CANADIAN Army JOURNAL

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The Cover

The Wild Autograph, Model A-5, stereoscopic plotter used by the Army Survey Establishment, RCE, for map making. This instrument is a marvel of precision.

The object of the Canadian Army Journal, which is published by the Directorate of Military Training under authority of the Chief of the General Staff, is to provide officers of the Active, Reserve and Supplementary Reserve Forces with information designed to keep them abreast of current military trends and topics, and to stimulate interest in current military affairs.

THE IMPORTANCE OF MILITARY GEOGRAPHY

By
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I feel the making of war resolves itself into very simple issues, and the simplest in my view is: what is possible, and what is not possible? . . . what is possible will depend firstly on geography, secondly on transportation in its widest sense, and thirdly on administration. Really very simple issues, but geography I think comes first.—Field Marshal Lord Montgomery.

Recent articles in the Canadian Army Journal have drawn attention to the "vital problem of the teaching of military history." Any historical approach to military problems must necessarily involve a good deal of geography; for history is largely, if not entirely, "geography in motion." Nevertheless, there is a case for the treatment of military geography as a separate subject. While few would deny that lessons can be learned from the past, there is also "no surer way to disaster than to copy the plans of bygone heroes and to fit them to novel situations."

Since geography has but recently reached university status in Canada it is not surprising that little importance has so far been attached to a systematic study of its military applications. It is only a slight exaggeration to say that military geography as such has no status whatsoever in this country. Professor Griffith Taylor's lectures in the Department of Military Science of Toronto University are the exception rather than the rule.

In contrast, other countries, particularly Germany, have attached considerable importance to military-geographical writings and to the teaching of the subject as part of an established training programme. In 1941 the Geological Society of America published a bibliography of militar-

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geography and geology which, with a later supplement, contained over five hundred titles although "no effort had been made to make this bibliography comprehensive." The large number of papers published in the Geographische Zeitschrift which were concerned with the First World War, 1914–1918, and the later work of the Zeitschrift fur Geopolitik give ample proof of Germany's interest.

Karl Haushofer devoted most of his life to an attempt to make the German people and the German General Staff what he called "space-minded." He also criticized the inability of the British "to think in continents." Many years before the last war he pointed to the vulnerability of Singapore from the land—a direction in which the British stubbornly refused to look. His geographical approach is seldom found in British writings, although there are rare statements like that of Colonel E. S. May who said, while addressing a conference of the British General Staff in 1906: "It does not reflect credit on us as an army that even where our forces have been stationed for years and years the military characteristics of the country in the neighbourhood are often very little understood . . . had it been otherwise, no doubt we should have been less at a loss than we often were during the late war." This was rare indeed; in fact, as Field Marshal Montgomery put it, it took a war in Singapore to get rid of the topee and the spine-pad.

Haushofer's writings dealt mainly with broad strategic concepts and after 1930 he abandoned his scientific pretensions and prostituted his science to the Nazi "geopolitik." When the Germans invaded Russia the Zeitschrift fur Geopolitik published the opinion that it would be no more difficult for Hitler to reach the Urals than it had been for Napoleon to reach the Rhine. Nevertheless, the fact of Haushofer's degeneration should not blind us to the value of many of his ideas.

Geographical details are equally as important as the broader conceptions of the strategists. Perhaps the best example of the value of an intimate knowledge of terrain and a complete adaptation to environment is given by the initial successes of the Finns in the Russo Finnish War, 1939–40. Others come readily to mind, but a quotation from an article by Professor E. G. R. Taylor is particularly relevant. "The line drawn on the map (a derivative of the old 1/80,000) to mark a certain Normandy river in the line of advance was broken between two points. A draughtman's error was assumed and the course of the river reconstructed. Actually, however, it was limestone country and the water

had simply disappeared underground. Further deductions were, however, made from the size and character of the drainage areas as to the approximate width and depth of the river in its different reaches, and dispositions for crossing it were made accordingly. But in point of fact the upper waters above the 'perte' pursued an independent course by underground channels to the sea, while the beheaded river when it reappeared was an inconsiderable stream that presented no obstacle whatsoever. One moral of this tale seems to be that geomorphology should be part of the education of at least some elements of army personnel. A foreknowledge of the whole assemblage of surface features to be expected in a particular type of country, whether chalk, limestone, clay, formerly glaciated, rejuvenated or whatever it might be, would allow of valuable forecasts as to water supply, vegetation, location and grouping of habitations and many other matters. Conversely, the presence of certain tell-tale features on the map would indicate to the trained observer the character of the terrain; the boundary between chalk and clay, for example, with all its implications for good going, is sharply marked. Modern geography, however, is not included in the education of the young officer, and an examination of his map-reading manual, excellent though it is in many respects, reveals an astonishingly meagre and outmoded vocabulary for the description of surface relief—a vocabulary that can be traced back to the French military manuals of the last century. An object for which we have no name is likely to go unnoticed, or at best be very clumsily described, and an officer's reconnaissance notes would certainly gain were he master of the rich and precise topographical vocabulary which geography employs."

This is a part of Professor Taylor's answer to those who admit the importance of geography but insist that effects are so obvious that no special training is needed to detect them. Nevertheless, it should be remembered that geographic conclusions from soldiers with inadequate geographical training are perhaps less dangerous than strategic or tactical conclusions from geographers with inadequate military training. This is important and has been discussed at length by Colonel Sidman P. Poole (USA) in a paper entitled "The Training of Military Geographers."

In time of war (and it is then that the prestige of the geographical profession is highest in military circles) geography plays a dual role in military operations. There is first of all the contributions of experts and specialists in various intelligence

FLASHBACK

On March 9, 1945, the 4th Canadian Armoured Brigade fought its last engagement with the enemy west of the Rhine. On the morning of that date, the Lake Superior Regiment with a squadron of the Governor General's Foot Guards carried out a rapid encircling movement in the wood between Bonninghardt and Winnenthal. Ninety prisoners were captured without a single Canadian casualty. Then the Grenadier Guards, with a company of the Algonquin Regiment, mounted an attack on Winnenthal itself. This proved to be a tougher nut to crack. Early in the afternoon, the Lake Superiors and tanks of the GGFG joined the attack. After an all-night battle the enemy admitted that the combination of infantry, tanks and flame-throwers was too much and about 200 hard-bitten paratroopers surrendered.

The 4th Canadian Brigade included the Governor General's Foot Guards, the Canadian Grenadier Guards and the British Columbia Regiment. The Brigade landed in France in July 1944 and fought throughout the remainder of the European campaign until final victory in May, 1945.—*Directorate of Public Relations (Army), Army Headquarters, Ottawa.*

MILITARY GEOGRAPHY

(Continued from preceding page)

agencies who provide detailed topographic and climatic information upon which the planning of an operation is partly based. Secondly, there is the role of geography as "a necessary part of the habitual background of intelligent thinking;" this is important in the determination of higher policy and is perhaps most neglected in peacetime.

It has been the purpose of this paper to indicate briefly that both eminent soldiers and eminent geographers are convinced of the importance of military geography as a subject of special study in any army. Much could be done to raise its prestige in Canada, and this need not affect the place of military history in the curriculum. Quoting again from Colonel May's address delivered 45 years ago: "It is because they stir the imagination that Military History and Geography are so valuable to the soldier, enlarge his horizon and foster military instinct. We cannot profit by one without a knowledge of the other, and some of the most difficult problems that puzzle generals are in their essence geographical."

SOVIET MILITARY ORGANIZATION

II: Rise of the Soviet Army *

The Civil War in Russia produced a group of self-made strategists who believed that they had discovered a new revolutionary military doctrine which relegated to the past the theories of the old army generals. This group of Communist militarists was led by Mikhail Frunze and included Voroshilov, Gusev, Tukhachevsky and many others. In opposition to Frunze stood the belligerent Trotsky who was supported by some of the ablest military thinkers of the old army. Disregarding the possible consequences of opposing the ardent young Communists, Trotsky vigorously fought against this revolution in military doctrine which held that the Red Army should abandon all methods of warfare based on old foundations. The ideas which stood in conflict were many.

The pure Communists, militarily immature but nonetheless recently successful leaders in mobile campaigns of the Civil War, believed that they could overthrow conventional military theories and doctrine in the same manner that they had caused a political upheaval. They looked to Karl Marx for guidance but finding little there, they turned to Engels who had taught that the emancipation of the proletariat would create new forms of warfare. However, they overlooked a fact that Engels had pointed out—that it would take time to introduce drastic changes. Young leaders of the Red Army were deficient in knowledge of military history but nevertheless they wanted a militia-type army. They visualized wars of manoeuvre employing small bodies of forces and they held that their army should be the first to attack.

Trotsky contended that Soviet Russia, weakened as she was by years of warfare, should encourage military studies and create and arm a large well-trained army for defensive purposes. He and his supporters viewed the problems in terms of more maturity and experience. The arguments grew in intensity until the military issues became political ones. Trotsky's fiery arguments that the Soviets must learn the ABCs of

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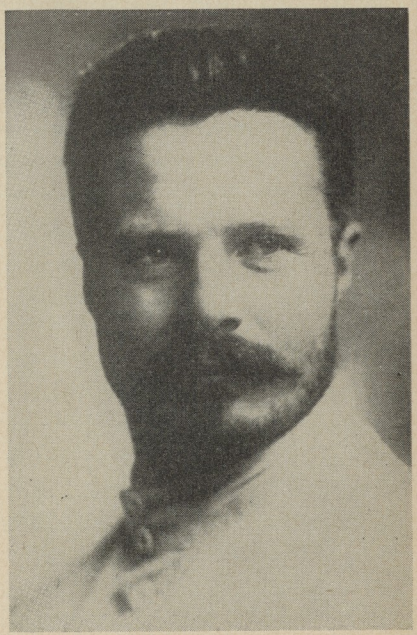
National Archives (U.S.)

Leon Trotsky who was deposed as War Commissar in 1924. He was succeeded by Militarist Mikhail Frunze.

the military art before creating new doctrine fell on deaf ears, alienating him from the commissars and political leaders and widening still further the breach between the old and new army officers. It was obvious that if Trotsky's group won out the former Tsarist officers would be in the ascendancy in the new army. But "Marxian" military doctrine prevailed. Trotsky failed to complete the postwar reorganization of the Red Army along the lines which he championed. In 1924 Frunze became the *de facto* chief of the Red Army. He had proved his military skill in the Civil War and later demonstrated organizational ability as he built up and reshaped the armed forces in 1924 and 1925.

The Soviet War College had by this time graduated new general staff officers but since they lacked experience Frunze wanted to retain the old army officers. These former Tsarist officers, however, were considered by the Red clique of commanders as being apart from them. The cleavage had been made and time was all that was needed to eliminate them and give the army its "purer complexion."



Keystone View Company

Mikhail Frunze

Frunze invoked a series of important reforms which were to have lasting effect on the future fighting capabilities of the army. Great efforts were made to "polish" and school those politically reliable officers who lacked formal and military education. The entire administrative structure of the army was simplified and recast. To build reserves a standardized system for military service was established.

The army was placed on a territorial-militia basis with about one-third of its strength placed in the regular army. This system was adopted primarily for budgetary reasons since the upkeep of a regular army soldier cost about two and one-half times that of a territorial militiaman.

From its inception the Soviet government sought to make the Red Army new, to distinguish and disassociate it entirely from the pattern of the Tsarist army. Where the Soviets did range back in history for military antecedents, they delved far back, as is illustrated in the adoption of the peculiar head cloth that characterized the Red Army uniform of the 1920s. This item of headgear resembled the old Slavic helmet worn by legendary Russian heroes of antiquity.

Having brutally disposed of the White forces during the Civil War, the Communist Party and military circles sought from the past history of the Russian army the reasons for the humiliating defeats of World War I. The conclusion was reached that the previous system of discipline was outmoded and that too little attention had been given to the life of the soldiers. Having successfully fought to destroy all aspects of the Imperial Russian Army and its traditions, the Soviets could not then say that Suvorov had led a similar reform in respect to soldiery. The Soviets clearly recognized, however, that Suvorov had established a precedent. In World War II the Soviets were to revive and glorify the Suvorov legend.

In the early 1920s all of the old forms of military discipline had been completely discarded. Even officer titles were no longer in use. It was an army of salaried classes and no ostensible officer ranks.

There were still dissident elements in Russia and the loyalty of the army had to be insured. Thus a political and cultural campaign was launched to indoctrinate the army thoroughly and associate it more closely with the people. The political administration of the Red Army grew into a giant apparatus that managed and directed propaganda trains, unit libraries, show troupes, newspapers and a variety of other political and cultural activities. The Central Theatre of the Red Army was established in

Moscow. The regimental clubs for officers and soldiers were managed by commissars and exploited as instruments of propaganda. The political administration of the Red Army established a system of military newspapers. The central organ of the army then as now was Red Star. In addition many military districts, army corps and divisions had their own dailies while regiments published weekly or semi-weekly journals. Factories and theatres were made sponsors of military units to insure a closer tie between the civil and the military. Thus the Soviets energetically welded together their military force whose strength after the Civil War was maintained for a number of years at 562,000.

There was one factor, however, which disturbed the Soviets. Despite efforts to build and maintain the army according to their own methods and abilities, they continued to rely partly on the military specialists who were holdovers from the Tsar's army. Even Stalin for all his much-touted military talent in the Civil War had only directed a few thousand men and none of the Soviets in power had thorough military backgrounds.

To improve further the position of the commanders, definite limitations were placed on the powers of the political commissars in the 1924–25 period and the principle of unity of command was partially established. Beginning in 1925, the Army was able for the first time to plan and systematize its training programme and to standardize its equipment.

Beyond the reforms of Frunze which were carried on after his death by Voroshilov, the greatest impact on the organization and composition of the Red Army resulted from the industrialization of the USSR under the Five Year Plans. Both Frunze and Voroshilov repeatedly stressed the fact that the technical equipment of the Red Army was inferior to that of many European nations. During the first decade of Soviet power the backwardness of Russian industry prevented any marked improvement of the Soviet position. However, under the Five Year Plans which began in 1928 the USSR provided its army with improved weapons and modern equipment. There was a gradual increase in the mechanization of the army.

In 1934 the Commissariat of the Army and Navy was reorganized and redesignated the Commissariat of Defence. The general command structure of the army was adjusted to the demands of increasing mechanization and modernization.

The General Staff Academy was established in 1935. The white and red colors of the old imperial general staff were given to the

National Archives (U.S.)

Early units of the Red Army marching through the streets of Moscow. By 1921 the Red Army strength exceeded 5,000,000 men.

members of this academy as were other old uniform distinctions. In 1936 officer titles and regular promotions were reintroduced in the Red Army.

Russia's leaders put their faith mainly in the ground forces. Both the Soviet air force and navy still are considered to be of secondary importance to the Army.

The Soviets were attentive to future developments. They were the first nation to experiment on a large scale with airborne troops. During Kiev manoeuvres in 1934 an infantry brigade was dropped from aircraft for the first time in military history. German army observers witnessed this experiment. The Germans later developed the airborne technique well beyond that of the Soviets whose small number of airborne troops were unskillfully employed and decimated in World War II.

The artillery arm received considerable emphasis as the Red Army progressed in organization and strength. A variety of good weapons was developed and manufactured in quantity. Stalin favoured artillery and labelled it the "God of War." Frunze gave the arm its early impetus.

Many propaganda devices, including a controlled press, were—and still are—used in the indoctrination and ideological development of Soviet troops and the home front.

Soviet military chiefs placed considerable faith in the cavalry. They enlarged the cavalry to about forty divisions by 1940 and progressively

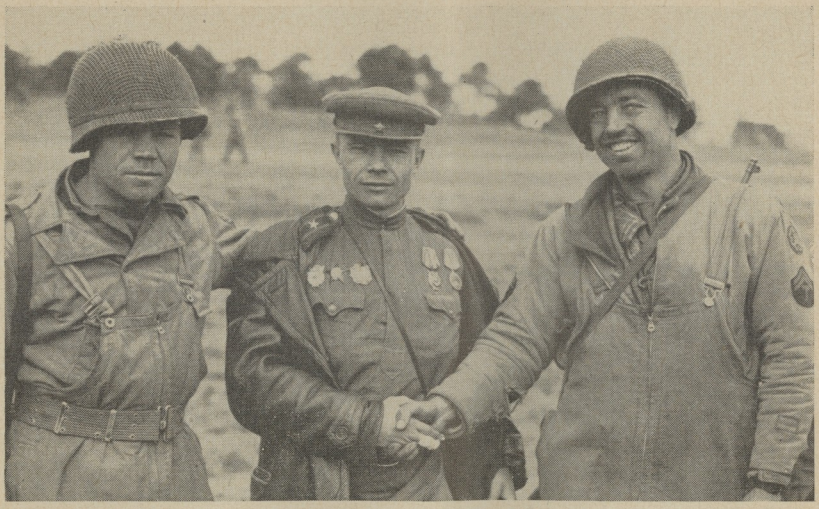
armed it with heavier weapons which gave it the staying power that the lance-minded Polish army lacked in 1939.

The great Red Army purge of 1937 struck the Soviet people like a thunderbolt and greatly shocked the world. The Soviet newspapers headlined "For Espionage and Treason to the Fatherland—Execution by Shooting." Eight high-ranking Soviet generals including Marshal Tukhachevsky had undergone trial and were shot. The purge did not stop here. Seven military district commanders disappeared as did Marshal Bluecher, the renowned, talented and popular commander of the Far Eastern Red Banner Front. His exact fate is still unknown. Smirnov, the Navy Chief, also vanished along with the Deputy Commissar of Defence, Marshal Egorov, and the head of the military aviation. The bloody purge went deeper into the Red Army. It has been estimated that more than 30,000 of the commanding officers of the Army and Navy were executed or imprisoned. For the most part these officers were never seen again but there is one known exception. General Rokossovsky—a cavalry corps commander in 1937—returned from prison-exile in World War II to become a marshal.

The purge made it evident that a conflict of major importance had arisen between a large section of the Red Army leaders and Stalin's clique and that the political machinery designed to insure army loyalty to the Party had failed. By its mass executions the Soviet government indicated its own fear of opposition and its brutal strength of suppression. Even before 1937 the former Tsarist officers had lost a great deal of their influence and numbers but after the purge they were exceedingly rare within the Army.

About two years before the purge the commissars were professionalized by a decree which placed them in nine graduated ranks to correspond with commanders. The *Politruk* (political director) served the lowest elements while commissars were designated for battalion and higher units. Privates could be *politruks*, thus opening the way to power for active Communists in the lowest ranks. Decrees concurrent with the purge of 1937 reinstituted the commissars in positions of dominant control as a precaution against future disaffection. Fear and suspicion followed in the wake of the purge. Discipline was unfavourably affected. In some units the burden of maintaining discipline fell on the commissars. The prestige of military commanders had reached a new low.

Having found new organizational form under the administration of Marshal Voroshilov, Commissar of



U.S. Army Photograph

The historic link-up of American and Soviet troops in April 1945 hastened victory in Europe.

Defence from 1927 to 1940, the Red Army began to increase in size. By 1934 the announced size of the standing army had increased from 562,000 to 940,000. In 1935 the Army rose to 1,300,000 and in 1938 the territorial-militia system was abandoned as the Army was placed on a regular basis. By 1939 the Red Army was more than 3,000,000 strong.

In this period the Red Army had tested some of its men and equipment in the Spanish Civil War and skirmished with the Japanese army. The Red Army finally fought the Japanese in the Far East in two large engagements—at Lake Khasan in 1938 and at Khalkhin-Gol in 1939. It was in these battles that Marshal G. K. Zhukov gained early fame and the Soviet armoured forces surprised the Japanese. Here the Soviets had also developed and used an underwater bridge.

For the purpose of buying time against Hitler and not the least hesitant to acquire new territories in Europe, Stalin concluded a non-aggression pact with Germany in August 1939. Soviet troops marched into Poland.

In contrast to the USSR's claim of inadequate military preparation for defence of its borders was her aggressive and unwarranted attack on Finland in November 1939. The world witnessed a poor showing

of Soviet military might against a power inferior in numbers and armament.

The debacle of the Finnish war caused many changes in the Soviet Army. Marshal Timoshenko, who finally managed to break the strong Mannerheim Line, replaced Voroshilov as Commissar of Defence.

Having emerged the victor in the Finnish war the Red Army recognized the degree to which it had been outfought. A period of reorganization and change set in. Disciplinarian Marshal Timoshenko quickly introduced much-needed reforms, the first of which was the abolition of political commissars in August 1940. This change was motivated by the fact that the commissars had interfered in the proper execution of military assignments during the war against Finland. A new and more severe Disciplinary Code replaced the one of 1925. The salute was reinstated.

The Russian Army that Germany was soon to cut up and force backwards was a different army from the one which had suffered ignoble defeat at Tannenberg, yet it had some of the traditional Russian military defects. At the outbreak of war the leadership of the Soviet Union's three giant army groups was in the hands of Budenny, Voroshilov and Timoshenko — trusted comrades of Stalin in the Civil War. The army groups were too big and unwieldy in proportion to the talents of the men who led them, but Russia could replace the hundreds of thousands of men lost and there were others who could step into the shoes of those leaders who failed. The Red Army was ill organized. For all of its 22,000 tanks, the Army's armoured power was not in a combat form to deal effectively with the 2000 German medium tanks to be committed against it. Two-thirds of the Red Army tanks were lost in the first few weeks of the war. The essential difference between German success and Soviet failure lay in the employment of armour. The purge of 1937 was still felt. The Red Army had young and aggressive leaders but their initiative had long been stifled.

However, the Red Army was to correct these deficiencies in 1942 and 1943 when the rear services were reorganized. Armour was built up and formed into effective tank and mechanized armies. In mid-war the Army was to correct its deficiency in mortars and raise its morale by the introduction of new decorations and uniforms which copied those of the Tsarist armies. The guard unit system was revived. Like Napoleon, Stalin was to create many marshals—29 altogether.

And as the Red Army grew into its strength of many millions, the

U.S. Army Photograph

Rapid progress in the modernization of Soviet combat forces in the Second World War is typified by these heavy tanks entering Leipzig, Germany, for occupation duty.

Communist Party conducted a campaign within the Army to recruit new members. The Party could not afford to let the military become too strong.

The memory of Russian participation in World War II is still fresh. Hitler's armies crossed the Soviet border in great strength on 22 June 1941. Suffering early reverses, the Red Army reeled before the German onslaughts in apparent disorder. At times, however, that same Army brilliantly executed difficult withdrawals in the face of overwhelming Nazi might. Men, material and space were sacrificed extravagantly to gain time to strengthen her defences and at the same time soften the effects of German surprise and military superiority. Russia's employment of a "scorched earth" policy and her skillful use of guerrilla-type warfare further complicated the German offensive.

The German timetable received a setback in the fall of 1941 as the Red Army stiffened before Moscow and bitter cold made more difficult the operations of the Wehrmacht. An ever-growing stream of lend-lease weapons and equipment from the United States was added to fresh war supplies from Russia's relocated industries east of the Urals to bolster the grimly resisting Red

forces. The sieges of Leningrad, Sevastopol and Stalingrad are symbols of the determined resistance of the Red Army. The 162-day siege of Stalingrad ended in January 1943 to turn the tide in favour of the USSR. Some 330,000 German troops besieging the city were encircled and the forces of von Paulus were either captured or destroyed.

After Stalingrad, the victorious westward march of the Red Army began. One by one the fallen cities of Voronezh, Kharkov, Rostov, Sevastopol, Odessa and Kiev were rewon by the Russians. In all nearly 700,000 square miles of Russian territory were cleared in three years of fighting. Soviet and German personnel losses numbered in the millions by mid-1944. In addition, tens of thousands of tanks, guns and planes were lost on both sides.

While the team of General Bradley and Marshal Montgomery drove towards Berlin across the north German plains and the armies of Generals Patton and Patch spearheaded through south Germany, Marshal Zhukov's forces closed in on the capital from the east in the spring of 1945. Surrounded and beaten, the decimated German forces surrendered unconditionally to the Allies on 8 May 1945.

U.S. Army Photograph

Despite mechanization (opposite page), the Soviet Army relied heavily on horse-drawn transport. This column formed part of the same occupation force entering Leipzig in 1945.

The lessons of World War II left their imprint on the Soviet Army. From them sprang new combat tactics and improved design and production of war materiel with special emphasis on tanks, artillery pieces and other ground force weapons.

The Soviet Army entered the post-war period as the most powerful ground force in the world. Certain deficiencies remained in the areas of technical equipment, technical skill and in the professional qualifications of many of its officers but these shortcomings were being corrected.

Although the post-war Soviet Army ground force was reduced to perhaps less than one-third of its VE day strength, it had much greater mobility without having sacrificed its hard-hitting capabilities. This smaller force retained approximately the same number of organic tanks as in the larger establishment. While many inferior infantry units were being inactivated, other infantry divisions were built up with increased transportation, greater artillery firepower and the addition of organic armoured elements.

In 1946 the USSR reorganized its armed forces by integrating the Army (along with its air arm) and the Navy into a single Ministry of Armed Forces. Under the provisions of the reorganization decree, the newly unified Soviet Armed Forces were comprised of equal components—ground, air, naval and supply. Despite this theoretical equality, however, the new Armed Forces General Staff was made up primarily of officers from the ground force. Nevertheless, the reorganization placed greater emphasis on the roles of the Soviet Air Force and Navy in future wars.

(To be continued)

RADIO TELESCOPE

A 600-inch "radio telescope" is being installed by the [U.S.] Navy at the Naval Research Laboratory where it will be used to study radio "signals" from the sun, moon, and the stars. Although energy is continually emitted from the solar system, visual study of these radiations is limited to two windows—one, the range of the spectrum, the other, the microwave radio range which enables much greater study. The visible portion of the spectrum is only a very small portion of the whole. It is hoped that the high sensitivity will permit observers to distinguish between different areas on the sun, and thus study sun spots and hydrogen "flares."—*Marine Corps Gazette (U.S.)*.

MINE TERROR

FROM AN ARTICLE IN "ALLGEMEINE SCHWEIZERISCHE MILITARZEITSCHRIFT" (SWITZERLAND). *

In the same way that the fear of a sudden tank penetration can influence the thinking and actions of personnel engaged in a defensive operation, fear of mines can influence the thinking and actions of personnel engaged in offensive operations. "Mine terror," by its very nature, produces a restraining effect on troops which reduces their initiative and offensive spirit. Troops, unexpectedly entering mine fields, not only suffer casualties from the weapons themselves, but develop a fear of the unknown, expecting to find mines wherever they step. This fear is further increased when offensive action is conducted at night or under adverse weather conditions.

A Major Problem

The various aspects of "mine terror" did not originate during World War II. They played an important role in the operations conducted during World War I, when wire entanglements with mined areas in front of them were difficult positions to break through. The fear of unexploded mines was ever present; even artillery fire was unable to detonate all the mines and clear a path for the attacking forces.

Experience in World War II showed that "mine terror" held the same fear for attacking forces.

The Russians were masters in the employment of mines; something which the Germans learned very quickly. During the campaigns in Russia, German troops would slow down and become overcautious once they encountered mines, even when barbed wire and other obstacles were not employed.

The Russians never forgot to sow their retreat routes with mines. These weapons had to be reckoned with even in hastily occupied lines of resistance. German troops passing through cultivated fields or open country often came onto irregularly strewn mine fields, which produced a feeling of uneasiness in the advancing units, inflicted damage on their cross-country vehicles, and produced numerous casualties. The consequence of this was "mine terror," which forced the Germans to advance with more caution; hence, more slowly.

Mines planted on the edge of woods and along forest paths and roads proved to be especially effective. Troops encountering mines at the

*This digest is reprinted from the Military Review (U.S.).—Editor.

edge of a wooded area were extremely cautious in moving through the entire area. This caution was increased further by the poor visibility in wooded areas, and a feeling of uncertainty induced by the physical aspects of the terrain.

Extensive Use of Mines

On the Eastern front, the use of mines had an unprecedented effect on both sides. Mine fields containing 10,000 to 100,000 mines were common, and the terrifying effect of these large, mined areas influenced the tactical operations of both sides.

For example, a Russian mine field containing several thousand mines was discovered in a wooded area which was anticipated as an assembly area for several German armoured divisions. Since there was neither the time nor the equipment available for an extensive demining operation, the assembly area had to be shifted to open terrain.

An indication of how quickly units can be overcome with "mine terror" was demonstrated in the area northwest of Moscow, in 1943. Unconfirmed reports had been circulated that the Russians were using dogs carrying mines to knock out tanks. These dogs were supposed to be trained to seek refuge under approaching tanks, whereupon a contact rod on the dogs' backs would cause the mines to explode. This report, and the resultant "mine terror," caused the Germans to shoot all dogs in the area.

Even staffs were not immune to "mine terror." Troop commanders and their staffs repeatedly ran onto mines during offensive operations and were killed or injured. This prompted them to be more cautious, thereby influencing their actions and decisions for future operations.

Combatting 'Mine Terror'

It is generally agreed that experience and training are the best methods for solving fear of the unknown. The same is true as regards overcoming "mine terror."

It may be argued that the laying of mines, their removal, and their neutralization are specialized tasks which should be left to the engineers. However, in combat there are never enough engineer troops to handle the mine problem in all areas. Therefore, if all troops are trained in the proper techniques of handling, laying, removing, and neutralizing mines, the problem of "mine terror" can be eliminated.

The Germans found that the training of personnel in the handling of mines and demolitions was an excellent means of preventing or reducing "mine terror."

In 1943, a German corps was faced with the problem of breaking through an extensive mine field on its

front. The success of its primary mission was based on surprise and speed, and any bogging down on the edge or in the middle of the mine field would have jeopardized its chances for success. Since the corps front was narrow, and most of the personnel were behind the line in reserve, it was decided to attempt a large-scale training programme covering the handling of mines.

The training began with small groups working with dummy mines. When the training had progressed, live mines were used. The final training consisted of exercises simulating actual combat operations in mine fields. During the successive phases of the training, the fear of mines gradually disappeared.

The value of the training was demonstrated by the speed, initiative, and "know-how" of the troops as they penetrated the mine fields on the first day of the offensive. The operation was not only a success, but casualties were extremely light.

On the other hand, the service troops, who had not been schooled in the methods of handling mines, suffered most of the casualties. Curiosity, carelessness, and the belief that there could be no danger in an area through which the combat forces had already passed were the causes of most of the losses.

Summarizing, it may be said that "mine terror," like "tank terror," can be avoided by training troops in the handling of mines. If troops are trained to meet a particular situation, even if it is encountered as a surprise, they will be able to react to it in a calm and efficient manner.

Russia Building Fleet

A report from England recently gave increased emphasis to reports that Russia is building up her fleet.

An unofficial survey, "Brassey's 1950 Annual" reported that the USSR has recently completed two 35,000-ton battleships, one or two aircraft carriers, plans to build two more battleships, and is increasing her submarine strength to 1,000 by the end of 1951.

The 65-year-old publication noted that "There is an impression of unreality about this Russian naval expansion, if only because it seems to be based on a faulty conception of modern naval requirements." Brassey's also estimated a Russian army of 3,000,000, with trained manpower reserves approaching 13 million by 1954.—*Army-Navy-Air Force Journal (U.S.).*

HOW LONG IS A DAY?

By
Lt. Col. J. A. Stairs, MBE, Directorate of Armament Development,
Army Headquarters, Ottawa

"How long is a day?" One would think the answer was quite simple. A day is obviously the time taken by the earth to rotate once on its axis. But wait—let's see.

The easiest way to measure earthly rotation is to note the time taken by some object such as the sun or a star to go once around the sky—from some position on the meridian until it returns.

Now this lands us into many complications. First, we find that the rotation as measured by the sun is about four minutes longer than the rotation as measured by a star. Then we also find that the sun-measured day varies during the year and the "about 4 minutes" just mentioned is only an average figure taken over the 12 months.

The most accurate "day" is measured by the star method. The stars are so far away that their position hardly seems to change even over the centuries and this virtue of appearing fixed makes them good markers. However, even though the stars can serve in measuring as accurately as is possible one exact rotation of the earth this is NOT a siderial (star) day. Actually, the siderial day varies from one exact rotation by about a hundredth of a second. Why? Because the earth not only spins on its axis like a top, but it also wobbles on its axis like a top. One complete wobble takes over 25,000 years. Slow as this movement is, it still is enough to make the difference mentioned.

As for the solar or "sun" day, the reason it is about four minutes longer than the siderial day is seen in Fig. 1. The earth is not only spinning on its axis but it is also going on its yearly journey around the sun. This makes the difference. In Figure 1 the sun is overhead at (A) and one exact rotation brings the observer around to position (B), but no sun overhead because the earth itself has moved. About 4 minutes later the sun is overhead again at (C).

But that isn't all. During the yearly trip the earth's distance from the sun varies and as it comes closer it moves faster, in the same way that a shortened clock pendulum will swing faster. This means that it moves further during a day and consequently the distance BC in Fig. 1 becomes greater and the day is therefore longer. As the earth gets farther away from the sun, it moves more slowly,

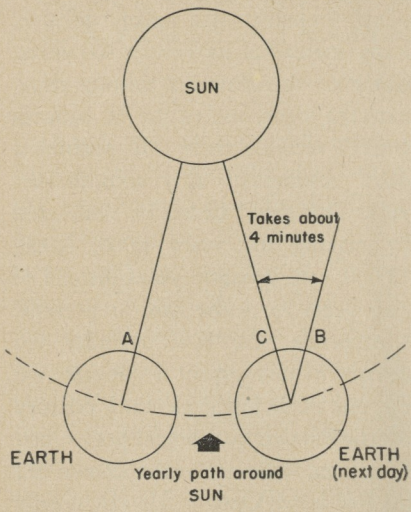


FIG 1

does not go as far and BC grows less, giving a somewhat shorter day.

Another variable arises because the earth's axis is tilted and in the springtime this makes BC (Figs. 1 and 2) a north easterly movement, of which only the west east portion BD (Fig. 2) affects the length of the solar day. The same happens in autumn.

Thus the solar day becomes rather a changeable affair. For this reason we have two types of solar day—the apparent and the mean. The apparent solar time is the one with all the variables. It is the time told on sundials. Mean solar time simply smoothes out these variables. It is as though we used a fictitious sun so that the distance BC in Fig. 1 remains the same every day in the year in spite of what the apparent sun does due to the earth's tilted axis and varying speed.

The time lag, or lead, which separates the apparent from the mean sun is called the Equation of Time and on any globe of the earth it is given (roughly) by the analemma, which looks like a big figure "8" located in the Pacific between the Tropics of Cancer and Capricorn.

The exact difference between the siderial and mean solar days is 3 minutes and 55.909 solar seconds. As both days are divided into 24 hours of 60 minutes and 60 seconds each, the siderial second, minute and hour

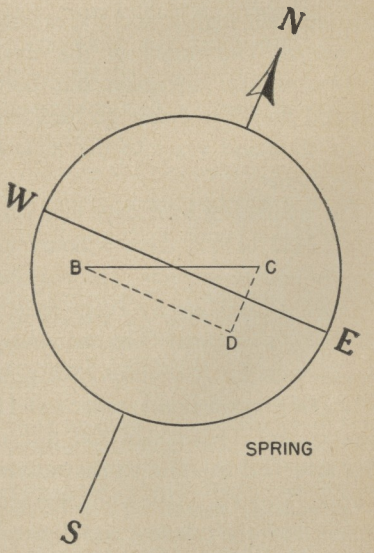


FIG 2

are all shorter than their solar counterparts. There are 366¼ days in a siderial year.

Standard time, the one in common use, is the mean solar time for a meridian chosen as the standard in an area called a time zone. Atlantic Standard Time is taken on the 60-degree meridian West of Greenwich, Eastern on the 75th near Ottawa, Central on the 90th, and so on every fifteen degrees. Daylight Saving is just a scurvy trick to get everyone out of bed an hour earlier!

Who split the day into 12 hours of light and 12 of dark is not known. Originally the hour was variable—12 long hours during the long summer days and 12 short hours during the short summer nights, and the reverse in winter. The origin of the sixty division is also unknown but both this and the 12 probably go back five or six thousand years to the earliest civilizations.

The number of solar days in a year is 365.2422 or 365 days 5 hours 48 minutes and 46 seconds. The fraction of a day is taken up by every fourth year being a leap year. This, however, over-corrects for it assumes each year to be 365 days 6 hours, which is 11 minutes and 14 seconds too much. This error led in 1582 to the reform of Pope Gregory XIII, who dropped 10 days from the calendar and decreed that, in future, centuries which were not divisible by 4 would not be leap years. In effect this makes only 97 leaps (instead of 100) every 400 years. But even this does not wholly eliminate the error, and of the 11 minutes and 14 seconds there still remains a small residue of 25.9 seconds per year. This could all but be eliminated by making the years 4,000, 8,000, 12,000, etc., common years instead of leap years as is the case at present. Meanwhile, the best calendar yet devised in this respect is not our own but one made in the eleventh century by the Persian astronomer-poet Omar Khayyam, who is better known for his Rubaiyat. Omar's calendar is only out by a shade more than 1 second a year. It is astonishing to think that such accurate measurements and computations were made in the Moslem world some 20 years before the impact of the first crusade.

TIME IN WAR

The *time* concept in war has changed astonishingly during the last decade. Aside from giving tremendous advantage to an aggressor who strikes without warning, the world's new inventions have so altered the time and space factors that there is little hope in these days for the nation who must do her planning after war starts.—*Armed Forces Talk* (U.S.).

DON'T JUMP TO TANKS

Lt. Col. William R. Kintner in the United States Army Combat Journal*

During the first critical summer days of the Korean war, marked by the long retreat back to the Pusan bridgehead, the Soviet-made T34 tanks used by the North Koreans were a formidable menace. The impressive gains made by the North Korean tanks inspired considerable criticism of our Army's armour. Now that this particular "tank crisis" has passed we are in danger of not weighing these enemy successes with balanced judgment and concluding that this country's security requires tanks—tanks out of all proportion to their value to us. We like a simple answer to our military problems, and we know that American industry can turn out a lot of tanks. But let's not jump to simple conclusions or too many tanks. The first waves of Red tanks which rumbled across the 38th parallel had a heyday. None of armour's arch enemies was available to the defence at the time these Red tanks chalked up their big gains. But once these enemies made their appearance, the invading tanks lost their effectiveness on the battlefield and their space in American headlines. The natural enemies of the tank form an air-ground weapons system comprising the land mine, the bazooka (with the shaped-charge warhead), artillery, the rocket-firing aircraft, and engineer units equipped to neutralize or destroy paths suitable for tank travel. This system developed with surprising speed in Korea and once it became effective, the T34 lost most of its potency.

Exploiting surprise, the North Korean Reds routed the poorly armed Republic of Korea forces. The chaos and disorganization of retreat left no time to sow minefields, demolish bridges or devise tank traps. USA units hastily thrown into action were not fully prepared to withstand the armoured attack. There were obvious deficiencies in training and equipment.

None of the elements of an effective anti-tank weapons system was initially present and the rolling hills of central

Lt. Col. Kintner is author of The Front Is Everywhere.—*Editor.*

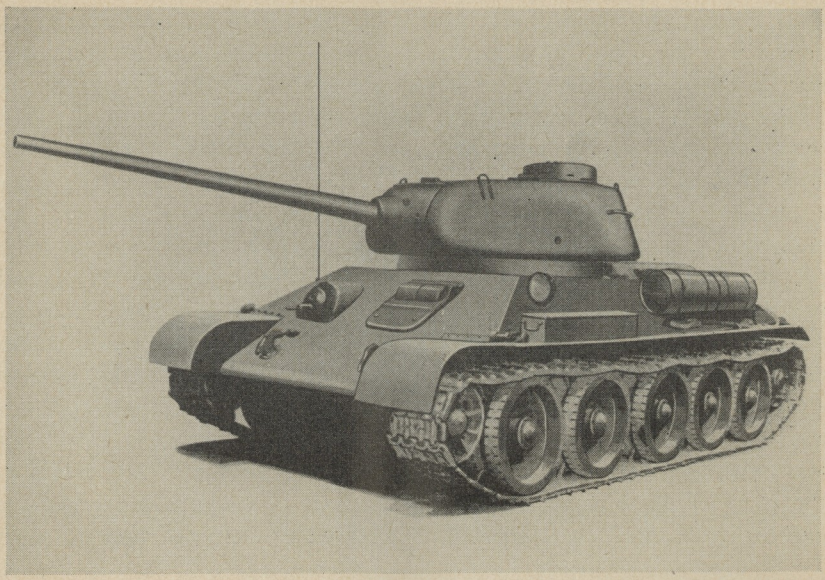
In last month's issue the Journal published an article by a Canadian commander entitled "What Is Tank Country?" The accompanying article by an American officer presents another aspect of tank warfare. The attention of the reader is also drawn to a British officer's opinions on still another phase of the armour question which are published on page 62 of this issue under the title "This Universal Tank Controversy".—*Editor.*

National Defence Photograph

The 25th Canadian Infantry Brigade in Korea are replacing the 17-pounder anti-tank gun with the light (160 lb.) and very effective 75 mm. recoilless rifle. This weapon was developed by the U.S. Army in order that the infantry would have a readily portable gun capable of engaging destroying armoured vehicles. In this photograph members of the 2nd Battalion, The Royal Canadian Regiment, are seen firing the rifle.

Korea became tank highways rather than tank traps.

In the resentment against our repeated losses, the significance of our tankless forces in the field struck the American people and a hue and cry arose for tanks and more tanks. Many of the Army's armour advocates led the swing with the axiomatic statement that the best anti-tank weapon is a tank. Even if the matter were limited to the issue of stopping a single tank, this appears highly questionable. The outcome of a tank duel would to a large degree depend on who fired first. It could depend on the tactical situation as well. A tank on the defence, in a dug-in position, for example, has an advantage over an attacking tank that must silhouette itself against the skyline as it seeks out its opponent. This same advantage accrues to the more mobile and less expensive bazooka, utilizing



The Russian 35-ton T34 tank. It is armed with an 85 mm. gun.

cover and concealment to balance its lack of armour.

We are less concerned, however, with the variety of means available to stop a single enemy tank than with the place of armour in the American military machine. How much of our defence appropriations should be earmarked for armour in view of our strategic commitments abroad? What is the future of armour in the years immediately ahead?

Are tanks the new cure-all for American security that they might have first appeared as we looked over our shoulder at Korea? Before reaching a conclusion, let us briefly examine tank warfare in World War II and then analyze our strategic position in the present unstable world of today.

In France, General Patton's tanks wrote some glorious pages in the history of mobile warfare. Their magnificent dashes electrified the whole world, but these end-runs did not take place until after the German front had been shattered. In July 1944, Patton's sweeps began when enemy aircraft had been almost entirely driven from the skies and enemy artillery, thinly spread over two massive fronts, was constantly under attack by our Thunderbolt fighters. The breakthrough opened rout conditions which permitted no time for German mining or demoli-

tions. Further, the terrain of northern France was tank country; in fact, it was the birthplace of the tank.

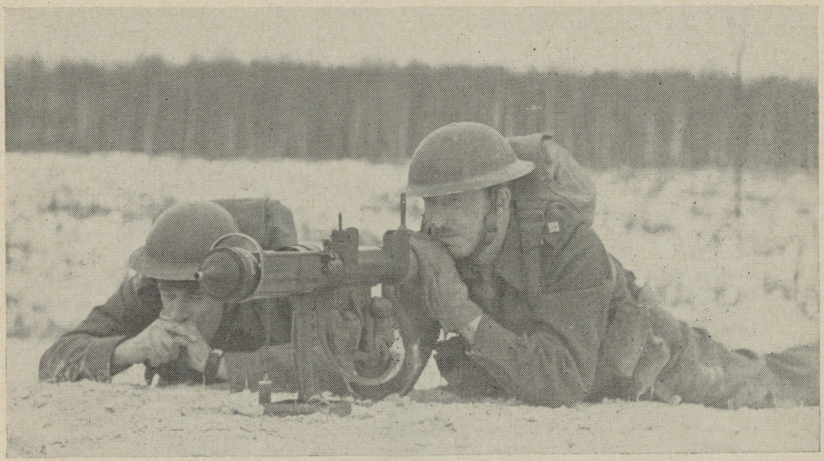
The spinning wheel of war successively brings varying combinations of fire power, armour and mobility to ascendancy. In the brief history of the tank, which has followed this cyclic pattern, Patton's epic brought the tank to the top of the wheel.

Earlier in World War II, German tanks had previously been highly effective against the Allies in France and the Low Countries. But the lessons of the German penetration of the hinge of the Maginot Line was eventually digested by the world. Guderian's blitz was concocted of a balanced combination of tanks and aircraft ideally designed to exploit the transient technical advantage then possessed by armour over fire power.

Against the Soviets, on the other hand, the German armour did not fare as well, especially after the force of the opening aggressive thrusts had been exhausted. It is true, of course, that the panzer divisions made important advances before the Soviets developed material and anti-tank tactics to cope with them. Eventually the Soviets deployed their armies in depth on a massive scale forming the land-island defence system, each

National Defence Photograph

Canadian soldiers riding on a German Panther tank captured during the Second World War.



Canadian Army Photograph

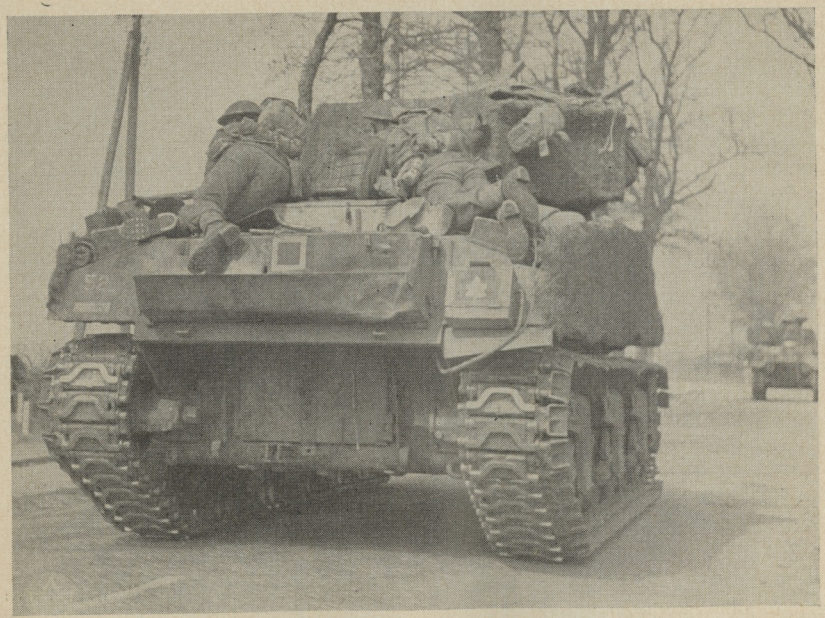
The PIAT (Projector Infantry Anti-Tank), an Infantry company weapon used effectively by the Canadians in the Second World War.

island strongpoint almost an army in itself and self-contained. As the Soviet defences and armour improved, the power of the panzer divisions declined. German armour was able to thrash around in the never-never land between these islands, but was subject to repeated losses all out of proportion to the damage inflicted on the Red forces.

Tanks in the desert played a crucial role. Yet estimates of their value changed almost as rapidly as shifts in the desert war's fortunes between the Afrika Korps and the Allies.

Three facts stand out in assaying the triumphs of US tanks in World War II. They generally were superior in mobility and control but inferior to German tanks in armour plate and guns. Secondly, our tank gains were always made under the protecting umbrella of decisive superiority in tactical air, which often overwhelmed enemy tank defences. Finally, opposing infantrymen did not possess bazookas or weapons firing shaped-charge shells. Nor were those weapons featured in the defence of France in 1940 or in the see-saw tank battles of the desert. The role they might have played in these battles and against us in our victorious march across France and into Germany cannot be assessed.

Against this survey, let us measure America's requirements for tanks at the present. We're not a nation dedicated to making aggression, but a



National Defence Photograph

A Sherman tank engages the enemy with MMG fire while moving up to Groningen, Holland, during the last war. Canadian Infantrymen lying on the top of the tank are under enemy fire.

country dedicated to a world-wide defence against it. We are not planning a surprise attack of hostile lines through which to release hordes of rampaging tanks. If total war replaces limited war, what we will need on land is a means of stopping the tide. We must hold this tide from engulfing many peoples all over the world who are not only our friends but our essential allies, all of them needed if we are to win the great struggle. This calls for weapons which can meet the requirements of an initial defence against the vast infantry-tank forces of the enemy. Thousands of relatively inexpensive and highly mobile weapons will be needed to meet this vast world-wide demand. Whatever their individual design, they must collectively comprise an effective anti-tank weapons system.

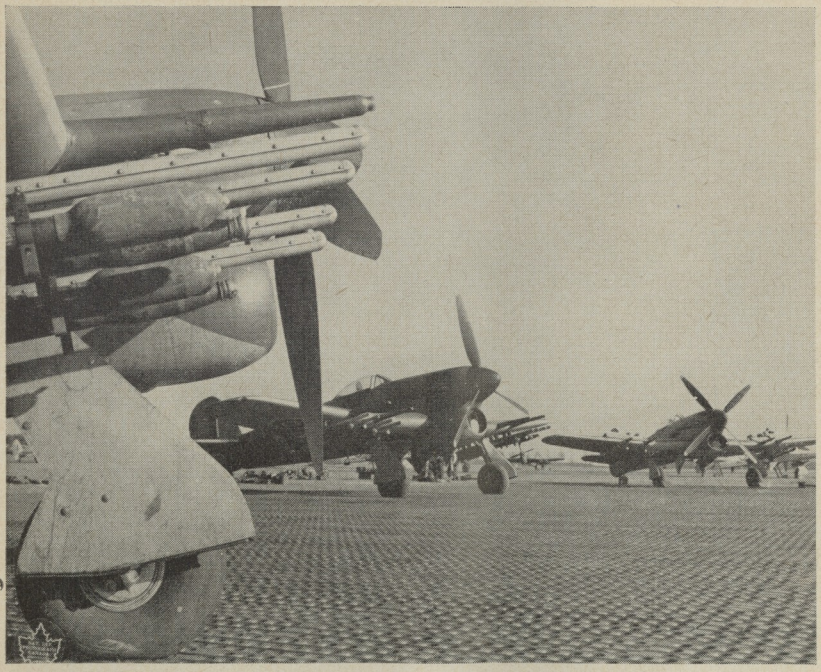
Let us look at how such a weapons system might operate. Larger bazookas using the latest ammunition—rockets with shaped charges—are lethal at short ranges. In the hands of experienced soldiers with the ability and daring to close the range, these bazookas will make it unprofitable for tanks to forage alone where they cannot be protected by cross-fire of their

brother tanks, or through overgrown country where the bazooka can lurk behind trees, hedgerows or hillocks.

When massed in open country to protect themselves from the depredations of the bazooka, enemy tanks will fall prey to flexible artillery concentrations and flights of heavily armoured, rocket-firing aircraft. If the battle terrain makes them road-bound, they will be stopped by demolitions, mines, and tank traps.

National Defence Photograph

German mines collected by Canadian troops on the Normandy beaches. They included Teller-mines and artillery shells, mainly French 75's, which were wired to beach obstacles to impede landing craft and tanks.



Canadian Army Photograph

Rocket-firing Typhoons on an airfield in Germany during the Second World War. The "Tiffies" were used in the anti-tank role.

Will this combination of weapons hold armour at bay? It looked for a time as though the T34 type tanks of the North Koreans were impervious to the bazooka, but the 3.5-inch model quickly exploded this fallacy. The dramatic rush of these weapons to the field only emphasizes the fact that we cannot be lax in forging more effective weapons for the system needed to keep armour chained.

The shaped-charge shell is a nightmare to the world's designers of armour. It can be delivered not only by bazooka, but by artillery and rocket-firing aircraft as well. This effective refinement in the design of the projectile concentrates the force of the explosion in the desired direction, rather than having it expended in all directions equally. It represents a threat to armour which can only be met by much heavier armour plate than any now employed. While the effect of even this projectile can be lessened by inclining the surface of the armour to effect a glancing impact, such inclined surfaces cannot be pre-

sented to all projectiles fired frontally, from a flank or from the air. Improved resistance to the penetration of these projectiles might be made by expensive processes which harden the steel surfaces, but at this stage of technical development, the race between explosives and armour seems one-sided. The methods of delivering the explosive forces that man has created have already far surpassed the protection that can easily be afforded by armour plate.

From this we must conclude that in the foreseeable future, tanks will either be extremely heavy, expensive, road-bound, and slow or not really tanks at all but virtually personnel and weapons-carriers, providing protection only against small-arms fire.

Fortunately, the weapons system we have briefly described fits the

National Defence Photograph

The German Tellermine, an anti-tank weapon.

National Defence Photograph

A Churchill tank laying a ramp used for crossing beach obstacles. This photograph shows an exercise being undertaken as a prelude to the Normandy invasion.

global requirements imposed by a strategy of initial defence. Land mines and demolition equipment are relatively inexpensive and simple to emplace. They are easily transported overseas and can be stockpiled near where they are likely to be used. In contrast to the tank, weapons such as these, if captured by an enemy overrunning our position, could not be transformed into a two-edged sword and used effectively against us while we are on the defensive. The more expensive items in this system such as self-propelled artillery are highly mobile and can be kept in reserve to meet major threats as they develop. Because of their high mobility, unarmoured artillery pieces are less susceptible to capture. These are the type of ground defensive weapons that we need now and should concentrate on obtaining in quantities.

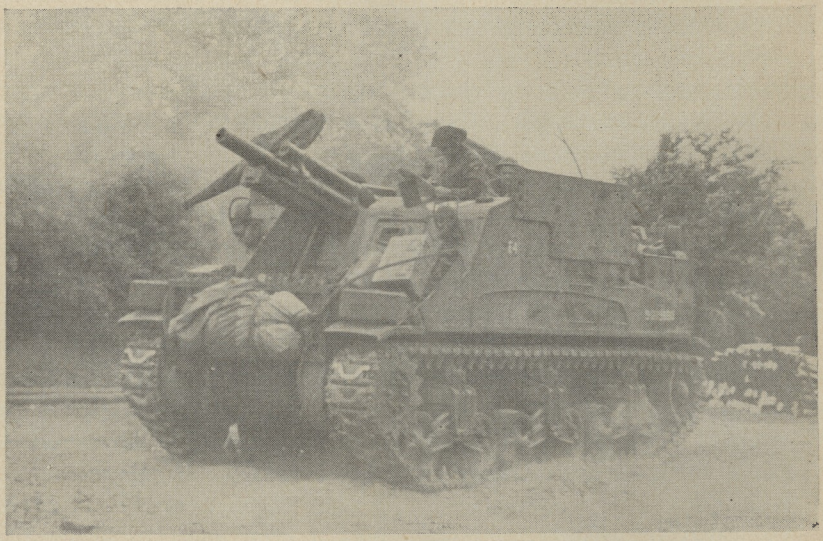
The nature of America's armour programme must be considered in conjunction with our over-all requirements in tactical air. For the initial defensive phase of any future conflict the Army's weapons must be designed to contain the enemy's armour tide on the ground while tactical air delivers the Sunday punch from the sky.

Command of the air is still an essential prerequisite of victory for our forces. (It should be obvious by now that the ratio of our divisions to those of the enemy must also be greatly improved). Without a guaranteed command of the air, our entire

military position will crumble. Yet we cannot simultaneously support a large tank programme and a vast tactical air development programme. At this critical moment, we should accelerate the production of rocket-armed aircraft capable both of fighting for mastery of the skies and of blasting enemy tank columns before they reach the line of contact. Assigning a relatively low priority to armour is the other side of the tactical air coin.

The expensive tank (in terms of labor and materials) must wait until our operations are more nearly ready to use them. Then they can be of the latest style, less vulnerable to the weapons that are lying in wait for them, and specifically designed for the locale where they are to be used.

We do, of course, need tanks today for infantry divisions and armoured units already in existence or proposed for early mobilization. These units are designed to use tanks which give them the balanced power needed for tactical flexibility in the defence. But the vast numbers of tanks we may find necessary for a great land offensive should not be bought today. Ample time to manufacture these does not exist. Time can be found for the protracted build-up (a necessary prerequisite to the launching of such an offensive) only if we find means to stabilize the initial defensive line. To build vast numbers of tanks now would be to deny our allies the



National Defence Photograph

Self-propelled artillery used in the anti-tank role.

National Defence Photograph

Canadians driving their Sherman tank through a muddy field as they advance across Germany in the last war.

defensive weapons they so sorely need, and to perpetuate our present critical shortages of tactical aircraft and artillery and bazookas.

American industry has the capability of turning out a lot of armour, but the manufacture of a large number of tanks, particularly with industry not geared for full-scale war production, would deprive us of more urgently needed munitions. For every unnecessary tank and its crew we should substitute a rocket-firing aircraft and pilot.

To match the 40,000-odd tanks marshalled by Communists would require hundreds of thousands of men to man them and more to support their effort. Even if we tried to make the tanks and recruit the tankers we would not be able to use them without putting a lot more coal on the fire. Tanks are not flown across oceans as are tactical aircraft; they are not loaded as easily as artillery and bazookas. They have to be deck-loaded on most vessels which can carry only a few. Their large-scale employment would step up our bridging requirements. It would require a great effort to place them where they could be used. They

would also necessitate a very sizable effort to resupply them for they expend great quantities of POL and ammunition.

In a possible war, we will be competing with an enemy who is fighting on interior lines of communication, using relatively short land hauls for resupply instead of transporting it across oceans. A large-scale armoured programme would result in our playing the enemy's game with the cards stacked against us. It would be an endeavour of containing him tank for tank rather than skillfully cutting away his strength.

The tank may be an ideal tool for an aggressor. With tanks the aggressor can come thundering into battle against weak forces with no warning when and where he chooses. He will employ them in that way, unless he is opposed by an anti-tank weapons system capable of blocking this type of power play.

Because the tank is primarily a weapon of the offence, and that its use on the defence is greatly limited and extremely expensive in comparison with other weapons, tanks do not represent the same dividends for American priority-conscious defence dollars.

But even in recognizing its value on the offence, let us also realize that the speed of offensive warfare is ever increasing and threatens to leave the tank, as we know it today, far behind in rapid attacks of the future. Airborne troops, permitting the strategic encirclement and by-passing of strongpoints, may mean more than tanks in tomorrow's war. The tank and anti-tank requirements of airborne forces approximate those of Western armies today. Airlift to haul heavy tanks into the landing area does not exist; yet enemy tanks represent the greatest single hazard to an airborne operation. The period between the initial drop and the establishing of a solid perimeter defence is the most crucial phase of the airborne battle. This initial defence, like the initial strategic defence of the free world must be compounded from a successful combination of rocket-armed fighters in the sky and lightly but powerfully armed soldiers on the ground.

To summarize: A major tank development programme at this time would conflict with the more essential tactical air programme; would impose added burdens on overladen logistical supply lines; could not overcome the immense Soviet armour lead; would interfere with the rapid arming of our allies and run counter armour-vs-fire power trend.

So let's take another look before we jump to tanks.

THE BATTLE OF MOHILEW 1812

By
MAJOR J. W. OSTIGUY, DSO, DIRECTORATE OF MILITARY INTELLIGENCE, ARMY HEADQUARTERS, OTTAWA*

Among the many incidents in history where the personality of a commander has caused the balance of victory or defeat to tilt in his favour there is the following outstanding example drawn from the Napoleonic wars. The Story is told by Marcel Dupont (a cavalryman in the First World War and now a French historian) in a recently published book[1]. The event took place at the beginning of Napoleon's ill-fated campaign in Russia, during the Battle of Mohilew, on the 23rd July 1812. It concerns Marshal Davout, who was recognized as Napoleon's best tactician, and, as we shall see, was as brave as the rest of the phalanx surrounding the Great Captain.

Experience shows that in the heat of battle a body of men, however well trained and disciplined, may be swayed by a feeling of panic caused by a deteriorating tactical situation coupled with the strain of battle. Only one factor can stop the impending catastrophe—leadership. The only one who can remedy this situation is the immediate commander who in bygone days of massed armies could be anyone from a battalion commander to the commander-in-chief himself and in modern warfare the platoon, company or battalion commander.

During the advance into Russia, Marshal Davout's corps[2] had the task of preventing the junction of the two main Russian Armies, those of Prince Bagration and of Barclay de

* *The author commanded a company of the Regiment de Maisonneuve in France and Germany during the Second World War. After the cessation of hostilities he attended the Canadian Army Staff College and on graduation was posted to the Canadian Army Staff in Washington, following which he held a G-2 appointment at the Canadian Army Staff College. He was then posted to the Historical Section at Army Headquarters and later to his present appointment with the Directorate of Military Intelligence.*—Editor.

[1] "Vive L'Empereur," *Editions Bellenand, Paris, 1950.*

[2] *Although usually formed of three Infantry Divisions, the French Napoleonic corps numbered only about 15,000 men; in this instance Davout had 16,000 men.*

Tolly, by stopping Bagration's progression to join the 1st Russian Army under de Tolly in the North.

By mid-afternoon of the 23rd July the situation of Davout's corps was critical: ever since the morning his three Divisions had been in contact with a Russian corps under Raeffskoï, which had the advantage of much superior artillery. Although severely mauled, the French held their ground until about three o'clock, when the remainder of Bagration's army arrived to join hands with Raeffskoï and put the already hard pressed Davout at a disadvantage of more than four to one.

Already Davout had committed all his infantry leaving him as a last reserve only three heavy cavalry regiments (6th, 11th, 12th Cuirassiers). In order to survey the battle he had placed himself with his staff behind the centre of the line on a height to the South of Mohilew. There the victor of Auerstaedt and Eckmühl was in close contact with the deep masses of his corps. On the left his position was made secure by the Dnieper River, while on the right and vulnerable flank a light cavalry regiment was preventing a turning movement being attempted by a swarm of Cossacs.

The object of the enemy until then had been to influence the battle with artillery in order to soften up the French line for an onslaught by 30,000 bayonets. The punishment was severe and the French had no hope of reinforcement, while the arrival of the remainder of Bagration Army enabled the Russians to throw fresh troops into the battle.

Against that important factor the French had in Davout an asset which more than balanced the two forces. Although fatherly and soft in his private life, the Marshal maintained strict discipline among his troops. To combat looting which he abhorred, he meted out severe punishment. For example, a grenadier found guilty of having stolen a chicken was condemned to be shot, with Davout presiding at the execution to give more weight to the sentence. This severity produced no love from his men yet resulted in profound admiration for the victories achieved mainly by discipline. Such was Davout, whose eyes on that day were searching his line and the enemy's.

Towards the end of the afternoon he spotted a weakening of the French centre, where the Russians had just brought up a large battery of forty pieces. Its devastating effect produced in one battalion in particular the beginning of a panic. In a flash he ordered the members of his staff to stay where they were and galloped towards the battalion which was already withdrawing.

Reining his horse in full view of the troops and of the enemy he

dominated the battle by his strong voice and ordered a halt. Overawed by the heavy silhouette of their terrible leader interposing itself between them and the Russian guns, the men wavered and stopped. On discovering that the battalion commander had been killed, Davout called out that he himself would take his place. Completely oblivious to the cannon balls ploughing the earth all around him, he ordered the men to attention.

When the first moment of surprise at such a command had passed, the men mechanically took the correct stance and were brought into play by the command "Heads Up." Meanwhile, relentless enemy fire caused utter chaos. Davout's stern face mellowed a bit as he ordered alignment on the 1st Company. As though on the drill square the men went through the motion of rectifying the thin line and filling in the ever-increasing gaps. "Order arms," commanded Davout, and produced a perfectly aligned battalion in the centre of formations whose order had been completely disarranged by the continuous battle.

There was an immediate feeling of comprehension amongst the men. They then understood that the Marshal had taken them in hand and dispelled the fears which had gripped them only moments ago. This should have been sufficient, but Davout was relentless and seemed to want to review the whole manual of arms. Unperturbed by the cannon balls (all of which now appeared to be aimed at the lone, gold-clad horseman) the Marshal proceeded to order the "load," beating the rhythm of the twelve movements with his voice.

Completely mystified by the strange behaviour of the battalion, the Russians stopped their guns and launched a cavalry charge. To them the unusual situation indicated a favourable moment to breach the line. Calmly Davout took position between the two centre companies and ordered the front rank to kneel. The Russian Hussars with flashing swords galloped towards the battalion. "Aim," commanded the Marshal, adding "Aim at the chests of the horses." In perfect unison the rifles were pointed at the advancing horsemen. Only when they were at fifteen paces did he order "Fire." In a single volley two thirds of the enemy regiment were laid low; the remainder fled. Returning to the front of the battalion; Davout calmly replaced his sword in its scabbard and, after words of congratulation followed by cheers, galloped back to his staff.

ROYAL MILITARY ACADEMY — SANDHURST

By
LT.-COL. G. A. RIMBAULT, DSO, MC, THE LOYAL REGIMENT*

The Royal Military Academy Woolwich was always known as the "Shop"; the Royal Military College Sandhurst was invariably referred to as the "RMC". Neither exists today.

In their place we have something new—the Royal Military Academy Sandhurst—the RMAS: note well the correct title if you please: not the "RMA", but the "RMAS". How does this new establishment compare with its illustrious predecessors, and in what ways does it differ from them?

The uninformed critic has been heard to say, "Ah, a post-war compromise, a glorified OCTU, a place without tradition. It can't be as good as the 'Shop' or the RMC". Yes, we have heard all this and similar criticism, and the object of this article is to provide some of the answers.

A wise man once said "There are two kinds of fool: there is the one who says 'This is old, therefore it is good', and there is the other one who says 'This is new, therefore it is better' ". The RMAS is both old and new; it has been evolved from the best of the old with all that is good of the new; but let us try to describe some of the fascinating complex organization that is the RMAS.

The Combined Academy

It is true that the RMAS is new in that it was only opened as recently as 1947, but the decision to amalgamate the RMA and the RMC was taken in 1939 and only the advent of the Second World War delayed the event. The reason for the amalgamation is that in modern war the whole essence of success lies in team work, and to achieve this high measure of co-operation between the various Arms of the Service in battle it is essential that all officers receive the same basic military training. Once that groundwork is assured then the various technicalities of individual Arms can be added.

It is a complete misconception to compare the RMAS with the war-

(*Continued on Page 42*)

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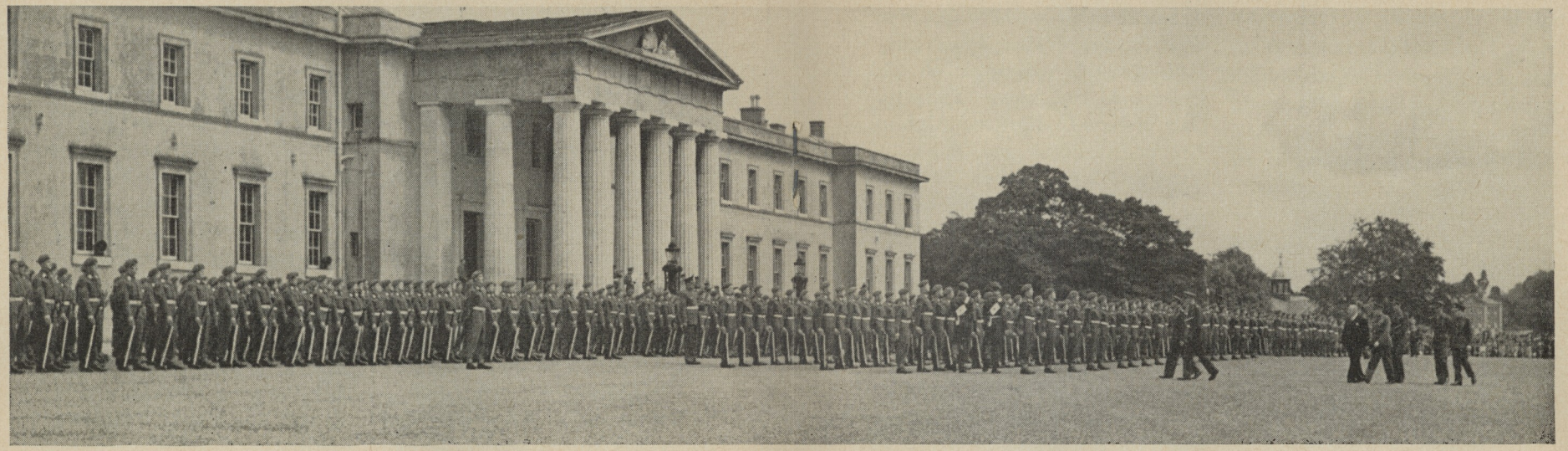


Photograph by courtesy of The British Army Journal

The Old College with Academy parade in progress.

Sandhurst beagles.

Photograph by courtesy of The British Army Journal

time OCTU or with the present day OCS. The OCTU's task was to train a young officer to command a platoon or equivalent sub-unit in battle in the shortest possible time. The OCS today is likewise concerned in training a young officer to command a troop or platoon for the remaining months of his National Service in the Regular Army and for his subsequent service in the Territorial Army. It is for this reason that the OCS course is divided between basic training and special-to-Arm training.

The aim of the RMAS is something much broader. It is to provide a solid foundation on which a young man can build his life's career as a Regular officer. It is designed to develop character and leadership qualities and to provide a basic military and general education common to all Arms. No specialist training is undertaken at the RMAS; this is carried out later at the various Arms Schools by means of Young Officers' courses.

Three Colleges and Specialist Wings

The RMAS is organized into three Colleges—Old, New, and Victory. Each college resembles an infantry battalion in that it is commanded by a lieutenant-colonel and has an adjutant, an RSM, and four companies, each of three platoons. Instead of letters the companies bear the names of famous battle honours: thus Blenheim, Dettingen, Waterloo and Inkerman are the companies of Old College; Marne, Somme, Ypres and Gaza of New College; and Alamein, Normandy, Rhine and Burma of Victory College.

The officer cadet's life centres principally round his Company. Most of his military instruction, such as Tactics, Administration, Map Reading, Military Law, is given to him by his company officers, and his games and sports are organized on a company basis.

There are, however, four subjects which are not taught by companies but by specialist wings. These are Drill and Weapon Training, Signal Communications, Fitness Training and Driving and Maintenance.

Drill and Weapon Training are the responsibility of the Adjutant and all drill instruction is in the hands of warrant officers and sergeants of the Brigade of Guards and sergeants of the Infantry of the Line. The Signal Communications Wing is under the command of a Royal Signals officer with instructors drawn from various Arms, while all warrant and non-commissioned officers of the Fitness Training Wing are drawn from the APTC. Driving and Maintenance is handled by officers and NCO instructors of various Arms with some technical civilian assistance. The Demonstration Hall of the

Driving and Maintenance Wing is one of the show places of the RMAS with its unique collection of working models and sectioned engines and vehicles.

The Academic Side

Parallel to and closely integrated with the military staff is the academic side. This consists of a staff of about seventy-five lecturers whose task it is to give officer cadets all that part of their education which is primarily academic but which is related to their professional requirements, as well as to encourage the habit of self education through the further study of languages or such subjects of a historical, literary, or scientific nature as each individual may select after his Junior term. The academic side is also concerned with remedying such weaknesses in basic education as may be found to exist. Under the supervision of a Director of Studies are the four departments of Science, Mathematics, Languages, and Modern Subjects, the first two forming the Faculty of Science and Mathematics. The chief difference between the organization of academic studies and military studies is that the Company organization has to be broken down for the former in order that officer cadets may be placed in "sets" according to their standard of knowledge of the subjects concerned.

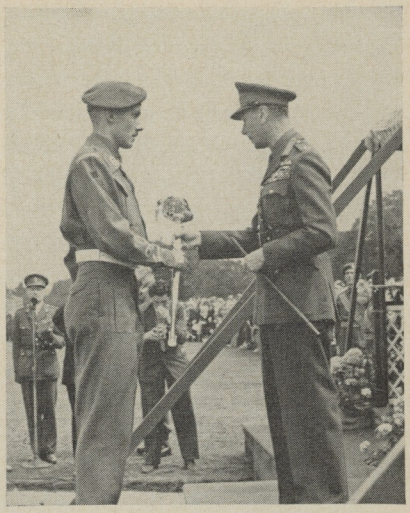


Photo by courtesy of The British Army Journal
HM The King
presenting the Sword of Honour.

This question of academic knowledge is of much greater importance than was the case before the War at the "Shop" or the RMC because the intake to the RMAS is drawn from a much wider field and there is considerable difference between the highest and the lowest standard of knowledge among cadets on arrival.

Furthermore, the overall requirement of having a few officers with a scientific training in all Arms of the Service, as well as the particular demands of RE, R Sigs, and REME, and, to a lesser extent, of RA, necessitates the arrangement within the syllabus of various courses, including a special one in preparation for the University of London Intermediate

Examination in Engineering or Science. Each of the first three Arms mentioned requires in varying proportions young officers who have qualified at the University Examination, while RA demand a definite standard of mathematical ability.

These considerations necessitate the interview of each officer cadet soon after his arrival and the arrangement of the course of work best suited to his ability. Those officer cadets who show most ability on the scientific and mathematical side are selected for the special course but are allowed to decide for themselves whether they take it. The remainder take a common course during their Junior term and may subsequently devote more attention to languages and modern subjects bearing in mind that the RAC, Infantry, RASC and RAOC do not demand any special standards in science and mathematics in their young officers.

Leadership Training

The greatest attention is paid to developing leadership qualities, and one of the most important aspects of the RMAS system is the authority delegated to cadets in their senior term. In every company one senior and three junior under officers and one senior sergeant are selected each term, and on them devolves the responsibility for the day to day routine administration of their companies. All cadets in the senior term wear special insignia and have various duties to perform and responsibilities to undertake.

To encourage initiative and leadership qualities and to give officer cadets practice in planning their leisure and in organizing their hobbies, a very large number of clubs and societies exist at the RMAS quite apart from the normal games and sports common to the Army. The Drag, the Beagles, the Ski Club, the Yacht Club, the Photographic Society, the Highland Dancing Club, the Music Club, and many others, all offer a chance of interesting and instructive recreation, and in all cases the management of affairs is left largely to the officer cadets under the supervision of military and civilian members of the staff.

Deciding the Order of Merit

The course at the RMAS comprises three terms, each of twenty weeks duration, the whole course covering eighteen months. The Summer term will in future run from March to August and the Winter term from September to February, although in 1950, for special reasons, the Summer term will finish on the 20th July. Each term culminates in The Sovereign's Parade, the name graciously bestowed by King George VI on the occasion of the first Passing Out parade held in 1948. At this

parade the Sword of Honour is presented to the most outstanding cadet of the term and The King's Medal is awarded to the cadet who comes first in the order of merit.

Hitherto the summer parade has been taken by his Majesty in person or by a member of the Royal Family. At the end of the Winter term His Majesty has nominated a distinguished officer to represent him.

The Order of Merit, like many other things at the RMAS, has been evolved by taking the best from the RMA and the RMC where their systems differed. Two things decide the Order of Merit — a cadet's character grade and his educational grade. The latter is decided in the normal way by means of examinations in all subjects, both military and academic. Character is assessed on leadership qualities, and the cadet's loyalty, determination and the part he has played in all aspects of RMAS life, including games, sports, other outside activities, are all taken into consideration. By combining these two gradings a really true picture of each cadet's value as a potential officer is achieved.

Choice of Arm

The question of choice of Arm is one of the greatest importance to every cadet and to his parents, and because the present system is not fully understood throughout the Army or by retired Regular officers, it is explained here in some detail.

A number of cadets arrive at the RMAS with the definite aim of joining a Corps or Regiment in which their father has served or with which they have some territorial or other connection, but a good many other youngsters have little or no previous connection with, or knowledge of, the Army and have no fixed ideas on the subject of choice of Arm.

Throughout his course at the RMAS the officer cadet is given very full information about all Corps and Regiments. Their histories, their roles in the modern Army, their organization, their individual characteristics, and the type of career they offer—all these are made known to him, and every Corps or Regiment in the Army has a regimental representative amongst the officers of the instructional staff who will advise a cadet as required.

Half-way through his Junior term, when the cadet returns from his first mid-term leave, he puts down a tentative list of choices. This is in no way binding and is merely called for in order to allow regimental representatives to interview potential candidates and to assess their chances. In his Senior term the officer cadet makes his final choice of Arm. He may express three preferences. If one of these is RAC he is allowed to state three choices of

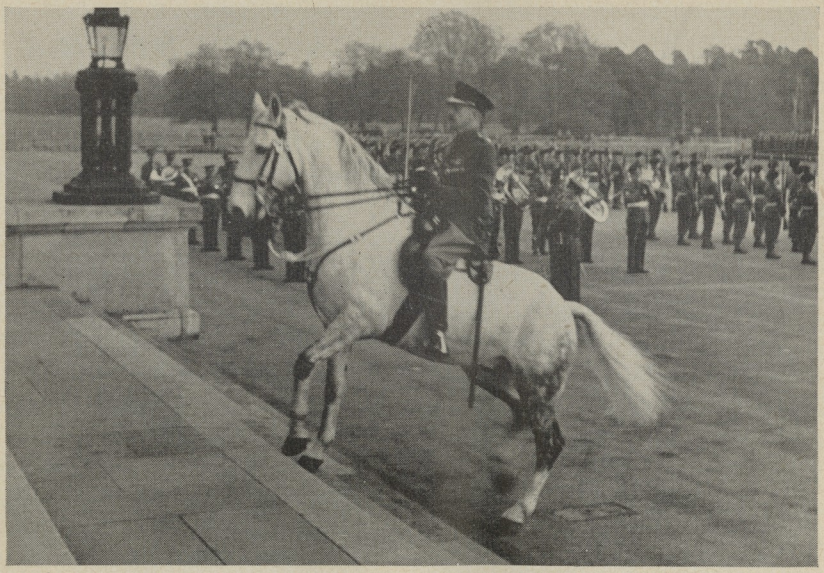


Photo by courtesy of The British Army Journal

The Adjutant riding up the steps of Grand Entrance.

Regiment within that Arm, the first and second choices being definite Regiments, and the third choice being either a Regiment or the expression "any RAC vacancy". In the case of Infantry the cadet is also allowed three choices but in this case only the first choice may be a specific Regiment: his second and third choices must be stated as a Brigade Group or, alternatively, "any Infantry vacancy". Thus a cadet's final choice might be:—

1st—Buffs; 2nd—Home Counties Brigade; 3rd—Any Infantry vacancy; 4th—RA; 5th—RASC

or

1st—RE; 2nd—9th Lancers; 3rd—4th Hussars; 4th—Any Cavalry vacancy; 5th—R Sigs.

The actual selection of officer cadets for commissioning into corps and regiments is done by the War Office Commissions Board. The Board do all they can to place officers according to their choice, but the vacancies in the various corps and regiments do not always coincide with the choices of the candidates. There are fashions in regiments as in other things, and there are always more candidates for certain regiments than those regiments can absorb. Consequently the Board have to weigh carefully the claims of the various applicants.

Great weight is, very rightly, given to the candidate's position in the Order of Merit for this is an indication of his potential value as an officer, being a measure of his character as well as his academic ability. Position in the Order of Merit is, however, tempered by a strong family claim or close family association with the Regiment. This is done by giving a lift of a definite number of places to a cadet who has a family claim to a regiment backed by the Colonel Commandant or Colonel of the Regiment; thus a cadet who passes out fifty-seventh in the Order of Merit might be given a lift of thirty places because of his family claim, and so take precedence over a cadet who passes out twenty-eighth. The actual weight given to a claim will depend upon individual circumstances.

The system has been designed to give due weight to the needs of the Service which must come first, to the place of the cadet in the Order of Merit, and to family claims. In practice, this system has allowed a very great majority of cadets who have passed out in the first five terms from the RMA Sandhurst to get their first choice of arm and of regiment. A small number of cadets have been disappointed, but they have invariably been those who have passed out very low in the Order of Merit.

The above facts give merely a bare outline of the RMAS. It is not possible to describe the warm and living atmosphere of the place, which must be experienced to be understood.

The RMAS is one of the show places of the Army and, as such, invariably figures in the programme of every visiting notability to this country, civilian as well as military.

It is not only the beautiful grounds which form such a perfect background to the scene; it is not only the buildings steeped in tradition in which so many of our famous leaders such as Churchill, Alexander, and Montgomery have been trained; but it is above all, the atmosphere created by some thousand young men, the selected leaders of the Army of the future, whose keenness, courage, and ambition, create the spirit that is the RMAS.

Joint Action

Modern warfare depends upon complete integration of effort to achieve cohesion and unity of action. World War II demonstrated that joint action is the key to military success—a fact that will be even more evident in any future war. To achieve joint action in wartime we must have it in our peacetime training.—*General Mark W. Clark (U.S. Army).*

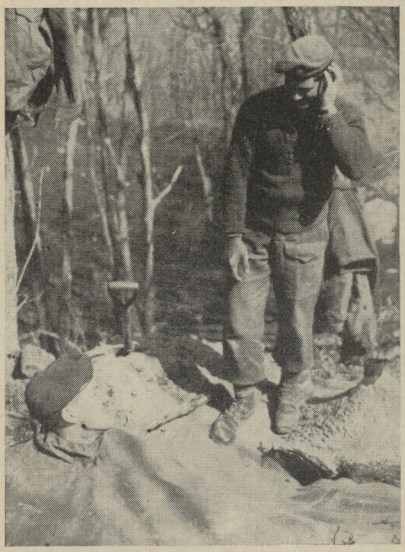
A PICTURE STORY

CANADIANS IN KOREA

National Defence Photographs Supplied by Directorate of Public Relations (Army), Army Headquarters, Ottawa

A Canadian officer and a corporal compare enemy mortar bombs. A "dud" mortar bomb has been disarmed and the fins are being compared with the exploded bomb tail-piece. On the officer's lap are shrapnel pieces taken from the hole of the exploded bomb made a few feet from their slit trench.

Canadians stand guard in their slit trenches. This photograph was taken shortly after an April snow storm.



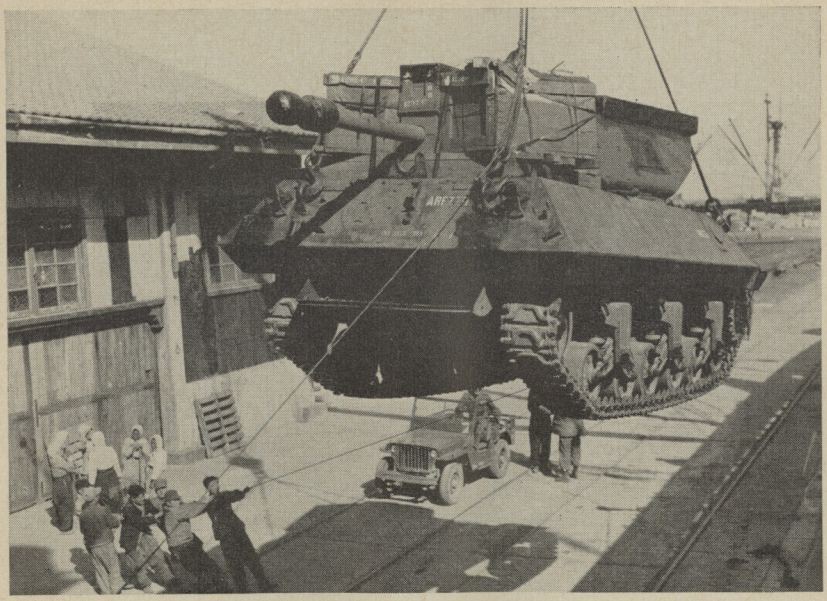
In a jocular mood, this Canadian soldier tries to sell his chum on a new idea for keeping warm in a slit trench. His head protrudes from a poncho which covers the trench.

These riflemen with a forward company of the PPCLI examine a rock shelter for enemy occupants. Why don't they enter? The cave may be mined!

With their trench sheltered by a poncho and camouflaged with pine branches, two Canadians prepare for the night.

From a poncho-covered slit trench, two soldiers keep a wary eye open for the enemy.

Top: A Canadian examines a trench abandoned by the retreating enemy. *Left*: A corporal compares two enemy grenades. The small grenade in his left hand is a Chinese weapon; in his right hand he holds a large Russian grenade left behind for the first time by the retreating Chinese. Some of the Russian grenades still have labels on them, and this one is of the concussion type.



The first self-propelled gun of the 25th Infantry Brigade is unloaded by native workers on arrival in a South Korean port as the massive build-up of supplies and equipment gets underway.

THE INFANTRYMAN

The well-trained Infantryman is an even more highly skilled technician than most of his comrades in other arms, and the Infantry require men of the highest intelligence and education. To think otherwise is to follow the not inconsiderable number of people who quite honestly, but quite wrongly, believe that an individual who goes from door to door selling vacuum cleaners, or who performs some purely mechanical duty in a factory or workshop, is of superior worth to a trained agricultural worker, who is master of a variety of duties demanding marked intelligence and a high standard of judgment. No one appreciates the work of the technical arms who support the front line assault troops, and provide their needs, more than the Infantryman. The latter makes no claim to a superior status; he merely asks to be regarded as a highly skilled fighting technician—not as an unskilled labourer.—*The Army Quarterly* (*Great Britain*).

THE ARTILLERY ATTACK

COLONEL GINO FERRARI IN "RIVISTA MILITAIRE" (ITALY)*

During the early phases of the last war, it generally was admitted that the decisive factors in the battles were armour and air power, with little credit being given to infantry and artillery. However, as the war continued, it was shown that the infantry and the artillery were vital factors in battle and that the earlier misconceptions were due, mainly, to the faulty employment of these forces.

It is the purpose of this article to show the importance of artillery, and the role that it played during the last half of World War II. A particular examination also will be made on the employment of the Soviet artillery.

Artillery Support Required

During the first years of the war, there arose many situations in which, despite the support of tanks and aircraft, it became impossible to achieve success in an attack without strong artillery support. Therefore, as the war progressed, it became customary to make greater use of massed artillery fire. It was the Soviets who first felt this need and employed powerful masses of artillery.

The Soviets had learned that the use of supporting artillery fire, based on pre-war methods of employment, did not produce the desired results, and that new methods of employment were required. They discovered that:

1. The infantry cannot be expected to make a successful attack, without excessive losses, unless the enemy fire is neutralized by massing overwhelming artillery fire, in depth, on the attack positions. Only the cooperation of powerful masses of defiladed artillery, along with the fire power of direct fire artillery, is able to neutralize the enemy positions, obtain the maximum effect, and solve the various fire problems in a rapid and economical manner.

2. Attacks by tanks must be supported effectively by the artillery, otherwise they will become easy prey for the enemy anti-tank weapons. The more tanks employed in the attack, the more artillery required in their support.

3. The flanks of the units employed in the attack must be covered, especially where it is expected that a counter-attack may develop. It is necessary, therefore, to establish artillery reserves, particularly reserves of self-propelled artillery, in order to provide greater flexibility of action.

This digest is reprinted from the Military Review (U.S.).—Editor.

As a result of these concepts, the Soviets, during the last months of 1941, started using massed artillery, a practice which they continued throughout the war. From 1943 until the end of the war, the Soviets, in any action of major importance, did not use less than 322 guns for each mile of front, and, at times, increased this to 805 guns for each mile of front. The employment of this imposing mass of artillery is called, by the Soviets, "the artillery attack."

In order to provide efficient employment of such large numbers of artillery, the Soviets established artillery brigades and artillery divisions. These same types of organizations later were adopted by the Germans.

Mobility Required

Supporting artillery should have mobility. It should be able to displace rapidly and resume firing without difficulty. The mobility of the Soviet artillery divisions was equal to the mobility of their armoured divisions. On various occasions, Soviet artillery divisions were able to leave their positions, move to new locations 90 miles away, and begin firing within a 24-hour period.

German artillery divisions, on the other hand, did not possess this mobility and, therefore, were dissolved later in the war.

The artillery attack, from the viewpoint of time and space, is divided into three phases by the Soviets:

1. Preparation of the attack.

2. Support of the infantry and tanks in their attack of the margin of the enemy's defence system.

3. Support of the infantry and tanks in the interior of the enemy's defence system.

Although these phases may not be new, a few of the methods used in their employment are of interest.

First Phase

The Soviet artillery preparation, as a rule, consisted of co-ordinated fire by the division, corps, and army artillery. Targets included anti-tank weapons and tank obstacles; fortifications and machine-gun positions; observation posts and command posts; communications networks; and supply centres.

In the armored attack, the first objective was the destruction of anti-tank guns and tank obstacles. During the preparation, the self-propelled guns did not reveal themselves unless such action was called for in the fire plan. As a rule, the preparation reached a depth of from 2 to 3 miles and, at times, up to 5 miles in depth. The Soviet artillery preparations often accounted for 60 per cent. of the enemy's losses.

Direct fire artillery was necessary in order to obtain maximum effectiveness against fortified positions and to

reduce the losses among the infantry. The Soviets usually employed about 25 per cent. of their artillery in direct fire support, at distances of from 200 to 1100 yards from the objective. The employment of pieces ranging from 122- to 203-mm in size in direct fire support was not unusual. Also, it was the Soviet practice to use large numbers of direct fire artillery—77 guns for each mile of front at Stalingrad and 68 guns for each mile of front at Sevastopol. This direct fire support required powerful masses of defiladed artillery to take care of counter-battery missions in order to provide protection for the exposed direct fire pieces.

Counter-battery fire proved itself to be of particular importance in the outcome of every battle. At the beginning of the war, the Germans believed themselves capable of effecting counter-battery fire by means of aerial bombing. However, they soon learned that this method was not effective against the large masses of Soviet artillery. After an aerial bombing of several minutes' duration Soviet artillery was able to go back into action almost immediately. However, the Soviet's counter-battery fire, repeated several times or maintained for a certain length of time, was capable of interrupting the activity of the German artillery.

Second Phase

The artillery organic to the regiments, and the direct fire weapons from division artillery, constituted the accompanying artillery during an attack. Such artillery received their orders from the infantry company and battalion commanders during the attack. Generally, two to four pieces of direct fire artillery accompanied each infantry company in the attack.

The division artillery, which was not used in direct fire support of infantry companies and battalions, was employed in direct support of the regiments. For this purpose, groups were formed from division artillery and reinforcements from the general artillery reserve.

The corps artillery provided the moving barrage in front of the infantry and the tanks during the attack. The moving barrage was extended to the range limits for each particular piece, and shifted in range and deflection, according to definite fire plans.

The army artillery took care of counter-battery missions, as well as missions against enemy reserve and communications centres.

The self-propelled artillery, and a specified number of tanks, provided flank protection for the attacking elements. The self-propelled artillery proceeded in bounds of from 430 to 550 yards—providing greater accur-

acy than was possible by the use of tank weapons.

There were two conditions which were indispensable for obtaining maximum success in this type of attack:

1. Perfect co-operation between the direct fire and the indirect fire artillery.
2. Maximum use of the moving barrage by the attacking infantry and tank elements.

Third Phase

The third phase, the support of the infantry and tanks in the interior of the enemy's defence system, generally, was a continuation of the second phase. In this phase, the artillery, infantry, and tanks had to possess flexibility in their operations in order to exploit any sudden breakthrough or change in the battle. This generally was accomplished by changing from centralized to decentralized control, depending upon the situation.

The Soviets attribute the German defeat, which began with the Battle of Moscow and the retaking of Stalingrad, to the indisputable superiority of the Soviet artillery.

Conclusions

1. An attack, even though supported by tanks and aircraft, cannot be carried to a successful conclusion without strong artillery support.
2. Artillery support, in order to be effective, must be massed.
3. In order to employ massed artillery efficiently, it must be organized into large units of a permanent character.
4. Artillery must possess mobility and be able to displace and move great distances without reducing its efficiency. Therefore, it must be mechanized or motorized.
5. Direct fire artillery must be employed with massed artillery to ensure maximum success.
6. Artillery must be so organized and co-ordinated that it can be employed under centralized or decentralized control.
7. Artillery must be capable of massing large units of fire on a single target within a short period of time.
8. The artillery attack can be successful only if there is perfect co-operation between the direct fire and indirect fire artillery, and if the attacking infantry and tank elements make maximum use of the moving barrage.
9. The combined training of all forces must be perfected to the point where maximum co-operation and mutual confidence is achieved.

TOPOGRAPHICAL MAPPING FOR DEFENCE

By
Captain C. T. Osborne, Army Establishment, RCE
Army Headquarters, Ottawa

Part 3

All manuscripts after checking are passed to the Reproduction Division which combines the Drafting and Reproduction Sections of the Army Survey Establishment, RCE. Manuscripts at the compilation stage are at a scale twice as large as that of the finished map. The photo-mechanical section makes all reductions with a process camera and before passing into the drafting section the manuscripts are again reduced to $1\frac{1}{2}$ times the scale of the completed map. From the resulting negative a photo lithographic plate is made. With a hand-proving press the positive is printed in non-photographic blue on chart paper mounted on a zinc sheet in order to eliminate stretching and shrinkage. Four similar copies are passed to the drafting section where draftsmen cover in black all that portion of the detail which is to be represented on the final map. One mounted blue "pull" is used for each colour to be printed so that the four blue pulls are all used for black, blue, brown and green. The time taken to complete the drafting on a map sheet in inhabited areas—for example, around Ottawa—is about six months; in uninhabited areas, as along the Alaska Highway, three months is sufficient time for this process. Map names and any other lettering to go on the map are set up by linotype and attached to the manuscript. When photographed again they appear as part of the drafted sheet.

The four manuscripts are then taken down to the photomechanical section and reduced to the final scale of the map. From these negatives offset printing plates are made, one for each colour to be produced. These colour plates pass to the printing section and by means of the hand-proving press a number of proof copies are turned out. They are returned to the drafting section to be checked and corrected where any imperfections can be discovered and put right. Corrections to be applied are passed to the negative retouchers who make them on the

National Defence Photograph

Checking detail on the manuscript with the aerial photograph.

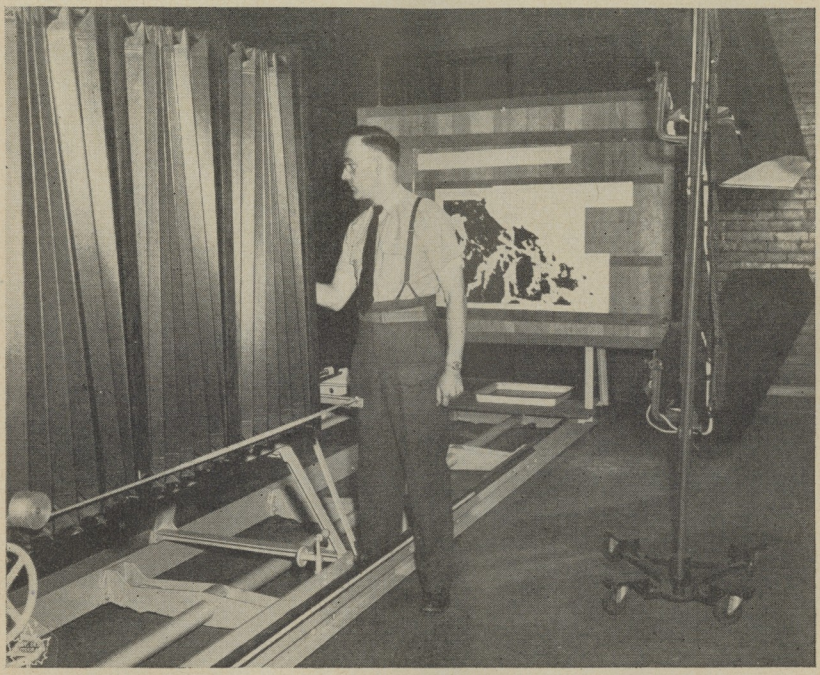
negatives and return them to the photolithographic section where plates are made and passed to the press room for printing. Recently a method used by the Army Map Service in Washington has been introduced into the unit whereby a photographic colour proof is made directly from the negatives, eliminating the hand-proving method now in use. The former method allowed of one proof every two days: the new method turns out four sheets a day.

The number of copies to be printed of any one map varies with the importance of the area. For 10,000 or more they are run off on the two-colour printing press; if less than this number are required they are run off on the single-colour press. Each colour, or two colours in the case of the former, requires one run through the machine. For most maps this entails passing them through at least four times.

Maps are printed on bond paper at sizes 22″ x 29″, approximately, depending on the scale of the sheet, at a rate of 5,500 per hour. This unit prints about one million maps

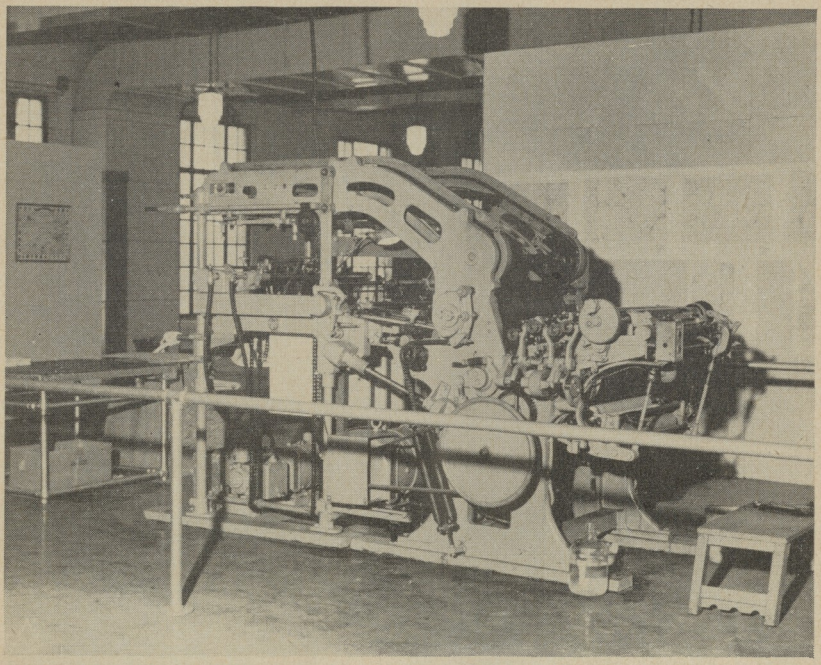
per year and distributes nearly half of these, the remainder being stocked and held for use when required. All standard maps printed are on sale to the public through the Department of Mines and Technical Surveys.

The varied nature of the tasks involved in map making requires personnel of different skills and abilities. Commitments are heavy and the great need is for production. Recruits for the unit must therefore have an aptitude for one or more phases of the work. On enlistment they complete their general military training and corps training at the Royal Canadian School of Mechanical Engineering. An aptitude test and personal preference bring them into the Survey service. Within the Army Survey Establishment itself facilities are provided to train them for the work they are to do. Trade tests encourage them to increase their knowledge and lectures are given in elementary surveying and photogrammetry. The best method, however, is "on the job" training which keeps them engaged on the production of map sheets while yet



National Defence Photograph

The process camera used for reducing map scales.



National Defence Photograph

The lithographic press used for printing maps in one colour.

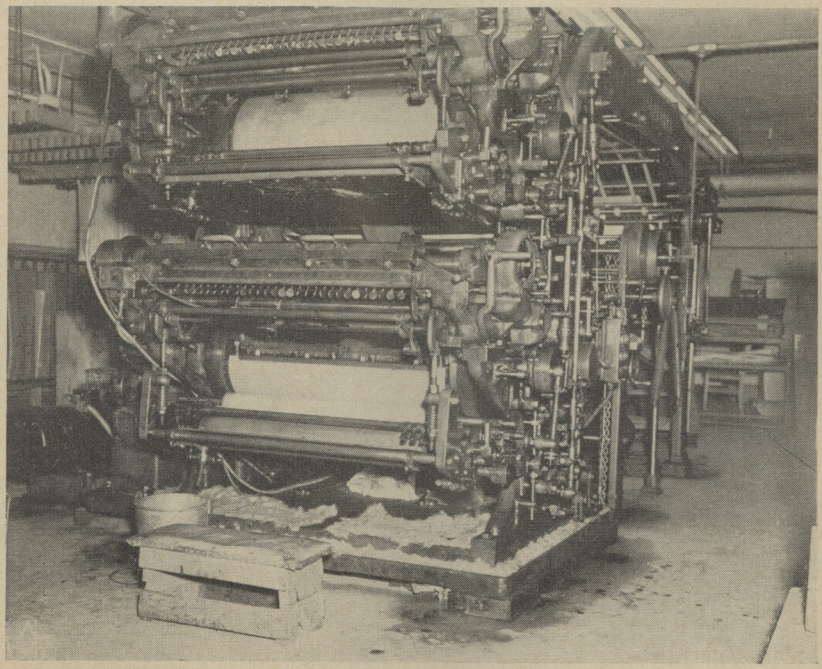
permitting them to gain the knowledge essential to them before they can be upgraded.

Some of the men trained by the Establishment have left to work for other governmental departments or private mapping agencies. The training they have received here is useful to themselves as individuals and to the country as a whole, for there is much yet to be done in Canada. In a recent United Nations' publication, "Modern Cartography", Canada was represented as having about 50% of the country mapped at scales 1/250,000 with a very small percentage of map coverage at any larger scales. In comparison, many of the Eastern countries, including India, Turkey, Syria and Burma have been surveyed completely at small scales. This same publication goes on to point out that topographic mapping is a public service and therefore a function of government. As an extension of this theme, the need for co-operation between governments is suggested as a basis for further mapping, particularly with regard to common first order control. On

this continent, Canada, the United States, and Mexico, have made connections at their boundaries to mutual stations and have accepted the same figure on which to base their framework. Further to this, the United Kingdom, the United States and Canada have recently reached basic agreement on standard military topographical maps which includes scales, sheet sizes, symbols, grids and projections.

The demand for maps of Canada has increased considerably since the war. The graph given here will show how the requirements have been met during this time. An expansion of services over the last few years has increased output though not nearly fulfilling demand. However, the requirements for National Defence mapping are the driving force behind the entire mapping programme today and for the future. The Army Survey Establishment and the other mapping agencies are wholly committed to this and are doing everything possible to satisfy the need for defence maps of Canada.

(*Concluded*)



National Defence Photograph

The two-colour lithographic printing press.

THIS UNIVERSAL TANK CONTROVERSY

By
LT.-GEN. SIR GIFFARD MARTEL, KCB, KBE, DSO, MC*

In his article[1] in the July number Lt. Col. Carver is quite right in many of the points that he has made, but for reasons that he has not quite perceived. Most of the warfare on the Western Front was position or semi-mobile warfare. For this purpose we needed fairly heavy tanks as Lt. Col. Carver has pointed out, with strong armour and powerful guns. At the start of the war Hitler overran Poland and France with staggering success by using highly mobile warfare and very mobile tanks. We also saw mobile warfare in the first battle of Libya but on a very small scale. After that there was practically no really mobile warfare. We missed the opportunity of mobile warfare after our victory at Alamein and thereby lost the chance of rounding up Rommel and ending the North African war and possibly shortening the whole war. Then, right at the end, we had mobile warfare when the British and USA armoured divisions broke out from Normandy. They caused consternation among the enemy and the German front began to collapse. If these armoured divisions could have remained mobile their action would probably have ended the war, but both the British and USA forces ran out of petrol. The halt that ensued enabled the Germans to recover their morale. These armoured divisions were not held up by lack of armour or gun power. They by-passed the German heavy tanks and some strong defensive positions with the utmost ease. It was the fact that they could not maintain their mobility that brought their action to a halt.

The Russian Front

Let us now consider another matter. Lt. Col. Carver has drawn

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[1]*In this article, published in the July 1950 issue of* The British Army Journal, *Lt. Col. R. M. P. Carver, CBE, DSO, MC, Royal Tank Regiment, expressed the opinion "that all armoured regiments must be equipped, organized and trained to carry out the roles of acting as the primary fighting army in mobile operations and of supporting infantry, as well as of fighting all enemy tanks whenever and wherever encountered."*—Editor, the Canadian Army Journal.

all his lessons from the armoured actions on the Western Front. These operations were of course on a far smaller scale than on the Russian front. In any case we are not going to fight the last war over again. It is the Russian whom we will fight if a war should arise. It is those great operations on the Russian front that we should study. Lt. Col. Carver has not even mentioned this. The Russians explained to me, while I was out there on their battle fields, how the panzer divisions had advanced at high speed and attacked their masses and their cumbersome horse transport from every direction and caused terrible casualties. One Russian general told me that under those conditions the only thing they could do was to march back to the heart of Russia. Germany could not of course maintain her Panzer divisions when she had penetrated deep into Russia, and this action lost her the war. It was quite unnecessary.

Surely this is the way for the Western nations to be prepared to deal with Russia today, instead of trying to build up large manpower armies to hold long defensive positions such as that of the Elbe or the Rhine. The Russian Army has only been mechanized to quite a small extent. Even our country with all our industrial capacity could not mechanize an army of three or four hundred divisions in less than about ten years. But for meeting this Russian threat the Western nations need some twenty armoured divisions and they must be really mobile. The heavy dual purpose tanks with their long administrative tail are no use for this rôle. Our armoured divisions will have no difficulty in by-passing Stalin tanks and strong defensive posts, by using their mobility, but a number of heavy tanks will be needed to follow up for use in breaking or holding a strong defensive position at times. The armoured divisions with their highly mobile cruiser tanks will of course be the most important formations for dealing with the Russian forces.

The Two Types

From this reasoning we see quite clearly that two types of tank are needed for these two rôles. Why should anyone imagine that we have suddenly reached a point in the history of the world, where the same methods and weapons are needed for siege warfare, as we use in the most highly mobile warfare? I have discussed these matters with the leading soldiers in America, France and Russia and found them in agreement with the widely accepted view in our country that it is essential to have these two types of tank. Germany used comparatively light and highly mobile tanks in the

A Summary and a Comparison

JOMINI and CLAUSEWITZ

By
Brigadier-General Sir James E. Edmonds, C.B., C.M.G., D. Litt. (Oxon.)*

This is written in order to save those who come after me the trouble of reading the works of the above-named two writers of the Napoleonic age on the art of war. In the past they were both well known and discussed, but they are now, it seems, neglected. Most of us have heard of Clausewitz (1780–1831), a Prussianized Pole; some even have tried to read, in translation, his book "On War", a dull and ponderous work in three volumes and an appendix, which, in its native German must have discouraged and appalled the most enthusiastic student of war. I have met two officers who actually claimed to have read it right through. One of them, Major S. L. Murray (retired), wrote in 1909 a small book "The Reality of War", with the subtitle "An Introduction of Clausewitz", a clever, thoroughly pro-German summary, in which he held up his author for admiration as "a practical soldier of very great experience" and "Napoleonic" in outlook; with which description I entirely disagree. It is significant that the only words of Clausewitz which are well known and quoted are: "War is a mere continuation of policy by other means," which is a section heading.

Few people of to-day, however (Major Murray among them), seem even to have heard of General Baron de Jomini (1779–1869), a Swiss officer of Napoleon's Army and of much greater war experience than Clausewitz, and at the "highest levels," who was a counsellor of Emperors and

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THIS UNIVERSAL TANK CONTROVERSY

(Continued from preceding page)

East and much heavier and slower tanks for her defence in position warfare in the West during the latter part of the war. It is well to remember that if the war had continued for another year, our dual purpose Centurion tanks would have been blown off the battle field by the single purpose new model Tiger tanks in position warfare. Surely we have had enough of that?

Kings, and who wrote a "Précis de l'art de la Guerre" in a single volume of 350 pages. I have never met anyone who claimed to have read this treatise. Yet between the wars of 1815 and 1870–1, Jomini was studied everywhere, even translated in the U.S.A. (the copy which I have bears the imprint "West Point, N.Y., January 1862"), and the book was praised by General McClellan, the famed organizer and first commander of the Army of the Potomac in 1861–2, who was American attaché with the French-British forces in the Crimean war, and who knew Europe. In a magazine article, he said that it expressed "the true principles of war, drawn from the campaigns of the greatest generals, in clear and intelligible language." It is best read in the original, as it was in past days, when, as a result of the long occupation of France after 1815, the Franco-British alliance in the Crimean War, and to their sisters having French governesses, most British officers could read, if not speak French. I have been unable to discover that any notice was taken of Clausewitz outside Germany in the 1815–71 period.

Between Clausewitz's death from cholera in 1831, when his papers were edited and published by his widow, and 1871, only one other edition of his principal work was issued. "Zum Kriege" was certainly not much studied in Germany, either then or later. When in 1899 I visited the *Kriegsakadcemie* (Staff College), I inquired if Clausewitz were read. My conductor shook his head and said contemptuously, "Only theory, philosophy of war." How, then, did his name rise to fame and General Jomini's disappear.

The explanation is simple. After the easy victories of 1870–1, a great demand arose in all civilized countries for the books written by German generals, as containing the "recipe for victory." French military authors went entirely out of fashion—to the victors, the book market. An astute Berlin publisher looked around for what he could plant on the foreign public, as had previously been done with the works of Goethe, who, as Nietzsche said, was "nothing but a fanfare of vanity which, from time to time, is blown across the German frontier." Those who doubt the truth of this appreciation and are not German scholars might read Carlyle's translation of Goethe's "Wilhelm Meister." The Berlin man published a third German edition of "Zum Kriege," arranged for translations, had the first life of Clausewitz written (1873), and boomed and advertised both works. It was from this third edition that Colonel J. J. Graham made the only English translation, "On War", published by Trubner in London in 1873. Jomini was completely eclipsed, even in France: the

last book on him which I can discover, by C. A. Sainte Beuve, is dated 1869, the year of his death, at ninety. Such is the power on the book market of success and of advertisement. There is, to my mind, no doubt whatever of the comparative value of the two books, apart from the different experiences of the two authors—one is vague and prolix, the other crystal clear and practical.

Both treatises on the art of war are of course out of date, except for a few general principles of policy and strategy, although the little-heard-of historical works of the two authors are by no means obsolete. Before 1914 I actually got a few tips from the Swiss. For instance, always send a staff officer with an advanced guard if contact with the enemy is expected; and he gives some interesting details of how Napoleon, Berthier and Ney worked.

Clausewitz, who entered the Prussian Army as a cadet at the age of twelve, seems to have been a courtier rather than a professional soldier, being A.D.C. to Prince August of Prussia in the Jena campaign, in which he was taken prisoner; military tutor to the Crown Prince (Friedrich Wilhelm IV) 1810–12; A.D.C. to a Russian general in the 1812 and 1814 campaigns; only in the Waterloo campaign, as colonel, was he with troops, as Chief of the Staff of Thielemann's corps—which was not in the battle. He was promoted major-general in 1818, and appointed head of what would now be called the staff college. His historical works are on the Jena and the 1812 campaigns.

Jomini started in life as a banker in Paris; but on a family friend becoming Swiss Minister of War, he returned home and was employed as chief of the war secretariat 1796–1801, and was promoted to *chef de bataillon*. He had undoubtedly military tastes and talent, and attracted notice in 1801 by publishing a little book "traité de Grand Tactique". It must have been well thought of, as Ney, whilst at Boulogne, accepted Jomini's services as volunteer A.D.C. In this capacity Jomini took part in the Ulm and Austerlitz campaigns, and in December, 1805, was definitely appointed Adjutant-Commandant (Colonel) to Ney's corps. During the Jena campaign, and for a whole year, he served on the personal staff of the Emperor Napoleon, who, though he thought little of his writings, felt that he had something of the "sacred fire" and, at any rate, possessed a special knowledge of Prussian tactics and ways. Berthier seems to have been jealous of him and undoubtedly tried to check his career and promotion. After Eylau he had periods of sick leave; but he was again with Ney in Spain; was sent on a special mission to Napoleon during the Wagram campaign 1809, and was promoted *général de brigade*.

In 1812, Jomini, being still out of health, was Governor of Wilna and Smolensk; he suggested the passage of the Berésina near Borisov, and assisted General Eblé in the bridging. In 1813, after a final row with Berthier, who had held up his promotion to *général de division*, Jomini went over to the Allies, and the Tzar Alexander, who had previously tried to obtain his services, became his patron, making him a personal A.D.C. He offered much sound advice to his patron; but the Austrian Schwarzenberg, commanding the Allied forces at Dresden and Leipzig and in the advance into France, would have none of it—to the detriment of the cause. After the peace Jomini devoted himself to writing: published "Traité des grandes opérations militaires", "Guerres de la Révolution" and a life of Napoleon, etc., but returned to Russia to advise during the Turkish War of 1828; was recalled there in 1837 to direct the studies of the Tzarevich, and again in 1854 at the time of the Crimean War. It was for the edification of his royal pupil that Jomini wrote his "Précis de l'art de la Guerre", just as Clausewitz founded his "Zum Kriege" on the lectures which he had given to the Prussian Crown Prince.

Clausewitz's first volume is devoted mainly to thoughts on war in general and to strategy; his second to defence; and his third to the attack (not the offensive). War he defines on page 1, as "nothing but a duel on an extensive scale," the object of the opponents being to meet and fight it out; war is "fighting." In the same out-of-date line of thought he defines strategy as the "employment of battle to gain the object of war"; and, that there shall be no doubt, he repeats fifteen lines farther on "strategy is the employment of the battle to gain the end of the war." To this end, "there is no more imperative and simpler law for strategy than to *keep the forces concentrated* [italics in the original]." Hardly a Napoleonic conception. But later on he seems to doubt that the battle is everything, and admits the usefulness of "doing damage in a general way" and of "wearying out the enemy," which he explains as "a gradual exhaustion" of the enemy's physical and mental will-power, what we call "attrition." The Germans certainly took to heart his principle, that "war is an act of violence, which in its application knows no bounds . . . to introduce a principle of moderation would be an absurdity," any "spirit of benevolence is a dangerous error." Without a single example to elucidate his text he proceeds to consider moral forces, military virtue, boldness, perseverence, superiority of numbers (he would like 2 to 1), surprise, stratagem, strategic reserve (really battle reserve), economy of force: this last, he explains, means that

"no part of the force shall be idle . . . whoever has part of his forces on the march whilst the enemy's are fighting is a bad manager of his forces"; friction and information (just one page, Jomini has eight). All his thought is directed to the one battle; detachments get no mention.

Clausewitz holds that "the form of defence is stronger than that of offence," and believes that luck is quite as important a factor as judgement, so that "war, of all branches of human activity, is most like a game of cards."

The second and third volumes, which discuss tactics, are of course entirely out of date. Clausewitz seems obsessed by swamps: he gives us one chapter on the principles of the defence of "swamps and inundations" and another on the attack of "morasses, inundations and woods." Marshes certainly had a tactical importance in most of Marlborough's campaigns. Of the principles of night operations, he says, "only special reasons can make a night attack advisable . . . most night combats are so conducted as to end with daylight"; there is not a word as to how night marches and night advances should be conducted. He is, however, ahead of his times in pointing out that "cavalry has decreased in importance according as improvements in the use of fire has advanced"; but it is curious that he fixes the strength of an infantry brigade at 5,000 because this number "can be commanded by one man directly . . . through the compass of his voice"—hardly in the din of battle! of which Clausewitz lacked much experience.

Jomini, like Clausewitz, opens his treatise with chapters on: "The relations of diplomacy to War" and "Military Policy"; but nearly a third of the text is devoted to "strategy" and the rest to "Grand Tactics and Battles," "Operations of a mixed character, partly in the domain of strategy and partly of tactics" (Napoleon's favourite sphere); "Logistics, or the practical art of moving armies" and the "Employment of the different arms in battle."

To have the best chance of success a nation, he says, must enter on a war "with the whole of her resources, and at the time most opportune to her." He has a whole section on the dangers of war on two fronts at once, and a list of conditions to which the Government must attend in order to have "a perfect army": these include "a well organized system of national reserves," "superior armament," "well instructed arms of engineering and artillery," a "general staff" [this was written in 1837, sixty-seven years before the British Army had one], "careful choice of commanders" and "keeping alive the military spirit of a nation." He is opposed to War Councils at the seat of Government,

except to decide on the general plan and the nature of the operations; to settle the general distribution of the forces and to inspire recruiting. He anticipates Admiral Mahan by the use of the phrase "control of the sea," without which, as he says, successful invasion of an island is impossible.

Strategy he defines as "the art of making war on the map," and "it decides where to act"; he describes how Napoleon used to crawl on a map on the floor, with a pair of compasses in his hand, set at a day's march, usually 25 miles. The art of war, he tells us, "consists in bringing into action upon the decisive point, the greatest possible force." He confesses that the defensive is not without its advantages, "when wisely conducted". It may be passive or active, taking the offensive at times. "The passive defence is always pernicious." For most generals he advises "a well instructed general staff as a most useful organization [a composite brain, said the Prussians, who first assembled one]." Napoleon, however, was his own chief of the staff; Berthier was merely a head clerk, who saw to the copying and dispatch of orders—instances are given of his failures, perhaps the worst was at Eylau, when he sent orders to the reinforcements by an officer on a tired horse, in spite of the officer's protests. "To impose a chief of staff upon a general would be to create anarchy and want of harmony"—yet someone sent Kitchener in South Africa a chief of staff he did not want; and to Haig in France, two of them, one of them saying to Haig on arrival, "I suppose you don't want me?"

Of "detachments" Jomini is modern in saying "send out as few as possible," and quotes many examples of the failure of diversions. Of night operations he says little, but again is modern in saying that "the most favourable manner of attacking the enemy is to fall upon its camp just before daybreak." He favours arming all cavalry with the lance (as the Germans did after 1870–1). A charge has "not much hope of success unless it is supported by infantry and artillery," and he advocates throwing cavalry "against the flank or rear of an enemy's line" already attacked by infantry in front; but its principal value is in pursuit.

Jomini has been criticized as being too "geometrical." He certainly provides maps and a number of conventional diagrams easy to understand, and is, at any rate, better in this respect than Clausewitz; and he cites plenty of examples, drawn from recent history, to fortify his conclusions, in which commendable practice the Pole again fails. Any soldier who reads the two books on war will not have the slightest hesitation in preferring Jomini's.

ARMY NICKNAMES

By
MAJOR T. J. EDWARDS, MBE, FRHISTS.

Army nicknames have much the same character as regimental badges in that both usually epitomize some historic episode; some, of course, are prompted by badges and thus endow the episode with a double commemoration. Besides soubriquets connected with individual regiments and corps, there are those which refer to soldiers in general, such as "Tommy Atkins," or groups of regiments such as "Light Bobs" for Light Infantry.

The word "Nickname" is derived from a fifteenth century word "eke-name," meaning a name added to, or substituted for the proper name of a person or place, usually in ridicule or pleasantly. Some regimental nicknames come within the definition, but many have been inspired by some glorious chapter in military history. As everyone knows there are regimental nicknames of a highly colourful and opprobrious type which one regiment has "inflicted" upon another in a moment of extreme frustration (to use a mild word), and although the soubriquet has stuck, no editor would print it without being in danger of "losing his head."

Thomas Atkins

Without doubt the commonest nickname associated with the army is "Thomas Atkins" or "Tommy Atkins," meaning collectively all soldiers, or individually any soldier. The expression first appeared in 1815 in a War Office Circular letter referring to the Soldiers' Accounts Book—the A.B.64 of the period. "Thomas Atkins" was the specimen name used in the book; apparently he was illiterate, or at least he could not write, for in a number of places will be found "Thomas Atkins X his mark." The same name was used in this connection for several years later; this may have given rise to a popular, but inaccurate, idea that the Duke of Wellington introduced in it 1843.

The seventeenth century counterpart of "Thomas Atkins" was "Lobster." In 1643 the Royalists gave this nickname to the Parliamentarian Horse owing to their bright iron-shells (breastplates), but a few years later the name was applied to all

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troops of the Parliamentary forces owing to their redcoats.

James's "Universal Military Dictionary" quotes the following collective nicknames—"Light Bobs" for Light Infantry, "Tow Rows" for the grenadiers and "Flat-Foots" for battalion men. "Light Bobs" is now restricted to The Somerset Light Infantry, whose regimental journal is called "The Light Bob Gazette." "Tow Row" appears to refer to the line of the song "The British Grenadiers" which runs—"With a tow row row row to the British Grenadiers;" "Flat-Foots" is undoubtedly the ancester of our present "PBI."

In this article we will try to give one of the nicknames of as many Regiments and Corps as possible and to give examples of the main categories; perhaps the largest category has been inspired by service on the battlefield, so we will start with some of these.

The Cross Belts

The campaign in Spain during the War of the Spanish Succession (1704–11) was overshadowed by Marlborough's Campaign in North-west Europe. Nevertheless, our regiments had some noteworthy successes in the Peninsula, a few of which are still commemorated in various ways, one being the nickname of the 8th King's Royal Irish Hussars, "The Cross Belts." At the battle of Almenara on 16 July, 1710, the 8th Dragoons, as the regiment was then, defeated a regiment of Spanish Horse and took them prisoners. They took from the Spaniards their cross belts and wore them themselves, a mark of distinction for which the Commander-in-Chief gave his permission. In the Clothing Warrant of 19 December, 1768, it was laid down that Horse Regiments were to wear cross belts (as hitherto) but Dragoon Guards and Dragoons to wear only one shoulder belt, except the 8th Dragoons which was permitted to wear cross belts. Thus a gallant exploit of 240 years ago is kept evergreen by a nickname.

Those who have dined on Guest Nights with the 14th/20th King's Hussars will remember the silver Loving Cup. Originally this was a domestic utensil belonging to Joseph Bonaparte, which the regiment captured at the battle of Vittoria on 21 June, 1813, during the Peninsula War. The French were soundly defeated and in the rout lost all of their baggage; the Fourteenth had the good fortune to fall in with the baggage of Napoleon's brother and among other things secured this item, the identity of which may be guessed from the nickname the regiment gained, namely, "The Chambermaids."

The Slashers

The regimental march of The Gloucestershire Regiment is an old Irish tune called "The Kinnegad Slashers." When the 28th Foot, later First Bn, The Gloucestershire Regiment, marched into Montreal in the depth of the winter of 1764–5, a magistrate, Mr. Walker, showed great inhumanity by refusing to provide suitable billets for the families of the regiment; as a result of the extreme severity of the weather several women and children died from exhaustion and exposure. This naturally angered the regiment and it is said that some of the men dressed themselves like savages, entered Walker's house, danced round him, then placed him in a chair and cut off both his ears. From this circumstance and the intrepid manner in which they conducted themselves during the American War of Independence, the regiment was dubbed "The Slashers."

In the Irish Rebellion of 1798, the tune "The Kinnegad Slashers" was composed in honour of the Kinnegad Yeomanry, who had distinguished themselves against the rebels. In 1866–67 The Twenty-Eighth were stationed in County Westmeath, the home of the Kinnegad Yeomanry; so that it was natural for "The Slashers" to adopt the tune of "The Kinnegad Slashers," thus linking the disgraceful conduct of Mr. Walker with service in the Emerald Isle.

The Vein Openers

"The Vein Openers" is the nickname of The Worcestershire Regiment and it suggests something to do with the shedding of blood. In 1770 the Twenty-Ninth Foot, now First Bn, was stationed at Boston, North America, where the Colonists were very discontented, their growing hatred for England being extended to British soldiers. On 5 March of that year the Twenty-Ninth provided the guard at the Customs House when a mob of rioters tried to rush the place and seize the money there. The guard fixed bayonets and kept them at bay but they then hurled insults at the troops, which led to blows; one of the mob struck Captain Preston, commander of the guard, and knocked down one of the privates. Someone shouted "Why don't you fire?"; this was taken by the guard to be an order and a volley was directed at the rioters, three being killed and others wounded. The Colonists called this by the exaggerated name of "The Boston Massacre," and as it was the first blood drawn against the colonists, they nicknamed the Twenty-Ninth "The Vein Openers." Captain Preston and those of the guard who fired were tried by an American Civil Court and acquitted of any offence; the judge

remarked that an apology was due to them from the Boston authorities, for exercising such restraint under great provocation.

The Faughs

During the Peninsula war the old Eighty-Seventh Foot, now First Bn, The Royal Irish Fusiliers, charged the French at Barrosa on 5 March, 1811, shouting their Irish war-cry, "Faugh-a-Ballagh," meaning "Clear the way," hence their soubriquet "The Faugh-a-Ballagh Boys" or briefly "The Faughs." The Peninsula Campaign was also the scene of other gallant exploits now commemorated in nicknames. The Middlesex Regiment earned their famous "Diehards" at Albuhera on 16 May, 1811. The fighting here was particularly desperate, casualties being heavy on both sides; as the British ranks thinned the remnant closed in on the Colours. Presently Colonel Inglis of the Fifty-Seventh was badly wounded, but he refused all offers to be moved to the rear and he cheered on his men with "Diehard Fifty-Seventh Diehard," which became embalmed in the exploits of the British Army as a well-earned soubriquet. An estimate of the casualties of the regiment may be obtained from the fact that after the fight the rations of one company were drawn by a drummer "in his hat."

The Bloody Eleventh

The expression "The Bloody Eleventh" is not a colourful expletive inspired by sudden annoyance, but the honoured nickname of The Devonshire Regiment, the old Eleventh Foot, which they won on the field of Salamanca on 22 July, 1812. The regiment was in Hulse's Brigade of the 6th Division and had a hard time throughout most of the battle. Towards the end the French made a strong counter-attack against The Devons in square and although they inflicted many casualties the square was not broken. The day was very hot and the perspiration, mixed with blood from wounds, gave the men a lurid appearance. But they had more to come because as the French withdrew the Sixth Division was sent in pursuit and the Eleventh received many more wounds. When their comrades in other regiments saw them covered in gore they gave them the appropriate nickname of "The Bloody Eleventh."

Sankey's Horse

Nicholas Sankey was Colonel of a Foot Regiment which served in Spain during the War of the Spanish Succession where, in 1705, it was mounted on mules and was at once dubbed "Sankey's Horse" by the troops: this regiment is now The

Dorsetshire and the old nickname is still used.

The American War of Independence provided the occasion on which The East Yorkshire Regiment became "The Snappers." According to regimental tradition it was at the action of Brandywine on 11 September, 1777, that the supply of ball ammunition ran out. When the officer commanding the leading company of the regiment enquired why there was a pause in the advance, he was informed that there was no more ammunition. But this did not daunt him for he roared out "Then Snap and be dammed to you:" this ruse completely succeeded. It was also during the same war that The Wiltshire Regiment acquired its nickname of "The Springers." It was employed as Light Infantry, which had a word of command "Spring up." After one action General Burgoyne addressed the regiment as "My brave Springers," which they regarded as a very high compliment and the soubriquet dates from that time.

The Holy Boys

The Peninsula War of 1808–14 was fruitful of a great number of nicknames mainly owing to the length of the campaign and the numerous battles that occurred. The badge of The Royal Norfolk Regiment is the well-known figure of Britannia, which the Spaniards mistook for the Virgin Mary and giving the regiment credit for being very religious, called them "The Holy Boys." The old Forty-Fifth Foot, later First Bn, The Sherwood Foresters, was in many a tight corner when serving under the "The Iron Duke," to give Wellington one of *his* nicknames, but always brought credit upon themselves by the manner in which they behaved. Stubbornness was one of their main characteristics, for they would never give an inch whatever the odds. In his history of the Peninsula, Napier refers to them as "that Stubborn Regiment" from which their nicknames of "The Old Stubborns" is derived. Writing of the old Fiftieth, now The Queen's Own Royal West Kent Regiment, in his account of the battle of Vimiera Napier states, "With faces begrimed with powder as black as their own lapels they came tumbling down on Laborde's Division with a fearful war-cry." It was from this that the regiment acquired the name of "The Dirty Half Hundred."

Many of our regiments have served as Marines or have seen sea service of some kind, but this association with the Royal Navy does not appear to have inspired many nicknames. One that comes to mind, however, is "The Old Agamemnons," the name conferred on the Second Battalion The Welch Regiment, when

it was the Sixty-Ninth Foot, by none other than Nelson himself. This battalion was employed as Marines in 1782 under Sir Samuel Hood in the West Indies and in 1793–4 under Lord Hood at the siege of Toulon. It was in 1796 that it served under Nelson, when a portion fought in the "Agamemnon," and when he transferred his flag to the "Captain" it accompanied him. It was on this occasion that he christened the regiment "The Old Agamemnons."

The Cherry Pickers

Uniform has been a fairly prolific source of nicknames, some being reminders of a particular article of dress seldom or ever seen since 1914. "The Cherry Pickers," by which the 11th Hussars have been known for over one hundred years, is a case in point. When Prince Albert came to England in 1840 for his marriage to Queen Victoria, the 11th Light Dragoons escorted His Royal Highness from Dover on his way to London. To commemorate this service the regiment was converted to Hussars and styled the 11th, or Prince Albert's Own Hussars. The change in uniform brought them crimson overalls, which gave rise to their soubriquet.

Before the 10th Royal Hussars were mechanized the bridles, cruppers and breast-plates of the officers' charges were decorated with numerous Cowrie seashells, from which it derived its nickname of "The Chainey Tenth."

"The Pompadours," a name attached to The Essex Regiment, is not an obvious association, until it is remembered that the original facings of the regiment were crimson, or puce, a colour much favoured by Madame de Pompadour, a mistress of Louis XV of France.

The Red Knights

Towards the end of the Eighteenth Century The Cheshire Regiment, the old Twenty-Second Foot, must have made a striking appearance on parade, for they were dressed in red coats, red waistcoats and red breeches, hence they were known as "The Red Knights."

Some colonels' names have been canonized in nicknames of their regiments. For instance, when the Earl of Mar raised The Royal Scots Fusiliers in 1678, he dressed his regiment in grey trousers, hence they were called "Mar's Grey Breeks." Philip Bragg was Colonel of the old Twenty-Eighth Foot from 1734 to 1759. He was a very outspoken officer and his fame spread throughout the army, he being referred to affectionately as "Old Bragg." When the Twenty-Eighth became The Gloucestershire Regiment their soubriquet of "The Old Braggs" continued and is still current.

It may seem a little odd to refer to a Surrey Regiment as "The Glasgow Greys," but this happens to be one of the nicknames of The East Surrey Regiment, more particularly applied to the Second Battalion which, as the Seventieth Foot, was raised in Glasgow in 1756 and wore grey facings. The Royal Northumberland Fusiliers earned their name of "The Fighting Fifth" from their good active service record and because they were the Fifth Foot up to 1881.

The Duke of Wellington's Regiment enjoys the name of "The Havercake Lads." This originated during the American War of Independence from the practice of recruiting sergeants carrying an oat-cake locally called a Havercake, stuck on the points of their swords to attract hungry recruits, during a period of dearth in Yorkshire.

The Gunners

The "Honour Titles" of Batteries of the Royal Artillery came into being originally in much the same way as nicknames, many of which did not receive official approval until 1925. "The Chestnut Troop," "The Rocket Troop," and "The Eagle Troop" have been familiar names for many years and epitomize fine exploits in the history of "The Gunners," as does also "The Battle Axe Company." The complete list of these "Honour Titles" commemorates service in Europe, India, Burma, Afghanistan, China, New Zealand, North America, Egypt, the West Indies and South Africa, and some keep evergreen the names of distinguished battery or troop commanders such as Norman Ramsay, Mercer and Tomes.

Besides "The Gunners," the other great corps also formed from the now defunct Board of Ordnance is the Royal Engineers, commonly known as "The Sappers," a name which sufficiently indicates a part of their original role.

Here are some more nicknames that have been officially embodied in regimental titles. "The Oxford Blues" —Royal Horse Guards (The Blues), from their blue uniform which distinguished them from the Dutch Horse Guards, brought over by William III from Holland, who also wore blue uniform. "The Bays" —The Queen's Bays, from the colour of their horses for many years. "The Greys"—The Royal Scots Greys, from the colour of their original uniform and also from their grey horses.

"The Buffs" and "The Green Howards." From 1738 to 1748 when regiments were known by their Colonel's names, both the 3rd Foot and the 19th Foot had Colonels of the name of Howard. For the sake of distinction the colour of the

facings was usually placed before the Colonel's name, hence "Buff Howards" and "Green Howards." The name of the Colonel has disappeared from The Buffs (Royal East Kent Regiment) whose buff facings perpetuate the colour of the leather equipment they wore in the Seventeenth Century, but The Green Howards (Alexander, Princess of Wales's Own Yorkshire Regiment) have ensured perpetuity for their nickname by having it approved as their official title. "The Black Watch" —this was the nickname applied, with some hatred, to the Forty-Second Highlanders by the disaffected in Scotland—the term "black" is supposed to be derived from the regiment's dark tartan, and "watch" is an old term for the police and is, still current in the "Watch Committees."

Pontius Pilate's Body Guards

"Pontius Pilate's Body Guards" gives some idea of antiquity, although it may be an exaggeration in point of fact. This most distinctive nickname refers to The Royal Scots, the old First Foot, raised in 1633 for service under the King of France, but having roots that go back to the Sixteenth Century. The regiment was raised by Sir John Hepburn and its seniority in the French service was questioned by the Picardy Regiment, who mockingly gave them the soubriquet. "But we were on guard the night of our Lord's crucifixion," boasted a French officer, to which one of Hepburn's sharply retorted, "Had *we* been on duty then *we* would not have slept at our post."

There are lots more nicknames, some polite some not so polite, but the few quoted here are sufficient to show how many have their origin in episodes of Regimental history, the memory of which they now perpetuate. There are many that we have not mentioned, which have been inflicted upon Regiments with the intention of creating derision. So let us end with a note of warning that a little knowledge may be a dangerous thing, and it therefore behooves the uninitiated to find out the meaning of a nickname before he uses it; otherwise he runs the risk of "dropping a brick" and creating embarrassment.

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50 YEARS AGO

The board of naval officers appointed to study the merits of wireless telegraphy has recommended that it be used in the Navy to the exclusion of carrier pigeons.—*From the files of the Army-Navy-Air Force Journal (U.S.) 50 years ago.*

WEAPON PRODUCTION IN SWITZERLAND

Tor Skjervagen in "Militaer Orientering" (Norway)*

Switzerland, although a small country, has made incredible progress in the industrial field. Its production of fine watches is well-known and, therefore, it is not surprising to learn that this country carries on a comprehensive research and experimental programme for the purpose of producing better and more efficient weapons.

The main armament centre, the Federal Armament Design and Construction Works, is located at Thun, approximately 15 miles from Berne. It is located ideally for this type of production, for it occupies the site of a former artillery range, and is adjacent to a large military installation. The works was founded in 1865 and, since that time, its installations and activities have increased steadily. Primary emphasis is on research and development, rather than production.

The development of heavy artillery occupies the major effort of the works, but research also is conducted on other weapons, with the exception of hand weapons.

The specialized equipment used at the works requires the services of well-trained personnel. New personnel receive one year's training at the works' special craftsman's school and then they are sent to the various departments in the works for an additional three-year period before being assigned to definite positions.

Military training also receives an important role in the training of the new personnel. Non-commissioned officers conduct special classes.

The works also is connected with the ballistics research and experiments conducted for the Army. Interior and exterior ballistics, weights of projectiles, and various propelling charges are studied to determine the maximum efficiency for each weapon. All matériel is checked in a special testing establishment to determine the effects of temperature and vibration—important factors in modern warfare. The information which is obtained from the research in the works is checked in the field by the Army.

Only an expert can appraise definitely the work being done in the Swiss armaments works. But the average individual, observing the gigantic programme in action, readily can understand the importance of the programme and the reasons why the Swiss are proud of this portion of their industrial effort.

*This digest is reprinted from the Military Review (U.S.).—Editor.

LETTERS TO THE EDITOR

"Neptune"

Editor, the Journal:

I have been following the Military History series appearing in three recent issues of the *Journal* with an interest stimulated by the advent of the examination season.

The third of this series, "The Normandy Assault," which appears in your February issue, quite clearly gives the code word "Neptune" to the *whole* assault phase of Operation "Overlord." The entire business of securing a lodgement on the continent is described as Operation "Neptune."

This, I contend, is not accurate. Although the naval operation in the assault phase of "Overlord" indeed went under the code name "Neptune," it is clear that this restricted sense is not intended by the author of the article in question.

Apart from being a naval operation, "Neptune," surely, was the code name given by the planners to the *area* between Grandcamp and Caen to avoid confusing this area with other parts of the French coast in which Operation Overlord might have been mounted.—*Capt. R. J. G. Weeks, Canadian Intelligence Corps.*

Editor's Note : *The article mentioned in the preceding letter was written for the Journal by the Canadian Army's Historical Section. In order to give Colonel C. P. Stacey, OBE, Director of the Historical Section, an opportunity to reply in this issue, Capt. Week's letter was referred to him. Colonel Stacey's reply follows.*

Editor, the Journal:

Your Correspondent Capt. Weeks does not mention the books he has been reading, but it is not surprising that he has had difficulty with the code names relating to Operation "Overlord." Some of these code names are loosely used in published reports and other documents, including some high-level ones, and it is rather difficult to straighten the matter out on the basis of material in print. The Historical Section had a lot of trouble with these matters when we first began work on "Overlord."

However, Capt. Weeks is mistaken in contending that "Neptune" was a purely naval code name, and he will really not be misled if he accepts the definition given in the article in the *Journal* for February 1951. As is mentioned in a little booklet called *Canada's Battle in Normandy*, which my Directorate published in 1946 and which is referred to at the end of the article, the Naval, Army and Air commanders-in-chief for the assault

"A LITTLE NONSENSE . . ."

This cartoon is reprinted from the London "Graphic," 1888. The caption reads: "A suggestion from a Military Correspondent who has seen Professor Baldwin's descent," which would indicate that the professor must have been a balloonist. Although the uniforms of these Highlanders have been examined under the Journal artist's "thread counter," we have been unable to identify the regiment. In 1888, the campaign freshest in memory, probably, was the Nile Expedition of 1884–5. The "enemy" in this picture have a rather "Fuzzy-Wuzzy" appearance, and the rifle carried by the Highlanders appears to be the Martini-Henry. The Editor is strong in his belief that this picture represents the birth of the modern paratrooper.

LETTERS TO THE EDITOR

(*Continued from preceding page*)

phase (Ramsay, Montgomery and Leigh-Mallory) produced in February 1944 an "Initial Joint Plan" for the entrance into Europe. This joint plan itself bears the code name "Neptune," and its second paragraph (which is quoted in our booklet) begins: "The object of 'NEPTUNE' is to secure a lodgement on the Continent from which further offensive operations can be developed." This sentence may usefully be compared with Capt. Weeks' contention.

Capt. Weeks' other suggestion, namely that "Neptune" was primarily a name given to an *area*, derives I think from a remark in Lord Montgomery's Normandy to the Baltic. Nevertheless, the records seem to me to indicate that the area probably took its name from the operation rather than *vice versa*. — *Colonel C. P. Stacey, Director of the Historical Section, Army Headquarters, Ottawa.*

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