



CATM

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CANADIAN ARMY TRAINING MEMORANDUM

NUMBER 70

JANUARY 1947

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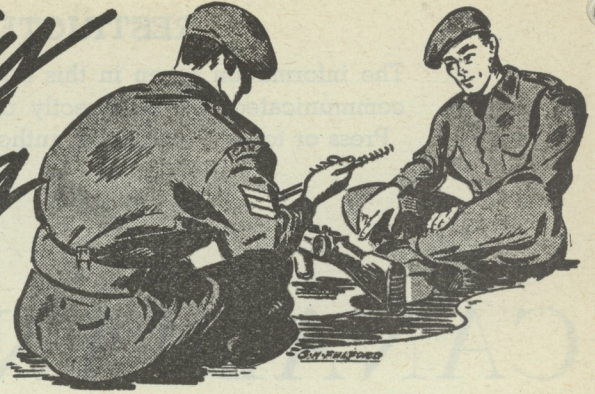
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Military Training



HOW GOOD IS YOUR UNIT SECURITY?

The following questionnaire is published as a guide against which the efficiency of your unit's Security can be measured. If an affirmative answer cannot be given to all questions, some adjustment of Security arrangements within your unit is necessary.

1. Has a Unit Security Officer been appointed and has he a sound knowledge of security problems and requirements?

2. Have unit Standing Security Orders been drafted and are they regularly brought to the notice of the troops?

3. Has a practical series of security lectures and discussions been prepared for the unit training programme?

4. Are all ranks concerned familiar with the requirements of CARO's dealing with the classification, handling and transmission of classified matter?

5. Is the importance of observing the regulations contained in CARO's concerning the communication of military information regularly im-

pressed on all ranks?

6. Is there any form of control over visitors to unit HQ?

7. Is adequate provision made for the disposal of classified waste?

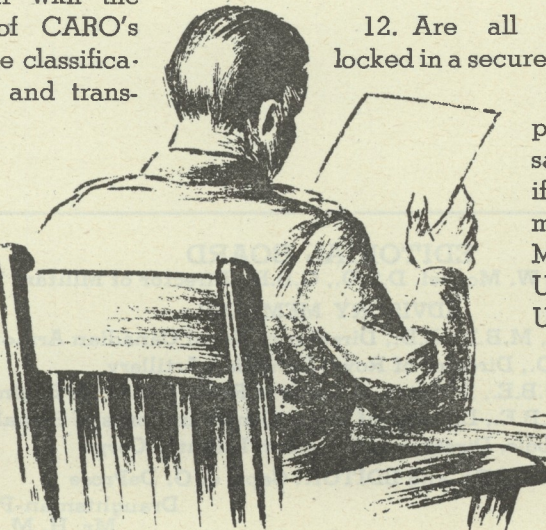
8. Is caution exercised in the discussion of military matters over the telephone?

9. Are all files and papers locked away when offices are vacated?

10. Are classified documents handled in such a manner that only persons required to know their contents have access to them?

11. Have precautions been taken for the protection of classified matter in the event of fire?

12. Are all classified documents locked in a secure place when not in use?



During periods of peace, as in war, the safeguarding of classified material is of paramount importance —
MAKE CERTAIN YOUR UNIT IS NOT AN UNWITTING CONTRIBUTOR OF INFORMATION.

ARMOUR

This is the third in a series of articles prepared by the staff of The School of Tank Technology, England. The accompanying article, written by H. Harris-Jones, Senior Technical Officer at the School, was submitted for publication in CATM by the Directorate of the Royal Canadian Armoured Corps. It is reprinted from "The Tank," a British publication.—Editor.

It has already been brought out in the first of this series of articles (CATM, Oct. 1946) how much of the total weight of the tank, as it has been developed up to the present day, is accounted for by the demands of protection. These demands and the methods taken to satisfy them come under the general heading of "armour". Naturally enough, the exact ratio of armour weight to total weight of vehicle may be expected to vary from type to type; for instance, it should be greater for the heavy assault tank than for the lighter exploitation cruiser, but it is surprising how little the ratio has differed in the past from the one-half quoted in that article. It follows that—however the tank is first thought off, whether policy demands a given standard of protection or whether bridging, transport, etc., fix the top limit of total weight—the designer will from the start have a pretty fair idea of what weight of material will be available for armouring.

The armour allowance was about enough on the Matilda to make it safe against all its enemies of 1940-41, however they chose to attack. Since then, the power of anti-tank equipments has tended to get ahead of the standard of protection that could be provided against them, and so the armour allowance has not been enough to guarantee anything like all-round immunity. How to use

this inadequate allowance to the best possible advantage has become one of the most important and most difficult problems the designer has to solve. The difficulty is all the greater because there is no obvious measure or yardstick by which the efficiency of one protection design can be tested against any other. Users' opinions are always valuable, but it would not be easy, in view of what generally happens when a tank is shot up, to get Capt. A., attacked from the right, Lieut. B., attacked from the left, and Sgt. C., attacked from the front, to agree as to whether the armour arrangement was the best possible. (They would all probably insist that thicker armour was needed, but the designer can do nothing about that in face of the weight limitation he has had to accept).

This aspect of the problem, to which much study has been given, will be discussed in a later article. Here it is proposed first to discuss broadly the general steps which the designer takes in solving his armour problems.

The General Problem: This is summarised in the form of questions:

1. What material, and what condition of that material, provides, on a weight-for-weight basis, the greatest resistance to such projectiles as are likely to be met with in action?
2. Is it possible to get more out of a given weight of that material by mounting it at an angle?
3. How is the total weight of material to be distributed over turret and hull and over the front, side and rear aspects and over roof and belly, so that the tank has the best chance of survival in battles to come?
4. Can anything further be done, with negligible or no increase in weight, to increase the safety of the tank?

Material: Steel armour has so long been in use as material for protection in war that it was natural that at the birth of the tank, it should be considered the best material available. Since then, several alternative materials have been investigated, but even against A.P. (armour piercing) shot and shell expressly designed and developed to defeat armour, no material has been found more or even as efficient. In fact, it is safe to say that against the increase in weight of A.P. attack on tanks from 1940 to 1945, steel armour became relatively even more efficient than the alternatives. Some reservation should, perhaps, be made, where high-velocity, tungsten, carbide-core projectiles are considered; no obviously better material has been found against them, but it is thought that a good deal of further research is needed. (Against the latest anti-tank device, the shaped charge—exemplified by Panzerfaust, Bazooka, P.I.A.T., etc.—the supremacy of steel armour no longer holds; it is hoped to discuss this and its implications in a subsequent article).

Condition of Armour: Through variations in alloy content and variations in heat treatment, it is possible to produce steel in many forms to meet special requirements. Generally speaking, the special requirements for armour are:

1. Tough resistance to the penetrating action of shot.
2. Grudging and not disastrous yielding to a shot that cannot be kept out.
3. Good behaviour under the terrific shock when a heavy projectile moving very fast has to be brought to rest in a very short period of time.

In action, a tank is likely to meet a variety of weights of attacks; for instance, the Sherman met attacks varying from the 4½-lb. projectile of the 5 cm gun to the 22½-lb. projectile of the 8.8 cm gun. Hence, in his search for the best type of

armour to use, the designer must be guided by the degree of resistance to, and behaviour under, graduated weights of attack. Generally speaking, strength of resistance to a particular shot increases with increasing hardness, but the best hardness level is lower for the heavy shot than for the light shot. Moreover, if the armour is at a hardness level for maximum resistance against one shot, it is often liable to flake under heavier attack or even to crack or break up under the shock.

(Flaking, or, as the Americans call it, "spalling", plays an important part in armour investigation; it is a form of failure whereby a circular disc, thin at the edges and thicker in the middle, is forced off the back of the plate. The diameter of the disc is always greater than the calibre of the shot—one specimen forced off by a 6-pr. round was over 20 inches in diameter—and whether the disc comes back in one piece or in several pieces, the failure is undesirable because of the largely increased lethal possibilities and because such damage, like cracking and breaking, must have a depressing effect on tank crews).

The final choice of armour condition will be a compromise between these various requirements. The manufacturer will apply the appropriate heat-treatment, and the quality of the material going into service will be continually checked by resistance and behaviour tests suggested by the experimental investigation. An example where there was apparent neglect of these over-all requirements was the armour of the German Pz. Kw. III and IV. It was excellent against 2-pounder attack, but it failed badly, both by flaking and breaking up under 6-pounder and 75 mm attack.

Sloping of Armour: There is so much misunderstanding about this aspect of armour behaviour that a somewhat elementary explanation may be forgiven.

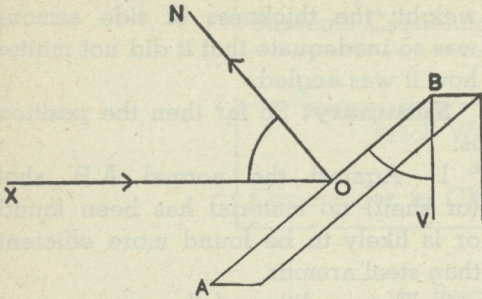


Fig. 1: Angle of impact.

Through the provision of ballistic caps, the A.P. projectile keeps such a high velocity over all practical fighting ranges that its flight may always be taken as horizontal. The line XO in Fig. 1 represents this. The line ON is drawn at right-angles to the surface AB of the armour plate. Then angle XON is the angle of impact.

Angle of Plate: If BV represents a vertical plane, then angles XON and ABV are equal. In order that the angle of impact (for direct fire) may be equated to the angle of slope, the latter is conventionally measured from the vertical and not, as would be more natural, from the horizontal.

The side views of two plates, one vertical, one sloped, are represented by their cross-sections ABCD, PQRS in Fig. 2. They are of the same width and of the same weight, and so the greater length PS of the one has to be compensated for by a smaller thickness x . To a tool boring in a straight line OXY the

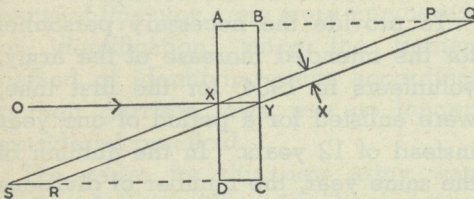


Fig. 2: How angling affects A.P. shot attack.

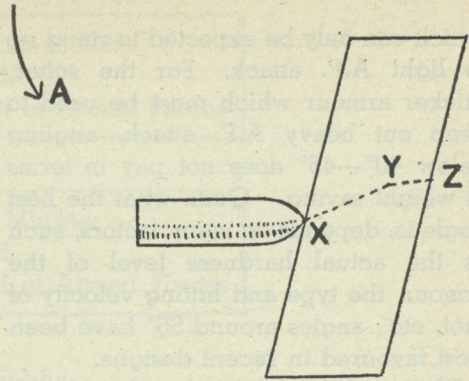


Fig. 3

thickness to be overcome is XY in both cases. There is, however, nothing to hold the shot in a straight line and something like this happens: (See Figs. 3 and 4).

In both cases the blow on the nose turns the shot away in the direction of the arrows A, and it has to start on a longer travel along XY. In Fig. 3 the thickness of the plate is such that the greater pressure on the top side of the shot at Y tends to turn it towards Z, and so there is some compensation for the original unfavourable turn at X. A further most important factor in angle attack is the liability of the shot to break up; the sooner and the more extensively the plate can cause such break-up the more successful it will be in giving protection. Hard armour which does not itself break up or flake is more efficient for the purpose than soft armour. Hence, mounting of plates at any angle above 20° will save weight on armoured cars, light tanks, etc.,

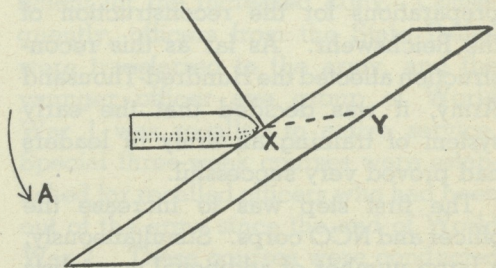


Fig. 4

which can only be expected to stand up to light A.P. attack. For the softer, thicker armour which must be used to keep out heavy A.P. attack, angling below 40°—45° does not pay in terms of weight saving. Quite what the best angle is, depends on many factors, such as the actual hardness level of the armour, the type and hitting velocity of shot, etc.; angles around 55° have been most favoured in recent designs.

With angling of this order, the relative saving in weight increases as the protection approaches nearer and nearer to full immunity; when the weight allowance is nothing like adequate for this, angling will not improve matters. For instance: by mounting the Panther

hull front at 55° against the 17 pr. the Germans saved some 25 per cent. by weight; the thickness of side armour was so inadequate that it did not matter how it was angled.

Summary: So far then the position is:

1. Against the normal A.P. shot (or shell) no material has been found or is likely to be found more efficient than steel armour.

2. The condition of the armour must not be based on too narrow a view of its present and future task.

3. Sloping of armour does pay but only when certain standards of immunity and of behaviour under attack are satisfied.

GERMAN TRAINING METHODS

This is the second instalment of an article reprinted from the publication "German Training Methods" produced by a combined British, Canadian and United States staff. The information was obtained from original German documents and prisoners of war. The first instalment was published in the December 1946 issue of CATM.—Editor.

ARMY (1934 to 1939)

In the autumn of 1934, after the death of President von Hindenburg, Hitler, as Fuhrer and Chancellor of the German Reich, automatically assumed command of all armed forces in Germany. The chain of command is shown in the chart on page 7.

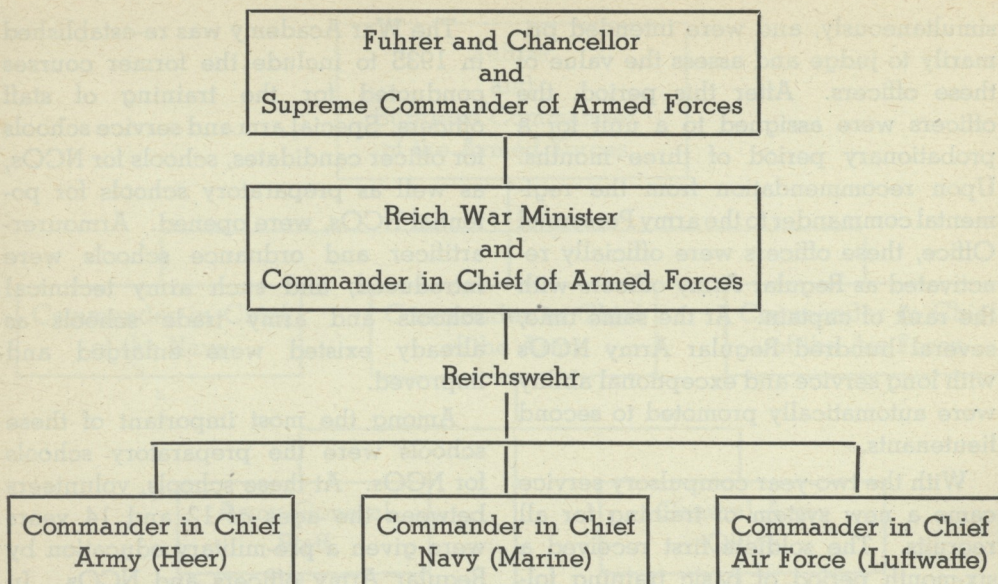
Immediately after assuming the position of Supreme Commander of the Armed Forces, Hitler started political preparations for the reconstruction of the Reichswehr. As far as this reconstruction affected the Hundred-Thousand Army, it was decided that the early system of training an army of leaders had proved very successful.

The first step was to increase the officer and NCO corps. Simultaneously, a large number of additional specialists were needed to carry out duties in

newly-formed units. These specialists included first sergeants, stable sergeants, and accountants, as well as pay and supply NCOs. At the same time, the construction of new barracks and training areas was begun, and the development of modern weapons was increased. To insure uniformity of training, new pamphlets and instructional manuals were published and issued in large quantities.

Period of Enlistment

To provide the necessary personnel for the intended increase of the army, volunteers in 1934, for the first time, were enlisted for a period of one year instead of 12 years. In the autumn of the same year, the number of divisions of the army was doubled by dividing all existing larger units. Most of these



newly-created units, however, could not be brought up to full strength at this time, as the yearly intake of recruits was not increased. In general, Infantry regiments consisted of only two battalions. The divisions and regiments were not numbered but were allotted the names of their garrison town for identification. From 1934 to 1937, the former Hundred-Thousand Army, which consisted of seven infantry and three cavalry divisions, was increased to an army (Heer) of 12 army corps, each organized on a basis of three divisions, plus additional corresponding corps troops. This was done by simply creating three units from each of the existing units. Each division headquarters created the nucleus for three such headquarters; each regiment was sub-divided to form three regiments and each battalion, three new battalions. In 1935, when the increase came into effect, the divisions and regiments of this new army were numbered for identification, since the former method of identifying units according to their garrison town was no longer considered practical.

The cadre for this new army was recruited from the already existing army formations and from units of the

State Police (Landes-polizei). The latter consisted of 150,000 men as authorized by the Versailles Treaty. Personnel enlisted for a period of 12 years, and the force was organized similar to Infantry units although they received no field training. They were established for protection against internal unrest.

Compulsory Service

In order to get sufficient personnel to bring these new formations up to strength, compulsory service for one year was introduced in 1935. This period was increased to two years in 1936, and affected persons from 19 to 24 years of age primarily. Older age groups were called up for a training period of only eight weeks.

The officer corps of the former Hundred-Thousand Army was insufficient for the increased army. Consequently, officers from the State Police were transferred to the army, and the younger officer age group of World War 1 was recalled to active service. Special three-week courses were established for recalled officers who had been out of the army since the end of World War 1. These courses were conducted for officers of all arms and services

simultaneously, and were intended primarily to judge and assess the value of these officers. After this period, the officers were assigned to a unit for a probationary period of three months. Upon recommendation from the regimental commander to the army Personnel Office, these officers were officially reactivated as Regular Army officers with the rank of captain. At the same time, several hundred Regular Army NCOs with long service and exceptional ability were automatically promoted to second lieutenants.

With the two-year compulsory service came a new system of training for all recruits. The soldiers first received a six-month period of basic training followed by a second six-month period of squad, platoon and company training. This second period included field exercises and manœuvres complete with live ammunition and supporting arms. The second year was utilized for advance training in which potential NCOs were used as assistant instructors or squad commanders.

Aim of Training

The aim of training was to produce proficient individual fighters and create a large body of potential reserve NCOs and officers. This training was carried out in the newly-created regiments and conducted by officers and NCOs of the pre-1935 army. Training of the older age groups, which were recruited for eight weeks, was carried out in specially created training units. One such unit was created in practically every Infantry and Artillery regiment. The training excluded all field training and squad or platoon training, and was primarily intended to acquaint personnel of the older age classes with their weapons and with the army in general.

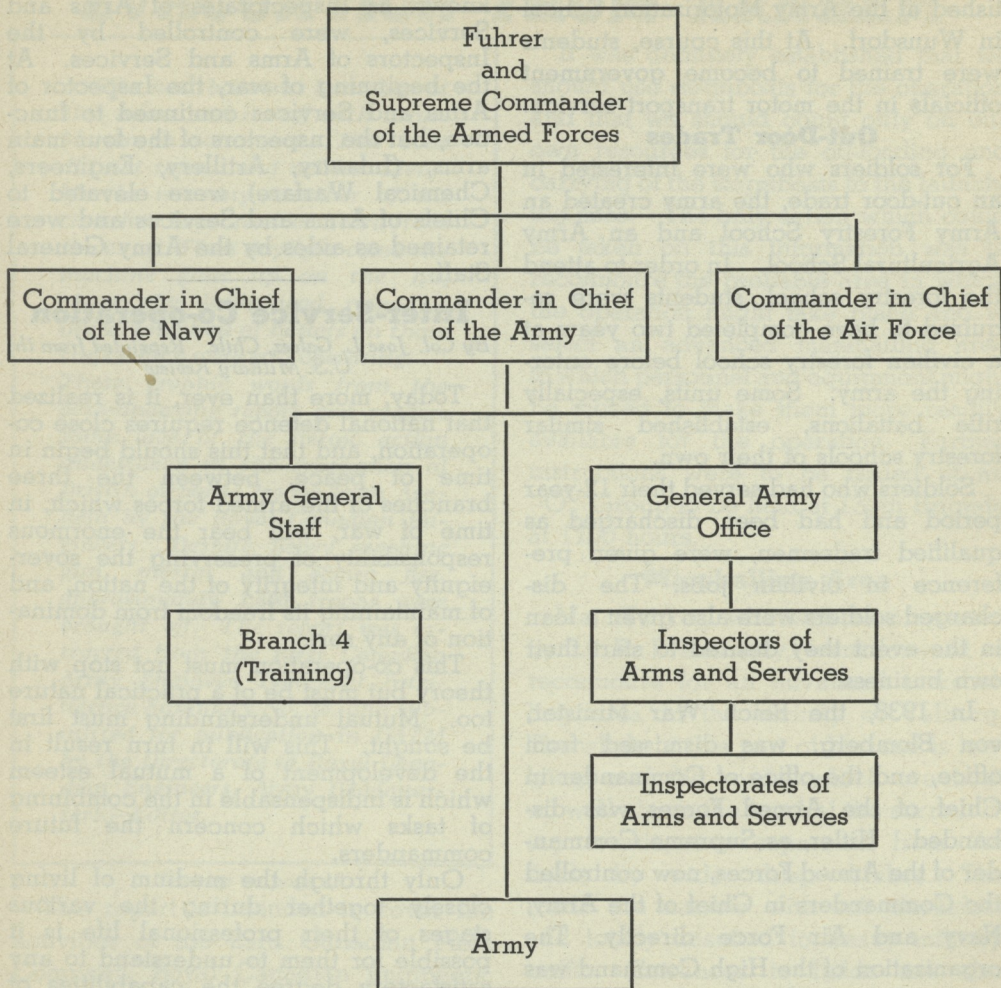
Hand in hand with the creation of new units went the improvement and enlargement of existing schools and the creation of new schools.

The War Academy was re-established in 1935 to include the former courses conducted for the training of staff officers. Special arm and service schools for officer candidates, schools for NCOs, as well as preparatory schools for potential NCOs, were opened. Armourer-artificer and ordnance schools were introduced, and such army technical schools and army trade schools as already existed were enlarged and improved.

Among the most important of these schools were the preparatory schools for NCOs. At these schools, volunteers between the ages of 12 and 14 years were given a pre-military education by Regular Army officers and NCOs. In addition to this, formal education was given by civilian teachers provided by the army. These schools, controlled by the Inspector of Training and Education in the army, were conducted over a period of three years. Upon graduation, many of the students joined the army as potential NCOs but were given no special advancement as compared to the normal flow of recruits. These schools were dissolved in 1942-43 when the Hitler Youth took over the functions of such schools.

Special Schools

In the Hundred-Thousand Army, numerous rehabilitation schools were established to prepare the 12-year soldiers for a civilian occupation after their period of service. These schools were continued and enlarged during the years of compulsory service. In 1939, they were dissolved except for such schools as were needed to rehabilitate blinded and otherwise disabled veterans. Every soldier, prior to discharge, was compelled to attend one of these schools. In this way all personnel were assured of having an occupation upon leaving the army; at the same time it was a valuable inducement for recruitment in pre-war



times. Young men who were financially unable to attend special schools as civilians would enlist for 12 years and emerge a fully qualified civilian official, tradesman, or technician.* Each garrison had two established trade schools for administration and for economics. The administration courses were given during the last four years of service and qualified the soldier upon graduation for a senior civil service position. The courses on economics were conducted during the last two years of

*These schools were conducted within the last four years of service. Soldiers attended the schools in addition to their normal military training, except for the last year when military duty was discontinued and the soldier attended the school only.

service only, and qualified the soldier for a junior civil service position.

At the same time, each service command conducted one army trade school which a soldier could attend during this twelfth year of service. At these schools, students could learn to be locksmiths, tailors, shoemakers, electricians, or carpenters. The final examination qualified the soldier as either a master or assistant craftsman in whatever trade he studied.

An Armed Forces Survey School was established in Berlin to teach graduates surveying and map making. A technical course was established in Berlin to teach graduates surveying and map making. A technical course was estab-

lished at the Army Motorization School in Wunsdorf. At this course, students were trained to become government officials in the motor transport service.

Out-Door Trades

For soldiers who were interested in an out-door trade, the army created an Army Forestry School and an Army Agricultural School. In order to attend the forestry school, students were required to have completed two years at a civilian forestry school before entering the army. Some units, especially rifle battalions, established similar forestry schools of their own.

Soldiers who had served their 12-year period and had been discharged as qualified tradesmen, were given preference in civilian jobs. The discharged soldiers were also given a loan in the event they desired to start their own business.

In 1938, the Reich War Minister, von Blomberg, was dismissed from office, and the office of Commander in Chief of the Armed Forces was disbanded. Hitler, as Supreme Commander of the Armed Forces, now controlled the Commanders in Chief of the Army, Navy and Air Force directly. The organization of the High Command was now as shown in the diagram on page 9.

The Army General Staff realized at this time that an army's striking power depended on thorough training along uniform lines. Therefore, particular attention was paid to this training. Even during wartime it maintained control over all training matters in Branch 4 (Training). Branch 4 compiled, for the Army General Staff, all necessary orders and service regulations to service commands which were responsible for their proper execution. These orders and regulations were issued by the Army General Staff.

All training problems of the various arms and services were worked out by appropriate departments of the General Army Office. These departments,

known as Inspectorates of Arms and Services, were controlled by the Inspectors of Arms and Services. At the beginning of war, the Inspector of Arms and Services continued to function, but the inspectors of the four main arms, (Infantry, Artillery, Engineers, Chemical Warfare) were elevated to Chiefs of Arms and Services and were retained as aides by the Army General Staff.

Inter-Service Co-operation

By Col. Jose L. Galvez, Chile. Reprinted from the U.S. Military Review

Today, more than ever, it is realized that national defence requires close co-operation, and that this should begin in time of peace, between the three branches of the armed forces which, in time of war, will bear the enormous responsibility of preserving the sovereignty and integrity of the nation, and of maintaining its freedom from domination of any sort.

This co-operation must not stop with theory but must be of a practical nature too. Mutual understanding must first be sought. This will in turn result in the development of a mutual esteem which is indispensable in the combining of tasks which concern the future commanders.

Only through the medium of living closely together during the various stages of their professional life is it possible for them to understand to any satisfactory degree the capabilities of each branch of the service with respect to the others. One is thus made aware of the efforts and acts of sacrifice of the other branches of the service in the fulfillment of their missions. There develops, consequently, a feeling of mutual understanding where there previously existed, perhaps, an unjustifiable feeling of antagonism. What was formerly negative and productive of dissociation is transformed into what is positive and stimulating. There arises, spontaneously and naturally, an attitude of esteem which is the undeniable foundation on which must rest all our future operative possibilities.

War has proved fully that all senior commanders should understand thoroughly the capabilities not only of the branch of the service to which they belong, but also those of the other related one.

EVACUATION FROM ARNHEM

"The next boat was launched at 2145 hours and set off with Lieut. Martin in command. This boat did not return and neither Lieut. Martin nor any member of his crew has been seen or heard from since. . . When daylight came the machine guns up on the hill above the bridgehead rained a murderous hail of bullets on those craft which were still operating. . . These graphic words from the accompanying report give readers some idea of the heroic action undertaken in the evacuation of British airborne troops from Arnhem by the Royal Canadian Engineers. Despite heavy machine gun, mortar and 88mm fire, approximately 2,500 troops were brought off. The report was extracted from the First Canadian Army Engineer Technical Intelligence Summary No. 26, and submitted for publication in CATM by the Directorate of Royal Canadian Engineers, Army Headquarters.—Editor.

See map on page 13

This report is intended to cover the activities of the 23rd Canadian Field Company, Royal Canadian Engineers, in connection with the evacuation of the 1st British Airborne Troops from their bridgehead at Arnhem and to bring out some of the lessons learned in that operation.

Maj. M. L. Tucker, Officer Commanding the Company, was called on to attend an "O" Group meeting of Commander Royal Engineers, 43rd Division, at 1000 hours on Sept. 25, 1944. At this meeting it was stated that it had been decided to bring off as many as possible of the survivors of the 1st British Airborne Division from their bridgehead. No information as to the number of men to be brought off could be given and only a general idea of the area from which we were to operate could be suggested.

It was definitely established that we should use stormboats for the operation and that we should count only on our own resources for the off-loading and carrying of the stormboats to the launching sites. The only action which could be taken on this information was to reconnoitre the probable area in which the operation might take place and to select an advanced marshalling area to which personnel and equipment might be moved to make them more readily available for the operation. Further instructions were to be issued at an "O" Group to be held at 130th Brigade at 1700 hours.

Marshalling Area

Maj. Tucker, who was accompanied by Lt. R. J. Kennedy, went forward to reconnoitre for an advanced marshalling area in the vicinity of Valburg. The whole of this part of Holland is low-lying, and the roads, which are built up well above the level of the surrounding terrain, are separated from the fields by wide, deep ditches. The roads are narrow with soft shoulders and totally unsuited to heavy military traffic. Entrances to fields are also narrow and difficult to negotiate, even in the day time when clear vision may be had. The railway yard, however, had a considerable area of hard standing, and this was chosen as the advanced Company area. A tree-lined side street with a reasonably wide verge was chosen to accommodate the bridging vehicles.

On the return to Company HQ at Nijmegen, arrangements were completed for the movement of personnel and bridging vehicles to the advanced positions. Lieuts. Kennedy and Tate were sent ahead to obtain all possible information on dispositions of our own and enemy troops from the 130th Brigade, which occupied the area in which our operation was to take place,

and to reconnoitre the most likely sites for the operation. Lt. Kennedy had already made the preliminary reconnaissances of most of this area when he had been attached for two days to the 104 Field Company and when it had been expected that this Company would support the 43rd Division in an assault crossing of the river. The information gained in these earlier reconnaissances was of great assistance to him in this present task. The two officers were ordered to report back to advanced Company HQ at Valburg at 1730 hours.

Information on the scheme was so limited that no plan for the operation could be formed at this time. It was decided, however, to move all available working personnel and the bridging vehicles forward in plenty of time to get them into the advanced harbours before darkness threatened. The Company vehicles to be taken were cut to a minimum and consisted of three jeeps, two scout cars fitted with wireless, two kitchen lorries and the 12 three-tonners, one for each of the 12 sections. The remainder of the Company personnel and vehicles were left behind in command of Capt. McIntyre.

Two Sites

Maj. Tucker proceeded to the 130th Brigade HQ and Lieuts. Kennedy and Tate reported to him there at 1715 hours. Lieut. Kennedy reported that they had found only two sites in the area which he considered suitable for the proposed operation. He gave details of work required to make the sites satisfactory for use, and outlined his plans for conducting operations should these sites be chosen.

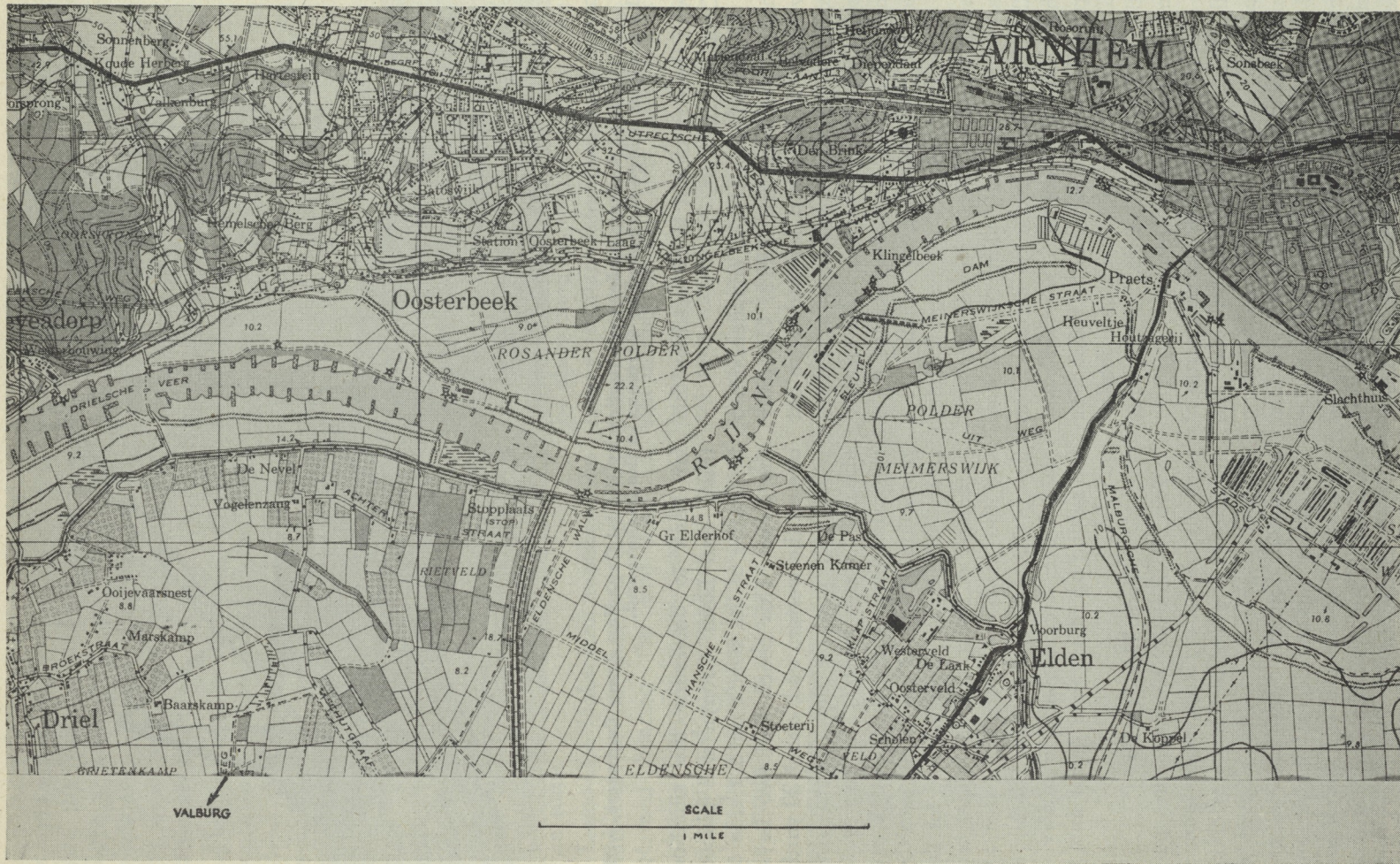
CRE, 43rd Division, was unavoidably delayed and it was 1745 hours by the time his "O" Group convened. The sites for the night's operations had been selected and turned out to be the two that Lieut. Kennedy had figured would be best. The 260th Field Company

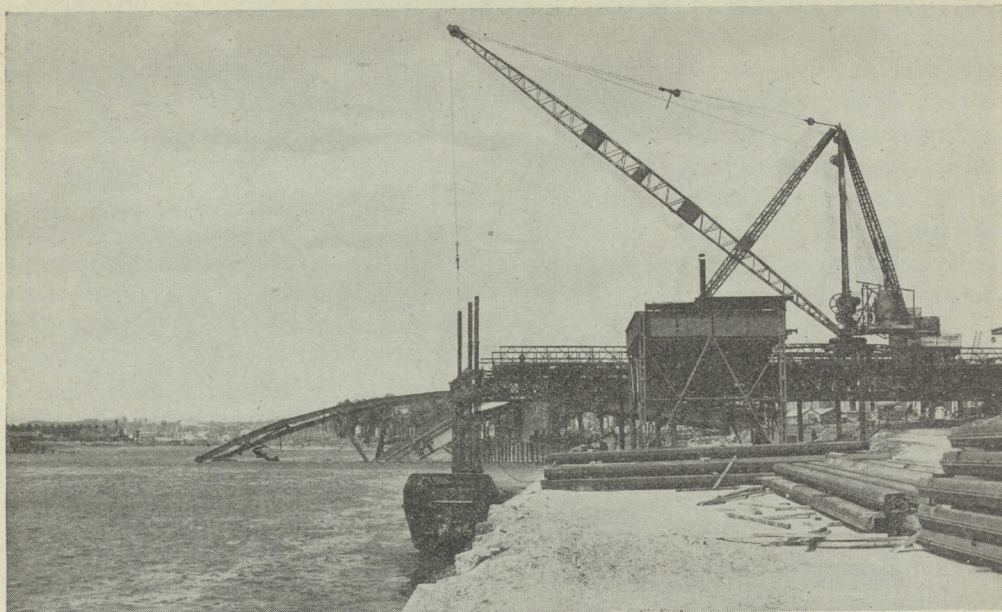
was ordered to operate assault boats and we were ordered to use stormboats from a site to the NE of Driel. . . For this operation, we were allotted 14 stormboats and 17 Evinrudes; the balance of the bridging equipment which we had brought up was to be turned over to the 20th Canadian Field Company for operation on the other site. A route forward was designated and orders given that no bridging vehicles were to proceed beyond Stavaste Bridge prior to 1930 hours. It was believed that the centre of the bridgehead held by the Airborne Troops was directly across the river from the site to which we were being directed.

We were called on to have our first stormboat report to the north side of the river at 2140 hours. There was still no indication of the number of troops which we might be required to bring off, but orders were that we should continue until the beach was cleared. A heavy barrage was to be laid down by our artillery, commencing at 2100 hours, to drown any noise that might result from the offloading and carrying up of the stormboats. A feint was to be made a few miles west of us in an endeavour to distract the enemy. The "O" Group was dismissed at 1815 hours.

Bridge Construction

It was fortunate that Lieuts. Kennedy and Tate had been so thorough in their reconnaissance and in sizing up a proposed plan of operation. Even with this, it seemed unlikely that we could get up to our site in time. On his return to Valburg, Lieut. Tate was ordered to proceed with a section from No. 2 Platoon to construct a bridge from the road into the orchard we were to use as an offloading point. This party got away at 1845 hours. The bridging equipment was broken down into lots, as designated by the CRE, and was lined up on the road





Canadian Army Overseas Photo

A bridge at Arnhem under construction by the 1st Canadian Army Engineers, with the Arnhem bridge destroyed by Germans in the background.

with the equipment to be used by this Company in front.

Our operation was to commence two hours ahead of the 20th's. Company vehicles to be taken forward were cut to three jeeps, one scout car and three section personnel lorries. All personnel not carried in these vehicles were loaded onto the bridging vehicles.

A column moved off from Valburg at 1915 hours. Point men were dropped at each cross-roads along the way so that no vehicle might go astray. The head of the column reached and passed Stavaste Bridge at 1940 hours. The enemy sent up flares and shelled the road as we moved up, but only one minor casualty was sustained.

Lieut. Kennedy was put in charge of the off-loading of vehicles and the carrying of stormboats to launching sites, about 500 yards ahead. Lieuts. Martin and Cronyn were delegated to clear and tape routes for moving the stormboats from off-loading points to launching sites. Subsequently, Lieut. Martin was detailed to proceed to the

far bank to determine the situation there, and Lieut. Cronyn was placed in charge of the beach on our side of the river. This beach had two bays, one on the western end, about 20 yards wide, and one on the eastern side about 60 yards wide. The two were separated by a groin built of rock and projecting about 30 yards out into the river. The small bay was used for the launching of boats, and the wider one and the groin as operating bases for the craft. Lieut. Tate was slated to assist Lieut. Kennedy and to supervise the setting up of advance patrol dumps and RAP.

Two Floodwalls

Two floodwalls blocked the path from the off-loading area to the launching sites. The first of these was about 20 feet high with banks sloping to about 45 degrees. The second one was about one-half of that height and the slope of the banks was much less severe. These obstacles became most difficult to negotiate. The heavy rain softened the ground and the churning

of men's feet as they struggled over with the stormboats soon created a slippery mess which gave no footing whatsoever. Hand ropes were fixed, but even with these the going was extremely difficult.

The first boat was launched at 2130 hours, but it had been badly holed when the men carrying it slipped coming down the side of the floodwall and the stream of water which poured into it would have sunk it before it could have completed a crossing. The next boat was launched at 2146 hours and set off with Lieut. Martin in command. This boat did not return and neither Lieut. Martin nor any member of his crew has been seen or heard from since.

Lance-Cpl. McLachlan captained the third boat to be launched and soon returned bearing the first load of Airborne Troops to be evacuated by us. He continued and completed 15 trips before he was relieved by a fresh crew. The fourth boat, in charge of Cpl. S. F.

Smith, was launched 20 minutes later at 2235 hours. This boat made its way safely to the bridgehead, but swamped when a mortar bomb fell close by on the return voyage. Cpl. Smith, although not a swimmer, floated back on his open greatcoat to the far side. Four of his passengers also got back, but all other occupants of the boat appear to have been lost.

Succeeding boats were launched at intervals of about 20 minutes, and all 14 boats were in the water by 0330 hours. None of these boats were sunk in the channel, but several of them were eventually holed by enemy fire or submerged obstacles and had to be abandoned on reaching shore. An enemy mortar was observed firing from directly opposite the launching site during the time that the first four boats were being launched, but was not seen afterwards, so that it is presumed that our troops in the bridgehead must have cleaned it up.



Canadian Army Overseas Photo

Loading of stormboats

The night was intensely dark, but fires started by our bombers in the afternoon and the numerous flares sent up by the enemy must have revealed a great deal of our movement to him. These fires helped us greatly, too, since they provided beacons by which our boat crews could direct their craft. Intermittent bursts of Bren were fired across to mark the limits of our beach boundaries, but in view of the fact that the fires provided stationary and constant light, the crews did not resort to observation of the incendiary bursts from the Brens.

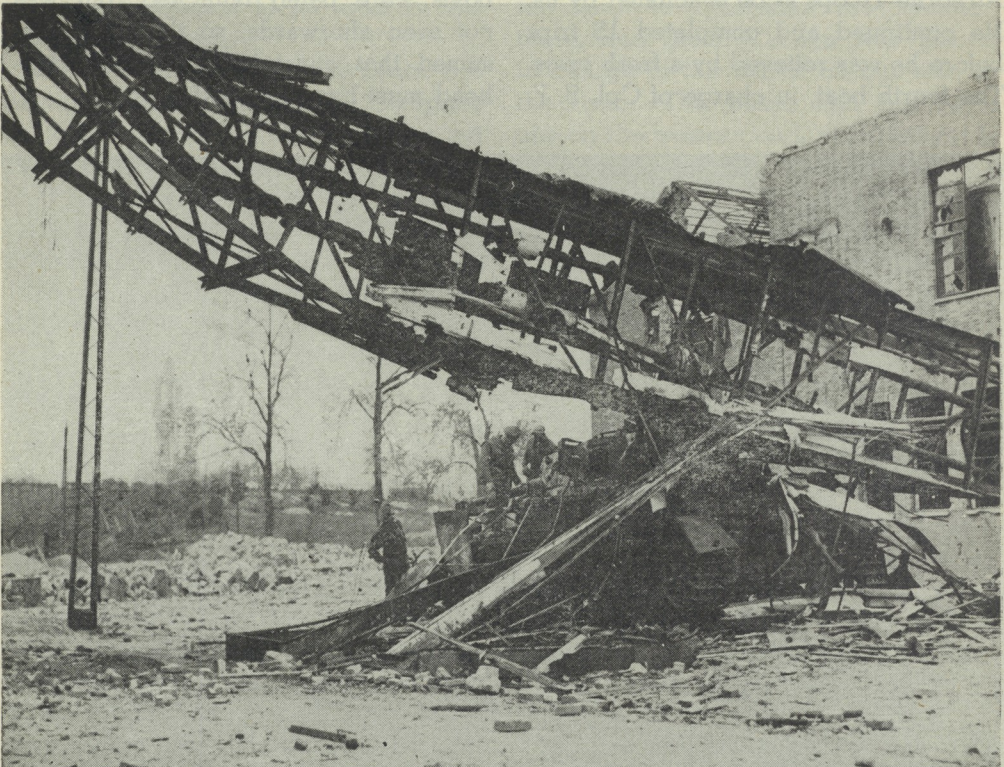
Rain and Wind

Heavy rain was accompanied by a bitter wind which made things most unpleasant, but the bad weather was probably less to the liking of the enemy than it was to us and must surely have

resulted in our having had less casualties than we should have done had the night been clear and fine.

There was a great deal of enemy fire during the night. Machine guns sent on fixed lines swept the river and beaches on both sides. Fortunately, most of the fire was high—at least it was on the operating site on the south side of the river. When daylight came the machine guns up on the hill above the bridgehead rained a murderous hail of bullets on these craft which were still operating, but the downward angle of the fire was much less effective than it would have been had the guns been in position to make more horizontal sweeps.

Mortar and 88mm fire fell everywhere. Many casualties were reported from the bridgehead, but on the river



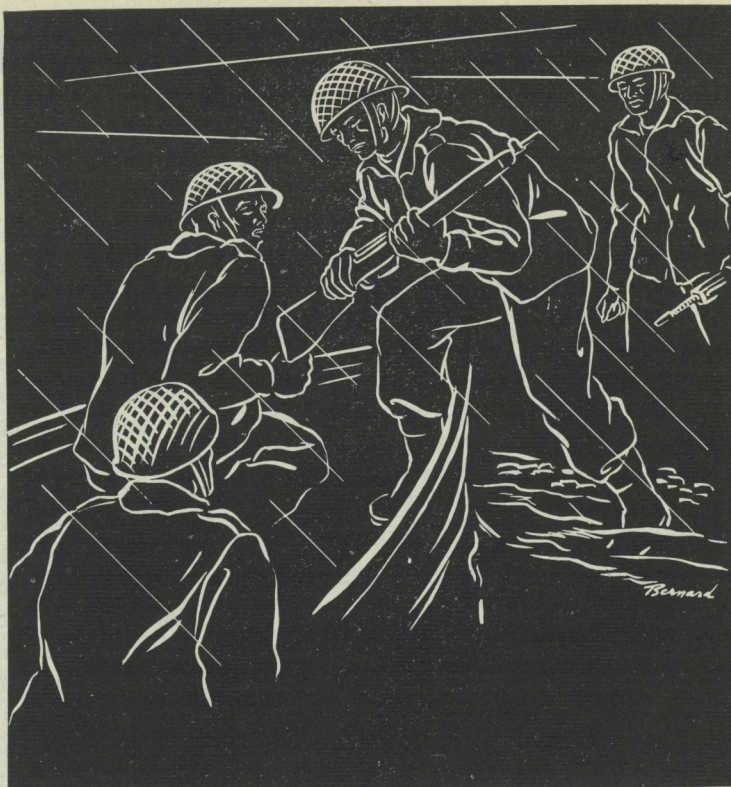
Canadian Army Overseas Photo

Blocking a roadway in Arnhem is a knocked-out German tank and steel tower smashed by Allied artillery. This picture was taken as British and Canadian troops captured the city of Arnhem after crossing the Ijssel River from Westervoort.

and on the south bank they were very light. Three men were wounded in the off-loading area and one between there and the beach. Enemy snipers were also active, and it was reported that some of the Airborne Troops spotted the positions of two of them in crossing the river and proceeded to liquidate them when they reached the south shore.

2,500 Saved

It was found impossible to keep complete records of the crossings made and the passengers carried. Paper turned to pulp in the driving rain; also, loads were not according to the book. The maximum lifted at one time was 36. All of these men were packed into the boat by Lieut. Kennedy on his last trip—the last trip made by anyone in this operation. The minimum lifted was six. A corporal operating a boat which was leaking badly decided he could make one more trip and bring off a



few men before his craft went down. It sunk as it approached the south shore, but fortunately the water was shallow at this point and they were all able to wade safely ashore. It is estimated that approximately 150 boatloads were brought back by the stormboat crews and that the average load carried was about 16 passengers. Thus, approximately 2,400 to 2,500 troops were brought off.

METEOR FLIES AT 480 MILES PER HOUR

The fastest flight in the history of Australian aviation was made in Melbourne recently when a Gloster Meteor jet-propelled fighter reached 480 miles an hour. The plane had been brought to Australia from Britain with three other jet-propelled planes for tests under Australian operating conditions. The

test flight lasted about an hour and the plane reached a height of 20,000 feet. The test pilot said that the performance of the machine was satisfactory in all respects. After further tests in Victoria, the plane will be sent to the north of Australia for tests under tropical conditions.—*Australian News Summary.*

HINTS TO SOLDIERS

On the conclusion of hostilities, the late General Patton, U.S. Army, wrote a pamphlet called "Helpful Hints to Hopeful Heroes" in which he set out a series of points which he considered might be of value to the soldier. This pamphlet was issued to all U.S. Army Schools, including the Infantry School, Fort Benning, as it contains valuable material for use by Infantry instructors. Part I of this pamphlet is reproduced here and is reprinted from The (British) War Office Infantry Bulletin.—Editor.

Probably there is nothing original in what I shall now put down because war is an ancient subject and I, an ancient man, have studied and practised it for over forty years. So, what appears to me as original thought may be simply subconscious memories.

The soldier is the army. No army is better than its soldiers. The soldier is also a citizen. In fact, the highest obligation and privilege of citizenship is that of bearing arms for one's country. Hence it is a proud privilege to be a soldier—a good soldier. Anyone in any walk of life who is content with mediocrity is untrue to himself and to American tradition. To be a good soldier a man must have discipline, self-respect, pride in his unit and in his country, a high sense of duty and obligation to his comrades and to his superiors, and self-confidence born of demonstrated ability.

There has been and is now a great deal of talk about discipline but few people, in or out of the army, know what it is or why it is necessary.

When a man enters the army he leaves home, usually for the first time, and also he leaves behind him the inhibitions resulting from his respect for the opinion of his parents and his friends, which inhibitions, unknown to himself, have

largely guided his existence. When he joins a unit and lacks this corrective influence he is apt to slip in morals, in neatness and in energy. Administrative discipline must replace the absent inhibitions.

All human beings have an innate resistance to obedience. Discipline removes this resistance and, by constant repetition, makes obedience habitual and subconscious. Where would an undisciplined football team get? The players react subconsciously to the signals. They must, because the split second required for thought would give the enemy the jump.

Battle is much more exigent than football. No sane man is not afraid in battle but discipline produces in him a form of vicarious courage which, with his manhood, makes for victory. Self-respect grows directly from discipline. The army saying, "Whoever saw a dirty soldier with a medal?" is largely true. Pride, in turn, stems from self-respect and from the knowledge that the soldier is an American. The sense of duty and obligation to his comrades and superiors comes from a knowledge of reciprocal obligation and from the sharing of the same way of life. Self-confidence, the greatest military virtue, results from the demonstrated ability derived from the acquisition of all the preceding qualities and from exercise in the use of weapons.

Tragic Fact

It is an unfortunate and, to me, tragic fact that in our attempts to prevent war we have taught our people to belittle the heroic qualities of the soldier. They do not realize that, as Shakespeare put it, the pursuit of "The bubble reputation even at the cannon's mouth" is not only a good military characteristic but also very helpful to the young man when bullets and shells are whistling and cracking around him. Much more could be done if the women of America would

praise their heroes and if papers would publish the citations of soldiers in their home towns, and, further, if foolish ideas of security did not make the citations so unrealistic. Perhaps the returning soldiers of this war may correct this very unfortunate situation.

One of Kipling's poems starts as follows:

When the young British soldier
Comes out to the East,
He acts like a babe
And drinks like a beast,
And wonders, because he is
often deceased
Ere he learns how to act like a
soldier.

All our soldiers do not drink like beasts. In fact, the lack of drinking in our army is remarkable. However, many do act like babes. What follows is an attempt to make certain suggestions which have proved useful.

Do not dig slit trenches under trees if you can avoid it because a shell passing overhead and striking the tree acts as an airburst and the fragments come straight down so that your slit trench is useless to you, although it may be of some assistance to the Graves Registration people.

Slit trenches for gun crews must be in the close vicinity of the gun else the men waste too much time getting from the trenches to the gun. Also they are just as apt to get killed while making the run as they would be if they stayed by the gun. Finally, a gun that is not firing is useless and its crew are disloyal to the soldiers in front of them whom they are supposed to be supporting.

Don't Dig Too Much

The trick expression, "Dig or Die," is much over-used and much misunderstood. Wars are not won by defensive tactics. Digging is primarily defensive. The only time it is proper for a soldier to dig is when he has reached his final objective in an attack or when he is

bivouacking under circumstances where he thinks he may be strafed from the air or is within artillery range of the enemy. Personally, I am opposed to digging under such circumstances as the chances of getting killed while sleeping normally on the ground are quite remote and the fatigue from digging innumerable slit trenches is avoided. Also, the psychological effect on the soldier is bad because if he thinks he has to dig he must think the enemy is dangerous, which he usually is not.

"Hit the dirt" is another expression which has done much to increase our casualties. Frequently in fighting . . . other troops in the next war we will find that they have resort to their knowledge of our custom of hitting the dirt. What they do is wait until we have arrived at a predetermined spot on which they have ranged rockets, mortars or artillery and then they put on a sudden and violent machine-gun fire—frequently straight up in the air. The soldier, obsessed with the idea of hitting the dirt, lies down and waits supinely for the arrival of the mortars, rockets, etc. He usually doesn't have to wait long.

The only time it is proper for a soldier to drop is when he is caught at short range, under 300 yards, by concentrated small-arms fire. But even then he must not hit the dirt and stay supine. He must shoot fast at the enemy or in the direction of the enemy because it is as true now as when Farragut stated it in the Civil War that "The best armour (and the best defence) is a rapid and well directed fire." It is a sad commentary on our troops that frequently we get the report that such and such a unit is pinned down under fire and later the same unit comes back.

When soldiers are caught in a barrage, either from mortars, rockets, or artillery, the surest way to get out

of it is to go forward fast because it is almost the invariable practice of the enemy to increase rather than decrease his range.

In the days when the chief small-arms fire on the battlefield was delivered by rifles, it may have been necessary to advance by rushing in order to build up the firing line. Today, when the chief small-arms fire on the battlefield and the majority of the neutralizing fire is delivered by machine-guns, mortars and artillery, there is no advantage in advancing by rushing because until you get within 300 yards of small-arms, fire has very little effect, whereas, when you lie down between rushes you expose yourself to the effect of shrapnel. When you get to 300 yards, your own small-arms fire, which is superior to anything now existing or which will probably ever exist, will neutralize the enemy small-arms fire so that you do not have to advance by rushing. I say this very feelingly because I have seen, on many occasions in manoeuvres and in battle, troops advancing by rushes when they were defiladed behind hills and could have gone forward in limousines, had they been available, with perfect impunity.

Marching Fire: The proper way to advance, particularly for troops armed with that magnificent weapon, the M-1 rifle, is to utilize marching fire and keep moving. This fire can be delivered from the shoulder but it is just as effective if delivered with the butt of the rifle halfway between the belt and the armpit. One round should be fired every two or three paces. The whistle of the bullets, the scream of the ricochet and the dust, twigs and branches which are knocked from the ground and the trees have such an effect on the enemy that his small-arms fire becomes negligible.

Meanwhile, our troops in the rear, using high angle fire, should put out the enemy's mortars and artillery. As I have stated, even if we fail to put out

the mortars and artillery, the most foolish thing possible is to stop under such fire. Keep walking forward. Furthermore, the fact that you are shooting adds to your self-confidence because you feel that you are doing something and are not sitting like a duck in a bathtub being shot at.

In marching fire all weapons must be used. The light machine-guns can be used while walking—one man carrying the belt, the other man carrying the gun. The same is true of the Browning Automatic Rifle and, of course, as previously stated, of the M-1. The 60mm mortar advanced by alternate sections can do much in the same way. The 81 usually should support from one position.

Fire Is Queen

I think if we would say that "Fire is the Queen of Battles" we would avoid arm arguments and come nearer telling the truth. Battles are won by fire and by movement. The purpose of the movement is to get the fire in a more advantageous place to play on the enemy. This is from the rear or flank.

Every soldier should realize that casualties in battle are the result of two factors: first, effective enemy fire and, second, the time during which the soldier is exposed to that fire. The enemy's effectiveness in fire is reduced by your fire or by night attacks. The time you are exposed is reduced by the rapidity of your advance.

Bravery and Courage: If we take the generally accepted definition of bravery as a quality which knows not fear, I have never seen a brave man. All men are frightened. The more intelligent they are the more they are frightened. The courageous man is the man who forces himself, in spite of his fear, to carry on. Discipline, pride, self-respect, self-confidence and the love of glory are attributes which will make a man courageous even if he is afraid.

The greatest weapon against the so-called "battle fatigue" is ridicule. If

soldiers would realize that a large proportion of men allegedly suffering from battle fatigue are really using an easy way out, they would be less sympathetic. Any man who says he has battle fatigue is avoiding danger and forcing on those who have more hardihood than himself the obligation of meeting it. If soldiers would make fun of those who begin to show battle fatigue they would prevent its spread and also save the man who allows himself to malingering by this means from an after-life of humiliation and regret.

Trenchfoot: Soldiers must look after themselves, particularly in wet or

cold weather. This applies particularly to "trenchfoot" which, with reasonable assistance by the higher command, can be largely prevented if the soldier will only take the trouble to massage his feet and put on dry socks. He is not responsible for the arrival of the dry socks but, provided they do arrive, he is responsible for putting them on.

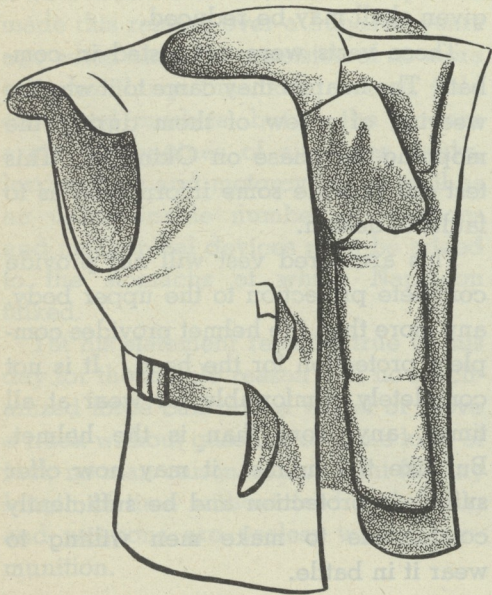
The same thing is true of venereal disease. Soldiers do not have to contract it if they will take the precautions which the military establishment provide. When they do contract it they are disloyal to their comrades because, while they are recovering, somebody is doing their work.

BULLET-PROOF VEST.

(U.S. Cavalry Journal)

Wouldn't it be wonderful if the following statement was true?

"A new type of protective armour for the individual, pliable as silk, light as a feather, but which will turn any projectile up to an eight-inch shell, has recently been invented."



Such a statement, however, is perhaps as far from the truth as it ever was, and yet the attempt to develop individual armour which will reduce battle casualties continues.

"Good" protective armour is a relative thing. It must afford considerable protection without unduly impairing the battle efficiency of the wearer.

New Type

Protective armour for Infantry has not been a practical thing for several centuries. Towards the close of this war a new type of protective armour for the individual was developed, however, which may prove to be sufficiently practical to warrant its wear under battle conditions. This armour is of fibrous rather than metallic structure. The plates of this armour are not pliable, they do weigh more than a feather, and they will not turn every projectile which the mind of man has conceived. They will not turn a rifle bullet fired at a medium range. Encasement in an armoured vest of this material will not

eliminate the possibility of the individual receiving a chest or abdominal wound.

An armoured vest of this material is not as comfortable as an old sweater. Yet it may be sufficiently comfortable and offer a sufficient measure of protection to warrant its adoption for battle wear.

The vest is not unduly heavy, weighing approximately five pounds, with plates one-eighth inch thick. Since the plates of the armour are not pliable, they cannot be extended to cover the lower abdomen and at the same time allow the individual sufficient freedom of action. The extension of the plates to cover the lower abdomen causes chafing and discomfort if the individual does much climbing, running, or engages in other vigorous activity. On the other hand, the lower abdomen is somewhat protected by the cartridge belt, and the plates may protect all the body above the belt line.

Undeniably, the vest is hot—a disadvantage less apparent in cold climates.

Will Turn Fragments

Since it is hot; since it is cumbersome, if not unduly heavy; since it won't turn a rifle bullet, what good is it? The answer lies in the fact that not all wounds are caused by rifle bullets. The armour will turn a .45 calibre bullet. It will turn most, but not all fragments. It would turn a larger percentage of fragments if it were thicker, which would also increase its weight.

The percentage of deaths resulting from wounds in the chest and abdomen is high; studies indicate that the figure runs in the neighborhood of 50 per cent.

The number of casualties from fragments is generally greater than the number of wounds inflicted by small arms—some campaigns in the Pacific being exceptions.

The armoured vest would markedly reduce the number of wounds of a type which so frequently result in death. By how great a percentage would it reduce wounds in the chest and abdomen from fragments? The answer to this question may not be given definitely, but very limited tests have indicated that one-eighth inch thick plates will turn approximately 75 per cent of fragments of a 60mm mortar shell and two-thirds of the fragments of 81mm mortar shells which have travelled a distance of 10 to 40 feet. The distance is, of course, only one of several factors upon which the chances of penetration depend. In the case of fragments from the same shell, some may penetrate, others may not. The armour gives greater protection against hand grenades.

Might Reduce Deaths

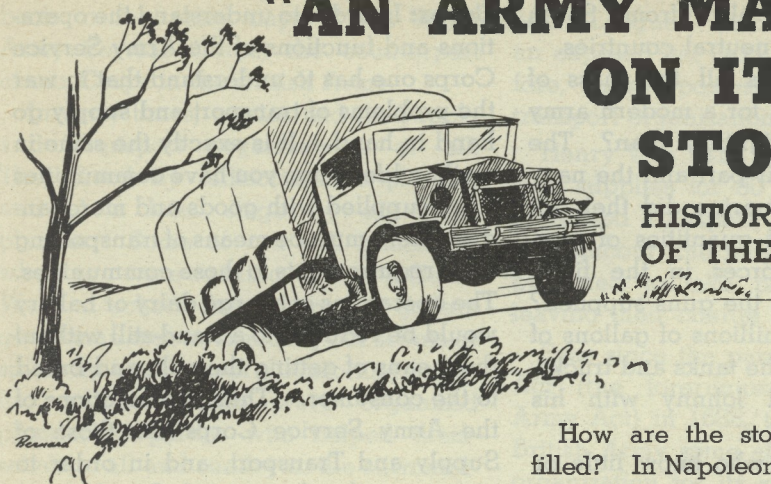
This type of armoured vest might not only reduce the number of casualties resulting from fragment wounds of the chest and abdomen, but might (let's be optimistic) possibly reduce the percentage of deaths resulting from such casualties, since the multiplicity of wounds to a given individual from a given shell may be reduced.

These vests were not tested in combat. The nearest they came to it was the wearing of a few of them during the mopping up phase on Okinawa. This test did provide some information as to faults of design.

This armoured vest will not provide complete protection to the upper body, any more than the helmet provides complete protection for the head. It is not completely comfortable for wear at all times, any more than is the helmet. But like the helmet, it may now offer sufficient protection and be sufficiently comfortable to make men willing to wear it in battle.

"AN ARMY MARCHES ON ITS STOMACH"

HISTORY AND WORK OF THE RCASC



This article on the history and work of the Royal Canadian Army Service Corps was written by Lt. Col. D. Douglas, O.B.E., Assistant Adjutant and Quartermaster-General, Central Command. — Editor.

Napoleon said that an army marched on its stomach.

A curious remark, yet one full of meaning and one whose import no military commander of the highest or lowest rank can overlook. Napoleon made this remark over a hundred years ago when his army consisted of no more complex things than men, horses, field guns and muskets, but in the modern army the engines of airplanes, tanks, lorries, cars and motorcycles as well as an unimaginable number of weapons and mechanical devices must be added to the stomachs of which Napoleon talked.

Yet his statement remains true to this day for the simple reason that no mechanized force can turn a wheel or move a track without gasoline or some kind of fuel; no man can march or fight for any length of time without food and drink, and weapons are useless without ammunition.

How are the stomachs of an army filled? In Napoleon's day it was a comparatively simple matter. His armies were relatively small and their wants few: simple fare for the men, fodder for the horses, powder and shot for cannon and musket.

Lived Off Country

While Napoleon's armies were supplied to a certain extent from a central source, for the most part they lived off the countries through which they fought. The supply of ammunition presented no great problem, as the weapons were not very intricate. Powder had to be carried, but shot could be moulded on the spot.

If Napoleon's method of filling his stomachs was simple, it was nevertheless precarious, and it was of course this precariousness that prompted him to make his famous remark. You will recall that when his armies marched into Russia during the Autumn of 1812 the Russians retreated before him, burning the crops and killing the cattle they left behind. His army thus found nothing to eat and they were obliged to call the whole thing off.

So much for Napoleon, but how is a modern army supplied? The answer is: off the country, but not necessarily off the country or countries in which the army is fighting.

The Canadian and British Forces in the last war were supplied from Canada,

from Britain and the rest of the Empire, from the U.S.A., also from South America and other neutral countries.

Yes, but how was all the mass of equipment required for a modern army delivered to the fighting man? The railways played their part and the navy and the merchant marine did their bit in transporting vast quantities of merchandise to our forces in the field. True, but how were the guns supplied? Who supplied the millions of gallons of gasoline and oil to the tanks and trucks, and who provided Johnny with his morning cup of tea?

For those of you who know little or nothing about the army, the answer is: an organization known as the Army Service Corps.

And for those of you who know all about the army, how much do you know about the duties of the Army Service Corps and its origin? Not very much? Well, few people do, and so for the benefit of all of you and to get you into the picture, as they say in the army, here is a brief outline of the history of the ASC.

The History of the Army Service Corps: In order to understand the operations and functions of the Army Service Corps one has to understand that in war the problems of transport and supply go hand in hand. It is exactly the same in civilian life; when you have communities to be supplied with goods and merchandise, there must be means of transporting their requirements to those communities. The operations of a large dairy or bakery would be reduced to a stand-still without the means of getting the milk and bread to the consumer. Thus, the functions of the Army Service Corps are those of Supply and Transport, and in order to give you the history of Supply and

Transport in our army, we have to turn back to the early days of the Royal Army Service Corps, the counterpart of our Corps in the British Army.

In early times, armies had no Supply and Transport organizations at all. They lived by indiscriminate plunder and at a later stage by organized plunder. Some of you will remember when you were reading Caesar's Gallic Wars at school that when that gallant gentleman was not sending out scouts or spies, he was forever dispatching foraging parties. These were organized plundering parties who helped themselves to all and sundry in the surrounding countryside and in this way obtained the wants of the army.

The first recorded indications of the activities of a forerunner of the Royal Army Service Corps is found in the history of Edward II. There we learn that in the French Wars

the Black Prince employed his wagons as a "Leaguer" (a camp) to strengthen an exposed left flank. He must, therefore, have possessed some form of transport organization.

Henry V in 1415 invaded France and took supplies for 80 days with him in organized transport, but unfortunately at Agincourt the personnel of the latter preferred to take part in the battle, leaving their charge to look after itself.

Ever since the passing of the Mutiny Act (the forerunner of the present Army Act) in 1688, there was with the British Army some attempt at a central organization for its supplies and transport.

Handled by Civilians

In the Irish War of 1690 and in Marlborough's campaigns (about 1712) particular attention was paid to transport and supply, but these services were in the hands of civilians who apparently neglected their duty whilst making the most of their chances. Some say that the Army Service Corps of today make



the most of their chances, but don't you believe it!

In 1794 and the succeeding 13 years, a system of supply depots for the army in Britain was established, but again, being controlled by civilians, the arrangement was unsuccessful. At this time, too, some attempt was made to put transport on an organized basis by the formation of the Corps of Royal Waggoners which four years later was converted into the Royal Wagon Train.

The principal function of this unit appears to have been the transport of wounded and baggage, the transport of supplies still being effected by whatever civilian vehicles and animals happened to be available and commandeered. The Royal Wagon Train had military personnel, but supplies were still handled by civilians who still made the most of their chances.

In spite of these attempts at an organization of supplies and transport, the system was apparently of little use on active service because Wellington's dispatches from the Peninsular War are full of complaints about the semi-starvation and immobility of his troops. The hardships suffered by the troops in the Crimean War were so devastating in effect that a Royal Commission was convened.

One outcome of the Crimean War was the creation in 1855 of the Land Transport Corps.

This Corps was succeeded in 1857 by the Military Train, which is sometimes known as the great-grandfather of the Army Service Corps of today.

Although the operation of the Military Train was not all that could be desired, chiefly because it was separate from the Commissariat or Supplies Branch, yet it served with distinction in China, India and New Zealand. During the Indian Mutiny, the Military Train was employed as cavalry and, as the historians say, "in the guise of Dragoons fought with

distinction at the Relief of Lucknow, two members being awarded the Victoria Cross."

In 1868 the Military Train was disbanded when Mr. Cardwell, Britain's Secretary of State for War, made his famous reforms, and Supply and Transport became the concern of the Control Department, which was divided into three branches: The Army Service Corps, The Army Ordnance Department and the Army Pay Department. This organization was short-lived, however, and in 1875 Supplies and Transport were separated from the other two by the creation of a Commissariat and Transport Department which five years later became the Commissariat and Transport Corps.

Semi-Military

This Corps was a semi-military organization officered by army officers but including many civilians.

In 1889, the Army Service Corps, as we know it today, was brought into being by that famous Quartermaster-General of the British Army, Sir Redvers Bullar, V.C.

The South African war was the first real test of the Army Service Corps and it was during this campaign that it proved its worth. The British Army could at last fight unhampered as in the past because its two principal maintenance services, Supply and Transport, were amalgamated into one Corps.

The South African War was the first campaign in which mechanical transport was used, a few steam tractors being successfully employed.

It was not until 1910 that Mechanical Transport was adopted on any large scale, and then only because of the introduction of the internal combustion engine.

In 1906 the Canadian Army Service Corps was formed and during the war of 1914-18 the CASC and the ASC

of the British Army worked hand in hand, organized on the same lines and doing the same job.

For the most part, in the 1914-18 war the transport of the Army Service Corps was horse-drawn, but there was also a certain amount of mechanical transport.

The hard work done by the ASC of both the Canadian and British Armies during the war of 1914-18 had as its best reward the fact that the troops were always well supplied. At the end of the war, however, His Majesty King George V rewarded the Army Service Corps by conferring upon it the title "Royal," and so we have now the Royal Canadian Army Service Corps and the Royal Army Service Corps.

The Royal Canadian Army Service Corps in War: Now, when Napoleon said that any army marches on its stomach, what he meant was that any army depends for its fighting efficiency upon the soundness of its maintenance system, and maintenance means Supply and Movement. If this were true in Napoleon's time, how much truer is it today when the amount of stores and equipment required is so vast.

Winston Churchill said in his book "The River War" (published in 1899):

"It often happens that in prosperous public enterprises the applause of the nation and the rewards of the Sovereign are bestowed on those whose offices are splendid and whose duties have been dramatic. Others whose labours were no less difficult, responsible and vital to success are unnoticed. If this be true of men, it is also true of things. In a tale of war the reader's mind is filled with the fighting. The battle . . . with its vivid scenes, its moving incidents, its plain and tremendous results . . . excites imagination and commands attention. The eye is fixed on the fighting brigades as

they move amid the smoke; on the swarming figures of the enemy; on the general, serene and determined, mounted in the middle of his staff. The long trailing line of communications is unnoticed. The fierce glory that plays on red, triumphant bayonets dazzles the observer; nor does he care to look behind to where, along a thousand miles of rail, road and river, the convoys are crawling to the front in unnoticed succession. Victory is the beautiful, bright-coloured flower. Transport is the stem without which it could never have blossomed. Yet even the military student, in his zeal to master the fascinating combinations of the actual conflict, often forgets the far more intricate complications of supply."

This, then, is the task of the RCASC—Supply and Transport, or Supply and Movement. Supply is dependent upon and is useless without Transport.

The term Supply, as it affects the ASC, means providing and delivering to the troops all foodstuffs required for the men, and all gasoline, oil and lubricants for the tanks, trucks, jeeps and motorcycles.

The term Transport means moving by road everything required by the army—food (and sometimes water), clothing, medical supplies, casualties, prisoners, refugees and a host of other items.

Supplies and Transport: How was Supply and Transport effected during the 1939-45 war?

In the first place, all transport in the British and Canadian Armies during the last war was mechanized with the exception of a small amount of animal transport used in Italy and Eastern Theatres of Operations.

The RCASC and the RASC were organized into self-contained Companies. Some of these Companies were

designed for transport only and consisted of a number of Transport Platoons each consisting of one officer, 60 men and 30 three-ton lorries. Others were designed for both supply and transport and these, in addition to the Transport Platoons, had some supply personnel added—clerks, butchers, bakers and issuers for the handling of food stuffs, ammunition or gasoline.

Every Canadian Division had its own Supply and Transport organization. Each Division, consisting of about 18,000 officers and men, all told, had as part of its complement roughly 1,400 officers and men of the RCASC and approximately 300 RCASC three-ton lorries.

Each Canadian Corps composed of two or more Divisions had a pool of RCASC Transport Companies and Supply personnel to supply and transport to each Division its needs. First Canadian Army, in its turn, had its pool of RCASC Transport Companies and Supply personnel to handle and transport the vast tonnages of supplies to the various Corps under its Command.

It is difficult to give a detailed picture of the manner by which supplies were brought up from the rear areas and delivered to the fighting units, and the method by which gasoline and ammunition were distributed to the vehicles and guns, without taking up a lot of space. Broadly speaking, the system was that dumps or stocks of supplies were held as far forward as compatible with safety from attack by the enemy, and gradually broken down into smaller packets as they progressed forward until actually issued to the man, vehicle and gun.

Fuel Consumption

The quantity of gasoline and oil that was consumed in the war is almost unbelievable. Some idea can be obtained when you realize that it required a thousand gallons of gasoline to move an Armoured Division one mile and that most Armoured Divisions averaged

25,000 gallons of gasoline per day whether they were fighting or not.

In order to ease the transport system of the task of carrying this terrific tonnage of gasoline, a pipeline was built under the English Channel to deliver gasoline as far forward as possible to the troops in Europe. This pipeline, which had its origin as far back as North Wales, was extended with the advance of the armies until it was across the Rhine.

Supplies of ammunition were held in large dumps in the rear areas, brought forward and held in smaller dumps behind the fighting troops and issued to the Divisions as required. The great problem with ammunition is its weight, and it is interesting to know that each Armoured Division carried with it at all times in its Army Service Corps transport approximately 700 tons of ammunition. This was the Division's reserve and this stock was always maintained, being replenished daily as required.

Vehicles and Units: In order to carry out their task in this last war, the Army Service Corps was equipped with a large assortment of vehicles of all types. The standard load carrier was the three-ton lorry, but in addition there were companies equipped with tank-transporters capable of carrying tanks weighing 40 tons, and others with special lorries for carrying bridging equipment; there were companies equipped with DUKWs for river crossings. In Italy there were pack-mule companies and in Burma and India the RASC even operated some elephant companies for heavy transport in the jungle and for bridge building and the clearing of landing fields.

The RASC also operated a large fleet of Motorboat Companies for inland as well as coastwise water transport.

In addition to land and water transport, the Army Service Corps has a branch for supply by air, and airborne

divisions have their complement of ASC personnel trained and equipped to supply their formations. This is a feature of Supply and Transport work which will no doubt play a large part in any future war.

In addition to the various transport companies, the Army Service Corps operated a host of other types of units— Mobile Field Bakeries capable of producing 30,000 pounds of bread in 24 hours; Mobile Petrol Filling Centres for filling petrol cans in the field; Base Supply Depots and Detail Issue Depots for handling supplies of foodstuffs; and Bulk Petrol Storage Depots for the storage of gasoline in bulk and Petrol Depots for handling gasoline in tins.

The above is a bare outline of the motley collection of vehicles, units and establishments operated by the Army Service Corps, all of whom did their bit in filling the stomachs of our armies in the last war.

"Deliver The Goods"

The main task of the Army Service Corps is to keep the wheels rolling and to "deliver the goods," but in addition to this the ASC man, whether he be driver or storeman, has to be a soldier. He is armed and trained to use his weapons like his comrades in the Infantry. On a number of occasions in the war just past, units of the RCASC stood their turn in the line. One particular unit held a section of the River Maas in Holland during December 1944, and like their great-grandfathers of the Military Train were employed "in the guise of dragoons," as they were officially and affectionately known as "The Compo Dragoons." The name "Compo" was taken from a type of preserved ration pack. Another unit experienced front line service in Italy in the Winter of 1944. All of which goes to show that the Army Service Corps can fight as well as supply the army with its wants.

The RCASC In Peacetime: So much for the Army Service Corps in wartime. What about their duties in peacetime? Do they carry on supplying the peacetime army with its transport, its foodstuffs, gasoline, etc.? They do, and here tabulated in brief are the tasks of the RCASC of the Active Force in Canada at the present time:

1. The movement of troops and stores by rail, by sea and by air.

2. The operation of all road transport for the movement of troops and stores for the Canadian Army.

3. The provision, maintenance and issue of all supplies of foodstuffs and fuel for the Canadian Army.

4. The provision, maintenance and issue of all gasoline and oil required by the Canadian Army.

5. The provision and training of all cooks and catering personnel for the Canadian Army.

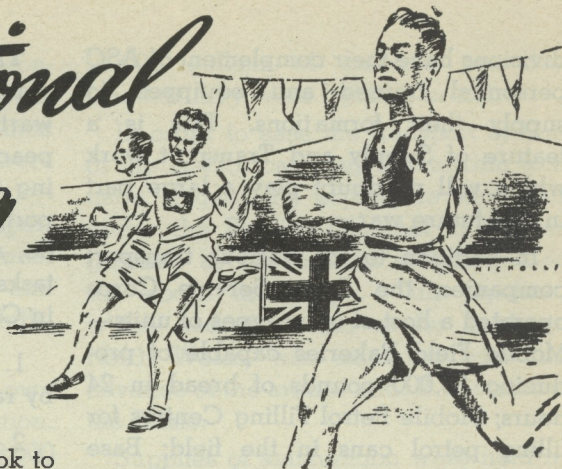
6. The provision and training of all clerks for the Canadian Army.

7. The operation of Water Transport Vessels at Halifax and Vancouver for local supply duties and for the towing of floating targets for Coast Artillery practice.

In each Military District there is a RCASC staff at headquarters who supervise the duties of the Corps within the District. There is also a Supply Depot and a Transport Company to cater to the needs of the Active Force Units in the District and the Reserve Force Units when in training.

Throughout Canada there are Reserve Force Units of the Royal Army Service Corps and the majority of these perpetuate the units which were overseas during the war and served the Canadian Army as Divisional, Corps and Army Supply and Transport Units in the United Kingdom, Sicily, Italy, France,

Recreational Training



ENJOY THIS YEAR

In the December issue CATM took to task those readers who were neglecting to keep themselves in good physical condition. It was suggested that we should pause to consider whether we were really being fair to ourselves by a neglect which eventually reflects itself in our general well-being.

Some general exercises were suggested for the more common weaknesses found in many people who find it so easy to be talked into riding in cars, trams and elevators when a little exertion on their part would prove beneficial to their physical welfare.

We are now going to offer some helpful suggestions that will not only give your recreation an added pleasure, but will also give you a "lift" during your daily toil.

For those who wish to keep themselves sound in wind and limb, and who are

willing to take a few minutes every morning to do this, the sets of exercises illustrated on pages 31 and 32 will be found suitable. They were compiled by the Army Physical Training Corps.

Try these two sets, repeating each one three days in succession. Once you've started you will want to continue them!

Another exercise which may be regarded as complementary to those already mentioned, but which few people want to practice, is the neck exercise in which you turn your head rapidly to the left, front and right when anyone asks you to have a second helping at meal times. This is a particularly good one, and we're sure our readers will feel much better for the effort.

Yours for better digestion!

(Continued on next page)

HISTORY AND WORK OF RCASC

(Continued from previous page)

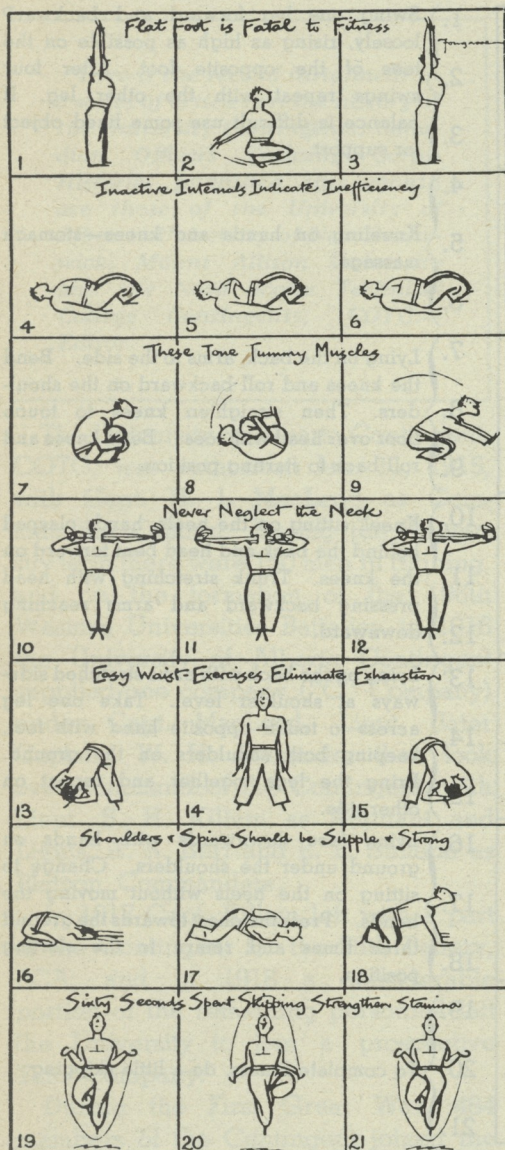
Belgium, Holland and Germany. These Units are in the process of being formed at the present time, and it is important that they be founded on sound lines and made up of well-trained and experienced men, as they will form the backbone of Canada's Army Service Corps in a future war, should there be one.

Nil Sine Labore—"Nothing Without Labour"—is the motto of the RCASC and their brothers-in-arms, the RASC. That is the task of the Army Service Corps:

nothing but hard work, but work which requires an infinite amount of planning, organization and careful attention to detail.

The esprit de corps is very high amongst officers and men of Canada's Army Service Corps. They are justly proud of the part they played in defeating Hitlerism and the way they served the Canadian Army in the war of 1939-45, as their fathers did in the earlier war of 1914-19.

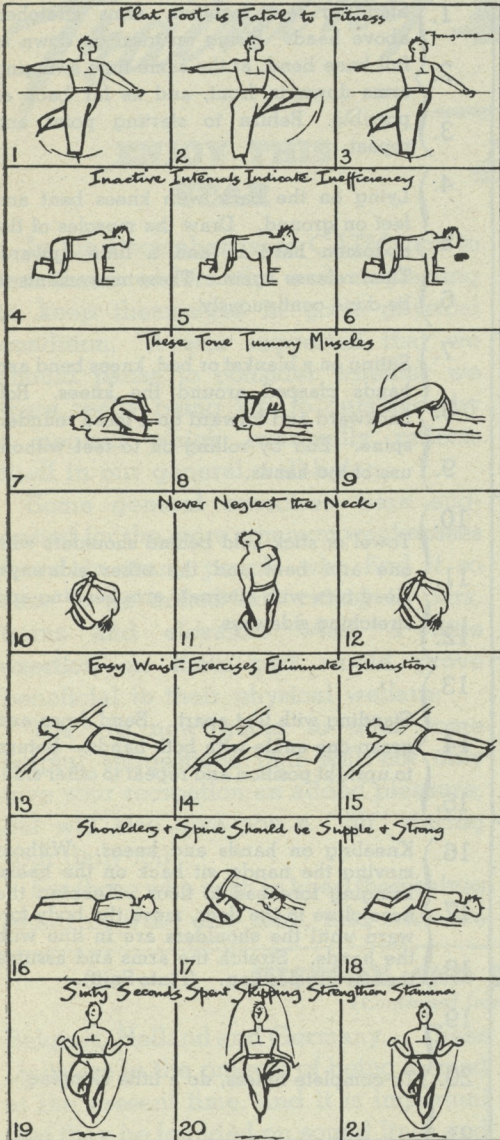
Set No. 1



1. Standing feet together, arms stretched above head. Rising on toes, go down to full knee bend, at the same time swinging arms down in front, and as far back as possible. Return to starting point and repeat.
- 2.
- 3.
4. Lying on the back with knees bent and feet on ground. Draw the muscles of the abdomen hard in and a little upward. Then release again. These movements to be done continuously.
- 5.
- 6.
7. Sitting on a blanket or bed, knees bent and hands clasped around the knees. Roll backward and forward on a loose rounded spine. End by rolling on to feet without use of the hands.
- 8.
- 9.
10. Towel or stick held behind shoulders with one arm bent and the other sideways. Head turn with alternate arm bending and stretching sideways.
- 11.
- 12.
13. Standing with feet apart. Bend down and grasp one ankle with both hands. Return to upright position and repeat to other side.
- 14.
- 15.
16. Kneeling on hands and knees. Without moving the hands, sit back on the heels, bringing forehead to floor. Keeping the nose close to the floor, move the body forward until the shoulders are in line with the hands. Stretch the arms and assume the starting position. (Pluto Sniff).
- 17.
- 18.
- 19.
20. To complete fitness, do a little skipping.
- 21.

SKETCHES BY FOUASSE

Set No. 2



1. } Swing one leg forward and backward loosely, rising as high as possible on the toes of the opposite foot. After four swings repeat with the other leg. If balance is difficult use some fixed object for support.
2. }
3. }
4. }
5. } Kneeling on hands and knees—stomach massage.
6. }
7. } Lying on the back, arms to the side. Bend the knees and roll backward on the shoulders. Then straighten knees to touch floor over head with toes. Bend knees and roll back to starting position.
8. }
9. }
10. } Kneel, sitting on the heels, hands clasped behind the back and head bent forward on the knees. Trunk stretching with head pressing backward and arms reaching downward.
11. }
12. }
13. } Lying on the back with arms stretched sideways at shoulder level. Take one leg across to touch opposite hand with foot, keeping both shoulders on the ground. Bring the legs together and repeat on other side.
14. }
15. }
16. } Lying face downwards with hands on ground under the shoulders. Change to sitting on the heels without moving the hands. Press the chest towards the ground three times and return to the starting position.
17. }
18. }
19. }
20. } To complete fitness, do a little skipping.
21. }

SKETCHES BY FOU GASSE

HISTORY OF THE UNIVERSITY CONTINGENTS CANADIAN OFFICERS TRAINING CORPS

ALBERTA CONTINGENT

Here is the second instalment in a series of articles on the history of the University Contingents, Canadian Officers Training Corps. Histories published this month are those of the University of Alberta, University of New Brunswick, Mount Allison University and the Nova Scotia Technical College Contingents, COTC.—Editor.

The University of Alberta Contingent, COTC, was authorized Jan. 11, 1915, with Capt. H. J. MacLeod as Commanding Officer. During the University term there were 150 men in training, and on the formation of the 196th Western Universities Battalion in 1916 the University of Alberta Contingent supplied one company ("C" Company) under Capt. MacLeod. Lieut. (later Captain) W. H. Alexander then took over command of the Contingent, with Lieut. S. H. Killam as Adjutant and Lieuts. A. R. Burt and E. L. Shildon as Platoon Commanders.

In 1917 Capt. Killam left with a part of the Contingent for the 78th Battery, RCA, and in 1918 a considerable portion of the remaining personnel left the University to join a prospective Tank Company.

During the First Great War, 484 members of the Contingent joined the Active Forces; at the outbreak of that war the student body numbered only 440.

During 1918-19 there was very little training owing to the influenza epidemic and the consequent delay of six weeks in the opening of the University. Most of the training during this period took

the form of Physical Education.

In 1919-20 the Contingent was re-organized under Maj. H. J. MacLeod, and in 1921 he was appointed Lieutenant-Colonel to command the Unit. Later in 1921 Maj. S. H. Killam was acting OC during leave of absence of Lt. Col. MacLeod. Maj. Killam was accidentally drowned in 1923.

In 1924 Lt. Col. MacLeod resigned as OC and was succeeded by Lt. Col. F. A. S. Dunn, who kept the Contingent together under rather difficult circumstances, as Military Training was not very popular during those years.

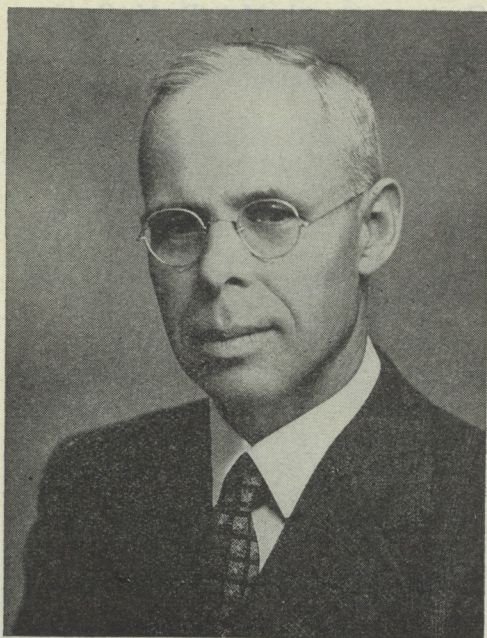
Lt. Col. Dunn was succeeded in 1935 by Lt. Col. E. H. Strickland, and in 1936 Maj. P. S. Warren was appointed Second-in-Command. Maj. Warren was promoted to Lieutenant-Colonel in 1939 and took over command of the Contingent, with Maj. D. M. Smith as Second-in-Command and Capt. H. J. Bishop as Adjutant. Up to this time



students wishing to qualify for commissions wrote War Office examinations, and the number qualifying was gratifyingly high.

In 1940, 1941 and 1942 Lt. Col. Strickland was Training Officer for the Contingent. Lt. Col. Strickland, with Capt. D. E. Smith as Assistant, was succeeded as Training Officer when he took over No. 133 Canadian Infantry (Basic) Training Centre, Wetaskiwin, Alta., in 1942. Maj. H. J. Towerton took over the training duties for the Contingent at this time. During 1940-41 Capt. C. Tracy was full-time Adjutant and continued as part-time Adjutant until 1945.

Lt. Col. Warren continued as OC until the end of the Second Great War. During these years the Unit devoted itself to Basic Training, and in May of each year the Unit trained at Camp Sarcee, Alta., for two weeks. Compulsory Military Training was required of all physically-fit students during the war years for a two-year period, the number of training hours being reduced



Dr. Robert Newton, president of the University of Alberta.



Lt. Col. F. Owen, Officer Commanding the University of Alberta Contingent, COTC.

for senior students. The latter were given advanced training in Signals, Artillery, 3-inch mortar, as well as Medical work. Strength of the Contingent varied according to the registration at the University, but in 1940-41 the number reached 1,292, of whom 692 attended the spring camp.

For the last two years of the war, Majors F. Owen and W. G. Hardy served as Assistant Training Officers to Maj. Towerton.

1,400 In Forces

Approximately 1,400 members of the University of Alberta Contingent joined the Armed Forces, in the Second Great War, the majority obtaining commissions in the three services where many won high rank and distinction. At the outbreak of the war registration of men and women in all Faculties totalled 1,700.

Members of the Contingent trained for two hours three days a week, but owing to the large number taking

instruction, training proceeded practically every day, including Saturday afternoons and Sunday mornings. Commencing in 1941, First Year women students were also required to engage in War Work, one of the options being drill under the direction of the COTC with Maj. Owen in charge.

At the cessation of hostilities in 1945, Lt. Col. Warren was succeeded as OC by Lt. Col. Owen, and training time was reduced to two hours a week. The strength was 200 all ranks.

At the present time the Contingent is being reorganized in accordance with

the new system of training for the COTC. The establishment for the Unit has been set at 120 and there will be no difficulty in filling it. The response from ex-service men on the Campus who did not have commissions during the war has been very gratifying, and there is plenty of moral support at this University for continuance of Military Training, in sharp contrast to the situation prevailing after the First Great War. There is no doubt that this spirit will prevail as long as the new training system continues to be elastic, practical and interesting.

UNIVERSITY OF NEW BRUNSWICK CONTINGENT, COTC

Formation of the Contingent: On Aug. 14, 1915, Dr. C. C. Jones, Chancellor of the University of New Brunswick, wrote to Sir Douglas Hazen, then the Honourable J. D. Hazen, Minister of Marine and Fisheries, asking his opinion on the proposed organization of an Officers Training Corps in connection with the University. Hon. Mr. Hazen thoroughly approved, and after the Senate of the University had definitely signified their desire through Dr. Jones to carry out the project, he brought the matter to the attention of Sir Sam Hughes, then Minister of Militia and Defence.

There followed considerable correspondence, resulting in the following extract from General Orders dated 15th November, 1916: "6th Divisional Area. Authority is granted for the formation of one Company, Canadian Officers' Training Corps, with headquarters at Fredericton, N.B., to be designated the New Canadian Officers Training Corps." (G.O. 138/1915).

1915 to 1919

Strength: In October 1915, 63 members were enrolled. Lieuts W. L. MacDonald and H. D. McKnight were attached to the Unit from the 71st (York) Regiment, the former to command the Contingent with the local rank of Captain. Other officers were Lieuts. D. W. Wallace and L. C. Kelley.

First Inspection: The first official inspection of the Contingent was carried out on May 17, 1916. The inspecting officer was Maj. H. H. Stethem, later of the Royal Canadian Dragoons, then A/G.S.O. Troops, N.B. The number efficient was 42. At an examination for Lieutenants' Certificates held the same day, nine candidates passed the required qualifications.

Active Service Record, First World War: Nineteen members left for overseas between January and May, 1916. A total of 105 members of the unit saw active service. The names of 32 of those who made the supreme sacrifice appear on the Roll of Honour.

1920 to 1939



Maj. R. J. Love, Officer Commanding the University of New Brunswick Contingent, COTC.

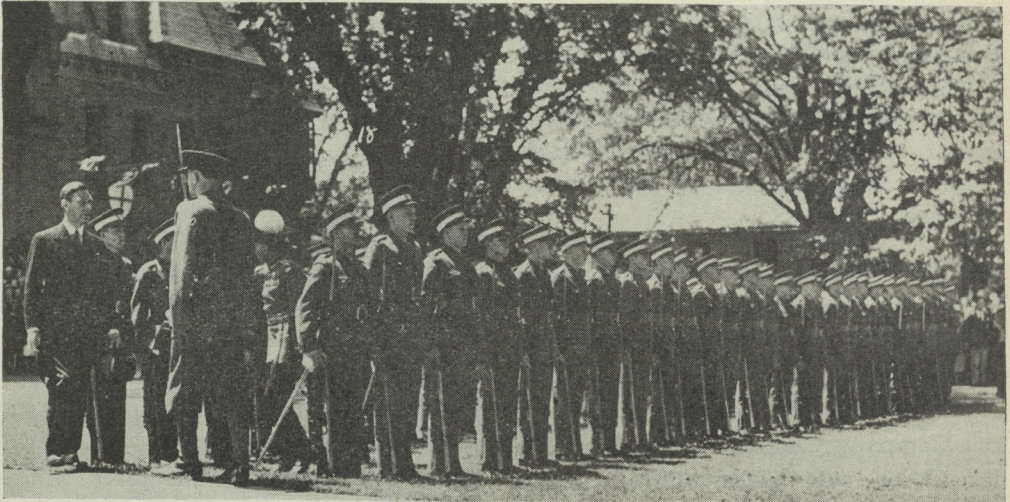
The following number of awards for conspicuous bravery in active service were recorded:

C.M.G.....	2
D.S.O.....	4
M.C. and Bar.....	1
M.C.....	17
M.M.....	5
D.C.M.....	2
Russian Order of St. George..	1
Russian Order of Ste. Anne...	1

Strength: The unit was reorganized in 1920 in accordance with G.O. 249/1920. Prof. Adam Cameron was now in command of the Contingent, having assumed these duties in 1917 on the departure of Capt. MacDonald for overseas service. A gradual and steady growth in strength took place, and in 1931 the strength of the Unit totalled 182 all ranks. Lt. Col. Cameron died in 1931 and Maj. W. G. Jones was appointed to command the Unit. Maj. Jones continued in command until Oct. 1, 1946.

Qualification of Officers: Until 1922, approximately eight members qualified each year as Infantry Lieutenants. In the period 1923-39, 270 members of the Unit obtained Lieutenants' qualifications through the medium of the Certificate "A" examinations, thus qualifying as Captains.

Attachments to RCAF and Signals: During the summer vacations more than 50 members were selected for flying training with the RCAF at Camp Borden, Ont.; 50 members also followed technical courses at the Canadian Signal Training Centre at Camp Borden and Barriefield, Ont. Of the



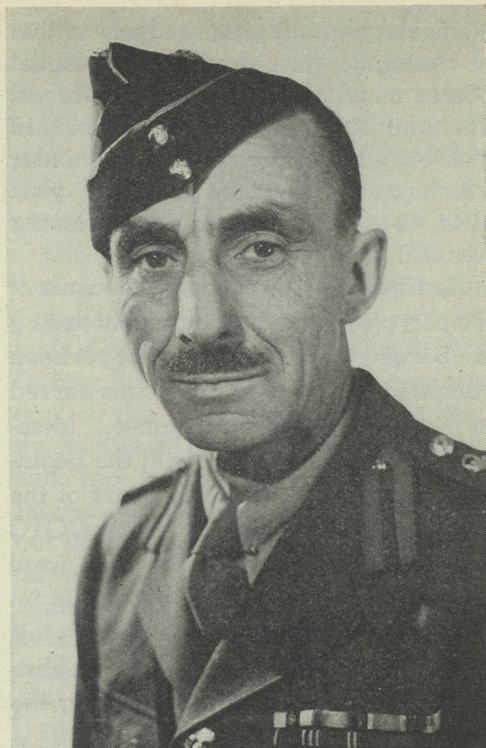
His Majesty King George VI inspects the guard of honour furnished by the University of New Brunswick Contingent, COTC, during the Royal Visit to Fredericton in 1939. His Majesty is seen at the left of the picture.

former, one later attained the rank of Air Vice Marshal and another the rank of Air Commodore.

DCRA Inter-University Rifle Competitions: The Contingent has always been keenly interested in rifle shooting. It first entered the DCRA competition in 1925 and placed fourth among seven teams with a score of 699. In 1932, this University's Contingent won the competition with a score of 799 out of a possible 840. Next year it was again the winner. In 1934 and 1935 the University placed second to McMaster University, but has since been forced out of the competition due to the collapse of the outdoor butts at the Devon Rifle Range where the competition shoot was held.

Guards of Honour: Commencing in 1922, the Unit was represented each year on the composite Guard of Honour at the opening of the Provincial Legislature. The Contingent supplied the complete guard in 1927, this privilege being enjoyed until 1941.

On the occasion of the Royal Visit to Fredericton on June 13, 1939, a Guard of Honour consisting of two officers and 50 other ranks was furnished by the Contingent. This guard was inspected by His Majesty on the grounds of the Legislative Building. (See the accompanying photographs). The guard was

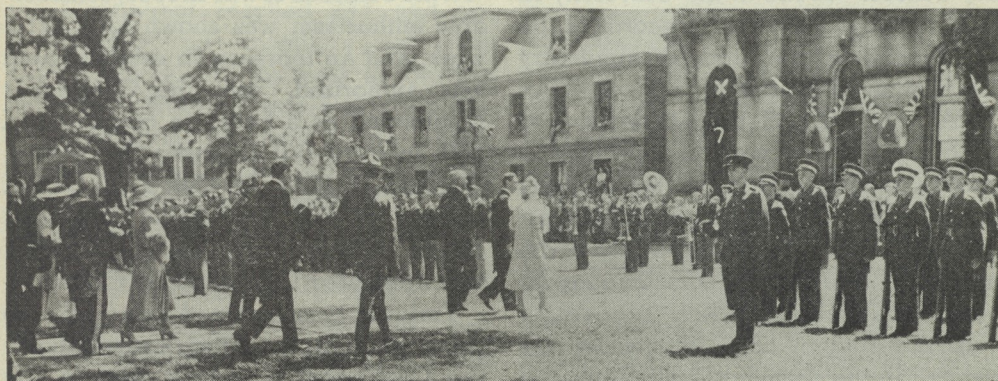


Brig. M. F. Gregg, V.C., M.C. and Bar, President of the University of New Brunswick and Honorary Lieutenant-Colonel of the University's Contingent of the COTC.

commanded by Maj. F. H. Brennan (then Second Lt. Brennan) who later served as GSO2 with 3rd Canadian Division, CAOF.

1940 to 1946

Strength: In 1940 the role of the Unit was changed from that of providing



At the right of this photo is the guard of honour drawn from the University of New Brunswick Contingent, COTC, for the occasion of the Royal Visit to Fredericton in 1939. The Royal Couple is seen in the centre of the picture.

elementary training for students to that of training and supplying potential officer material for the Armed Forces. The unit strength reached its peak in 1941-42 when 276 all ranks were under training. During the academic year 1944-45 the total number under training was 270.

Active Service Record: Records of the part played by the Contingent during the Second Great War have not yet been compiled. However, graduates served in many and varying capacities. Members of the unit, especially at the beginning and during the early years of the war, proceeded directly from COTC to units of the Armed Forces and were highly successful as officers. This indicates that the training offered by this University was worthwhile. Enlistments of personnel while attending the

University, directly from COTC, exceeded the following figures:

Royal Canadian Navy.....35
 Canadian Army,
 Active Force.....100
 Royal Canadian Air Force..35

Present Training Program: This University readily accepted the new type of training programme planned for the COTC. The necessary reorganization is now being carried out under its present Commanding Officer with the whole-hearted support of the President of the University, Brig. M. F. Gregg, V.C., M.C. and Bar.

The present slate of officers follows:
 Honorary Lieutenant-Colonel, Brig. Gregg; Commanding Officer, Maj. R. J. Love; Adjutant, Capt. A. Blakeney; Resident Staff Officer (attached), Maj. L. A. Gagnon, Royal Canadian Corps of Signals.

MOUNT ALLISON UNIVERSITY CONTINGENT, COTC

The Mount Allison University Contingent of the Canadian Officers Training Corps (Sackville, N.B.) was formed during the war 1914-18. It was reorganized in 1920 and continued to function until 1927, with Maj. F. L. West (now Lieutenant-Colonel) as Commanding Officer. A fire at the University in 1933 destroyed the early records of the Contingent and very little documentary information is available.

"A" and "B" Certificate work was done and credit was given by the University to students who successfully passed the Certificate examinations. Interest in the COTC gradually decreased, however, and the Contingent ceased to function in 1927.

In the autumn of 1938 interest was revived in the dormant Contingent, and the Regents of Mount Allison consented to the formation of an Engineer Unit at the University. Lieut. W. McCor-

mack, cadet and physical instructor at Mount Allison Academy, was the first Commanding Officer of the reorganized Contingent, and parades were held three times a week during the winter of 1938-39.

Infantry and Engineers

At the outbreak of war in 1939, considerable enthusiasm was shown for COTC work, and an increase in establishment was authorized, with the Contingent functioning as a battalion composed of both Infantry and Engineer Companies. On Nov. 8, 1939, Lt. Col. F. P. Day, a veteran of the First Great War and Mount Allison's first Rhodes Scholar, was appointed Commanding Officer.

Training was confined principally to preparation for the militia examinations; the Contingent also took part in the Remembrance Day service in 1939 and the annual church parade. During a seven-week leave of absence of Lt. Col.



H/Col. W. T. Ross Flemmington, president of Mount Allison University and Honorary Colonel of the University's Contingent of the COTC.

Day in the spring of 1940, Second Lt. G. F. G. Stanley (now Lt. Col. Stanley of the Historical Section, Army Headquarters, Ottawa) assumed command. The annual inspection held on March 29, 1940, took the form of a tactical scheme prepared by Second Lt. Stanley.

During the term 1940-41 strength of the Contingent reached 293, and approximately 50 members left the Contingent during the year to join the services. Training was similar to the Basic Training received by an Active Service recruit. The annual summer camp was held at Sussex, N.B., from May 23 to June 5, 1941.

Training and Exams

In 1941 Military Training was compulsory for all medically-fit students, and Basic Training was carried on with the new recruits, while those who had completed this training in former years prepared for qualifying examinations. While

at summer camp in Woodstock, N.B., 24 cadets qualified for commissions in the Reserve Army. Again, approximately 50 left the Contingent for the services, 24 of these proceeding to the OTC at Brockville at the close of the summer camp.

On the retirement of Lt. Col. Day in June 1942, Lieut. G. N. Laidlaw became Commanding Officer, and was replaced by Lt. Col. H. S. Gamblin on Oct. 9, 1942. During the year 1942-43 the organization of the Contingent was changed, the Engineer Company being disbanded and two Infantry Companies formed. Intensive Physical Training was carried out during the year and 140 attended the summer camp at Utopia, N.B., the Mount Allison University Contingent being considered the best trained at the camp. Thirty-nine members left to join the services during the year.

In 1943-44 enrolment totalled approximately 170, with 135 attending the annual camp at Sussex. Capt. W. S. Daley was appointed Commanding Officer in October 1943.

Intensive Programme

Members of the Contingent returned to the University one week before the



This is some of the winter training done by the COTC during the war. Under the new Training Programme many changes have been made in the type of work to be done by the COTC.

formal opening in September 1944 and took part in an intensive Military Training programme. Maj. G. N. Laidlaw became Commanding Officer, and the Contingent went to the summer camp at Sussex in May 1945.

Following the defeat of Japan, practical training was discontinued during the year 1945-46, although the Contingent continued to function administratively.

The Mount Allison University Contingent is fortunate in having as Honourary Colonel the President of the University, H/Col. the Rev. W. T. Ross Flemmington, O.B.E., formerly Principal Protestant Chaplain with the Canadian Army Overseas.



A slit trench in the snow, and notice how careful they're being with the spoil! This will bring back memories to COTC students who trained during the winter in the war years. Training, however, is going to be a bit different from now on.

NOVA SCOTIA TECHNICAL COLLEGE CONTINGENT, COTC

Before giving any historical account of this Contingent, it is well to know something of its background, and that of the College in which it functions.

The College is located in Halifax, N.S., a garrison city, and, previous to the Second Great War, a port of call for the British Navy. Personnel of both the Army and Navy were a common sight on the streets, even in peacetime. The people here are "service conscious."

Higher education in the Province before the opening of the Nova Scotia Technical College was limited to Arts and Pure Science. The need for advanced studies in Applied Science was felt by the denominational Universities, but as individuals they did not feel justified in developing their own facilities to obtain this result. The Provincial Government was consulted and agreed to operate a College giving the Junior and Senior years in Engineering.

The Nova Scotia government, through the Dominion government, obtained the site for the College buildings from the Department of National Defence on condition that Military Training form part of the curriculum. This arrangement was satisfactory to the province, and one afternoon each week during the College year, with a 15-day camp during the vacation period, were set aside for Military Training. The College is unique in that it has only Junior and Senior students, and that Military Training is compulsory for all students who are not physically handicapped.

The first classes were held in 1909, and since then Military Training has been taken by all physically-fit students.

For a number of years the training was taken more or less in lieu of Physical Training. Students received no recognition for their training, and no official records of their military qualifications were kept.

Following the First Great War it was considered advisable to officially recognize Military Training, and in 1920 the first Nova Scotia Technical College Contingent of the COTC was authorized. The administrative staff of the Contingent was drawn from full-time members of the Faculty, a practice which is still maintained. Through the generous co-operation of the local military headquarters, members of the HQ instructional staff were supplied for the periods of instruction. Since Military Training was a part of the curriculum, veterans of the First Great War "Formed Fours", "Sloped Arms," etc. The reaction here was varied, but most of the students wrote the military exams and qualified for Certificate "A".

Engineers Corps

As it was considered that students of engineering would be more suitably placed in the Engineers, the syllabus of training was changed to this branch in 1925. This Corps continued as Engineers until 1933, when the syllabus was changed to Artillery (Mobile). About this time two platoons of the Contingent were formed at St. Mary's College, and training of these platoons took place on St. Mary's campus.

Instruction in Artillery (Mobile) continued for all students until 1940. The 15-day camp was held at one of the forts in the district, and one year it was held at Petawawa, Ont. In 1940 the Unit branched out and included Anti-Aircraft and Coast Defence in its syllabus, facilities at and near the College being excellent for training in both. Instructors from local army units gave instruction in the Special-to-Arms syllabus.

In 1940, due to the shortage of officers, the Contingent was asked to train a graduate battery. Personnel of this battery were College graduates,

and, upon qualification, could elect to active or to the reserve corps. Recruiting for this battery was done through advertising in the local papers, and the response was very gratifying. The graduates, all employed men and some of whom resided out-of-town, turned up for all parades and spent their vacations in camp, which was held on the College campus. This battery was discontinued in 1942.

In 1944 permission was granted to those students desiring Naval or Air Force Training to substitute the University Naval Training Division or the University Air School for the COTC. About 50 per cent of the student body went into these services, including practically all the Mechanical Engineering students and a large number of the Electrical Engineers. Strength of the Unit was further reduced by the withdrawal of the St. Mary's platoons upon the formation of their own Contingent. This reduction in personnel made it necessary to reorganize the Unit, but it had an advantage in that the faults of the individual were more easily detected and corrected.

The attachment of an Assistant Instructor for full-time duty relieved the administrative staff of much of the routine work. Under his direction, a continuous and effective program of training was maintained.

25% In Services

Since the College registration is limited to Junior and Senior students only and in one branch of learning—Applied Science—the number of students is necessarily small in comparison with many Colleges. The percentage of graduates in the service, however, is quite high. For the period from 1920 to 1939, 103 graduates were in the services. This number represents about 25 per cent of the graduates for that period. All were members of the COTC while studying here.

During the Second Great War, 105 men, including 55 from the graduate battery, went into some branch of the army. These men all entered the services with commissions. During the latter part of the war Selective Service permitted only a limited number to go into the Services. Every Unit produces its outstanding character, and best known from this Contingent is Capt. Perry Cadigan, the "Ole Bill" of World War II.

Under the new University Training

Scheme, a limited number of students will be in the COTC. The remainder, except those in the UNTD, must take military training. It is to be hoped that arrangement may be made through which their training will be recognized and their knowledge as technical men be made available should the emergency arise.

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SERVICE WITH THE CHINESE ARMY

This article by Col. H. M. Cole, U.S. Field Artillery, is reprinted from the U.S. Field Artillery Journal for the information of Canadian officers who may be interested in the training of the Chinese army and the customs of the Chinese people.—Editor.

China is a popular subject these days and much is being written about the turbulent internal and external circumstances and relationships of this great country. Little has been written, however, from the point of view of Americans stationed there. Whether American officers and soldiers will remain for long in China cannot be known, but since the possibility thereof exists, an article on the peculiar conditions of such service is considered appropriate. Much of the material covered by this article, incidentally, was contained in a pamphlet furnished new arrivals in China. This pamphlet has not been made available in the United States.

I served in the "Y" Force in the Chinese Training and Combat from

January 1943 to June 1944, not only with the Field Artillery Training Centre in Yunnan Province, but also with the V Chinese Army Group, the major part of which was in the vicinity of Kunming.

Work Worth-While

During my period of service in China, most newly-arrived Americans went through an initial period of considerable disillusionment and discouragement. This was due, I believe, to their having failed to appreciate the undeveloped character of the country, to a preconceived misunderstanding of the capabilities of the Chinese Army, as well as to a belated realization of the many difficulties and obstacles to be surmounted. After a time new arrivals usually realized that, whereas they could not accomplish nearly as much as they had hoped, they still could make important progress in training the Chinese; in other words, most old timers considered that their work was worth-while.

Geographically, China is a vast area which including Manchuria is about one and one-third times the size of the United States. Much of this area is mountainous and important



parts are divided from each other by mountain ranges. Great portions of the southern provinces are covered by rice paddies. In general the climate is similar to that of the United States except for rainfall, which is generally less. The southern provinces, however, undergo the monsoon rains, but these are of a comparatively mild nature and scarcely comparable to the extremely severe rainfall of India and Burma.

Communication Poor

The scarcity of communication facilities in China is not generally realized. True, there are railroads, motor roads and motor vehicles, but all are most limited, by our standards. Most of the motor vehicles are in a very poor state of maintenance and repair; moreover, the Chinese invariably overload them. When a unit of Chinese troops moves, it moves by marching, except in the most unusual circumstances. When a Chinese officer must change station, he walks—unless he is fortunate enough to get a lift on a truck or a pony cart or can afford to hire a chair which is carried by coolies. Conscriptees for the Chinese Army are marched to their troop units, often over distances as

great as a thousand miles. A loss of 30% or 40% due to desertions, sickness and death en route is expected. Only in unusual circumstances is American air transport made available to move Chinese troops.

The difficulty of the Chinese language is certainly a major obstacle to efficient dealing with the Chinese. The official dialect is Mandarin, which is spoken by the largest language group of Chinese people. Cantonese dialect is spoken by the second largest language group of people in China. There is as much difference between the Mandarin and Cantonese dialects as between French and Spanish. Both are difficult for a foreigner to learn not only because inflection is very important and usually determines the meaning but also because neither dialect lends itself well to accuracy of expression.

Under the primitive conditions that have existed there has been little need for exact language, so it has not been developed. There are many other dialects in addition to Mandarin and Cantonese.

In some cases people living in villages only ten or fifteen miles apart cannot under-

stand each other because they speak different dialects. At the Field Artillery Training Centre we had a great deal of difficulty with voice radio and telephone communication because some of the student officers spoke different dialects.

The written Chinese language consists of around thirty thousand characters, each character having the meaning of a word, and these are the same for all dialects. It takes years for a scholar to learn all of them. Small wonder then that around 50% of Chinese officers and 95% of Chinese soldiers cannot read or write and about 90% or 95% of the civilian population is also illiterate. Of course, it is practically impossible to manufacture a typewriter capable of printing the Chinese language. I have heard it said that there are such machines, but I have never seen one.

The American officer or soldier serving with the Chinese is forced to rely on his interpreter. These are commissioned as officers in the Chinese Army and were secured from college students. Many of them are worthy young men and in many instances have proven very loyal to the American officers to whom they were assigned. In giving instruction the American states a sentence or two and the interpreter translates. It is best to give the interpreter the text to study before a class or lecture. The American should look at and talk to the person to whom he is speaking and should not talk directly to the interpreter. Perhaps this seems a small point but you will be more effective if you follow this advice.

Chinese Food

Chinese food served at banquets is carefully prepared and very delicious indeed. (In view of the prevalence of

dysentery the usual precautions must be observed—drink only boiled water and do not eat uncooked food unless it is something that can be peeled). You may need to acquire a taste for some dishes, and you should learn to use chopsticks well. No dairy products are used by the Chinese and they have no refrigeration, so all meats must be eaten promptly after being slaughtered.

Although Chinese food served at official dinners is costly and is most palatable, do not think that the Chinese troops live well. In the fall of 1943, the official ration of the Chinese soldier was increased to the following: one pound of meat per month; five pounds of beans per month; vegetables to the value of 100 Chinese dollars per month; and 24 ounces of rice per day. Actually they received no meat at all—the substitute being an equivalent amount of bean curd, a protein. They have two meals per day, one at about 0900 and one at about 1630.

Organization

The organization of the Chinese Army follows the same echelons of command as our own except that the army corps is omitted. The chain of command is from division to army. The army corresponds to our corps and the army group to our army. The Chinese units were usually greatly understrength. A division was supposed to be 10,000 strong but I saw few with more than 5,000 officers and men. One battalion of field artillery is all that is normally provided for each army of three divisions, although the Chinese units that were trained and equipped in India did have one battalion in each division. The field artillery was equipped with German, Russian, French, and American material. By June 1944 six battalions had been re-equipped with our 75mm pack howitzers.

The Infantry weapons consist of the Chinese-made Generalissimo rifle (modeled on the German military rifle), the Chinese-made light and heavy machine guns, some 60mm mortars supplied by the United States, a certain number of Bren guns and tommy guns, as well as the Chinese-made 82mm mortar. They also had some units equipped with a powerful but inaccurate 150mm mortar. The Chinese-made weapons were serviceable, but the Generalissimo rifle was made of poor steel and inaccurate after a few rounds.

One serious defect of the Chinese method of exercising command is that the commander does not delegate authority or use his staff. Control is highly centralized. If the commander is absent, the next senior will seldom take any action except on the most trivial matters. In the V Army, which consisted of three divisions and certain non-divisional units, no company or battery commander could be appointed or relieved without the personal approval of the Army Commander.

Common Qualities

There is no fundamental reason why Americans and Chinese should not get along well together. Actually, they have important qualities in common. First among these is a sense of humor, which certainly makes for mutual respect and regard. Moreover, Americans and Chinese both treat their women-folk with respect and consideration.

The Chinese do not like direct dealing as we usually do. They do not put "their cards on the table," but prefer an indirect approach to their objective. They have found that in dealing with foreigners they can often get their way by simply waiting, as the

foreigner will get impatient and give way in order to get the matter settled.

Time means little in China, and the people are seldom in a hurry. This trait is exasperating to us sometimes but it is practically impossible to do anything about it. If you get impatient and blow up, you can be sure that you will get absolutely nowhere.

Good Manners

The Chinese are rather formal in their relationships and lay a great deal of stress on good manners, and preserving the "face" of the other person. For example, no Chinese would think of striking another in a quarrel, as that would put him in the wrong and cause him to lose face. Instead he will probably appeal to bystanders or passerby to hear the story and decide the matter. They usually think that Americans are crude and our rough and ready ways are often shocking to them.

The matter of drinking at dinner parties is attended with considerable formality. You can announce that you don't drink but if you do drink you will be asked either to "guam pei" (dry glass) at which you empty your glass or to "shui bien" (as you please), when the amount you drink is at your discretion. . . There is no drinking at any Chinese dinner until after rice, the last dish, is served.

The matter of face is important in China as elsewhere in the Orient. To us face means prestige or self-respect which is important to ourselves. However, if we are humiliated or lose prestige we may feel badly about it, but a Chinese will take the situation much more seriously than we would.

Their idea of responsibility for injured people is difficult for us to grasp. If a passerby gives aid to a victim of a motor accident he becomes responsible

for the person, and is expected to pay for his hospitalization.

Another tendency that the Chinese have which is hard for us to understand is that of laughing when they have done something wrong or even when someone is injured. After a motor accident, for instance, the Chinese driver, even if at fault, will probably laugh heartily. This naturally enrages Americans, but I have had it explained to me they laugh in order to cover up their own embarrassment.

The Chinese do not know the meaning of privacy. They have been brought up under unbelievably crowded conditions— result, one man's business is everybody's business. Every move a foreigner makes, if he is living among the Chinese, will be looked upon with curiosity, especially if they have seen few foreigners before.

Very Curious

If you enter a community, more than likely your vehicle will be immediately surrounded by a crowd of curious people, who will stay with you while you eat, and will not leave you alone, even in order to give you a chance to do those things which we do not do in public in America. Even your personal papers, clothing and equipment are considered fit subjects for observation, handling and comment. The educated people know better than to be so inconsiderate, but the bulk of the population do not realize that they are being objectionable. There is little that the foreigner can do except to endure such situations.

The Chinese are probably the most talkative and long-winded people in the world. They like to make and to listen to speeches, and are especially fond of long lectures as a method of instruction. Of course, this was not in accord with our ideas and we had a hard time convincing them that it was not good wartime pedagogy!

The Chinese are a proud and sensitive people. If while dealing with them you should get mad, swear a bit, and generally blow up you will make no progress whatsoever. They will probably pay no attention to you under such conditions. They will certainly not accommodate you. The best method of operation is to be as patient as they are, and to show them that they cannot outwait you. This will be exasperating but probably quicker in the long run.

And finally never use the word "Chinaman" or such expressions as "Chinks," or "Slant Eyes." We do not think of the word "Englishman" or "Frenchman" as being a term which would insult anybody but "Chinaman" is so considered. The reason for this goes back to the days of the treaty ports when this word was used in a derogatory sense. The proper term for you to use is "Chinese."

BRITAIN'S BIGGEST ANTI-AIRCRAFT BATTLESHIP

HMS *Vanguard*, Britain's newest and most powerful battleship, has been designed essentially for an anti-aircraft role. In addition to her main armament of eight 15-inch guns, the *Vanguard* has sixteen 5.25-inch guns mounted in twin turrets and capable of low-angle and high-angle fire. The battleship is thus equipped to accompany an aircraft carrier task force and provide a high degree of protection for the carriers in action. The effectiveness of *Vanguard's* anti-aircraft armament is enhanced by the installation of the latest radar and fire-control equipment, the guns being remote controlled, and laid, trained and aimed automatically from a master-sight.—*The Sphere, Great Britain.*

SOLDIER TO SOLDIER

The value of army training in sharpening the wits of soldiers returning to civilian life, particularly Infantry training, is the theme of this article reprinted from the (British) War Office Infantry Bulletin. It was published originally in the British Army magazine "The Soldier."—Editor.

Under the heading "The Army of Today is NOT All Right," a six-month soldier has been getting it off his chest in a Sunday newspaper.

He says he and his comrades have a feeling of futility, because if there is a "next war" it will be fought with atom bombs and rockets, and the army is back in the Bren gun and mortar epoch.

Whether or not one thinks the army's job should be to prepare for the "next war," the fact remains that the army's main task today is cleaning up after the late war. We're not proposing to use atom bombs in Germany for a good time to come. Nor are we using atom bombs in Palestine, but the troops out there are certainly equipped with Bren guns. And so long as the army's main job in the world is one of policing, Bren guns are unlikely to go out of fashion.

Variety of Roles

Next comes the complaint that "far too many recruits find themselves in branches like the Infantry, where they are taught nothing that will be of any use in civilian life." Why not include the technical arms too? A knowledge of the workings of the anti-aircraft predictor and an ability to recognize 50 different types of aircraft are a fat lot of good to anybody in Civvy Street. But then the army isn't primarily a training for Civvy Street. It's a training in a vast variety of roles for a vast number of likely and unlikely eventualities. In a sensible world you

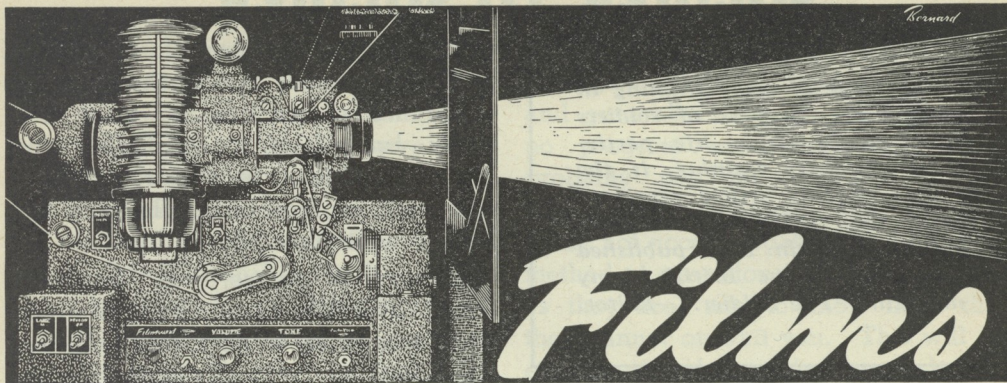
wouldn't need an army of such scope and dimensions. Given the kind of world we've got, we do need it—every branch of it, including the branches which are researching into new weapons, how to handle them and how to neutralize them.

Infantry, of course, was "finished" after World War One! And the "next war" was going to be fought with gas and bacteria. Yet, oddly enough, quite a number of Infantrymen were usefully employed in World War Two.

The third complaint is a queer one. It is that the young Infantry soldier, re-emerging into Civvy Street, will find that his brain is stunted, that he "will be unable to think or to concentrate as clearly as he had been able to do formerly." This is said to be because the exhausting physical programme exhausts the brain as well, and he doesn't have enough spare time to keep his mind in working order.

Trained to Use Brain

This reads perilously like the moan of somebody who can't take it. The argument that hard physical training numbs or "stunts" the brain won't stand up. Try to get a doctor—even a civilian doctor—to endorse that one. The plain truth is that many a man never begins to use his brain until he gets into the army. The army has made men who "couldn't do arithmetic" into experts on the slide rule. It has made men who were electrically ignorant into radar technicians. It has made men who "couldn't speak in public" into accomplished lecturers. The modern Infantryman is required to have an impressive knowledge of the arts and sciences of war. An Infantryman trained to think will live longer than an Infantryman who doesn't think. And an Infantryman with an agile brain will have a better chance when he returns to Civvy Street.



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

Airborne Forces

1. TF 1-892 Minimum Altitude Bombing Attacks (17 mins)
 - (a) Discusses the techniques for bombing attacks at minimum altitudes and the types of aircraft most suitable for these operations.
2. WF-30 Birth of the B-29 (27 mins)
 - (a) Shows the assembly line construction of the B-29 and its use in global air war.
3. TF 1-3350 Glider Technique (37 mins)
 - (a) Describes the correct techniques for glider operations.
 - (b) Distribution: Joint Air School (Army Component).

COTC Training

1. CA-34 The New COTC (19 mins)
 - (a) Designed to show the university student the advantages of being a member of the COTC and the type of training he will experience in the various Corps of the Army.
 - (b) Distribution: All Command Film Libraries, for use by Resident Staff Officers at universities within the respective Command.

Small Arms Training

1. C-851 Automatic Weapons—General Principles of Mechanism (20 mins)
 - (a) Explains, by building up a hypothetical weapon in diagram, the principles of operation common to all automatic weapons.
2. C-852 "Common Stoppages in Automatic Weapons" (10 mins)
 - (a) Describes a method to be followed in diagnosing those stoppages which are common to all automatic weapons.
 - (b) Distribution: All Corps Schools.

Signals

1. TF 1-474 Radio Antennas—Creation and Behavior of Radio Waves (11 mins)
 - (a) With the aid of animation and diagrams this film develops an understanding of the creation, behavior and use of radio waves.
 - (b) Distribution: All Command Film Libraries and Royal Canadian School of Signals.

