

RESTRICTED

NUMBER 68

NOVEMBER 1946



CATM



Lt. Gen. Charles Foulkes, C.B., C.B.E., D.S.O.
Chief of the General Staff

OTTAWA
EDMOND CLOUTIER
Printer to the King's Most Excellent Majesty
1946

ALLC HEADER INFORMATION

COLLECTION	HISTORICAL
TITLE	CANADIAN ARMY TRAINING MEMORANDUM NO. 68
DATE	NOVEMBER 1946
SOURCE	CATM
FILE NAME	HIS 0097
ALLC REMARKS	THIS PUBLICATION HAS BEEN PROVIDED FOR IT'S HISTORICAL SIGNIFICANCE AND LESSONS LEARNED POTENTIAL

NO SPELL CHECK!



Canadian Army Training Memorandum

RESTRICTED.—The information given in this document is not to be communicated, either directly or indirectly, to the Press or to any person not authorized to receive it.

NUMBER 68

NOVEMBER 1946

Published by the Directorate of Military Training under authority of the Chief of the General Staff

Contents

SECURITY

"Lest We Forget"—It's Up To You!..Security in peacetime. 2

MILITARY TRAINING

New Design of the 3-Inch Mortar Pit..With sketches..... 3

Organizing Battle Patrols..An appreciation of a problem... 6

The Evolution of the Submachine Gun..A lethal weapon.. 8

Lessons From Burma and French Indo-China..... 14

The Comet—A Heavy Cruiser Tank..It moves at 32 m.p.h.. 19

British and U.S. Methods of Instruction..A comparison... 21

RECREATIONAL TRAINING

Army Sports Coaching..Fostering a good spiril..... 23

FEATURES

For Valour..A complete list of Canadian V.C.'s..... 25

The Conquest of Italian East Africa..Last of a series..... 29

The RCASC Feeds An Army..The Corps' work in wartime..... 31

Swiss Army Training..A few interesting facts..... 41

Some Major Lessons of the War..Looking back..... 42

War Quizz..Some answers for the puzzled..... 45

Films..A list of the latest releases..... 48

EDITORIAL BOARD

Chairman: Col. R. W. Moncel, D.S.O., O.B.E., Director of Military Training

ADVISORY MEMBERS

Col. E. F. Schmidlin, M.B.E., E.D., Director of Royal Canadian Armoured Corps

Col. J. S. Ross, D.S.O., Director of Royal Canadian Artillery

Col. H. L. Meuser, O.B.E., Director of Corps of Royal Canadian Engineers

Col. A. E. Wrinch, C.B.E., Director of Royal Canadian Corps of Signals

Col. D. Menard, D.S.O., Director of Canadian Infantry Corps

SECRETARY and EDITOR: Capt. J. G. DeProse

Art Director
S/Sgt. B. J. Reddie

Draughtsman-Photographer
Mr. H. M. Hands

"LEST WE FORGET"—

IT'S UP TO YOU!

During the Second Great War, Security was so closely identified with warlike operations that many came to regard it as purely a wartime measure. In the same vein, they now believe that Security no longer matters.

Nothing could be further from the truth. Long before 1939, the Spitfire, Radar, Asdic and many other service secrets were protected by the observance of service discipline and the Official Secrets Act.

Security was brought into the lime-light especially by the success of enemy agents and Fifth Columnists on the Continent in 1940, particularly in the invasion of the Low Countries. Their successes demonstrated the need and the meaning of Security to millions who had never given it a thought. It sharply brought out the fact that lives could be saved and victory hastened by denying information regarding the plans and dispositions of our forces, great or small, to the enemy.

No Wartime Appeal Now

Security, however, now faces the task of performing its duties without its wartime dramatic appeal, and against the natural reaction of personnel to cast off all restrictions on private liberty of thought or action.

As there are no more D-Days for future operations to be protected, Security regulations can be, and have been, considerably relaxed in this respect.

It must be remembered, however, that there are policy matters concerning the Canadian Army which still create a necessity for the application of some Regulations.

Other major classes of information which must be protected are those that relate to our resources for waging war. Examples are scientific research and experimental establishments, new weapons, new equipment, etc. Removal of

safeguards from these types of information would be sheer folly, and the widespread dread of atomic bomb secrets falling into unscrupulous hands indicates that public opinion approves of these measures.

Still A Live Issue

Security remains a live issue. As the many restrictions and safeguards, provided by extensive wartime Security organizations against human error, will largely disappear, the maintenance of good Security depends mainly upon the loyalty and common sense of the individual. The Official Secrets Act is a powerful weapon to employ against indiscreet or unscrupulous persons. However, once a secret is out, the harm is done, and therefore, Security Training will in some respects be more important now than it was in wartime.

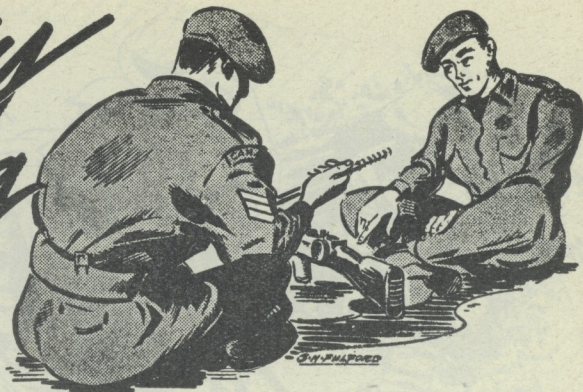
It is the duty of all ranks to guard against carelessness and gossip, which are the most important among Security crimes.

Finally, it must be remembered that Security is largely self-discipline. The habit of tidying up and leaving all secure in workshop or office, a discreet pen and, above all, the possession of a quiet and temperate tongue, mark the Security-minded soldier.

PILOTLESS AIRCRAFT

Thousands of bomb-carrying pilotless aircraft could be rained on an enemy thousands of miles away through use of the radio navigation system called loran that was used during the past war. A scientist who worked on the loran project says that all-weather flying bombs could be launched from hundreds of points and guided to their targets by an invisible net of precisely timed signals spread over the area attacked.—(U.S. Infantry Journal)-

Military Training



NEW DESIGN OF THE 3-INCH MORTAR PIT

This article, reprinted from the (British) War Office Infantry Bulletin, describes a new design for the 3-inch mortar pit produced by the British Army's Infantry Heavy Weapons School, Netheravon, England. The sketches help to explain the construction.—Editor.

The present design of the 3-inch mortar pit described in S.A.T., Vol. 1, Pamphlet No. 9, Lesson 75 is inadequate for the following reasons:

1. It provides too little room for the efficient handling of the mortar. Only a limited traverse can be obtained on either side of the zero line, and then under conditions which leave practically no room for the mortar numbers to work.

2. It is difficult to obtain clearance for the flight of the bombs over the front of the pit, especially when the baseplate has sunk into the ground after prolonged firing.

It is, of course, obvious that these drawbacks can be overcome by developing the pit as the tactical situation permits, until it becomes quite adequate, but nothing has hitherto been suggested or laid down as to how this should be done. An entirely new pit has, therefore, been designed, which satisfies all

the requirements of a detachment operating in defence. In considering the design, the following principles have been borne in mind:

1. There must be ample room for the detachment to handle the mortar efficiently over an arc of fire extending at least 45 degrees on each side of a central zero line.

2. There must be clearance for the flight of the bomb over the front edge of the pit, even when the baseplate has sunk some distance into the floor of the pit.

3. There must be adequate protection with headcover for the detachment.

Points To Be Noted

The final design is shown in Fig. 3, while the sketches (Figs. 1 and 2) also explain the layout. The following points should be noted:

1. A semi-circular pit is necessary if adequate traverse is to be obtained, leaving room in which the detachment can operate.

2. When the mortar is traversed 45 degrees to the right there is insufficient room for Nos. 2 and 3 and the ammunition on the right of it, unless the right end of the pit is extended into an ammunition bay.

3. The slit trenches are so positioned that personnel in them are defiladed from the pit itself. Should any ammuni-



Fig. 1

tion be detonated by enemy fire the mortar numbers are protected against it.

4. The front wall of the pit is 5 feet from the baseplate and, as the depth of the pit is 3 feet 6 inches, this allows adequate clearance when the baseplate is bedded in.

One important point needs consideration. In all mortar work it is stressed that the aiming posts should be at least 10 yards distant from the mortar, to ensure accuracy when switches are made. If the new pit is dug on ground which slopes upwards from the position this is obtainable at all elevations; but if the ground is flat, the posts are not visible at low elevations (45 to 60 degrees) unless they are about 5 yards from the mortar. This problem can usually be solved by some form of improvisation, such as heightening the aiming posts.

Trenches Connected

It will be noted that the slit trenches are connected to the mortar pit. This has been done so that the detachment can take post quickly when "Stand To" is ordered. On the other hand, if increased protection is desired, the slit trenches can be sited

a few yards away and NOT connected to the pit.

As far as the sequence of development of the pit is concerned, the following should be adopted:

1. Slit trenches to a depth in which all mortar numbers can take cover from shell or mortar fire.
2. Ammunition bay to a depth at which all bombs are under cover.
3. The semi-circular mortar pit.
4. Completion of slit trenches.
5. Further ammunition pits for the dispersal of reserve ammunition.

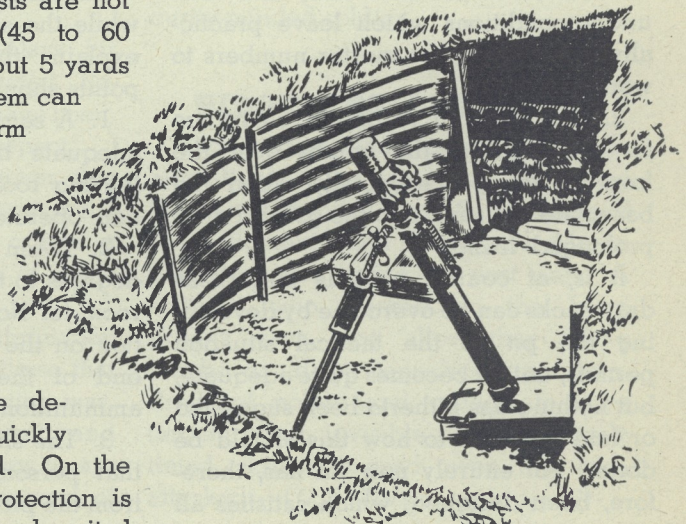


Fig. 2

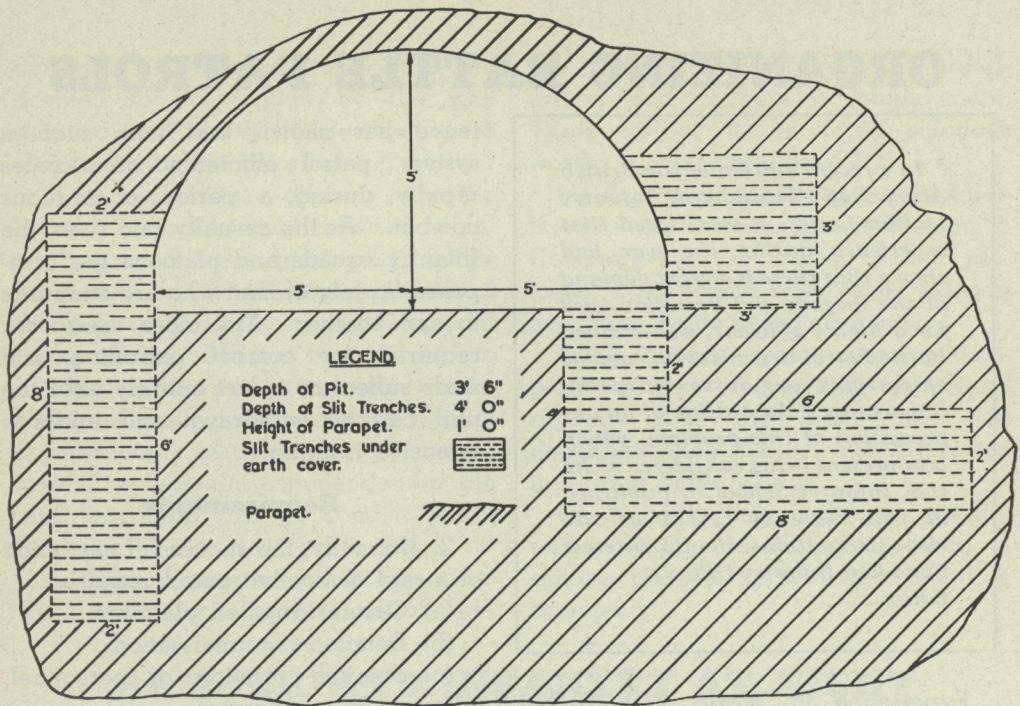


Fig. 3

BRAIN INJURIES

A new treatment for brain injuries has been announced by the Office of the Surgeon General. The patients are otherwise healthy who have lost the ability to speak, or to understand what is said to them, or to read or to write. The condition is called aphasia, caused in these instances by injuries to the brain. A man with aphasia may be able to write what he wants to say but not to speak it. He may understand what he sees in writing but cannot understand the same words when he hears them. Or he may suffer from combinations of such difficulties.

The treatment consists of first giving the patient a dose of sodium amytal, which breaks down emotional barriers and restores confidence so that the patient can begin to learn. Even if brain areas that originally were used for speech or reading or comprehending speech are destroyed, near-by areas can be trained to take over these functions if treatment is started early.—*U.S. Infantry Journal*.

BETTER BEARINGS

Supersonic speeds with jet propulsion are more likely with the development of a new anti-friction bearing by the Army. The bearing is insulated and is lubricated and cooled by a special oiling system.—(*U.S. Infantry Journal*).

PRESSURE SUITS

A pressure suit that will support life in a vacuum and yet allow complete mobility has been developed by the Air Forces and should be available in about two years. The suit is designed to protect flyers from possible rupture of pressurized cabins at extremely high altitudes. The ultimate development would be a pressurized cabin or capsule that could be ejected with the person and with its own parachute to break the fall. Men can be forcibly ejected from a plane only up to a maximum speed of 450 miles per hour. After that the human body cannot stand the terrific pressure of the air.—*U.S. Infantry Journal*.

ORGANIZING BATTLE PATROLS

In a recent edition of the British Army Staff (Washington) Infantry Liaison Letter, it was stated that experience during the war had shown that there is a great demand at the Brigade and Battalion level for a highly efficient, well-trained Battle Patrol Organization capable of carrying out tasks of special importance. An outline of an appreciation of this problem, which is at present being considered at the U.S. Infantry School, is published in this issue of CATM as the views it contains should interest Canadian Infantry Officers.— Editor.

Experience in World War II has shown that there is a great demand at the Regiment and Battalion level for a highly efficient, well-trained Battle Patrol organization, capable of carrying out tasks of special importance. An outline of an appreciation of the problem which is at present being considered at the U.S. Infantry School follows:

The Problem:

1. What is the best means of maintaining in the Infantry Regiment during combat a capacity for high performance patrol work on selected missions of great tactical importance?

2. Should there be immediately available to an Infantry Regimental Commander, a unit which can be immediately called upon for the performance of special tasks when it is undesirable to break up the tactical unit of a Battalion for this purpose?

Facts Bearing on the Problem:

1. Our doctrine of division employment as practised in the past war contemplates almost continuous commitment. This is made possible by maintaining a steady flow of replacements for combat casualties. Exper-

ience has shown that with such a system, patrol efficiency deteriorates rapidly during a period of arduous combat. As the casualty rate rises, the Infantry squads and platoons are composed largely of men who are strangers to one another. The close team-work required for combat patrolling and raids suffers or is lost entirely until the unit can be withdrawn and undergo intensive training.

Requirements

2. Normally, the successful execution of a raid or combat patrol requires:

(a) Careful detailed planning.

(b) Detailed reconnaissance.

(c) Detailed briefing of personnel, followed by a rehearsal.

(d) Men who are highly-trained, daring, rested, in good spirits and well led.

3. Rifle companies cannot, after extended combat, be expected to fulfil these requirements. Very frequently, the tactical and personnel situation, insofar as a rifle company is concerned, precludes its meeting of them.

4. As the Infantry regiment is organized at present, the regimental or battalion commander has three alternative means for conducting a different combat patrol or raid:

(a) The use of an element from his reserve.

(b) The withdrawal of a unit from the line for the mission.

(c) The passing of responsibility to a line company to perform the mission.

5. All have their disadvantages. Frequently, the reserve is small and badly in need of rest. Withdrawal of a unit is time-consuming and may be undesirable tactically. A company in contact, after extended combat particularly, cannot fulfil the requirements outlined in Paragraph 2 above. In any event, for the job to be done properly,

considerable training time must be devoted to preparation by the unit selected, and its loss during this time is always felt by the battalion.

6. Representative officers in the Infantry School from 21 different Infantry Regiments were questioned on this problem. To solve it, ten regiments of the 21 formed, during combat, a special organization. Officers from 17 of the 21 regiments recognized the desirability of having some special type of organization available to the regimental or battalion commander for the most important raid or combat patrol missions.

7. Since it is agreed that a requirement exists for a special patrol unit,

the problem becomes one of organization and concept of employment. There appear to be three solutions worthy of consideration:

(a) Expansion of the regimental Intelligence and Reconnaissance Platoon to Company size, to consist of four platoons: a scout and observation platoon and three battle patrol platoons.

(b) A combat reconnaissance company under regimental command separate from the Intelligence and Reconnaissance Platoon and organized into three battle patrols.

(c) A battle patrol platoon directly under Regimental Command and a similar platoon under each battalion command.

ARMOUR AND INFANTRY AT NIGHT

Here is an account of Infantry and tank co-operation in defence at night submitted by a company commander who took part in the operations in North-West Europe. It is pointed out that the use of tanks in this role cannot be considered normal, and depends mainly on whether or not the tanks are required to carry out their maintenance by night. Instances of tanks co-operating in this way have been known to occur also in the Far Eastern theatres. The account is reprinted from the (British) War Office Infantry Bulletin.—Editor.

Place: Second attack on Arnhem by 49 (W.R.) Infantry Division.

Details: A tank troop of 4 Shermans were placed under my company's command after the successful attack on Arnhem.

The ground was steep and well covered, with a wood on my left front. Two tanks were placed in the forward platoon area with two in reserve. My orders to the tank troop leaders were to fire on given arcs for each tank at a

range of 100 yards at heights of one foot and four feet above the ground, fire to be opened on the Platoon Commander's alarm signal being given.

I, in my turn, grouped the platoon (of four sections) to ensure no enemy got near enough to the tanks to discharge bazookas, etc.

That night the platoon was attacked by three Renault tanks and 50 S.S. Troops. Fire was opened by our tanks and the enemy was beaten off, leaving their three tanks and several dead. Flares were fired to assist our tanks. We had no casualties.

I had previously used this method of employing tanks at night in Normandy, but this was the first time a serious attack had necessitated their use.

Admittedly, the use of tanks in this role is:

1. Dependent on the agreement of the tank commander.
2. Dependent on the tank's daytime role.
3. Dependent on the tank's maintenance system.

This method was definitely successful and of great morale value.

THE EVOLUTION OF THE SUBMACHINE GUN

The "glorified pistol" has become an important part of the Canadian Army's firepower, and in this article George R. Gans, inventor, author and soldier, tells of the development of the sub-machine gun from a service pistol to the lethal weapon it is today. The article is reprinted from the Army Ordnance, a U.S. publication, and the accompanying illustrations were obtained through the courtesy of the Directorate of Arms Development, Army Headquarters, Ottawa, and H. A. Reiffenstein, curator of the Canadian War Museum, Ottawa.—Editor.

The submachine gun, as we know it today, had its origin in the 32-shot drum magazine and shoulder stock which, when fitted to the German Luger service pistol, transformed it into a small carbine whose lightness and bad balance made it unsuitable for military use. However, this improvised pistol-carbine arrangement led to the development of the Bergmann machine pistol 18¹, a fully automatic carbine rather than a pistol, using the same ammunition and magazine.

The MP 18¹ was introduced into the German services as a defensive arm, one gun being issued to the noncom in

charge of each machine-gun crew. The Bergmann served to correct the machine-gunner's paradoxical position of providing defensive firepower for the Infantry while at the same time they themselves were highly vulnerable in close combat.

Military Curiosity

The first tactical use of the submachine gun proved it a convenient close-range automatic weapon extremely handy for trench use. Unfortunately, insufficient experience prevented a detailed study, and, in its final analysis (if, indeed, there was one), the machine pistol was regarded as a mere military curiosity—nothing more than an over-glorified pistol. Classified as a highly specialized, limited-purpose weapon, unworthy of any earnest military consideration, it became lost in the shuffle.

The famous Thompson submachine gun arrived in 1919, too late for the war, but it later attained such great notoriety as a "civilian" weapon during the gang war of the 'twenties and early 'thirties that the name "tommy gun" has since been applied to all submachine guns. The civilian use of the "Chicago chopper" (and the use of the Bergmann during post-war uprisings in Germany) kept the application of the submachine gun in the public eye, and thus prevented its vanishing into oblivion during the



Bergmann machine pistol 18¹.

years of "peace" in which the military failed to see any value in this detested "gangster's gun."

Thus, kept alive by transfusions received from the press, it persisted until the mid-'thirties, when war again a probability, it had the opportunity to exhibit its military potentialities.

Until 1935 there had existed but two basic types of submachine gun: the 1918 Bergmann and the Thompson, of 1919 vintage. The submachine gun could, at that time, be likened to the 20-year-old fellow who was only two feet tall because he was lost at the age of one and was not found until nineteen years later—under the icebox!

The submachine gun's growth had been stunted in infancy when it was lost under the icebox of confusion and outmoded ideas, and the rejuvenation of the world's armies and their tactics revealed an immense need for mechanical improvement.

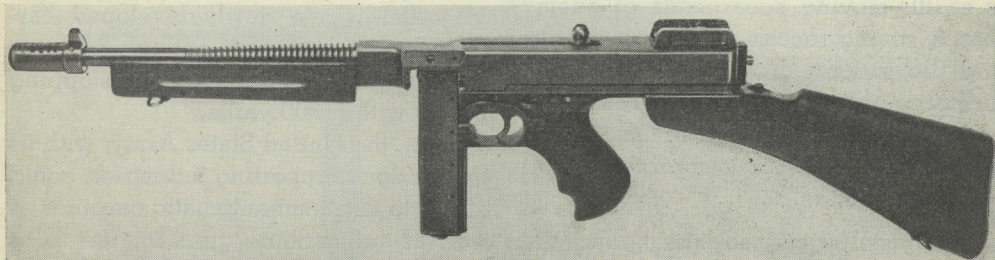
Spain's civil war provided a field for exploring the military potentialities of the submachine gun. Germany was the first to make this exploration, and the modernization of the Wehrmacht also brought about the modernization of the submachine gun. In 1938, the Germans lifted it from military obscurity by adopting the Schmeisser machine pistol 38.

The MP 38 was the first weapon to possess all the characteristics, including the all-important feature of cheap mass production, of the modern submachine gun. This simple, blowback-operated weapon was a streamlined version of the old Bergmann, identical in action but completely different in external appearance. Neat and compact, it introduced, in place of the conventional rifle-type wooden stock, the folding metal stock which was developed for use by parachute troops.

"Gangster's War"

In 1940 the German blitzkrieg culminated with the collapse of France and the British withdrawal from Dunkirk, and formal warfare between armies ended at least temporarily. It became a "gangster's war," to which the "gangster's gun" was eminently suited. England, expecting an invasion, was prepared to fight "in the houses and in the streets."

Street fighting means hot, sudden combat at close quarters, involving snap firing at fleeting targets—definitely a warfare of small groups and individuals. The employment of regular team weapons in such combat is always difficult and frequently impossible because light machine guns and automatic rifles are incapable of quickly shifting their fire. Also, ammunition carriers with their loads were ill-fitted for the close and vicious nature of house-to-house fighting.



Thompson submachine gun M1928A1.

The fire of the manually-operated or semi-automatic rifle was in itself insufficient, but it was very effective when augmented by the volume of fire of the submachine gun. Its essential characteristics made the submachine gun ideal for small warfare because, since it is an individual weapon like the rifle, its compactness made it more manoeuvrable at close quarters than a bulkier arm.

A large number of rounds was immediately available in the gun's magazine, and, by changing magazines, the gun could remain in action when other weapons had expended their ammunition. Also, because the employment of small-size pistol cartridges permitted him to carry ammunition proportionate to his firepower, he could carry on a little war all his own. Consequently, Great Britain purchased and manufactured in its own factories huge numbers of Thompson submachine guns.

Blitzkrieg had also demonstrated that warfare, when finally resumed, was to be a high-speed, fluid-front war of specialists. Artillerymen, truck-drivers, mechanics and ordnancemen who, in the days of static trench warfare, had been safe behind relatively fixed lines, now, even if their army were on the offensive, would be constantly exposed to swiftly-moving spearheads of enemy forces, roving reconnaissance elements, and the sudden attacks of descending air-borne units. So they required small, convenient dispensers of intense emergency firepower for self-protection at very short notice.

The pistol was inadequate, and the rifle was too cumbersome for specialists and too limited in firepower. The advantages of the German distribution

of Schmeissers among specialists were instantly obvious.

The United States Army began searching for an appropriate weapon to replace the pistol and rifle in the rear echelons. Although the Thompson submachine gun was employed to a certain extent, the Army decided that its value did not compensate for its inaccuracy at ranges over 150 yards and poor penetration except against personnel almost entirely exposed to fire.

Greater Range Needed

The calibre .45 bullet has great stopping power within its limits, but a weapon called upon to reply to the fire of offensive arms had to have a greater range than 150 yards. The nominal effective range of guns firing 9 mm Luger pistol cartridges was 300 yards, although firing at targets over 100 yards away with any submachine gun of the time was sheer optimism.

It was held that an arm with a pistol's limited ballistic qualities could not justify its weight (the Thompson weighed more than the M1 rifle) except for special uses. Moreover, the Thompson was cocked with an open breech, and pressing the trigger caused the massive bolt to rush forward before each shot, jarring the weapon and making accurate semi-automatic fire virtually impossible.

Something in between was required—a weapon like a rifle with the convenience of a pistol. The compromise was found in the lightness and compactness of the M1 semi-automatic carbine, a new miniature version of the M1 rifle, whose newly-developed cartridge was powerful enough to give its blunt-nosed bullet adequate stopping power within 300 yards.

Thus, the United States Army, with its tremendous supporting industries, could afford to use semi-automatic carbines as well as submachine guns for the same purpose. The Germans and the British, however, relied solely upon submachine guns for protective armament.

But the very features which made the tommy gun efficient defensively made it valuable on the offence. The "gangster's gun" was very successful in the British employment of "gangster's tactics"—the Commando raid. Troops participating in such hazardous types of operations had to move with lightning speed and hit hard, and they required assault weapons which supplied heavy yet extremely mobile and flexible firepower. This type of raid was greatly similar to the German air-borne operations which had already proved the worth of the sub-machine gun.

Tommy guns were therefore liberally distributed throughout Commando units, contributing substantially to their effectiveness. The Russians later proved both the defensive and offensive value of this weapon. England was not invaded, but Russia was, and the Russians fought in the houses and in the streets, using sub-machine guns with telling effect.

Later, carrying the offensive abilities to tremendous lengths on a general scale by completely arming entire units, often as large as battalions, with tommy guns, they demonstrated the devastating effect, both physical and psychological, of such concentrations of fire. German veterans will readily corroborate.

Dunkirk robbed the British Army of almost all its weapons, even light arms, and England was desperate for guns. Many Thompson guns were brought from America, but the Thompson was an expensive weapon, and its manufacture was not easily adaptable to the already heavily overtaxed British industry. The answer to this crisis was the Sten gun—the "Woolworth Gun"—a crudely finished piece of junk which cost only eight dollars but whose performance equaled those of the more expensive weapons of its class.

Sten Satisfactory

Originally intended as an expendable stop-gap weapon, it was found so satisfactory that it remained a standard arm of the Army and Local Defence Volunteers (Home Guard). Considerable numbers were also smuggled and parachuted to saboteurs and guerillas in German-occupied territory.

The first few years of the war having provided the submachine gun with a wide variety of field use, such controversial subjects as type of fire could at least be fully discussed. In the sub-machine gun's infancy it had been held inadvisable to complicate its mechanism with a selector to allow semi-automatic fire.

Some years ago, a foreign military attache stationed in Washington told the author of early experiments with semi-automatic devices in the standard machine pistol of his country. "The



Schmeisser machine pistol 38.

results did not seem to be in proportion to the complication," he said, "and it was seldom used. A trained man can easily come down to one or two-shot volleys without mechanical aid."

References to the Thompson have already indicated that a gun cocked with its breech open was constantly jarred by the forward slap of the bolt, and it was claimed that open-breech cocking was necessary to prevent the possibility of spontaneous ignition of a round held in a heated chamber. Since it was considered incapable of any great accuracy and was a weapon of "firepower" anyway, it would have seemed that change-over mechanisms were a waste of time, energy and materials.

This was a visualization of the submachine gun as a bullet-squirter whose primary purpose was to spray lead indiscriminately, but its role was later more thoroughly understood. It was actually a weapon of opportunity, whose "firepower"—an often-used but seldom explained term—was certainly not a mere capacity for burning up ammunition. More accurately, it was its ability to administer as much well-placed fire as possible. With its fully automatic capacity available to furnish a reserve of fire, the tommy gun gave its most satisfactory performance when used semi-automatically, as a rifle—bursts being resorted to only for use in the critical phases of action.

It must be remembered that cyclic rate and accuracy were anything but coequal concepts. Very intensive fire could be maintained and a thousand rounds discharged, but without accurate aiming this shower of lead was absolutely wasted. When bursts were too long, the line of fire inevitably swerved, resulting in diminishing accuracy. Fir-

ing therefore had to be frequent and exact.

The interval necessary to change magazines was also valuable in allowing a cooling period for the soldier as well as for the gun. These points were proved by the Reising submachine gun, an arm able to fire semi-automatically and cocked with its breech closed, which was used in action by U.S. Marines.

It is difficult to say how much further development of the submachine gun would have gone had not the war ended when it did, but changes were making a trend obvious.

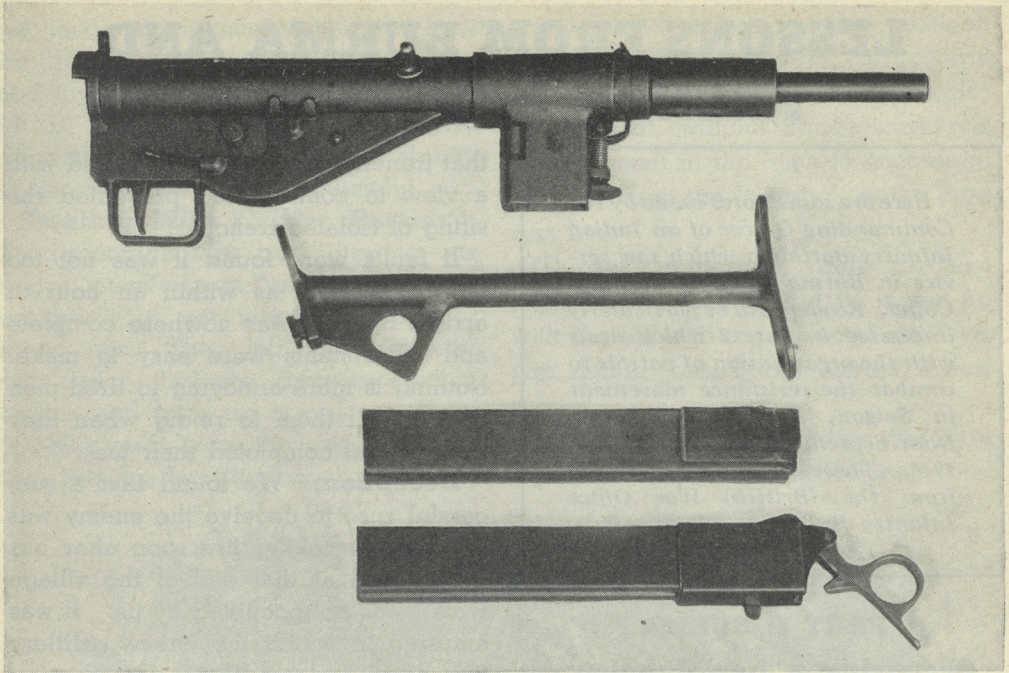
The use of rifle ammunition in the submachine gun would have been impossible without making it an automatic rifle. Since the effectiveness of such an arm would have depended upon a continuous ammunition supply, others besides the gunner would have been absorbed into the service of the piece which then would have lost its flexibility and independence.

What Was Needed

The required weapon had to be completely self-contained and capable of delivering full firepower from the hands of one man. It had to be small, compact and light so that a large quantity of ammunition could be easily transported by the gunner.

The dimensions of the cartridge always governed the ammunition factor, necessitating the use of less-effective pistol ammunition. The British stepped up the cartridge load, increasing the range of the Sten gun—which was modified to make it sturdier—and let it go at that. The Germans, however, could not use the machine pistol, for its ammunition supply was already extended to the limit. Their move was to develop an intermediate cartridge—one between pistol and rifle ammunition.

Some time later the U.S. Army found that for close-in automatic-weapons' support it was necessary to have a weapon



Sten machine carbine. Top to bottom: body and barrel, butt, magazine and magazine filler.

with greater range and penetration than the submachine gun, but with greater mobility and flexibility than the automatic rifle and light machine gun. To attain sufficient ballistics qualities, at the same time remaining an individual arm, the weapon required an intermediate cartridge, like the German compromise between the two contra-

dictory qualifications.

But the answer to the ammunition problem already existed in the combination of features which made the calibre .30 M1 carbine cartridge ideal.

The weapon problem was easily solved, too, because the M1 semi-automatic carbine was easily adaptable to full-automatic fire.

UNDERGROUND SURVEY

The Army and Navy Munitions Board, which is charged with planning for the industrial mobilization of the nation, is surveying underground sites which might be suitable for storage of tools and war production equipment and which might be adaptable in wartime for vital industrial production and other military uses. Both natural caves and man-made caverns such as mines are being studied.

At the same time shock-wave studies which may make even caverns deep underground untenable in atomic war are being carried on at Aberdeen

Proving Ground. Information gleaned from the Bikini test will be studied to find out at what height an atomic bomb should be detonated to crush solid rock to a depth of 150 to 200 feet.—
(*U.S. Infantry Journal*).

EXPLOSIVE PLASTIC

A plastic explosive containing TNT was patented recently. It can be molded into any desired shape. It burns freely and fiercely in air and can therefore be used for flares and rocket charges. — (*U.S. Infantry Journal*).

LESSONS FROM BURMA AND FRENCH INDO-CHINA

Here are some notes made by the Commanding Officer of an Indian Infantry Battalion which saw service in Burma and French Indo-China. Readers will be particularly interested in Part 2 which deals with the organization of patrols to combat the resistance movement in Saigon, French Indo-China, from September 1945 to January 1946. These lessons are reprinted from the (British) War Office Infantry Bulletin.—Editor.

PART 1: BURMA

Occupying a New Position: It was found that the enemy brought down artillery fire on his old position very soon after the position was captured by our troops. He had in most cases ranged his guns previously and consequently even a few rounds fired caused many casualties. It is, therefore, essential that as far as possible positions taken up should not be the ones where the Japs were; to make it more difficult for the enemy to know the exact position, avoid all movement, especially in the open.

Secondly, remain dispersed. The tendency to congregate around QM stores, wells, etc., must be avoided.

Thirdly, start digging immediately. It is amazing how even a small hole will protect a man from shells unless he gets a direct hit. "Dig deeper and quicker" could not be more true.

Linking Up the Perimeter: As soon as possible, usually about an hour after arriving to take up a defensive position for the night, we used to have a very short stand to. This allowed company and platoon commanders to tie up perimeter boundaries, siting of automatics, etc., and ensured

that trenches were properly linked with a view to control, and prevented the siting of isolated trenches.

If faults were found it was not too late to change, as within an hour of arrival digging was nowhere complete and adjustments were easy to make. Nothing is more annoying to tired men than to tell them to re-dig when they have almost completed their task.

Deception: We found that a successful ruse to deceive the enemy was to light a smoking fire soon after our arrival and at that end of the village which was not occupied by us. It was amusing to watch the enemy artillery fire coming down there and missing us. In addition to lighting fires in unoccupied villages, we occasionally sent out small parties at night who went to these villages and fired several rounds of tracer and a few very lights throughout the night. This ensured pretty heavy shelling on the village next day.

Blessing In Disguise

Once when the battalion was moving from "A" to "B", the MT was following the battalion some distance behind, but took a wrong turning: this turned out to be a short cut and the transport thus arrived at "B" before the battalion. This latter position was not very far from the Jap's position and actually in their view. They accordingly saw the dust made by the transport. Before the arrival of the battalion, it was decided not to go to "B" but to take up a position about half a mile short of it. The MT consequently turned back and the Japs saw it going away. They thought that troops had debussed at "B" and taken up a position there. Consequently, for the next four days they shelled the area regularly. To convince him that we were still there,

we made arrangements to light fires in "B" area regularly, both morning and evening. The move of the MT to "B" turned out to be a blessing in disguise and afforded us an opportunity of deceiving the Japs successfully.

Dealing With "Jitter Parties":

To discourage Japs from jittering our troops, we often sent "anti-jitter parties" consisting of not more than two or three men. They left the perimeter soon after dark or sometimes even earlier and took up a position about 500-800 yards from the camp. When they heard a Jap jittering us, this party

munication trenches are dug, platoon and section commanders can control the fire of their sub-units and can also move about, without unnecessary risk or movement in the open to encourage or discourage the "windy", as the case may be.

Thirdly, until new drafts become experienced, they should be mixed up with the old and experienced men. A pair should consist of an old and a new soldier.

In spite of stringent orders there are a number of men who will open fire at



made its way towards him and he was jittered instead. The Jap in most cases either ran away in a hurry or got killed. If the party encountered a large number of Japs they had orders to melt away and rejoin the battalion in the morning: they were not to return to the battalion during the night. The result was that very few Japs jittered us.

Nervous Men At Night—New Drafts: Indiscriminate firing at an imaginary enemy can be overcome by taking scrupulous care in the siting of trenches on the perimeter.

First, no man should occupy a trench any great distance away from his section.

Secondly, trenches should be so cited that section commanders can directly control their sections. If good com-

anything at night. This is specially so in the case of new drafts. It was discovered that the best way of remedying this fault was to make every platoon commander submit a report in the morning showing the number of rounds fired by his men during the night and the reasons for firing. Any one who fired without justification was deprived of his ammunition during the night for a period in proportion to the amount he had fired. He had to deal with the Japs, if they came, with his bayonet. This had a most deterrent effect on "jumpy" men.

Ambush: A successful ambush, in my opinion, is a V-shaped ambush. If it is a platoon ambush, put two sections on either side of the road and the third one further back, away from

the direction in which the enemy fire is coming. Let him come into the triangle formed by the three sections before fire is opened. He is then caught well and properly. The same applies to a company, etc., ambush.

Co-operation With Tanks: When working with tanks in close country thick with elephant grass, it is most important that the Infantry escort should be very close to the tanks. A Jap will pop out from the most unexpected place to damage the tank. Once a Jap came out of the grass between a tank and a sentry hardly a yard apart, and succeeded in damaging the tank before he was killed.

On the other hand, in open country the Infantry should not be too close as they will become an easy target.

Grenades Very Useful

The Jap invariably let the tank pass before he opened fire, which was directed on the following Infantry. This fire often came from very close quarters and from well-concealed positions which the tank could not get at. It was then a Infantryman's battle at close range, mostly fought with bayonets and grenades. The grenades can never be too many. Before going into battle our men preferred and usually did carry four to six grenades per man. Most of the killing was done by grenades, with a final thrust with bayonets to remove agony. A jeep and trailer load of ammunition and grenades near tactical headquarters was found a most useful standby, especially if the battle had been going for a long time.

When co-operating with tanks we found it unsatisfactory to net a 48 set on the squadron frequency as there was too much interference. It was found more satisfactory to keep the squadron commander with his command tank near the battalion tactical headquarters and his squadron second-in-command working with the leading

company commander. The leading company commander passed and received information from the commanding officer on his 48 set while the squadron commander was in constant touch with his own squadron through his command tank.

Communications

There were two parallel channels of communications with little interference. If the leading troop wanted the Infantry to do something he got in touch with his squadron commander who passed the information to battalion. The battalion, in turn, got on to the company commander concerned. Requests by tanks for Infantry actions were passed in the following sequence: Troop Commander — Squadron Commander — Infantry Commanding Officer — Leading Company.

This method never once failed during the whole of the year's operations. It was particularly useful when working with Royal Armoured Corps units whose troop commanders generally did not speak Urdu and could not talk to platoon commanders.

Generally the troop and platoon commanders worked so well, especially if they had previous experience of working together, that except for keeping their commanders in the picture, they seldom had to ask the latter for help. Whenever they had to, the time taken was very short and never once was there any unnecessary delay.

Overcrowding of Battalion Headquarters: The battalion headquarters should consist, in battle, only of those people whose presence is essential. It is wrong to have the whole Intelligence section up if two men can do the job. The same applies to the Signal platoon, otherwise one shell landing is frequently very costly.

After suffering casualties, one realizes how unnecessary these casualties are if a little care is exercised in the beginning to prevent unwanted bodies from

coming too far forward. Issue strict orders not to allow any sightseers or any other such people from coming too far forward.

Observations: In a defensive position in daytime we made full use of the Intelligence and Sniper sections by organizing a routine system of observation. Those men were fully-trained in making out shelling reports and systematic observation. They were given as good a field of view as cover would afford and were to be in position before dawn. Several times we were able to catch enemy night patrols and ambushes making their way back at dawn.

Cipher: Before going into operations, every clerk was thoroughly trained in cipher duties. This left the Adjutant and Intelligence Officer free for other work. The clerks liked it too, as otherwise there was little work for them to do. I discovered many units making the Adjutant responsible for their cipher. The result was that the poor man spent most of his time busy enciphering and deciphering messages when he should have been doing something else more important.

Weapons

3-Inch Mortars: Our 3-inch mortars were often fired as a battery, generally in defence. The result was first-class. The men got tremendous confidence in them. Whenever a company was detached, at least one, and often two, sections of mortars were sent with them.

If the anti-tank regiment had a detachment of mortars with the battalion, then all the mortars were placed under one command.

Smoke was rarely used. On occasions it was used to indicate targets to our aircraft, but this was not repeated often as it was liable to be used by the enemy to mislead our aircraft if he also had smoke. Coloured smoke was never issued to the battalion.

2-Inch Mortars: Our 2-inch mortars were mainly used for indication of targets to tanks.

MMGs: MMGs were very useful in defence. They were seldom used in attack except for protection of flanks.

In a defensive position never fire your MMGs during daytime from the position they occupy at night. This will save them not only from enemy artillery fire but will also make it difficult for snipers and jitter parties to locate their position.

Use of M9A1: During a counter-attack at night it was found that a Jap was using a grenade discharger from a tree not very far from the perimeter. A M9A1 grenade fired into the tree knocked him down. I do not know if M9A1 has been used in this role before, but it is worth trying.

PART 2: FRENCH INDO-CHINA

Street Fighting: The following are some lessons learned in Saigon and its suburbs during the Annamite resistance movement from September 1945 to January 1946.

The town varied from well-designed open streets to small alleyways and native shacks. There were few buildings over three to four stories high. The population consisted of Chinese traders and Annamite labourers. There was no means of identifying hostiles and except for a curfew, little control over the very crowded streets. There was no practical assistance from the locals, the majority being disinterested in what was happening.

Forces and Weapons: As regards our own troops, a battalion had to cover too wide an area to do more than patrol and make surprise checks.

The hostiles consisted of small parties working to simple plans of hit-and-run tactics, but there were also some individual gangsters. Their armament consisted mostly of grenades, but they had also Stens and rifles. Fire bombs



were also used, particularly for attacks on dumps, warehouses, etc.

Keeping Order: Japanese troops were used to find static guards on bridges, factories and powerhouses, etc. Our troops carried out very frequent patrols which were varied in route and timing as much as possible.

All vehicles were escorted and parties of less than four armed men were strictly forbidden to leave camp. A curfew was imposed.

Each company maintained a pursuit platoon ready to operate at a maximum of three minutes' notice at any time.

Searching for Hostiles: It was found a waste of time to chase gangs as they always had a good route taped which frequently led over roof tops. Instead, the whole block near any shooting was segregated at once and all movements by locals stopped. The nearest pursuit party was turned out and a thorough search of the area carried out.

The search parties always worked starting in a line and moving towards stops: before going in the men left all valuables behind. After the search was over the men were lined up in the street and searched by NCOs; locals were asked at the time if they had any complaints against the behaviour of our troops. It was found that this method forestalled the great number of complaints of thefts and damage which invariably followed raids and it was also regarded by the men as a protection against false accusations.

Check raids of suspected areas and ambushes were frequently carried out.

Vehicles Are Targets

It was found that fast-moving vehicles were invariably targets for grenades, but a vehicle moving slowly and with its occupants obviously looking for trouble was generally left alone.

When any shooting occurred the order was to stop all movement ruthlessly to gain initial control, and to take immediate counter-action in the direction of the firing.

By night, fast patrols in two or more jeeps frequently caught wrongdoers unawares.

A great deal of successful preventive work was done merely by studying the types captured carrying weapons and thereafter arresting others by their looks alone. Quite a "hunch" was developed for picking out malcontents and hostiles.

THE COMET—

A HEAVY CRUISER TANK

After the British Cromwell tank came its successor, the Comet, more heavily armed and with thicker armour, but with no less speed. Its main armament is the new 77mm, which is carried in addition to two 7.92mm Besa machine guns, and its speed is 32 miles an hour. The accompanying illustration was drawn from a photograph by CATM's artist, and the article, written by Maj. J. R. W. Murland, Fifth Royal Inniskilling Dragoon Guards, is reprinted from the U.S. Cavalry Journal.—Editor.

Some time before Britain's Cromwell tank made its first and extremely successful appearance in action, the design of its successor, the Comet, was already well advanced. Battle reports on the Comet, first employed in March, 1945, showed that the new tank not only represented a great advance over its predecessor as a weapon of war, but had also demonstrated a similar degree of mechanical reliability—one which would have been considered fantastic a few years ago.

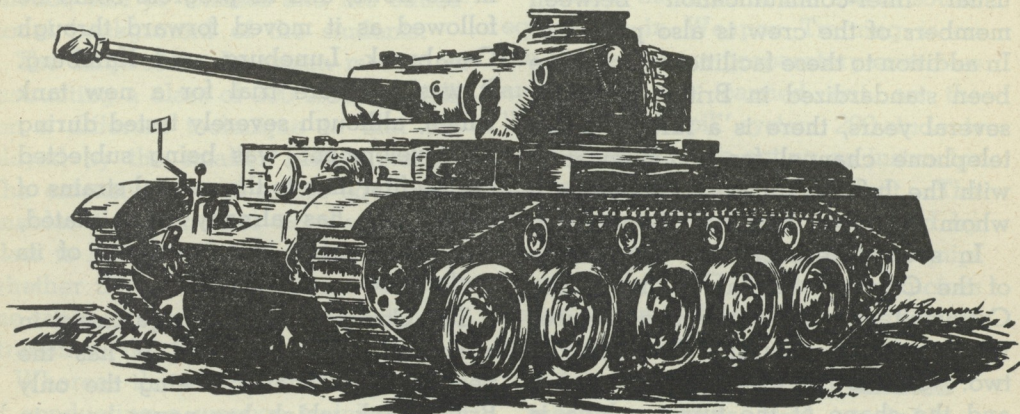
When the question of a successor to the Cromwell was first contemplated,

the designers faced the inevitable conflict of military requirements. It was clear that the paramount needs were for a heavier armament together with thicker armour; at the same time it was considered that little, if any, of the Cromwell's great speed could be sacrificed. That this was achieved without the sacrifice of any military essential can only be regarded as something of a miracle.

Beats German "Tiger"

The gun selected for the main armament of the Comet was the new 77mm, which combines a good armour-piercing quality with the ability to fire a most effective high-explosive shell. It is of interest that the armour-piercing performance was better than that of the 88mm KwK 36 gun, which was mounted in the much publicized German Tiger Tank. The Comet also has 7.92mm Besa machine guns, one mounted in the turret co-axially with the 77mm gun, and the other in a ball-mounting in the front of the hull. Sixty-one rounds of ammunition for the 77mm are carried, together with 5,750 rounds of machine-gun ammunition.

Special devices were designed for sighting and laying the 77mm and Besa turret guns, and are one of the out-



The British Comet Tank.

standing features of the Comet. It is not possible to describe these devices in detail, but it can be said that they represent a departure from any previous practice in many respects; the methods of sighting and laying insure the greatest possible accuracy at all combat ranges, and with this equipment the 77mm is at present the most accurate British tank gun.

The adoption of the 77mm gun made it necessary to increase the diameter of the turret ring to 64 inches, which is 7 inches more than that of the Cromwell. The over-all dimensions of the Comet are also slightly bigger. It is 21 feet 3 inches long, 10 feet 1 inch wide, and 8 feet 9 inches high, and weighs almost 33 tons.

Established Design

The general lay-out of the tank follows established British design, and a crew of five men is carried. These are the driver, hull-gunner, commander, turret-gunner, and loader wireless operator, the last three being accommodated in the turret. The turret traverse is power-driven, and has a full traverse of 360 degrees.

The radio equipment in the Comet is most comprehensive. Basically, it follows previous practice, allowing simultaneous telephonic communication on two channels, one to higher formations within medium range, and the other to tanks within short range; the usual inter-communication between members of the crew is also provided. In addition to these facilities which have been standardized in British tanks for several years, there is a further radio-telephone channel for communication with the Infantry or other troops with whom the tanks may be co-operating.

In several respects the appearance of the Comet is similar to that of the Cromwell, but there are two features which prevent confusion between the two. One is the external gun mount, and the shape of the turret, which is more squat on the Comet. The other

is the four rubber-tired rollers on each side of the Comet which carry the top run of the track.

The remaining suspension details follow the usual design for British cruiser tanks: Christie high-speed suspension is employed, with five large road wheels on each side, and a Rolls-Royce "Meteor" petrol engine of 600 horsepower, which gives the Comet a maximum speed on roads of approximately 32 miles per hour.

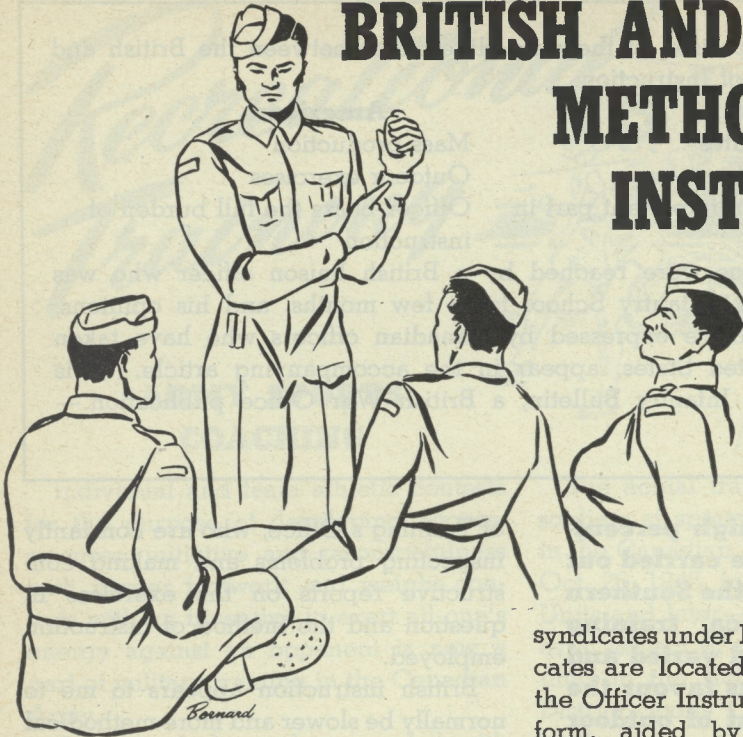
Transmission, Steering

The transmission and steering system do not call for any particular comment. The Merritt-Brown controlled differential steering system is employed, which gives a positive drive to both tracks at any radius of turn. This system was first used on the Churchill tank, and since then it has been standardized on all British tanks. It is very compact, making it possible to accommodate the entire engine and transmission in the compartment of the hull behind the turret. Two rear sprocket wheels transmit the drive to the tracks.

The Comet was first used in action in the exploitation that followed the Rhine crossings, and it formed the equipment of the well-known 11th Armoured Division in its advance from the Rhine to the Baltic. During the last 46 days of the war in Europe, the exploits of this division were continually in the news, and its progress could be followed as it moved forward through Osnabruck, Luneburg, and Hamburg. It was a severe trial for a new tank which, although severely tested during its development, was being subjected for the first time to the special strains of battle. As has already been stated, excellent reports were received of its performance and reliability.

The Comet is standard equipment in armoured regiments, and it has the peculiar distinction of being the only British tank which has never been in action outside of Germany.

BRITISH AND U. S. METHODS OF INSTRUCTION



The basic Principles of Instruction in the British and American Armies are identical; both encourage the maximum use of visual aids when facts are being taught; both insist on the maximum amount of practical handling and the minimum use of **eye** and **ear** when teaching skills. The main differences in the two systems lies in their technique, which differs considerably owing to varying conditions of weather and terrain, size of classes and the educational background of the students.

The large-scale American method of instructing a class of 200 students calls for a different technique to that employed by the smaller British classes. The extensive use of sound equipment enables the instructor conducting the class to be easily heard by all students whether they are in a lecture hall, on the range or attending a tactical demonstration in the field.

Whereas the normal British methods of conducting a weapon training class in mechanical training is for the class

to be split up into syndicates six to ten strong and for each syndicate to be instructed and practised by an NCO with only occasional supervision by an officer, the American system like-wise divides its class into

syndicates under NCOs, but all the syndicates are located in the same hall, and the Officer Instructor, from a raised platform, aided by large-scale working models, gives the instruction. The NCOs with syndicates assist by answering problems which arise within the syndicate and by giving demonstrations, etc. This method ensures a very high standard of instruction by the instructor best qualified to carry it out, but perhaps results in the American NCO lacking that sense of responsibility and ability to instruct, characteristic of the good British NCO.

Another example of the use of sound equipment in Weapon Training is on the Range, where preparatory exercises and firing are carried out on the "Coach and Pupil" system; 200 students are paired off, one acting as instructor and critic, the other as student. The lesson is controlled and supervised by an Officer Instructor using sound equipment, while NCO assistant instructors check individual faults of members of their syndicates.

In Great Britain, limited training areas and variable weather conditions make it

Below is a comparison of the main differences between the British and American Methods of Instruction:

British	American
Small syndicates	Mass production
Indoor exercises	Outdoor exercises
NCO plays an important part in instruction	Officer bears the full burden of instruction

These conclusions were reached by a British liaison officer who was attached to the U.S. Infantry School for a few months, and his opinions, which agree with those expressed by Canadian officers who have taken courses in the United States, appear in the accompanying article. It is reprinted from The Infantry Bulletin, a British War Office publication.— Editor.

essential that a high percentage of training be carried out indoors, whilst in the Southern States of America training areas are vast and varied and weather conditions favour the maximum amount of outdoor instruction. Consequently, sand table and cloth models, plays and playettes figure very prominently in British programmes, whilst the American relies almost entirely on outdoor demonstrations, TEWTs and exercises.

American instructors are specialists, and normally teach only one subject or tactical phase, i.e., an instructor belonging to Section "A" of the Attack Committee, which is part of the Tactical Section, teaches the platoon in the attack. He probably has three or four problems which he has studied and knows perfectly. This policy leads to a high degree of efficiency in individual problems, but may result in some instructors lacking the broader tactical outlook which the corresponding British instructors have who undertake all the tactical phases of war. This possible weakness in the American system is largely overcome by a very thorough system of supervision of all problems by senior officers from the Co-ordinator

of Training's Office, who are constantly inspecting problems and making constructive reports on the exercises in question and the method of instruction employed.

British instruction appears to me to normally be slower and more methodical than the average American counterpart and greater time is allowed for criticism and discussion. The American student appears to absorb detail more readily and studies his Field Manuals more intensely and has greater faith in their teachings than the average British student.

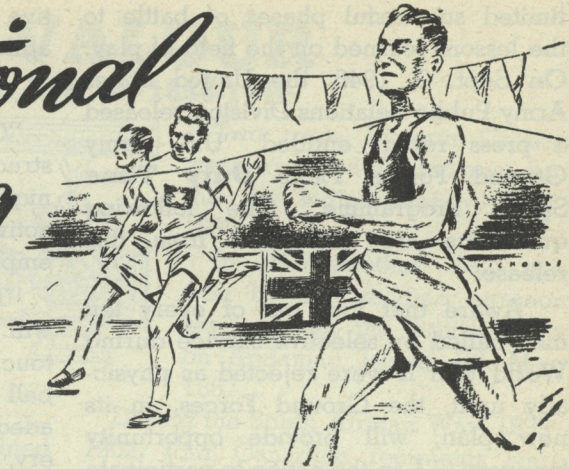
Graded Tests In U.S.

On the completion of the study of each subject, American students are given a written examination in the form of a graded test, with the object of:

1. Emphasizing and impressing upon the students the most important points on the subject in which the test is given.
2. Testing the efficiency of the instruction which has been given.
3. Obtaining a knowledge of the student's information upon which the test is given.

Graded tests are normally of the objective type: Completion Questions; Multiple Choice Questions; Matching Questions; True-False Questions. This type of examination is simple and reliable, and compares very favourably

Recreational Training



ARMY SPORTS COACHING

Individual and team athletic contests for the purpose of developing aggressiveness, initiative and resourcefulness with proper footwork and weight controls with an incentive to exert all one's energy against an opponent is now a part of military training in the Canadian Army.

A spirit of clean play, coupled with an all-out-to-win spirit, should be fostered in Army games. This can be accomplished only when the individual is properly trained and coached by competent instructors.

The actual training and coaching of soldiers at sports during training hours in the Canadian Army was first adopted Oct. 26, 1945, in Holding and Sortation Units and later—Feb. 5, 1946—adopted as a subject of military training for all units in the Active Army. Successful District Sports Coaching Schools were held.

On Dec. 21, 1945, the Canadian Army issued its first sports instructional book entitled "Canadian Army Sports Coaching Guide".

Many Nations have attributed un-

METHODS OF INSTRUCTION

(Continued from previous page)

with the normal and more lengthy essay type usually employed at British Schools.

Army Extension Courses are run by all American Army Schools with the object of providing a progressive, non-resident course of military instruction for personnel of the Army. Six series of sub-courses, each series corresponding to the following levels of instruction, are organized: (1) Basic Military Instruction; (2) Second Lieutenants; (3) First Lieutenants; (4) Captains; (5) Majors; (6) Lieutenant-Colonels. Each series consists of sub-courses arranged in progressive and logical order, paralleling to the maximum extent practicable the presidential in-

struction at the Infantry School. This is entirely instruction by correspondence and has no parallel which I know of in the British Army.

In conclusion, the main differences between the British and American methods of Instruction are in technique: mass production compared with small syndicates; out-of-door training in America, indoor exercises in Britain; the American tendency to specialize; the comparative methods of examination; and the American system of correspondence courses. The officer bears the full burden of instruction in the American Army, whereas the NCO plays an important part in the British system.

limited successful phases of battle to the lessons learned on the field of play. On Sept. 2, 1946, the United States Army Public Relations Division released a press report entitled "U.S. Army Ground Forces Plans **Duty Time Sports Programme.**" The following quotations are abstracted from this release:

"Aware that four out of every ten men called by selective service during World War II were rejected as physically unfit, the Ground Forces, in its new plan, will provide opportunity for every G.I. in the nation to participate in a variety of sports, at the level of individual ability, under trained, capable leaders during regular drill hours.

"Present training directives call for six hours of each training week to be spent in organized competitive athletics, in contrast to the 1-3 hour periods permitted in leading universities and colleges, thus giving the Ground Force soldier the best intramural sports activity in the country.

"To develop the athletic directors and instructors needed to carry out the coaching and organization phase of the program, the Army Ground Forces has taken over the Quartermaster Physical Training and Athletic Directors' School at Camp Lee, Virginia.

"Headed by Lt. Col. H. S. 'Sam' Francis, former All-American Fullback and Track Star at the University of Nebraska, 1936 Olympic Track Stand-out, and a veteran of four years with the Chicago Bears and Brooklyn Dodger pro grid teams, the school will handle a class of 60 officers and 120 enlisted men at each course.

"With no rank discrimination recognized, all students will be thoroughly drilled in the coaching of over 20 popular sports ranging from archery to wrestling, during the eight weeks course.

"Students will also receive an effec-

tive background in the organization of athletic tournaments and officiating.

Student Participation

"Classroom work will consist of instruction in fundamentals and techniques of various sports highlighted by active student participation with emphasis on organization and team play.

"The majority of the instruction time will be utilized to teach basketball, touch football, swimming, boxing, baseball and softball, and track, with adequate attention being paid to archery, badminton, bag punching, cross-country, golf, horsehoes, soccer, speedball, table tennis, tumbling, volley ball and weight lifting.

"Upon graduation, students will be qualified as athletic directors in their respective units, to administer the Ground Forces programme.

"Assisting Lt. Col. Francis in coaching the Camp Lee football team and as a staff instructor is Maj. Walter French, formerly of the Philadelphia Athletics and West Point baseball and football coaching fame."

This form of streamlined, dynamic physical training in the U.S. parallels the speed of mechanized warfare, and is a natural trend toward accelerated methods of training.

GUIDED MISSILES MAY CIRCLE WORLD

Ordnance experts are looking forward to guided missiles having a range of 20,000 miles and being capable of circling the world. The rockets now being tested in New Mexico have a range of 200 miles. The Joint Army-Navy Committee is now searching the United States, the Caribbean and Pacific areas for a suitable testing site for the contemplated rockets.—*U.S. Infantry Journal.*

FOR VALOUR

Canadian V.C.'s, 1854-1946

The most exalted of all decorations given to the armed services for heroism is the Victoria Cross.

It was established in 1856 by Queen Victoria, on the suggestion of the Prince Consort, as a reward for individual acts of supreme gallantry by all ranks, officers and men.

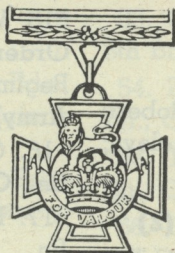
In the Royal Warrant it was ordained that "the cross shall only be awarded to those officers or men who have served us in the presence of the enemy, and shall have performed some signal act of valour or devotion to their country."

The cross is of the modest bronze, cast from captured enemy cannon. On the obverse is the Royal crest of a lion above the British crown with a ribbon beneath it inscribed "For Valour". On the back of the suspender from which the cross hangs is recorded the name, rank and other particulars of the recipient. The back of the cross carries a record of the act for which the decoration was awarded. The holder is entitled to V.C. after his name.

Won Twice Three Times

In the event that it is won twice by one man a replica is added to the ribbon. This has happened only three times in 89 years, in approximately 1,300 times it has been given. The first bar to the Victoria Cross to be won in the Second Great War was awarded to Capt. Charles Hazlitt Upham, V.C., of the New Zealand Military Forces.

The first Victoria Cross bestowed upon a Canadian dates back to the Crimean War, 1854-1856. Lieut. Alexander Robert Dunn, 11th Hussars, serving with the British Army was decorated with the Victoria Cross for his gallantry at Balaclava, October 25th, 1854.



Two more Victoria Crosses were awarded Canadians during the Indian Mutiny, 1857-1859.

In 1867 another V.C. was won by a Canadian surgeon serving with the British Army on Andaman Island, 7th May, 1867.

During the South African War, 1899-1902, four Canadian recipients were decorated with the V.C.

First Great War

The First Great War, 1914-18, saw 68 V.C. winners, 26 of them posthumous. It was in World War I that the first posthumous award was given. This was to L/Cpl. Frederick Fisher, serving with the 13th Bn., C.E.F., in Belgium, 23rd April, 1915.

In World War II, 1939-1945, 16 Victoria Crosses were awarded gallant Canadians, eight of them posthumously.

A total of 1,335 Victoria Crosses have been won to date, and of this total Canadians received 92; 34 were awarded posthumously.

Herewith is a breakdown by services:

Navy.....	4
Army.....	83
Air Force.....	5

The awards are listed chronologically, and the date shown is that of the deed,

Pursuing its policy of publishing information that is useful for record purposes, CATM this month lists all the Canadian Victoria Cross winners since the award was first established in 1856 by Queen Victoria. The information was obtained from the Directorate of Public Relations, Army Headquarters, Ottawa. It should be noted that the total of Second Great War V.C. winners was correct at the date of CATM's publication.— Editor.

not the gazettement. Posthumous awards are indicated by an asterisk.

Here is a complete list of Canadian V.C. winners to date:

Crimea, 1854-1856 (1)

1. DUNN, Lieut., Alexander Robert; 11th Hussars (British Army), Balaclava; 25 October, 1854.

Indian Mutiny, 1857-1859 (2)

2. READE, Surgeon, Herbert Taylor; 61st Regiment of Foot (British Army), Delhi; 14 and 16 September, 1857.

3. HALL, Able Seaman, William; Peel's Naval Brigade, Royal Navy, Lucknow; 16 November, 1857.

Little Andaman Island (1)

4. DOUGLAS, Asst. Surgeon, Campbell Mellis; 2nd Bn., 24th Regiment of Foot, (British Army), Little Andaman Island; 7 May, 1867.

South Africa, 1899-1902 (4)

5. RICHARDSON, Sgt., Arthur Herbert Lindsey; Lord Strathcona's Horse; 5 July, 1900.

6. COCKBURN, Lieut., Hampden Zane Churchill; Royal Canadian Dragoons; 7 November, 1900.

7. HOLLAND, Sgt., Ernest; Royal Canadian Dragoons; 7 November, 1900.

8. TURNER, Lieut., Richard Ernest Williams; Royal Canadian Dragoons; 7 November, 1900.

First Great War—1914-1918 (68)

9. O'LEARY, L/Cpl., Michael; 1st Bn., Irish Guards, (British Army), France; 1 February, 1915.

*10. FISHER, L/Cpl., Frederick; 13th Bn., C.E.F., Belgium; 23 April, 1915.

11. BELLEW, Capt., Edward Donald; 7th Bn., C.E.F., Belgium; 24 April, 1915.

*12. HALL, Colour-Sgt., Frederick William; 8th Bn., C.E.F., Belgium; 24 April, 1915.

13. SCRINGER, Capt., Francis Alexander Caron; C.A.M.C. attached 14th Bn., C.E.F., Belgium; 25 April, 1915.

*14. CAMPBELL, Lieut., Frederick William; 1st Bn., C.E.F., France; 15 June, 1915.

*15. WILKINSON, Temp. Lieut., Thomas Order Lawder; 7th Bn., The Loyal Regiment (North Lancashire) (British Army) France; 5 July, 1915.

16. CLARKE, Pte., (A/Cpl), Leo; 2nd Bn., C.E.F., France; 9 September, 1916.

17. KERR, Pte. John Chipman; 49th Bn., C.E.F., France; 16 September, 1916.

*18. RICHARDSON, Pte. (Piper), James; 16th Bn., C.E.F., France; 8 October, 1916.

19. HARVEY, Lieut., Frederick Maurice Watson; Lord Strathcona's Horse (Royal Canadians), France; 27 March, 1917.

*20. MILNE, Pte., William Johnstone; 16th Bn., C.E.F., France; 9 April, 1917.

*21. SIFTON, L/Sgt., Ellis Wellwood; 18th Bn., C.E.F., France; 9 April, 1917.

22. PATTISON, Pte., John George; 50th Bn., C.E.F., France; 10 April, 1917.

23. MacDOWELL, Capt., Thain Wendell; 38th Bn., C.E.F., France; 9-13 April, 1917.

*24. COMBE, Lieut., Robert Grierson; 27th Bn., C.E.F., France; 3 May, 1917.

25. BISHOP, Capt., William Avery; Royal Flying Corps, France; 11 August, 1917.

*26. HOBSON, Sgt., Frederick; 20th Bn., C.E.F., France; 16 August, 1917.

*27. BROWN, Pte., Harry; 10th Bn., C.E.F., France; 16 August, 1917.

28. O'ROURKE, Pte., Michael James; 7th Bn., C.E.F., France; 15-17 August, 1917.

*29. LEARMONTH, Capt. (A/Maj.), Okill Massey; 2nd Bn., C.E.F., France; 18 August, 1917.

30. HANNA, C.S.M., Robert; 29th Bn., C.E.F., France; 21 August, 1917.

31. KONOWAL, A/Cpl., Filip; 47th Bn., C.E.F., France; 22-24 August, 1917.

32. HOLMES, Pte., Thomas William; 4th Bn., Cdn. Mtd. Rifles, C.E.F., Belgium; 26 October, 1917.

33. O'KELLY, Lieut., (A/Capt.), Christopher Patrick John; 52nd Bn., C.E.F., Belgium; 26 October, 1917.

34. SHANKLAND, Lieut., Robert; 43rd Bn., C.E.F., Belgium; 26 October, 1917.

*35. MCKENZIE, Lieut., Hugh; 7th Bde., Machine Gun Company, C.E.F., Belgium; 30 October, 1917.

36. MULLIN, Sgt., George Harry; Princess Patricia's Canadian Light Infantry, Belgium; 30 October, 1917.

37. PEARKES, Capt. (A/Maj.), George Randolph; 5th Bn., Cdn. Mtd. Rifles, C.E.F., Belgium; 30-31 October, 1917.

38. KINROSS, Pte., Cecil John; 49th Bn., C.E.F., Belgium; 28-29 October, 1917, and 31 October-1 November, 1917.

39. BARRON, Cpl., Colin; 3rd Bn., C.E.F., Belgium; 6 November, 1917.

*40. ROBERTSON, Pte., James Peter; 27th Bn., C.E.F., Belgium; 6 November, 1917.

41. STRACHAN, Lieut., Henry; Fort Garry Horse, France; 20 November, 1917.

*42. DE WIND, 2nd Lieut., Edmund; 15th Bn., Royal Irish Rifles (British Army), France; 21 March, 1918.

43. McLEOD, 2nd Lieut., Alan Arnett; R.A.F., France; 27 March, 1918.

*44. FLOWERDEW, Lieut., Gordon Muriel; Lord Strathcona's Horse (Royal Canadians), France; 30 March, 1918.

45. McKEAN, Lieut., George Burdon; 14th Bn., C.E.F., France; 27-28 April, 1918.

46. BOURKE, Lieut., Roland; Royal Naval Volunteer Reserve, Ostend, Belgium; 9-10 May, 1918.

*47. KAEBLE, Cpl., Joseph; 22nd Bn., C.E.F., France; 8-9 June, 1918.

*48. CROAK, Pte., John Bernard; 13th Bn., C.E.F., France; 8 August, 1918.

49. GOOD, Cpl., Herman James; 13th Bn., C.E.F., France; 8 August, 1918.

*50. MINER, Cpl., Harry Garnet Bedford; 58th Bn., C.E.F., France; 8 August, 1918.

*51. BRILLANT, Lieut., John; 22nd Bn., C.E.F., France; 8-9 August, 1918.

52. BRERETON, Pte. (A/Cpl), Alexander; 8th Bn., C.E.F., France; 9 August, 1918.

53. COPPINS, Cpl., Frederick George; 8th Bn., C.E.F., France; 9 August, 1918.

54. ZENGEL, Sgt., Raphael Louis; 5th Bn., C.E.F., France; 9 August, 1918.

*55. TAIT, Lieut., James Edward; 78th Bn., C.E.F., France; 8-12 August, 1918.

56. DINESEN, Pte., Thomas; 42nd Bn., C.E.F., France; 12 August, 1918.

*57. SPALL, Sgt., Robert; Princess Patricia's Canadian Light Infantry, France; 12-13 August, 1918.

58. RUTHERFORD, Lieut., Charles Smith; 5th Bn., Cdn. Mtd. Rifles, C.E.F., France; 26 August, 1918.

59. CLARK-KENNEDY, Lt. Col., William Hew; 24th Bn., C.E.F., France; 27-28 August, 1918.

*60. NUNNEY, Pte., Claude Joseph Patrick; 38th Bn., C.E.F., France; 1-2 September, 1918.

61. HUTCHESON, Capt., Bellenden Seymour; C.A.M.C. attached 75th Bn., C.E.F., France; 2 September, 1918.

*62. KNIGHT, A/Sgt., Arthur George; 10th Bn., C.E.F., France; 2 September, 1918.

63. METCALF, L/Cpl., William Henry; 16th Bn., C.E.F., France; 2 September, 1918.

64. PECK, Lt. Col., Cyrus Wesley; 16th Bn., C.E.F., France; 2 September, 1918.

65. YOUNG, Pte., John Francis; 87th Bn., C.E.F., France; 2 September, 1918.

66. RAYFIELD, Pte., Walter Leigh; 7th Bn., C.E.F., France; 2-4 September, 1918.

67. KERR, Lieut., George Fraser; 3rd Bn., C.E.F., France; 27 September, 1918.

68. LYALL, Lieut., Graham Thomson; 102nd Bn., C.E.F., France; 27 September, 1918.

69. GREGG, Lieut., Milton Fowler; Royal Canadian Regiment, France; 27 September-1 October, 1918.

*70. HONEY, Lieut., Samuel Lewis; 78th Bn., C.E.F., France; 27 September–2 October, 1918.

71. MacGREGOR, Capt., John; 2nd Bn. Cdn. Mtd. Rifles, C.E.F., France; 29 September–3 October, 1918.

72. MERRIFIELD, Sgt., William; 4th Bn., C.E.F., France; 1 October, 1918.

73. MITCHELL, Capt., Coulson Norman; 4th Bn., Cdn. Engrs., C.E.F., France; 8–9 October, 1918.

*74. ALGIE, Lieut., Wallace Lloyd; 20th Bn., C.E.F., France; 11 October, 1918.

75. BARKER, Capt., (A/Maj.), William George; R.A.F., France; 27 October, 1918.

*76. CAIRNS, Sgt., Hugh; 46th Bn., C.E.F., France; 1 November, 1918.

Second Great War, 1939-1945 (16)

*77. OSBORN, C.S.M., (WOII), John Robert; Winnipeg Grenadiers, Hong Kong; 19 December, 1941.

78. MERRITT, Lt. Col., Charles Cecil Ingersoll; The South Saskatchewan Regiment, France; 19 August, 1942.

79. FOOTE, Hon./Capt., John Weir; Canadian Chaplain Service, attached The Royal Hamilton Light Infantry (Wentworth Regiment), France; 19 August, 1942.

*80. PETERS, Capt., Frederick Thornton; Royal Navy, West Africa; 8 November, 1942.

81. TRIQUET, Capt. (A/Maj.) Paul; Royal 22nd Regiment, Italy; 14 December, 1943.

*82. HOEY, Capt. (Temp. Maj.), Charles Ferguson; The Lincolnshire Regiment (British Army), Burma; 16 February, 1944.

83. MAHONEY, Maj., John Keefer; The Westminster Regiment (Motor), Italy; 24 May, 1944.

*84. MYNARSKI, P.O., Andrew Charles R.C.A.F., France; 12 June, 1944.

*85. HORNELL, Flt. Lieut., David Ernest; R.C.A.F., North Atlantic; 28 July, 1944.

*86. BAZALGETTE, A/Sqd.-Ldr., Ian Willoughby; R.A.F., France; 4 August, 1944.

87. CURRIE, Maj., David Vivian; 29th Cdn. Armd. Recce. Regt. (South Alberta Regt.), France; 18–20 August, 1944.

88. SMITH, Pte., Ernest Alvia; The Seaforth Highlanders of Canada, Italy; 21–22 October, 1944.

*89. COSENS, Sgt., Aubrey; The Queen's Own Rifles of Canada, Holland; 25–26 February, 1945.

90. TILSTON, Capt. (A/Maj.), Frederick Albert; The Essex Scottish, Germany; 1 March, 1945.

91. TOPHAM, Cpl., Frederick George; 1st Canadian Parachute Battalion, Germany; 25 March, 1945.

*92. GRAY, Lieut., Robert Hampton; Royal Canadian Volunteer Reserve, Tokyo Bay; 9 August, 1945.

NAZI WEAPONS

Army research in Germany indicates that only lack of time prevented some potent German "secret weapons" from being used. One was the supersonic bomber expected to reach an altitude of 154 miles and capable of reaching New York. Another was a giant rocket carrying smaller rockets which could reach speeds of 580 miles an hour after leaving the parent projectile. Range was estimated at 3,000 miles. The six-foot X-4 Ruhrstahl was a rocket-propelled, gyro-stabilized missile, designed to be launched from a parent plane. It had a proximity fuse. The Viper was a rocket-propelled missile, capable of 600 miles an hour. It was designed for attack with cannon rockets or by ramming. The pilot could automatically eject himself from the missile just before ramming. There are also indications that the Germans were far ahead of the United States in the development of the ram jet engine. The Germans had 136 secret weapons in various stages of production.—*U.S. Infantry Journal*

THE CONQUEST OF ITALIAN EAST AFRICA

This is the last of a series of articles on "The Conquest of Italian East Africa" written by Capt. J. C. Gardner of the Directorate of the Royal Canadian Armoured Corps, Army Headquarters, Ottawa. The entire East African campaign has been covered in previous issues of CATM (Nos. 64 to 67, July to October, 1946, inclusive). This month's article deals with mopping-up operations, and the writer obtained authentic information from the publication "The Official History of the Abyssinian Campaign."—Editor.

THE ATTACK FROM THE SOUTH

(See map page 30)

General Cunningham had arrived in Kenya in early November 1940 and his forces had crossed the Somaliland border by the 24th January, 1941. On 6th April they entered Addis Ababa. The amazing story of that 2000-mile advance is the story of the southern army of the great pincer which broke Italian power in East Africa.

This story is one of incredible courage and skill, for General Cunningham had won a triple bet against the enemy, against the weather, and against difficulties of supply. If he had lost any one, he would have lost all three, and he was always more in danger of losing

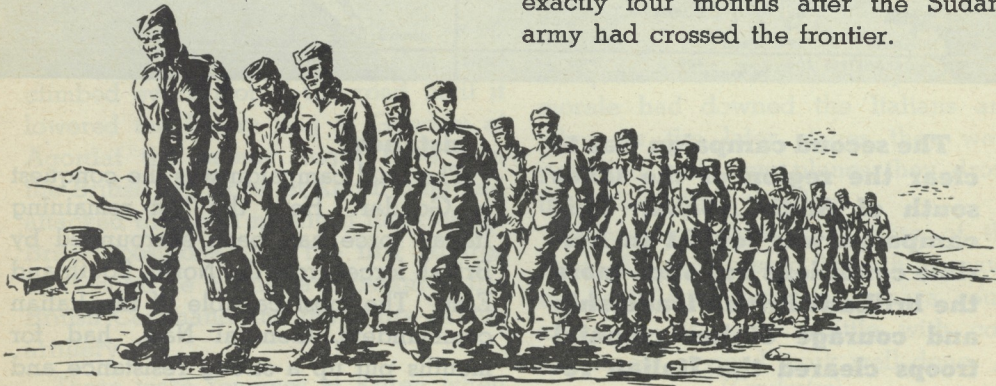
the last two than the first. I am not going to relate the progress of this campaign but a study of the map will give you an idea of the operation.

The conquest of Addis Ababa did not mean the cessation of hostilities, for the Italians were determined to hold the British forces in the South and accordingly they had withdrawn to numerous mountain strongholds. In following them the British fought a series of three secondary campaigns which did not possess much military importance as the great pincer was the supreme military event of the East African campaign. Nevertheless these campaigns are alive with interest and contain many of the most amazing stories of the whole amazing campaign.

Search For Scattered Armies

The first campaign was to clear the Italians from Amba Alagi. Here the Duke of Aosta, the Italian Commander-in-Chief, surrendered on the 18th May, a little less than six weeks after General Platt's forces had entered Massawa to the north and General Cunningham's forces had entered Addis Ababa to the south.

All that was left of the Duke's army surrendered to bring the total of prisoners to 50,000. The hardest mountain positions of Abyssinia had been won exactly four months after the Sudan army had crossed the frontier.





The second campaign was to clear the region of the lakes south of Addis Ababa. This campaign was fought in horrible conditions but once more the brilliant British leadership and courage of her colonial troops cleared the Italian re-

sistance.

The final campaign was the conquest of Gondar. Here the last remaining Italian force had been surrounded by British forces from the North, South and East. The most capable of the Italian commanders, General Nasi, had for months put up a strong resistance and

THE RCASC FEEDS AN ARMY

Of all the corps in the Army, the Royal Canadian Army Service Corps is most impressed with the truth of the statement attributed to Napoleon that "an Army marches on its stomach." This feature article, written during the Second Great War and forwarded for publication in CATM by Canadian Military Headquarters, London, England, describes the gigantic task of the RCASC in supplying the Canadian Army with food, as well as other supplies.—Editor.

It was a strange and exciting Dominion Day in 1943 for thousands of young Canadians who were sailing in a large convoy somewhere on the high seas enroute to long-delayed adventures. A feeling of fitness for the task ahead pervaded all ranks of the Royal Canadian Army Service Corps units with the 1st Canadian Division as they prepared for the work of feeding and

supplying an army. All gear had been placed on board, the trucks were loaded—to conserve space—and issues of all necessary equipment were complete. The troops had been told that their destination was Sicily, the landing to be made on 10 July, and every soldier was thrilled. No one knew what lay ahead, except the certainty that it was something new and different, and there was a feeling of optimistic expectancy.

The time was not spent in daydreams, however; every minute was occupied with preparations for a successful landing. Operational Conferences were held, maps were studied, the men were briefed in their respective duties as well as malaria precautions, contact with civilians, native fruits and other things with which it was important they should be familiar. Arrangements were planned regarding the supply to the forward troops of everything that was necessary

(Continued on next page)

THE CONQUEST

(Continued from previous page)

when the rains came in July 1941 he still held a large area centered on Gondar.

The regular divisions had by this date left East Africa and it remained for the native units with a backing of regular troops to clear up this last stronghold.

There had been moments of deep anxiety in this campaign that had climbed every foot of the road until it lowered the Italian flag at Gondar; at Agordat the enemy might have torn the British to pieces; at Keren if he had attacked the open northern flank of the British positions after the first failures on Sanchil he might have captured the British Command and the entire British artillery.

There were reverses at Keren when

all seemed black, when mangled battalions had to be pulled out of the thin line and replaced by others not yet up to strength, and when plans had to be recast day after day. The British command never surrendered the initiative. The iron discipline and the superior training of our soldiers found them prepared for the casualties, the mountains, the heat and the cold. An antiquated airforce braced by skill and morale had downed the Italians and when in the later stages they were provided with new planes they drove the Italians from the skies.

When our ships and those of the South Africans passed through Massawa the East African staff in Asmara could afford to sit back a little with consciousness of good work well done.

(Conclusion)

to keep them fit for fighting. They must have sufficient ammunition, gasoline, clothing, equipment and—as vitally necessary as anything else—food.

After a very few days a soldier ceases to be a thoroughly efficient fighting man if he is without food, or if his food is inferior in quality or insufficient in quantity. The Army authorities realize this and hold the Army Service Corps responsible for providing adequate food and seeing that it reaches the troops.

The system under which an Expeditionary Force is supplied includes a Base Depot, which receives all shipments of provisions and supplies from home parts and distributes them daily as required to organizations known as Forward Maintenance Centres, which are to be found in every Corps in an Army. The Divisions in a Corps pick up supplies from the Forward Maintenance Centre.

Military men will recall that in the



Canadian Army Overseas Photo

An armful of tinned goods ready for issue.

war of 1914-18 and the following years a Division was the smallest formation that could be self-supporting, that is, provide its own artillery, medical, engineers and supply services. On the reorganization of the Canadian Army in 1934 the ASC organization of a Division consisted of a Headquarters, Ammunition Company, Petrol Company, and Supply Column which supplied these commodities for the whole Division. With the advent of mobile warfare, a Division was found to be too large and unwieldy to operate as one fighting formation and it was decided that an effort should be made to have each Brigade (of which there are three in a Division) function as a self-sustained fighting group. Each Brigade therefore had with it its own Regiment of Artillery, a Company of Engineers, Field Ambulance and a Composite Army Service Corps Company. This decision, therefore, put a Brigade in the position of being able to move complete to any sector or area.

The RCASC was, of necessity, reorganized again and each Brigade had its own RCASC Composite Company which consisted of sufficient transport and sections of technical personnel to service the Brigade with all commodities, that is, ammunition, petrol, oils, lubricants and rations.

Different Problems

Each theatre of operations presents its own problems, however, and it was found in Sicily and Italy that due to lack of roads (there being usually only one road on which the Division moved), the narrowness of the Divisional front, and the rapidity of our advance, the setting up of ammunition, petrol and supply points for each Brigade would cause a congestion of these points on the main Divisional Axis (road). Therefore it was decided to go back to the old pre-war principle that the RCASC Composite Company handle one com-

modity only and that on a Divisional level.

Thus the 1st Canadian Infantry Brigade Company (which was formerly the 1st Canadian Divisional Ammunition Company) was detailed to handle all ammunition; the 2nd Canadian Infantry Brigade Company (formerly the 1st Canadian Divisional Petrol Company) to handle all petrol, oils and lubricants, and the 3rd Canadian Infantry Brigade Company (formerly 1st Canadian Divisional Supply Company) to handle all rations.

Unit Quartermasters indented each day on 3rd Canadian Infantry Brigade Company, RCASC, usually 72 hours in advance, for the number of rations required. All figures of the units were compiled and the ASC made its demands on the Forward Maintenance Centre 24 hours in advance. Rations were then picked up by the 3rd CIB Company and taken forward to the Supply Refilling Point where they were broken down to unit requirements. Rations were then either delivered to the unit, or the Unit Quartermasters sent trucks and took delivery at the SRP.

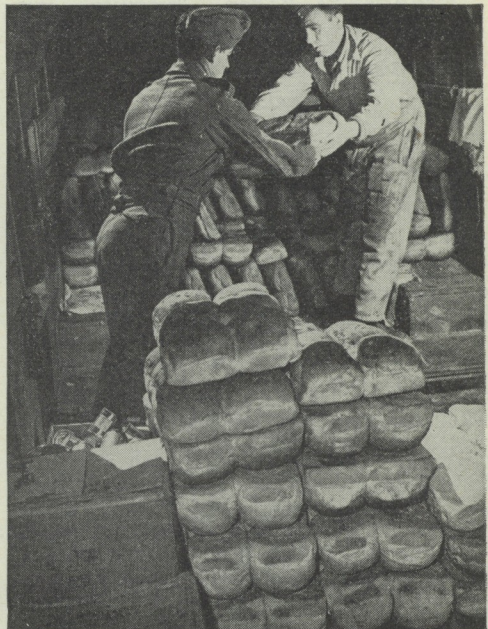
Two Rations

While on board the ships enroute to Sicily each officer and soldier was given a 48-hour Mess Tin Ration and a 24-hour Emergency Ration. The Mess Tin Ration was to provide the soldier with sufficient food for the first two days after landing, when the work of unloading the ships and getting the ammunition, gasoline, etc., rolling might interfere with the prompt delivery of rations. It was very compact and fitted snugly in both halves of an issue mess tin. To be placed in one half was a tin the exact shape of the mess tin and containing the new type of biscuit (which is not so hard or dry as that issued in 1914-18), chocolate bars and candies. In the other half of the mess tin was placed a tin of corned beef, two

small tins of cheese, one small tin of dripping, a tin of prepared tea, sugar and milk, a small tin of jam, two cards of matches and a Tommy Cooker, complete with heating tables ready to provide Johnny Canuck with a hot meal quickly.

The Emergency Ration was a tin of vitaminized chocolate with calorific value of 800, weighing approximately 16 ounces. This was to be kept intact by the soldier. It was for use only when he was cut off from supplies by the enemy and was intended to keep him physically fit until food and ammunition could be got to him, either by breaking the cordon around him or by parachute.

The Emergency Ration has been twice used during operations in Sicily. On one occasion a patrol of the Royal Canadian Regiment was cut off and had to use this reserve store; on another occasion a Company of The Royal 22nd Regiment was cut off two or three days



Canadian Army Overseas Photo

Fresh from the oven—and just like mother used to bake!

and their only means of sustenance was the vitaminized chocolate of their Emergency Ration.

Immediately after the troops had made their successful landing, the crafts began running up to shore and discharging the supplies of all types. Prominent amongst the Army's equipment and stores were stacks upon stacks of boxes about 24" x 16" x 14" with the word "COMPO" and one of the letters from "A" to "G" stencilled on the sides. These cases contained the rations on which the troops were to live for the next 24 days. There were seven different diets for as many days, so that there would be ample variety in the meals, and the letters on the boxes signified the precise type.

Each box contained enough food, all in tins, for fourteen men and provided three well-balanced meals—breakfast, dinner and supper. Open a box taken at random from the pile and you would find a diet prepared somewhat as follows:

Breakfast: Bacon, biscuits, jam, margerine, tea.

Dinner: Steak and kidney pie, potatoes, carrots, pudding, tea.

Supper: Balance of meat and vegetables, cheese, jam, biscuits, margerine, tea.

Each box also contained matches, 98 cigarettes for the 14 men (seven apiece), chocolate bars and candy.

After the landing, 3rd Canadian Infantry Brigade Company, RCASC, took charge of the issuing of the Compo Boxes—or packs as they are known—to units. As has been mentioned, there were seven different types of packs, and they provided, if properly handled, a well-balanced diet for the week, one that would be pleasing to the palate and be a decided improvement over that of the last war which, according to old soldiers, consisted of "all stew

and more stew". Packs were stacked according to types and a careful record was kept of issues, with the result that each unit received a different type of ration each day.

For the next 24 days, the issue of rations in the form of Compo packs went merrily along. It was an easy way of issuing rations and the Unit Quartermasters, almost as voluble as Italians when things are not entirely to their liking, had nothing of which to complain. In fact, the Division was moving so fast that the number of days left for Compo packs was overlooked.

The 25th day brought a rude awakening. On that day the supply convoy went to Forward Maintenance Centre to draw the day's rations for the Division and found the issue was made of 50 per cent Compo packs and the remainder in "Middle East" rations. This was practically identical with Compo except that it was in bulk, with a preponderance of corned beef and the addition of bags of flour (usually of Canadian make), sugar and salt, bread, tea, tinned milk and tinned or dried fruits. These rations had to be broken down to meet the unit requirements and this necessitated the weighing of the different commodities to distribute them into the various amounts to which each individual unit was entitled.

The weighing of the commodities presented difficulties, for most of the equipment required for handling this type of rations had been lost during the voyage through enemy action and had not by then been replaced. Scales, weights, scoops and containers were needed, and it was necessary to send parties into the neighbouring Sicilian towns to collect such scales and weights as could be found.

When these were procured the weights were in kilograms and con-

version tables had to be compiled to show equivalents in Canadian pounds and ounces. The difficulties were overcome, but perhaps the units received their rations a little later that day, and, incidentally, it was the first time in the experience of the Division ASC that rations were broken down to meet requirements by lantern light.

The issue of the Middle East ration was made until the Canadians reached Campobasso in Italy during October 1943, when another type was introduced to replace it. This was called the "British North Africa Ration". It was prepared for cooler climates and had more meat (fresh meat when available), dehydrated mutton and potatoes. Luncheon meats were also provided. This permitted a corresponding reduction in the amount of corned beef

issued, to the general satisfaction of the troops, who were beginning to tire of it as part of the menu. Unit cooks, however, were remarkably successful in serving corned beef in varied styles.

There was, as mentioned, a daily issue of bread in both the Middle East and the British North Africa rations. It will surprise readers to know that it was "white" bread made of high quality flour, something unknown in wartime England and more palatable even than the Vitamin "B" bread adopted generally throughout Canada. Most Canadian soldiers had not seen white bread for several years before arriving in Sicily and Italy, as the English bread is greyish-brown in colour and is called the National Loaf.

The Division went into a rest area in the vicinity of Campobasso, but after



Canadian Army Overseas Photo

Remember the corned beef? This is how you used to get it.

a short stay the 3rd Canadian Infantry Brigade was ordered into the mountains above Isernia to hold a front where, due to elevation and the time of the year, the weather was cold. To meet this situation two additional rations were provided to give them added comfort. The first was the "Winter Beverage Ration" comprising tea or cocoa to be made frequently during the day, and the sentry on duty on a cold night really appreciated the luxury of an occasional hot mug of tea. The other was the "High Altitude Ration", given to troops employed at elevations above 2,000 feet. This provided more tea, sugar and milk, together with corned beef, biscuits and margerine.

Up to and including the time the Division reached Campobasso an important issue to all ranks was Mepracine tablets, sometimes called Atabrine, for the prevention of malaria. If a man faithfully took the tablets five times a week and exercised other anti-malarial precautions as laid down, there was no fear of him developing the disease. From July 10 to December 31, approximately 1,620,000 tablets passed through Army Service Corps for issue to units of the Division.

The issue of rum to the troops was a matter of some controversy during the last war, and many Canadians will be interested in the present policy and custom. During the intense heat of Sicily and Southern Italy this potent beverage was carried by the 3rd Canadian Infantry Brigade Company, RCASC, but very, very little of it was issued. With the approach of the rainy season and cold weather its issue naturally increased. Distribution was originally made only on the authority of the G.O.C. Division but later the order of a Brigadier or the Senior

Medical Officer of the Division was accepted, the G.O.C. Division not always being available to give approval.

The ration is limited to not more than one ounce per man per day. It is an entirely optional issue and the man may decline it. Issue to him is made in the presence of an officer, and cocoa is available if he wishes to have it as a warm drink. Rum and cocoa is a warming and invigorating drink on a cold wet night, and serves a good purpose in making the troops comfortable and protecting them from chills and bronchial ailments.

Food For Patients

While the ordinary rations were required in large quantities to feed an Army, there were other supplies which had to be kept in stock or procured for use. For instance, there were wounded and sick soldiers coming down the line at all times, under the skilled care of personnel of Regimental Aid Posts, Field Dressing Stations and Field Ambulances. Two things are uppermost in the minds of the Royal Canadian Army Medical Corps—speed in getting a man to a hospital and care for him while on the way.

Some of the patients required special meals such as liquid diet or soft food. Therefore, delicacies such as jelly powders, custard powders, soft drink powders, ovaltine, brandy, ale and porter were kept ready for issue to the Medicals for the sick and wounded. Then, too, there was the slightly wounded or sick patient who still had a very healthy appetite. For them the area was scoured for cattle and fowl and the butchers of the RCASC carried out the necessary slaughtering and dressing. A farm, too, was commenced Dec. 10, 1943, under RCASC administration and supervision. Fowls, sheep and other animals were purchased and kept at the farm for fattening. Another unusual commodity in Stores at Supply

Point was spirits for the sterilization of surgical instruments.

After a battle one would frequently see a Canadian soldier coming down the road with his steel helmet at a jaunty angle on his head, his clothes crumpled and stained, his face shiny with perspiration and his Tommy-gun at the ready, herding in front of him a group of enemy soldiers. These he handed over to the Canadian Provost Corps at the Prisoners' of War Cage, where they had to be fed and arrangements made to transfer them to the rear. "POW Transit Rations" were issued to each prisoner as he was sent on his

way by truck down the line. Some of the prisoners were sceptical about the food provided for them, probably fearing it might be poisoned, but with the approach of hunger their timidity diminished rapidly.

On entering a captured Italian town it would sometimes be found that the Germans had destroyed all houses and stocks and left the inhabitants destitute. On such occasions there were such pitiful sights as old people and young children begging for "biscotta" and "chocolatta".

It was necessary to provide food for these refugees and



Canadian Army Overseas Photo

The QM checks a few items before issuing them to the troops.

arrange for their evacuation to safer and well organized areas. As may be imagined, the sight of the enormous quantity of provisions at the Divisional Supply Point was a source of amazement and envy to the peasants, whose diet even in peacetime had been meagre and unbalanced.

One such evacuation occurred at San Vito on Dec. 27, 1943. On arrival in the town square the refugees were found huddled around the town hall portico, on the steps of the building and roadways surrounding it. There was a cold wind blowing despite a clear warm sun. The refugees had come down the road from Ortona and possibly other areas within the enemy's lines. Most of them were aged and very infirm, of both sexes.

There were many children, some of them babies in arms. The younger women and children were very emaciated. All were poorly and insufficiently clothed with garments of torn and patched material reminiscent of Jacob's coat. Practically all of them were without covering for their feet, which were red with cold. They appeared not to have washed for days and their unkempt condition accentuated their state of malnutrition. There were only two persons in the group of between 300 and 400 who had some type of overcoat. They had collected together some of their most cherished possessions, wrapped them in a handkerchief or a piece of rag and commenced their walk to freedom.

Food For Refugees

A wagon was sufficiently loaded with food for the adults and milk for the children and sent to Lanciano, to which town the refugees were being taken. The cooks, too, were instructed to prepare a hot meal for all as soon as the trucks pulled into Lanciano.

During the trip enemy airmen machine-gunned the route, resulting in the loss of two vehicles, the driver of each becoming a casualty.

After crossing the Sangro River the going got really "sticky" and Indian troops (the Sikhs) and their mules were attached to form part of the 1st Canadian Division Mule Transport Company. The diet of Indian troops is totally different from that of Canadians and 3rd Canadian Infantry Brigade Company found its rations augmented by bags of strong smelling spices and herbs.

A tall, fine looking Sikh Quartermaster Sergeant drew the rations for his unit and as the Canadians could not identify the different types of spices and herbs it was left to him to point out the commodity and say to how much of each he was entitled. Later, when the accounts were audited it was found that this soldier of the Indian Empire had been most meticulous in making his demands. Having some experience with Quartermasters, this singular incident came as a pleasant surprise and restored a belief in miracles.

In a soldier's spare moments he might be seen sitting in a slit trench, or against a crumbled wall, or in the cab of a truck writing a letter home.

It was a joy to see the broad, happy smile break out on the face of a boy as he read of news from his home town. His immediate reaction was to reply to his mail, and to enable him to do so as quickly as possible, Blue Air Mail letter cards were issued by the Army Service Corps on a scale of one per man per week—and woe betide the RCASC if they were any short in a unit issue! This weekly ration was increased when more air transport was provided for mail, shortly after the visit of the

Minister of National Defence to the Front in November 1943.

The feeding of the Canadian troops in Italy for their first Christmas under operational conditions received very careful attention long before the arrival of that holy day. Whenever possible, it was to be a day of rest but the final decision regarding that depended on the enemy. Eventually it transpired that his greeting took the form of artillery shells, with which the Canadians reciprocated fourfold in Christian charity.

Nevertheless, ample provisions of Christmas cheer were on hand, for in addition to regular rations, there were oranges, apples and nuts, fresh pork (18,375 lbs. being issued), cigarettes, mince pies, chocolates and the ingredients for making Christmas cakes. The Expeditionary Forces Institutes had also available for purchase, under unit arrangements, turkeys, chocolate, plum puddings, Christmas cake and beer. A typical Christmas dinner for a unit consisted of soup, roast pork and apple sauce or turkey, potatoes, green peas or carrots, plum pudding, mince pie, cake, oranges, cigarettes and coffee, tea and beer.

The following incident on this Christmas Day, 1943, illustrates the splendid spirit of comradeship and unselfishness that exists amongst the troops. Word was received by the Postal Unit that 1200 bags of mail for the Division had reached the Forward Maintenance Centre. Transport was hurriedly provided by the Army Service Corps and the Posties picked up the bulky consignment, arriving back at Supply Point about eleven o'clock in the morning. The sorting of the mail was commenced immediately; in the meantime each unit was advised on the arrival of Christmas mail and asked to send in a truck to pick it up at three o'clock in the afternoon. While most

of Christmas Day was spent in hard work, and their sumptuous dinner delayed, the men of the Postal Unit found profound satisfaction in the knowledge that many of their comrades received parcels and letters from home on Christmas Day—on the very day the senders had hoped they would arrive.

All the handling of the different types of rations was carried out by 3rd Canadian Infantry Brigade Company, RCASC, which consisted of a Headquarters, a Composite Platoon, two Transport Platoons, two Relief Driver Increments and a Work Shop, making a total strength of a little over 300 all ranks. The actual handling was done by the transport platoons but the drawing of supplies at Forward Maintenance Centre, off loading, breaking down to unit requirements and issuing was carried out entirely by the composite platoon which consisted of 41 all ranks.

Notwithstanding the small numbers of men handling this work, the 1st Canadian Division never went short of any supplies: in many cases requirements were anticipated and steps taken to have the required articles on hand.

This organization normally handled a division around 18,000 troops, but at no time was the Divisional strength constant. Due to additional units being brought in (as in the case of the Sikhs, for example) and miscellaneous units working in the same area drawing rations through the Division (which included Naval, RAF and British Detachments), it varied. At one time rations were drawn for a strength of 29,400, still handled by the same 41 men.

At an operation Conference of the Division, Maj. Gen. C. Vokes, CBE, DSO, the General Officer Command-

ing, paid tribute by saying, "The 1st Canadian Division has a supply service which has never failed and will never break down." "A" Branch also asked CRASC to "pass on to all units under his command their appreciation for the hard work and excellent supply of commodities to the Division during the past week or ten days. It has meant that the Division at all times had what it wanted, where it wanted it and when it wanted it."

Working conditions were not always favourable; much depended on the location of Supply Point; in wet weather special care was necessary to keep such commodities as flour, sugar and salt dry; if the Division moved rapidly it

meant long strides and all night work for the Supply personnel. During September 1943 the Division moved 418 miles in 14 days and had to be maintained each day.

Around San Vito another phase of difficult working conditions was experienced for the Supply Point was under shell fire for weeks at a time. Had the men stopped work each time a barrage commenced, the forward fighting troops might not have received their rations on time. It was essential for the work to be carried on during a barrage; fortunately the German fire was none too accurate and this, combined with numerous "dud" shells, made casualties practically negligible.



Canadian Army Overseas Photo

Four hands all ready to go to work . . . wish we could see their faces!

SWISS ARMY TRAINING

Here are a few interesting facts for CATM readers on the system of military training in the Swiss Army, which mobilized 650,000 men in the Second Great War from a population of approximately 4,000,000. This is a condensation of an article appearing in the U.S. Army and Navy Register.—Editor.

American Army administrative personnel who pride themselves in producing reams of well-turned military phrases might be at a loss . . . were they to assume duties in the Swiss Army, where official communications are sometimes produced in as many as three languages.

General Staff Officers would also have difficulty in the Swiss Army, for there each is required to speak and write at least two languages, while troop commanders must be fluent in the language their men speak—and that could be any one of German, French or Italian.

Typical example of Swiss methods of solving language difficulties is tall, lean Lt. Col. George Zueblin, commander of the Infantry Basic Training Centre in Zurich, Switzerland, who . . . is at the Infantry School, Fort Benning, Georgia, to study American methods of training Infantry soldiers at both the Infantry and Airborne School.

He speaks English as well as the basic Swiss language, remarking that English is not particularly different except for occasional pronunciation problems that trip the would-be linguist.

Universal Training

Discussing points of similarity as well as differences in American and Swiss methods of training soldiers, Col. Zueblin explained that in Switzerland a system of compulsory and universal

military training has long been in effect, with ages from 18 to 60 subject to call. Actually, he explained, 18- and 19-year-olds were called up during war, but now the army takes just those of 20 years and over.

The 20-year-old is given a four-month course of basic training. Then, during the period he is between the ages of 20 and 32, he is called into the Army seven more times for a three-week period of refresher training. After this, when the man is somewhere between the ages of 32 and 36, he is again given another three-week refresher course. Beyond the age of 36 years Swiss citizens are not called up in peacetime.

Soldiers in the Swiss Army who wish to be commissioned officers are recruited from the ranks of the non-commissioned officers. Each non-com selected for officer training first attends a 3½-month school similar to an officer candidate school. Following this, the Infantry officer attends another four-month course as a platoon leader. After his graduation, the officer is called up for additional training every year until he is 36 years of age.

650,000 Mobilized

Switzerland, with an area of only 15,737 square miles and a population of slightly over 4,000,000 persons, mobilized 650,000 men during the war.

Questioned as to the physical condition of civilians brought into the Swiss Army under the compulsory military training system, Col. Zueblin remarked that on the average it was very good. This he attributed to a widespread sports program in Switzerland, with each town or community having its own societies for sports enthusiasts. Skiing, soccer and swimming dominate the sports field, with hiking and mountain-climbing being favorites in some sections.

SOME MAJOR LESSONS OF THE WAR

We shall fail to progress in peacetime with the exploitation of lessons learned in war if we set limitations on what can be done, in certain circumstances; these alleged limitations retard the technique of war until the arrival of someone who either disregards or overcomes them. This is one of the conclusions reached by Col. R. B. Pembroke, Coldstream Guards, in the accompanying article reprinted from the Journal of the Royal United Service Institution (Great Britain).—Editor.

The present seems a suitable moment to consider some of the major lessons which have been learned in the war. Many of the lessons learned are not new: they are the lessons of old wars which have had to be relearned. On the other hand, we must remember that it has been said that the British Army always goes to war trained and equipped for the end of the previous one. There is a modicum of truth in it due, I think, to the British preference for slow evolution rather than revolution and also to failure to differentiate between what is true as a principle and what is true only in certain particular circumstances. For instance, many soldiers were all too prone to regard methods, equipment or organizations proved in the Western Desert as necessarily applicable to campaigns in other countries, and we shall have to be more careful not to be dogmatic about things which may only apply in the peculiar conditions of Italy.

Developments in the technique of war follow largely upon the discovery of means to overcome limitations of weapons or the human body. The Russians have shown how the apparent hindrances imposed by weather could be overcome or disregarded and gained

considerable advantage thereby. They refused to accept the conventional dictates of the weather built up on practice, and thereby advanced the technique of war.

"Vested Interests"

We shall fail to progress in peacetime with tactical developments and the exploitation of lessons learned in this war unless we take note that there is a tendency among various arms to build up what one may call "vested interests." For instance, you may hear it said and accepted that armoured cars can only be used in certain circumstances, that heavy bombers can only be used in certain circumstances, and these alleged limitations delay the advance of the technique of war until the arrival of someone who, in order to achieve a certain result, either disregards or overcomes these limitations. In Northwest France the Allies achieved surprise by refusing to accept the limitations apparently imposed by lack of harbours and by developing other means of getting stores ashore in sufficient quantities for major operations. We must keep our minds flexible and view with suspicion any limitations which are the result of particular circumstances or mere practice.

One of the things which has been learned, or rather confirmed, is that good discipline is an essential foundation for the successful army. Before the war, discipline had become somewhat unfashionable because it had come to be thought of as a senseless form of Prussianism, out of place in the democratic world. But that attitude was surely based on a misunderstanding of the word.

On the more material side the lessons and advances are many. There are all the lessons from combined operations and the improvements in technique since the first landings at

Guadalcanal and Dieppe in the autumn of 1942. There are the lessons of that controversial subject, the use of Infantry and tanks. There are the developments in supply by air and airborne landings with the flexibility which they give. There are the developments in smoke and the converse, artificial illuminant, and there is what we have learned from the Germans about the counter-attack. I am going to deal with four major subjects only: the power of the artillery, depth in the attack, the importance of superior mobility, and the air arm on the battlefield.

Guns Concentrated

When times were bad with the Russians after the German invasion they had to cut their divisional artillery to the barest minimum of forty-eight guns. When production improved they formed artillery divisions rather than replace their divisional weapons and were therefore able to keep a large part of their artillery as a direct and vital influence on the battle by concentrating it at the decisive place. The Russians speak of the artillery "leading" the Infantry on to their positions.

For our part, we have made great strides in developing the concentrated power of the artillery. In the defence, centralized control of the gun has of itself at times defeated a major attack, as at Medenin on 6 March 1943. In the attack, it is important to note that it is centralized control which has given the additional power to the artillery in this war as compared with the last, and not the weight of shell, though it is true that the air-burst has made troops in trenches more vulnerable than they were.

As regards the effect of gun fire in the attack, the experience of the war

is that, despite the air-burst, artillery fire neutralizes but does not destroy an enemy well dug in. Assuming that the Infantry are right up to the barrage or timed concentrations, there must be a minimum interval of two minutes between the guns lifting and the arrival of the Infantry on the objective, this interval often being more when the timing has gone wrong. It is during this interval that the main trouble occurs, and the enemy is sometimes able to man his weapons before our Infantry arrive.

As a general point we must integrate as much as possible the major means of firepower—artillery, mortars and machine guns, particularly in defence; and we must be careful, if the Infantry gun is introduced, that it does not lead us to make the same mistake as the Germans with their Infantry guns, namely to forget the importance of concentration and centralized control of artillery.

Defences Overcome

By 1939 the number of automatic weapons in a unit had greatly increased and, in addition, in the west, both sides had constructed powerful defences along their frontiers. Yet carefully prepared defences of great strength were repeatedly overcome. It seems worth while to consider how this has come about.

It seems clear that the great offensive successes of the war cannot be put down to any inherent failure of the deep defence zones, which have frequently been overcome, nor are they due to any increased power of the artillery, nor can the air arm alone have brought about these results. I suggest that the cause is the greater depth now possible in the attack.

In 1914-1918 the great attacks used to peter out before complete victory could be achieved. Foch was wont to use the analogy of the disappearing ripples after a stone has disturbed a

pond. In April 1918, after the initial success of Ludendorff's second great offensive, Foch remained unmoved despite Haig's calls for reinforcements. When Foch was asked why he was so unworried, he drew on a piece of paper the frontage of the break-through. He then drew a series of curves to represent the lessening impulses of the advance until they stopped at a distance from the original front equal to the frontage of the attack. This is in fact approximately where the offensive stopped, though the important thing to note is that there was no vital objective within the area captured and therefore the offensive was a failure. Does Foch's rule of thumb method of measuring the scope of offensives hold good today? It is true that the depth of penetration must hold some relation to the width of the initial break-through. Nevertheless, it seems clear that Foch's axiom no longer holds good, the reason being the greater depth of attack now possible.

The means we have of getting the greater depth in the attack are these:

Increasing the amount of medium and heavy artillery, the use of armoured formations, direct air support, airborne troops, underground armies (only possible when operating in friendly country overrun by the enemy), strategic bombing, economic warfare and political warfare.

We have made great progress in the use of these weapons. We have not yet succeeded in integrating all these means of warfare, nor has it yet been fully appreciated that they should be directed to deepening the attack, that is, directly assisting the actual battle so far as possible, and that only secondly should they engage in projects which do not directly affect the campaign being waged on the ground.

Great resources are of limited value without mobility. Superior mobility may be the

most important single factor in the winning of a campaign, though not in the winning of a single battle.

In a combined operation the main difficulty is not so much the actual landing as the defender's superior mobility which enables him to concentrate before the landed troops are established ashore. In the Pacific, this advantage to the defender is largely nullified by the poor means of communication available. In Normandy the Allies achieved superior mobility by clogging that of the Germans through air power.

In their advances on the White Russian front in June-July 1944, the Russians appear to have gone across country in very wide enveloping movements, cutting off the Germans in the main points of resistance, which were naturally at focal points and along the main lines of communication. It is not clear how the Russians moved across country at such speed, but it is worth noting that their achievements owed a great deal to their boldness. In the ordinary way such a policy has its dangers. We have seen the danger of wide envelopment against a strong enemy who makes use of interior lines in the disaster which nearly occurred at the opening stages of the British offensive in the Western Desert in November 1941.

Perhaps the clearest example of the value gained by the Russians from superior mobility is their success in the winter campaigns in moving across snow and ice, and in their overcoming of mud in the autumn rains and spring thaws.

Victory goes to the side which "gets there fustest with the mostest."

Large Airforce

After June 1940, and in 1941, we were a commonwealth with power dispersed throughout the world; and the difficulty, or rather impossibility, of

deploying an army on the continent large enough to defeat a great European power was as real as it always has been in history. It could not be foreseen that Russia would enter the war on our side, nor could it have been said with certainty in the autumn of 1941 that she would be able to stay in it. It could not be foreseen that the United States would fight or that if they did they could develop their power in time to intervene. In these circumstances there is no question but that the right decision was made to plan an enormous strategic airforce which alone offered a possibility of winning the war. The decision must be made as to whether a war is to be won in the air or on the ground and all resources devoted to the decisive sphere, though anything left over can be used for other long-term projects. In this war, however,

our hands were forced in 1940.

One of the most notable features of the Russian campaign is their concentration of effort at the decisive point. The Red Army and Airforce is entirely devoted to winning the battle in hand. It is possible that one of the means by which they make these amazing advances across countries with poor communications is by the use of transport aircraft on a large scale for maintenance purposes. The Russians only indulge in strategic bombing when the fronts are quiet. This is of course to some extent because they have not the bombing force available, but the main reason may be that even with their enormous resources they feel they cannot afford to dissipate them to the extent of providing a large strategic bombing force.

WAR QUIZZ

This is a digest of an article by Lt. Col. A. H. Burne, D.S.O., British Army, published in The Fighting Forces (Great Britain). The original article was entitled "War Puzzles", but was changed to "War Quizz" for publication in CATM. While it is believed this "question-and-answer" quizz will answer many questions for members of the Canadian Army, the author points out that they "are in no way inspired or sponsored by Authority." The article was submitted by the Directorate of the Canadian Infantry Corps, Army Headquarters, Ottawa.—Editor.

A great many incidents and operations in the war puzzle the troops. The extent of their perplexity and desire for information has been borne in upon me increasingly in the course of my lectures on the war to troops all over the country. I have accordingly listed

below some of the questions most generally asked, and I append the gist of my replies. These replies are in no way inspired or sponsored by Authority.

Q.: Is it true that Singapore fell because our guns could only shoot out to sea?

A.: No. The bulk of our main armament could, and in fact did, shoot on the land side.

Q.: Why did Tobruk fall?

A.: During the Battle of Knightsbridge, South African troops garrisoned Tobruk, and naturally manned the portion of the perimeter that faced the enemy, namely, the western face. As a result of our retreat to Egypt the rest of the perimeter had to be garrisoned in a hurry by elements that had fought at Knightsbridge and were in the act of retreating. Rommel attacked and penetrated this part of the perimeter before these troops had had time to restore the defences and organize the defence properly. As a result, the

bulk of the South Africans—the only properly equipped defence troops—were never engaged.

Q.: Why did not the 8th Army attack the Mareth Line while Rommel was away attacking the Americans?

A.: Because, owing to supply difficulties, only a skeleton force could be maintained opposite the Mareth Line. A storm on 15 December had sunk many ships in Benghazi harbour, and the Armoured Corps, which was essential for the attack, had had to lend vehicles to act as supply lorries.

Q.: Why was our progress in Italy after the fall of Rome so slow.

A.: Because a large number of seasoned troops were taken away, principally for the landing in Southern France.

Q.: Was Dieppe intended as an invasion or only as a raid?

A.: Only as a raid.

Q.: What was the object of the Arnhem operation?

A.: The object was primarily to obtain a crossing over the Issel River to the northeast of Arnhem, whence a fairly clear run to the Elbe would have been possible.

Q.: Is it true that our plans were given away and that this led to our failure?

A.: No. If the enemy had learned our plans he would not have left us three intact bridges—at Grave, Nijmegen and Arnhem.

Q.: Then why did the operation fail?

A.: For three main reasons: (1) The enemy had, unbeknown to us, two panzer divisions resting behind their lines in the vicinity of Arnhem. These counter-attacked and drove a wedge between our forces in Arnhem and those to the west and to the south of it. (2) The weather broke on the second day and the air could not keep the

troops in Arnhem supplied with food and ammunition. Nor could a Polish paratroop brigade land, as planned, south of the town and act as a connecting file to the 2nd Army. (3) The 53-mile long "corridor" of the 2nd Army was cut three times, whereby sufficient ammunition could not reach our guns that were supporting the Arnhem troops. The operation was "touch and go", and we just lost.

Q.: Why did we leave the Germans for months in possession of Dunkirk, the Channel Islands and the Atlantic ports?

A.: Dunkirk was unnecessary for us once we had got Antwerp; the German garrison, was in effect in a concentration camp, and, thanks to the floods, we could neutralize them with fewer troops than they possessed.

The Channel Islands could have been liberated at any time, but at the cost of life and property to the inhabitants. Our delay saved them from this. Meanwhile, our ships and guns were more profitably employed elsewhere.

The French were entrusted with the task of liberating the Atlantic ports. They attempted to liberate St. Nazaire, but the attempt failed. They then wanted to amass adequate forces, and with these they did liberate the Gironde just before the end of the war.

ONE-MAN TANK

A patent for a one-man tank has been issued to an English inventor. The tank consists of a cylindrical armoured body lying horizontally between the tracks, in which the operator lies prone with a machine gun sticking out in front of him. The body is on a pivoted based on which it can raise up, giving the operator a longer field of vision and fire. The body also can be traversed for a wider field of fire.—*U.S. Infantry Journal.*

Q.: Why did we take so long in opening Antwerp?

A.: The Estuary of the Schelde was very heavily mined. The Navy could not go in till the mines were swept, and the minesweepers could hardly be expected to go in until the guns at the entrance had been silenced. Those to the south of the entrance were captured by the Canadian Army after a strongly contested advance. Those to the north were situated on the Island of Walcheren. Attempts to drown them out by breaking holes in the sea wall were unsuccessful, so a landing by ground troops became necessary. As soon as this was accomplished and the guns were silenced, the minesweepers went in, followed by the Navy. It would have been unreasonable to expect that all this could have been done much more speedily than it actually was.

Q.: Did the Russians let down the Poles on August 1944 by re-

treating from Warsaw?

A.: No. They did not retreat voluntarily. They were driven back by a powerful German counter-attack from the north which drove in their right flank.

Q.: Were the Americans surprised by Rommel's Ardennes offensive?

A.: The Americans were aware of the massing of German troops opposite the Ardennes, but interpreted it wrongly. The attack thus came as a surprise.

Q.: Why did the American 9th Army halt on the Elbe instead of going to Berlin?

A.: The advance of the Western Allies from the Rhine to the Elbe was more rapid than had been anticipated. It had been planned that we and the Russians should meet on the Elbe. In order to keep to this plan the U.S.A. troops were obliged to halt for several days on the Elbe.

RECOILLESS MORTAR

When the war closed the Chemical Warfare Service had a recoilless mortar "goon gun" in the field and ready for battle use. It is a new brother of the famous and battle-proven 4.2-inch chemical mortar. Besides being shock-proof, it is more portable and also capable of point-blank fire. It is an improvement on the accuracy of the "goon gun", because it can be fired straight into pillbox apertures, caves and dugout openings, windows, etc. The new gun is described as follows:

"A distinct feature is the recoilless mortar's weight. It tips the scale at only 170 pounds, which is about half the weight of its older brother. Using a standard 30-caliber machine gun mount, it does away with the heavy baseplate of the mortar and the necessity for preparing a position in advance. Three men can conveniently handle it.

"The new weapon owes its non-recoil to a tube and reaction chamber, the

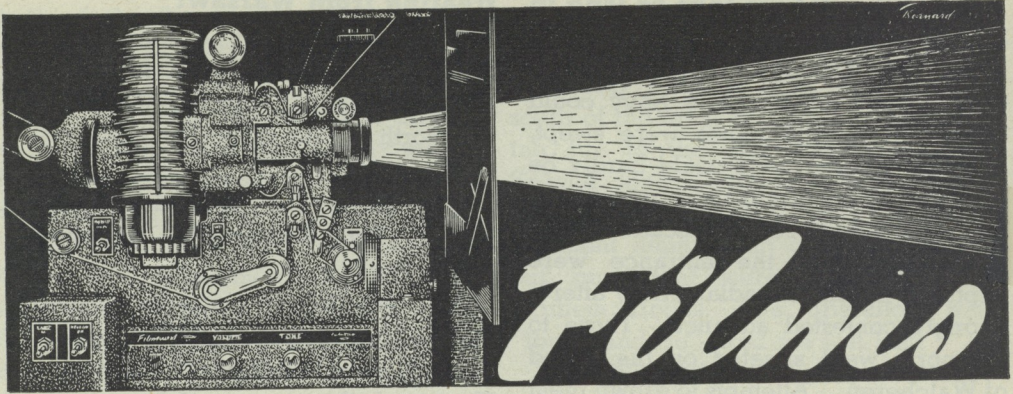
latter being screwed on the rear of the barrel. Open at the far end, this chamber allows gas from the explosion of the propelling charge to escape in the rear to compensate for the jar from ejection of the shell.

"Few targets can escape this glamorized 'goon' which can be elevated 45 degrees or depressed 15 degrees and traversed 360 degrees."

The new mortar fires a modified standard 4.2-inch chemical mortar shell containing white phosphorus—for incendiary or smoke effect—or high explosive.—*U.S. Army and Navy Journal*.

MUD BATHS

Baths of mud, peat, clay and various mineral waters have been used with good results by Soviet physicians in treatment of war wounds, including injuries to nerves.—(*U.S. Infantry Journal*).



(For your information the following films and film strips have recently been distributed or are being distributed during the current month.)

Airborne Forces

1. TF 31-1253 Basic Training of Glider Borne Troops Pt I—(23 mins)
2. TF 31-1254 Basic Training of Glider Borne Troops Pt II—(29 mins)
3. TF 31-1255 Basic Training of Glider Borne Troops Pt III—(23 mins)
 - (a) Three U.S. War Department films. Pt I deals with the knots and lashings used in lashing equipment into the CG-4A cargo glider. Part II details the glider's cargo compartment and methods of loading equipment; and Part III "Flight Training" gives the new glider soldier an over-all picture of his job.
 - (b) Distribution: A-35 C Para TC.

Signals

1. C-843 I'll Tell the World (18 mins)
 - (a) Illustrates common mistakes made by officers when speaking on the air, such as compromising a code-sign and map reference code, carelessness when using slidex and veiled speech.
 - (b) Distribution: All Command Headquarters Film Libraries, Royal Cdn School of Signals, Royal Cdn Armd Corps School, Royal Cdn School of Artillery, Royal Cdn School of Military Engineering and Royal Cdn School of Infantry.

FILM STRIPS

Signals

1. FS-203 Battery Charging Pt I
2. FS-206 The Tele F Part I
3. FS-208 Wireless Set No. 19, Part I
4. FS-209 Wireless Set No. 19, Part II
5. FS-210 Wireless Set No. 19, Part III
6. FS-502 Wireless Set No. 19, Mk III—Opening Up and Prepare to Net Drills
 - (a) Distribution: All Command Headquarters Film Libraries, Royal Cdn School of Signals, Royal Cdn Armd Corps School, Royal Cdn School of Artillery, Royal Cdn School of Military Engineering and Royal Cdn School of Infantry.
7. FS-200 Fullerphone Mk IV—Pt I
8. FS-201 Fullerphone Mk IV—Pt II
9. FS-207 The Tele F Pt II
10. FS-226 Switchboard Magneto 10 Line—WD—Pt I
11. FS-239 Keyboard Training Pt I
12. FS-240 Keyboard Training Pt II
 - (a) Distribution: All Command Headquarters Film Libraries and Royal Cdn School of Signals.

THIS MONTH'S COVER

CATM dedicates its cover this month to Lt. Gen. Charles Foulkes, C.B., C.B.E., D.S.O., Chief of the General Staff, Army Headquarters, Ottawa. The portrait was painted by CATM's artist, and is superimposed on that portion of the map of the Netherlands in which the 1st Canadian Corps, under command of Lt. Gen. Foulkes, played a role which led to the final collapse of the German Army.

The map includes Westervoort, Arnhem and Wageningen. Westervoort was the jumping-off place for the capture of Arnhem; Wageningen saw the signing (May 5, 1945) of the surrender conditions by Lt. Gen. Foulkes for the Canadian Army and Field Marshal Blaskowitz for the capitulating German forces.

Lt. Gen. Foulkes was born in England, educated in London, Ont., and was commissioned in the Canadian Machine Gun Corps in 1923. He reverted to Lieutenant from the rank of Captain in 1926 when he transferred to the Royal Canadian Regiment as a Permanent Force Officer.

Following regimental duty, he served as a Staff Officer in Military Districts 1, 2 and 3. He is a graduate of the Staff College at Camberley, England.

In November, 1939, he was appointed Brigade Major and proceeded overseas a month later. He returned to Canada late in 1940 to assume the appointment of General Staff Officer, 1st Grade, with the 3rd Canadian Division, and in July 1941 accompanied the Division to England.

He was later appointed to command the Regina Rifles, and then commanded the 3rd Infantry Brigade in the First Division for eight months until he was appointed Brigadier, General Staff, First Canadian Army, in April 1943.

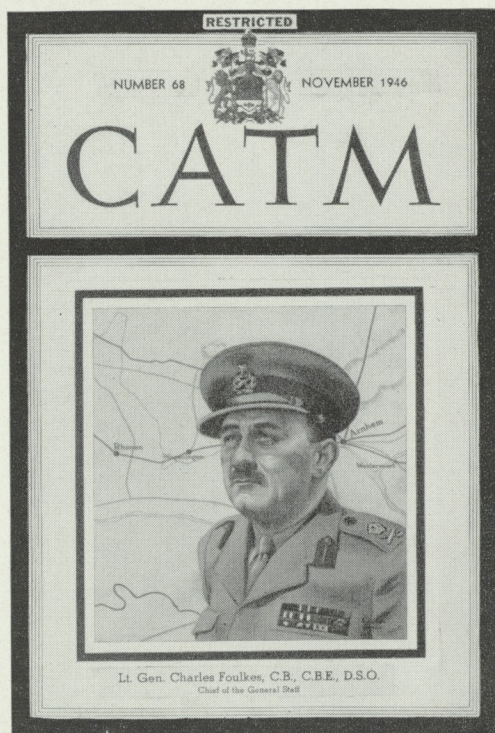
His promotion to Major-General and appointment to command the 2nd Canadian Infantry Division dates from Jan. 11, 1944.

Lt. Gen. Foulkes took the 2nd Division to France and fought it through the historic battle of Falaise, up the buzz-bomb coast to Antwerp and into the Lowlands. In September 1944 Lt. Gen. Foulkes took over command of the 2nd Canadian Corps, in a temporary capacity, and fought the battle of Walcheren, which has been described by Gen. Eisenhower as "Canada's greatest contribution to Allied victory."

In November 1944 he was promoted to his present rank and to command the 1st Canadian Corps in Italy. In February and March of 1945 he took the Corps to Holland in time to play a leading role in the final battles which brought about the collapse of the German Army.

After relinquishing command of the 1st Canadian Corps on July 17, 1945, Lt. Gen. Foulkes returned to Canada and was appointed Chief of the General Staff on August 21—a post that he has held throughout the difficult period of demobilization and reconversion of the Canadian Army.

(A more extensive biography of Lt. Gen. Foulkes appears in the April 1945 issue of CATM.—Editor.)



IT HASN'T CHANGED A BIT!



First Engineer to Second Engineer (circa 1200 A.D.): "And you were the guy who said tradesmen like us could take it easy! Look at those gunners riding around on the siege tower!"