

# CATM

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**THE CANADIAN FORESTRY CORPS**

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# Canadian Army Training Memorandum

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# THE CANADIAN



The late Maj. Gen. J. B. White, C.B.E., D.S.O., E.D.  
Former Commander of the Canadian Forestry Corps

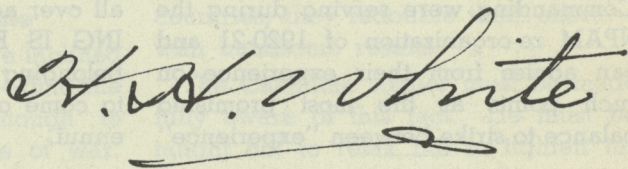
# FORESTRY CORPS

On the virgin forests of Canada, and on the carefully husbanded woods and plantations of Scotland and the Continent, the Canadian Forestry Corps in two wars has left, for all to see, the mark of its war-gear'd labours. Its output filled a multiplicity of home-front and battle-front needs—woods and timbers for aircraft and air-raid shelters, for mine galleries and railways, for huts, ships, docks and hangars, for an almost endless list of increased and special war uses.

The Corps embodiment in 1916 and in 1940 was occasioned by the German submarine which menaced British sea supply routes. Great Britain asked us for this specialized help and as far as her timber needs went it is fair to say that the cant-hook proved mightier than the torpedo.

In World War II the cant-hook was more than once laid aside for the rifle. Our lumbermen were well trained in infantry weapons and used them to good effect. In the Ardennes when the German break-through threatened the whole Allied front four companies of the CFC became the only organized Allied resistance on a ten mile front for 48 hours while the 6th Panzer army probed for an opening that would let them through. The Canadian loggers doggedly held their position until relieved.

A large share of the credit for the organization, team-work and success of the Corps must go to its Commander, the late Maj. Gen. J. B. White, C.B.E., D.S.O., E.D. The personality of this strong and capable leader was reflected in the spirit of the officers and men he commanded who tackled and finished their heavy task with enthusiasm, esprit-de-corps and whole-hearted co-operation.

A handwritten signature in cursive script, reading "H. H. White", with a decorative flourish underneath.

*This foreword to the Canadian Forestry Corps articles appearing in this issue of CATM was written by Lt. Col. H. H. White, officer administering the CFC at Headquarters, Ottawa. Maj. Gen. White, former commander of the CFC, died early in 1945.—Editor*

# EDITORIAL

## THE MONTHS AHEAD

After World War I, it is considered a fair statement that there was too great a time-lag between cessation of hostilities and the re-construction of the NPAM to the point where its units were capable of carrying out truly effective training. How can this hiatus be avoided in our day? We suggest by an appreciation, a plan, and a timed programme.

We have the advantage that the end of World War II found most of our Reserve Army units "valid and subsisting", some of them even tuned to a better pitch than in 1939. But with demobilization the Reserve Army becomes again our First Line of Defence, and we must lose no time in perfecting appropriate organization, and preparing for a realistic training programme that, when fully developed, will find units ready to meet all its demands.

Fortunately, all our District Officers Commanding were serving during the NPAM re-organization of 1920-21 and can advise from their experience on such points as the most promising balance to strike between "experience"

and "youth" in filling regimental appointments. Certainly a good leavening, at least, of young battle-trained officers and N.C.Os. is something all units must try for with their best efforts. Arduously acquired tradition and knowledge must be preserved and passed on before it is forgotten.

Sound organization is the basis of any hope of successful training. In every unit the "ESTABLISHMENT" must be kept constantly in mind, with its completion in all detail as a primary objective. Ensuring that every man is QUALIFIED for the vacancy he covers is a process that never ends and that must be pressed hard from now forward.

Our training plan with its timed programme must, to succeed, BUILD FROM THE GROUND UP. Individual training must be well and truly completed before the platoon and company levels are essayed. Some of us will have to go over the FUNDAMENTALS all over again—and again, but BUILDING IS FUN and the satisfaction of belonging to a well-found unit, bound to come out on top, will save us from ennui.

## THE INSTRUMENT

(U. S. Military Review)

Battle is the final objective of armies, and man is the fundamental instrument in battle. Nothing can wisely be prescribed in an army—its personnel, organization, discipline, and tactics, things which are connected like fingers of a hand—without exact knowledge of the fundamental instrument, man, and his state of mind, his morale, at the instant of combat. . . Man is flesh and blood; he is body and soul. And

strong as the soul often is, it cannot dominate the body to the point where there will not be a revolt of the flesh and mental perturbation in the face of destruction. . . The best masters are those who know man best, the man of today and the man of history.—*Ardant du Picq* in "The Relation of Psychology to Leadership" by *Helmick*.

# FROM THE ENEMY HIMSELF

As revealed, quite authentically, in recent newspaper stories, one of the Allies' most valuable weapons in the European conflict was the German soldier's inability to keep his mouth shut. It's no longer a hush-hush fact that some of our most valuable information about the enemy was obtained from the enemy himself.

From the North African invasion on, Allied Intelligence was frankly amazed at the willingness of the German soldier to talk about his unit—and in innumerable cases the information was a vital factor in the operation immediately ahead. It may have been that the German—unable for so long to speak freely on any subject in his homeland—welcomed the opportunity, when captured, to speak out. But, whatever the reason, it was long readily apparent that Security silence was something which the German high command had failed sufficiently to stress.

## Caution In Peacetime

In the Canadian Army we're inclined to assume—all too wrongly—that the Canadian soldier knows enough to keep his mouth shut in time of war. But what about "time of peace" where



the reasons for buttoned lips are not, perhaps, as readily apparent?

Security is just as important in time of peace as in time of war and the Canadian soldier must be taught that military information in his possession—those commonplace, "unimportant" facts—must be jealously safeguarded at all times. Intelligence services—including those of potential enemies—don't fold up and cease to function in times of peace. On the contrary, with all added facilities at their disposal, with comparatively few restrictions to hamper their efforts in democratic countries, they redouble their efforts—with handsome results.

The Canadian soldier must be made fully aware of this fact. He must be taught not to relax but to tighten his Security defences in times of peace.

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## THE TULIP

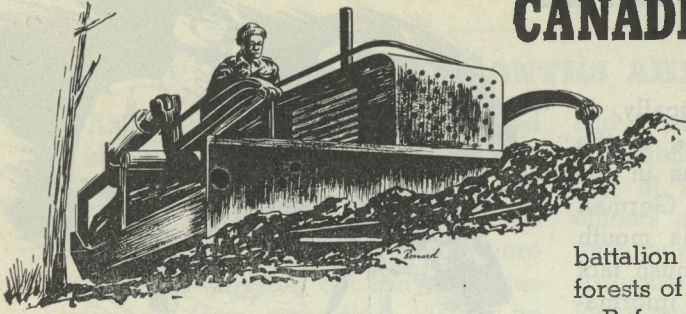
*(U.S. Military Review)*

Introduced for the war's last great battle in Europe, the "Tulip"—a Sherman tank firing Typhoon rockets—was conceived, evolved, and tested in a single day, a model example of co-operation between the Army and the Royal Air Force.

It all began with an officer of an armored battalion of the Coldstream Guards saying in his squadron mess on

the Western Front, "Why not try fitting Typhoon rockets onto our tanks?"

A visit was paid to a neighboring Typhoon airfield, and the RAF commander handed over a supply of rockets which a modification in the Typhoon's launching gear had rendered out of date. He lent an RAF fitter who, working with the Guards fitters, quickly devised equipment for housing and launching the rockets, one on each side of a tank.



# CANADIAN FORESTRY CORPS WINS ITS BATTLE

*(Condensed from an article by Maj. George F. G. Stanley in the March 1944 issue of the Canadian Geographical Journal).*

In a day of tanks and guns, battle-ships and bombers, popular imagination tends to seize upon steel as the one great raw material of modern warfare; the importance and value of wood is sometimes overlooked. Nevertheless wood remains one of the essential aids of the fighting services. From the factory on the home front to the scene of battle, ply wood, building lumber, pit props, pulp wood, railway sleepers and boat skins are to be found in every phase of combat; in the air, on the ground and on the sea. Wood is used to construct certain types of aircraft; it is used to build hangers, huts, barracks and docks; it is used to make the hulls and fittings of landing craft, patrol vessels and motor torpedo boats. Without wood the modern army, navy or air force would operate under a very serious handicap.

The first forestry units in the history of the Canadian Armed forces were those formed at the request of the British Government in 1916. The shortage of timber and the impossibility of finding ships for increased imports from abroad had become a matter of serious concern, and it was natural for the New Brunswick-born Secretary of State for the Colonies, the Rt. Hon. Bonar Law, to turn to Canada for assistance. In February he cabled the Governor General to the effect that the British Government would be grateful if the Dominion would furnish a

battalion of lumbermen to exploit the forests of Great Britain.

Before the conclusion of hostilities in 1918 the Corps had extended its operations from Southampton to Inverness in Great Britain and from Bordeaux to the Jura Mountains in France. The total strength, all ranks, including attached labour, amounted to 31,447.

It was the realization of the continuing vitality of wood in modern total warfare and the memory of the contribution of the Canadian Forestry Corps from 1916 to 1918 which prompted the Rt. Hon. Anthony Eden, the Secretary of State for the Dominions, in the early months of the war to ask the Canadian Government if they would be prepared to despatch forestry units for service in Great Britain and France under financial arrangements similar to those under which the Canadian Forestry Corps had operated during the last war.

**Negotiations were carried on, and in June 1940 it was agreed that Canada would provide 20 forestry Companies.**

The spring of 1940 witnessed a rapid break in what the Rt. Hon. Winston Churchill had referred to as that "strange and unnatural calm." In April the Germans invaded Denmark and Norway; in May, Holland and Belgium. The success which attended these thrusts, together with the increasing intensity of the Battle of the Atlantic and the heavy demands upon shipping for the Middle East and other theatres of war, constituted a state of affairs not dissimilar from those which had led to the formation of the original



Corps in 1916. More than ever it was essential to increase the British output of sawn lumber. And with their experience of lumbering, their up-to-date methods and their machines, the Canadians were the obvious men to make the most of the British timber resources.

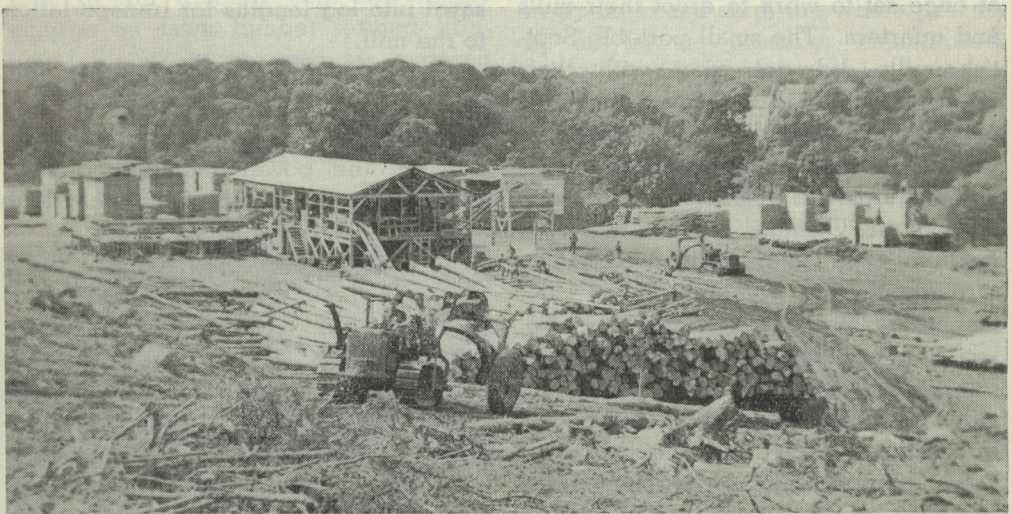
The original plan contemplated the formation of 20 companies, of which 10 would operate in Great Britain and 10 in France. The unexpected collapse of our continental allies reduced those companies intended for France to the position of "doubtful starters"; nevertheless recruiting for the Corps continued throughout the summer of 1940. In October the Advance Party left Canada for overseas, and, two months later, the first company, from the Head of the Lakes, landed on the shores of Scotland.

Scarcely had the first companies been mobilized when another request was submitted by the Secretary of State for the Dominions that the number of companies to be sent overseas might be increased. This the Canadian Government agreed to do. Ten more companies arrived in Scotland during 1941 and 1942 until, finally, 30 Cana-

dian Forestry companies were to be found throughout the length and breadth of the Scottish Highlands.

Personnel of the different companies were recruited from all parts of the Dominion of Canada: from the Pacific Coast to the Head of the Lakes, from Quebec to the Maritimes, even from the supposedly treeless prairies. English-speaking, white men and red, skilled and unskilled, hastened to volunteer their services.

The Corps began with the great advantage of having among its officers men who were not only connected with the lumber industry in Canada but who also possessed knowledge and experience of timber conditions overseas. In command of the Corps was appointed the late Brig. Gen. (later Major-General) John B. White, CBE, DSO, ED, of Montreal, who had commanded the Canadian Forestry in France during the first war and who, for some time, had been Deputy Director of Timber Operations with the British Forces with the rank of Brigadier-General. At the same time Gen. White was a militia officer of long experience. In 1911 he was commissioned in the 17th Duke of York's



**This photo shows the preparation of lumber by the Canadian Forestry Corps in Scotland. The logs are cut, go through the mill and come out as boards at the other end.**



**Cordwood cut and piled by the Forestry Corps for use in Canada.**

Royal Canadian Hussars and after the war of 1914-18 commanded this regiment. Subsequently he commanded the 3rd Mounted Brigade and became President of the Canadian Cavalry Association.

This combination of soldier and technician, typified by Gen. White, is characteristic of the present Canadian Forestry Corps. Not only are the officers and men, for the most part, experienced lumbermen, they are also trained soldiers. The majority of the senior officers are either veterans of the last war or militia officers, while all other ranks are required to undergo two months basic military training in Canada. This training is continued on arrival overseas.

Upon their arrival the Canadians at once set to work to erect their mills and quarters. The small portable Scottish mills did not meet with their approval, although each company now operates a "Scotch Bench" for the purpose of sawing mining timber. The mill equipment, selected and purchased in Canada, is the standard medium type rotary mill well-known throughout the Dominion. The mill machinery includes a 16-foot carriage, log haul-up, 5-inch three-saw edgers, rotary re-saw, spool stripper and trimmer table. The usual power unit is an International UD 18 100-horse-power Diesel Engine, although in one or two instances steam power is used. The logging equipment includes tractors,

sulkies and 2 and 3 drum winches for high lead logging. On the whole one may say that each forestry company is equipped on the basis of the most up-to-date methods of logging used in Eastern Canada, with a few special items from the West.

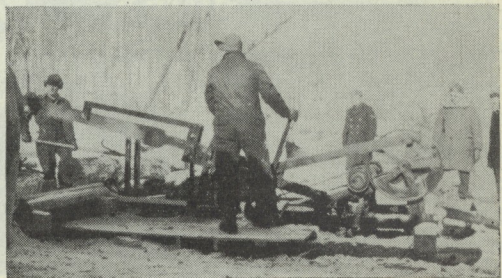
### **Type of Timber**

The timber in which the Forestry Corps are cutting wide swathes consists largely of Scotch pine, spruce and larch. In several of the camps Douglas fir and different types of hardwood have occasionally been harvested. Some of the timber milled has been upwards of 120 years of age, but, for the most part, it is of 60 to 70 years growth.

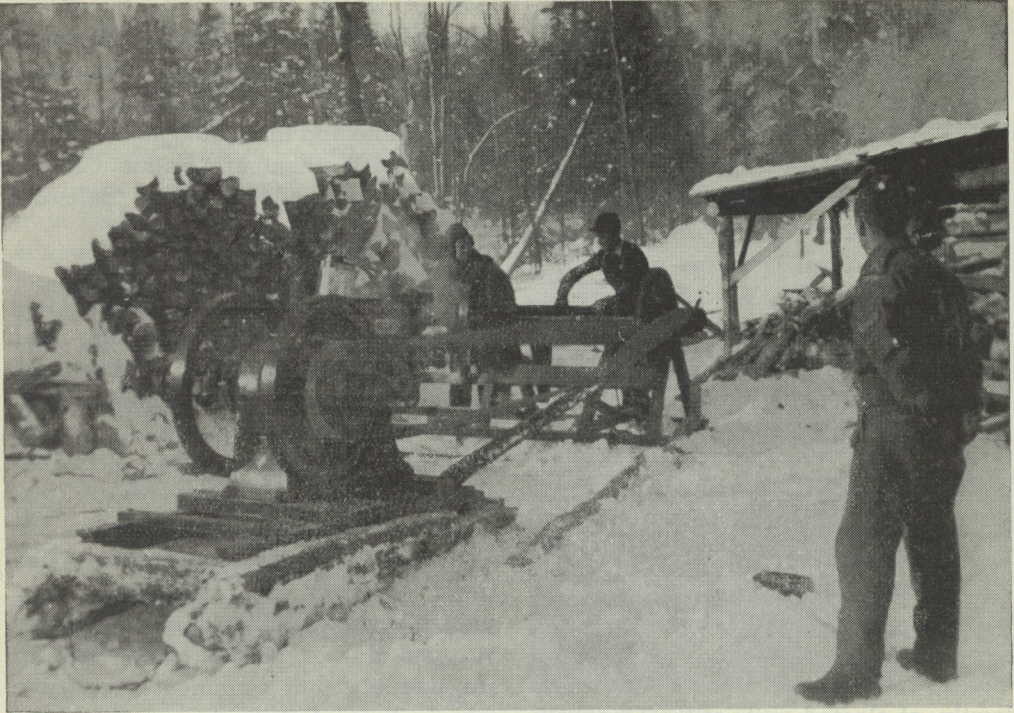
The work begins with the requisitioning of the areas in which the companies are to carry out logging operations.

The next task is to extract the fallen timber. This involves the use of tractors or "cats" as they are called, and large wheeled arches known as "sulkies." Both of these are being used for the first time in Scotland by the Canadians. The logs, trimmed of their branches, are attached to the sully by means of a steel cable and then hauled or bucked to the loading skids, where they are sawn into log lengths for transportation to the mill.

At the mill the logs are tipped into the mill pond or log wash. From here the washed logs are carried into the mill on the power ladder and then canted on the mechanical carriage



**A drag saw in operation.**



**A circular cut-up saw (buzz-saw) at work.**

which feeds them into the whirring headsaw. After the log has been sliced into planks these are put through the edger. Slab wood, on the other hand, is conveyed by a separate belt, and the better pieces are put through the rotary resaw. From the edger the planks pass to the trimmer saw and finally emerge as sawn lumber termed "National Stock" to be used for a dozen different war purposes.

### **Other Activities**

The Forestry Corps have also assisted in other activities outside their normal duties as lumbermen and soldiers. They have been employed as fire fighters; given assistance to other Dominion forestry units; built a prisoner-of-war camp; cleared a large airfield in England required for the expanding needs of the RCAF component of the First Canadian Army; and, on one occasion, transported a large whaleboat in a manner reminiscent of the famous

"Ship Railway" built across the isthmus of Chignecto.

The logging and milling methods of the Canadian Forestry Corps have excited the admiration of British forestry experts. From the time the tree is felled until the sawn lumber is stacked away on board ship, the whole process is, as far as possible, mechanized.

The result has been a constant flow of lumber from the woodlands of Scotland to the "National Stock." The daily average output of sawn lumber of each mill is approximately between 22,000 and 26,000 f.b.m., a real and tangible contribution to the Empire's war effort. At the same time pit wood, pit props, pulp wood, slab wood, telegraph poles and boat skins are all part of the production of each company. Sawdust disposal presents something of a problem in view of the absence of sawdust burners; and the shortage of motor lorries for hauling purposes has made it

difficult to reduce the increasing quantities of slab wood available for fuel.

**Official recognition of the work of Gen. White in organizing the Canadian Forestry Corps and the achievement of the Corps in exploiting the British forests to the advantage of the United Nations came at the beginning of 1943 when Gen. White's name appeared in the New Year's Honours List. On 2 February the Commander of the Canadian Forestry Corps was invested with the CBE at Buckingham Palace.**

This was not the only mark of royal favour in the history of the Corps. On 7 September, 1941, Their Majesties King George VI and Queen Elizabeth carried out an inspection at Balmoral Castle, the Scottish home of the royal family, of elected units of the Canadian Forestry Corps. The inspection was brought to a conclusion with a march

past at which His Majesty the King, dressed in the uniform of the Cameron Highlanders, took the salute. Following this ceremony, Their Majesties invited Gen. White and his staff to attend divine service with them at Crathie Church and to lunch afterwards at Balmoral Castle.

### **Huge Supply**

Since the Canadian Forestry Corps first began its operations in 1941 there has been no let-up in the work of feeding the demand for lumber. Over 200,000,000 board feet have passed through the Canadian mills in Scotland. (This figure had jumped to 400,000,000 at the war's end.) Bare patches are appearing in increasing numbers like great scars on the Highlands. Few people wish to see their hills and valleys stripped of trees, least of all the Scottish Highlanders; but sentiment must give way in time of strife, for wood is vital to the war effort, and valuable transatlantic cargo space had to be saved.

## **WALL OF FIRE FOR COAST DEFENCE**

*(Reprinted from U.S. Military Review)*

After the fall of France in 1940, when Hitler was actually planning the invasion of Britain, a wall of fire was prepared around the island to cover the sea, the beaches, the cliffs, the roads, and the fields.

A great sea-flame barrier, fed by pipes into the Channel, was established,

backed up by the Inshore Oil defences, and by flame-throwing apparatus and tanks on land. Had the Germans set sail for England, their invasion craft would have gone up in fire and smoke before a single invader could have set foot on the shores.

Vital beaches from Kent down to Dorset were guarded in this manner.

**There is one other moral quality I would stress as the mark of a really great commander as distinguished from the ordinary general. He must have a spirit of adventure, a touch of the gambler in him. As Napoleon said: "If the art of war consisted merely in not taking risks glory would be at the mercy of very mediocre talent." Napoleon always asked if a general was "lucky." What he really meant was "Was he bold?" A general may be lucky, but no general can be lucky unless he is bold.**

*—Field Marshall Lord Wavell*

## FORESTRY CORPS IN CANADA

When the Canadian Forestry Corps proceeded Overseas in 1940 a HQ was established in Ottawa to recruit and train reinforcements, supervise and advise regarding the selection and shipment of technical equipment. Major (later Lieutenant-Colonel) H. H. White, who was left in charge of this phase of the Corps' activities, served in the First Great War as a CFC Company Commander.

Four Recruiting Wings were established to raise reinforcements for the Corps Overseas with a CFC Training Wing at Valcartier, Que. Thousands of men from every community in Canada received the required military training at this Centre.

In 1941-42, ten additional Forestry Companies were authorized, trained and despatched Overseas.

In 1943, five Forestry Detachments were authorized at the suggestion of the Department of Munitions and Supply to assist in alleviating the acute shortage of firewood in Canada.

### Firewood Supply

The task thus allotted to the CFC, under the supervision of Lt. Col. White, was the production in the shortest possible time of as large a quantity of firewood as possible. The supply produced was to partially replace the quantity of firewood removed from the public market for the use of military establishments and made available to the Department of Munitions and Supply.

These Units were located in Quebec and Ontario and operations were successfully carried out until the Detachments were disbanded in Nov. 1945. A sixth Detachment was later authorized for New Brunswick to provide firewood for M.D. 7.

In addition to cutting firewood, the CFC was allotted the task of loading many thousands of cords of firewood,



*Canadian Army Photo*

**Lt. Col. H. H. White, officer administering the Canadian Forestry Corps at Headquarters, Ottawa.**

cut by civilians, at the head of the Lakes.

"Si monumentum requiris circumspice" (If you wish to see their work, look around you.)

## THE RIGHT SPIRIT

*(U.S. Military Review)*

There are many factors which go to make an efficient army in war. . . . I only want to emphasize one, and that is the RIGHT SPIRIT. British troops have always been imbued with the right spirit, a spirit which never knows defeat. I was amused recently in London to find in a military hospital a dozen patients who had a special dinner to celebrate Dunkirk, the biggest defeat the British Army has ever suffered. But its spirit was not defeated, and so I think these men had every right to enjoy a good dinner.—*Lt. Gen. Sir Arthur Smith, Commander in Chief, Paiforce (Persia and Iraq Command).*

# Military Training



## CANADIAN ARMY SIGNAL SYSTEM

The Canadian Army Signal System consists of 31 radio and teletype stations stretching from coast to coast. The system leases 8,920 miles of landline and its wireless circuits extend to a total mileage of 30,375 miles. The value of traffic, based on commercial rates, sent over this system amounts to over \$10,000 daily or approximately \$4,000,000 on an annual basis.

**Background and History:** Prior to World War Two this System was known as the Interprovincial Radio System. The first station on that system was established in 1922 at Camp Borden, the first home of the Signal Corps Training Centre.

During the period between 1922 and 1939, the System was gradually expanded until each district had a radio station in operation. Based on present day standards, these stations were low-powered and the maintenance of communication between districts and NDHQ required considerable skill and improvisation on the part of station personnel. Lack of funds to secure suitable sites, buildings, and equipment limited somewhat the ability of the System to handle much traffic. Nevertheless this period afforded Signals personnel an opportunity to obtain valuable experience in the handling of military traffic under varied conditions. This experience served as an excellent

background for those who later were engaged in supplying communications on active service at home and overseas.

**Service Offered by the CASS:** The CASS operates on a non-commercial basis. In addition to handling all messages for the Department of National Defence, the System handles, free of charge, messages for all Dominion Government Departments to and from any point on the Canadian Army Signal System. Other than the Defence Departments (Army and Airforce), the largest user of the System during war-time has been the Department of Munitions and Supply.

Army Signal Offices are now in operation at the following locations: Calgary, Alta.; Camp Borden, Ont.; Chilliwack, B.C.; Debert, N.S.; Dundurn, Sask.; Edmonton, Alta.; Fredericton, N.B.; Halifax, N.S.; Kamloops, B.C.; Kingston, Ont.; London, Ont.; MacDonald, Man.; Montreal, P.Q.; Nanaimo, B.C.; Ottawa, Ont.; Petawawa, Ont.; Prince Rupert, B.C.; Quebec, P.Q.; Regina, Sask.; Saint John, N.B.; Shilo, Man.; St. Johns, Nfld.; Suffield, Alta.; Sussex, N.S.; Sydney, N.S.; Toronto, Ont.; Vancouver, B.C.; Vernon, B.C.; Victoria, B.C.; Washington, U.S.A. (RCAF); Winnipeg, Man.

The Service offered to users of the CASS compares very favourably to that offered by commercial landline

companies. Under normal conditions an ordinary clear message to any point on the CASS is delivered to the addressee within a maximum of three hours from the time it is received in the Army Signal Office. An "Important" message is normally delivered within a half hour to an hour, while "Immediates" and "Most Immediates" are normally delivered within 15 to 30 minutes. In the case of Cipher messages additional time is required due to the necessity of enciphering and deciphering.

### Traffic Record

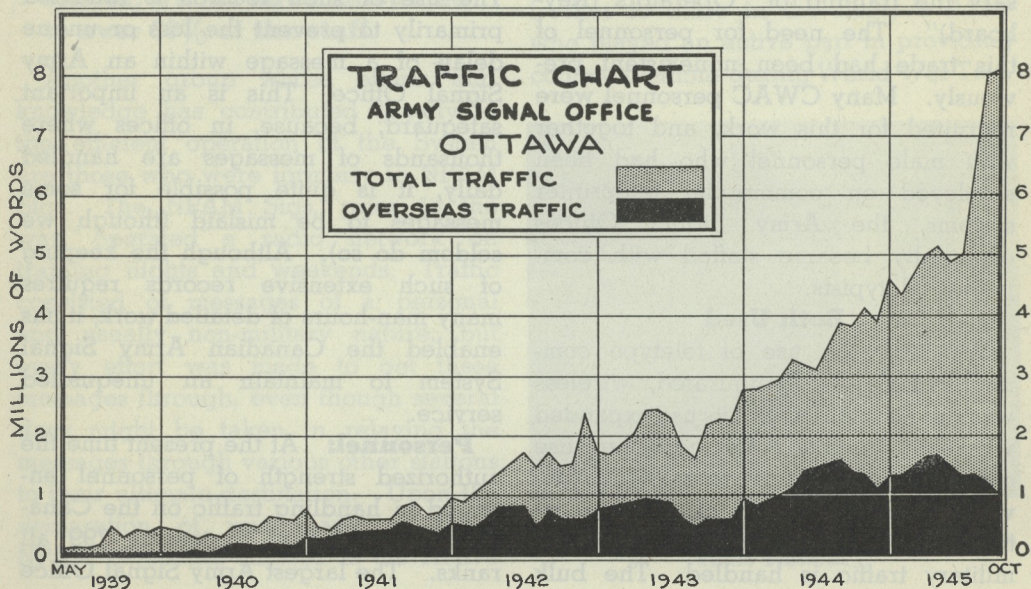
During the month of October 1945 the Canadian Army Signal System handled more traffic than at any other time in its history. A large amount of this increase was due to the heavy volume of administrative traffic caused by the return of our troops from overseas and their demobilization within Canada. During this month the Ottawa Army Signal Office alone handled over 7,000,000 words within Canada. At the existing average of 62 words per message, this represents a volume of 120,000 messages per month or nearly 4,000 per day.

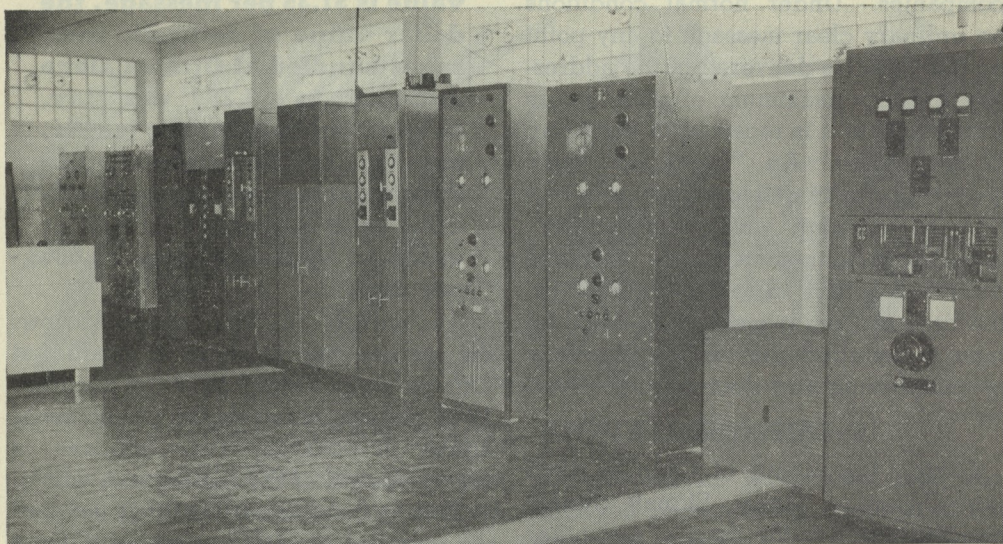
### Since the present computed

**value is \$1.35 per message, the dollar value of domestic messages handled at Ottawa alone amounts to \$5,200 per day. In addition to domestic traffic, overseas traffic originating in Canada is sent over CASS facilities and amounts in dollar value to approximately \$3,000 per day.**

As shown on the graph below, the percentage increase in traffic at Ottawa from May 1939 to October 1945 has amounted to the phenomenal figure of 3200%. This increase is representative of the System as a whole.

During the first two or three years of the war, the steadily increasing volume of traffic placed a heavy strain on the resources and personnel of the CASS. It was difficult, almost impossible, to obtain new and better equipment, not through lack of funds, but because equipment for overseas was needed first. As the CASS employs only commercial type wireless equipment at its fixed stations, it was not until the latter years of the war that some equipment of this type was made available. In the meantime telegraph and long distance telephone accounts had risen to





*Canadian Army Photo*

**An interior view of the Ottawa transmitting station.**

such heights that it was decided to lease landlines and connect all important military centres to NDHQ by teletype.

This was done gradually, starting with the Commands, until by May, 1944, all commands, districts and the larger camps had direct teletype communications to NDHQ. The adoption of landline teletype as a method of communication on the CASS made necessary the training of "Operators (Keyboard)". The need for personnel of this trade had been nonexistent previously. Many CWAC personnel were recruited for this work, and together with male personnel who had been employed on commercial teleprinter systems, the Army Signal Offices eventually became staffed with competent teletypists.

**Both Used**

Although the use of teletype communication was inaugurated, wireless was still maintained and its use expanded wherever possible. The combined use of wireless and landline teletype provided alternate means of communication, an absolute essential wherever military traffic is handled. The bulk of the traffic during the past two years

has been handled on teletype circuits.

Army Signal Office records are so designed, that within a period up to a year, the full course of a message may be traced. If the original message has been lost or mislaid by the originator, a copy may be secured from the sending Army Signal Office. (This practice should only be resorted to in cases of dire necessity as Signals personnel take a dim view of this practice). The use of such records is intended primarily to prevent the loss or undue delay of a message within an Army Signal Office. This is an important safeguard, because, in offices where thousands of messages are handled daily, it is quite possible for some messages to be mislaid (though we seldom do so). Although the keeping of such extensive records requires many man-hours of detailed work, it has enabled the Canadian Army Signal System to maintain an unequalled service.

**Personnel:** At the present time the authorized strength of personnel engaged in handling traffic on the Canadian Army Signal System is 799 all ranks. The largest Army Signal Office is located at NDHQ where the author-

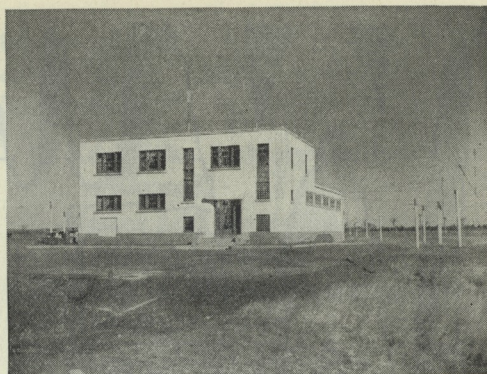


ized strength is 260 personnel. Unfortunately the volume of traffic has always increased more rapidly than personnel were trained or available. Consequently many Army Signal Offices, particularly Ottawa, have had to function at less than their authorized strength.

At the start of the war, many of the personnel employed on the CASS were sent overseas or were routed to instructional duties. This policy was continued throughout the war as qualified, physically fit personnel were sent overseas as reinforcements whenever required. This meant that the CASS became in effect a finishing school for many Signal Office personnel. However, it also meant that the System suffered from a high personnel turnover. In view of the continually mounting volume of traffic, many of the personnel have consistently worked overtime with few 48's or other breaks, on jobs which placed them under continual strain.

**No small share of credit should go to members of the CWAC whose presence enabled the CASS to release men for the active theaters. In many offices, CWAC have amounted to over 50% of the staff.**

Another group whose efforts and knowledge has contributed greatly to the efficient operation of the System are those who were formerly in NPAM Sigs. The NPAM Sigs, prior to the war, operated a radio network on training nights and weekends. Traffic consisted of messages of a personal and usually non-military nature, but every effort was made to get these messages through, even though several days might be taken in relaying the messages through various other stations to their ultimate destination. Upon the declaration of war many of these NPAM personnel enlisted in the Active

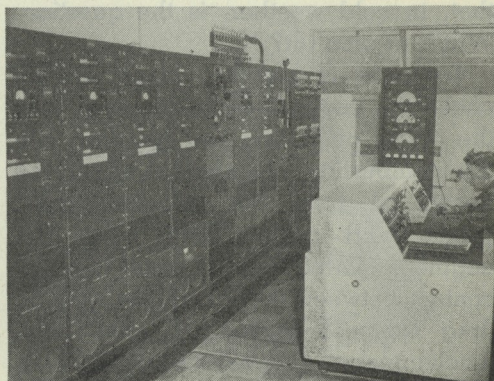


*Canadian Army Photo*

**Exterior view of the Ottawa transmitting station.**

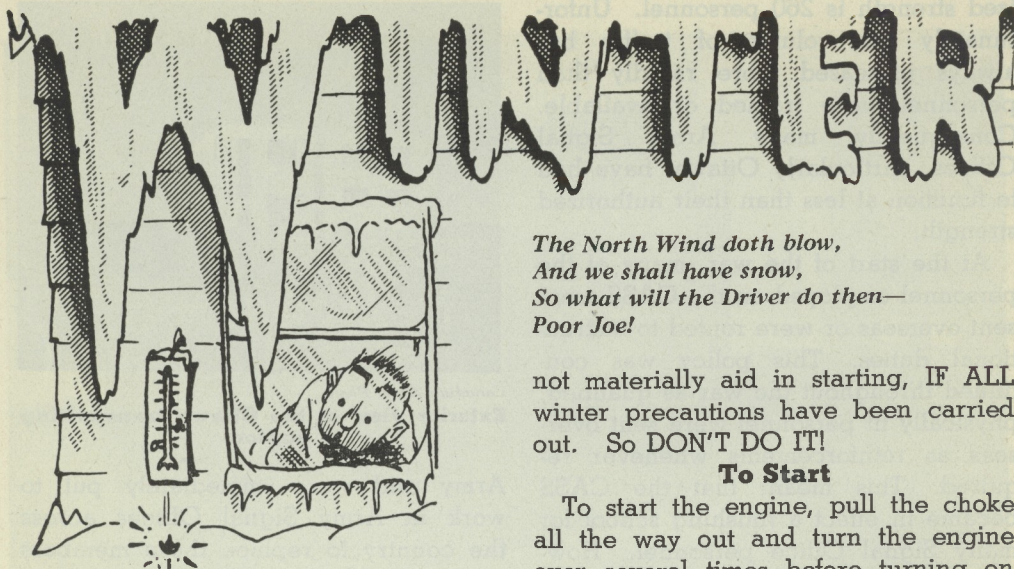
Army and were immediately put to work in Army Signal Offices across the country to replace those members of the Permanent Force which were despatched overseas. A good many of the CASS RADIO stations were almost completely staffed by former NPAM personnel.

It is to be hoped, that, in the near future, up-to-date equipment will be issued to Reserve Signal Units, so that once again a Canadian network of Reserve Army stations may come into being. Aside from the importance of such a project in providing trained personnel, it would also prove extremely worthwhile as a stimulant and a refresher to those in the Reserve Army who played an active part in providing communications during World War Two.



*Canadian Army Photo*

**Remote control receivers of the Ottawa radio station.**



*The North Wind doth blow,  
And we shall have snow,  
So what will the Driver do then—  
Poor Joe!*

not materially aid in starting, IF ALL winter precautions have been carried out. So DON'T DO IT!

### **To Start**

To start the engine, pull the choke all the way out and turn the engine over several times before turning on the ignition. If the engine fails to start promptly, do not run the battery down by repeated attempts—investigate the trouble. When the engine starts allow it to run slowly until the cold oil circulates to all parts. DO NOT LEAVE THE CHOKE PULLED OUT ANY LONGER THAN NECESSARY.

Winter months mean treacherous driving conditions so drivers should be DOUBLY CAUTIOUS. When pulling away, to avoid spinning the wheels, USE THE HIGHEST GEAR POSSIBLE AND ENGAGE THE CLUTCH SLOWLY. When stopping, to avoid locking the wheels and skidding, APPLY THE BRAKES GENTLY, RELEASE AND APPLY AGAIN.

To reduce the hazard of skidding and consequent contact with poles, telephone; cars, street, electric; lamps, street; and vehicles, civilians, for the use of:

*This article was written for CATM by the Directorate of Mechanical Engineering, NDHQ. Additional articles by DME will appear in future issues of CATM.—Editor.*

The hazards of winter driving can best be realized by observing the number of stalled vehicles, frozen radiators, growing junk piles and crowded casualty wards. The operation of vehicles in winter involves factors not encountered in normal temperatures, but fortunately most of these can be neutralised by sound maintenance and skilful operation.

Many aids have been provided to reduce the difficulties of winter driving, and now operation of a vehicle in the coldest weather can be both comfortable and safe.

**OPERATION:** Before any vehicle can be operated it must be started. But that, in cold weather, is the question. Will it or won't it?

To assist in starting, many drivers choke the engine before stopping, with the object of putting raw gasoline into the combustion chamber to wash the heavy oil from the cylinder walls, pistons and rings. Then when the engine is started there is metal to metal contact between these surfaces with no drag from congealed oil. But, alas, much unnecessary wear also takes place, especially if the engine is warmed up at more than a fast idle. Contrary to back fence gossip, this choking does

1. Drive slowly.
2. Use four wheel drive, if applicable.
3. Avoid sudden stops or turns.
4. Do not change speed quickly.
5. Stay out of deep ruts.
6. Stay in shallow ruts.

If, in spite of all you can do, a skid begins: 1. STEER IN THE DIRECTION OF THE SKID. 2. DO NOT SUDDENLY REMOVE YOUR FOOT FROM THE ACCELERATOR. 3. DO NOT APPLY THE BRAKES. 4. DO NOT DIS-ENGAGE THE CLUTCH.

When driving with chains, caution is required when turning or when applying the brakes. Chains increase side slip or "slewing" when turning and when stopping, and if the wheels skid cross links may be broken. And, by the way, when using chains, be sure that the tires are fully inflated, with cross link hooks turned away from the tire, and that you can pull the chain 3 inches away from the tire at any point.

Before parking, after driving in wet snow or water, drag your brakes slightly to dry them out, otherwise the water may freeze around the drums and lock the wheels.

When parking avoid slush or water as the tires will freeze in if the temperature drops, resulting in damage when starting again. **PARK VEHICLES ON A HARD DRY SURFACE.** To prevent the vehicle from moving, block the wheels instead of using the parking brake, so that your brakes won't freeze.

There is no excuse for "bald" tires being used on army vehicles as adequate re-capping facilities are available.

**MAINTENANCE:** To operate efficiently vehicles must be maintained in first class mechanical condition, and all winter servicing must be carried out.

Batteries must be kept charged. A fully charged battery will not freeze until the temperature falls to minus

85 degrees F., while zero will be dangerous to one badly run down. Remember:

1. Keep the battery fully charged.
2. Never add water immediately before parking.
3. Keep terminals tight and clean.
4. Check that lights and ignition are turned off before parking.

Cooling in the winter may be a headache—and we **DO** mean the vehicle cooling system. Regular inspection is essential to guard against leaks. Radiator hoses, clamps, drain plugs, fan belts, water pumps and gaskets must be kept in good condition.

Ethylene Glycol, the authorized anti-freeze for use in water-cooled engines, will **NOT** evaporate at normal cooling-system temperatures. Any loss of coolant due to evaporation is a loss of water only, therefore water only should be used for topping up. Solutions containing 60 percent anti-freeze compound provide the most protection. An added advantage of Ethylene Glycol is that it actually contracts on freezing; hence it doubly protects the cooling system from frost damage.

Special winter grades of fuel aid in



starting and help to ensure efficient, trouble-free operation. Ordinary gasoline is not volatile enough for cold weather starting.

Condensation of moisture in the fuel tank will freeze and clog fuel lines and filters unless precautions are taken. **KEEP THE FUEL TANK FULL** to reduce the volume of air from which water may be condensed.

In sub-zero weather, methylated spirits (not the drinking stuff!) may be added to the fuel to reduce the danger of ice forming. Add one quart to 15 gallons of gasoline at the start of the winter season and add one pint to every 15 gallons of fuel put into the tank.

It is essential that lubricants suited to extreme cold be used to ensure proper lubrication of all moving parts of the vehicle.

Engine oil may be diluted with 20 percent gasoline, preferably unleaded and undyed. This should be done at all halts of more than three hours duration, or when parking for the night, if the temperature is below zero. After stopping the engine, allow five minutes for the oil to settle. If the level is low, top up to the full mark, before adding diluent. Then start the engine and run at a fast idle for approximately five minutes to thoroughly mix the oil and gasoline.

It may not be necessary to dilute after short trips and caution should be exercised here. It can be assumed that about half of the gasoline will boil off after an hour's run; all will boil off in three or four hours operation.

**Do not dilute oil with anti-freeze!**

#### **SPECIAL WINTER EQUIPMENT:**

What the well-dressed car will wear in wintertime has become "Big Business", from the tarpaulin-tent and under-chassis heater, to the tailor-made kit complete with everything but the exten-

sion to the windshield wiper to brush the snow off the driver's boots.

These kits are assembled for each make of vehicle and may include a water heater, engine primer, battery heater, radiator shutters, louvre covers, windshield defrosters, car heaters and other gadgets to completely winterize the vehicle.

#### **Aids For Winter**

In addition there are miscellaneous aids to winter driving. These include any or all of the items found in the complete kits, but may be used individually to suit certain requirements. Vision aids may be plain glass, heated glass, hot air blast, or electric or vacuum operated fans. Radiator muffs or engine hood covers, winter fronts, underseat heaters, 110 volt engine heaters are other examples of miscellaneous aids.

For the really obstinate starter there is that relic of ancient Rome, the "Slave" starter. It consists of a heater, batteries and a gasoline driven generator. The heat, blown through flexible tubes to all parts of the engine acts like a ray of summer sunshine and the vehicle almost starts off by itself.

So even if the "North Wind Doth Blow", and we DO have snow, and 20 below, too, poor Joe need have no troubles if he will properly maintain his vehicle and follow the winter servicing instructions as laid down by Canadian Army Local Electrical and Mechanical Engineering Instructions.

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#### **DON'T EXPECT DEFEAT**

**To expect defeat increases the possibility of being defeated; an army convinced of its superiority doubles its courage and its probabilities of achieving victory.—***Le Bon in "Guardia Nacional," Nicaragua.*

## SHRAPNEL EFFECT OF No. 36 GRENADE

Lethal effect of the No. 36 hand grenade is graphically shown in the accompanying photo taken at A30 CITC, Utopia, N.B. These pieces are the fragmentation of a blown grenade and the shrapnel effect of this weapon is clearly shown. Note the different sizes and the number of the pieces—80—and the base plug, centrepiece and striker and spring. It will give you an idea of how effective a No. 36 can be when used against the enemy.

### Grenade In Pipe

This burst was obtained by sinking a portion of clay drain pipe wrapped in sandbags into the ground approxi-

mately three feet deep. The pipe was placed in an upright position and the bottom stuffed with sandbags. The grenade was placed in the pipe with a pull wire attached to the safety pin which had been pulled nearly out.

Sandbags were placed over the grenade, leaving the pull wire clear, and a heavy steel plate placed over the opening to prevent pieces flying out of the hole during the explosion. When the wire was pulled and the grenade burst, the clay pipe was shattered but the pieces of grenade shown in the photograph were recovered from the folds in the sandbags.

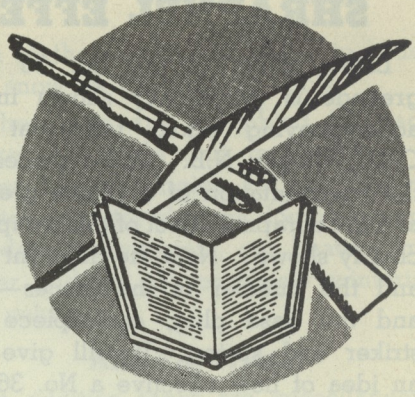


*Canadian Army Photo*

**This photo shows the shrapnel from an exploded No. 36 hand grenade.  
There are 80 pieces.**

# CANADIAN ARMY EDUCATION

## KHAKI SCHOOL AT CAMP NIAGARA



Camp Niagara, headquarters of the Kent Regiment, has recently set up a model "Khaki School". Housed in the old Military Hospital, its green-painted interior greatly belies the old idea of the dingy schoolhouse. The School "Principal's" office was formerly the hospital operating room and with its luxurious appointments, including gold-fish, would be the envy of any brigadier.

This school is providing accommodation for 720 men. Each of these men will be able to take one course of his own choice within the limits of the curriculum and will attend classes in other prescribed subjects for either the morning or afternoon of each day, from Monday to Friday.

Courses range from Grade School

through Middle and Upper School to Senior Matriculation and cover all the prescribed subjects—English, Mathematics, Social Studies, French, Latin, Spanish, Biology, Chemistry and Physics. In addition, there is a Commercial Department teaching Bookkeeping, Shorthand and Typing. Vocational training is provided in Art, Drafting, Radio and Electricity. Negotiations are underway to have further Vocational Courses set up in the Camp R.C.E.M.E. workshops.

The provision of qualified teachers has been one of the biggest problems at Niagara. Five officers and two junior NCO's were obtained from the unit itself who were ready and willing to



*Canadian Army Photo*

**A class in bookkeeping at Camp Niagara.**



Canadian Army Photo

**An art student discusses colour balance with the instructress at Camp Niagara.**

help out. This staff has been supplemented by three civilian teachers procured from the neighbouring town.

### **Good Library**

The close connection between a good library and adequate educational facilities has been proven at Niagara. One of the first steps taken when the School was being organized less than six weeks ago was to order the newest editions of textbooks and reference books to be studied and referred to in connection with each of the subjects on the curriculum. These, in conjunction with the standard C.L.E.S. textbooklets, have been installed in a new library adjacent

to the classrooms, well lined with bookshelves and completely catalogued and indexed with a full-time librarian in charge.

The excellent co-operation of the O.C. who is completely sold on the educational programme, together with the hard work and organizing ability of the Education Officer in charge and the enthusiasm of Kent Regiment Junior Officers, have accomplished somewhat of a miracle in a very short time.



Canadian Army Photo

**Draughting lesson at Camp Niagara.**

## **DISCUSSION GROUPS AT A36**

It often happens that the most frightening aspect of a problem is the job of getting things started. A36 Canadian Radar Training Centre, Barriefield, Ont., found this particularly applicable to the business of organising worthwhile discussion groups.

There were inevitable problems: first of all, no one likes to be told that he **has** to attend a discussion; secondly, shyness bred indifference; thirdly, the discussion leader was a stranger to most of the group, and finally, the men did not at once connect themselves in any way with the problems under discussion.

The results of those problems and the solutions to them are obvious. When the groups began their regular meetings the discussion leader had to do most of the talking to make the period last its full length—and preparing and delivering a 90 minute lecture takes a considerable amount of time and energy. In order to interest the men it was thought that the best subjects would be those that they could not normally take the trouble to learn about themselves. So the discussion leader gave a series of talks on the governments and peoples of the major coun-

tries of the world, leading up to a detailed investigation of Canadian Affairs and the democratic system of government in this country.

### **Personal Concern**

Once the men were made to feel that their opinions were welcome and would be listened to sympathetically they gradually came out of their shells, and were finally impressed with the fact that the affairs of the country in which they live are very much their personal concern.

Gradually self-consciousness has become less and less apparent within the group, to the extent, in fact, that occasionally it is difficult to enforce the rule that only one man may speak at a time.

The groups meet twice weekly. On Tuesdays one group meets in the morning and the other in the afternoon. Fortunately, in both groups there are factions often holding quite opposite views on the subjects discussed. On Thursdays the two groups combine in the afternoon when the speaker is the representative of a community club or a businessman from the city of Kingston.

A36 now feels that it has reached the final goal of the programme, because discussion has been stipulated to the extent where it is possible to conduct the discussion groups as a debating society, pure and simple, with the leaders in the debates coming from the groups, and the discussion leader acting as little more than a Sergeant-at-Arms.

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## **A BREAK FOR THE ARMY LIBRARIES**

*(By Capt. F. R. Branscombe, Directorate of Education, NDHQ)*

### **"See if you can get some decent books somewhere for the library."**

The NCO or Officer receiving this order has sometimes found it a difficult one to handle. He probably didn't know where to get the books—and then he wasn't too sure what books he should ask for anyway. In fact, deciding on titles was not as simple as it seemed. Even though he may have read quite a bit before joining the army, he found difficulty in learning what new books were being published, and which of the older ones were still in print.

These difficulties, together with pressure of other duties too often drove him to accept **any** books he could get his hands on. Thus it was that Army Libraries became cluttered with such books as "The Perfect Waitress of 1902," "The Cause and Cure of Baldness" and "What to Do Now that Baby is Here."

With the increased emphasis on education and other similar services

following the "cease-fire," such library conditions became intolerable. Some improvement, and a marked one at that, was imperative.

It was recognized that the real need was for trained librarians, not merely people to hand out books, but someone qualified to help Unit Officers in the selection of titles and to assist NCOs in the actual day-to-day operation of libraries. To meet these needs, vacancies for trained librarians were created on the Headquarters of Districts and Commands. The appointees, who are all CWAC personnel, have been selected with the greatest care: all had previous library experience and most had military service before undertaking their present duties. Knowledge of service conditions has been considered as important as professional skill.

**What has the appointment of a District Librarian on the staff of the District Education Officer got to do with the Unit man told to "get some decent books somewhere?" Just this: It**



**means he has someone in the District to whom he can turn and say "This is your pigeon!" Not only someone who should know where to get books, but a person who knows which are available and are best suited to the needs of the Unit.**

The District Librarian will be of help to the Unit Education Officer or NCO in other ways as well. New library stationery and forms have been authorized and she will be able to assist in their proper use. Suggestions for posters and other publicity activities may be had also.

A very important aspect of the District Librarians' work will have to do with Units too small to maintain regularly established libraries. Some of these are isolated and, therefore, there is all the more need for adequate library facilities. The D.L.O. will either supply them with expendable paper covered books or will operate an exchange box-library service for them. To do this she may maintain a pool of books at District Headquarters.

Although the Unit Education personnel will most frequently be calling on the librarians for assistance, it is

expected that others will find work for them also. Medical and Dental Officers, Army Examiners and Counsellors, Supply and Transport Officers—in fact, everyone has the occasional problem involving books. These problems can be passed through the Unit Education Officer to the District Librarian for "necessary action, please."

The need for adequate library facilities is greater now than it has been at any time during the war. This need will continue throughout the Winter and the Spring. The library has its part to play in maintaining the morale of the Units, and Commanding Officers now have available to them, the advice of library personnel to enable them to improve library conditions in their Units.

A good library involves not only the careful selection of books, chosen with regard to the tastes of the readers and with some regard to the proper proportions of various types of reading, but also a comfortable reading room, adequate display space for books and convenient arrangement. The District Librarian has the "know-how" and is eager to co-operate with the Commanding Officer and his staff in making the Unit Library a success.

## **CLASSROOMS CROWDED AT S17**

Within a few weeks of the announcement by NDHQ of the intended educational programme for the army, 263 soldiers at S17 Canadian School of Infantry had enrolled for Canadian Legion Educational Services courses. Some of these enrolled for as high as three courses in different subjects, the maximum which the CLES will allow. This brought to more than 300 the number of applications. The initial problem which loomed up was the limited number of textbooks. A response such as this had not been expected. Action was prompt in all

departments concerned and the difficulty was overcome. CLES deserves high praise for its generosity and efficiency in this undertaking which mushroomed into tremendous proportions almost overnight.

*(Continued on page 25)*

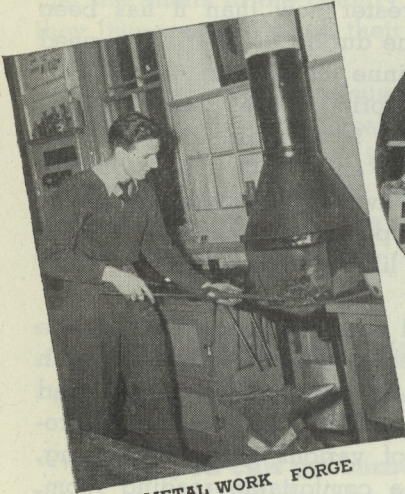
*This progress report on army education was received from S17 Canadian School of Infantry, Vernon, B.C. On Page 24 soldier students are shown studying the various subjects being taught at the School.—  
Editor.*



FRENCH CLASS



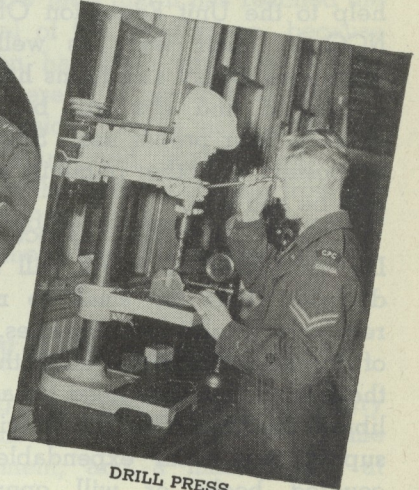
ENGLISH AND SOCIAL STUDIES



METAL WORK FORGE



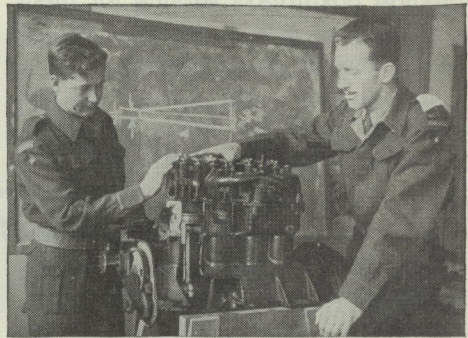
ARMY NURSES AT WORK



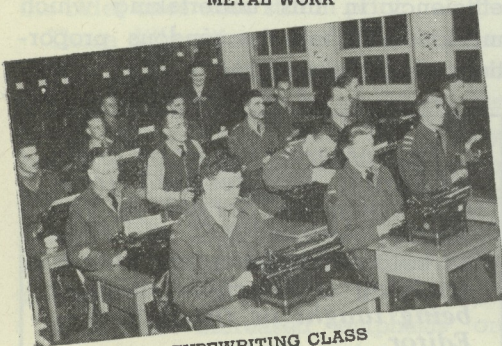
DRILL PRESS



METAL WORK



AUTO AND DIESEL



TYPEWRITING CLASS



WOOD WORK

By Nov. 1 all the ground work had been completed and the training commenced on that date. Tuesday and Thursday mornings at the School are devoted entirely to education. Instructors are volunteers from the staff and are qualified in their respective subjects.

The following classes are at present in operation: Introductory mathematics, Mathematics "A", Mathematics "B", Mathematics "C", Senior Matriculation Mathematics, English and Social Studies, French, Science, Practical Electricity, Principles of Radio, Bookkeeping "A" and "B", Auto and Diesel Engineering.

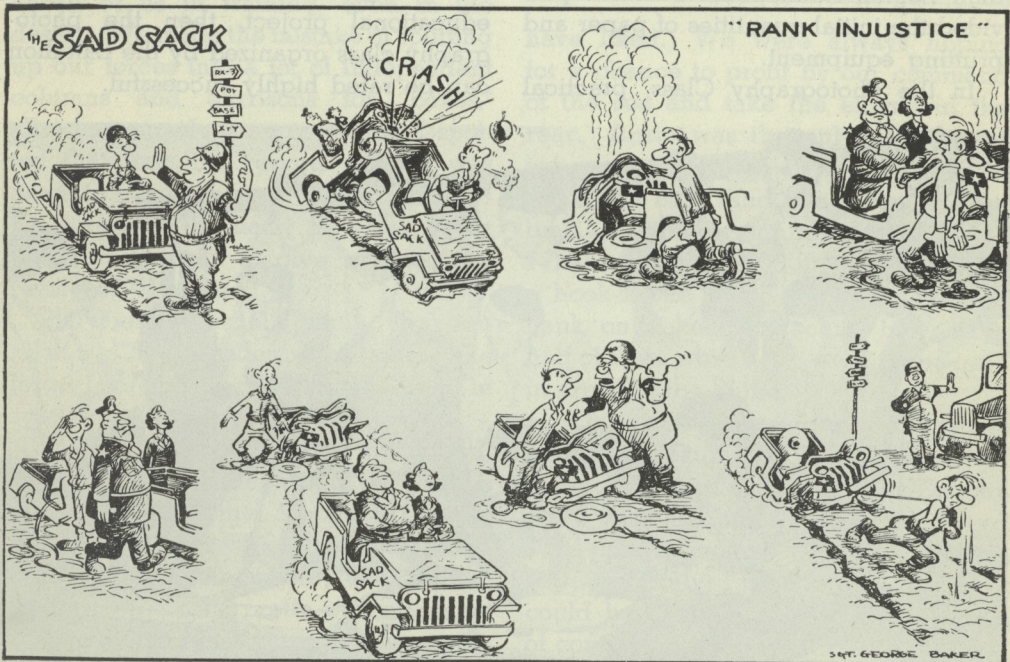
In addition to the day training, night classes have been organized in conjunction with the Vernon High School. Two classes in typing are now operating, each class being in session twice weekly with an enrollment of 46. Two classes in woodworking are also functioning, with an enrollment of 42. Metal working and draughting classes are similarly operating. A total of more than 125

are enrolled for these night classes taught by Vernon High School instructors.

A programme of addresses by guest speakers has been arranged for the cadets of the School OTC Wing. These lectures are held each Tuesday evening and prominent local citizens are invited to speak to the cadets. Up to the present the School has been favored by talks from the president of the local WPTB, the president of a fruit union, a government agent and a government entomologist.

It is hoped that through these talks there will be a better understanding of the functioning of the local, municipal and dominion governments. Other lecturers have been invited to speak at the School.

Through a better education will come a better civilization. A better understanding of the Army and its efforts will tend towards a better relationship with civilian enterprise.



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

# SOLDIERS LEARN PHOTOGRAPHY

When personnel of the 4th Infantry Training Battalion, Chatham, Ont., were surveyed through the medium of a questionnaire for educational purposes it was found that many men were interested in photography. As the battalion had some equipment as a "hangover" from a Camera Club of the Basic Training days and an excellent instructor, no time was lost in the establishment of a Photography Class.

Advance information indicated a class too big for the camp dark room, so new accommodation was sought. At first the ante-room of the indoor range was utilized, but eventually this proved too small and a new location within the range itself was found more satisfactory. This space was utilized as a dark room.

A small amount of equipment, such as small trays and chemicals, was available. The instructor had an enlarger of his own valued at \$45 and he used this to good advantage. Canadian Legion Educational Services provided the initial quantities of paper and printing equipment.

In the Photography Class, practical

work is done first with a view to emphasizing the simplicity of developing and printing and to arouse interest. Personnel print and develop very early in the course, using their own films and negatives. Later, instruction is given in enlarging, with personnel making their own enlargements. This is followed by instruction on the camera and explanation of chemical processes involved. Toning of pictures has been done. While interest has been added by outdoor practical work in composition, this has been somewhat limited by the scarcity of film.

The course included instruction in photographic chemistry, indoor photography, printing and finishing. It is also planned to incorporate slides and motion picture films for instructional purposes.

During one month 83 were enrolled in the Photography Class, and so great was the interest that an evening class was organized. If enthusiasm is a measuring stick for the success of an educational project, then the photography class organized by the battalion can be rated highly successful.



Men in the 4th Infantry Training Battalion attend a class in photography.

# ALEXANDER SUMS UP

Field Marshal Sir Harold Alexander surrendered the Supreme Command of the Allied Forces in the Mediterranean on September 29, thus ending his career as a soldier, in order to take up the functions of a viceroy. Before he left Rome I had a long conversation with him, in the course of which he looked back over the war as he had seen it and made some illuminating reflections.

"The War," he said, "can be divided into two halves, with Alamein as the dividing point. Before that we had never had the men or the equipment with which to take on the Germans successfully. At Alamein for the first time we had the right weapons and adequate reserves, and from that point we went ahead steadily."

## Can Always Learn

I suggested that we had a lot to learn from the Germans at the start. "You can always learn from the Germans," was the reply. "They were far ahead of us in training, even in the desert. We made the mistake of splitting up our forces into a lot of independent columns and garrisons for 'boxes,' allowing ourselves no reserves. I spotted that from the reports when I was down in Burma."

"Surely in the early days we never had enough men to give us adequate reserves?" I queried.

The Field Marshal's reply was emphatic: "The smaller your force, the larger percentage you should hold in reserve."

"I don't suppose," he continued, "that any commander would ever admit that he had all that he would like to have. The forces which invaded France had about everything they could need. In Italy we were pretty well off, especially in aircraft and guns, but we never had all the landing-craft we should



*This article, written by a London Times correspondent, gives the views of Field Marshal Sir Harold Alexander, Canada's new Governor-General, on the Second Great War. It was extracted from the London Times for CATM.—Editor.*

have liked. We were always hoping for a chance to profit by our command of the sea and take the enemy in the rear. Anzio was the only case where we were able to do it, and even there we could only land two divisions at a time. At the beginning of this spring I had collected 600 landing-craft for a hook-stroke round the Germans' left flank on Lake Comacchio, but nearly half of them were taken away to be used in crossing the Rhine.

"Our aim and hope during the whole Italian campaign had always been that we should be able to bottle up a German army in Italy and destroy it. When I was in command of A.A.I. (Allied Armies in Italy) I used to contend that it could be done, in face of a good deal of contrary opinion at A.F.H.Q.

"Actually I turned out to be right.

Our final battle in Italy lasted 22 days. In that short time we took 250,000 prisoners, exclusive of killed and wounded. Our own losses in killed, wounded and missing were under 13,000—that is to say, less than 1,000 a division. In other words, an army of 25 divisions, all well up in strength—they averaged 11,000 men to a division—and with their morale high, for the German divisions in Italy were all good, was destroyed by a numerically weaker army (I had only 18 divisions) in 22 days. Of course, we had overwhelming superiority in the air, greater strength in guns, and far greater mobility, but the decisive factor was that the Germans had their backs to the Po, and when they were defeated they could not withdraw."

The Field Marshal became enthusiastic when I mentioned the Americans. "Excellent friends and colleagues, and fine soldiers, too. They have created a magnificent army from scratch. Of course they had their troubles and made their mistakes, just as we did. The first divisions which they sent to Africa, with the exception of the 3rd, a regular division, were not so good as those which subsequently reinforced them in Italy. After Africa they copied our battle-schools and made the training tougher even than in ours. In them the men were hardened physically and mentally, and the divisions which reached us in time for the May offensive last year, the 85th, 88th and 92nd, and later the 10th Mountain, were first class."

He spoke in the highest terms of the American generals: Eisenhower, "a great man of the most complete integrity, a great commander and organizer;" Mark Clark, "extremely intelligent;" Truscott, "a fine fighting soldier." He also expressed the highest admiration for General Marshall. Of his Deputy Chief of Staff, General Lemnitzer, he spoke with warm affec-

tion, as a valued and charming friend.

"One of the reasons why I am glad to be going to Canada," he said, "is that I shall be able to see all those fellows again."

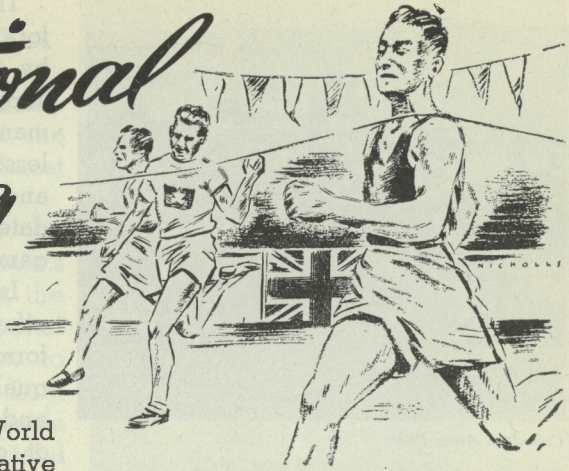
A question about the future of armies and the possibility of other wars elicited the fact that Field Marshal Alexander does not consider the discovery of the atomic bomb to be a sufficient deterrent to the natural bellicosity of man. "Mind you," he said, "I don't suppose we shall have another war in our time, at least not a big one. There may be smaller affairs." The British Army of the future, he thought, ought to be an elastic force, capable of adapting itself easily to the requirements of war as they arose. "What we need is a small staff of experts to watch the latest developments in science, and study their bearing on warfare.

"The new factors in this war have been the development of wireless, which enabled a general to control a large force easily even when dispersed, and of the petrol engine, which has facilitated rapid concentration and attack. This has made it possible to make surprise attacks in force and thus overwhelm a strong defence.

### **Airborne Troops**

"The use of airborne troops can obviously be carried much further. This will enable a commander to go one better than finding his opponent's exposed flank. Now, thanks to modern means of air transport, he has a chance of going over the top and planting a force with all its material and supplies in the enemy's rear. Previously this could only be done by sea, and command of the sea was all-important. Now command of the air has become even more important. In Great Britain we fortunately have a good navy and good natural air pilots. If we see to it that they remain abreast of the latest developments of science we should be able to stand up to anything."

# Recreational Training



## ARMY SPORTS

Never during the period of World War II was there such a representative gathering of the Canadian Army Overseas than at Nijmegen, Holland, on Aug. 4, 1945, when the Canadian Forces in the Netherlands assembled 20,000 troops to witness their Track and Field and Tug-O-War Championships.

This event was most impressive and functioned perfectly due to planning under the leadership of Brig. J. F. Bingham, chairman, Canadian Forces Sports Committee, in the Netherlands; Lt. Col. E. W. Cormack, chairman, Sub-Committee; and Senior Supervisor W. C. Naylor, YMCA, Auxiliary Services, secretary; also Sgt. Don Pecore, who was in charge of a party that worked miracles in reconditioning the Maple Leaf Stadium.

As an expression of goodwill and sportsmanship, a section of the grandstand was reserved for 5,000 Dutch civilians and two Dutch Women's Relay Teams were invited for an exhibition race, one being the World's Championship Team of Amsterdam.

At the conclusion of the meet, Field Marshal Sir Bernard Montgomery presented the prizes and upon request, spoke these few words:

**"I would like to say a word before we go away. I came down from Germany today to attend this meet and I would like to thank you all and**

**the competitors, especially for the pleasant afternoon. This is no occasion for a long speech, but I would like to make one point and that is that in the British Empire we go in a good deal for games and sports and we excel—our men excel—at games and sports, and that is one reason why the fighting men of the Empire are so formidable in battle and that is also another reason why we won the German War. I wish you all the very best of luck."**

These words were justified and expressed somewhat as a farewell in hope that heed might be taken of their significance for further guidance in Canadian Sports.

Basically, the good principles that influence British and Canadian sports

*In this article, Maj. H. C. Beaumont, M.C., Army Sports Officer, Auxiliary Services, NDHQ, tells of the sports meet in Holland which he attended last summer and also outlines the new post-war sports program known as the "Posture and Play Plan." This makes interesting reading.—Editor.*



Canadian Army Photo

and sportsmanship during war are the same good principles of character that should be inculcated into our sports life during the trying transition period and on through peaceful times. The justification of organized sports lies in its enormous influence in the development of morale, in the release it gives to the nervous tension generated by war and the balance and poise it confers on the participant by creating a receptive mind to good fellowship and team work.

From an appreciation of Wartime Sports, the following Post-War Plan has been formulated for Holding Units:

**PT AND RECREATIONAL TRAINING:** Mass sports have not produced the quality of play desired, simply because the majority of individuals are reluctant to participate in games, feeling that they may not perform with credit to themselves; furthermore, an unskilled player does not desire to play and spoil the game for others who play the game well.

This must be corrected! The time formerly devoted to PT should now take a new form. The plan is to combine PT with coaching in the skills of playing a game in the same period. The PT portion of this period should consist of physical exercises required for good posture and for limbering up the muscles appropriate to the particular game being taught.

There are 12 Coaching lessons for each game. These are prepared by Auxiliary Services, NDHQ, and supplied through the District and Command Sports Officers. At present, lessons for volleyball, basketball, soccer and skiing are available. At a later date, track and field and other seasonal games will be prepared.

In consideration of these facts, every effort should be made to put this new form of coaching into effect, to promote qualities of leadership, sportsmanship and co-operation through the medium of greater participation in Canadian sports.

Suitable crests for sportswear will be awarded to those who qualify.

Here is a brief of the plan:

**POSTURE AND PLAY PLAN:**

1. Hours per week—one half-day (4 hours) for Organized Recreation, 1 hour in each of the four other days during the week for "Posture and Play" coaching periods.

2. The half-day is to be quite flexible, part of which may be used for "Posture and Play" coaching periods for the purpose of pupils qualifying for Merit Crests.

3. Good posture—A special phase of so-called "Conditioning Warming-Up," callisthenics complementary to good posture, and the game selected to be taught during the period will be properly coached.

4. The games period will commence with the coach talking on the skills of the game, followed by demonstrations and individual coaching, also a vigorous workout in a short game.

5. Period will conclude in class formation, "Slowing-Down," "Cooling Off" and correction in posture.

Merit crests and records of qualification forms will be provided by Auxiliary Services, NDHQ, and supplied by District or Command Sports Officers.

An example of lessons will be furnished in a future issue of CATM.



# RADAR IN WAR

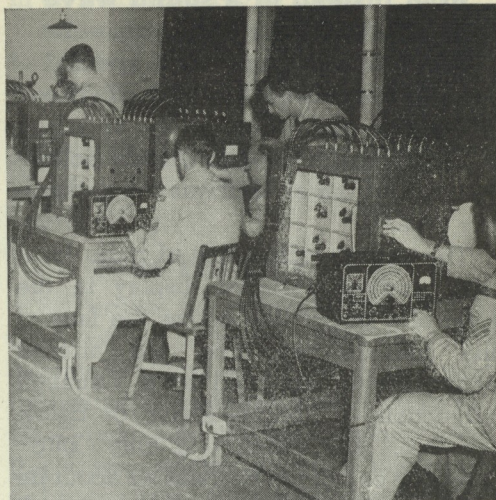
Partial lifting of the radar censorship ban makes it possible to reveal the importance of radar's part in the defeat of Germany.

Radar's first triumph was in the Battle of Britain. Without Britain's extensive operational radar system, the "few" of Mr. Churchill's immortal tribute would have been too few to stem the massed attacks of the Luftwaffe. Radar alone made it possible for them to dispense with wasteful standing patrols and to intercept the enemy at the right time and place.

Two years before that, when Mr. Chamberlain flew to Munich, the British radar chain was already in operation. So, while the whole civilized world held its breath in the darkest days of 1940, Britain was secretly protected by a curtain of radar waves—hundreds of miles in extent—through which no aircraft could approach undetected. Not even the British public knew of its existence. Its future, in peacetime applications, is one of almost fantastic potentialities. The entire strategy of air defence has been changed by it.

For effective defence—as the Battle of Britain proved—it is not enough merely to detect approaching aircraft and to know their distance. Efficient fighter interception demands three-dimensional location of the enemy—distance and direction plus altitude, and an estimate of the numbers. Radar provided the answer to all three, and gave all the essential data to enable British air defence to win the Battle of Britain against great numerical odds.

After determining the position of an aircraft the first problem was how to make friendly aircraft continuously exhibit a difference from others in their "radio" responses. This was accomplished by giving coded alterations of the returned echoes. These devices are known under the generic term



RCAF Photo

**A class of wireless electrical mechanics practice adjustments of the cathode ray D/F equipment.**

"I.F.F." (Identification, Friend or Foe).

Radio detection and ranging, or "Radar" as it has become known, is the generic name for various radio techniques based on the use of radio echo. To give a simple analogy, a person standing not far from a cliff can usually get an audible echo from the cliff by shouting toward it. The nearer the cliff, the shorter the time interval between the shout and the echo.

**Radar works on a similar principle. But a radio wave is**

*Radar contributed more to victory than any other single development of the Second Great War and, with the exception of the atomic bomb, was the most effective and sensational development. This article, condensed for CATM from the U.S. Cavalry Journal, tells of the development by British scientists of this astounding device in language the layman can understand. Read it and learn more about one of the marvels of this age.—Editor.*

**used instead of a sound wave or shout and the returning echo wave is picked up by a special radio receiver instead of the human ear.**

The indicator used to display echoes returning from aircraft was the cathode ray tube.

The earlier techniques of radio location involved a signal display in the form of a bright line across the face of the cathode ray tube, the aircraft echoes being signalled by a V-shaped projection—a "blip"—above or below the line. The distance of this "blip" from one end of the line was an accurate measure of the distance of the aircraft causing the signal.

The detection of hostile warships from aircraft, the warning of our ships of the approach of enemy aircraft, the defence of harbors and coasts against small enemy vessels, the feeding of gunnery data to predictors from radio location equipment, the control of searchlights by radio location so they could unmask with the certainty of illuminating the aircraft target immediately—all these (though later improved) were accomplished facts by the outbreak of war in September, 1939.

#### **Windscreen Used**

It was realized that if fighter aircraft could be made to carry a complete miniature radio location station, they could seek out and even fire on enemy aircraft on the darkest night or in a cloud. A windscreen was developed for mounting on the plane and which the enemy echo indicated itself as a spot which grew "wings" as the enemy approached and moved up or down, to port or starboard—just as the appearance of the enemy itself would have done had it been visible.

On many occasions successful interception was first marked by the appearance of the tell-tale green spot on the windscreen somewhere away from the fighter's line of flight. The pilot would

make a rapid adjustment of course and altitude to bring the spot ahead and centered. Then the spot would develop "wings" as the distance lessened. Finally, the real enemy would appear as a dark shape in the night sky, just where the green outline hovered.

A burst of fire from the fighter's guns, and a successful interception was almost certain.

The toll of German bombers rapidly increased after radar was installed in night fighters. By early 1941, the first sets had been put in. In the whole of January of that year the number of enemy bombers which fell to the British night fighters was four. The destruction of one bomber in a raid made headlines in those days. But, after dropping to three in February, the figures leapt to 24 in March, 52 in April and 102 in May. Then the attacks dwindled. Losses became so great before Hitler started his attack on Russia that the Luftwaffe could no longer afford them.

**Other devices indicated the precise altitude of an aircraft above the surface of the ground and gave warning to ships of the proximity of mountains, icebergs or other vessels. Others found towns for bombers on the darkest cloudy night and even displayed a moving map of harbor details, railway lines and similar features.**

It became possible to project optically a map, aircraft indications and hand-written plots all together on a translucent screen. The dream of many commanders is realized in this—the power to sit in a room at headquarters and see all the movements of hostile and friendly aircraft displayed before them on a map.

After the United States entered the war, no war secret of Great Britain was withheld from her. The disclosure of all British progress in radar to date

had been made to the United States in August, 1940. Ingenuity in manufacturing methods, peculiarly American, enabled supplies of radar equipment to be made available to the Allied Forces in the great quantities needed for the successful assault on the Reich, and for the war in the Pacific.

The fact remains, however, that Britain put radar into operational use earlier and on a far greater scale than any other country in the world.

### **Germany Crippled**

Radar solved problems of defence and attack, and in the air made possible the crippling of Germany by non-stop bombing. Radar has been used during the war so that:

1. RAF bombers could take off, navigate and return from mass saturation raids with minute accuracy, fixing positions on special gridded maps by aid of what are known as "Gee" signals from ground radar stations. This system changed the number of bombers that could be put over a target

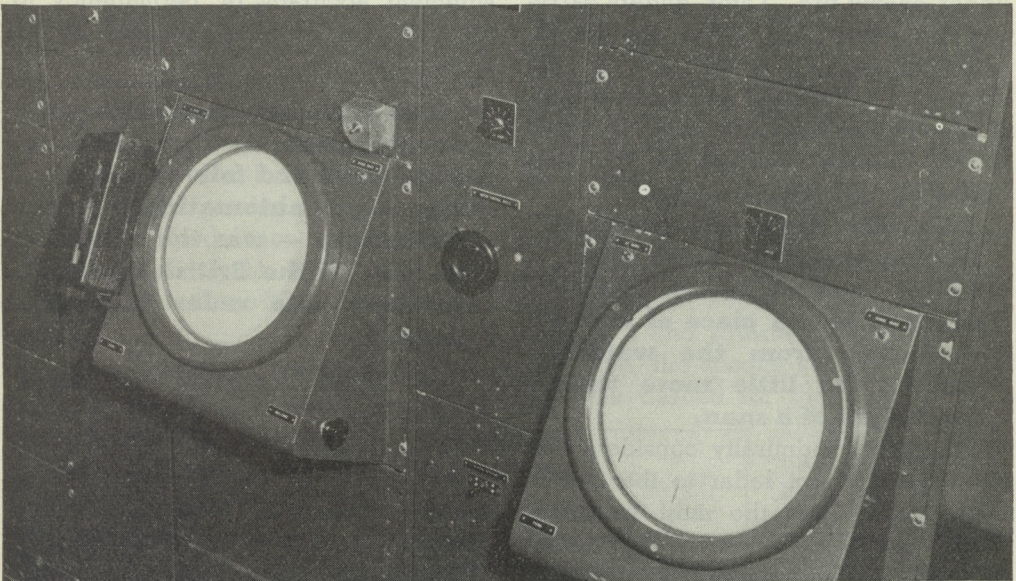
in an hour from 100 to 1,000.

2. Another system entirely self-contained in a bomber made it possible for the crew to "see," in miniature, by means of radar reflections from the ground, despite darkness or fog, outlines of a coast or town they were approaching.

### **Most Fantastic Of All**

3. Perhaps the most fantastic installations of all enabled ground radar operators sitting in England to guide individual bombers to enemy positions, "see" when they were precisely over the targets and then signal for the bombs to be dropped. This method accounted for the deadly accuracy with which the big guns on the invasion coast were destroyed before D Day. It was also used against Essen and other Ruhr targets.

Still more bombing aids were developed, and these met the need for accurate bombing at any range. A startling device was in use which enabled a navigator to see, on a cathode



*RCAF Photo*

**Here is a micro wave early warning set with its two circular plan position indicators on which are projected the images of storms in progress anywhere within 120 miles of the station.**

ray tube screen, a picture in glowing green spots and shadows comparable to a map of land, water and built-up area over which he was flying.

As Germany crumbled under the weight of Allied bombs the question of invasion came to the fore. For the ultimate success of D Day, it was essential that the enemy's heavy guns along the Channel coast of France should be silenced. Forty of these were within range of the selected invasion route and it was necessary for the Bomber Command to silence them. On the night before D Day not one of these guns fired. They all had been silenced by bombs released from a height of over 20,000 feet by aircraft using signals from England.

Another radar story is of the "Rebecca-Eureka" combination, secret of the airborne force, which guided hundreds of parachutists and glider troops to their objectives on D Day. "Eureka", which was the name of the beacon used by airborne troops, was dropped by parachute with the first wave. It was unpacked and assembled often under enemy fire. Later, gliders carrying the other half of the equipment, called "Rebecca", could pick up the signals from "Eureka" and so make sure of arriving at the right spot. In other words, "Eureka" marked the spot and "Rebecca" led the aircraft to it.

**Consider the achievement of finding on a pitch-black night, in an area of many square miles of sea, a piece of metal projecting from the water's surface for little more than the height of a man.**

The British Admiralty considers that the application of radar to the anti-U-boat warfare was the most important single factor in ensuring the defeat of the U-boat and consequently in winning the vital Battle of the Atlantic.

In gunnery, radar meant that guns could effectively open fire at greater

ranges and engage unseen targets, both surface ships and aircraft, with accurate ranges to within a few yards.

The 26,000-ton Scharnhorst, sunk in 1943, was detected first by a British cruiser at a range of 17 $\frac{1}{2}$  miles. Contact was lost for a time, but was re-established by radar at 17 miles. Until the arrival of HMS Duke of York, the Scharnhorst was shadowed by a destroyer force, which relied entirely on radar and kept outside visibility distance.

### **Radio Navigation**

A ship's navigating officer is considered good if he can fix the position of a ship at sea by stellar or solar observation to within about a mile of her true position. An airplane can seldom rely on better position-finding by astronomical observation than within 10 miles of its true position.

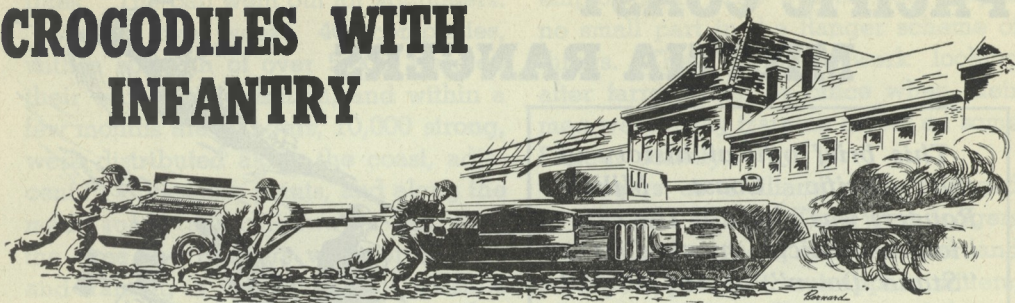
Yet it is now possible by various devices to have a continuous indication of the position of a ship or airplane to within a few yards of its true place on the earth's surface. Indeed, no map or chart can be printed with sufficient accuracy or permanency to vie with the possible accuracy of the equipment.

**One of radar's most uncanny developments — a gun which aims itself and follows a moving target automatically and unerringly — was the climax, in 1944, of the British Army's research into radar applications.**

This British invention was incorporated into U.S. equipment and quantities were manufactured and shipped to Britain, just in time to shoot down 80 per cent of the flying bombs which were destroyed by anti-aircraft batteries.

Other Army radar developments were coastal guns which, at 20 miles range in the dark without the aid of a human eye, sunk 11 out of 18 German ships.

# CROCODILES WITH INFANTRY



The first attempt by a Canadian Infantry Battalion to capture MAY-SURORNE was defeated with heavy casualties. The same afternoon the attack was renewed by the now seriously depleted battalion, but this time it had the additional support of four troops of Crocodiles. This second attempt was completely successful.

"C" Company and "D" Company were combined—a total of about 60 men—and attacked on the right of the road with a troop of Crocodiles in support. To the left of the road, "A" Company and "B" Company advanced with two troops of Crocodiles. H hour was fixed for 1545 hours. The tank crews were assured that there were very few anti-tank guns in the neighbourhood, and throughout the action the Crocodiles were able to fight most aggressively. It was later discovered that the enemy positions had been very accurately pin-pointed by air photographs, and the defence overprint maps indicated every post, with one single exception, exactly as it was found on the ground.

## Infantry Follows

The Crocodiles moved forward, each tank closely followed by two sections of Infantry, one just behind the trailer and the other 20 yards in rear. During the attack, any hedges or ditches pre-

viously known to contain MGs or snipers were seared with flame. When the village was reached, the Crocodiles moved away from the road and one tank in each troop advanced on a line directly behind the houses while the other two tanks placed themselves so as to give covering fire.

As each tank with the right two companies approached a house, it blew a hole in the building with its 75mm gun and squirted a jet of flame through the hole into the house, which then caught fire. The leading section directly behind the tank at once dashed for the doorway and cleared the house as quickly as possible. This procedure may sound dangerous, but the liquid, once ignited, is unlikely to cause damage to the attacker. He should, however, beware of getting in the path of the jet, as everything touched by the liquid catches fire.

## Work Continues

While the leading section was clearing the first house, the Crocodile moved on to the next house and again blew a hole in it and squirted in some flame. This time, the second section following the tank dashed for the doorway and cleared the house, and the first section, having finished its work, came back to the tank. Thus the two sections alternately cleared the buildings set

*Here CATM presents an account of co-operation between tanks and Infantry based on a report from Canadian sources. It was extracted from the War Office Infantry Bulletin.—Editor.*

# PACIFIC COAST MILITIA RANGERS

*This brief official history of the Pacific Coast Militia Rangers was given at the ceremonies which marked the "Stand Down" of the PCMR as part of Canada's armed forces. Maj. Gen. F. F. Worthington, C.B., M.C., M.M., GOC-in C, Pacific Command, officiated at the "Stand Down" held at Vancouver, B.C. This history was extracted from "The Ranger", official publication of the PCMR.—Editor.*



The Pacific Coast Militia Rangers has been one of the most colorful organizations in the whole history of Canada.

As defeat after defeat marked the early days of the war with Germany, and the full meaning of modern all-out warfare was gradually made clear, army officer and man on the street, alike, realized that no place on the globe was immune or safe from attack.

When the Nipponese war machine was finally unleashed on the Democracies, service men and civilians on the Pacific Coast became increasingly alert to the impending danger of attack.

## CROCODILES

*(Continued from Page 35)*

fire to by the tank, while the sections of the reserve platoon followed farther in rear to occupy the houses once they were cleared. The fires started blazed all night and some of the buildings continued to burn all next day.

The enemy withdrew, obviously demoralized judging from the amount of equipment he left behind. That morning and during the previous night,

Here was an area, larger than the combined areas of Belgium, Switzerland, France and Italy, with over 5,000 miles of rough, rugged coastline and with vital roads and railways stretching for miles through the Interior. How could it be defended? An attack might be expected at any time, and would be guided by Japanese who knew the coast and country intimately.

The lessons of Crete, of Hong Kong and of Singapore had been learned, and it was realized that coast defence guns and garrisons alone were helpless. The only solution was an organized home defence force, built along guerilla

before the Crocodiles were used, he had resisted strongly. The Canadian Infantry, therefore, had nothing but the highest praise for the Crocodiles, and they were greatly impressed by the aggressiveness and courage displayed by the tank crews. They were not in the least disturbed by the problem of having to clear houses already ablaze; in fact, they were very glad to have such effective support even though it cost them a lot of extra sweat.

lines. The call went out for volunteers.

Within two weeks 40 companies, with a strength of over 5,000, were on their way to organization, and within a few months the Rangers, 10,000 strong, were distributed along the coast, adjacent to vulnerable points, and along the main roads and highways. All over the area the Rangers were organizing and training in preparation for possible raids or attacks. Preparing, if needs be, to fight on their own initiative, or to assist the regular forces.

They trained in rifle shooting. Before the war there were only five rifle ranges for the whole area; soon there were 163. Where their rifle shooting was good they made it better. They trained in reconnaissance, map reading and field sketching. Much of the area was unmapped. The Rangers made their own maps, which proved invaluable in training manœuvres and also in organizing searches for lost aircraft.

**They trained in guerilla tactics, in scouting and they guided the more regular forces whenever required. They trained in bushcraft and first aid work, and they trained to counter any possible Fifth Column activities.**

Travelling instructors were sent around the country, to outlying coastal points and outposts in the Interior, and the Rangers gathered from miles around to attend lectures and demonstrations. A Ranger training camp was established near Chilliwack, B.C., and Rangers came from all parts to attend this camp, from Vancouver Island and the Queen Charlottes, from the Nass and Skeena Rivers, from the Cariboo and Chilcotin, from the Peace River and the Yukon, and from the Okanagan and the Kootenays.

The Rangers did this work voluntarily and without remuneration. There is not a Ranger who did not dig deep into his own pocket or suffer some loss of

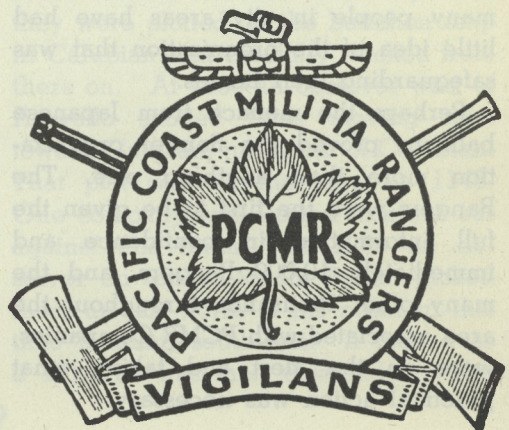
employment. The women, too, played no small part in the Ranger scheme of things. They went to work looking after farm, ranch or office when their men were away training or out on some Ranger activity.

Rangers as civilians were engaged in all walks of life. They were loggers and timber cruisers; millmen and land surveyors, prospectors, trappers, miners, hunters, ranchers, farmers and homesteaders; they were railway section men, right-of-way scalers and fishermen.

The PCMR was of necessity a great "leveller"—the labourer and the banker worked together. The logging boss found himself in a group or detachment commanded by one of his truck drivers. All had just the one idea. They were "Rangers"—all working together toward the one common end—the end which they achieved so well. A fellowship of man was created in the Rangers and it will carry on.

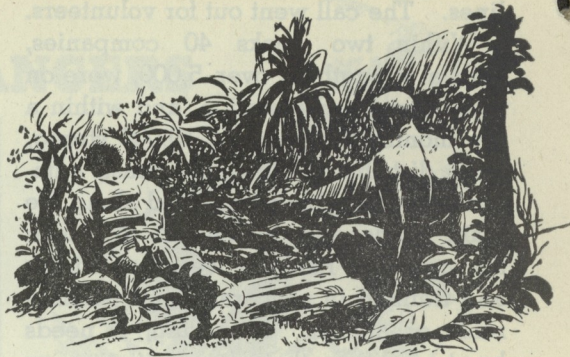
With this work, and the enterprise, zeal and enthusiasm behind it, it was not long before the PCMR assumed a vital role in the defence of Pacific Command.

No attack or raid developed but the Rangers were ready at all times, day or night, to quit their civilian work or to go out on some important duty. In all outlying areas, wherever personnel were available, the Rangers were represented. At nearly 600 points in this vast area, Rangers have trained hard,



# FILIPINO PONY EXPRESS

*This is a story of how Filipino boys "carried the mail" for U.S. guerillas on Leyte and of how the native runners kept the Americans informed of Japanese troop movements, thus winning the major part of the credit for annihilation of enemy forces. Written by Lt. Col. E. M. Postlethwait, the article was extracted for CATM from the U.S. Infantry Journal.—Editor.*



An unusual situation developed in the Northern peninsula of Leyte near the end of the campaign in December 1944.

Shortly after the 32nd Division broke the Yamashita Line at the head of the Ormoc Valley, the 1st Battalion of the

34th Infantry (24th Division) was moving from Calubian back to Pinamopoan by water. About one and one-half companies were left at Calubian when suddenly word came that 2,000 to 4,000 Japs had landed at San Isidro and were moving west toward Calubian.

Col. Jock Clifford (then a lieutenant-colonel and later killed on Mindanao) was ordered to hold Calubian with the force he had there until more troops could be sent back. The only immediate aid available was the 95th Guerilla Regiment with whom the 1st

## RANGERS

*(Continued from page 37)*

worked hard, and given up all their leisure time to PCMR activities. No other military forces have had the same scope or covered the same ground.

Their work has been carried out without glamour or pageantry—sometimes without much recognition, and many people in city areas have had little idea of the organization that was safeguarding their homes.

Perhaps the menace from Japanese balloons proved the Ranger organization more than anything else. The Rangers were the first to be given the full information in confidence and immediately 10,000 Rangers, and the many other thousands throughout the area associated with PCMR Companies, were on the alert and taking what practical action was necessary.

The whole organization has been characterized by team work and team spirit. Team work not only in the organization but team work outside the organization. Team work with the Active and Reserve Armies, the Navy and Air Force, with provincial and municipal authorities and officials. Team work with industry, the logging industry, lumbering industry and fishing industry—teamwork throughout the length and breadth of the Pacific Command.

While the Rangers have now been disbanded, the Ranger idea will not die, and, if this land of ours is ever again threatened, to make it solid in total defence, it will be the Rangers who will fill the gaps and supply the link to fit the regular soldier to this rough, rugged country which we love.



Battalion had been working while fighting on the right flank of the 32nd Division. The 95th was a crack guerilla outfit and the civilian Filipinos of the northern peninsula were well organized in their local barrios.

### **Jap Castaways**

The Japs at San Isidro were actually castaways. They had tried to land at Palompon. Failing, they steamed for San Isidro where our planes caught them before they could make an organized ship-to-shore movement. Consequently they were disorganized and short on supplies. Nevertheless 3,000-odd Japs are not to be sneezed at. Several columns were reported heading for Calubian. It was a tight situation.

Col. Clifford did not commit his whole force to a local perimeter defence. He used one platoon to block the main trail from San Isidro to Calubian and depended upon good intelligence to govern the use of his mobile reserve.

"Sneak" patrols were sent out to keep tab on every Jap move. Each patrol consisted of two guerrillas and one American soldier. They moved usually at night. Most of the country was open and visibility was excellent. A patrol, therefore, usually spent its days in a clump of bushes on some high hill where they could observe Jap activity. The farthest patrols were ten to twelve miles from Calubian over very hilly terrain. They stayed out for a week or more until relieved and could have stayed longer. They literally lived off the land. Every Filipino shack was open to them and all the food in the house was theirs for the eating.

### **Self-Defence Only**

The patrols never fought except in self-defence. They killed a stray Jap now and then, but reluctantly because gunfire disclosed their position and forced them to move. When ambush conditions were right, the razor-sharp bolo of a guerilla took the place of

gunfire. It was a perfect setup. The guerillas knew the country like a book, the native people furnished rations and shelter plus grapevine news of the Japs, and the Americans gave the properly estimated information that the battalion commander needed.

**The final link in the system was the "pony express" delivery of information to Calubian in time for Clifford to beat the Japs to the punch. Each little barrio had its volunteer guards complete with a "capitan." None of the barrios was more than two miles apart, about 30 minutes trotting by a Filipino boy.**

A patrol report written on a field message form was given to the capitan of the nearest volunteer guards, the only instructions being "Colonel Clifford at Calubian! Hurry!" The capitan promptly dispatched a boy to the nearest barrio where the local capitan in turn sent it on. A message carried overland from ten to twelve miles never failed to reach Colonel Clifford in less than three hours. In that hilly terrain a combat-loaded soldier required six to eight hours to cover the same distance.

Enough patrols were scattered over the peninsula so that any Jap movement was bound to be seen by one or more observers. About 50 Japs started out from San Isidro one morning heading south toward Aravello Bay. By 0930 they were plotted on the battalion map in Calubian and carefully tracked from there on. At 1000 an observer west of Aravello spotted them moving west toward Gutusan, just south of Calubian. That plot was on the map by 1145. One company was alerted to move out against this threat. At 1200 an observer on top of Mount Banao picked them up just north of his position, this time heading southwest. It looked as if Tuk Tuk was their destination. The

message from Mount Banao reached battalion headquarters at 1400.

Tuk Tuk is about six miles south of Calubian, therefore it was impossible for a force to beat them there in time to lay an ambush without being seen.

### **Runner Dispatched**

A Filipino runner was dispatched to Tuk Tuk to warn the natives to get out before they were raided. At the same time Maj. George Willets started marching south with a rifle company, less one rifle platoon, plus a section of 81mm mortars. He had instructions to halt a mile or two north of Tuk Tuk for the night and await further orders by radio and runner.

Meanwhile, a sneak patrol observer near Parasan saw the Jap party moving west toward Tuk Tuk about 1500, and his report reached Col. Clifford by 1730. The bulk of the Battalion at this time had returned to Calubian from Pinamoppan and a platoon of amphibious tractors was based at Calubian also.

It was decided to hit the Japs from two sides. Early the next morning Maj. Willets moved his force into position on the northeast side of the town. At daylight two rifle platoons loaded into Alligators and headed down the coast. When the Japs saw the Alligators moving into shore at about 0900, and they were in turn seen moving a couple of machine guns into position by Major Willets and his mortar observers, the show was on.

**Our mortar shells began to crash among the shacks, the approaching alligators' machine guns chattered and only a few Japs escaped.**

By a series of such actions 4,000 Japs were held in check until the rest of the regiment moved over to the northern peninsula and cleaned it up. It was a brilliant piece of work for which the Filipino boys who "carried the mail" deserve a major part of the credit.

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## **DUTCH UNDERGROUND ACTIVITIES**

*(From Netherlands News. Extracted from U.S. Military Review for CATM)*

When the Allied airborne landings near Arnhem on 17 Sept. 1944 ended in failure, innumerable British soldiers managed to hide in the woods north of the city after the bulk of the forces had been withdrawn across the Lower Rhine. The Dutch underground movement organized raiding parties on food distribution centres to supply the British soldiers. An intricate communications system was put into effect, and on moonless nights groups of as many as 150 men were assembled in one single camp, from where they were taken safely through the enemy lines.

One of the most amazing feats of the Netherlands underground movement

was the establishment of a country-wide secret telephone network, linking up even small villages with the central posts. The work was carried out right under the noses of the Germans. The system was automatic and every one of the larger towns had its own central exchange. When the Germans blew up the bridges across the IJssel, thus cutting the secret telephone lines, underground workers strung a new line, rowing across in a small boat by night.

The men who maintained this secret telephone network also tapped German teleprinter lines, thus gaining valuable information which was passed on to the Allied forces by means of the underground telephone lines.

# INFANTRY SUPPORT WEAPONS

*Here is an interesting account of the employment of MMGs and 3-inch and 4.2-inch mortars in the Burma Jungle by a force forming part of the late Gen. Wingate's expedition. It was written by a brigadier commanding the force which was dropped behind the lines in Northern Burma. The report was extracted for CATM from the War Office Infantry Bulletin—Editor.*

**Medium Machine Guns:** "Gen. Wingate had always insisted that MMGs could be used to 'rake' the jungle area in which the enemy were, thus causing casualties and keeping their heads down. I did have some experience of this in the first and second Burma campaigns. In our 'block' on the railway line which we held against repeated enemy attacks for six weeks, we used MMGs in their more normal role—on fixed lines covering heavily barbed wire areas and booby traps.

At one period I had eight MMGs covering one sector of my wire against which the Japanese attacked every night. The Japanese would be lit up by the aid of 2-inch mortar parachute flares which worked very effectively and the MMGs caused extremely heavy casualties. We also used MMGs in the daytime for harassing fire at maximum range. Fortunately, due to air supply, throughout the campaign ammunition was never scarce. I used to cut down on rations rather than ammunition.

"Later on, during a counter-attack in which we had been fighting for some days, the Japanese counter-attacked my Brigade Headquarters area with the aid of three MMGs.

Unfortunately, we were in a flat jungle area and although the Japanese could not see us, they could hear us and they

'raked' the area backwards and forwards for 15-20 minutes causing heavy casualties, especially amongst the animals. The research officer who was with me timed one burst lasting two minutes. I would prefer any type of bombing or shelling I have yet experienced to this incessant mashing-gunning from very close quarters in the jungle.

**"Shortly after, I staged a fight to try out this method against the Japanese and it was very successful.**

"Later, when we fought for four weeks whilst capturing the hills and town of Mogaung, we made frequent use of this method against the Japanese. One or two MMGs would be brought forward in the attack behind the leading company or platoon. When the Japanese position in the jungle was contacted and our troops had got as close as possible, the MMGs would be brought up and would fire incessantly at the Japanese Platoon or Company area from close range, whilst another company would work round the flanks. On a given signal, the MMGs would stop and the flanking company would charge the Japanese. This was most effective and we took a number of isolated Japanese positions, killing very many more Japanese than we ourselves had killed. On two occasions, the



Japanese fled when the machine-guns stopped.

"To give you some idea of the closeness of the fighting, I once paced out the distance from our MMGs to the leading Japanese section post; it was 15 yards. As you will realise, this meant man-handling the weapons up and down the hills from where they had left their mules."

**Comments by Infantry Weapons School:** It is felt that the main lessons to be learned are as follows:

1. Don't be stereotyped in the handling of MMGs. If the more normal tasks cannot be carried out, don't assume that there is no place for MMGs, i.e., think of: (a) single guns; (b) "raking" an area including "tree tops;" (c) close range shooting.

2. The value of "sustained fire" was fully appreciated, the ammunition supply problem being overcome by the use of "air supply."

3. It should be remembered that the type of ammunition used in Burma was Mk VIII, and, therefore, the maximum range at which the harassing fire shoots were carried out was at 2,800 yards.

**3-inch Mortars:** "For most of the campaign we had no artillery and had to rely on 3-inch mortars and the excellent support of aircraft to make up for this deficiency. In the block, eight 3-inch mortars were sighted in section positions, connected together by telephone. Normally each would look after its own sector, but Brigade Headquarters would often ask for concentrations on the fronts of particular sectors.

"During the hardest Jap attacks we used from 500 to 1,000 bombs per night, and two or three thousand Japs were killed round the block, mainly by 3-inch mortar and MMG fire.

"When attacking in the jungle we used 3-inch mortars to provide close support whenever possible. Judging the distance in the jungle and firing

on sound had been practiced and worked fairly well, although on occasions we did cause casualties among our own men. Before a night attack we once fired 500 bombs in 10 minutes, and on another occasion 1,000 bombs in 15 minutes, immediately before the attacking force went in."

**Comments by Infantry Heavy Weapons School:** The above account emphasizes the importance of the 3-inch mortar in jungle warfare.

The mortar organization in the units taking part did, of course, differ from the normal organization in the Infantry, owing to the specialised task of the force. In addition, units were without the most up-to-date equipment and carrying harness.

**4.2-inch Mortar:** "At Mogaung I captured the hills overlooking the town but did not think at first I would be able to capture the town itself. I asked for 4.2-inch mortars to be dropped, so that I could harass the town at night. The town was out of range of 3-inch mortars, and the Japanese were moving about at night using the railway bridge. We fired our mortars from behind a 600-ft. hill. The Japanese could not hear the noise of discharge nor could they see the flash, with the result that the mortar shells landed unawares in the town and caused quite a few casualties as we found out from Japanese diaries. The 4.2-inch mortar was very effective in this way; it has a good effective lethal area."

**Comments by Infantry Heavy Weapons School:** The wheeled baseplate, which is now in production, was designed to meet a requirement in the Far East in support of airborne troops. It is intended for towing by Jeep, but on good going the mortar and bipod mounted on the wheeled baseplate is a two-man haul. Over broken country, with drag ropes, a double-manned team of six or eight men can make very good going.

# MENTALITY OF THE JAPANESE

A letter from an Officer in Burma: "The Japanese, if given time, will normally construct bunkers to defend a position. Much has been written about these, so no more is needed here from the point of view of description. The point that it is desired to stress here is that once a Japanese has got into his bunker, he is going to stay there, either till the attacking force withdraws, or he himself is killed. In the Japanese creed there is no other alternative. The following is hearsay but was heard so many times that it is assumed to be correct. It illustrates the type of mentality with which one has to contend.

## Suicide Lesson

"I was told by several people that in one of the Japanese textbooks there is a lesson on how to commit suicide with a grenade by pulling the pin and holding the grenade against the stomach. The result of the above attitude is that a live Japanese in a bunker is just as vicious as a cornered rat, and has to have the same sort of treatment meted out to him.

"As an offset to his admirable fighting qualities, he can be almost incredibly stupid. According to all accounts, this fortunately happens quite often. The following instance illustrates very well the combination of 'do or die' spirit and complete stupidity. The story was vouched for by a senior officer of a Corps Headquarters.

"In order to try and stop our tanks, the Japanese evolved a system of human mines. A man was put in a small fox hole complete with a fairly large explosive charge and a brick with which to hit the striker of the firing mechanism. He was then told to blow himself up under an enemy tank.

"One morning, a British officer came

*While much has been written on this subject both before and since cessation of hostilities in the Pacific, CATM believes that these sidelights on Japanese character will still prove interesting. The material was extracted from the War Office Infantry Bulletin.—Editor.*

on five of these human land mines from their rear. He went from one to the other and shot all five with his pistol. They were all concentrating so much on blowing themselves up under one of our tanks, that they took no notice of anything happening beside or behind them. As told to me, the story went that one of the men did look round and saw the officer, but then returned to his job of sitting with his brick in his hand waiting to blow up a tank. As reported by the officer concerned, his mental reaction could be plainly seen on his face; in effect, it was 'Oh, no. You're not what I am waiting for. You're not a tank, so back on the job again.'"

## LEADERSHIP

(U.S. "Combat Lessons")

**While we speak of the importance of leadership in battle, we must not forget that it is also important during the training periods prior to combat. It is during these periods that the discipline which must be present on the battlefield is developed. The degree of discipline attained is in direct proportion to the leadership of the commander.**

# Army Bookshelf



"And thus", said Major Pat, as he tossed another two dollars to the piano-player ("Merci, M'sieur"), "was the great Prince Eugene defeated at Denain in failing to support Albemarle."

"True", I replied, as I hunted vainly through the pockets of my greatcoat for my coloured wedge cap. "One recollects a similar circumstance in the case of Guido Stahremberg at Almanza."

The door crashed. The cab darted coffee-wards gathering momentum as we gained the bridge. The Major's eyes flickered wearily "The Ancient Principles", he muttered softly, "The Ancient Principles", his voice trailing off vaguely with some appropriate remarks about aspirin. . .

And where is all this leading us, mes enfants? It has simply been observed that young officers with an interest in their profession are spending considerable time in the profitable study of military history. Noon-hour cribbage games have given place to "match-stick" Alameins and Albuheras. Even the sub-staff have been observed muttering over an engrossing naval problem entitled "Battleship". And why not? The current literary crop of military material was never better, or the time more propitious.

In this connection our readers' attention is directed to a curious little volume which is well worth reading—**"Instructions for His Generals"**

**by Frederick the Great, King of Prussia, translated by Brigadier General Thomas R. Phillips and published by the Military Service Publishing Company with editorial offices at 2153 Florida Ave., N.W., Washington 8, D.C. 104 pp.**

Frederick, the founder of the Prussian tradition, and creator of the German General Staff, includes little gems like this in his chapter on Ruses, Stratagems and Spies: "Seize some burgomaster of a city . . . and force him to take a disguised man, who speaks the language of the country, and under some pretext to conduct him as his servant in the enemy army. Threaten him that if he does not bring your man back, you will cut the throats of his wife and his children whom you hold under guard while waiting, and that you will have his house burned. I was obliged to employ this sad expedient in Bohemia and it succeeded for me". One reflects sadly that the instructions of Frederick seem to have improved with age.—*A.J.A.*

**"Practical Marksmanship" by M. M. Johnson, Jr. Published by Wm. Morrow and Co., New York. 183 pp.**

This well-illustrated and practical volume is designed for the use of soldier and sportsman. It includes interesting material on sighting-in, aiming and pointing, strike-bracketing and

snap-shooting with various types of weapons. The author, M. M. Johnson, is the president of the well-known company bearing his name and is the inventor of the Johnson semi-automatic rifle and the Johnson LMG.—A.J.A.

**"The New Veteran" by Charles G. Bolte. 212 pp. \$2.50. Published by Reynal & Hitchcock, 8 W. 40 St., New York City. (McLelland & Stewart, Toronto, agents.)**

In one of his recent thought prompting addresses, Canada's Maj. Gen. Brock Chisholm pointed out the illogic of patronizing soldiers as "Our Boys" (irresponsible) rather than "Our Men" (complete citizens) and the dangers, after their discharge, of encouraging the "professional veteran" type to spread and to constitute a dejected and amenable rank-and-file for leaders of pressure groups.

Mr. Bolte enlarges and varies this theme against the U.S.A. background, with the spotlight on the U.S. Veterans Administration and American Legion.

He is a trained writer and fighting soldier. American-born, he joined the 60th King's Royal Rifle Corps before the U.S. entered the war, and lost a leg in North Africa. His style is economical and persuasive. Before entering his thesis he tells briefly the tale of his own campaigning and finds many generous words for his British comrades and for our medical service.

This book is bigger than its modest format suggests—too big for any short review. Its opening pages show the flavour: "GI Joe, mythical darling of the advertising copywriters, has had more nonsense written about him than has ever been set down concerning any other American folk hero with the possible exception of Davy Crockett . . . the educators urge more schooling for Joe, the psychiatrists want mental clinics, the businessmen say he needs free enterprise in big doses, the labor leaders demand strong unions to receive

him and so on . . . The only one left out of this great national consultation is Joe himself. The reason isn't hard to find: There is no such animal. GI Joe does not exist. Any wife, mother or sweetheart in America could tell you this if the experts would stop advising her on how to understand her beloved when he returns for long enough to let her remember that her man is an individual, not an abstraction."

And, quoting from a Corporal's letter: "When the soldier gets back he shall want more than a pat on the back and a drink or two. He shall want to be an eager partner in the reconstruction, who has learned much, who can give much and who is afraid of nothing."

That goes for Our Men, too.—C.D.C.

**"Men Under Stress" by Lt. Col. R. R. Grinker and Maj. J. P. Spiegel, U.S. Army Air Forces. 484 pp. \$6. Published by The Blakiston Company. (McLelland & Stewart, Toronto, agents.)**

Addressed primarily to the psychiatric branch of the medical profession, laymen soldiers who are undeterred by the technical vocabulary of the subject can find in this book modern psychiatry's interpretation of those states of mind, body and personality in some battle-tired men that thirty years ago were dismissed, but not for long, as "shell-shock."

In his jacket note Edward A. Strecker, M.D., leading U.S. psychiatrist, says: "'Men Under Stress' records interestingly the deductions from skilled observations of the effect upon many personalities of the physical strain and emotional upheaval of battle. Treatment devised by the imperative need for prompt help will have considerable value in shortening time-consuming therapies of civilian psychiatry. The revelations of man's psyche, stripped of its veneer by fear, furnish guidance in meeting the problems of rehabilitation."

George Bernard Shaw once wrote that "Are you brave"? was the one question the recruiting-sergeant never asked the recruit. The modern psychiatrist M.O. asks him a good many strange questions and our armies now benefit by having set a careful scientific selection as an ideal. Psychiatry is now seized with rehabilitation problems and its improved therapies will bring hope, improvement and cure to many who, however "brave", passed their individual crack-up point, fixed for them apparently by obscure causes not exactly of their own making.—C.D.C.

**"War Through the Ages" by Lynn Montrose. Published by Harper & Bros., New York and London. 941 pp.**

Brother, This is it! No longer need the Little Lady strain her imagination for an exotic gift for the happy warrior. This is an enthralling history of the Art of Warfare, from the classical age when the spears of Miltiades and his athletic Greeks swept Marathon of the

Persians; cycle by cycle, it moves through the machinations of the Grand Monarque, the campaigns of Napoleon, to the modern offensive of the United Nations. Get one of your own! You don't stand a chance at the library—A.J.A.

**"Muzzle Flashes". By Ellis Christian Lenz. Price \$15. Published by Standard Publications Inc. 812 pages.**

This book deals with the development of fire-arms from the earliest crude tubes used to project "Greek Fire", to the modern precision weapons. Development is vividly portrayed in relation to early American History, and the pedigree of modern weapons is traced through its course by many tales of Daniel Boone, Simon Kenton, and other famous American riflemen. Chapters are included on small arms inventors, target accuracy, and professional and amateur gunsmithing. It is profusely illustrated by the author and is a book for the gun hobbyist and collector.

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## SKIN BANKS—A NEW TREATMENT

*(From a British source. Extracted from U.S. Military Review for CATM)*

It is reported in the British medical journal "The Lancet" that Squadron Leader Mathews, a plastic surgeon in the RAF, has proved that skin can be stored and then used later to repair wounds.

The new treatment reduces the number of operations under anæsthetic at present undergone by badly burned airmen to one short one—when the skin is cut. Later, blood plasma is applied to the wound and thrombin—a "glue" that takes the place of stitches—to the undersurface of the graft, which can be applied at the bedside without the use of an anæsthetic. In five experimental cases the skin grafts "took" after four days' storage.

Skin storage would provide a "skin bank" in case the graft partially failed to take. It would also be available for experimental use in heterogeneous grafting on volunteers.

Skin that had been stored for 21 days was satisfactorily used in some cases.

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## Reserve Army Exams

Dates for written examinations for promotion in the Reserve Army in 1946 are as follows: March 30 and 31, August 24 and 25, December 7 and 8. District Officers Commanding will request the necessary copies of examination papers from National Defence Headquarters on a form issued to all Districts.





## PROVOST CORPS

**Editor, CATM:** It is desired to express appreciation for the attention given to the material supplied by this Corps for inclusion in the November issue. The cover page and the general set-up of Corps articles have already been the subject of favourable comment.

Generally speaking, this publicity will give a worthwhile boost to morale at a time when such encouragement is badly needed.—*Col. L. H. Nicholson, Provost Marshall (Army).*

## ARMOURED CORPS

**Editor, CATM:** In the November 1945 issue there is an article on the "History of the Royal Canadian Armoured Corps." Included in the article and appearing on Page 25 there is a picture of the Lord Strathcona Horse. As you no doubt know, this picture was taken in Piedmonte, Italy, around the end of June 1944. I had a troop from the 82nd Battery of the

## THE RULES

**All the great captains of antiquity, and those who in modern times have successfully trodden in their steps, performed vast achievements only by conforming with the rules and principles of the art: that is to say, by correct combinations, and by justly comparing the relation between means and consequences, effects and obstacles.—**

*Guardia Nacional, Nicaragua.*

4th Canadian Anti-Tank Regiment on the same parade. Our little group consisted of a Recce vehicle and four self-propelled M10's.

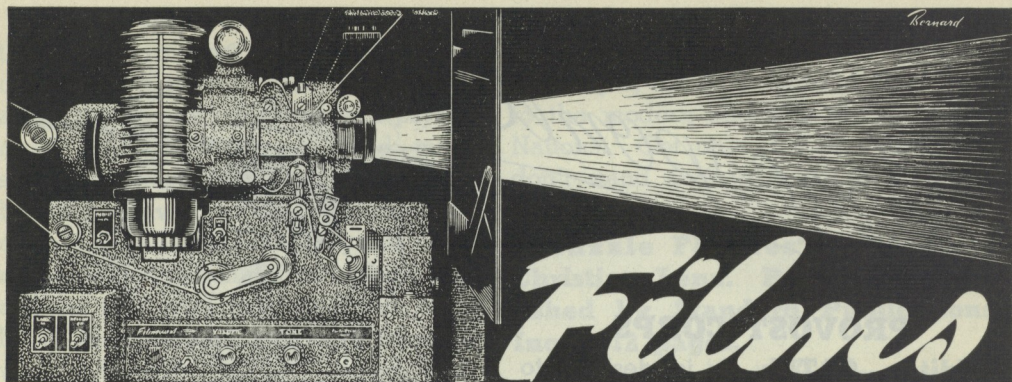
I wonder if by any chance your department could supply me with the necessary information so that I could write to someone to secure such a picture. I do hope you can be of some help to me in my search for such a picture. — *Capt. H. C. Flett, A3 CACTC, Shilo Camp, Man.*

*(The picture requested has been forwarded.—Editor.)*

## CAMPOBASSO

**Editor, CATM:** Your invitation to write to the Editor is gladly accepted, and my comment concerns your article on the "History of the Royal Canadian Armoured Corps" in the November 1945 issue of CATM. On Page 43 you refer to the battle honor of "Campo Basso"; the correct spelling is "Campobasso."

This name will bring back memories to many Canadian soldiers. Campobasso is an Italian city in the province of the same name, and is 172 miles ESE of Rome. The city was the hub of activity for the 1st Canadian Infantry Division and the 1st Canadian Armoured Brigade during November 1943. In this city were established the first rest and leave hostels in active operations.—*Capt. G. Harris, Loyal Edmonton Regt.*

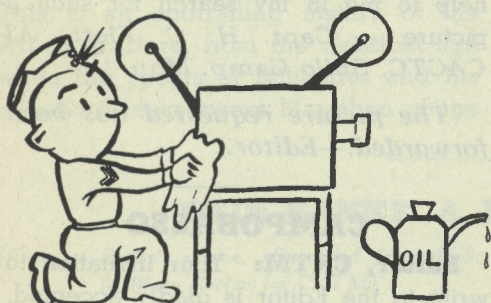


## NEW YEAR'S RESOLUTIONS

(Contributed by the Canadian Army Film Bureau)

During 1946 I resolve that:

**1. I will NEVER have to start a show with unfamiliar film.** (On receipt of all film I will inspect it to see that both surfaces are clean; splices



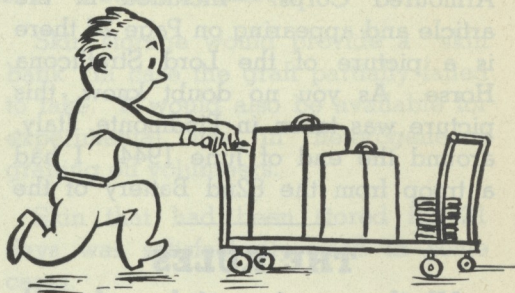
are properly made and secure; sprocket holes are intact; film is not warped or buckled; film is "heads-up" and all reels present; reels are not bent.)

**2. I will NEVER rely on last-minute maintenance to projector and screen.** (At regular intervals I will rid projector of dust and dirt; oil machine according to instructions; clean the optical and sound system lenses; check belts and pulleys; check aperture gate; clean screen with a soft brush; keep screen stored in a horizontal position.)

**3. I will NEVER start the motor until I have checked the threading.**

(I will see that film loops are right size; film is engaged on all sprockets; film gate is closed; film is properly attached to take-up reel and take-up adjusted properly; speed control is set right; directional switch is set properly; and the whole operation checked by rotating the hand set knob a few turns.)

**4. I will NEVER leave the projector while it is operating.** (I will be on the alert and ready to deal with any unforeseen difficulties.)

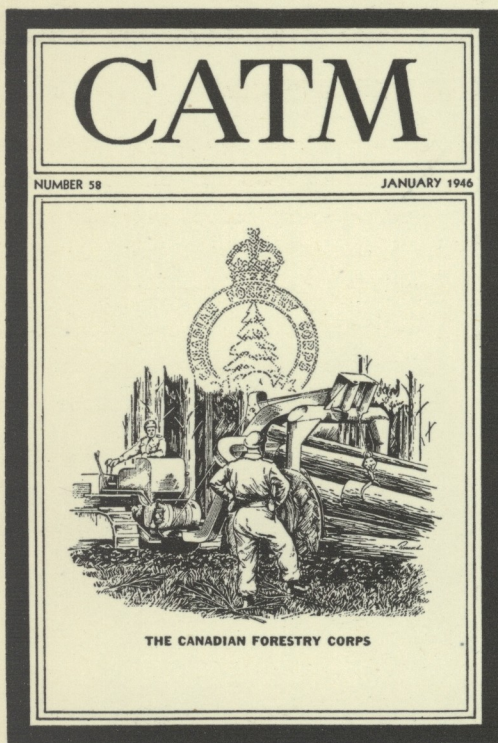


### PUSH WITH VIGOUR

When you seem to be most prodigal of the soldier's blood, you spare it, however, by supporting your attacks well and by pushing them with the greatest vigor to deprive time of the means of augmenting your losses.—

*Frederick the Great.*

THIS MONTH'S COVER . . .



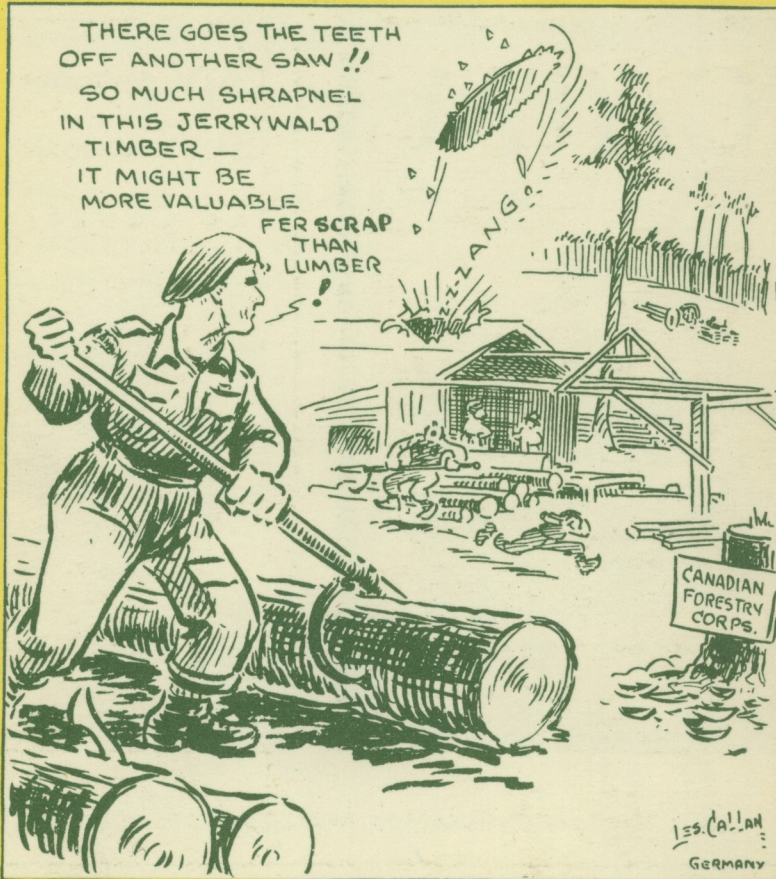
CATM dedicates its cover this month to the Canadian Forestry Corps. This Corps fought and won its battle in the forests of Europe.



Next Month—THE CANADIAN WOMEN'S ARMY CORPS

OTTAWA  
EDMOND CLOUTIER  
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\* In Reichwald near Rhine.

IF IT ISN'T ONE THING, IT'S ANOTHER!