marches. He met the Swedes at the hamlet of Fehrbellin, forty miles northwest of Berlin. Fehrbellin today has a population of 2,000



Expediency through experience. A tanker decorates the turret of his M4A3 with a string of pineapples (that go BOOM!) for handy use in case!

simple souls who make wooden shoes.

The Swedes had invaded Brandenburg with 30,000 men, but only 10,000 of them were present at the battle, under their ailing field-marshal. The Brandenburg force numbered 8,000—inferior numbers—and so great was the rush in coming up from Franconia that 6,500 of the 8,000 were cavalry. These horsemen, carefully trained in the Swedish manner, were Derfflinger's special protégés. The Swedes had with them some belated German free-companies. It was June 18, '75.

A page named Froben begged Frederick William to let him ride his Electoral white horse, a famous beast and well known, in the battle. Froben's thought was to distract hostile shots from the Elector's person. In this he succeeded amply. He was hit, seated on the white steed, by a cannon ball aimed at the Elector. It was a fatal piece of early camouflage that worked none the less.

The Swedes were as good as ever, of course, but their German mercenaries were an inferior breed of trooper. The battle was decided by a cavalry charge. Old Derfflinger, then age 69, led all 6,500 of his new, home-made cavalry in a furious charge against the Swedes. The invaders cracked, and were driven from the Brandenburg dominions. The Elector pursued them into Pomerania, and occupied it, al-

though the disappointing peace treaties forced him to relinquish it again. It was after the victory of Fehrbellin that the little Elector became the "Great" Elector. The august title originated in a contemporary folk ballad printed at Strassburg in Alsace-Lorraine. Unhappy, patriotic Strassburg was then soon to belong to Louis XIV—with the concurrence of the newly Great Elector.

So much for the first classic win of the Prussian army, which graduated from school on June 18, 1675. As one expert summarized it:

"The Great Elector died in May, 1688. In 1640 the greater part of his territory was occupied by strangers and devastated by war. Brandenburg was merely an appendage of the Holy Roman Empire. Its army was useless; its soil was poor; its revenue was insignificant. At his death the state of Brandenburg-Prussia was inferior to Austria alone among the states of the Empire; it was regarded as the head of German Protestantism; while the fact that one-third of its territory lay outside the Empire (East Prussia) added to its importance. Its area had been increased to over 40,000 square miles; its revenue had multiplied seven-fold; and its small army was unsurpassed for efficiency. The Elector had overthrown Sweden and inherited her position on the Baltic."

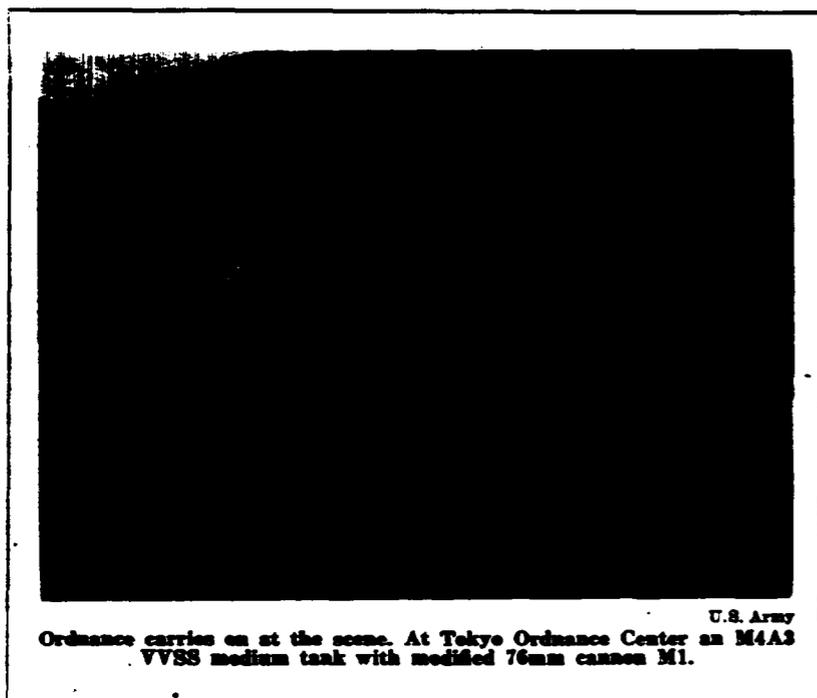
So much for the origins of the ageless Prussian army, mail-clad at its inception; to be mail-clad again today in steel helmets, tanks, planes and armored cars? Austria as usual tagged along behind. This was true in the Seventeenth Century, and also in the first World War. It was true in 1938, and is so in 1951.

Free-companies of infantry called *Landsknecht*, mostly sturdy Swabian pikeman, were the mainstay of the Imperial armies in the 1500's. They were tough, and looked very picturesque in their Elizabethan costumes. They liked to sing songs about themselves. Also, there were heavy feudal cavalry in cuirasses called *Kyrisser*. These early birds were in no sense regulars of the later Swedish type.

By 1600, there are supposed to have been a few Austrian regulars under Emperor Rudolph Hapsburg. But the Thirty Years War had to be fought out with feudal levies, uncertain Electoral allies, free-companies, Spaniards, and the traveling circus of Contractor Albert Wallenstein, as described earlier in the paper. The needy and bigoted Emperor Ferdinand Hapsburg had no Austrian or Imperial army he could really call his own.

After the death of Wallenstein, the last great *condottiere*, military units began gradually to belong to the Emperor instead of to their captains, colonels, or generals. Even in Austria, the days of free-companionships were waning. At the close of the Thirty Years in 1648, there were nineteen Austrian infantry regiments, six cuirassier regiments, and one of dragoons, probably Czechs. But this array, impressive on paper only, can in no way be compared to the right little, tight little army of the Great Elector.

Austria was always to be kept busy, for centuries to come, by the Turks or French or Prussians. Between 1495 and 1895—four centuries—the Austrian army fought 7,000 actions: an average of 17½ fights per year. Most of these, with true Hapsburg sloppiness, they lost in the most gentlemanly way imaginable. Frederick the Great was to do it in seven years; Bismarck in seven weeks. Frederick in 1760 had new iron ramrods; Bismarck in 1860 had new needle-guns. The Austrians on both occasions, as usual, had nothing new.



U.S. Army Ordnance carries on at the scene. At Tokyo Ordnance Center an M4A3 VVSS medium tank with modified 76mm cannon M1.

The armored division isn't all tanks.

It takes a lot of backing in support of the striking elements.

The system of control that keeps the supplies with the spearheads is important.

DSCP

by CAPTAIN JOEFFREY FORSYTHE

ARMOR has added another "for short" to the many military abbreviations. It's Dog Sugar Charlie Peter or DSCP, an abbreviation of considerable importance to everyone who serves in an armored division. The "for long" of DSCP is the Division Supply Control Point. There are many "points" used in the armored division such as initial points, water supply points, regulating points and release points; but none which can be used to greater advantage than the Division Supply Control Point. The DSCP is the "point of points."

Modern war, as armor knows it, demands expeditious procedures in all activities, procedures which must be simple and effective to aid and continue the advance of the combat battalions. The DSCP was designed for that specific purpose and tests have proven its value.

Not A New Idea

The DSCP is not a new idea. During the First World War and the Second World War several divisions established facilities similar to the DSCP of today's armored division. After World War II The Armored School expanded the idea and now the establishment of a DSCP is included in the logistical doctrine of the armored division.

As the name implies the division supply control point is concerned primarily with supply. Its principal function is to facilitate and expedite

the flow of supplies to the front. Tanks, guns, and men need gasoline, ammunition, and rations every day. The DSCP is geared to assist the combat elements of the division in procuring these essential supplies twenty-four hours a day:

Under G4

The DSCP is an installation which operates under the direct control of the division G4 who is in constant radio contact with the installation through the division administrative net (forward). Personnel required to man the DSCP can be provided by the division quartermaster battalion. An officer and four or five enlisted men should be sufficient to operate the facility twenty-four hours a day. A quarter-ton truck and a cargo truck will satisfy the transportation requirement for the installation. For communications the DSCP must have two radio sets with operators, a medium power set for operating in the division administrative net (forward) and a high powered set for operation in the division administrative net (rear). (See figure 1 for stations in the administrative nets.) With the personnel and equipment indicated above, the DSCP is ready to set up and commence functioning for the benefit of the combat elements.

The division G4 will indicate the location of the DSCP. In offensive operations this location will be on the main supply route (MSR) of the division in rear of a point where the road net permits a convergence of the axes of supply and evacuation of the major commands. Another consideration involved in selecting the location of the

DSCP is that it is usually positioned just in rear of the division headquarters forward echelon (division command post). This places the DSCP well forward, ahead of division trains, and convenient to all commands and combat battalions of the division (see figure 2). During defensive situations, division trains elements are consolidated and the DSCP will be located in the forward portion of the division trains area on the division MSR (see figure 3). These locations position the DSCP forward of division logistical installations during both offensive and defensive operations.

Funnel Point

Supply convoys of the commands and combat battalions will be coming from the forward areas to the rear for gasoline, ammunition and rations day and night. The commanders of these convoys precede their convoys and will be required to stop and report in at the DSCP. Here the supply convoy commanders can learn many things. The DSCP can inform them of the location of the division mobile Class III supply point and the amount of gasoline on hand, location of the division ammunition office (DAO), the division Class I distributing point, location of division technical service elements and their activities in division trains, and the location of army supply points and technical services installations in the event the division supply points and technical services cannot provide the supplies or services desired.

Another service that the DSCP can render is the relay of unit information to convoy commanders. For example:

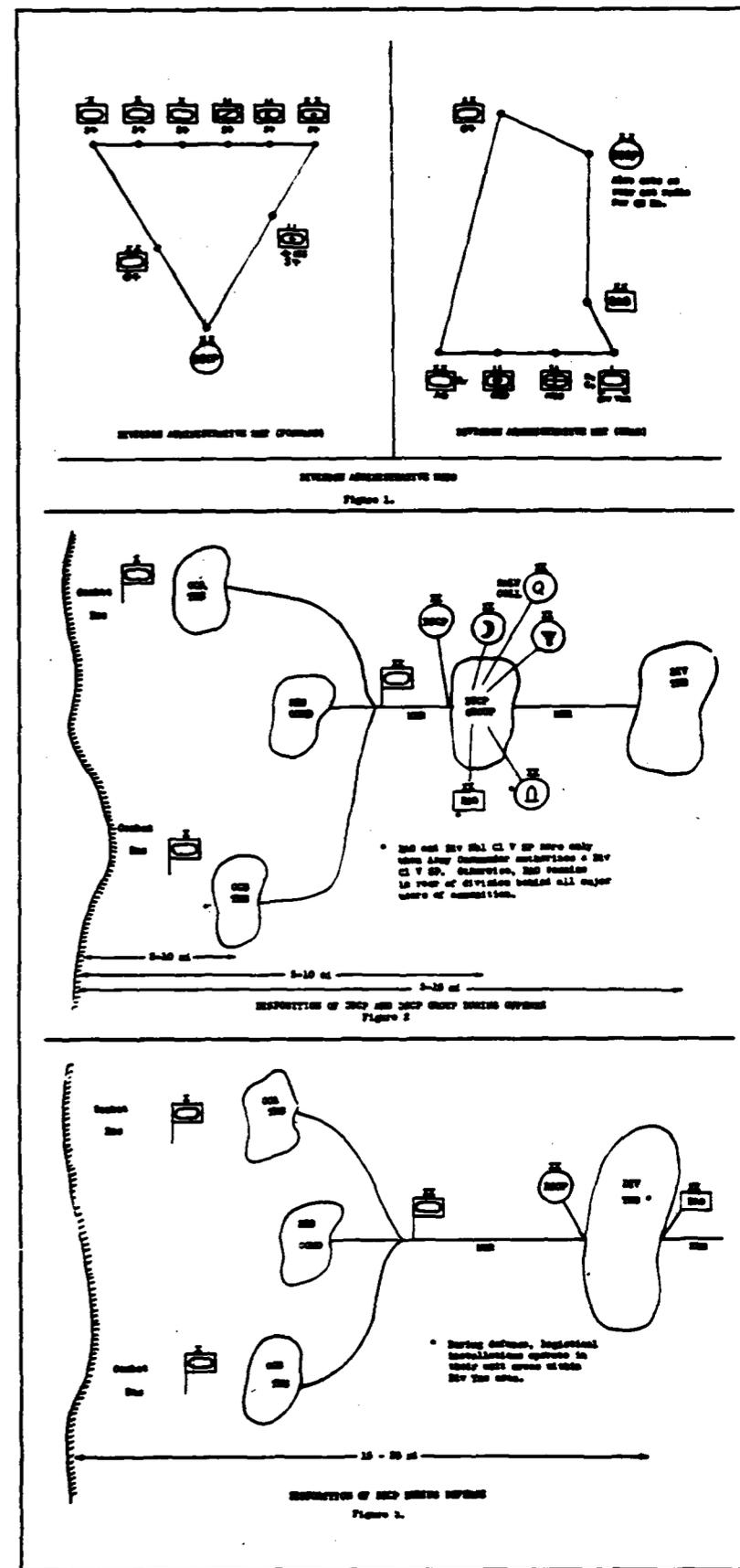
A unit dispatches an ammunition convoy to the rear for refill and discovers that the amount of ammunition requested is not sufficient to fill the unit basic load. It is a simple matter for the unit to have the DSCP contacted over the division administrative net (forward) and informed of the necessary correction. When the convoy commander reports in, the DSCP will inform him accordingly.

The DSCP works as well in reverse. When supply convoys or other logistical traffic have completed their missions in the rear and are returning to the front, they will be required to report in to the DSCP. If in the meantime, combat and other forward units have moved or are moving to new locations, the DSCP will have been informed and can pass this information on to the returning vehicles. In this way lost supply convoys can be avoided and there can be more assurance that the combat troops will receive their supplies when and where needed.

Figure 2 illustrating the disposition of the DSCP in offensive situations shows other installations in the immediate vicinity of the DSCP. The DSCP and the logistical installations in its immediate vicinity are known as the DSCP Group. During the offense the division quartermaster will operate his Class I and Class III supply points and the division salvage collecting point near the DSCP. If the field army commander authorizes the armored division to carry extra ammunition, the DAO and the division mobile Class V supply point will be established and included in the DSCP Group.

Such is the DSCP as taught and advocated by The Armored School today. It is an expansion of an idea designed to expedite logistical support for the fighting battalions of the armored division, a facility which can be used to many obvious advantages. It is, in effect, a type facility which we use every day, that is, a central information office, booth or window. The DSCP can to a great extent eliminate the necessity for a division administrative order. The necessary current instructions and information are immediately available at the DSCP. If a unit knows what it wants and the location of the DSCP, its logistical problems in combat are reduced considerably.

Captain Jeffrey Forsythe is a member of the Command & Staff Department of The Armored School, Fort Knox, Ky.





U.S. Army

Steel Dragons

by SERGEANT FIRST CLASS DOUG DUBOIS

THE Chinese Reds crouching in their fox-holes listened to an ominous rumbling coming from around the bend below their positions. It was the sound of tanks.

What they saw lumber around the curve moments later was not a reassuring sight. Already laboring under the psychological tension induced by the approach of enemy tanks, they were ill-prepared to meet the leering, distorted faces of dragons and tigers bulking before them. Contorted faces bobbed up and down and long horns in the center seemed to spout smoke and flame as they advanced.

Certainly that was the noise of heavy tanks . . . or was it? The horrible face, those glaring eyes, those tremendous teeth, the noise, the firing. . . .

Red soldiers looked about, were swept up in a wave of fear, broke and ran! Ran from the devils clanking along in their rear. The devils, in the form of tanks of the 89th Tank Battalion, surged forward, taking

SFC Doug Dubois is a Stars & Stripes correspondent attached to the 24th Infantry Division in Korea.

full advantage of an enemy in his moment of psychological disadvantage.

The dragon face scheme was a part of the U.N. program of psychological warfare. Lieutenant Fred Wilkins, tank commander in the 89th, who helped design the leering faces, attests to the effectiveness of the idea, and adds that "it puts us in the running with the Air Force boys with their painted plane noses." And Sergeant Joe McCoy, stepping back with his paintbrush to admire his handiwork, murmured, "it even scares me."

One or two skeptics in the battalion thought that the tank and its crew in original form was enough to scare the Red soldier.

Tank company commander Captain Clifford Rice whose namesake, Task Force Rice, became well known to the enemy during the February drive up Korea's West coast, believes that the dressing up along lines of ugliness of the tanks has a definite effect on the overly-superstitious Chinese, although he feels that they have good reason for respecting American armor and its record on the field in Korea.

Morale, esprit, teamwork and combat effectiveness spring from unit names. Our author feels we could enhance these prime considerations by calling upon our rich history for inspirational names for units

Let's Name Our Close Combat Units

by COLONEL CHARLES W. RAYMOND, 2ND

THIS country possesses an asset, stemming from a rich historical and geographical heritage, which for the purposes of instilling high esprit in our military units and enhancing their public prestige, has barely been touched. I refer to the multitude of names, of stirring implication, that lend color to our history and grandeur to our land. What an opportunity, to apply some of these names to units of our Army!

Sadly enough, this has rarely been done. What young recruit from Colorado, or from Utah, or Idaho, or New Mexico, would not feel instant pride upon being assigned to a unit known as, for example, the "4th Battalion, Rocky Mountain Rifles"? Let us suppose that this same unit were a part of a regiment, let us say, the "20th Infantry Regiment," which might also contain the "2nd Battalion, Jefferson Rifles" and the "7th Battalion, Yosemite Rangers." Now, the "20th Infantry Regiment" already has its fine record of past deeds, and its parent unit, the 6th Infantry Division, also possesses great traditions, all of which the recruit will absorb as he develops into a trained soldier and member of the team. But, at the outset, he has a distinguished name, rather than a number or a slangy sobriquet, upon which to affix his loyalty; and this new home of his with the resounding appellation is yet small enough that he can feel from the be-

ginning that he is truly a part of it. It is of such size that he can consider the outfit really his own team, that he can soon come to know personally most of his fellow soldiers and his immediate leaders, all proud of the same distinctive name.

The Navy has always taken great advantage of names. Each vessel is numbered, and each type designated by letters, yet most naval vessels also have names: of the states, of our cities, of bays and sounds, of distinguished American naval men, of famous battles, and so on throughout a broad field. Submarines which in earlier days simply were numbered, are now named after species of fish.

Even the Marines, who have long been satisfied to be known simply as "Marines," had a specially named unit in World War II in the Pacific in "Carlson's Raiders."

The Air Force has used names to some extent, for among its various types of aircraft have been such strikingly named planes as "Lightning," "Thunderbolt," "Liberator," and "Shooting Star." Individual aircraft, also, have often received names, like surface ships.

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In the United States Army certain units have occasionally, to a very limited extent, received or acquired names. The fame of the "Rough Riders" of the Spanish-American War still persists. World War II saw the employment of "Merrill's Marauders" as raiders in Burma. Following generally the pattern of the British "Commandos," several American separate infantry battalions of specially trained men were formed and called "Ranger" battalions, after the traditional manner of certain American forces of early days. Here, by the way, is a name, "Ranger," that is worthy of perpetuation in our Army on a grander scale than is now the case. In both World Wars, most of our divisions acquired nicknames, some of which have changed with the times. Army custom has for many years perpetuated the memory of outstanding soldiers, in the naming of posts, camps, and general hospitals. However, these often are names not well known to the nation at large, and although this is a practice that should certainly continue, it has little real bearing upon the present discussion. A soldier may develop great affection for a particular military post, but this is distinct from the loyalty he feels for his unit.

About the time of the Civil War, it was common usage to call artillery batteries by the name of the battery commander. This practice was often extended to brigades and divisions,

which in those days were of a less permanent nature than they have since become. Use of commanders' names, however, has the great disadvantage of instability, and is probably best employed only as a casual and unofficial method of designation, or for identifying a temporary task force.

In combat there seems to be a natural inclination of individuals to use names in lieu of numbers for tactical units. The most fruitful source for such names has usually been the list of telephone exchange code names. Within a division it was common practice in World War II to refer informally to "Winner" or "Wisdom," rather than the "135th Infantry" or "175th F. A. Battalion." Regimental commanders conversed quite intelligibly with their subordinates about "Red" or "Blue," rather than "1st Battalion" or "3rd Battalion." This of course was a security measure.

The use of names in the British services is a famous practice. The Royal Air Force called it, not a "P-40," but a "Tomahawk." They have had their "Spitfires," "Mosquitoes," "Lancasters," and their "Vampire" jet planes. The Royal Navy has a galaxy of names for its ships. We recall easily that it was the "Exeter," the "Ajax," and the "Achilles" that ran the German "Graf Spee" to death. Who would remember the names of the victorious British ships had they been known only as the "CA-81," the "CL-173," or the "CL-something-else"? But the really remarkable roster of names is that which lists the regiments of the British Infantry, and some of the old cavalry regiments now in the Royal Armoured Corps.

The British system of regimental names grew up as British history unfolded, and tradition piled upon tradition. The present-day result is certainly not without its drawbacks. The names take a confusingly wide variety of forms: There are "Grenadiers," "Fusiliers," "Guards," "Light Infantry," and many others. Some are "Royal," some "King's Own," some bear the name of the county, like "King's Own Yorkshire Light Infantry"; others are named for some distinguished peer or general, as the "Duke of Wellington's Regiment." One regiment in particular would strike a responsive chord even in the American who has read of Robin Hood: the "Sherwood Foresters." A

British order of battle, especially if the units' names are abbreviated or designated only by initials, is at first nothing short of a riddle for an American soldier, although of course a Britisher can unscramble it for him. But it takes only relatively short acquaintance to learn "Who's Who" in a particular area of operations.

A serious difficulty for the British has run parallel to one that we ourselves have encountered in our militia units of earlier wars, and later in the National Guard. This was the adverse effect of sending replacements from diverse parts of the country to a unit with a restrictive geographical name. To place a Yorkshireman in a regiment of Scottish Highlanders was as hard on English morale as, for us, to assign a Rhode Island Yankee to an all-Minnesota or all-North Carolina regiment of volunteers. It took World War I to get New York and Alabama National Guard regiments together, even in the same division, so intense have sometimes been our State loyalties. It is easy to understand that when combat assessed heavy casualties at one time against a unit composed of men all from the same political subdivision or district, the home morale received a staggering blow. This has happened as recently as World War II. The British solved this problem partially by scattering the battalions of their old traditional regiments, and brigading them with battalions of other regiments. In this way, the Coldstream Guards, for example, might have battalions engaged in several theaters or on home duty, all at the same time. Some battalions might be regular units while others of the same regiment might come from the civilian components. The regiment thus became a ceremonial and traditional association of proud soldiers, rather than a tactical formation; but precisely herein lies the great and continuing value of these ancient British regiments, a value upon which we have so far failed to capitalize.

One might say that the British system, the growth of so many generations, has become inadaptably and inflexible, hence outmoded and detrimental. This is not so, however, since the British as a result of lessons learned in World War II have made innovations in their practices, designed to retain traditional *esprit* while at the same time adapting the

system to modern problems of assignment of replacements. The ceremonial British Infantry Regiments have been grouped into some fourteen non-tactical "named" brigades. Some of these are: The Brigade of Guards, The Lowland Brigade, The Home Counties Brigade, The Yorkshire and Northumberland Brigade, The Midland Brigade, The Welsh Brigade, The Irish Brigade, The Highland Brigade, and The Green Jackets Brigade. By this device, the British expect to have sufficient replacements available to any Regiment in war. The individual soldier would have as much chance as before of serving in his own Regiment. Unless the emergency is exceptional, the individual would at least serve within his own brigade, with men from the same general home area and with the same attitudes as himself. The broad regional aspect of the foregoing names is apparent. It approaches the concept that appears logical and desirable for us, if we were to start naming units in our Service.

In this country, we have dealt with the problem in the past by abandoning state designations of units in our federalized Guard, and by paying slight official attention to the fact that the personnel of a unit came from any particular State. To the citizens of a State, however, its National Guard units continued to belong to that State, and the units' accomplishments were portrayed with pride in the local press. For instance, one who read any Ohio newspaper during World War II could infer that the war was being waged practically singlehandedly by the 37th Division. The fact that long before war's end there were thousands of non-Ohioans in the 37th Division, made no difference to the people in Ohio. In Minnesota, the papers often referred to the 34th Division as "Minnesota's Own," while in Iowa, which originally furnished a large portion of the Division, it was called "Iowa's Own." But the fact is that by 1943, practically every State in the Union was represented in the 34th Division; while attached to it, fighting with it, and wearing its shoulder patch was a special unit of Nisei, mostly native of Hawaii.

A few years ago, Texans were happy to receive the veteran battleship "Texas" as a gift to the State, although the famous vessel had been by no means an exclusively Texan enter-

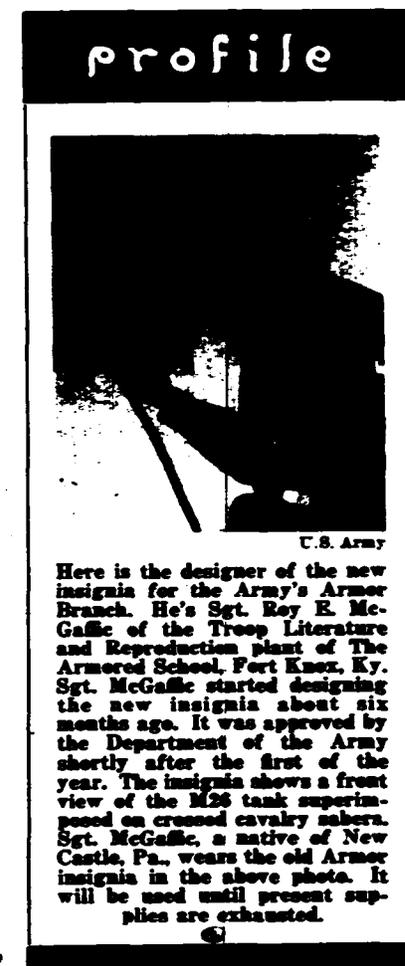
prise, in money, materials, or manpower. It appears that there is a genuine urge in the residents of our various regions to feel possessive pride in some military unit. This is good and healthy and ought to be encouraged, so long as the strict State loyalties, sometimes detrimental if pressed too far, can be merged and blended into an *esprit* that transcends State boundaries and reflects affections of National scope. An indication of the popularity of such an ideal is the quick prestige acquired by the 42nd Division in World War I. It was nicknamed "The Rainbow Division," since it was a composite of National Guard units from different sections of the United States, and because its shoulder patch was, symbolically, the many-hued rainbow. The implication was understood at once by the public, and the unit was held in high regard.

Names for federal units should avoid coincidence with a State name, with a possible exception: "Washington." State names would continue to receive recognition by the Navy and by the National Guards of the States, and State loyalties would continue to serve purposes valuable to enterprises other than this proposal. Primarily, names should be selected that possess broad regional application, such as names of rivers. Unfortunately for this purpose, some of our important rivers have given their names to States, but many, like Columbia, Rio Grande, Allegheny, Hudson, Yukon and Susquehanna, might be chosen.

There are many other sources of appropriate names, such as great American statesmen: Washington, Jefferson, Franklin. There are famous soldiers: Robert E. Lee, Pershing, Winfield Scott, Miles Standish. Our history provides the names of other personages: Nathan Hale, Daniel Boone, Kit Carson, Kamehameha. Our geography gives us names of mountains: Blue Ridge, Bitter Root, Appalachian, Cascade. There are American trees: Redwood, Sequoia, Hickory. There are place names, some of them from Indian tribes, such as Huron, Modoc, Ontario, Mohawk, Narragansett, Shenandoah, Cape Cod, Hatteras, Niagara, Taconic, Barnegat; a stirring roster of names that spell "America." There are so many possibilities that it is futile to attempt to list them further.

It is obvious that, if a policy of nam-

ing units were adopted, there would be a great rash of proposed names, suggested by a large number of persons. Many names so suggested would be inappropriate, for any of several reasons. Some would be purely nicknames, some lacking in general cognizance, some would be cumbersome. Others would be lacking in dignity or have unfortunate implications. For example, although Dakotans might



U.S. Army
Here is the designer of the new insignia for the Army's Armor Branch. He's Sgt. Roy E. McGaffie of the Troop Literature and Reproduction plant of The Armored School, Fort Knox, Ky. Sgt. McGaffie started designing the new insignia about six months ago. It was approved by the Department of the Army shortly after the first of the year. The insignia shows a front view of the M26 tank superimposed on crossed cavalry sabers. Sgt. McGaffie, a native of New Castle, Pa., wears the old Armor insignia in the above photo. It will be used until present supplies are exhausted.

feel at home in a "Bad Lands Battalion," rival units would no doubt short-title them "The Bad-Landers." Not too good, if it were an airborne unit.

A carefully devised set of rules would have to be established so that only the most fitting, euphonious, and concise names would be adopted. The process would resemble the adoption of distinctive insignia. Each proposed name would have to be decided upon its own merits. It might be desirable to allow a degree of opportunity for

members of a unit to propose the name they would like to bear, but the chief object would be to build up a list of distinguished names to endure for many years, rather than to cater to the immediate members of units. A well-chosen name would meet with general acceptance and in a short time would become a respected part of the battalion's traditions.

Certainly the present informal practice of nicknaming units shouldn't be interfered with. The 15th Infantry Regiment would undoubtedly continue to be known as the "Can Do," and the 3rd Infantry Division as the "Marne Division," until such time as usage might alter or drop such names. The present proposal simply places emphasis upon unit *esprit* at battalion level, where it can be implanted and stressed early in the recruit's service, and can be maintained as the unit progresses through its training and goes to take its place in the larger team, that is, the regiment and the division.

No proposal is worthwhile without some recommendations and a plan for putting it into effect. Thus . . .

a. Select names of distinctly American connotation, and apply these to series of battalions of Infantry and Armor. If experience shows it to be advisable to extend this practice to other arms, such action could be considered later. These series of battalions might be called "brigades," since that term is no longer generally used in the Infantry or Armor. In any event, a tactical brigade would have a number, whereas, the traditional "brigade" would be named, e.g., "The Mojave Ranger Brigade." The list of names so selected should be held to a rather limited total figure, say about fifty.

b. Select one or more descriptive terms, which when coupled with the brigade name and battalion number, will constitute the battalion's official designation. The term "Rifles" is suggested as especially appropriate, since this is a term of historically American usage, is euphonious, and especially is emphatic upon the basic weapon of the soldier, the rifle. Other desirable terms, for units from certain regions, are "Rangers" and "Scouts." "Grenadiers" is also suggested, although this has more of a European flavor than other terms of this nature.

c. Allot each name to all compo-

nents, cutting squarely across Regular—National Guard—ORC lines, and number the battalions of identical name serially from "First," using no numeral of more than two digits. If more designations are needed, the roster of names should be increased, in preference to using numerals of over two digits.

d. Assign names by redesignating existing battalions, each battalion retaining its present battle honors. Confer the accumulated battle honors upon the named brigade, as a whole; by simple reference to the war in which each honor was gained. In the future, battle honors when earned by a battalion, should generally be conferred on all battalions of the same name, just as the achievements of any Marine Corps unit shed renown on all future Marines. Upon activation of a new battalion within a brigade, the new unit would then be endowed at the start, by virtue of its "family name," with at least some of the tradition established by the rest of the brigade.

e. Request to have the present "Distinguished Unit Citation" established as a Presidential recognition, similar to the Navy's. If this step is approved, authorize the word "Presidential" to be included as an official and permanent part of a unit's designation. This should apply to all units so honored, including those of Arms and Services not authorized to name their units.

It is to be expected that some difficulties might arise in the adoption of such a system. However, such problems ought not to be insurmountable. For instance, there are the difficulties of assignment of replacements, already mentioned. Under any system of assignment this will always be a matter requiring intelligent struggle toward sound application of personnel policies.

Any sort of proposal can usually arouse objections. One objection to this proposal might be the possibility of decreasing the cohesion between battalions. In the armored division, the separate status of battalions and absence of any regimental framework does not seem to impair the fighting "cohesion" of the units, once they know each other, through training and association, as competent colleagues. There was no lack of cohesion as a fighting regiment in the case

of the 133rd Infantry, for example, while the 100th Separate Infantry Battalion, the famous Nisei outfit, served in lieu of the absent 2nd Battalion, even using the 2nd Battalion's telephone code name of "Wisecrack White." Rather, the friendly competition and mutual respect resulting from differences of designation were beneficial. The presence of two "Company A's," two "B's," etc., confused no one, for they could be called "Red Able," "White Able," "White Charlie," "Red Baker" and so on.

Some of the most notable objections might be the following:

a. "Why restrict the naming of units to the Infantry and Armor? Other branches will want the same privilege." The answer lies partly in past experience of the British. In their service, it is only in the principal arms that regimental names are used. Among supporting arms and services, take as an example the Artillery: The traditional name of that arm is "The Royal Regiment of Artillery." In other words, *Esprit de Corps* considers the supporting arm as a whole to be a single traditional "regiment." The name is based upon the military specialty. No other names seem necessary in the Royal Artillery, except that the portion that corresponds to our armored field artillery is called the "Royal Horse Artillery"—again "military specialty." The situation is analogous in the Royal Engineers, The Royal Army Ordnance Corps, the Royal Corps of Signals, and other services. Another reason for not naming units of supporting arms or services is that in military historical writings, the progress of an action is narrated in terms of the operations of the principal arms engaged. The identities of the various supporting units are usually recorded in some form of appendix, such as a troop list, and for simplicity's sake do not appear in the main narrative. This is merely a manifestation of the fact that it is the primary arms who come to close grips, bear the impact of personal conflict, and therefore earn the distinction of specific attention by the historian. Names would serve to focus this attention.

b. "Naming of units complicates the order of battle." At first glance, perhaps so. But the designations of some of our present types of service units are "mouthfillers." It may be

said that, the smaller the detachment and the more limited its specialized scope, the more initials it has, and the fewer the people who understand their meaning. The fact is that the interested people quickly learn the meaning of a unit's designation. Americans are quite adept at concocting and understanding suitable abbreviations for names. Therefore, American order of battle should suffer no real complication from the use of names for units of battalion size, but rather should gain tremendously in the appeal to the *esprit* of soldier and civilian alike.

c. "The names won't mean anything; the system is not spontaneous, and will therefore be poorly received." Names will mean something if properly selected. "Grand Canyon" and "Yellowstone" mean something to every informed American. Any system of designation is synthetic; if it is begun entirely spontaneously, it will probably result in a hodge-podge, rather than a system. But it must have a beginning at some time if it is to exist at all. There was a time before any of the British units had yet been named; there was a later period when their names were quite new, not yet old enough to be "ancient traditions." The British simply started their practice and developed it to suit changing times. Whatever colorful customs of naming may have once had their beginnings in our Army, they have generally been laid aside, rather than adjusted to new conditions. A unit name need not be years old to incite pride. The new German Army that arose under the Nazis had many newly named organizations such as the elite "Hermann Goering" units, in which the members' *esprit* was exceedingly high.

An enduring unit name must simply be meaningful, be popularly appealing, and have a degree of immutability which "Sherwood Forest" and "Rocky Mountain" possess, and which "Hermann Goering" did not possess. A system of carefully selected names based upon such attributes could be successfully begun in our Army. If the beginning were made judiciously and with restraint, it is probable that the innovation would be eagerly accepted by the troops and the people, and would continue to develop as an honored and useful tradition in our Service.

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GENERAL GEORGE B. McCLELLAN AND THE ARMY OF THE POTOMAC

MR. LINCOLN'S ARMY. By Bruce Catton. Doubleday & Co., Garden City, L. I. 372 pp. \$6.75.

Reviewed by
ROBERT SELF HENRY

The army referred to in the title as "Mr. Lincoln's" is the Army of the Potomac. The period covered is that of its command by General McClellan. The story told is that of the Army and its General and the bond of understanding between them, in contrast with the relations between the General and political forces which he did not understand but which, in the end, wrecked his career as commander.

The story begins with the arrival of

The Author



Bruce Catton began writing as a reporter. After serving various newspapers he became special writer and Washington correspondent of NEA. He was Associate Director and Director of Information for WPB from 1942 to 1945 and for the Department of Commerce in 1946. In 1948 he became Special Assistant to the Secretary of Commerce. He is now Information Specialist in Department of Interior.

McClellan from the Peninsula, and the magical effect of his presence upon officers and men of the army which, under John Pope, had just been defeated at Second Bull Run. Having thus begun at the dramatic moment when the administration at Washington was compelled to recall McClellan to command of the army he had created, the work reaches back into the past, somewhat in the fashion of a Joseph Conrad story, to pick up the beginnings and then to work forward to the end of McClellan's period of command.

General McClellan had the misfortune to come too early to high command. In Mr. Catton's phrase, "He found himself at the top of the ladder almost before he started to climb. One day he was leading a diminutive army of volunteers in an obscure campaign far back in the wild mountains; the next day—almost literally, the next day—he was the savior of his country, with President and Congress piling a prodigious load on his shoulders, and with every imaginable problem arising from the most confusing and pressing of wars seemingly coming straight to him, and to him alone, for solution."

The extraordinary thing is that this 35-year-old general-in-chief successfully solved the first part of his problem. From the medley of disorganized units about Washington, after First Bull Run, and from the other regiments which came in later, he created a great, finely tempered weapon—the Army of the Potomac. Running all through Mr. Catton's work is the picture of that army and its life, especially as revealed in what he refers to as "the rich mine of material" in the innumerable regimental histories, as well as the works of the better known

memoirists. These regimental histories, Mr. Catton says—and the life and color of his book bear him out—"provide the flavor of the young army as nothing else could do, giving the homely and often almost incredible little touches which make those far-off soldiers suddenly come alive."

Between General McClellan and the army which he created, and which might with justice be called his rather than Mr. Lincoln's, there was a rare intensity of devotion. The General "was trusted to the death by one hundred thousand fighting men." Mr. Catton says, "but he himself always had his lurking doubts" when it came to making all-out fighting use of his army.

This "buried sense of personal inadequacy" is one of the reasons

The Reviewer



Robert Self Henry is Vice-President in charge of Public Relations of the Association of American Railroads. In railroad service for the past twenty-six years, he has written a number of books on transportation. A recognized historian, his four works on history are *The Story of the Confederacy*, *The Story of Reconstruction*, *First with the Most* *Ferroc*, and most recently, *The Story of the Mexican War*.

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ascribed for the young General's comparative failure in the use of the army.

The other and more consequential reason, developed throughout the book, was that "General McClellan never quite understood" that he "was not merely the commander of an army in a nation at war" but was actually the central figure in "working out, under fire, the relationships that must exist between a popular government and its soldiers at a time when the popular government is fighting for its existence."

In working out these relationships, Mr. Catton says, there was lamentable failure. As early as the autumn and winter of 1861-1862, the evidences of this failure were accumulating. McClellan's antecedents and attitude led



U.S. Army
President Lincoln visits General McClellan at his Potomac Army Headquarters.

the radically inclined Republicans to look upon him as one not simon-pure in the faith and so not having his heart in the war. As against this gnawing suspicion, the General had little patience with the political point of view and finally developed, on his own part, suspicion of the good faith and wish to win the war of some of those who were nagging at him. With the poison of mutual suspicion at work on both sides, the marvel is that the army under McClellan did as well as it did, and finally won the tactically drawn battle but strategic victory of the Antietam.

In the light of the attitude of the more radical—using the word in its Civil War sense—of the Union politicians, Mr. Catton makes the interesting observation that among the "list of Union officers who were in the key positions when the war was finally

won—Grant, Sherman, Sheridan, Thomas, Meade—there was not an abolitionist in the lot, not a man who began the war with any particular animus against slavery." For that matter, a similar observation might be made as to the majority of the more successful Confederate commanders, few of whom were outstanding and original secessionists.

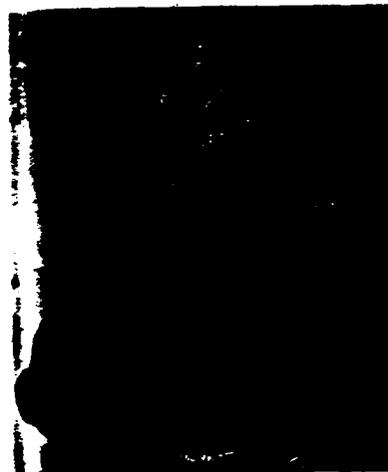
One more fatal difficulty in McClellan's path was the ineptitude of the intelligence service of his army and his own temperamental tendency to rely on its reports. "So to all the other handicaps that beset him—distrust at the War Department, troops withheld, strategic plans countermanded—McClellan had this final ruinous handicap to contend with:

heavily outnumbering his opponent, he was led to believe that his opponent heavily outnumbered him," is the way Mr. Catton sums it up.

But with it all, in the author's opinion, inability to work with the civil authorities was the most serious of McClellan's handicaps. "A capacity for getting along with the civil authorities is just as essential a part of the equipment of the general in command as is his ability to plan campaigns and win battles. . . . Lee had this capacity to his very finger tips." The time came with McClellan, on the other hand, when "it was almost a question whether he was fighting the Confederates or the authorities at Washington," who, he was convinced, were determined to get rid of him at any cost, even to losing battles and perhaps the war.

And get rid of him they did, for a

ARMOR—March-April, 1951



U.S. Army
General George B. McClellan.

time at least, during which time General Pope led the Union forces to defeat at Second Bull Run. It is into the backwash of this defeat that McClellan rides as the book opens, to be welcomed with ecstatic shouts by the recreating soldiery. At a time when there was "enough ill will and all-round distrust afloat in Washington to lose any war" the harried President took "his political life in his hands by reinstating McClellan in command."

"The Union cause had reached low-water mark for the war," Mr. Catton observes, as he launches into a brilliant treatment of McClellan's achievement in pulling the army together and moving out in pursuit of Lee in Maryland. The campaign which brought the two armies face to face across the valley of Antietam Creek, and the bloody battle fought across that stream and about the village of Sharpsburg—the bloodiest



U.S. Army
Battle fog at Antietam.

ARMOR—March-April, 1951

single day of the whole war—are presented vividly and clearly. The analysis of the far-reaching effects of the victory which no one at the time quite recognized as a victory, but which at least was not a defeat, is penetrating.

Without the victory at the Antietam it would have been politically impossible to issue the already prepared Emancipation Proclamation. Without that proclamation, converting the war from one for the mere maintenance of the Union to a crusade against slavery, there would probably have been the European intervention which the Confederacy sought. And with such intervention, as Mr. Catton analyzes the situation, the chances of maintaining the Union unbroken would have been small indeed.

"Indecisive tactically, the battle shaped all the rest of the war," Mr. Catton writes, and "meant, at the very least, that the war must now be fought to a finish. There could no longer be a hope for a peace without victory. The great issues that created the war were going to be settled, at no matter what terrible cost. This fight was decisive."

Mr. Lincoln's Army covers the events of a little more than a year leading up to this turning point of the war. Its focus is on events in the Eastern theater of war, with slight attention to the less dramatic but likewise decisive events west of the Appalachians. Partly because it is so focused, the work successfully combines dramatic narrative qualities with colorful characterization, sharply etched pictures of army life in the 'sixties, and perceptive insight into the politico-military problems of high command in time of internal division.

The People's General

The Personal Story of
LAFAYETTE

by

DAVID LOTH

Conservative revolutionary, rake-hell Puritan, stubborn compromiser, unfaithful but adoring husband—this was the real Lafayette, the man of contradictions beneath the plaster shell of the Lafayette legend. His personal life has heretofore been obscured by the aura of sanctity with which American textbooks have invested him, but now this lively biography, based upon new research, presents an intriguing full-length portrait showing all the facets of the many-sided man.

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