

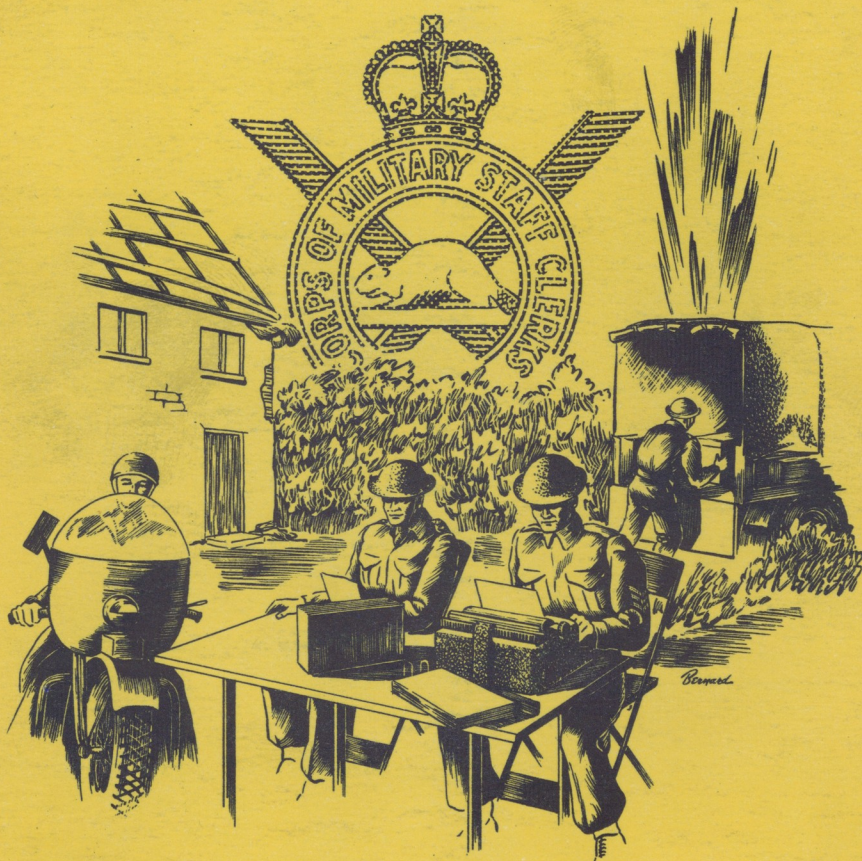
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THE CORPS OF MILITARY STAFF CLERKS

CATM



Canadian Army Training Memorandum

OCTOBER 1945

NUMBER 55

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THE CORPS OF MILITARY



Lt. Col. A. P. Sprange, D.C.M.

AAG in the Directorate of Administration and EO for the
Corps of Military Staff Clerks

STAFF CLERKS

The Corps of Military Staff Clerks was organized in 1905 to train soldier clerks for the General Staff and Adjutant-General's Branch at the then Militia Headquarters and the Military District Headquarters.

Notwithstanding the fact that the British authorities gave up the idea of a special Corps for this purpose at about the same time as the Corps of Military Staff Clerks was authorized, the organization of the Corps seems to have been justified because it expanded from an original strength of 50 to 2,500 at the cessation of hostilities.

The main objective of the Corps in peace time is to train suitable soldier clerks to take their place in the field in wartime, at all Formation Headquarters, etc., including Brigades, Divisions, Corps, Armies, Echelon and Records. Practically every member of the Corps who was in the Permanent Force at the outbreak of hostilities and who was of age and fitness, proceeded overseas. A large number were commissioned, some of whom hold senior staff appointments, so that the early training was of inestimable value. The Corps has lost 40 members in action and has gained its laurels by the granting of 88 Honours and Awards.

Quite a large proportion of the CMSC personnel serving Overseas were, owing to their particular qualifications, procured from personnel of the actual fighting units and transferred into the Corps. They were selected as particularly suitable for the Corps after training at the General Clerks Pool in Aldershot.

It would almost be a reflection on the Corps to say that its members do nothing but "work very hard." Of course they do, but many of them possess the essential qualifications for taking part in various forms of athletics. They have won various championships in softball, bowling and hockey and maintain a very live and enthusiastic recreational association. A number of members of the Corps have interested themselves in Rifle Shooting and the Corps has had members on Bisley Teams at various times.

The morale of the Corps personnel while Overseas was very much enhanced by the efforts of the Women's Auxiliary which, with financial help from the Detachments and the Recreation Association, was able to despatch parcels and cigarettes periodically to the extent of several thousands of dollars. Many letters of high appreciation from the boys have rewarded the Auxiliary for their efforts.

A fair proportion of the personnel are asking for demobilization, and there is no doubt that the technical training and experience they have gathered as secretaries, stenographers and clerks will be of inestimable value to them in procuring suitable employment in civil life.

Asprange



A CLOSED MOUTH CATCHES NO FLIES

This is the open season for the "now-it-can-be-told" story with every newspaper of every one of the Allied countries trying to score a world "beat". Wrapped in secrecy until the end of the war with Japan, all sorts of stories have since been appearing in the press dealing with happenings and developments during the six war years.

Don't be led astray by publication of these stories, for it's still "open season", too, on the soldier who talks out of turn. The writers of these newspaper stories knew exactly how much they could say without damage, were told just how much information it was safe to release. But, without submission to NDHQ through proper channels, you and the rear-rank private who will follow your lead are, respectively, in no position to judge. So, we repeat, don't let the fact that part of a story has been released trap you into telling the rest of it—it's probably exactly that portion that authorities are still keeping in wraps.

Official Secrets Act

The Official Secrets Act, extracts from which appear on your notice

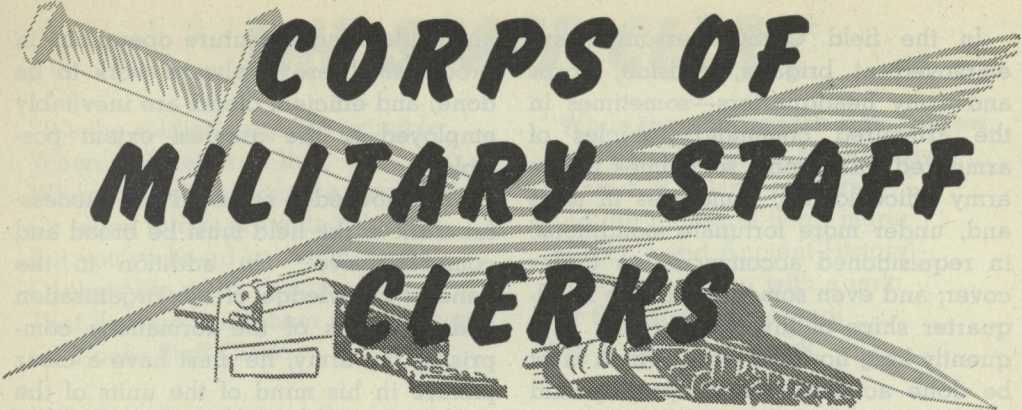
board, applies to you equally before and after discharge. Approval from NDHQ is still required for publication of any article—and a public speech or radio broadcast constitutes publication. . . . And finally, remember, too, that with cessation of all censorship in Canada the final civilian safeguard is gone and, more than ever, the Canadian Army is responsible for its own Security of Information. You as an officer of the Canadian Army share in this increased responsibility.

ONE POINT ONLY

Even though we are strong, we should still direct our main attack against one point only. In that way we shall gain more strength at this point. For to surround an army completely is possible only in rare cases and requires tremendous physical or moral superiority. It is possible, however, to cut off the enemy's line of retreat at one point of his flank and thereby already gain great success.—

Carl von Clausewitz.

CORPS OF MILITARY STAFF CLERKS

An illustration at the top of the page features a typewriter on the left and a pen nib on the right, both rendered in a hatched, woodcut style. The title 'CORPS OF MILITARY STAFF CLERKS' is superimposed over these elements in a large, bold, sans-serif font.

The functions of the Corps of Military Staff Clerks consist of training and supplying stenographers, typists and record clerks for the General Staff and Adjutant-General's Branch at Defence Headquarters, Command and District Headquarters.

The Headquarters of the Corps in Canada is at National Defence Headquarters where the policies as to qualifications, training, promotions, etc., are controlled and records are maintained regarding the personnel to enable postings, etc.

The term "clerk" is used in a very general sense because the members of the Corps consist of Stenographers, Typists, General and Record Clerks (with particular aptitude for compiling and analysing official material and records), Specialists on office machines, Secretaries and Court Reporters, and last, but not least, Staff Orderlies, men with long service who are particularly smart and with proven integrity to guard and carry special documents, etc.

Some of the more highly qualified specialists are employed in the legal branches and perform duties as Court Reporters for Courts Martial, Courts of Inquiry, Meetings, Lectures, etc.

At the outbreak of war, the CMSC despatched clerks for the London Headquarters and the Headquarters 1st Canadian Division and, during the war, many clerks were transferred from various regiments, etc., to the Corps after

receiving training at the General Clerks Pool.

The "pen is mightier than the sword" might still have significance if it is co-related to the modern weapons. The "sword" has been mechanized, but so has the "pen" by typewriting and duplicating machines, Hollerith machines, offices on wheels in the field, all of which are used by members of the Corps. The "Op Orders" in the field must be ahead of the fast-moving armies and Echelon work, records, etc., must be speeded up for that purpose, so that wherever possible, clerical work is done by machinery.

Visitors to Headquarters in overseas theatres of war, both in the field and at the base, will note that members of the Corps of Military Staff Clerks are invariably present, and it is soon realized that the clerk is an important cog in the military machine.

These soldier clerks have duties to perform that are exceedingly diversified, and their employment varies from the normal routine clerical work performed in military offices to the vital and important duty of reproducing and distributing orders from Headquarters of fighting formations, from which the Commander directs and governs the fighting activity of his troops.

In the field CMSC personnel are employed at brigade, division, corps and army headquarters—sometimes in the armoured command vehicles of armoured formations; sometimes in the army office lorries; sometimes in the army office tents and, under more fortunate conditions, in requisitioned accommodation under cover; and even sometimes in the headquarters ships of invasion forces. Frequently long hours of work, which must be done accurately and speedily and under the worst possible conditions, is the rule. These clerks have the confidence of their staff officers, and share in their responsibility in that they are the medium through which orders and instructions of all kinds are issued.

Following the procedure in the RASC of the British Army, in the field headquarters members of the CMSC are employed in the branches of the Chief of the General Staff, the Adjutant-General and the Quartermaster-General—more briefly in the "G," "A" and "Q."

As the term "soldier clerk" implies, they have to be efficient clerks with a broad general knowledge of military organization and procedure, but primarily they are trained soldiers.

Thorough Knowledge

A clerk on any field formation headquarters knows the organization of his own headquarters intimately. He understands fully the specific duties, purpose and object of the particular branch in which he is employed—and he knows the functions of the various other branches.

The tempo of the work that is done is in accordance with the operations in progress, and during intense operational activity one of the vitally important tasks is the reproduction and distribution of orders. The clerk must know the form, sequence and material to be included in such orders.

During quiet periods there is the normal routine office work to be carried on, and generally at this time there is

much planning for future operations in progress. There is always work to be done, and efficient clerks are inevitably employed to the greatest extent possible.

The knowledge required of a successful clerk in the field must be broad and comprehensive. In addition to the general knowledge of the organization and functions of the formations comprising the army, he must have a clear picture in his mind of the units of the various arms and services. This general knowledge is necessary, but the necessity for specialized knowledge of office procedure in the field is much more important. The clerk must have an intimate knowledge of the systems of registration and distribution of papers and messages; he must know signal procedure and message forms and proper priorities. Distribution lists, staff tables, orders of all kinds, war diaries, maps, map reading and marking, and courts of inquiry and courts martial are other items of work that repeatedly occur in his daily routine.

Shares Dangers

In the field the clerk shares the dangers of his comrades. He is often referred to as a "pen-pusher" and an "ink-slinger"—but the troops know that his job is as necessary and his work as important as that performed by others. In both the First and Second Great Wars men of the Corps were called upon to assist in the actual protection of their Headquarters against close attack by the enemy.

The training and experience which they receive while in the Corps, particularly their stenographic and secretarial qualifications, should stand them in good stead when they return to civil employment, for it is seldom, if ever, that a good male stenographer cannot obtain and hold employment. These qualifications will give rise to higher appointments both in and out of the army.

THE STAFF CLERK

"It's the soldier's right to grumble
When in billet or in line,
When the raid becomes a fumble
Or when things are going fine.
But you've heard so many stories
Of their life when dangers lurk
That, for one, we'll hear the wailings
Of a poor Staff Clerk.

"We have heard about the sniper
Calling down the heavies' wrath,
Of the bomber and the piper
Making fun of Heinie's staff,
Yet, these heroes all do tremble
When Lieutenants act the 'Turk',
But it's cursings of a General
On a poor Staff Clerk.

"Though the C.T. may be narrow,
And each shell hole filled with rain,
Yet the narrowness of Red-Caps
Sends a Staff Clerk quite insane.
For it's 'Type this!' 'Check my figures!'
'What's the strength of men at Kirk?'
'Order Bombs!' 'Phone Signals!'
'Damn it!!!'
You're a poor Staff Clerk.

"While they never take staff courses,
They must know the Martial Law,
Quote K.R. (Can.) on horses
And ten thousand items more;
'G.R.O.'s and Ancient History'
They can tell you with a jerk;
For the Modus Operandi
Ask a poor Staff Clerk.

"When the guns have ceased to thunder
And the front line is no more;
When Hitler sees his blunder
And they stop this bloody war,
What a life will be the private's—
Lots of fun and little work!
But they'll still be wanting statements
From the poor Staff Clerk.

"When we've gained the last objective
Of this life and get above
Where the soldiers stop their scrapping
And do nought but sing of love,
Then their faithfulness to duty,
And the jobs they did not shirk,
Will be entered in the Good Book
By a poor Staff Clerk."

(By Sgt. T. Knight,
48th Highlanders)

BOLDNESS PAYS A DIVIDEND

(By a Company Commander in North-West Europe. Extracted from Current Reports From Overseas.)

The most interesting feature in the night attack was the successful way in which the squadrons and companies . . . worked together; a troop of tanks supported each platoon. First, the tanks, with the infantry a few yards behind them, shot up with their 75-mm and Browning guns all the places where the enemy might be; next, the infantry, passing through the tanks,

advanced about 100 yards; finally, the tanks closed up to the infantry, and the whole process was repeated.

An advance of more than a mile was made in this manner. It seems that the enemy was terrified by the approach of tanks in the dark, by the streams of tracer, and by the flash of the 75-mm guns, for a considerable number surrendered without firing a shot. The whole operation gave further proof that boldness pays.

HANDS ACROSS THE BORDER

"They are a grand bunch of fellows, and they certainly know their weapons."

This is a typical comment by Canadian army personnel about members of the U.S. Weapon Training Teams who came to Canada during the summer to teach the Canadian Army Pacific Force how to handle American weapons—weapons the CAPF would have handled if it had got to the Pacific.

For their part, the U.S. army men enjoyed themselves in Canada. They said they were sorry to leave after such a warm welcome and grand send-off. And so, while their instruction was not needed for combat, their visit to the Dominion did much to cement the bond of goodwill and mutual help between the U.S. and Canadian forces.

Shortly after units of the 6th Canadian Division and CAPF Replacement Units began concentrating at the eight concentration points across the Dominion, nine U.S. Weapon Training Teams arrived to carry out demonstrations and instructions on their weapons. One team went to each of the following concentration points: Debert, Sussex, Barriefield, Petawawa, Macdonald, Shilo and Vernon. Two teams went to Borden.

Each team was composed of one lieutenant and 22 ORs. The senior officer in charge of the teams was a captain.

CAPF Volunteers

Canadian personnel under instruction were CAPF volunteers who had completed corps training in the RCAC, CIC, RCASC and Canadian Provost



Corps, as well as Pacific volunteers who had returned from overseas. All were well grounded in Canadian weapons, and the task was, therefore, one of conversion to the American equivalent of the Canadian platoon and battalion weapons.

Arrangements were made at all concentration points for a schedule of demonstrations to familiarize personnel with the new weapons generally, and also a programme of instructional periods on each weapon.

It is interesting to note that the personnel of the U.S. teams were all men who had had experience in actual combat. They had seen action in various theatres, some in the Pacific; others in North Africa, Sicily and Italy; still others in North-West Europe.

At the conclusion of the training, commanders of the various concentration points reported that the teams had been exceedingly successful in getting the instruction across to all ranks in the Canadian army cadres.

Here Are The Weapons

And now for the weapons on which instruction was given. First and foremost was the M-1 Rifle (Garand), .30 calibre. This is a gas-operated, clipped, semi-automatic, shoulder-controlled rifle, and it's the personal weapon of

the American infantryman. Canadians have long envied the U.S. riflemen's weapon, and CAPF volunteers were pleased at the prospect of being armed with this rifle.

Instruction was also given on the "BAR". This is the Browning Automatic Rifle, .30 calibre, and in each rifle squad (section) one man is armed with this weapon. This fully-automatic rifle with a 20-round box type magazine. It has two rates of fire: normal at 550 and slow at 350. Actually, there is no Canadian equivalent for the BAR, which is a cross between a machine-carbine and an LMG.

The M-2, .30 calibre carbine is carried by company grade officers and certain members of crew-served weapon groups. It is capable of firing semi-automatic or fully automatic fire by manipulating the selector. It has a 15-round mag, and the cyclic rate is from 750 to 775. There is no Canadian equivalent for this carbine.

Instruction was also given on the M-3, .45 calibre submachine gun. Fully automatic, this weapon has a fixed firing pin in the bolt, so constructed that excess energy from its forward movement is expended simultaneously with the explosion of the propellant. This feature also gives greatly improved accuracy, because it is largely responsible for the fact that the gun does not climb, as do the other weapons of this type, during rapid fire. The Canadian equivalent to this weapon is the Sten machine carbine.

Other weapons on which construction was given follow:

M-1911A1, .45 calibre pistol, which is carried by field grade officers and certain members of crew-served weapon groups. The Canadian counterpart is the 9mm Browning Automatic Pistol.

M-1919A6, .30 calibre Browning machine gun. These are the com-

pany commander's firepower weapons and have a cyclic rate of 400 to 500. The Canadian equivalent is the Bren light machine gun, although the weapons are entirely different in appearance and operation.

Heavy machine gun—Browning M-1917A1, .30 calibre machine gun.

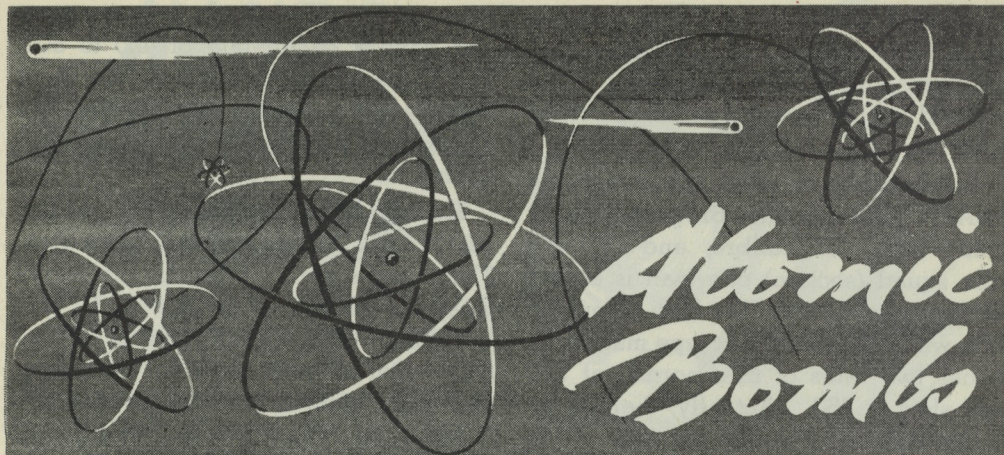
There are eight of these in the heavy weapons company of the U.S. rifle battalions. The cyclic rate is 400 to 520 and it is water-cooled. The Canadian equivalent is the Vickers MMG.

Mortars—The 60mm and 81mm mortars have practically the same characteristics and employment in the American army as the 2- and 3-inch mortars in the Canadian army.

Grenades and launchers—Each type of rifle has its own special launcher which is clamped on the muzzle. Grenades are placed on the launcher and propelled by means of a grenade cartridge. Types of grenades available are HE, anti-tank, anti-personnel, screening smoke, coloured smoke and flares. The launcher differs from the Canadian grenade discharger in that the grenade tail tube fits over the launcher, whereas the Canadian grenade fits inside the discharger cup.

Anti-tank rocket launcher—This weapon, better known as the "Bazooka", is merely a hollow tube with attachments on the outside to enable the gunner to carry it easily and fire accurately. It fires an HE anti-tank rocket and also has a WP rocket. Its maximum effective range against tanks is limited to 300 yards because of its low accuracy factor at longer ranges. The Canadian equivalent is the PIAT, which is very similar in employment and effectiveness, although entirely different in construction and operation.

Flame-thrower—The flame-thrower is a one-man portable surprise weapon used for close fighting. It has a range from 20 to 40 yards.



(This article was written specially for CATM by R. W. McKay, acting scientific adviser to the Chief of the General Staff. This story of the atomic bomb is simply told and in view of the world-shaking possibilities of this greatest of all weapons known to man, it should be of great interest to all readers.—Editor.)

Through all the history of war men have continually to improve their weapons, and always as new weapons or methods of attack were produced new defences were found to meet them. So consistently has every new device been followed by appropriate counter-measures that it is regarded by many as axiomatic that a defence will always be found to neutralize the effectiveness of every new offence. But, certainly, this is not necessarily true, and with the atomic bomb now added to the arsenal of destruction we must surely ask not merely how will a defence be found against it, but, also, whether any defence is possible.

Source of Power?

First, however, let us consider some questions regarding the bomb itself. How powerful is it and what is the source of its power? How plentiful are its ingredients and do other materials exist which might be made into similar or greater explosives? Can others learn to produce similar bombs as they have been produced by Britain, U.S. and Canada? No one knows the answers to all these questions but sufficient is

known to enable us to form reasonable opinions regarding the problems of atomic warfare.

The explosive force of the atomic bomb is greater than the imagination can grasp from figures alone. We must be made fully aware of it, however, from the sight of the pictures of devastated Hiroshima and Nagasaki.

The atomic bomb is as many times more destructive than the block-buster, as that powerful weapon exceeded the effect of a stone hurled against a city wall by an ancient engine of war.

The explosion of RDX or TNT is a chemical process and the forces involved are the forces **between** atoms. The enormously greater energy of the atomic bomb comes from **within** the atom and is released violently when the core of an atom is split apart. To understand this distinction it is necessary to know something of the constitution of matter.

All materials are made up of three sorts of "building bricks" arranged together in different patterns which give the various materials their characteristic properties. These "bricks" are called electrons, protons and neutrons. The basic pattern in which these "bricks" fit together consists of a core or nucleus made up of protons and

neutrons surrounded by a number of electrons equal to the number of protons. These groups are called **atoms**, a name no longer appropriate, as the word "atom" indicates an entity which can not be divided into components. Since the early part of this century it has been clear that atoms were made up of smaller parts, but the name has been and is likely to be retained, purely from force of habit.

Number Varies

The number of protons in each atomic nucleus varies from one to ninety-four and this number determines the **chemical** nature of the atom. Each number corresponds to one of the "elements," the combinations between which are dealt with in chemistry.

It was once thought that there was only one type of atom for each "element"; however, it is now known that several kinds of atom are possible for each element, always with the number of protons characteristic of the element but with different numbers of neutrons. Thus the nucleus of hydrogen has one proton alone in the common variety and one proton and one neutron in the rarer heavy hydrogen. The highest number of protons in any naturally occurring atom is 92 in uranium, accompanied by 146 neutrons in the commonest uranium, uranium (238), and with 143 and 142 neutrons respectively in the rarer uranium (235) and uranium (234). The numbers used in designating these materials, it will be noted, are the sums of the numbers of protons and neutrons present.

Groups of atoms of the same or different kinds form molecules, and aggregates of many molecules form the ordinary substances with which we are familiar.

Chemical changes, that is to say changes involving rearrangement of the atoms in the molecules of a substance, may

either require energy to bring them about or may give out energy as in the burning of coal or the detonation of explosives. Similarly, rearrangement of the protons and neutrons within an atomic nucleus may be of either kind, but, in general, the energies involved are enormously greater.

Most of the known changes which occur or can be brought about in atomic nuclei are of the type known as transmutation and involve the ejection or addition of a relatively small part of the nucleus. In the case of uranium (235), however, the entry of a **neutron** into the nucleus produces a different effect called "fission", the splitting of the nucleus into two nearly equal parts together with the release of a small number of neutrons. These **neutrons** can act as triggers for the fission of still more uranium (235) and so on with successively more and more atoms involved. The accompanying release of energy as this reaction proceeds produces the explosive effect of the atomic bomb.

In order that the explosion may occur, enough of the neutrons produced must strike uranium (235) atoms to cause the action to continue, and this means that at least a certain critical amount of uranium (235) must be present and be relatively free from other materials which might absorb the neutrons. Therefore, atomic bombs, unlike chemical explosives, must be of a certain size or else an explosion cannot occur. Smaller amounts are stable and safe. It also means that a fairly concentrated sample of uranium (235) must be produced before its explosion is possible.

Must Be Separated

Since uranium (235) is always found in nature mixed with 140 times its weight of uranium (238) the use of

uranium (235) as an explosive involves its separation from the commoner uranium, a process of extreme difficulty as the two substances are identical chemically. However, it has been found possible to produce a new element, plutonium, by the action of slow neutrons on uranium (238). This material is like uranium (235) capable of fission, and being chemically distinct from uranium it can be separated from it and concentrated. This plutonium is the substance of the atomic bomb.

Far more than 99 percent of the earth's surface is made up of elements which are intrinsically stable, and of the remainder, which possesses stores of atomic energy, only uranium (235) and the synthetic material plutonium are known to be capable of explosion. Some other atoms, including relatively common lead and bismuth, contain stored energy but nothing at present known would make one expect that this energy is likely to become available.

In considering the availability of raw materials we will, therefore, only consider uranium. While uranium is not a common metal it has been mined in the Canadian North West Territories and in Belgian Congo and produced in smaller quantities as a by-product of Vanadium and other ores in Colorado and Central Europe. It occurs also in Portugal, Japan, England and Sweden, although not in quantities formerly considered worth mining. Canada's production alone in 1938 amounted to nearly a million pounds and was then chiefly limited by the market.

Briefly, then, the atomic bomb is an agent of destruction capable of annihilating a city at a single blow. The raw materials for its production, though limited, are plentiful enough to cause

more damage than all the wars in history have produced. When considered in connection with long range weapons such as the Germans produced, particularly if such weapons were further increased in range by utilizing the atomic forces as propellants, it is not inconceivable that any city in the world, London, Tokyo, New York or Montreal—or any group of cities might be obliterated in an instant and without notice. Is any defence possible?

At present we hold the secret of the bomb's manufacture but scientists of every nation have contributed to the present knowledge and only the most complacent deny that whoever has the will to learn can learn the rest within a few years. Control of the actual sources of uranium, control of plants producing plutonium, control of all nucleus research are counter measures which have been suggested. Possibly even some method may exist for preventing the use of atomic bombs even after they are in the hands of an enemy. But for the present we do not know the answers. Until we do, by far the most important military task is to explore all possible defences against this weapon which dwarfs all others.

CO-ORDINATION

"Co-ordination," read the Russian Army regulations, "means integration of the military operations of troops carrying out a common task as regards objective, time and place. To organize this co-ordination means to calculate and integrate the efforts of all types of arms at all stages of the battle.—*From the Soviet War News as reprinted in U.S. Military Review.*

WHEN IN DOUBT—SHOOT!

(By Lieut. Glenn J. Duman in U.S. Cavalry Journal.)

My outfit's first engagement was with the armor of a Nazi panzer division. Because their tanks stayed out of range of our bazookas and used their cannon against us, we Doughfeet were left pretty well weaponless—or so we thought. After five days of fighting tanks we developed a definite complex. When the Germans started shooting

we would get out of sight and pray. We were convinced that to shoot back was not only useless but generally fatal.

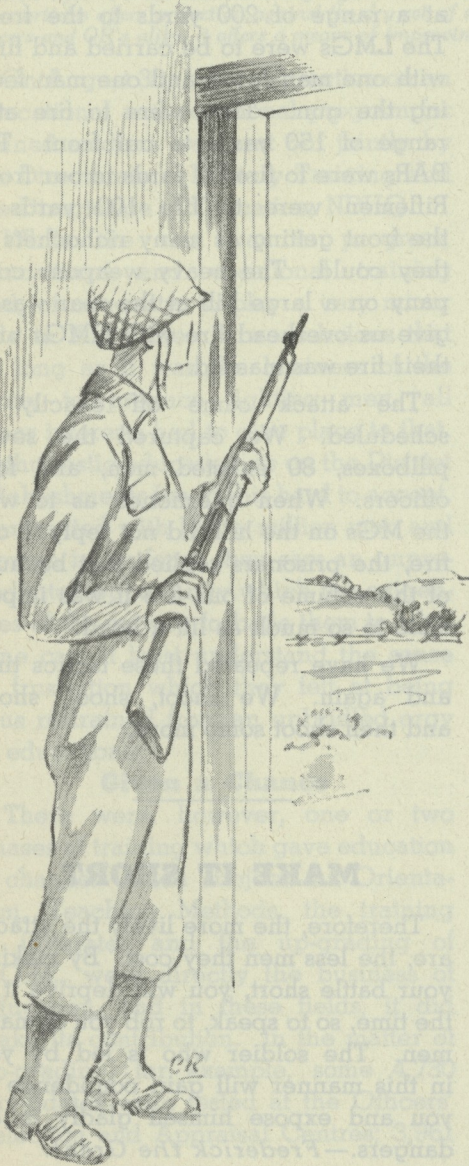
Under the circumstances our attitude was understandable. But later when we moved to a new sector and faced infantry that we could not only shoot back at but beat the hell out of, our old complex of getting out of sight stayed with us. And all our replacements, including officers, seemed to catch the same idea. Time after time when new platoon leaders would report that they had been under enemy fire and then questioned as to what they did to build up return fire, they would reply, "We didn't fire back because we didn't want to reveal our position." This despite the fact that the enemy fire was directed at their position.

It's Dangerous

Under such circumstances "not revealing your position by not firing back" is not only hokum, but is damned dangerous. Yet on a snow-covered open field that afforded not a scrap of cover and concealment I have seen an entire company pinned down by enemy small arms for a solid hour without the company making a single effort to change their position or to return the fire.

After many losses we finally learned our lesson and learned it well. Now when we are fired upon we not only fire in return but fire everything we've got. That is not only the best way to gain our objective, but it is by far the safest way.

This lesson was clearly demonstrated to us when our company was ordered to infiltrate to an unoccupied town behind enemy lines on the Moselle River. We loaded every man down with as much ammunition as he could possibly carry. When daylight came we were set up in three large public buildings in the centre of the town each mutually supporting the other. On



either side of the river and covering our position from all angles were long high ridges. These were held by the Germans in concrete pillboxes looking down on us.

We adopted a policy of shooting at everything that moved. Chicken wire was placed around all first floor windows to prevent grenades being thrown in. Machine guns were mounted on tables well back from windows so that positions would not be revealed by muzzle blast. Riflemen stayed well back from windows for the same reason.

When the Germans changed reliefs in the pillboxes it was necessary for them to leave the houses they occupied on the outskirts of the town and walk about a thousand yards up and along the ridge. The first time they tried it we opened fire with every weapon and killed and wounded a satisfactory number. They tried it two more times and each time we bagged some more. Finally they began to crawl through the deep snow to change reliefs.

Then on the second night they decided on 24 hour tours of duty and changed guards after dark. Then we fired at the sounds. By the third night we were such a thorn in their side that eight SS men were brought in to lead a dawn attack on us—as we learned later from PW reports. We drove this attack off without suffering a casualty. In the three full days we spent in that town this counter-attack was the only enemy small-arms fire we received. We had the Wehrmacht bullied.

Seven Pillboxes

On another occasion in the Siegfried Line we came to a hill which we could approach only up an open 30-degree slope 700 yards long. On the top of the hill were seven concrete pillboxes mutually supporting and to add to the

difficulty a light snow fell on the night before the attack. A German officer captured the night before said it would be impossible to take the hill by assault.

Five TDs were assigned to support the attack from the line of departure which was a woods at the foot of the hill. It was decided that two companies would attack in line using marching fire. My company was on the left.

We put everything, including bazookas and LMGs, in the line. The bazookas were to fire as they marched at a range of 200 yards to the front. The LMGs were to be carried and fired with one man firing and one man feeding the gun. They were to fire at a range of 150 yards to our front. The BARs were to fire 50 yards to our front. Riflemen were to fire 100 yards to the front getting as many ricochets as they could. The heavy weapons company on a large hill at the rear was to give us overhead fire with HMGs until their fire was masked.

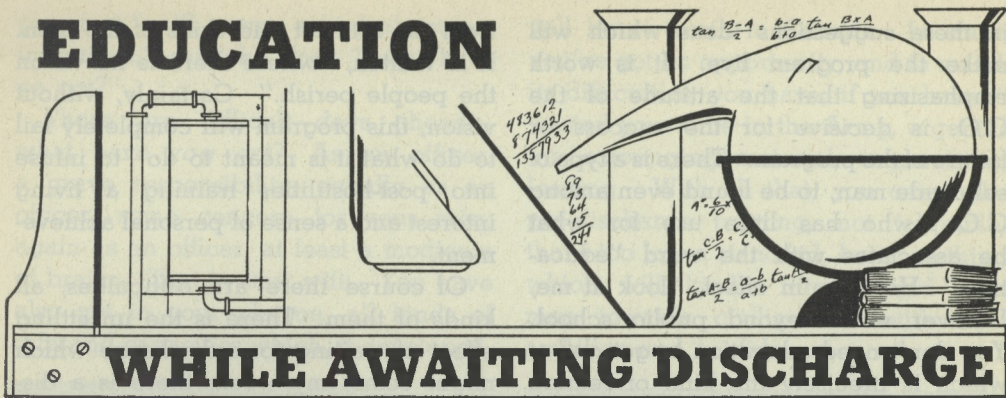
The attack came off exactly as scheduled. We captured the seven pillboxes, 80 enlisted men, and four officers. When questioned as to why the MGs on the hill did not reply to our fire, the prisoners replied that because of the volume of our fire it was impossible to so much as lift a head.

We have repeated these tactics time and again. We shoot, shoot, shoot, and then shoot some more.

MAKE IT SHORT

Therefore, the more lively the attacks are, the less men they cost. By making your battle short, you will deprive it of the time, so to speak, to rob you of many men. The soldier who is led by you in this manner will gain confidence in you and expose himself gladly to all dangers.—*Frederick the Great.*

EDUCATION



WHILE AWAITING DISCHARGE

(Here are three articles on Canadian Army education which should be read by every person on his way back to civilian life. To the Commanding Officer who has men awaiting discharge, the program outlined in these articles offers protection against the dry rot of monotony and idleness; to members of the service, officers and OR's alike, it offers a means of improving their economic standing on Civity Street.—Editor.)

On August 30, 1945, a directive on an educational and vocational program for trained soldiers was sent out jointly by the Directorate of Military Training and the Directorate of Education, NDHQ.

While the war was in progress, educational and vocational training had, of necessity, to play a very minor role in Army life. It was obvious that as long as it was the business of the Army to produce fighting men, all other interests had to give place to that. Enthusiastic educationists on the District establishments found this hard to accept. Confronted with half a million men and women in uniform, they saw an unprecedented opportunity which the exigencies of the service forbade them to take. One can at least understand the sense of frustration which they felt at being thus restrained from an unbridled orgy of education.

Given a Chance

There were, however, one or two phases of training which gave education a chance. Such subjects as Orientation, Teaching Methods, the training of illiterates and the up-grading of P.O.M., were directly the business of Education, and in these fields, it did make its contribution. In the matter of up-grading, for example, some 4,730 candidates were tested at the Officers' Selection and Appraisal Centres; 3,961

personnel wrote preliminary tests in Districts and, as a result of up-grading in classes, their standing in subsequent tests went up on an average of 10.6%.

The situation with regard to training changed literally overnight when hostilities ceased. From that moment on, the Army has been faced with the old and crucial question as to what to do with, and for, men whose military training has been completed and whose services as fighting men are no longer needed. Many a good force, unable to solve that problem, has, in the past, descended from heights of valor and discipline to low levels of discontent, broken morale and even mutiny. It is at this moment that Education may come into its own, not merely as a factor in the maintenance of morale, but as a means of preparation for return to civilian life.

Recognition of this led to the joint directive on an educational program to be included hereafter in Training Schedules. That directive not only announces policy—it submits, for guidance, a suggested list of subjects and projects which might form the features of the program.

It is hoped that Commanding Officers who are ultimately responsible for the success of the whole scheme, will find

in these suggestions ideas which will make the program live. It is worth emphasizing that the attitude of the C.O. is decisive for the success or failure of the program. There is a type of self-made man, to be found even among C.Os., who has little use for what he associates with the word "education." He says, in effect, "look at me, I never went beyond public school. You don't need education to get on"—which is precisely the kind of remark one would expect from an uneducated man.

Requires Salesmanship

Should the present educational program be launched in that atmosphere, it is doomed. Education is, at best, an acquired taste; men have to be sold on its value and interest. If an educational program anywhere, and especially in the Army, is to succeed, it needs all the interest, enthusiasm and conviction a C.O. can give to it. It requires "salesmanship" of a high order. If men have the idea that this is something laid on to avert trouble, they will have none of it. Army discipline cannot compel men to study. That is why it is urged that any program in a Unit should be related to the wishes of the men as expressed through a questionnaire.

No matter what private opinions are on what men ought to study, in this case the program must be built on what what men want to do, always, of course, within the limits of what is reasonable and practicable.

It would be, for example, unreasonable to meet the demands of a man who recently declared in an official questionnaire, that his post-war employment would be running a "red-light house." It would be impracticable to oblige the man who asked for a course on embalming. The thing to be avoided like the plague is a dull unimaginative program, miles away

from the interest and skills of the men. It is written, "where there is no vision the people perish." Certainly, without vision, this program will completely fail to do what it is meant to do—to infuse into post-hostilities training a living interest and a sense of personal achievement.

Of course there are difficulties, all kinds of them. There is the unsettling effect of waiting for a discharge which might come any week; there is a disabling sense that it is not worthwhile, and any study a man is going to do he'll tackle when he is out of the Army; a formidable list of objections can be suggested by the man who doesn't feel like having anything to do with an educational program.

Avoid Dry Rot

The question officers have to face is, if you let this program down, what have you to put in its place for the maintenance of morale and the good of your men? It's the case of Old Bill in the last war, "if you knows of a better 'ole, go to it". In any Command, given a C.O. who is concerned in keeping men in his Unit from the dry rot of monotony and idleness, given a group of Company and Platoon Officers who have a sense of responsibility for their men and realize their problems, **this program will work.** It's up to you.

There is an old story about an Aberdonian in London. He was a modest Scot, modestly dressed, not revealing in appearance his Scottish abilities. Being hungry, he turned in to the first restaurant to which he came. It happened to be the Trocadero, and the Trocadero in pre-war London had its points. The headwaiter, a resplendent official, observing the bucolic look of this client, saw in him an opportunity for a little humor, so when the Scot said to him bluntly, "Weel, what have you got?" He replied, facetiously, "We have sheeps head and calfs liver and

pigs feet." "I wasna askin' about yer infirmities," said the Scot, "what have ye got?"

There are difficult days ahead—what have *you* got? As an officer, a grave responsibility; equally as an officer, some concern for your men; again as an officer, at least a modicum of brains. That to start with. You have also got in your platoon, all kinds of gifts and capacities which, if developed,

will be of worth to Canada. In short, you've got an opportunity, and to match its difficulties, you have, if you haven't wasted your time in the Army, a genius for scrounging material, improvising, leading. With all that, you can make pre-discharge training, not tolerable, that's too low a standard, but something which will kindle interest and start men towards civilian life with new ambition and confidence.



POLICY OF EDUCATION FOR M.D. 13 (1945-1946)

Everyone will agree that if Canada had used the eight months prior to 1939 for training an Army of 500,000 in the science of war, we should have been better equipped to fight the war when it came. However, at the time many were busy pushing away the thought that war might come and refused the idea of preparation for it.

Right now the situation is reversed, but the attitude remains the same. There are thousands of all ranks in the Army who refuse to face the fact that in perhaps as short a time as six months they, or the men for whom they are now responsible, will have to leave the security of semi-monthly pay and be

thrown on their own resources again.

Although the welfare of those under his control is the immediate responsibility of the commander, the interest shown by many officers in the adequate preparation of their men for their return to civil life seems negligible.

The Army cannot escape its responsibility to its men by referring to the various agencies set up to look after them after discharge. **Now** is the time when many serving soldiers can secure preparation that will shorten considerably, the period between discharge and complete rehabilitation. It is the duty of all officers to ensure that every person under his command knows

what facilities are available and that every possible step is taken to encourage those who wish to do so, to take advantage of the opportunities provided. Every man's problem is an individual one. It is not right to allow him to drift along month after month until he is discharged.

There has been considerable criticism at a high level when it was suggested that men were sent into battle without sufficient training. It is equally important to see that men are properly prepared for return to civil life. It is the duty of every officer to see that his men are trained for the vital problems of peace.

Training the fighting soldier today is the small end of the stick and only small numbers are needed. Thousands of others need advice and interest taken in them. Today, the great day is not the day when the soldier goes into action, but the day when he becomes a civilian once more. The time of preparation for this day grows more and more limited. This is not primarily the job of the Education Officer or Army Examiner; it is definitely the responsibility of the O's C., Company Commanders, Platoon Commanders and Detachment Commanders. Today it is not sufficient for this group to push this subject into the laps of Education Officers and Padres, etc. Interest must be shown and maintained by all officers in command of groups of any size.

It should be carefully noted that there is no intention to interfere in any way with the training of soldiers slated for overseas service. Neither is there any intention of forcing all the remainder to engage in educational courses. The policy will be to see that every soldier is made personally acquainted with the courses that are available and to offer every encouragement to those interested to prepare themselves better

for their return to civilian life. The opportunities available for "pre-civilian" training have never been sufficiently emphasized to the individual soldier.

Now is the time to do this for the coming winter may be the last in which many of these men will have an opportunity of adding to their value as future civilian employees.

PSYCHIC OBSERVER

(MGRA Monthly Letter—Australian Military Forces)

A forward observer—Infantry Division Artillery, watched a battalion of supported infantry fight up the slopes of a hill against heavy opposition. He saw the battered ranks finally gain the top of their objective and sink to the ground, exhausted. Their officers attempted a hasty re-organization. He also saw a heavily-wooded draw running toward the hill, an excellent avenue for a counter-attack that would drive the tired troops off their prize and threaten the entire regimental line.

"Were I to register my artillery battalion on that draw," mumbled the observer, "we could fire on a moment's notice at any counter-attack coming from there."

A short telephone call did the trick and a minute later the adjusting round whistled overhead. The sharp crack of its explosion caused an unusual thing. The draw began to move and hundreds of Nazis jumped out of foxholes and from behind trees to head for the hill.

"One hundred short, fire for effect"! the observer cried into the telephone.

Twelve 105mm howitzers roared, then roared again and again. The counter-attack withered and disintegrated.

It wasn't fair. It is impossible to fire on counter-attacks before they even get started. Artillery observers aren't supposed to be psychic!

CAMP BORDEN PROGRESSES IN EDUCATION TRAINING



Camp Borden trained men equipped to fight, but now the fighting is over the Camp is making real progress in equipping men to return to civil life. Men who have completed Corps training are now being put on the following weekly syllabus:

Education or Trade	
Training.....	12 periods
Sports.....	6 "
Rehabilitation and In-	
Service Counselling.....	2 "
Citizenship.....	3 "
PT.....	6 "
Drill.....	6 "
Weapon Training.....	3 "
VD.....	1 "
	—
Total.....	39 periods

Already a full-time Business Course of four weeks duration to provide for 90 men is being operated by Camp HQ. Subjects include typing, bookkeeping, correspondence, arithmetic and com-

mercial law. In addition, each training centre has organized its tutors, instructors, classrooms and training material for operating its own courses.

875 Candidates

To date there are 875 candidates enrolled in courses operating at Camp Borden. In addition, many are working on Canadian Legion correspondence courses. The most popular courses to date appear to be Commercial, Mathematics, English, Science and Mechanics.

Vocational courses are being expanded to include a wide range of subjects and the facilities of the MT Shop and D and M School may soon be available. Popular subjects are: Photography, Radio, Drafting, Carpentry, Accounting, Motor Mechanics, Agriculture, Sheet Metal, Music.

There is no doubt that the whole camp is co-operating to put over this very complete programme.

THE MILITARY VALUE OF THE ARMY EDUCATION PROGRAM

(U.S. War Dept. Information and Education Digest)

Every military operation of this war has convinced American commanders of the value of leading intelligent, teachable and well-educated troops. This was true when men underwent basic training, and when they were being trained for the enormous complexities of modern large-scale invasions. It was all the more true when units operated virtually "on their own" after a break-through.

But the qualities of mind produced by good education pay additional dividends when men must settle down to the long grind of duty in an occupied country, or the grim monotony of service in our strategic outposts all over the globe.

No Place For Ignorance

Whatever the duties assigned to them, this has been no war for ignorant or thoughtless men. A commander may never fully appreciate the high value of a mentally alert subordinate—until, in some sudden crisis, the brains of a single sentry, messenger or squad leader get the better of some situation that might otherwise have had most serious consequences.

That is why the General Staff in this war has been so concerned with the new military problem of orienting and educating the individual soldier. The wide deployment of our soldiers was foreseen. The premium placed on individual brains and initiative was foreseen. In former wars, the carrying of so much news, information and education to troops would have seemed merely a frill. In modern wars, it is not a frill, but is one of the conditions of victory.

Restoring the mental poise and determination of soldiers, during rest periods, was formerly no difficult problem. In wars fought on our soil, many men

could even go home on furlough. In Europe last time, there were comfortable leave areas. Today there are few ideal vacation resorts in war-torn Europe, just as for other reasons there are none in the Pacific. So the commander must find other means to divert and strengthen the soldier's mind in the intervals of duty and when he is awaiting discharge.

The intelligent soldier bears long separation from his home and family much better when he feels he is being fitted to solve some of the extremely serious civilian problems which he knows lie ahead of him.

The Army Education Program is no cure-all. But it is a new way, and a good one, to supply many intellectual needs of the American soldier at appropriate times during his service.

Hundreds of thousands of our soldiers, to date, have shown their appreciation of this program by taking correspondence courses. A large number are enrolled in off-duty classes. In accordance with the provision of Readjustment Regulations 1-4, Army University Study Centres, Unit Schools, and Vocational Schools are being opened in Europe, and they can follow the Army wherever overseas conditions permit.

Up to Commander

The commander who actively sponsors these educational developments is doing something much to his own advantage while he remains in command. Some of his men need only the spark-plug of a little well-organized education to increase enormously their own potentials. Other men feel increasingly drawn to a commander who offers them this unusual privilege while they are in uniform.

IN PRAISE OF INFANTRY

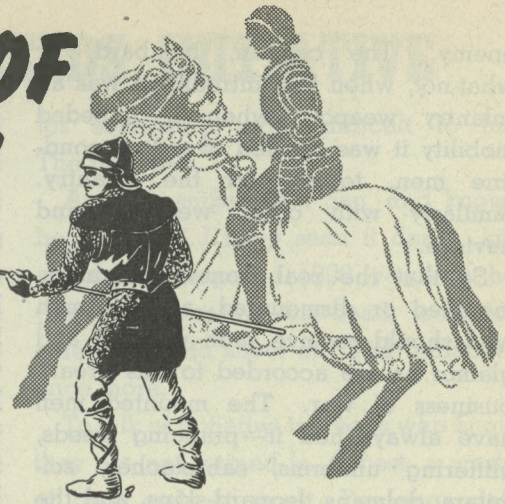
(Field Marshal Viscount Wavell in the London Times.)

My attention was lately called by a distinguished officer to the fact that, whereas in official correspondence and in the press it is the practice always to use initial capital letters in referring to other arms of the service, e.g., Royal Armored Corps, Royal Artillery, etc., the infantry often suffered the indignity of a small "i." My friend wished to adopt the usual method of an Englishman with a grievance and to write to The Times about it! But he proposed to do it vicariously, through me. Hence this article. I had not, I admit, noticed the small "i" myself, nor would it have worried me greatly if I had. But I do feel strongly that the Infantry arm (with a capital "I") does not receive either the respect or the treatment to which its importance and its exploits entitle it. This may possibly be understandable, though misguided, in peace; it is intolerable in war.

Three Facts

Let us be clear about three facts. First, all battles and all wars are won in the end by the Infantryman. Secondly, the Infantryman always bears the brunt. His casualties are heavier, he suffers greater extremes of discomfort and fatigue than the other arms. Thirdly, the art of the Infantryman is less stereotyped and far harder to acquire in modern war than that of any other arm.

The role of the average artilleryman, for instance, is largely routine; the setting of a fuze, the loading of a gun, even the laying of it are processes which, once learned, are mechanical.



The Infantryman has to use initiative and intelligence in almost every step he moves, every action he takes on the battlefield. We ought therefore to put our men of best intelligence and endurance into the Infantry.

Yet the Infantry in peace or war receives the lowest rates of pay, the drabest uniforms, sometimes even the least promising of recruits; most important of all, it ranks lowest in the public estimation and prestige. This is all wrong and should be set right by methods more important than a capital "I."

In all the long history of war on land the front-line fighting man, whose role is to close with the enemy and force him to flee, surrender or be killed—the only method by which battles are ever won—has two categories only—those who fight mounted once the Knights-at-arms, then the Cavalry, now the Royal Armored Corps—and those who fight on their feet—the inevitable, enduring, despised, long-suffering Infantry with a very capital "I".

Artillery, Engineers, RASC, and the like simply handle the weapons and equipment which Infantry have from time to time discarded when they found that they encumbered their mobility and lessened their power to perform their primary role of closing with the

enemy. The cannon, bombard, or what-not, when first introduced was an Infantry weapon; when it impeded mobility it was handed over to second-line men, to support the Infantry. Similarly with other weapons and devices.

So that the real front-line fighters, mounted or dismounted, are the men who should receive such panoply and glamor as are accorded to this dreary business of war. The mounted men have always had it—prancing steeds, glittering uniforms, sabretaches, scimitars, dolmans, leopard-skins, and the like in the old days; the imposing clatter of tanks and smart black berets in these sterner days. But the Infantryman who bears the danger, the dirt, and the discomfort has never enjoyed the same prestige.

A British Infantry Journal?

In peace, the Royal Armored Corps, the Artillery, the Engineers all had Inspectors to look after their interests. The Infantry had to content themselves with a humiliating asterisk in the Army List and a footnote which explained that the Director of Military Training (who was sometimes a gunner or engineer) also acted as Inspector of Infantry. The Royal Armored Corps had a centre at Bovington, the Artillery at Woolwich, the Engineers at Chatham. But the Infantry were homeless. There was a Cavalry Journal, an Artillery Journal, an Engineer Journal, but no Infantry Journal. I understand that it is intended to repair these omissions after the war.

But I believe that what the Infantry would appreciate more than anything is some outward and visible symbol. No one grudges the parachutist his very distinctive emblem, but the Infantryman is, I will maintain, subject to greater and more continuous, though less spectacular, risk than the

parachutist, and should certainly have an emblem. What it should be I must leave to others—a rampant lion, crossed bayonets, a distinctive piping?

It can surely not have escaped notice that nearly all our leaders who have distinguished themselves in this war have been Infantrymen— Field Marshals Dill, Alexander, Montgomery, Wilson; Generals Auchinleck, O'Connor, Platt, Leese, Dempsey, and others. Last war was a static war, but there was a fashion for cavalry generals; in this war Infantry generals have shown that they can move as fast as any.

So let us always write Infantry with a specially capital "I" and think of them with the deep admiration they deserve. And let us Infantrymen wear our battle dress, like our rue, with a difference, and throw a chest in it, for we are the men who win battles and wars.

A Story

I will conclude with a story which was told me some ten years ago by General Gouraud, a great fighting French general of the last war, who was then Governor of Paris. He was dining with three British generals, of different arms of the service. He told us the following as current in the French Army to illustrate the characteristics of the three principal arms:

"The general gives an order to the Infantryman. The Infantryman, being rather stupid, does not well understand what the general wants, but goes out and engages the enemy.

"The general gives an order to the artilleryman. The artilleryman understands it perfectly, but being much cleverer than the general goes and does something quite different.

"The general gives an order to the cavalryman. The cavalryman, cleverer than the general, does something quite different."

We all assured him that things were arranged differently in the British Army!

CONFIDENCE BREEDS INITIATIVE

(Maj. H. M. Todd in Defence (Great Britain))

The spirit of aggressiveness is a sine qua non to the seizing and holding of the initiative in battle. "You must win that fire-fight". But to win that fight, and to win, and hold, and always to be seeking, the "first move"—the power to "call the tune"—and the feeling of superiority over one's enemy—all of which are integral parts of what we call initiative—the first requisite is conscious skill with the personal weapon.

The machine gunner who has fired his gun so much that he does it "with his eyes shut" acquires a feeling of invincibility which he expresses by seeking targets. The initiative, in other words.

The bomber who can throw a Mills bomb on to a spot one yard square every time is proud of it and looks

for something more difficult to hit. The initiative.

And the sniper who can, and knows he can (and I have seen it done), kill an enemy sniper at 800 yards if he (the enemy) moves his head, looks for other heads to shoot at. The initiative, once more.

To talk of initiative to troops who know they are not trained is, at best, a waste of time and, at worst, "propaganda" which deceives nobody. In war, the initiative will always lie (a) with the side whose men think they are better trained and better armed; (b) with the side whose men are expert with their individual weapons and know it; and (c) with the side whose officers, knowing (a) and (b), are continually seeking it, and who, by their own attitude, communicate to their men a restlessness which will not let them "take root" with any mental ease or comfort.



Reproduced by courtesy U.S. Army Weekly "Yank"

POWER OF THE HOLLOW-HEAD

(U.S. Army Ordnance)

The whole world—except our enemies—seems to have missed one of the real secrets of rocket warfare. For the power of the bazooka is not alone in the rocket itself but in the hollow-head projectile which the rocket carries. On these pages are published schematic drawings which show this feature of rocket warfare for the first time in Army Ordnance.

In the hollow-head charge you have the essence of the terrific striking power of the bazooka. The mystery of the bazooka is not alone in the fact that it is a rocket and rocket launcher but in that the ingenious design of the projectile enables it to penetrate thickest armour with relatively low striking velocity. The truth of the matter is that the hollow-head charge will pierce armour plate if brought against it with

no more energy than that of the human hand.

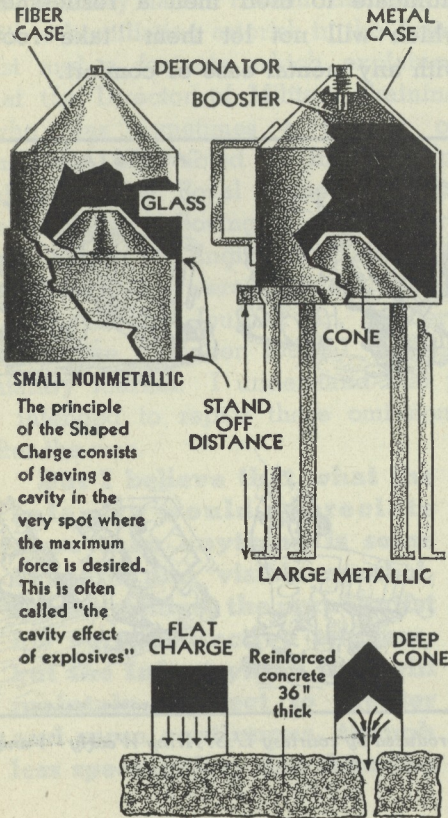
Here, then, is a much-overlooked phase of our World War II Ordnance development. Long a secret, it became known to the public only when the rocket launcher, popularly called the bazooka, made its public appearance. Even now the public does not realize fully that the terrific firepower of that weapon is the effect of the hollow-head charge.

Inverted Cone

As the drawings show, the hollow-head charge is an inverted cone.

A design for this type of projectile was brought to the United States in 1940 by a young Swiss engineer, Henry H. Mohaupt, who conducted the original experiments in this country in co-operation with the Ordnance Department of the Army in which he later served as a private.

Models of the Mohaupt design were made and tried in 1941, and the device performed with astonishing results against armour. To quote Col. L. A. Skinner, well-known rocket authority of the Ordnance Department: "To the surprise of most of the few who knew of the project, the device performed amazingly well against armour. As a result of these trials, a grenade fitted with the special Mohaupt head and designed to be fired from a spigot launcher was produced and standardized as the 'Grenade, High-Explosive, Antitank, M10.' It was a formidable projectile except for one thing—it could not be fired practically from the shoulder rifle, the caliber .50 machine gun, or the special projectors built for it because of the heavy recoil. As originally designed, the projectile weighed about 3 pounds and had a maximum velocity of about 240 feet a second." From there on out it was a matter of adapting the hollow-head charge to other calibers and types of



LOW-HEAD CHARGE

projectiles from very small ones up to others of considerable size.

Thus was brought back to life an implement of warfare which had disappeared completely after nearly a century of use. It was the hollow-head charge that brought the rocket back. In our own country nearly a century ago, rockets were the object of serious military consideration—but there was no hollow-head charge to make them effective. Truly the genesis of the military rocket begins with its first serious employment in 1806 and its abandonment about 1900. Writing on this subject in this magazine only six years ago, Lieut.-Col. Calvin Goddard, well-known small-arms authority, had this to say:

"It is of interest that the United States Ordnance Manual of 1862, which devotes 1½ pages to a detailed account of the fabrication of the 3¼-inch (16-pounder) rocket, makes no mention of the smaller 6-pound size described by Scott in his 'Military Dictionary'. . . . Perhaps the exigencies of war had created a trend toward simplification and the elimination of unnecessary types and models. Certain it is that the rôle of the rocket in war steadily was becoming less important. Thus, in Metcalfe's 'Ordnance and Gunnery',

which supplanted Benton's at West Point in 1894, we learn that 'their inaccuracy and their low capacity as vehicles of kinetic energy have limited their use in recent times to incendiary purposes—particularly in savage warfare.' . . .

"Between the publication of Metcalfe's work (1894) and that of Bruff which succeeded it (1898) as the Military Academy textbook on ordnance and gunnery, the war rocket seems to have made a quiet exit from the American stage—no mention of it in any form being found in the latter volume. Whether or not this constitutes a permanent retirement or merely a brief withdrawal preparatory to a dazzling reappearance at some future date, remains to be seen. . . ."

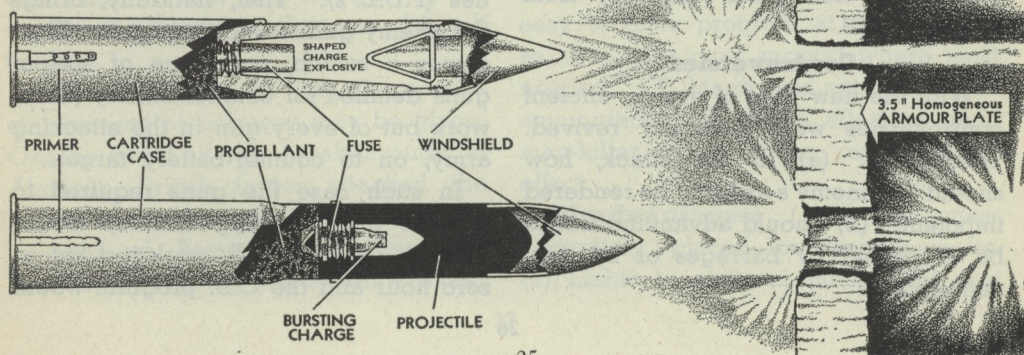
Six-Year Story

The past six years indicate how swiftly the "permanent retirement" of the rocket has been terminated.

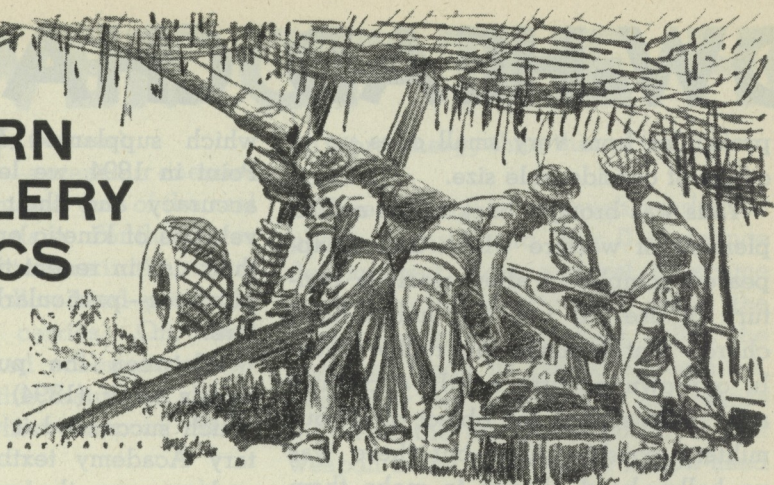
The hollow-head charge, as the drawings show, has important use in connection with demolition operations.

The future will reveal further adaptations of this new rocket-propelled projectile. We would do well to lose no opportunity to press the development to its full conclusion wherever that may lead, the imagination of Jules Verne to the contrary notwithstanding.

SHAPED CHARGE VS ARMOUR-PIERCING



MODERN ARTILLERY TACTICS



(By Maj.-Gen. H. Rowan Robinson, C.B., C.M.G., D.S.O. in *U.S. Infantry Journal*.)

In the early days of the present war, the artillery lessons learned in 1914-1918 appeared to have lost their value. Attacks in Poland, the Low Countries, and France were executed by the Germans at tremendous speed. There was little time for accurate survey, for the aerial photography of enemy gun-positions; no place for heavy artillery, hardly time for indirect fire and the consequent layout of signal communications. Artillery support was afforded largely by direct fire controlled in the battery.

When, however, antidotes to blitzkrieg methods were discovered and war fronts became more or less stable, careful preparation prior to assault became once more the order of the day. There was then a reversion to former methods, applied by instruments which except for the self-propelled gun and vastly improved radio, did not differ radically from those of 1918.

Controversies

With the new turn of events, ancient controversies were naturally revived. They were: (a) In the attack, how should the enemy's artillery be rendered impotent? (b) Should advancing troops be supported by barrages or by concentrations?

As to the first point the old objections to the direct destruction of hostile batteries prior to the attack were raised, namely, that it was not a man-killing operation and that the cost in material and man-hours of manufacture for the number of shells required to destroy guns was greater than that of the guns destroyed.

There are, however, two other existing methods which are less subject to objection. The first is neutralization—that is, fire only during the actual attack when enemy gunners must at least be attempting to man their guns. That causes casualties to the gun-detachments and makes matters otherwise difficult for them.

The second is stratagem of some sort. For example, the attacking artillery opens with, say, a 3-minute bombardment of Forward Defended Localities (F.D.L.'s). That, naturally, brings the enemy gunners to their guns. Then comes a switch, not alone of special guns detailed for counter-battery (C.B.) work but of every gun in the attacking army, on to counter-battery targets.

In such case the guns required to support the attacking infantry would be pulled off this C.B. work just before zero hour and the C.B. program would

invariably hold some guns ready to fire on any previously unlocated enemy batteries.

These methods, provided that survey and communications have been soundly organized, show good results—but methods require constant change. The new strategem, however successful, must step down as soon as (or preferably before) the antidote comes into being.

Second Question

The second question has long been a subject of debate, but more so during this war than in the last because defensive fire-power has enormously increased and undestroyed, unneutralized nests of machine guns or anti-tank guns have the power of paralyzing movement even more now than heretofore. The immediate counter-attack supported by mortars is also a factor.

The respective advantages and drawbacks of using the two methods in any artillery plan may be listed as under:

Barrages

Advantages: (1) Cover the ground with fire so that no enemy post should escape treatment. (2) Furnish real protection provided the pace of infantry and barrage are everywhere equal, infantry move close behind the barrage, and the enemy has been located accurately. (3) Guide the infantry to the forming-up line and, thereafter, direct their advance to the objective.

Disadvantages: (1) Very expensive in ammunition. (2) Depend for effectiveness on the occurrence of the expected. When, as is more usual, the unexpected happens, they are difficult to alter.

Two examples of the successful employment of barrages may be given. On the night of the break-through at Alamein, British forces attacked the enemy on high ground which had been in rear of Rommel's position. The pace had been too fast to allow either

air-photographs or patrolling to give the data on which concentrations could be fired. A barrage by nearly 200 guns on a front of 1,200 yards was therefore fired without previous registration.

This proved satisfactory, for the following infantry had but little trouble in reaching their objectives. It is to be noted, however, that the enemy had been heavily hammered for many days in succession and was probably in no mood to offer stout resistance.

Again, at Wadi Akarit, a large Axis force was holding some hills dominating the high road to Sfax. The main feature, Djebel Romana, was a rocky hill which it was essential to gain and hold if a break-through was to be effected. Good air-photographs showed all the enemy's F.D.L.'s and battery positions, but the Djebel itself appeared to be undefended. This, in the case of a key-point, could not be believed possible, so a barrage was laid right up the hill and down over the other side.

It was well this was done, for the hill was packed with enemy. Being in rock, the positions were barely visible even at close range and air-photographs had failed to disclose them.

Concentrations

Advantages: (1) Possible to support any particular attack, or a whole succession of attacks, with a large proportion, possibly the whole, of the available artillery. (2) Comparatively easy to alter program at short notice so as to give most support where most needed. (3) Much less extravagant of ammunition. (4) More effective as a man-killer. (5) Higher psychological effect.

Disadvantages: (1) Useless unless accurately placed on enemy posts. (2) Liable to omit an enemy MG post

or two which might hold up the whole attack.

Again two examples may be given. The much-lauded Alamein barrage was largely not a barrage at all, but a series of concentrations. The infantry were to advance deeply on a wide front—conditions which rendered barrage-fire impossible except, perhaps, for a short period at the start. As first-class maps had been prepared giving exact locations of every enemy post from front to rear of the hostile position, concentrations were likely to be much more effective than a widely distributed hail of shell, the bulk of which would plough harmlessly through the desert.

The second example: in Sicily, in the hills southwest of Etna, the Allies were just preparing to move up to battle-positions for the attack on the Sferro hills when the latest air-photographs arrived.

The interpreter quickly spotted that to a flank of the start

line was a new and thick MG nest which, if neglected, might bring disaster on the attack. A heavy concentration was immediately laid on it and a battery detailed to keep it under fire during the actual assault. The shell-holes in and around the nest were effective evidence of the value of a concentration where based on a combination of good air-photographs, interpretation, and survey.

It is often possible to combine the two methods with advantage. Short and sharp concentrations, for example, applied on the more powerful of the enemy's strong points enhance the prospects of effectiveness in the infantry advance behind any ensuing barrage.

In defensive action, with good maps and communications available, concentrations placed where help is most required are used. They are of course



particularly effective if observers (whether on the ground, in tanks, or in the air) have a good view of the approaches to the position and if communications are good. Many proofs were given of this in Tunisia, where sometimes as many as ten regiments of artillery were concentrated, first on one enemy target, then on another.

Defensive fire (D.F.) is, of course, nearly always needed at periods in the attack: not only have the artillery to get the infantry on to their objective, but they have to keep them there. And that is by no means easy against determined counter-attacks.

Fell Back

During the assault on Wadi Akarit, for instance, Allied infantry broke right into the enemy position. The German counter-attacks came in about three hours later. D.F. "Bantam" was called for and answered by 16 rounds per gun from eight regiments. It had to be called for again and again, as well as other tasks to right and left. In spite of the cover thus afforded, the infantry under overwhelming pressure had to fall back.

Two other calls were then made—"Bantam South 400" and "Bantam South 800", apart from observed shooting by F.O.O's. These shoots protected the retiring infantry until they reached ground suitable to hold, when other D.F. calls sufficed to hold the enemy off.

The term "concentration" implies the placing of shells on the right spot in the required quantity. The difficulty lies in application; where numerous calls are coming in from enthusiastic F.O.O's, it is hard to gauge their relative importance so as to assign a suitable number of regiments to each task.

SCARLET PIMPERNELS

(From a British source. Reprinted from U.S. Military Review.)

From the little village of Tempsford in Bedfordshire the Royal Air Force operated two secret special mission squadrons. None of the inhabitants knew that the RAF station near them held one of the war's biggest secrets. These squadrons were the airborne Scarlet Pimpernels of this war.

The squadrons delivered arms, ammunition, radio sets, food and other supplies to the underground fighters of all the occupied countries. They carried skis and sleighs to the Norwegians and bicycles and bicycle tires (made in England but stamped with the names of French makers) to the underground in Western Europe.

Saboteur Training

There was also a passenger service. Czech, Polish and Dutch agents were dropped in their own countries, while others were brought back to England for training as saboteurs.

The old unarmed Lysanders and Hudsons in which the "pick-up" flights were carried out had no secret devices to help them operate. Guided only by the dim lights shown by the patriots below, the planes landed in small secret fields to pick up their passengers. The pilot usually flew alone with a map on his knees, for there was no room for a navigator when there were passengers to bring back.

At first, landing conditions were terrible. To improve them, members of the underground were brought back to England, taught where and how to build a landing field, and then flown back.

About 700 resistance leaders in all made the trip.

OVERLOADING?

GET A LOAD OF THIS FIRST!

(This article, extracted from the U.S. Ordnance Sergeant, is not intended to condemn the practice of overloading per se. When handled properly, overloading of transport vehicles can be a successful means of stepping up the transportation of material. But it must be done only with a knowledge of the pitfalls it may incur—for the operating techniques of "normal" conditions frequently become abusive techniques when the conditions change. It is this abuse which must be watched for and avoided.—Editor.)

The straw that broke the camel's back would play hob with a military transport vehicle, too. It would break the frame, axle housings, springs, torque rods, propeller shafts, axle gears, differentials and axle shafts, in addition to ruining the wheel bearings, tires, clutch, transmission, engine, brakes and many other parts. If you happened to be the guy who gave the camel a raw deal, it probably wouldn't have been especially serious, and you could have passed it off by giving him a nice funeral. But when your truck breaks down because it's been overloaded and abused in driving cross-country, over bad roads or no roads at all, it's a different story. The funeral might be yours—or your buddies!

The payload capacities that have been assigned to military vehicles are not arbitrary ratings. They represent definite, safe carrying capacities for cross-country operation, and they have been established by scientific engineering methods. Therefore, it is only logical that loads which exceed these ratings will cause breakdowns if not properly handled.

Dangers Hidden

Because the dangers of abused overloading are hidden ones, something else often gets the blame. Joe says the axle shaft was faulty. It wasn't, though, until his truck was overloaded a few times and driven over ground that would rattle the treads off a heavy tank. Taking an overload over severe terrain

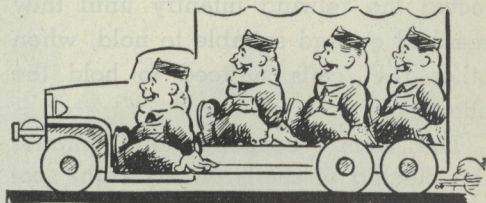
will wind up an axle shaft like a corkscrew, on the same principle that a wire bent back and forth a few times will "wind up" and snap.

In addition to bad terrain, which is number one on the list of hidden evils to watch out for, there are other unknown factors that have a bearing on the subject. The speed with which certain phases of operations are made is vitally important, for the heavier the load, the greater the strain on every part when turning or stopping the truck, and excess speed increases this strain even more. The skill of the operator is also important. Proper handling of a vehicle can save untold damage, by preventing jolting, skidding, swaying, etc.

Imaginary Trip

Let's take a typical 2½-ton 6 x 6 over an imaginary trip and see how these factors affect the vehicle. . . .

The specified rating of the truck, 2½-tons, is the weight established for cross-country operation, which allows ample safety factor for practically all conceivable conditions of cross-country terrain. Actually, in terms of "normal" operation of vehicles on typical American highways, the truck has a 5-ton capacity. Suppose, then, the truck is loaded to the 5-ton limit for "normal"

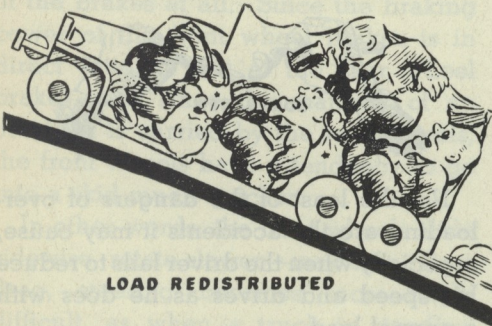


LOAD EVENLY DISTRIBUTED

operation. As the vehicle starts out, it is moving along a level highway. The weight of the truck and its load is distributed in the proper ratio, with 5,400 pounds on the front axle and 7,800

pounds on each rear axle. Remember, the safety factor has been used up. Now suppose the road conditions were not known before the vehicle began its trip. There happens to be a steep hill along the line. This is what happens:

If the grade is steep enough, the front wheels may actually be lifted off the ground during a quick pick-up, and all the weight, 21,000 pounds, will shift to the rear axles! This

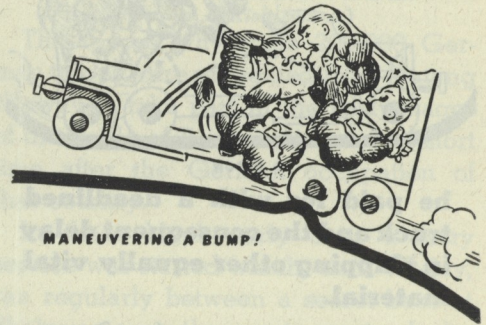


serves as an example of the fact that, even on lesser grades when the truck hits an incline, the load is completely redistributed and, with no factor of safety to fall back on, the trouble begins.

Though the breakdown may not occur on this first hill, parts may be weakened, and three or four more such hills during the course of the trip may cause one or more of the weakened parts to break down. And remember, the vehicle we are using as an illustration is a 6 x 6, with two rear axles to share the load. On a 4 x 4 in the same situation, the entire vehicle weight and its overload would be transferred to **one** axle.

Supposing the hill has been crossed without mishap. Now we start running into badly bombed terrain, recently taken from the enemy. It's strewn with debris—rocks and logs and piles of earth. Going over a partially covered log, of which there are many in the area, represents a real hazard to the

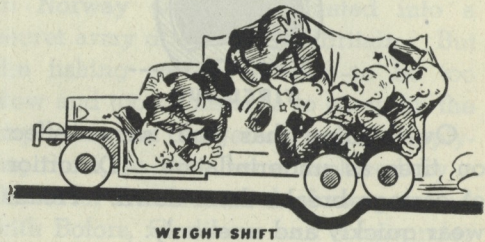
overloaded truck, for at one moment in the manœuvre the entire weight of the truck and its load, 21,000 pounds, is shifted to the intermediate axle, with its **maximum** capacity of approxi-



mately 16,000 pounds. With the 5-ton load, there is a sudden thrust of about three times the normal axle load on this axle. The safety factor has been used up—something has to give way.

Quick Shift

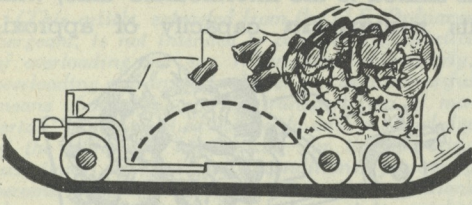
Suppose a shell hole has to be crossed. Again, the weight shift is a quick one—a jolt—this time on both the front and rear axles. And the intermediate axle won't be able to touch bottom all the way across the hole, so the rear axle takes a double overload during the course of the manœuvre.



Next, the driver finds he has to turn off what's left of the road and cross a ditch. Because the ditch is wider than a shell hole and doesn't look so deep, he doesn't slow down. Result:—a terrific strain on the vehicle as the weight is shifted rapidly from front to rear—with no safety factor to take the shock.

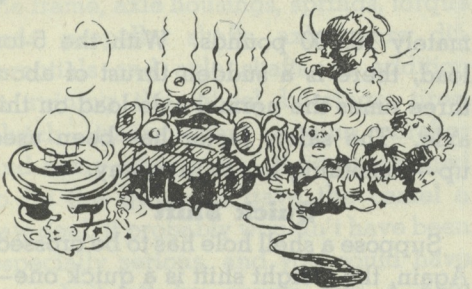
Any one of these conditions may cause a failure or weaken something to the point where

it will give way on the next trip. And the one extra load of material that got through will

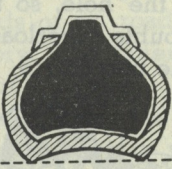


A DITCH

be paid for with a deadlined truck and the consequent delay in shipping other equally vital material.

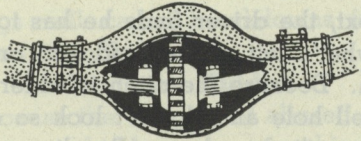


The drawings below illustrate a few of the mechanical failures that overloading causes.



TIRED OUT

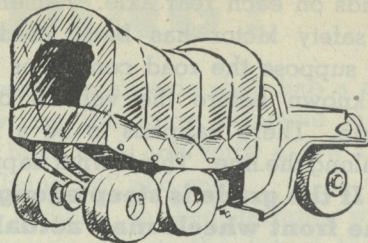
Overloading has the same effect on tires as underinflation. Distortion of casings breaks them down. Treads wear quickly and unevenly.



BENT, BUT NOT WITH AGE

Overloading causes bending and early failure of axle shafts. Differential and spring parts will fail sooner or later.

Overloading eventually bends the frame—throws working parts out of alignment.



OLD SWAYBACK

Axle shafts "wind up" and eventually snap, like a wire that is bent back and forth a few times.



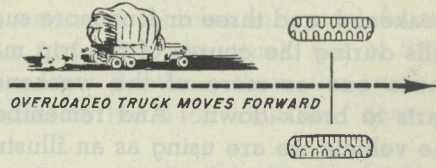
CORKSCREW

Not the least of the dangers of overloading are the accidents it may cause, especially when the driver fails to reduce his speed and drives as he does with a normal load.

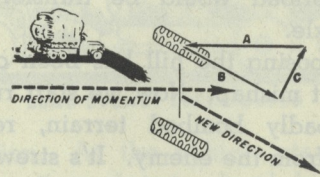
What Happened

A very common plea of drivers who have gone into a ditch when rounding a curve with an overloaded vehicle is, "My brakes locked." The brakes didn't lock though. This is what happened:

As the overloaded truck moves forward, the wheels rotate easily and



naturally. But as the driver attempts to turn, and the front wheels try to guide the truck in a new direction, the



momentum of the overloaded truck pushes straight ahead. When the brakes are applied to slow the truck for the turn, the reaction of the road

against the front wheels is in the direction of the arrow "A", while the reaction of the brakes through the wheels is in the direction of the arrow "B." This sets up the force "C," which represents the reaction to wheel rotation that is due to the turning angle.

The farther the wheels are turned, the more the brake reaction tends to skid the wheels. Were it possible to turn the wheels 90°, they would skid of their own accord, without application of the brakes at all. Since the braking power of the front wheel brakes is in direct ratio to that of the rear wheel brakes, and since the majority of an overload is carried by the rear wheels, the front wheels have a tendency to go into a skid much quicker.

In other words, the front wheels slide sidewise, rotate slower—may stop. Tires drag, steering becomes increasingly difficult, as when a truck is standing still on flat tires. This side pressure causes king pins and bushings to bind, front wheels to lock. The vehicle skids, Satan takes a holiday, and there's hell to pay for it. . . .

Slamming on brakes, frequent use of emergency brakes instead of power brakes, with the resultant strain on the front axle, and, in slippery weather, use of chains on rear wheels only, are common causes of accidents which are greatly aggravated by overloads.

Remember, unless all conditions of terrain and operation are known, and unless vehicles are handled with a thorough understanding of the effect of an overload under these conditions, overloading is a shining example of inefficiency and false economy. The temptation to succumb to its promise of getting something done beyond the normal possibilities of the vehicle is a mirage equal to anything the desert has to offer. And if you're going to fuss around in the desert, you'll be better

off with a crippled camel than a fleet of deadlined trucks. At least the camel will keep you company. . . .

FERRY SERVICE

(From a British source.)

The reason why some 200,000 German troops were prevented from leaving Norway to take part in the early stages of the Battle of Berlin originated a short time after the German occupation of that country.

In those black early days a ferry service was started which, until VE-day, ran regularly between a secret base at Skaloway, on the west coast of the Shetland Islands, and Norway. Secret agents and radio operators, arms, explosives, ammunition and equipment were regularly shipped over to the Norwegian underground and Norwegian volunteers were brought back.

At the beginning, in 1941, the ferry service consisted of half a dozen fishing smacks, each manned by a crew of four fishermen. During the first season half of them were sunk, but they were immediately replaced by nine others.

Secret Army

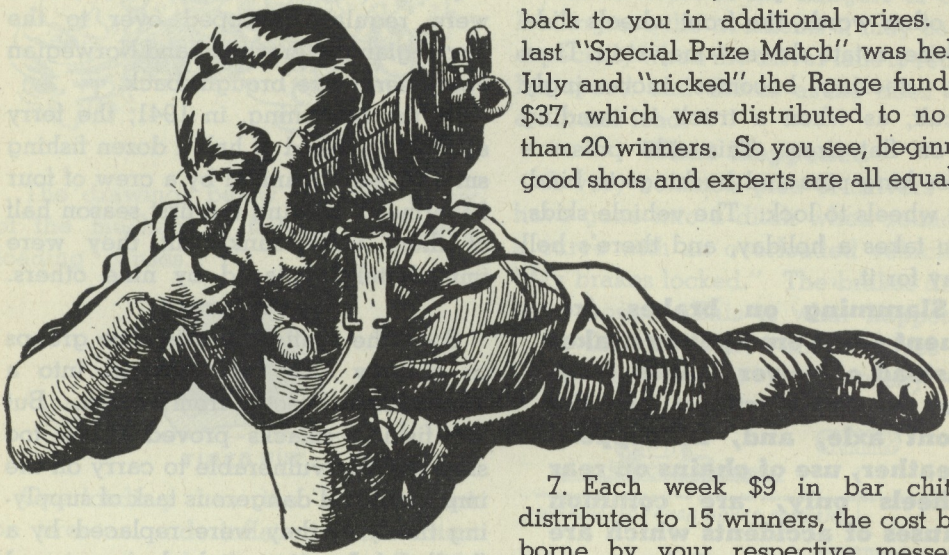
Soon the scattered resistance groups in Norway were co-ordinated into a secret army directed from Britain. But the fishing smacks proved to be too slow and too vulnerable to carry on the important and dangerous task of supplying them, so they were replaced by a flotilla of American sub-chasers armed with Bofors, Oerlikons and six-pounder guns and fitted with radar, flying the Norwegian naval ensign and manned by Norwegian fishermen in naval uniform.

In addition, to their routine duties, the now redoubtable ferry service worked in co-ordination with the Royal Navy and the RAF in attacking German coastal shipping. These attacks, combined with the attack on Nazi land communications by the Norwegian underground army that the ferry service had equipped, completely upset German plans to leave Norway.

RECREATIONAL SHOOTING

(Since the inception of the Recreational Shooting program, thousands of servicemen across Canada are shooting for recreation and, incidentally, are improving their marksmanship. This article, extracted from the Canadian School of Infantry Bulletin published at S17, C.S. of I., Vernon, B.C., tells of the well-organized Recreational Shooting facilities at that School. Other training establishments are invited to forward news of the progress made in their programs to CATM.—Editor.)

The recreational shooting facilities of this school are, we believe, unique. We say without fear of contradiction that no other School or training centre across Canada, small arms schools included, offers the same opportunities



for all ranks to enjoy rifle shooting as a sport, with the added incentive of weekly and monthly cash prizes.

The formation and success of this venture is due entirely to the interest, energy, and enthusiasm of Capt. Harry McBratney, the former WTO.

May we, with justifiable pride, give you a few facts concerning YOUR range.

1. The range is open five nights of the week, Monday to Friday, inclusive.

2. Shooting commences at approximately 1830 hours and continues as long as necessary.

3. Our double-decker firing point permits eight to fire at once, so there is very little waiting or delay.

4. A large selection of rifles kept in the range permits each man to fire his individual rifle—a rifle with which he rapidly becomes familiar.

5. The targets normally used are the standard Dominion Marksmen Army Competition target. These sell at 2 for 5 cents and are scored, graded, sorted and then kept for you until you have sufficient to "trade in" for the attractive badge awards.

6. All money thus collected goes back to you in additional prizes. Our last "Special Prize Match" was held in July and "nicked" the Range funds for \$37, which was distributed to no less than 20 winners. So you see, beginners, good shots and experts are all equal.

7. Each week \$9 in bar chits is distributed to 15 winners, the cost being borne by your respective messes or canteen. Since February when your range opened, over \$250 in cash awards have been issued. (Have **You** won anything?)

8. As an extra added attraction (as if any were needed) your mess or canteen gives to the top scorer each month an engraved Ronson lighter—something which can be used and prized for years to come.

9. It costs you nothing to join. The nickle you pay for two targets and 20 shots is returned in prizes.

Remember—beginners and poor shots

PHOTOGRAPHIC INTERPRETATION VS. PHOTO READING

Some confusion exists in the use of the terms "Photo Interpretation" and "Photo Reading" which are quite distinct in their application and scope.

Photo interpretation is a specialized method of extracting intelligence from air photographs, e.g., enemy defences, works, movements, concentrations, intentions, for the selection of dropping zones, sites for airfields, dumps etc. This method is also used for the selection of targets for bomb damage assessment, and for study of shipping and industry. Interpretation is carried out by highly-trained specialist personnel, who usually work in teams.

Photo reading is the method of extracting topographical information from air photographs in order to supplement the map, or in place of the map when no map exists. It is not a specialised subject and is now included in the normal training of combatant officers, officer cadets and NCOs.

Photo Reading by Fighting Troops: The value of air photographs, and of the training of regimental officers and NCOs in their topographical use, is well illustrated in the following extracts from reports from N.W. Europe.

"I have used aerial photographs both

RECREATIONAL SHOOTING

(Continued from Previous Page)

become good shots, good shots become experts, and experts have good sport in beating their own scores. As Kipling said—The only shots that count are those that hit. Figures often tell a story of their own: We have issued 134 First Class Awards; 83 Marksmen Awards; 52 Expert Awards. We have kept the range open 147 nights. We have issued bar chits to a value of more than \$250. We have distributed, in addition, more than \$75 in cash.

prior to attacks and also for patrolling. In all cases they have been very valuable for checking the sometimes most inaccurate maps. It is far easier to carry a route in one's mind after studying a photograph, specially when it reveals things not shown on a map, such as small buildings, haystacks, hedges, etc. They also assist in the advance planning of a platoon layout on re-organization. The most obvious advantage is the revelation of enemy weapon slits or other defensive works which give advance warning of places from which trouble might be expected."—2/Lieut. A. R. H., Welsh Regt.

Are Invaluable

"Have personally found the aerial photographs most invaluable to gain actual contours of ground. For instance, on the R. MAAS front in the ROER-MOND area I had to take out a standing patrol as a forward OP. I found the site of the OP very clear, and had not an atom of difficulty in guiding my patrol on a pitch black night a matter of 3,000 yds and hitting the exact spot. Again as I had observation over the river mainly on the village of OAL I was able to plot on the exact house where I thought I had detected a source of intermittent Spandau fire. This was consequently earmarked as a possible task for our mortars and RA.

"Without these photos it would have proved impossible. They are invaluable for pointing out to troops the true picture of ground, who would otherwise have difficulty in imagining or picturing ground from an OS map. A man feels satisfied in his own mind when he can see an actual pictorial record of the ground instead of the usual contour lines and conventional signs as on maps—this in itself breeds confidence."—2/Lieut. J.A.R., R.W.F.

WHAT DO YOU KNOW ABOUT REHABILITATION?

When you start on your way to Civvy Street, what is your clothing allowance? How much is your rehabilitation grant? Does your transportation warrant take you only to your place of enlistment, or can you go to any other place in Canada? What is the basis of the War Service Gratuity?

You should be able to answer these and a dozen other questions of vital importance to you in re-establishing yourself in civilian life.

If you are an officer, it's not sufficient for you to know all the answers yourself; you have an obligation to your men. You are required to explain the rules and regulations to them.

Not Enough Now

You may be a top-notch training officer; you may know your duties as an administrative officer. But that's not enough, now that thousands of men are awaiting discharge and wondering

what the score is.

You owe it to your men to keep them in the picture. Pte. Smith wants to know whether he's going to be able to get his old job back. Pte. Brown is worrying about getting a new job that may require vocational training. Pte. White wants to know how much help he can get in finishing his college education now that he's got a wife and child. You are expected to know the answers—or where they can be found.

To assist officers in obtaining the facts and figures, here is a list of some of the publications available which may be obtained by your establishment through the normal publications channel: The Common Sense of Re-Establishment, What's Ahead, Dismiss (But What Of A Job?), Back To Civil Life, Handbook On Rehabilitation, War Service Grants Act.

Read them—and then give your men the answers!

ECONOMY

(From 21 Army Group publication "It All Comes Out Of The Taxpayer")

"Good administration is economy. Economy does not mean an all-round cut of ten per cent; it means avoidance of waste.

"Resources should be provided on a basis 'as required for the operation.' The ruling factor must be: 'Is this item needed?', NOT 'Am I entitled to this item?'"

"To over-demand means either that you go short of something else, or that somebody goes short of what you have over-demanded or often both.

"The habit of over-insurance which leads to the retention of undisclosed resources is a sure sign of bad administration."

SCHOOL FOR SPIES

(Inter-Services Monthly Security Summary—
Southeast Asia and India Commands.)

The secret of the Ordensburg is out. Advancing Russian troops seized intact at Falkenburg in Germany one of the three "fortress schools" (the other two were in Bavaria and the Rhineland) established by the Nazis for the training of the most promising young gangsters in their ranks.

Paul Winterton, News Chronicle correspondent in Moscow, says in a (copyright) despatch:

Local people, when asked what these quadrangular brick turrets were, shook their heads and confusedly said that they did not know. The buildings inside a spacious yard were low, with wide light corridors and an endless chain of rooms on both sides completely identical.

Hasty Flight

Everywhere were traces of hasty flight—documents and papers spread unfinished everywhere and on desks were bundles ready for shipping. On the floor in the middle of one room there was a sumptuous velvet banner with brass wolves' heads and horses' manes. In the floor below there were big dormitories with iron beds and a restaurant for a thousand.

Zealous Nazis aged 25 to 30 were picked from students. They had to be perfectly healthy and possess pure Aryan blood. Each of the three schools had 1,000 pupils, the personnel changing in such a way as to permit them to spend one year in each school. Training included race theory, boxing, riding, automobile driving, fencing, spying technique and parachute jumping. Well equipped laboratories to prepare and decipher documents written in invisible ink, photo laboratories, drawing workshops, make-up rooms; everything

proved that these were the highest type of spying centres.

The last paragraph of the school statute shows the importance attached to them: "Any person who betrays or gives away the secret of Ordensburg is subject to destruction. And not only he, but his family and children will be destroyed."

When the archives of these schools are studied judges will have lists of the several thousands of cut throats trained there.

When danger came, none of them had the presence of mind to connect the electric wires and explode the entire structure, in spite of everything having been prepared for the blow-up—they ran abandoning uniforms, helmets and uncompleted reports.

HIGH STANDARDS PAY OFF

(U.S. "Combat Lessons")

The good leader strives to keep himself presentable even under the most trying conditions and requires the same of his men. Sometimes it is hard to do, but in the long run it pays dividends in maintenance of equipment, health of the men and esprit of the command.

Col. L. S. Friffing, Field Artillery, observed of the men of the Fifth Army before Cassino, Italy: "Personal appearance of the men and officers was superior. Daily shaves, washing of the hands and face, washing of clothes and care of weapons and equipment was emphasized. Saluting at the front was the best I've seen anywhere. I never saw a dopey-looking combat soldier. This is the lesson to us—'The alert survive'".

THE MANOR HOUSE AT MUCH MUDDLING

(This article was extracted from ATM and contains good training tips.—Editor.)

"It is often not until a unit finds itself in the line that it wakes up to the fact that what sufficed for its protection when it occupied a hutted camp in the grounds of the Manor House at Much Muddling suffices no longer."

How many training units can say of the sentries who protect their camps and billets by night that they know how to be inconspicuous, and when and how to challenge? How many can say that their sentries are so alert and inquisitive that they will always surprise the enterprising and stealthy intruder? Or that they are so incisive in covering and questioning anyone whom they do not recognize that not even the most plausible bluffer will deceive them?

The Lesson

A failure to reach the high standard required is seldom due to slackness, but rather to the self-consciousness and diffidence that are apt to assail a man when he has quickly to act on his own initiative and assert an authority to which he is not accustomed, more particularly when that assertion has to be vocal.

In the slow course of time, or more quickly once he has had experience or battle, the average soldier outgrows this self-consciousness and diffidence. When he does, he becomes a far more valuable member of the fighting team.

Formidable Man

There is no disputing that this process can always be hastened, and sometimes

completed, before the soldier is blooded. Training in, and insistence on, the highest standard of performance in the duties of an operational sentry do much to develop the incisiveness, the self reliance, and the alertness that are the hallmark of soldierly conduct, and make the young soldier a formidable fighting man before he has been into battle.

Officers are not doing their job unless they are continually putting their men to the test, unless they constantly try them out, on dark nights, at awkward, unpredictable times; and go on trying them out.

CUT-OFF ROLE FOR TANKS

(From Headquarters, Allied Land Forces, South-East Asia. Extracted from Current Reports from Overseas).

On another occasion a squadron of tanks went to the aid of an infantry company that had been ambushed and was urgently in need of help. Once contact was established with the company, who supplied what information they could of the enemy's position, a quick plan was made to destroy the enemy before he could slip away.

Frontal Attack

One troop of tanks was to support the company in a frontal attack through thickish country, while the rest of the squadron moved to higher and more open country round the flank, whence they would dominate the enemy's escape routes.

The plan was successfully carried out and 50 Japanese dead were counted after the battle.



HORSE SENSE

(British Army Infantry Bulletin)

The following extracts from an article by Captain H. James Fagan of the U.S. Army appeared in the July issue of the *Infantry Journal*.

"A candidate will move through the brush off a trail at night because somewhere he learned, 'Avoid trails but guide on them'. But the crashing noise he makes would tip off any enemy soldier within a hundred yards.

"Some times a man will move his group five yards off the trail. 'Why do you move alongside the trail, Candidate?' 'To avoid ambush, sir'. 'Will five yards keep you out of any enemy fire down the trail?' 'No, sir, but the grass hides the trail and we wouldn't be able to follow it if we go any farther out.' 'How far can you see a man tonight?' 'Fifty yards, sir.' 'Well, how about having one man move down the trail and guide on him?'

Three Exposed

"Once, a company of the battalion I was in occupied an extremely forward position in the Ousseltia Valley. One flank rested against a ridge but the other three sides were completely exposed in the open terrain. The nearest friendly elements were a mile to the rear. The surrounding valley was no man's land, where both friendly and enemy patrols roamed at will. In fact, it was a fairly regular occurrence for enemy patrols to cut our wire leading back to the rear.

"After several weeks, the company

was ordered to withdraw and rejoin the battalion. Security was put out to the front and the company moved down the road in the darkness. Half a mile down the road it struck the main road and moved down it, too, in the darkness. After another half mile or so, they ran into an ambush. The security had walked right through a small enemy patrol. Luckily, the casualties were light—two dead and a half a dozen wounded.

His Reasoning

The enemy patrol withdrew after the action leaving one dead—a man who was captured but tried to make a break and was shot. Let's consider how the company commander might have reasoned: "The enemy is aware of my position, communication, and routes of supply. Patrols operate freely in our rear. If I follow the main road leading to the rear what's to prevent the enemy from setting up an ambush? On the other hand, the country is open, no trees or bushes. Movement across country would not be too hard and we could avoid contact with the enemy except through bad luck'.

Narrow Exit

"Another time the battalion was taking cover in a deep wadi that paralleled our front. The only exit to the rear was a narrow road going out from the left end of the gully. The enemy knew the ground well, having occupied it only a few days before. They had shelled the road intermittently since then. During a lull in the firing, six

men were sent to the rear for supplies. I returned from an inspection trip in time to see them move out in a group. Just as I started to tell them to spread out, it happened. A shell crashed right in the middle of the men and when the smoke cleared all six lay on the ground—four dead, two seriously wounded. Bad luck? Partly, but chiefly lack of common sense. The men had watched the enemy shell that area for hours. Yet they moved out in a tight bunch to go through it. If they had only used their heads and moved out at intervals, some would have been hurt but not the whole group.

"It isn't necessary for a man to have a college degree to meet the situations constantly arising in battle. But it is necessary to follow a little simple reasoning. Each one requires a quick estimate of the situation. Boiling it down, consider these things: What's the situation? What's my mission? What can the enemy do to prevent me from doing it? What can I do to carry it out? And lastly: How will I carry it out?"

"To simplify it even further consider: What can happen here? What can I do to protect my men and myself?"

"Every little personal action should be governed by these considerations. If you're moving across a field, and there's a good possibility of artillery fire falling in the area, study the ground. Plan your route to stay near available cover if it's only a rut or ditch. Keep alert so that at the first warning whistle of an oncoming shell,

you can hit the ground. The quickness with which you move will often determine whether you're a casualty.

"If your outfit has contact with the enemy and is halted, dig in! Your back may be aching and the skin worn off the palms of your hands from slit trenches, but dig, Mister, dig—unless it's plain you should do something else—and keep living.

Awareness of Danger

"A man must develop an awareness of danger that puts him on the alert. He's got to be able to look at the road going up a defile and think. 'Watch out! Good spot for ambush'. Or see a bit of high ground within small-arms fire and become suspicious. Suppose your men are tired or you must hurry. Don't go rushing into a possible trap as one outfit did in Italy without reconnoitering the dangerous localities. You're very likely to get shot up unnecessarily.

"On the other hand every soldier must take calculated risks. A man who's thinking too much about his own safety is not worth a damn. He gets a case of 'yoxolitis' and is useless. A good soldier is one who takes no unnecessary chances but doesn't shirk the necessary ones. Many times you'll be ordered to attack a position with the certain knowledge that heavy casualties will result. Plan your attack and make as much of a reconnaissance as you can. Study your map carefully with particular attention to the reorganization and defence against counter-attack. Always expect the enemy to be as clever as you would like to be".

WATERPROOFING VEHICLES

(Here is one of those "now-it-can-be-told" stories about waterproofing vehicles for the invasion of Normandy. It is a digest from the British publication "The Tank" and was extracted from the U.S. Military Review for CATM.—Editor.)

In combined operations which necessitate landings on enemy beaches, one of the chief problems confronting the General Staff is the landing of the thousands of tanks, carriers, armored cars, guns, and lorries of all kinds, with their loads and all the other equipment and paraphernalia of a modern army. This is a big undertaking, even when the army had the use of quays and harbours and all the usual unloading appliances but when every vehicle and piece of equipment has to disembark from landing craft off shore and wade through water, at times deep enough to submerge the engine of a lorry completely, the problem assumes giant proportions.

Almost before the last man of the British Expeditionary Force had arrived back in England after Dunkirk, plans were afoot for our reinvasion of the continent, and preliminary investigations were made into schemes for landing vehicles without the use of ports or unloading facilities of any kind.

Large Fleet

Quite early, it was decided to provide a large fleet of flat-bottomed landing craft which, when fully loaded with vehicles, would be able to approach fairly close to shore and would be fitted with a ramp in the bows for lowering to permit the vehicles to run straight off. It was not possible for such craft to get close in to shore that vehicles could land dry-shod on the almost flat beaches of northern France, so that it would be necessary for the vehicles, etc., to be able to wade from craft to shore through a varying depth of water, depending on a number of factors such as the draft of the landing craft (varying

according to the load); slope of the beach; height of the waves; presence or otherwise of holes or runnels in the beach, and so on.

In March 1942, Combined Operations commenced trials at their training centre on the west coast of Scotland, to find out whether it would be possible to make a vehicle travel in water.

Some months later, progress had reached the stage where, by the use of various sealing materials, vehicles could be driven in water up to three feet six inches deep for a short time; many difficulties were encountered, however, and the engines constantly filled, due mainly to water getting into the high tension electrical system, with the result that the vehicles "drowned." The corrosive effect of salt water on metal parts and particularly on electrical components then became evident. This proved to be a serious matter, as vehicles which had stopped in the sea were unfit for use after recovery unless completely overhauled, which often involved the replacement of many parts.

It was seen that the problem was a manifold one:

- 1. To waterproof the vehicle to enable it to function in salt water.**
- 2. To ensure that no damage was caused during and after wading, so that vehicles when landed would be fit for normal operation at once.**
- 3. To ensure that the vehicles or equipment could run off the landing craft without fouling the ramp.**
- 4. To train drivers to handle vehicles in water, which involves a different technique to normal.**

In October 1942, the first waterproofed vehicles to be used in actual

operations were shipped from England for the North Africa landings which took place on 9 November. No definite information is available as to what happened to these vehicles individually; it did become clear, however, that the beach conditions in the Mediterranean, owing to the very small rise and fall of the tides, were very different to what was to be expected in the English Channel; Mediterranean beaches, being much steeper, permitted dry-shod landings to be frequently made. As a result, the waterproofing methods did not receive any real testing such as was anticipated on the Atlantic coasts.

It had now been realized that the application of the waterproofing materials demanded considerable skill on the part of the personnel, who would have to be specially trained to the methods and the manipulation of the materials; it was also found that vehicles had to be in absolutely first-class mechanical condition, if they were to wade satisfactorily; it was no use waterproofing old vehicles or those in doubtful running order. Each one had to go through a rigorous overhaul and inspection of the most detailed character before it could be passed for waterproofing.

Continuous Trials

All through the autumn of 1942-43 a continuous succession of trials were going on, in all weathers, to check up on the methods so far evolved and to overcome the endless difficulties which kept on appearing. One of the major obstacles to progress was that, when a vehicle failed in the water, the engine and components rapidly filled up, so that before the vehicle could be dragged ashore all evidence as to the original fault was obliterated by the subsequent drowning.

It was also found that the slightest defect in workmanship when waterproofing was always liable to cause a

complete failure with consequent drowning of the vehicle. Waterproofing was therefore a unique task in that 100 percent efficiency was essential; all work had to be carried out with meticulous care and attention to detail if success was to be achieved.

Owing to the enormous numbers of vehicles and other equipment to be waterproofed for the Normandy landings, it was impossible for the whole of it to be done by experts, as the necessary numbers of these could not be produced in the time available. The majority of the work would, therefore, have to be done by the units themselves, with expert supervision. It was considered that the manufacturers' methods, so far the only ones available, were too difficult to be carried out by the comparatively unskilled personnel in units, with a sufficient degree of reliability, and it was therefore decided to improve and at the same time simplify the methods and materials used so that greater reliability could be obtained by unit personnel.

The first thing was to find a substitute for the plastic material used in the manufacturers' method which would be equally effective but easier to apply. It happened that the U.S. Army was also on the same quest and eventually a waterproof, heat-resisting, and electrical insulating compound was evolved by the Ministry of Supply in co-operation with an oil company, who, when approval was confirmed, immediately commenced production.

Having found the right material for the simplified method, it was now necessary to evolve a new scheme for the many makes and types of vehicles in use in the Army. Each vehicle had to be tested and re-tested in the sea till a satisfactory result was achieved

and a separate instruction pamphlet written.

In July 1943, owing to the ever-increasing volume of experimental work, a co-ordinating authority in the shape of a special branch of the DME (Directorate of Mechanical Engineering) at the War Office was set up, together with a new experimental workshop on the coast. About the same time, two wading trials establishments were set up at selected coastal sites. Here waterproofing methods were tested on a large scale on each type of "A" vehicles, and certain types of "B" vehicles, to be employed in the invading force. Experiments were set on foot to involve methods for waterproofing the many items of miscellaneous equipment and guns, etc.; also the contents of technical and specialist vehicles. In all over eighty different types of miscellaneous equipment were dealt with and technical instructions prepared during the same period.

REME Work

In the preparations for the Normandy landings, most of the waterproofing would, of course, be done by units, but a supervisory and checking organization was required; REME (Royal Electrical and Mechanical Engineers) undertook this and also the responsibility for waterproofing some 5,000 vehicles for the assault force, some 11,000 reserve "B" vehicles, and 3,700 reserve "A" vehicles. Prospecting of sites for depots to carry out this work commenced in November 1943, and some fifteen depots were opened for the purpose.

Some idea of the magnitude of this task may be obtained from the fact that 950,000 man hours of work were involved,

apart from adjustments, alterations, etc.

Work began in February and continued in the case of reserve vehicles until well into July. Many of the earlier vehicles had to be done a second time, as it was found that, owing to the impossibility of placing such huge numbers of vehicles under cover, some of the work had deteriorated. Batches of the vehicles were checked from time to time by wading in the sea, an undertaking which was quite large in itself.

Adverse Weather

As it is now known, the Twenty-First Army Group's forces went ashore in Normandy in most adverse weather conditions, with a loss of vehicles attributable to defective waterproofing of a small fraction of one percent. All the follow-up and build-up vehicles were put ashore across the open beaches for an extended period, until jetties, ramps, etc., could be constructed.

This result could never have been achieved but for the magnificent effort made beforehand over many months by those who developed the technique of waterproofing and who were responsible for its application to the large number of vehicles required for the landings.

KEEP ON HIS TAIL!

Always mystify, mislead and surprise the enemy if possible; and when you strike and overcome him, never give up the pursuit as long as your men have strength to follow; for an army routed, if hotly pursued, becomes panic-stricken and can then be destroyed by half their number.—*Gen. Thomas J. (Stonewall) Jackson.*

PASSING IT ON



PIAT COCKING

A second effective method of cocking the PIAT in the prone position has been developed at A15 CITC, Shilo Camp, Man. (For another method developed at Shilo, see CATM No. 46, Jan. 1945).

The method illustrated here is quick, simple and decreases the danger of handling damage to a minimum. The steps are summarized as follows:

1. The firer pulls the shoulder-piece away from the outer casing and turns it anti-clockwise (see Fig. 1.)

2. The firer crawls up beside the weapon, places his feet on the shoulder-piece, passes his right arm around the monopod and grasps the trigger guard. The weapon is steadied with the left hand on the bomb support. Note that the sights have not been touched (see Fig. 2.) The shoulder-piece is pushed away with the feet until the action is cocked.

3. The firer applies the safety catch while crawling to the rear of the weapon. The shoulder-piece is pushed back and re-engaged (see Fig. 3.)



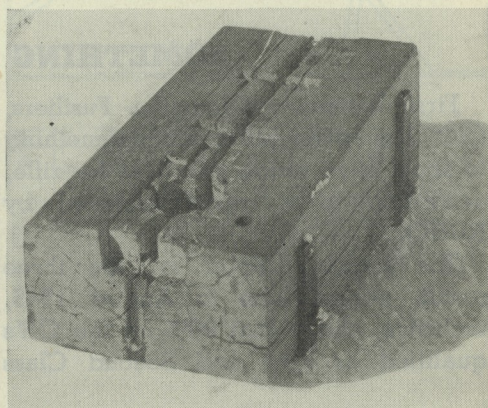
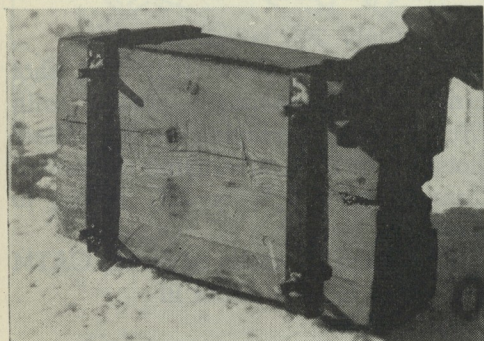
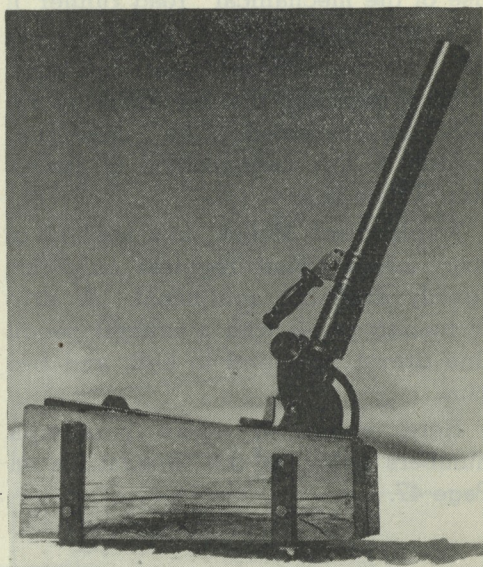


MORTAR DEVICE

With winter training around the corner, training officers will be interested in a device developed by A13 CITC, Valcartier Camp, Que. This centre discovered that when firing the two-inch mortar on frozen ground, three base plates were bent beyond repair due to the fact the hard ground would not absorb the shock.

To prevent further damage, A13 constructed the expedient shown in the accompanying photos. The block of wood on which the mortar is placed is reinforced with two iron bands and two 2-inch studs to prevent the block from slipping.

Incidentally, this device boosted the range of the mortar from 50 to 75 yards.



ROAD MEASUREMENTS WITH TRACING PAPER

(Here is a clever method of measuring road distances on a map. It was extracted from the U.S. Field Artillery Journal, and CATM passes it on as a helpful tip.—Editor).

For those who require a rapid, accurate method of measuring the road distance between two widely separated points on a map, we introduce the tracing paper method. Its advantages over the methods set forth in the field manuals are:

1. Accuracy—It is the only known method whereby a long, crooked road distance may be measured twice with exactly the same results.

2. Speed—It is as rapid a method as the others (except the method involving use of the mechanical "road runner").

3. Flexibility—It permits interruption of the measurement operation without requiring that the entire operation be repeated. The measuring device in this new method is always fixed to the map.

Employment of this new method of road measurement requires only this readily available equipment: A strip of tracing paper with a straight pencil line drawn from end to end, and two pins.

Here is how it works: paragraph numbers refer to the illustrations on Page 47.

1. Problem: To determine the road distance between RJ44 and CR55.

2. Lay the strip of tracing paper on map so that one end of the straight pencil line is over RJ44; stick white pin through RJ44 and rotate strip until line extends down centre of road to be measured.

3. Stick black pin in line where it diverges from centre of road to be measured.

4. Remove white pin; rotate strip around black pin until line again extends down centre of route to be measured; stick white pin in line at point where line diverges from centre of road.

5. Remove black pin; realign the strip by rotating it around white pin; stick black pin in line at point where line and road diverge.

6. Repeat same operation for next segment of road.

7. Repeat same operation for final segment of road, placing black pin through line into CR55.

8. Remove strip from map; place it so that straight line falls over graphic scale of map; read distance between first and last pin holes, which is the road distance between RJ44 and CR55 (in the accompanying example: 3.1 miles).

SOMETHING TO SHOOT AT

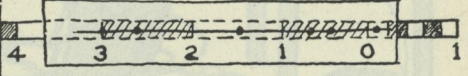
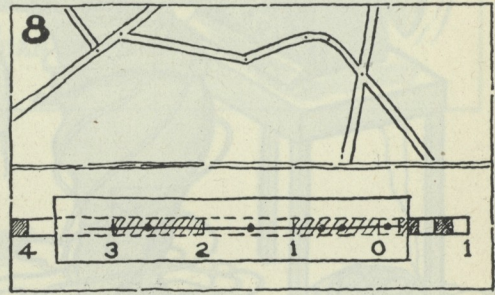
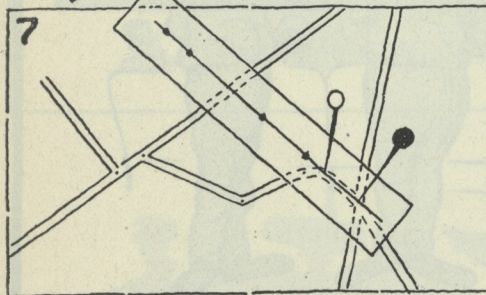
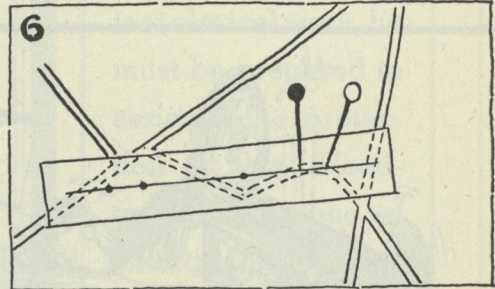
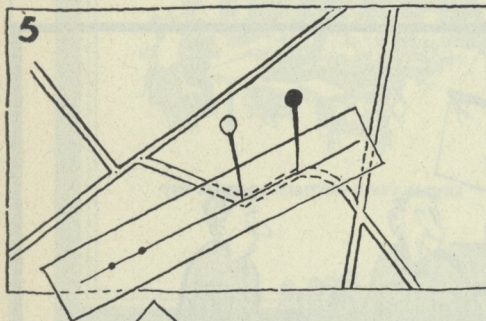
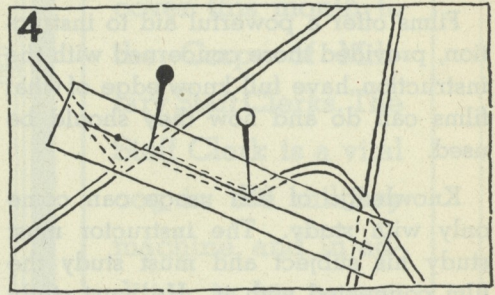
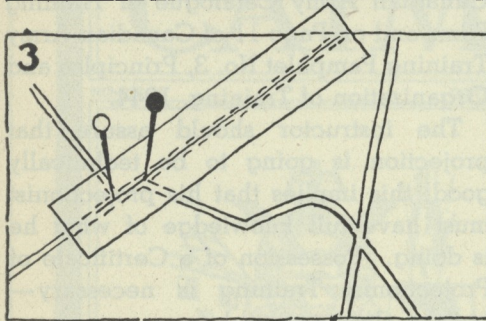
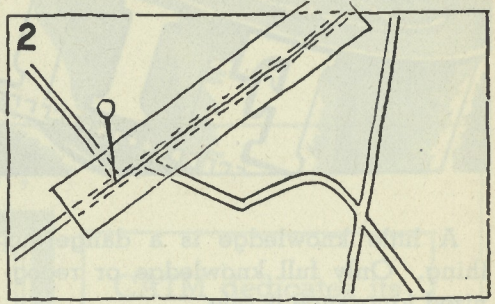
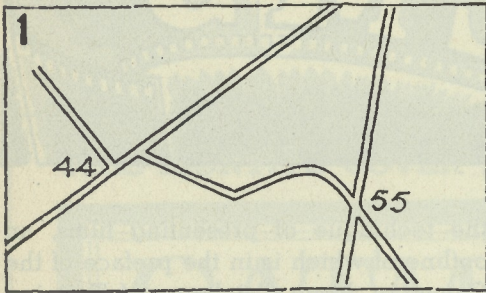
First Battalion, Edmonton Fusiliers, CIC, has given other units something to shoot at in range practices for rifle, according to a report received by NDHQ.

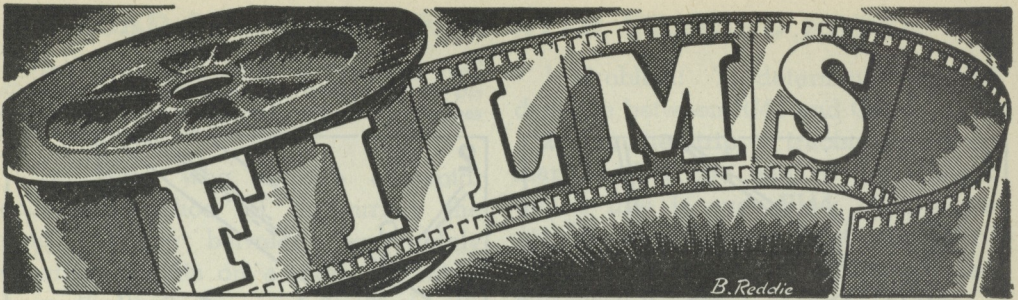
The training report for the three month period June to August 1945, inclusive, shows that 98% of the OR's qualified as First and Second Class

shots. Only 2% failed!

The summary show that 353 shot during the three-month period, with 276, or 78%, qualifying as First Class shots; 72, or 20%, qualifying as Second Class shots, and 5, or 2%, failing to qualify.

If this record can be bettered, CATM would like to hear about it!





A little knowledge is a dangerous thing. Only full knowledge or recognized ignorance is safe.

Films offer a powerful aid to instruction, provided those concerned with the instruction have full knowledge of what films can do and how they should be used.

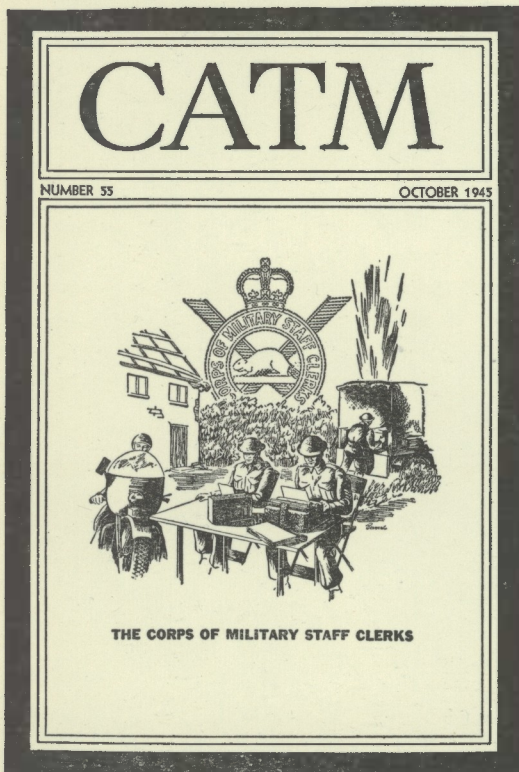
Knowledge of film usage can come only with study. The instructor must study his subject and must study the film connected with it. He must study

the technique of presenting films, an outline of which is in the preface of the Canadian Army Catalogue of Training Films and on Page 11 of Canadian Army Training Pamphlet No. 3, Principles and Organization of Training, 1944.

The instructor should assure that projection is going to be technically good; this implies that his projectionist must have full knowledge of what he is doing. Possession of a Certificate of Projectionist Training is necessary—but not always enough.



THIS MONTH'S COVER . . .



CATM dedicates its cover this month to the Corps of Military Staff Clerks. The Staff Clerk is a vital cog in the military machine, and in addition to his important clerical work, he must be prepared to assist in the protection of his Headquarters in time of emergency.

Next Month—THE CANADIAN PROVOST CORPS

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"DAMN — THESE EUROPEAN TRAINS!"