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A patrol of The Highland Company of the 5th Battalion, Royal Light Infantry (later The Black Watch (Royal Highland Regiment of Canada)), during the Fenian Raids, 1870. See "The Story and Traditions of The Black Watch", page 33.

PROGRAMMED INSTRUCTION – WHAT IS IT?

by

MAJOR J. L. MCCULLOCH, CD*

This article was specially written for the Journal *at the suggestion of the Director of Military Training.*—Editor.

The latest report from the Dean
In praise of the teaching machine
Is that Oedipus Rex
Could have learned about sex
By himself, and not bothered the Queen.

From the June 1961 "Current".

INTRODUCTION

Much publicity has been given, in recent years, to a new concept of teaching referred to, variously, as "Programmed Instruction", "Programmed Learning", or "Teaching Machines". While some of the publicity has been quite objective, much of it has tended to create the impression that this new concept is capable of curing all teaching ills and that machines are about to usurp the place of the instructor. It is intended, in this article, to describe and illustrate "programmed instruction". It is not intended to give advice and guidance for the creation of programmed material, nor is it intended to draw conclusions. For those who wish to pursue the matter further, a bibliography of basic readings is presented at the end of the article.

CHARACTERISTICS OF PROGRAMMED INSTRUCTION

"Programmed instruction" is a method of teaching which is either wholly or for the most part accomplished by having the student answer questions comprising a "programme", regardless of whether the programme is presented to the student through the medium of a book or a machine. The programme itself is a sequence of carefully worded questions so constructed as to guide the student by a series of very small steps through the material to be learned. It requires him, for each question, either to compose and write an answer or to select the correct response from a multiple choice so that he becomes conditioned to making the correct response.

Some of the advantages generally put forward in support of this method of instruction are:

1. It permits each student to progress according to his own ability, *i.e.*, it is self-pacing.

2. It makes learning faster, easier and more certain than is the case with the more traditional methods.

3. It reduces considerably the possibility of errors while learning, and provides for immediate reinforcement of learning.

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4. It allows the instructor to determine with a fair degree of accuracy where and how a student has gone astray, as well as where and how a whole class has failed to understand a concept, which in turn means that errors may be corrected and students put on the right track immediately, when explanation is most meaningful, and not days or weeks later when tests are administered.

5. It relieves the instructor of the presentation and drilling of straight facts and concepts and so permits him to re-position himself at the centre of instruction, working individually with students, *i.e.*, explaining, interpreting and helping them to apply the knowledge which they are acquiring.

Types of Programmes

Basically, there are two types of programmes: the *linear* and the *branching*. The two types look unlike and are based upon different theories.

The Linear Type

In this type of programme the subject matter is presented to the student in a carefully arranged sequence of small steps, or items, sometimes referred to as "frames" or "learning increments". Each frame presents a small bit of information together with a requirement for an active response in the form of a written answer by the student. When a student has recorded his answer he quickly discovers whether it is correct or not. If correct, he proceeds to the next frame; if incorrect, he finds out why and then determines the correct answer. This type of programme is based upon the assumption that it can be perfected to the point where students can progress through completely without errors, errors being regarded as weaknesses in the programme itself and not in the student's efforts. An illustration of this type of programme is presented on page 7.

The Branching Type

In this type of programme the student is given a unit of information and is required to select a response from a multiple choice of test questions. His selection is then used automatically to determine the subject matter that he sees next. If he passes the test question he is automatically given the next unit of information and the next test question. If he fails the test question the preceding unit of information is reviewed, the nature of his errors is explained to him, and he is retested. The test questions used in this type of programme are multiple choice questions and there is a separate set of correctional material for each wrong answer that is included in the multiple choice alternatives. In this type of programme the student is expected to make errors but to learn something from his wrong answers as well as from his correct ones. An illustration of this type of programme is presented on page 8.

There appears to be no conclusive research or user experience upon which to base an opinion as to the superiority of one type of programme over the other. From the student's point of view, the chief difference between the two is that the linear type requires a write-in answer whereas the branch-

ing type gives a multiple choice from which he selects his preference.

Presenting the Programme

Either type of programme can be presented to the student by means of a mechanical device, commonly referred to as a teaching machine, or by means of a programmed textbook.

Teaching Machines

Reduced to its essentials, a teaching machine is a mechanical contrivance which exposes a small unit of information, provides for an explicit response in the form either of a written answer or of selecting a response from a multiple choice, and quickly gives confirmation as to the correctness or otherwise of the response. A great many types of machines are available and the decision as to which to purchase requires the weighing of many factors, e.g.:

1. Is the machine capable of ensuring that the student responds to a question before seeing the answer?
2. Is the cost involved (anywhere from a few dollars to $5,000.00 and up) proportionate to the return to be realized?
3. Is there a separate strip of paper upon which the student writes his answer or does he write directly onto the question material, i.e., the programme itself, thus rendering it unusable for another student?
4. Are programmes available for the machine in question or is it intended to produce the programme locally?
5. Is the machine easy to operate, the writing space adequate, the writing surface convenient, the programmed material easy to read?

Programmed Textbooks

A programmed textbook is a book which is so designed that each unit of information, together with its question or questions, can be exposed without also simultaneously exposing the answer to the question. Such textbooks can be laid out in a variety of formats, e.g.:

1. Printing the unit of information together with its question and answer all on the same page and incorporating into the construction of the book a mask which the student is required to consciously manipulate in order to expose the answer. This format lends itself mainly to the linear type of programme.
2. Printing the unit of information, together with its question, on one page and printing the answer on another, i.e., "scrambling". This format lends itself to both the linear and branching types of programmes.

There appears to be some disagreement among educators, machine manufacturers and book publishers as to whether programmed instruction should be presented by means of teaching machine or programmed textbooks. The principle arguments in favour of each appear to be:

For Teaching Machines

1. Superior motivation.
2. Tighter control over students.

For Programmed Textbooks

1. Economy.
2. No requirement for repairs.
3. Portability.

There is general agreement that the teaching machine might have an appeal to less mature students and in

such instances might be a means of attracting and holding interest. There is considerable difference of opinion as to the importance of control; where the class attitude is poor and cheating is a possibility, then the machine would provide a control that a book could not. It has been suggested, however, that the desire to cheat disappears as the need to do so is eliminated. Thus the programmed textbook would be quite adequate provided that the programmed material which it contains can be perfected to the point where students become conditioned to making correct responses, as it has been claimed can be done. Research into the question of which is the superior means of presenting the material, while apparently limited, appears to indicate that there is not, in fact, much to choose between teaching machines and programmed textbooks. Results of experiments conducted by Collegiate School in New York and the University of California reported these findings:

Collegiate School

"It would seem that learning takes place with equal efficiency whether an automated teaching sequence is presented by programmed text or by mechanical write-in machine".

University of California

1. "No significant test differences were found between the student using the constructed response and the multiple choice machines and the programmed textbooks with responses".

2. "No significant differences were found between machine and programmed textbooks".

Acquisition of Programmes

Regardless of which type of programme or means of presentation is to be used, or whether they are to be used in combination, the fact remains that the central and most vital problem is the acquisition of good programmed material itself. There are two alternatives:

1. Purchase from textbook publishers.

2. Local production.

A number of textbook publishers and machine manufacturers have begun to produce and market programmed material, some of which has been judged as excellent, while some has been judged as a cheap attempt at exploitation. Any decision to purchase programmed material must be preceded by detailed consideration of the subject matter content, the soundness of the programming technique, and the degree to which the programmed material parallels the requirement of the training programme.

The basis and basic principles underlying programmed instruction have for a long time been recognized and applied by the Canadian Army as reflected in the detailed syllabus which is created for each subject comprising a course of individual military instruction. The basis of the programmed material, as for the detailed syllabus, would lie in the course prerequisites and the individual trades and specialties specifications and training standards. The principles of programming are the same, e.g., logical sequence, confirmation, reviews, testing, etc. The main differences between programmed material and the detailed syllabus are, therefore, the degree to which the

programming is carried out and the method of presentation.

In the detailed syllabus the subject material is broken into periods in sequence and the instructor is responsible for preparing the periods in detail and for presenting them to the students; in programmed instruction the subject matter is broken down into a sequence of very small items of information which are set forth in book or machine form, eliminating the need for the instructor to prepare and present the material in the normal way. Both are difficult to plan and prepare, but the "programmed" material, by its very nature, and considering the manner of presentation, would appear to be a much more exacting and time-consuming task than that of producing the detailed syllabus. A decision to produce programmed material must, therefore, take into account, at the very least, the stability of the subject matter to be programmed. It would be quite wasteful, it is suggested, to programme subject material which is subject to any appreciable degree of change since even a minor change could entail major, and therefore time-consuming, revisions to the programme itself.

Integration with other Methods

It is generally held that programmed instruction cannot take the paramount position from other teaching methods in the immediate future. This is not a question of which is the better method nor is it a matter of according recognition to this particular method. It is a matter of the difficulty in producing good programmes.

It is necessary, then, to consider the possibility of phasing in this method with the more conventional methods. The problem can be brought into focus in this question:

"Does the utilization of teaching machines and/or programmed material necessarily commit a school to a particular philosophy of teaching?"

The following reply by Dr. Skinner, of Harvard University, would indicate that it is possible to phase this method in with the more traditional methods so that they complement each other:

"All philosophies of education are directed toward efficient learning. No matter what the local programme, teaching machines or programmed instruction without machines can be used effectively for part of the task of education. They can be used in connection with any other type of instruction. There is no evidence that the student is made dependent on machines or programmes. Indeed, the available evidence indicates quite the contrary. Students who have developed confidence and competence through programmed instruction make excellent students in discussion and other types of instructional arrangements. The processes utilized by teaching machines are present whenever the student studies. He looks at a visual presentation or listens to an auditory one, he makes tentative responses, refers again to the material for additional help as needed, eventually emits a response and seeks some kind of confirmation. These are age-old processes; the machines simply permit the student to engage in them more efficiently".

Illustration of Linear Programme

Note: The following example of a linear programme is extracted from an article written by Dr. Robert E. Sil-

verman, Chairman of the Department of Psychology at New York University. It appeared in *Tomorrow's Teaching for Young Adults,* a report on teaching machines and programmed instruction published by the Canadian Association for Adult Education following a seminar conducted by the Association at Toronto on 15, 16 and 17 February 1962. As excerpts only have been used, paragraph numbers do not follow in chronological order.

"The characteristics of a programme are seen in this sample of seven items taken from three sections of a programme designed to teach young adults binary arithmetic. The learner reads the item with the answer covered, makes his response, and then uncovers the answer to check his response.

"1. A digit is a symbol we use to indicate quantity. We use the symbol 6 to mean the quantity six. We use the symbol 9 to mean the quantity ..... nine

"2. It is possible to use other symbols. We use the digit 5 to represent the *quantity five*. The Romans used the symbol V to represent the quantity ..... five

"3. We use a "decimal" system which is based upon ten different symbols or, as we call them, digits. A digit is a ..... we use to indicate a given quantity. symbol

"11. The words *number* and *digit* will be used almost interchangeably. To reemphasize the difference between digits (or numbers) and quantities: 0, 1, 2, and 3 are ..... digits or numbers
Zero, one, two and three are ..... they represent. quantities

"13. The mileage indicator on an automobile speedometer *counts* the number of miles we have travelled.

b	a

Column a counts in single miles, or one mile at a time.
Column b counts by tens or..... miles at a time. ten

"32. If 8 is the highest number, we have only ..... different digits, 0, 1, 2, 3, 4, 5, 6, 7, 8. nine
Remember: O is a digit too.

"33.

b	a
0	8

8 is the highest number we have. When column a reaches 8, if we keep on going, a 1 will appear in column b and column a will begin again at ..... 0"

Illustration of Branching Programme

Note: The following is extracted from a sample sequence published by the Educational Science Division, U.S. Industries Inc., to show how the tutoring technique is used to lead the student to discover complex ideas for himself. An extract from the page containing instructions to the student and pages 1, 2, 5, 9 and 13 only are reproduced here for the purpose of illus-

trating a branching programme set out in a "scrambled" programmed text format.

Extract from
Introductory Page

"It is not an ordinary book. The pages are numbered consecutively, but they are not read in the usual order. To proceed from one unit of information to the next, the reader must choose an answer to a multiple-choice question and turn to the page number corresponding to the answer of his choice. The succeeding page contains either another multiple-choice question requiring, again, selection of an answer or gives other directions regarding procedure."

The Arithmetic of Computers

Note: The following excerpt is chosen to show how the tutoring technique is used to lead the student to discover complex ideas for himself. In the present case, we want to develop the meaning of a zero exponent. The material that precedes this excerpt in "The Arithmetic of Computers" is reviewed briefly in the first few pages of this sample.

We have defined the symbol b^n as meaning "the product reached by using the number b as a factor n times." Thus, for example

$$2^3 = 2 \times 2 \times 2 = 8$$
$$3^2 = 3 \times 3 = 9$$
$$b^2 = b \times b$$

We have also learned that in an expression of the form b^n, the number b is called the base and the number n is called the exponent.

b^n — exponent — 2^3
b^n — base — 2^3

Finally, we have seen that a number expression such as 2^3 is called "the 3rd power of 2" or "2 raised to the 3rd power", and so on.

Now here is a question on this review material. Pick an answer and turn to the page number given after the answer you choose. The question is:

If the base of an expression is 2, and the exponent is 3, what is the expression equal to?

Answer	*Page*
8	5
9	9
I have no idea.	13

You did not follow the instructions. In a Tutor Text you do not turn directly from page 1 to page 2. As you finish each page of material you will find directions telling you which page you should read next. The reason for this is that different people will read this book in different ways. There is no place in this book that directs anyone to this page. You should turn back to page 1, therefore, and read the instructions again.

Your answer was: If the base of an expression is 2 and the exponent is 3, then the expression is equal to 8.

You are correct: $2^3 = 2 \times 2 \times 2 = 8$.

Very well. Now, to continue this quick review, you may have learned previously that if b^m and b^n are two powers of the same base, then there is a short-cut way of multiplying these two numbers, as shown below.

$$(b^m)\,(b^n) = b^{(m+n)}$$

Thus $(2^3)\,(2^5) = 2^{(3+5)} = 2^8$

and $(4^2)\,(4^3) = 4^{(2+3)} = 4^5$, etc.

Also, there is a similar rule for a division involving two powers of the same base.

$$b^m/b^n = b^{(m-n)}$$

Thus $5^6/5^4 = 5^{(6-4)} = 5^2$

and $7^3/7^2 = 7^{(3-2)} = 7^1$, etc.

These "formulas" were justified at some length in the full text of The Arithmetic of Computers. Here we must merely state them and hurry on to get to the interesting part. But let's be sure you have understood what has been said up to now. What is the result of dividing 8^6 by 8^2?

Answer	*Page*
$8^6/8^2 = 8^{(6/2)} = 8^3$	10
$8^6/8^2 = 8^{(6-2)} = 8^4$	14
I don't know	18

Your answer was: If the base of an expression is 2 and the exponent is 3, then the expression is equal to 9.

You have it backwards. You used the number 3 as the base and 2 as the exponent, and we want it the other way around.

In our brief discussion on page 1, we stated that in the expression b^n the number b was the base, the number to be used as a factor, and that the number n was the exponent, which tells the number of times the base is to be used as a factor. So if the base is 2 and the exponent is 3, and we substitute these values in the expression b^n, we have 2^3.

Now, 2^3 means the product reached by using the number 2 as a factor 3 times. And what is "2 used as a factor 3 times" equal to?

Return to page 1 and choose the correct answer.

Your answer was: I have no idea.

Well, let's see if we can explain a little more fully.

Some of the numbers in our number system are the products of factors. The number 15, for example, is the product of the numbers 5 and 3. That is, $5 \times 3 = 15$. The numbers 5 and 3 are called "factors" of 15.

Now there are some numbers that are the product of the same factor used a certain number of times. The number 16, for instance, is the product of the number 4 used as a factor twice. $4 \times 4 = 16$. A number that is the product of the same factor used a certain number of times can be written in the form b^n, where b is called the base and represents the number that is used as a factor and n is called the exponent and tells the number of times the base is to be

used as a factor. So the number 16 written in the form b^n would be 4^2, and 4^2 means "4 used as a factor twice", or

$$4^2 = 4 \times 4 = 16.$$

Now, the question on page 1 that the base, b, of the expression is 2 and the exponent, n, is 3. If we substitute these values in the expression b^n, we have

$$b^n = 2^3.$$

2^3, of course, means that 2 is to be used as a factor 3 times. So $2^3 = 2 \times 2 \times 2$ and what is $2 \times 2 \times 2$ equal to?

Return to page 1 and choose the correct answer.

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Heard During Courses

Definition of BOO (with apologies to the gunners)—"Backward Observation Officer".

* * *

Harassed TA Officer student preparing for final test, and seeking clarification from a fellow student on the crossing control organization for an opposed river crossing:

"What are the duties of the Station Master?"

* * *

Heard during a tutorial discussion on Medium Machine Guns:

"As the danger area of an MMG Section, when sights are set at 500 yards, is two feet above ground level, the safest method for assaulting infantry to cross this belt of fire, as they cannot crawl under it, is to jump over it!" — *The Infantry Journal (India).*

Canadian Army Photographs

Riflemen of the 2nd Battalion, Princess Patricia's Canadian Light Infantry, crouch as a "shell" explodes during Western Command's Exercise Lightning Strike.

Brigade Group Training

Exercise Lightning Strike

by

STAFF-SERGEANT A. G. MACDONALD*

The 1st Canadian Infantry Brigade Group got its final test of the summer at Camp Wainwright, Alberta, when Major-General J.M. Rockingham, CB, CBE, DSO, ED, General Officer Commanding Western Command, directed an exercise designed to test its ability to react quickly after a nuclear attack.

The "enemy" on the manoeuvres were the 1st Battalion of the Royal Welch Fusiliers who have been training with the Canadians for the summer.

The battle story had an unfriendly country called Eastland represented by the province of Saskatchewan attacking the cities of Calgary, Red Deer and Edmonton in Alberta. The brigade had to stop them.

As part of the exercise the brigade had to cross the rain-swollen Battle River and then attack across several thousand yards of semi-desert at the 636-square-mile camp. RCAF T-33 jets simulated attacking aircraft, and roads were actually cratered by the enemy forces to form road blocks. First step was to get light vehicles over the river on rafts.

(Continued on page 15)

**Staff-Sergeant Macdonald is Public Relations Assistant at Headquarters Western Command, Edmonton, Alberta.* — Editor.

Canadian Army Photographs

Above: Infantry are carried on a 50-ton Centurion tank of Lord Strathcona's Horse (Royal Canadians) which is fording the rain-swollen Battle River. *Right Top*: A jeep towing a trailer is guided onto a pontoon raft to cross the river. *Right Bottom*: "Enemy" troops, members of the 1st Battalion, Royal Welch Fusiliers, keep a watchful eye on the 1st Brigade Forces.

Canadian Army Photographs

Left Top: Airbone Patricias drop to take the Cattalo Bridge. *Left Bottom*: Major-General J.M. Rockingham, GOC Western Command who directed the exercise, discusses a phase of the battle with Brigadier G. A. Turcot, Brigade Commander, by wireless. At the left is his aide, Captain R. D. Partridge, and in ←— the centre is Captain T. D. Kenyon of the Royal Welch Fusiliers.

Army helicopters carried Major-General Rockingham to all parts of the "battlefield".

Centurion tanks forded the river — one was literally put out of action in unexpected deep water!

Major units came from the 1st and 2nd Battalions of the Princess Patricia's Canadian Light Infantry stationed at Victoria, British Columbia, and Edmonton, and the 2nd Battalion of the Queen's Own Rifles of Canada and Lord Strathcona's Horse (Royal Canadians), both from Calgary.

Transport was supplied by No. 4 Transport Company, Royal Canadian Army Service Corps, from Winnipeg. No. 3 Field Squadron, Royal Canadian Engineers, from Camp Chilliwack, B.C., handled the river crossing.

During the exercise, nuclear strikes were simulated by huge fireworks exploded by the Engineers.

The Infantry moved into battle on tanks and a para-drop by the airborne company of the 2 PPCLI near Cattalo Bridge brought the exercise to a close.

In his assessment of the results of the exercise, Maj.-Gen. Rockingham reported that he was quite pleased with the movement and the reaction time, and the Brigade Group's progress in mastering the mechanics of nuclear warfare.

Origin of the Beret

The black beret was officially adopted as the head-dress of the Tank Corps in place of the standard field service cap. This peaked cap had been found very unsuitable for use in tanks, as it did not fit close enough to the head and the wearer could not keep his eyes close to the vision slits or gun-sights unless he turned his cap back to front, while the khaki colour all too obviously showed oil stains. Its drawbacks came under discussion during the war, and particularly at a time when the 70th *Chasseurs Alpins* of the French Army were training with the Tank Corps in May, 1918. Elles (General Sir Hugh Elles) was favourably impressed by their beret-type head-dress, and still more after trying it on. That impression led him to recommend in 1922 that a broadly similar type of head-dress should be introduced for the Tank Corps. But the large beret worn by the *Chasseurs Alpins* was considered too "sloppy" and the Basque type too "skimpy" so the final pattern was a compromise, more akin to the Scottish "tam-o'-shanter" which was the description used in submitting the proposal to the King in November, 1923. It received Royal approval in March, 1924. — *Captain B.H. Liddell Hart in his book "The Tanks".*

FALLOUT ON THE BATTLEFIELD

by

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A question which has held the attention of many intelligent and thoughtful people, and about which innumerable words have been written, is whether or not nuclear weapons will be used in future wars. For a time it was hoped that the existence of nuclear weapons might rule out war, but that feeling has subsided: there have been wars since the advent of nuclear weapons.

Granted that there will be more wars, the issue turns then to if and how nuclear weapons might be employed. Quite a vocabulary of special terms has been developed just to discuss the subject: "deterrence" and "mutual deterrence", "preventive" war, "general" war and "limited" war, not to mention "brush-fire" wars, the possibility of "escalation" or war through "miscalculation", and so on and on.

It is not the intent of this paper to enter an arena where so many writers are already engaged. However, a conclusion of sorts may be quickly drawn.

Controversies over the use of new weapons have occurred before. Invariably, in the end they have resulted in the use of the weapon. Even so, the adoption of the new weapons has not been decisive in itself. What has been decisive has been the appreciation of how to use the weapon — the strategy and organization for its employment. Thus, whether or not nuclear weapons are ever actually used is not really material. An army must truly be prepared to live with them anyway. Just to have the weapons is not enough; to lack strategy, tactics, equipment or training for their use is to court their proper application by an enemy, with ensured defeat for oneself.

Military leaders seem to have difficulty in coming to grips with these matters. Historically, incumbent senior officers have frequently failed to adjust to changed conditions. Perhaps it is because the details of their profession which they learned in their youth have become too much a natural part of them. Later in life, when they learn to think in broader terms, this detail becomes a broad base of experience on which to draw. Naturally, they are reluctant to have the detail change. On the other hand, these senior officers are the only ones with the knowledge and experience to appreciate the larger significance of changed detail. Younger officers, who absorb the change in detail without trouble, lack the experience to expand this to major issues.

One of the most difficult new conditions to project onto an imaginary future battlefield, both as to detail and broad influence, is nuclear fallout. It does not seem likely that fallout will

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**The author is a student at the Canadian Army Staff College, Fort Frontenac, Kingston, Ont., and this is an essay written during his course.* — Editor.

be employed deliberately as a battlefield weapon in the tactical sense. However, neither does it seem possible that it can be entirely avoided. At least, whether deliberate or not, fallout must be prepared for as thoroughly as any other threat.

Residual radiation, called fallout, results from any nuclear detonation as an inherent part of the fission process. The height of the burst has little effect upon the total quantity of residual radioactivity produced,* but it has a governing influence on where fallout is deposited. The radioactive fission particles are very light, and will be dispersed over thousands of miles unless they have heavier particles to which to adhere and ride to earth. Such heavier vehicles must come from the ground, sucked up into the radioactive cloud. Generally speaking, militarily significant local concentrations of fallout will occur only if the fireball comes in contact with the ground. The more fireball that touches the ground, the more heavy particles will be taken up, and the more concentrated will be the fallout. Unfortunately, other effects which might be desired in the employment of nuclear weapons, such as high blast overpressures, are optimized by bursts at or near the surface. There will be a temptation, then, to use surface bursts regardless of fallout, or at least to use low airbursts where fuzing errors might bring the fireball into contact with the ground.

Once airborne, the distribution of fallout is entirely dependent on the vagaries of the winds up to the altitudes to which (depending mostly on weapon yield) the radioactive cloud rises. Needless to say, these wind patterns are constantly changing and are difficult enough to measure under the battlefield conditions, much less to predict. The most striking characteristic of fallout, therefore, is the unpredictability and non-uniformity of its deposition. A great deal of effort has been expended developing systems to cope with the prediction problem. None has proven satisfactory for field use.

Although fallout cannot be plotted accurately in advance and must be measured with a proper instrument to determine its actual intensity on the ground, it should not be assumed that fallout is invisible. Dangerous quantities of fallout will be characterized by readily evident falling dirt particles, cinders, ash, and dust. Even in rain, the drops will appear dirty and surfaces will be coated with a thin smear of mud.

The radioactivity from fallout is persistent. It may be dangerous for many months, especially when particles are breathed or eaten with contaminated food. The initial high intensities,

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**This neglects the activity which may be induced in the soil around ground zero through bombardment by neutrons from low-altitude bursts. The induced effect is localized and highly unpredictable as to intensity (though relatively minor) since it depends on the composition of the soil. The only safe rule to deal with it is to be suspicious of any area blackened by thermal radiation. Possible activity should be tested with an appropriate instrument. If active, the area should be avoided until it has decayed to safe levels, since this form of residual activity is more persistent than fallout and more difficult to clean up.*

though, fall of very quickly in the beginning. The "7 and 10" rule of thumb is an easy one to remember. Increasing the time since detonation sevenfold reduces the intensity tenfold. Thus, the radioactivity seven hours after burst is only one-tenth of what is was at the first hour. At seven times seven hours, about two days, it is a hundredth of its intensity at the first hour. At seven times two days, or two weeks, it is a thousandth, and so forth. Under actual conditions, it is not thought that first-hour intensity will ever exceed a few thousand roentgens per hour on the ground.

It is seen, then, that fireball contact with the ground is required to produce significant concentrations of fallout, but that such fallout will cover a large area of erratic shape and intensity in a difficult-to-predetermine orientation from ground zero. However, the intensity will decay to safe levels, in a battlefield sense, to permit at least movement or decontamination operations from a few hours to a couple of weeks at the most.

The battlefield commander looks for a weapon whose effects are predictable, the influence of which can be limited to his own area of operations, and which will give him assured results. None of these criteria can be satisfied by fallout. Leaving aside so-called "strategic" weapons, it seems likely that fallout will be encountered only as a result of accident, as a desperation measure, or on a very small scale from sub-kiloton weapons or demolitions. However it might be engendered, though, the biological and psychological effects of fallout will be the same.

Coupled with the fact that fallout is the most troublesome nuclear phenomenon to cope with as far as control is concerned is the problem that the effects of radiation present a difficult study from a medical point of view. Without going into technical detail, a few general features can be considered. Any amount of radiation is bad, but a great deal of radiation can be tolerated without causing military ineffectiveness. There is every reason to believe that most of the adverse results of even large enough doses to cause temporary incapacitation are eventually overcome by the body.

In the simplest terms, radiation causes injury by destroying cells in the vital organs. Massive doses of initial radiation can kill outright, but amounts of this scale are not received suddenly from fallout. Fallout doses are received over a period of time. Not only can measures be taken to reduce the dose being received, but also physical recovery takes place during this time. What counts is not the total dose received, but the so-called "effective biological dose".

The most commonly accepted method of determining this effective dose is to consider that only 10 per cent of the total dose is irreparable, and to allow a 30-day mean recovery period for the reparable portion.* This means that there may be sickness and debilitation from fallout, but with reasonable con-

The A+96 rule is a good approximation of an effective biological dose. This rule considers that the entire dose which would adversely affect an individual is received in the first 96 hours after* ***arrival* *of the fallout around the person or entry of the person into the fallout area.*

trol of exposure during the early high-intensity period there need not be much mortality.

It is true that a man with radiation sickness is not only temporarily lost to his commander, but also would require other men to care for him if they could be spared. Also, a man in such a weakened condition and with limited medical attention available, is prone to contract diseases which may be fatal. However, the psychological aspect may be more important than the biological. There is a fantastic amount of misinformation about the effects of fallout.

When world famous scientists cannot agree on radiation hazards, even as to what really constitutes a lethal dose, it is no wonder that the soldier is confused. It is absolutely essential that soldiers be taught that a man who has received even a substantial radiation dose is not necessarily a breathing corpse. To fail in this would not only increase mortality in those affected, but also, and much more important, it would lower morale and lead to panic in the entire command. It is purely and simply a commander's responsibility to prepare his men mentally for fallout as well as to train them in how to cope with it physically.

There is, of course, really only one way to protect personnel physically from fallout radiation. This is to place material between them and the radiation source. However, there are ways to avoid the necessity for having to protect from the radiation. Two standard methods of avoiding destruction from the immediate effects of nuclear weapons on the battlefield, concealment and dispersion, are not effective against fallout. The very great area coverage of fallout and the circumstances under which it is likely to be produced negate the value of these measures. Two other demands of nuclear warfare, though, are particularly applicable to the problem of avoiding fallout. These are mobility and flexibility.

Mobility is essential to get out of the way of approaching fallout, to get out of areas which have received fallout,* and to get across fallout areas rapidly when military considerations demand that they be crossed. Flexibility in every echelon and in every element of plan and execution is necessary to permit the mobility to be effective in these respects.

Certain requirements obviously exist for getting along with fallout on the battlefield. The first is a system of wind reports and fallout warnings. This is rather simple and basic, and already exists in fairly satisfactory form. Of course, the prediction model is quite unreliable and can be used only as a guide. This leads to the second requirement — a system of monitoring and instrumentation. Here the picture is less reassuring. The present instruments themselves leave a great deal to be desired, and the monitoring and plotting system has not worked well in field exercises. This last point is particularly a matter of training, however:

**A simple exercise in calculus can show that, if fairly good shelter (equivalent of foxholes or basements) is available, evacuation of fallout areas during the early stages is not advisable. A good rule would be to remain in place for six to 12 hours before attempting to move, even longer if evacuation is to be by foot.*

it is not a reflection on the system. And that leads to training as the final requirement. The training of the soldier mentally to accept fallout has already been mentioned. He must also be trained to appreciate protection from fallout. The mobile protection of tanks and armoured personnel carriers is highly important; it permits the safe evacuation of fallout areas or even the continuation of operations in fallout. But appreciation of static protection is equally important. Not everyone can have an armoured vehicle. The ancient military exercise of digging is of extreme value. The protection offered by field emplacements during early, high-intensity periods, followed later by acceptance of a certain amount of exposure during continued operations, will keep the army in the field despite fallout.

To summarize, fallout on the battlefield should be prepared for as simply as another hazard of the business. The proper tactics, equipment and training must be provided; but, most of all, the right attitude has to be there.

Bacterial sickness, although it took a grim toll of armies throughout history, did not eliminate war. Neither will fallout.

Tower of Babel Switchboard

Leopoldville — Switchboard operators everywhere: shed a tear for five men of the Royal Canadian Signals serving in the Congo—they run a switchboard in the Tower of Babel.

Item: "Please give me Mr. Lackshminarayanan." (He is the personal secretary to the senior civilian in the Congo United Nations force and comes from India).

Item: "Could I have Mr. F. Emmenegger." (He is from Switzerland and the force's senior postal adviser).

Other tongue-twisters the Canadian signalmen get daily include the force commander himself, Lt.-Gen. Kebbede Guebre of Ethiopia, Senor Quijano-Caballero of Columbia, Dr. N. Podaropoulous of Greece, D. Lehmkuhl of Norway and R. Chaouloff of Israel.

Rock of Gibraltar name in this global list of telephone subscribers is the head of the English translation unit, Mr. P.C. Stallybrass of the United Kingdom.

Running the UN switchboard in the seven-storey headquarters building are a team of Regular Army soldiers headed by Cpl. Ronald Levesque. With him on 'round-the-clock shifts are Signalmen Jean-Pierre Beaudry, Maurice Hamonic, André Menard and Ivan Robitaille. Their complete bilingualism means the smooth operation of an exchange that would become chaos otherwise.

The production of the UN telephone directory by No. 57 Canadian Signals Unit is a huge chore according to signals officers here who must, at all costs, make sure the right names are matched up with the right countries. Untold stories are implied in two listings of individuals who are shown as "stateless".—*Directorate of Public Relations, Army Headquarters, Ottawa.*

Canadians on Famous Marches

From a report issued by the Directorate of Public Relations, Army Headquarters, Ottawa

Nijmegen, Holland: Fast-stepping Riflemen and well-trained Army Cadets from Canada's NATO brigade in Germany drew thunderous applause from more than half a million spectators as they completed the last lap of the world-famous Nijmegen marches held here last July.

The population of this picturesque Dutch community swelled to nearly one million as Netherlanders and visitors from a dozen other countries flocked to witness the international four-day marches instituted more than 50 years ago under the patronage of the Royal Netherlands League for Physical Culture.

Conceived in 1909 when 45 Dutch citizens took part in an organized walk to sponsor physical fitness through walking, the marches have become an annual international event involving more than 12,000 military and civilian participants from more than 15 countries.

Marching for Canada was a 30-man contingent from the 1st Battalion, The Queen's Own Rifles of Canada, led by Lieutenant John Sharpe, and a dozen cadets from the Canadian brigade's No. 2596 Royal Canadian Army Cadet Corps (Overseas), led by Lieutenant L.L. Trudel of the 1st Battalion, The Canadian Guards.

The Queen's Own Battalion Bugles under the direction of Bugle Major R. Bruce provided an impressive touch of colour in their full dress uniforms of traditional dark green at a Military Tattoo during opening ceremonies.

The non-competitive marches require participants to finish a laid down course within a set period of time. Marchers who finish the course, this year ranging in age from 14 to 84 years, are awarded a special commemorative medal on a green and white ribbon.

For four days, servicemen and civilians hiked an average of 25 miles daily. The Canadian Riflemen marched in "fighting order" and carried their rifles, while other military and civilian marchers not so encumbered were required to march more than 30 miles every day. Younger entrants and older civilian marchers were assigned a shorter distance.

Varying routes were detailed daily through the network of country roads and lanes surrounding Nijmegen. A system of control points, rest points and first aid stations along each route were manned by Dutch traffic police and Red Cross workers. In addition, each group of marchers brought with them a first aid orderly who cycled beside them.

Cheered on their way through both burning sun and soaking drizzle by Dutch country-folk, the marchers reached the test on the final day as they marched through the city centre which was packed with thousands of cheering spectators who lined the streets for miles. The finishing point

Canadian Army Photographs

Above: Lieutenant John Sharpe leads men from The Queen's Own Rifles of Canada past the reviewing stand during the Nijmegen Marches. *Below*: Riflemen with a young mascot carrying a flag are followed by Royal Canadian Army Cadets led by Lieutenant L.L. Trudel of the 1st Battalion, The Canadian Guards.

was marked with the flags of the nations taking part.

A carnival atmosphere was achieved by staggering starting times. After 11 hours of marching, national groups passed the reviewing stands where military and civilian dignitaries acknowledged the salutes of their respective contingents and representatives. Bands from many countries were marshalled at the city's outskirts to meet each group of marchers and play them over the finishing line.

Colonel W. Clement Dick, representing Brigadier Cameron B. Ware, then 4th Canadian Infantry Brigade Group Commander, took the salute as the Canadian Infantrymen and the cadets marched past the stands.

In procession along with Canadians and other servicemen in field uniforms and equipment came blue-helmeted London "bobbies", kilted Scotsmen, sari-clad Indonesians, Spanish police in their white-plumed helmets, distinctively costumed Israelis, postmen, firemen and a host of others.

Bad Driving Due to Dull Wit

It is self-evident that many traffic accidents are the result of stupidity. Newspaper reports of tragedies often reveal evidence of utter folly — teenage drivers who switch cars while driving down hill, side by side; men so befuddled by drink that they speed for miles down the wrong side of a divided highway; young lives lost as the result of playing "chicken".

The best drivers are usually clever people, according to a study by Professor Hans Eysench, head of the Psychological Department of London University. Reckless driving is not only stupid in itself — it is often the sign of a person of below-average intelligence.

Tests proved, he said, that people with an intelligence quotient of 80 (the average is between 100 and 110) had many more accidents than people with a higher IQ. He felt that considerable caution should be shown before granting licences to the dullest 20 per cent of the population.

Dull-witted people prefer to conceal their deficiency, as a rule. But when driving, they often advertise it, blatantly.

Perhaps the standard of driving on the roads today would rise if society as a whole treated bad driving as a manifestation of sub-normal intelligence. Too many people glorify reckless, aggressive behaviour behind the wheel. To some minds, to drive dangerously and selfishly is to show courage, and strength of character.

This sort of "courage" never impresses those who have to deal with the aftermath of a traffic crash — police, ambulance attendants, distraught relatives. Whether or not brains and good driving always go together, says the Ontario Safety League, there is no doubt that recklessness is always a mark of stupidity. — *From The Petawawa [Ont.] Post.*

A CHALLENGE FOR THE MILITIA

by

BRIGADIER W. D. WHITAKER, DSO*

In this day of weapons of massive retaliation, of nuclear-tipped missiles that can be launched across continents, of bombs that can devastate whole regions in an instant, a Militia regiment of foot soldiers may well seem obsolete. But is it obsolete? Let's think this out a bit.

None of us who fought across Europe in 1944 and came back through the rubble and smoky ruins of those cities could want all that again. None of us who read of Hiroshima and have seen the pictures of the dreadful cloud arising from Pacific test sites could want such devastation in our land or any other.

Standing against that awesome possibility is such joint enterprise as the United Nations and the North Atlantic Treaty Organization. Consider NATO first. It is a joint undertaking of Western European and North American countries to come to the assistance of each other should any be attacked by an aggressor. Canadian commitments to that mutual defence still embrace well-trained and well-equipped Canadian Militia units...

Now consider the United Nations, an organization of nations from around the globe which in nearly two decades since World War II has not solved all the problems that make war, nor stopped all wars, nor even eliminated the most dreadful threats of nuclear war. But it is a world organization, none the less, which has stopped some wars, and isolated other wars, and squelched brush-fire wars short of general conflagration.

For the first time in history an international army... has marched out under the blue-and-white United Nations flag to stop war, not to wage it. These soldiers restored peace in Korea; they brought peace to Indo-China, in Kashmir; twice they stopped war in the Middle East. Today they maintain peace in the turbulent Congo.

In these UN operations, Canadian infantrymen have died and have been wounded. It would be wrong indeed to think that these casualties were any less vital to our peace and security than those we suffered on the Rhine or a century ago in the defence of the Welland canal...

What must we be prepared for today? Certainly two possibilities challenge us. The first is the need for highly-trained Militia regiments in Canada now. If war — the awesome nuclear war — should come, then it will only be with highly-trained soldiers that

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**Reproduced here are a few excerpts from an address by Brigadier Whitaker, commander of the Royal Hamilton Light Infantry (Wentworth Regiment) during the Second World War. Awarded the DSO at Dieppe and a Bar to this decoration during the Campaign in North-West Europe, he was appointed to command the Third Infantry Brigade in 1946, an appointment which he relinquished in 1951. Brigadier Whitaker made these remarks at the 100th Anniversary gathering of the RHLI (Militia) at Hamilton, Ont., on 29 June last.* — Editor.

we will save literally millions of our fellow Canadians. Civil defence training may not be glamourous. Some Militiamen have quit their units simply because they cannot think of soldiering in terms of pail and shovel sanitation brigades, or restoring water supplies, or Home Guard rescue work. Certainly there is nothing very heroic in clearing rubble, or digging a latrine. Nothing heroic unless and until we know that thousands ... are lying beneath razed buildings or dying of the diseases that follow fast in the wake of nuclear attack.

Here is a possibility for which Militiamen must train. The other possibility is that we can fight towards a world at peace.

It will be achieved certainly through world effort only — united action such as we have already seen under the blue-and-white United Nations flag. And it will only be achieved if the United Nations has under that flag trained and armed men who can enforce its unified decision — men like those who are training in this armoury today.

In preparation for this international police force, soldiering will become more and more exacting.

As Canadian soldiers so recently learned in the Belgian Congo, such a United Nations' police force action involves all the risks of battle plus all the skills of a police action: patience in the face of provocation; composure in the midst of riotous turmoil; fortitude under attack; enforcement of order without bloodshed. These were the order of the day in the Congo, and Canadian soldiers acquitted themselves with honour. These will be the demands made again and again during the coming years on those who enforce the peace under the United Nations flag.

To equip and train officers and men who can conduct such actions with diplomatic tact, soldierly skill and, above all, self-discipline — this is the real challenge for the Militia regiment today ...

220 Enrolled as Officer Cadets in Army

Two hundred and twenty high school graduates from across Canada have been enrolled as officer cadets in the Canadian Army for training under the Regular Officer's Training Plan at military colleges and various universities.

Of the group, 23 will attend Royal Military College, Kingston, Ont., 46 will go to Royal Roads, Victoria, B.C., and 66 to Collège Militaire St-Jean, Que. The remaining 85 go to approved universities of their choice.

Selected because of their high scholastic standing, and suitability as potential officers of the Regular Army, the officer cadets receive pay and allowances for the rank during the academic year. Tuition and book fees are paid by the Army.

Academic studies are supplemented by military training during the summer, both at camps in Canada and overseas. On graduation they receive commissions in the Regular Army. — *A report issued by Army Headquarters, Ottawa.*

Public Information and Nuclear War

by

LIEUT.-COLONEL J.D. DONOGHUE, CD*

Providing information to the public in peace and war has been recognized for centuries as a requirement by civil and military authorities. With the emergence of democracy the importance of an informed public was given new emphasis. If the people are to govern they must search out the true facts upon which to base judgments. And, when the facts are clouded and obscured and multiple choices are available to them, the public must be able to hear and read the varied prevailing opinions in order to decide and make known to their elected representatives the course they wish adopted.

The practice of informing the public has been confined neither to democracies nor modern times. Roman generals campaigning on the frontiers used courier-borne reports to ensure that details of their victories were proclaimed in Rome's market places. More recently, Hitler had his Goebbels. In sharp contrast, Winston Churchill dramatically and factually informed the public of the perils they faced and the sacrifices he was demanding. Also, during the Second World War, with government approval, the Allied Armed Forces organized extensive facilities to assist war correspondents in providing the public with information.

In peacetime, natural disasters repeatedly have illustrated the importance of informing the public. Many readers of the *Canadian Army Journal* will be personally familiar with the constant and heavy demand for comprehensive and accurate information to the public during natural disasters. Hurricane Hazel, the Manitoba Floods of 1950 and operations in 1948 when the Fraser River went on a rampage, illustrated this characteristic need for information. And the effectiveness with which it is provided can immeasurably assist those responsible for operations during natural disasters. In one such disaster a complete and frank situation report effectively delivered to the public by a commander was judged to have had an immediate calming influence, although the serious dangers still confronting the community were clearly stated.

The importance to defence of an informed public is even greater for nuclear than conventional war. And the need to inform the public on the subject will remain constant until such time as the climate for true peace has been developed universally and the control and inspection of arms has been accepted and effectively established.

**Formerly Deputy Director of Public Relations at Army Headquarters, the author has been seconded to the Emergency Measures Organization where he is Public Information Officer.*—Editor.

Unfortunately, those conditions do not exist today.

Technological progress has assisted efforts to ensure an informed public. It now is possible to provide an overwhelming mass of data, facts and opinions. Recently world-wide television and other revolutionary aspects in the field of communications were forecast by the highly successful project which placed the satellite Telestar in orbit.

But in the final analysis volume alone will not ensure that the public is informed. The effectiveness with which the public in the past and the future has and will be informed will vary primarily according to the integrity, honesty and skills in communication of the authorities providing the information and the writers and broadcasters who address themselves to the public.

Even with further technical improvements it will remain, as it is today, a most difficult task to ensure an informed public. Some facts will remain obscure, some truths unknown and some falsehoods circulated.

In addition to the difficulties inherent in ensuring an informed public and the complexities of the subject of nuclear warfare, there is no human experience in either short- or long-term effects of a multi-megaton thermonuclear weapons attack. Despite these difficulties, an impressive amount of information based on the best scientific knowledge available has been prepared for the public by the Federal Government. The Emergency Measures Organization coordinates the programme by which this information is provided. EMO issues information on subjects for which it is responsible and coordinates the emergency measures public information activities of all federal departments. In addition, it provides public information assistance to the provinces and through them the municipalities.

In preparing the EMO public information plan the first step was to decide what information the public needed and the second step was to select the means by which that information would be provided.

It is not possible in this article to provide the details of all the emergency measures information now available to the public from the federal government. Therefore, in what is a necessary over-simplification, the information being provided can be summarized as follows:

> Today, although nuclear war may not be probable, it is a possibility. Therefore, there is a need to know the effects of nuclear weapons and the plans of governments and those actions which can be taken by individuals, groups and families to provide increased protection.

A major means of providing information has been the publication of pamphlets and leaflets. One series of pamphlets is subtitled "Blueprint for Survival", each being numbered. A brief review of these will serve to expand the summary given above. The series includes:

YOUR BASEMENT FALLOUT SHELTER (Blueprint for Survival No. 1) describes the why, where and how, of the basement fallout shelter for existing homes.

BASEMENT FALLOUT SHELTER (No. 2) describes incorporation of a

fallout shelter when a home is being constructed.

FALLOUT ON THE FARM (No. 3) describes precautions for rural residents, their livestock and food.

11 STEPS TO SURVIVAL (No. 4) describes the steps individuals and families can take to improve their chances of survival.

SURVIVAL IN LIKELY TARGET AREAS (No. 5) is designed to assist Canadians who live in major cities which might be target areas in nuclear war.

BLAST SHELTERS (No. 6) describes the basic specifications of blast shelters and action recommended for occupants of such shelters.

Supplementing the Blueprint for Survival series are these publications:

SIMPLER SHELTERS — an accordion fold leaflet containing five shelter designs, some of which are less expensive than those contained in Blueprint for Survival No. 1.

YOUR EMERGENCY PACK — describes planning requirements for food, water, clothing and equipment.

WELFARE TIPS FOR SURVIVAL — describes the five emergency welfare services of clothing, feeding, lodging, registration and inquiry, and personal services.

SURVIVAL IN NUCLEAR WAR — an accordion fold leaflet summarizing the highlights of 11 Steps to Survival.

WALL CARDS — describe the steps to be taken in an emergency and explain the meaning of the warning signals.

The information contained in these publications is as factual as present knowledge permits. Prior to publication, drafts of each are reviewed by scientists and technical experts, qualified in the particular subject and every effort is made to present the information in language that will be understood by the public.

All these publications are available free and a letter addressed to EMO, Box 10,000, in the capital city of the writer's province will bring a copy.

Newspapers, radio and television stations also have been a major means by which emergency measures information has been made available. Many newspapers reprinted in full such pamphlets as "11 Steps to Survival" and broadcasting stations have presented many major productions on the subject.

As stated earlier, federal departments having major emergency measures responsibilities are responsible for preparing and issuing public information on the subject. For example, the Army supplies the information on its survival role. Also, the Department of Agriculture, in consultation with the Emergency Measures Organization, prepared, published and distributed the pamphlet "Fallout on the Farm". The principle has been adopted that each department is responsible for all public information aspects arising from its emergency measures responsibilities. The Emergency Measures Organization coordinates departmental public information in order to prevent duplication and ensure conformity with policy and fact.

Besides the current public information plan, the Emergency Measures Organization also is responsible for developing and coordinating an operations plan for public information that

would be brought into use in the event of a real emergency. In an attack on Canada, conventional or nuclear, dissemination of information to the public would be seriously disrupted. But at the same time it would be essential to quickly provide the public with information, instructions and advice, thereby reducing confusion and giving the people the incentive to survive and assist the country in recovering from the attack.

Here, too, it would be important to decide what information the public needed and the means by which it would be provided. With respect to the former, it is essential to distinguish between the two general types of information which may be defined as:

1. *Public Information* is that information concerning offensive and defensive actions by our nation, allies and enemy, disseminated by all possible means with the aim of maintaining morale.

2. *Warnings, Instructions and Advice* is information issued to the public requiring or recommending action by them in an emergency.

In planning, the principle has been accepted that every available operating means of passing information to the public would be used.

The quickest possible warning followed by instructions and advice to the public would be essential in the event of a threat of imminent attack on North America. Broadcasting stations provide the fastest means of disseminating information and for this reason an Emergency Broadcasting Plan developed, organized and operated by the Canadian Broadcasting Corporation has been prepared.

The plan resulted in the formation of the Emergency Broadcasting Network in which all radio and television stations in Canada, with the exception of some northern stations, will participate. The network itself is connected by teletype communications to the Army's Attack Warning System. In fact, the sounding of the ALERT warning on the system's sirens, means the government expects an imminent attack on North America and that the public should listen to the radio for instructions.

The Emergency Radio Network would be available for public information, probably in newscast format, as well as broadcasts by the Prime Minister and other senior representatives of government.

The printed as well as the broadcast word is included in the operations plan for public information. Provision is being made for the presence of Canadian Press and United Press International representatives, as well as CBC, in the federal complex for emergency government and the Regional Emergency Headquarters. These correspondents would obtain information by means of situation reports, briefings and interviews and also would have available to them the copies of the warnings, instructions and advice being broadcast to the public. Their dispatches, newscasts and broadcasts by senior members of government would be the main source of public information.

Preparation of warnings, instructions and advice would be the responsibility of civilian and military officers assigned to duties in the various emergency

headquarters. For example, warnings to residents of areas threatened or affected by radioactive fallout would be prepared by the Army, advice to farmers concerning cattle and crops by officers of the Department of Agriculture.

As stated above, the means of dissemination for public information and warnings, instructions and advice, would be by both broadcasts and the printed word.

In the past, the provision of information to the Canadian people in wartime has been considered important by civil and military authorities alike. But the very nature of a nuclear war involving an attack on North America has made public information one of the factors which well might decide the success or failure of the defence of this continent. Information will reduce panic and fear and, if acted upon, warnings, instructions and advice developed by a trained staff viewing the overall situation would save literally thousands upon thousands of lives and thereby immeasurably assist the civil defence activities of municipalities and the reentry and rescue operations of the Army. This gives both urgency and importance to the public information operations plan. The present plan is not perfect. No plan ever is. But considerable progress has been made towards ensuring that in the event of a nuclear attack authoritative information as well as warnings, instructions and advice would reach the Canadian people.

Arsenic and Old Boney

London, England: A group of scientists say that hair supposedly taken after death from the head of Napoleon Bonaparte was submitted to a nuclear reactor test and the results showed the French emperor "was exposed to arsenic intermittently".

Napoleon died on Saint Helena Island May 5, 1821. Some authorities have suggested he died of acute arsenic poisoning. Napoleon himself wrote the month before he died: "I am dying before my time, murdered by the English oligarchy and its hired assassin [Governor Hudson Lowe]."

In a report to the science magazine *Nature,* the researchers — Dr. Hamilton Smith, Dr. Sten Forshufvud and Dr. Anders Wassen — said that scientists attached to the universities of Glasgow and Goteborg came into possession of what they considered "an authentic souvenir" of Napoleon's hair.

The hair was brought to the researchers in Glasgow by a Swiss textile manufacturer, Clifford Frey.

"He [Frey] brought with him a family heirloom in the form of a small bundle of Napoleon's hair," the scientific group reported. "It was attached to a piece of paper with intricately knotted twine."

The hair was contained in an envelope bearing the names of the sender and the addressee. The sender was described as Napoleon's onetime valet on Saint Helena.—*From an Associated Press news dispatch.*

CIVIL DEFENCE: THE NEXT FIVE YEARS

The following statement on Civil Defence in the United Kingdom was made by the Right Honourable Harold Watkinson, Minister of Defence, and appeared in a paper presented to Parliament during February, 1962.—Editor.

Over the next five to ten years it is clear that Civil Defence will play an important part in maintaining the general preparedness of the whole nation for any emergency. In the report on defence for 1961 it was stated that the Government had reviewed home defence plans and concluded that some additional expenditure was needed to secure a balanced programme over the next few years. These plans have to cover a wide field, and are an integral part of our defence preparations. Departments are actively engaged in implementing a revised programme. Next year will be its second year, and the estimated home defence expenditure of civil departments will be £19.37 million compared with £18.61 million for the current year.

Among the preparations which will be advanced, the scheme of emergency control will be further developed, and emergency radio communications will be provided. For the warning and monitoring organization, a new system for rapidly passing messages over the telephone is being installed, arrangements are being made for the B.B.C. to supplement other warning channels, and a start is being made with the provision of special equipment and radio communications. Stocks of emergency equipment for maintaining drinking water supplies are being increased. Stockpiling of radiac instruments for essential services will continue, and further training equipment will be provided for the Civil Defence Corps and the Auxiliary Fire Service.

There have been a number of joint civil/military exercises in order to test plans for military aid to the civil power, and joint planning for this purpose is continuing.

An examination of the functions and organization of the Civil Defence Corps and the Auxiliary Fire Service has been carried out, and the Government now propose to discuss with the local authority Associations certain changes designed to make the Corps and the Auxiliary Fire Service better able to discharge their role. The strength of these Services on 31st December last was over 395,000 compared with just under 380,000 on the corresponding date in 1960.

The Government have reviewed dispersal policy in the light of developments in the strategic situation over recent years, and have had consultations with the local authority Associations. They have concluded that although the circumstances that might precede an attack upon us cannot be foreseen, it is necessary to have available a scheme which could be implemented, if it were thought right to do so, for dispersing mothers and children and other people in priority classes from major centres of population. The detailed application of the scheme will be worked out with the help of local authorities.

The late Lt-Col. George Stephen Cantlie, DSO, VD, CD and 1st, 2nd and 3rd Clasps, Honorary Colonel of The Black Watch, who was active with the Regiment for 70 years. *(From a colour print of a painting produced by Graetz Bros. Ltd., Montreal).*

THE STORY AND TRADITIONS OF THE BLACK WATCH

by

LIEUT-COLONEL P.P. HUTCHISON, ED*

On January 31st this year The Black Watch of Canada became one hundred years old. But to understand its story and its traditions one must go even further back, for almost two and a half centuries, to the origin of its parent, The Black Watch of Scotland, the senior Highland regiment of the British Army.

After the Rebellion of 1715 in Scotland, the Highlands were in a constant state of unrest. The wearing of Highland dress and the carrying of arms were forbidden and the clans of the North waged constant warfare against the English troops sent there to maintain order.

In 1725 the British commander, General Wade, accepted the offer of certain Scottish leaders to raise a special corps to police the Highlands, provided it was armed and allowed to wear the kilt. Six independent companies were formed which, in 1739, became The Highland Regiment and later the 42nd Royal Highland Regiment.

The Black Watch Tartan

Those who raised these original companies were chieftains of different clans — Campbell of Argyll, Munro, Grant and others. To avoid clan jealousies a new tartan was chosen in a new set, it is said, of the predominant colours of the tartans of these chiefs. This officially is "The Government Tartan", but around the world today it is known as "The Black Watch Tartan", a familiar sight in the streets of most great cities, even if not always worn by a soldier.

"Royal Highland Regiment" or "Royal Highlanders" was the Regiment's official name for many generations, but from its earliest days it was familiarly known as "The Black Watch" because of its dark or black tartan and its duty to watch or guard the Highlands. It was only in modern times that the Regiment's official title was changed to "The Black Watch (Royal Highland Regiment)". It is because it is a Royal regiment that its pipers wear a different tartan, the Royal Family's "Royal Stewart".

In the wars against the French this Scottish regiment in 1743 was sent out to Flanders. As a result it missed the Rebellion of 1745 in the Highlands, which perhaps was just as well, with so many potential Jacobites in its ranks. That year it fought its first great battle at Fontenoy. Then in 1756

**Lieut-Colonel Hutchison, Chairman of the Museum Committee of The Black Watch (Royal Highland Regiment) of Canada, has written a history of this famous regiment. The brief account published here, however, is taken from an address which he delivered last May to the Rotary Club of Montreal.* — Editor.

it came to America to fight against the French and Indians on this continent. Two years later, not far south of Montreal, The Black Watch stormed the abatis defending Fort Ticonderoga. That day it suffered what is said to be its heaviest casualties in any battle during more than 200 years of almost constant action around the world.

Attack Planned on Montreal

Even closer to Montreal comes The Black Watch story. At the Horse Guards in London it was decided to attack this city in 1760. The plan was for one British Army to approach from Quebec City, another from the south and a third from the west. This in the days, mark you, before cable or telegraph or wireless were even dreamed of! Naturally, these forces did not reach their objective simultaneously as planned. Two of them reached Montreal when it was all over. The one from the west under Sir Jeffery Amherst arrived first and settled for the night in a field which now is the Côte des Neiges reservoir.

It was Amherst's intention to attack the city the next morning after moving his force down the gully between Mount Royal and the West Mount (Mt. Trafalgar). But that night the French plenipotentiaries came out to the British headquarters and signed the capitulation of the city at a farmhouse near the pumping station of the present reservoir. The next morning Amherst led his army down Côte des Neiges

A photograph of the officers of the Royal Light Infantry taken during the Fenian Raids of 1870.

The Armoury on Bleury Street, Montreal, built during 1905.

into the little city on the shore of the St. Lawrence; with it were two battalions of The Royal Highland Regiment. This was the first occasion on which the pipes and drums of The Black Watch reverberated in the streets of Montreal.

Amherst was one of the first British generals to be given a peerage for a great victory and to take as his title its name. He became "Lord Amherst of Montreal", probably the only occasion on which a title commemorated a victory in which there had been no casualties on either side.

Service in North America

In 1758 the second battalion of the Regiment became the 73rd Royal Highlanders. For 40 years either the 42nd or the 73rd, or both, served in North America, which is the reason why The Black Watch is, perhaps, better known to our American friends than any other British regiment.

But by 1795 The Black Watch was again fighting in Europe. When the Regiment returned to England that year little red vulture feathers to wear in their bonnets were issued as a battle honour to all ranks. In 1822 an Army Order decreed that the Red Hackle was "to be used exclusively" by The Royal Highland Regiment. Since then the little red feathers are universally known as the distinctive mark of The Black Watch soldier. For the following 70 years those who wore the Dark Tartan and the Red Hackle fought in India, Egypt, the Peninsula, Australia, at Waterloo, in the Crimea and the Indian Mutiny.

But what, some will ask, has all this to do with a regiment of Highlanders

raised in Montreal a hundred years ago? People of other countries find it difficult to understand what constitutes a regiment under the British system. In our Army a regiment is not a set number of officers and men grouped in a single unit. With us a regiment is an historic name, an individual tradition, with common customs and history and a family feeling. These have been built up through the ages and are shared in and added to by a varying number of soldiers who wear the same uniform and are scattered around the world. It is a practical system, capable of great expansion in wartime and contraction in times of peace. Thus in the Great War of 1914-1918 there were 14 separate Imperial Royal Highland battalions, as well as other Black Watch units from Canada, Australia and South Africa.

Canadian Unit Born in 1862

The Canadian "branch" of The Black Watch Family is one of the oldest of all Canadian military organizations, the senior Highland regiment of our country and of the Commonwealth outside the United Kingdom. When it was formed in 1862, most of the British Regulars on duty in Canada had been withdrawn to serve in the Crimean War and the Indian Mutiny. The Civil War was being fought in the United States. The federal authority there had raised large armies and here it was feared the Americans might seize the opportunity to attack Canada as they had in 1775 and in 1812. As

The Regiment on parade in Quebec City on 24 July 1908 for the Quebec Tercentenary Review.

a result, a number of new Canadian units were then formed to defend Canada. One of these was the Canadian regiment which now is celebrating its centenary. Like its parent in Scotland, it, too, was raised by six local Scottish chieftains, each of whom undertook to recruit a company. Their names alone ring down the years of the Scots' influence in the development of Montreal — Routh, Allan, MacKenzie, Mathewson, Hopkins and Campbell.

The new unit was first called the Royal Light Infantry, but it, too, had its nickname — "The Royals". To the six original companies was added the following year a Highland company, wearing The Black Watch tartan and the red hackle in its feather bonnets. Gradually all the companies were outfitted in Highland uniform; by 1883 all were wearing the kilt.

Affiliation in 1905

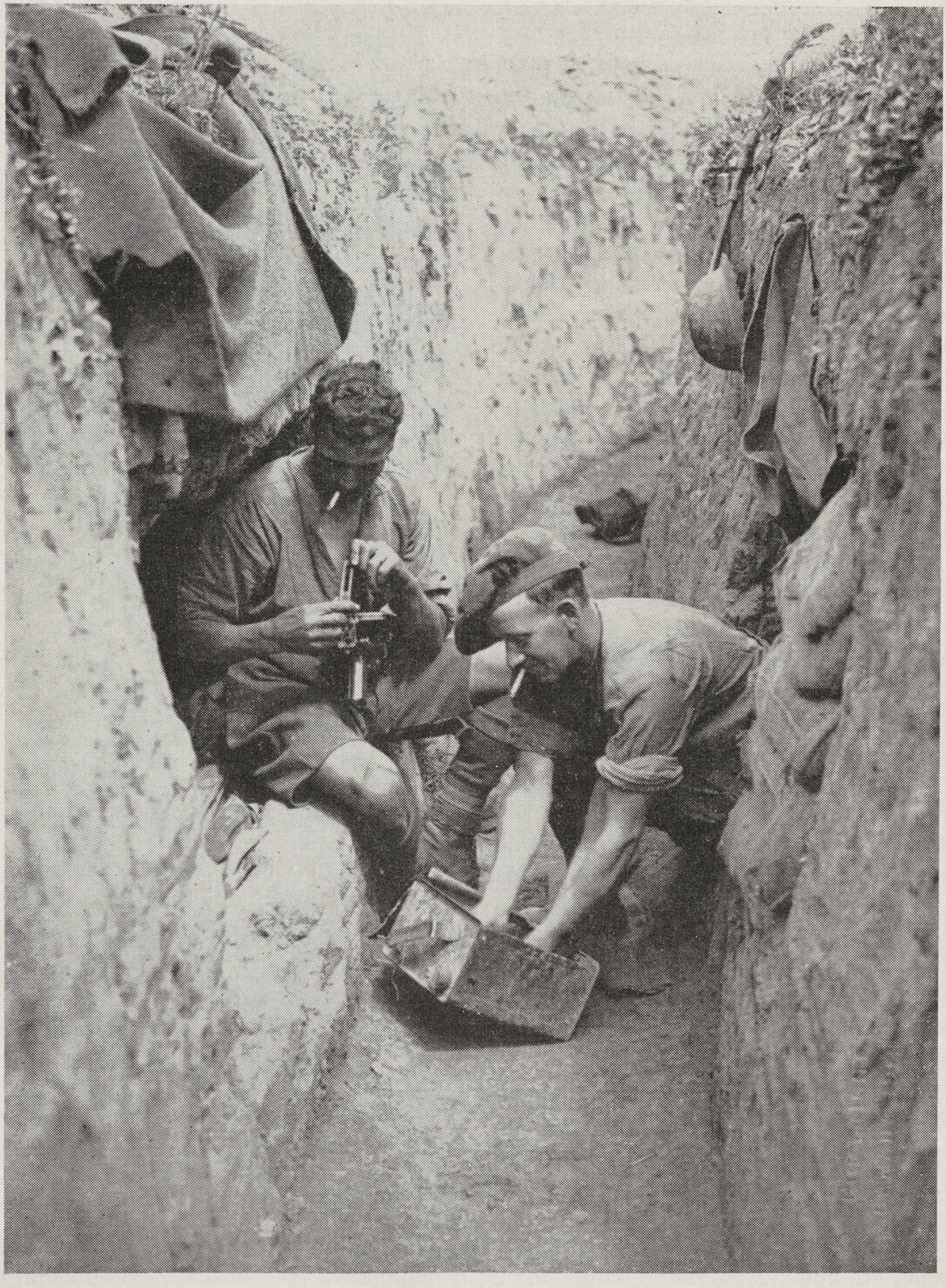
In 1905 the Regiment was officially affiliated with The Black Watch of Scotland. That year it built its own armoury on Bleury Street and the following year added a second battalion and a regimental headquarters to its establishment. This organization it maintained for 40 years in the Canadian Militia. The alliance with the parent regiment overseas has always been a particularly close one, with a constant exchange between them of officers and men. The Canadian branch has consciously and constantly conformed in dress, name and customs with the ancient Scottish branch.

Until the First World War, however, the Canadian part of the Regiment retained its own badge, the boar's head of the Campbells, and used a Campbell Latin motto in

A First World War recruiting poster of the 73rd RHC.

honour of an early member of that family who was a Governor General of Canada, the Marquis of Lorne, and of several members of his Clan who, for generations, were officers of the Montreal regiment. Then it adopted as its badge the Star of the Order of the Thistle as worn by the parent Black Watch, and the motto of the Order: "Nemo Me Impune Lacessit", which may be translated as "No one provokes me without being hurt".

From the start the Regiment took a commanding position in the military affairs of this city. It attracted to its officers' corps stalwarts of the local



Members of the 42nd RHC in a trench during the First World War. The soldier on the left is cleaning a Lewis gun and the other is washing his feet.

business world who bore such family names as Gault, Gaverhill, MacKay, Allan, Ogilvie, Cantlie, Molson and McCuaig. In its earliest days its influence, locally, was seen from a curious incident which occurred in 1871, the actual origin of which is now unknown. Apparently it resulted either from the refusal of the Regiment to cooperate with the local commanding general in preparing for a military ball or, as some claim, from the fact that the St. Andrew's Ball was organized that year by the regimental officers who omitted to invite the general. In any event, without prior warning, Ottawa issued an order disbanding the unit because of the general's report that it had "become disorganized".

This action was hotly protested. The Commanding Officer and his Second-in-Command resigned. Citizens met at meetings to protest. A delegation descended on the Minister of Militia and Members of Parliament were besieged. Indignant pamphlets were published, and the press raised a great cry condemning the general in no uncertain terms.

For some months the officers considered the order deprived them of the necessary authority to carry on. But the men of the Regiment would have none of it. They continued to turn out on their regular drill nights, marched off to the Champ de Mars under their NCO's, with the Regimental Sergeant Major in the Colonel's place at the head of the column, and carried on with their training.

Eventually, remedial orders were issued at Ottawa which cancelled the Regiment's gazetting out of the Service.

Aid to the Civil Power

During the Victorian era the Highlanders from Montreal often proved that they were far from disorganized, notably so when on ten separate occasions they were called out in Aid of the Civil Power: for the Fenian Raids of 1864; twice for those of 1866; again in 1870; for the Guibord Affair of 1875; twice for the Orange Riots of 1876; for the Quebec Dock Riots of 1878; for the Smallpox Riots at Montreal in 1885; and for the Valleyfield Strike of 1900.

During the American Civil War, when Canada was threatened, one of its companies of part-time soldiers was in the field for five months on the Niagara Peninsula.

In the Boer War a large detachment of its officers and men was on active service in Africa, most of them serving with the 2nd Battalion, The Royal Canadian Regiment. In 1903 the unit was again called out for the Montreal Dock Riots.

First World War

The Regiment's great opportunity, however, came during the First World War. For that campaign it raised and sent overseas three battalions — the 13th, 42nd and 73rd Canadians, all of which served in France and Flanders. It was the only Canadian regiment to have three battalions at the Front and its own Reserve Battalion (20th Reserve Bn. R.H.C.) in England for its reinforcements.

In April 1915 the 13th Royal Highlanders were on the left of the British Line at 2nd Ypres during the first gas attack in history. They suffered grievous casualties but saved the situa-

tion. In 1916 all three battalions fought at different times in the Battles of the Somme, and in 1917 all three attacked simultaneously up the slopes of Vimy Ridge.

During the Great War about 12,000 Canadians served with these three Black Watch battalions. More than 2600 were killed, and more than 6000 were wounded. Eight hundred and twenty-one were decorated for gallantry. Six of their members were awarded the Victoria Cross. Twenty-six Battle Honours were granted to the Royal Highlanders of Canada.

Second World War

After the war, the Regiment carried on its part-time soldiering in Montreal. Its veterans of the war period became its senior officers and NCO's, and many younger men joined its ranks. When war came again in 1939 it was ready to meet every call. Its 2nd Battalion was sent out to Soulanges to defend the vital St. Lawrence communication system even before war was declared. As soon as war was declared its 1st Battalion was mobilized for active service overseas.

Throughout the Second World War, 1 R.H.C. served overseas in Newfoundland, in the defence of Britain and on the Continent. The 2nd Battalion eventually was mobilized for the Active Force. A 3rd and a 4th Militia Battalion were raised, as well as the over-strength 42nd Veterans Reserve Com-

Field Marshal Wavell at the opening of the Memorial Museum established by The Black Watch (Royal Highland Regiment) of Canada. On the left is Lt-Col. Hutchison, Chairman of the Museum Committee and author of this article. On the right is Lt-Col. V.E. Traversy.

Canadian Army Photograph

Lieutenant-General Geoffrey Walsh, CBE, DSO, CD, Chief of the General Staff, inspects the pipes and drums of the 2 R.H.C. during an inspection visit to the 4th Canadian Infantry Brigade Group in Germany. He is accompanied by Drum Major Phelan and Captain S. Anderson.

pany. One company of the 1st Battalion and its mortar platoon took part in the Dieppe Raid.

When the Invasion of the Continent came, the 1st Battalion was soon in the thick of the fighting. At St. André during the Caen-Falaise offensive it attacked up a slope against tremendous odds and was practically annihilated. But it was soon built up again with the reinforcements the Regiment had raised back in Montreal.

During the North-West Europe Campaign the battalion fought some 36 engagements across France, Belgium, Holland and into Germany. It suffered what is reported to be the heaviest casualties of any unit in Field Marshal Montgomery's 21st Army Group — 117 officers and 1735 other ranks. Again, there were hundreds of honours and awards which came to its members and 20 more Battle Honours were added to the regimental list.

From 1939 to 1945 the Regiment supplied more than 5000 men and more than 500 officers to the Active Army, 68 of the latter reaching the rank of lieutenant-colonel on active service. It had trained 200 wartime second-lieutenants on active service. It had trained 200 wartime second-lieutenants in

its own school in Montreal, most of whom returned from the wars as field officers.

After the Second World War the Regiment was reduced to one battalion, but continued to build up its strength with young recruits to be trained by its veteran officers and NCO's of the war period.

NATO and UN Service

Soon its opportunity for full-time service overseas came again. When the international situation became critical Canada undertook military commitments for NATO and the United Nations in both Germany and Korea. In 1951 it was decided to raise a new Canadian brigade group for the former and in 1952 another for the latter. For each, a new Highland battalion was formed, with five Canadian Highland regiments, including The Black Watch, each supplying a company but continuing to wear its individual uniform. This, together with inter-company postings, created real administrative problems, as a result of which it was decided at Ottawa to redesignate the 1st and 2nd Canadian Highland Battalions as Black Watch units. The Regiment in Montreal welcomed this greater opportunity for service to Canada and supported the redesignation in every way.

We are very proud of our two regular army battalions and their regimental depot. They quickly absorbed The Black Watch tradition and have alread acquired a reputation for efficiency, smartness and *esprit de corps.*

The Regimental Headquarters is still in Montreal, the 3rd (Militia) being based at the Bleury Street Armoury. St. Andrew's Barracks at Camp Gagetown, New Brunswick, is now the Home Station of the Regular Army units.

Some of the recruits continue to come from Montreal, but today the greater part are raised in the Maritimes, most of them with Highland Scottish names. The Maritime Provinces have now adopted these Black Watch units as their own and there is no difficulty in keeping them up to strength.

The Militia Battalion

The 3rd Black Watch continues to train as a Militia unit. Today it is not so easy to obtain recruits for part-time soldiering as it used to be when the city was smaller, times less prosperous and a big city's counter-attractions fewer. In my view it is regrettable that more young men do not now come forward for Militia training. Those who have joined the Militia in the past know that there is real satisfaction in serving one's country in uniform, and being part of a tradition of service such as one finds in a regiment like The Black Watch.

One fine source of the Regiment's recruits today is its affiliated Cadet Corps. Many years ago the Bishop's College School Cadet Corps, which is also more than a hundred years old, was affiliated with the Black Watch. In more recent years the Regiment formed the Black Watch Cadet Corps in Montreal. This Corps grew out of a class which the Regiment started some years ago and has continued ever since to train boys who wish to learn to play the pipes and drums.

During the past few years the Regiment has also affiliated to it the Lachine High School Cadets, the King's College School Cadets in Nova Scotia and the Oromocto High School Cadet Corps in New Brunswick. In addition, at Montreal and in Toronto there are large branches of The Black Watch Association, members of which are veterans of the Regiment who have retired from active duty. The Black Watch Family in Canada, therefore, is a large organization, larger in fact today than its parent in Scotland.

Visit of The Queen Mother

(Editor's Note: While Lt-Colonel Hutchison referred to the visit of The Queen Mother, Colonel-in-Chief of The Royal Highland Regiment, this address was delivered before she arrived to attend the centennial celebrations in Montreal. The following is a brief account of the visit).

Throughout 1962 in Montreal, at Camp Gagetown and in Germany, special celebrations were held to mark the anniversary of The Black Watch. The apex of these celebrations was the visit of Her Majesty Queen Elizabeth, the Queen Mother, to Montreal last June. This year she is celebrating her 25th anniversary as Colonel-in-Chief of The Royal Highland Regiment, in which the men of her family have served for generations. She came to Canada specially to spend three days with her Canadian regiment.

On 9 June at Montreal Her Majesty presented new Colours to all three battalions of The Black Watch of Canada. This was the first time in the long history of The Royal Highland Regiment that three of its units received new Colours on the same occasion.

As The Black Watch marched by with its new Colours, emblazoned on them were the names of the Regiment's greatest battles which are now part of Canada's military history: South Africa, St. Julien and the Somme, Vimy and Amiens, Arras, Passchendaele and The Pursuit to Mons, Bourgebus Ridge and the Scheldt, The Rhineland, Walcheren and the Hochwald — names which stir the memories of us all and which give us a sense of pride in our century-old Highland regiment.

Technology and Leadership

The nations which will lead the world tomorrow will be the nations which give high priority to teaching and research and the development of competent military leadership. This means that the nation which has not only the most advanced science technology but also the most advanced programmes designed to prepare officers for the armed forces is likely to become supreme in power and leadership in tomorrow's world. It follows that institutions of higher learning become instruments of national defence because theirs is the responsibility of assisting the nation in meeting its specialized manpower needs.—*Dr. Asa S. Knowles, President, Northeastern University, Boston Mass., in an article "Partners in National Security", Army Information Digest (U.S.).*

A Young Officer's Views

Leadership: Everyday Aspects and Problems

by

CAPTAIN N. A. RETY, ROYAL CANADIAN ARMY MEDICAL CORPS*

An officer who is newly posted to a unit to take up command at some level faces an immediate disadvantage: he was not chosen by the men whom he is called upon to lead. He comes equipped with his authority as an officer, his knowledge, and — most important — with his personality. His authority as an officer provides him with the means of directing his men in the execution of their task. The *manner* in which the task is carried out will depend largely on his knowledge and personality. It naturally follows, then, that to achieve success in his command he must use his authority, knowledge and personality in the best possible combination.

In other words, initially every officer undergoes a trial. If, after a while, he can look back on a job well done and sense that the men regard him as the one they would have chosen at the start, he will realize with satisfaction that he has emerged not simply as the officer in charge, but the *leader* of that group.

Having become a leader he must foster and develop further the qualities which enabled him to rise to that position. He must always be conscious of the responsibilities he has acquired. His conduct must be above reproach. He must be mindful of the fact that his standing as a leader which may have taken a long time to achieve, may perish at any time in a matter of minutes.

A great deal has been written on leadership by men who are much better qualified to do so than I am. I have chosen, therefore, to discuss briefly everyday aspects and everyday problems of leadership which, in my hitherto short army career, I have witnessed or experienced myself. I shall deal with them point by point.

Confidence

Confidence is one of the key requisites of successful leadership. It must take three forms:

1. Confidence in yourself.
2. Confidence in you by your men.
3. Confidence in your men.

How do you acquire confidence? I say it is achieved through a thorough knowledge of your job, through capacity for hard work, through integrity and a sense of justice. Confidence in your men is essentially achieved by yourself, for their performance and sense of duty depend on your ability as a leader. Remember: confidence breeds courage. Take away confidence

**The author wrote this article while attending a Medical Officers' Orientation Course at the Canadian Forces Medical Service Training Centre, Camp Borden, Ont. He now is stationed at the Alberta Military Hospital, Calgary, Alta.* — Editor.

and you have insecurity. Insecurity breeds fear. Fear, in the cold war or in peace, will paralyze progress. In war it leads to defeat.

On Making Others Do
What You Want Them to Do

Everyone is familiar with the old saying that if you want to make the donkey work for you, you must show him a carrot or the stick. In the leading of men these alternatives do not apply. Leadership must be by *example*. If you want your men to work hard, *you* must work hard. If you want them to look smart, *you* must look smart.

Never abuse your authority. Do not rule by fear. Remember the words of Tacitus: "Fear and threats are poor bonds in place of love. When they are removed, those who cease to fear turn to active hatred".

Remember also that an officer who is compelled to use his rank to settle a point of discipline is making an admission of defeat as a leader. Leadership is the product of personal qualities, not the number of the pips on your shoulder.

Too many officers, on receiving an order which will involve them in some personal inconvenience, will criticize the order in front of their men. This undermines authority and lessens performance, for the seeds of discontent yield an early harvest and anything done with resentment is not destined for success. In this regard it may be said that an officer who is not loyal to his superiors cannot count on the loyalty of his men.

You must do something at all times. The sight of an idle officer is odious to his men. If you are idle your men will be idle. If you shirk duties they will shirk duties. On the other hand, if you accept hard work cheerfully you can count on them to do the same.

Knowing all your men by name is essential. But it is far from enough. They are people like yourself, with ambitions, problems, likes and dislikes. These personal qualities have a great bearing on the functioning of your unit. How much easier it will be to plan the work of your unit if you know the state of mind of the man who is assigned a key job. The plan may fail if you don't. Active interest in your men will bring them closer to you. Do not make short work of a personal problem that one of them wants to discuss with you. Remember: no man will lay bare his troubles except to a friend. When a man comes to you with a problem it is a sign that understanding prevails in your unit. Do not forget that you are the leader, *collectively* of the unit, and *individually* of each and every man.

You may find it an interesting pastime to keep a weekly performance chart for every man. It need only take the form of a simple graph. This way you may spot the man who is failing and help him out of a problem he never realized you knew about.

Courage is difficult to exhibit in time of peace. But courage is necessary to accept responsibility for the actions of your men. Do not fail them in this without good reason. Again, you may on occasion stand alone because of an opinion you hold. To maintain a stand against the concensus of group opinion requires considerable courage. Your

own conviction should be your guide. Test and retest it until doubt is dispelled. Listen to all and be humble enough to change your mind if you are proved wrong. If you feel you are right, do not let numbers influence what you say. Do not rate popularity too highly. It is an ever-changing trend, like the tide at sea: it may surge with power but it soon changes direction. Lord Moran, discussing courage, likened it to a bank balance from which one can draw in times of stress. Holding on to your convictions is one way in which you can augment your account.

It is essential that an officer should know the jobs of all men working under him and in most cases know how to perform the job himself. But it is wrong to interfere where interference is not indicated. The keynote of good organization is to "image the whole, then execute the parts" through thoughtful delegation of duties. Within that organization, however, as Francis Bacon put it: "Preserve the right of inferior places".

A Few Points on Authority

Establish your authority from the start. Dispense punishment with firmness and with justice. But do not parade your privileges as an officer. And when a man who is really trying makes a mistake, be prepared to "tolerate imperfections for the sake of a greater good". The greater good lies in preserving his cooperation.

Nothing will abolish the prestige of an officer more quickly than his inability to make up his mind. Sufficient knowledge of your job is a prerequisite of decisiveness. Whenever possible, put your men in the picture. They will do better if they know why they do a job. Always store in your mind alternative decisions. This way, if your first plan fails you have another ready at hand.

On Talking to Your Men

The way you talk to your men can make or break you. This fact need not be emphasized further. Here are the important points:

1. Talk in a positive manner and know what you are going to say.
2. Leave no room for doubt.
3. Men will look for content in your speech, not literary merit. It is easy to open a gulf between yourself and your men by the use of words to which they are not accustomed.
4. Be concise: "Brevity is the soul of wit". By the same token, brevity is also the soul of a well-expressed order. When you have had your say, say no more. It has been rightly said that "nothing enchances authority more than silence".

Avoid swearing in front of your men. Your language, like your uniform, should be spotless. Some officers I know feel that they get closer to their men by swearing. I believe they failed to get close to their men in other ways. You must be beyond reproach in their estimation. In my experience excessive swearing is an expression of low morale in a unit. *Swearing is also a manifestation of despair.*

Be Yourself

When you are at sea the sight of a fixed point on land gives you a sense of security. When you are reading a map a fixed point helps you to orien-

Policewomen Try Out New Army Vehicle

British Information Services Photograph

Military policewomen of Britain's Women's Royal Army Corps try out an Austin "Moke", developed for the British Army from the successful "Mini" twins — the Mini Minor and Mini Austin. The "Moke" was one of the vehicles on show at the Exhibition of British Military Vehicles, Chertsey, England, recently.

Leadership: Everyday Aspects and Problems

(Continued from preceding page)

tate yourself. In the same manner you should be this fixed point for your men when they look to you for a lead. You must remain *yourself* at all times. Do not assume different personalities to suit the occasion. Your own should be strong enough to deal with any kind of setback. Remember, the soldiers know you. They are quick to recognize a fake. Once you are identified as a fake you will cease to be a leader!

The Reward

Not long ago I heard a sergeant pay a simple tribute to a young officer. He simply said: "With that guy, I would go anywhere".

For all your work a simple remark such as this will be ample reward.

WHAT DO WE MEAN BY "MOBILITY"?

by

MAJOR V.J. FERGUSON, CD*

Today many people speak of "mobile war" and infer that mobility is the answer to all the problems of military operations in war. They do not, however, appear to have any clearly defined idea of what they mean by mobility. Many statements that argue that mobility is a prime factor in war, have little in common except a vague idea that mobility means movement of some sort. The aim of this paper is, therefore, to consider the term "mobility" and to find basic concepts that are suitable for military discussions.

In carrying out this aim, the following points will be dealt with:

1. General points regarding mobility.
2. Vehicle and force mobility.
3. Relation of vehicle characteristics to mobility.
4. Strategic mobility.
5. Tactical mobility.
6. Battlefield mobility.

When considering mobility the best and most logical point to start is the dictionary. The Concise Oxford Dictionary defines "mobility" in the military sense as the ability of a force to "be easily moved from place to place". The thing to note is that there are no limitations expressed in this definition. It does not state that mobility means the ability to move easily except when certain man-made or natural obstacles are met. Pure mobility by dictionary definition, therefore, means the ability to move a force easily from place to place under all conditions that may be encountered.

In almost any modern force the vehicle is the basic item, as the force depends on its vehicles for movement. The problem of movement of vehicles can be divided into two sections—firstly, when the vehicle is transported and, secondly, when it moves under its own power. When it is transported the only obstacle that is encountered is the physical one of size and weight, which limits the ability to carry the vehicle in or on another carrier. When the vehicle moves under its own power two obstacles are encountered, firstly terrain and secondly, enemy opposition. Therefore, if a vehicle, and hence the force, is to have good mobility, it must be easily transportable, have good cross-country performance and be able to deal with enemy opposition.

Before the mobility of vehicles (on which the mobility of a force depends) can be assessed, the characteristics of the vehicle from which its mobility stems must be considered. Of paramount importance is the size and weight of the vehicle. These factors are often interdependent, though not always so. The desire for load-carrying

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capacity, protection and firepower all affect the size and weight of a vehicle. The ability to move a vehicle or a carrier, be it by land, sea or air, is governed by the size and weight factors; also, an increase in size tends to hinder the movement of a vehicle through towns, woods and difficult defiles. However, unless the size of the vehicle is great enough in proportion to its weight, the vehicle cannot swim. Generally, the smaller and lighter the vehicle, the easier it is to transport or move across country.

Another major factor to be considered is the power of the vehicle in terms of horsepower per ton. On this will depend whether the vehicle is agile or ponderous and it will affect the vehicle's ability to get up steep slopes, negotiate heavy going or overcome obstacles such as fallen trees. With power one must consider the actual power plant used, and in future a major factor will be the type provided. The multi-fuel engine, which is basically a compression ignition engine, is capable of operating on a wide range of fuels, from aviation gasoline to fairly heavy distillates. Two advantages are gained when this type of engine is used. One is that greater power per unit of fuel is obtained and therefore, less volume is required. The other is that greater flexibility is gained as greater advantage can be taken of casual stocks of fuel that may be encountered.

Power is associated in many peoples minds with ground pressure. It is often said that the ideal vehicle should be powerful but have very little ground pressure. This is not necessarily so. The tractive effort obtained by the vehicle often depends on whether the soil can be compacted sufficiently. Factors also affecting tractive effort are soil conditions, slopes and possibly ground cover. Ground pressure is a result of vehicle weight and track area. Generally the weight of the vehicle will be more important than its ground pressure.

The suspension is an important factor which affects both tactical and battlefield mobility. On many vehicles it is the suspension that dictates the speed at which the vehicle may move across country. No vehicle suspension has yet been devised that will allow unlimited cross-country speed and still provide a sufficiently smooth ride for the crew to remain effective. Additionally, it is the design of the suspension that dictates ground clearance, which is most important in achieving mobility. If a vehicle cannot clear normal obstacles such as fallen trees, rocks, etc., then it will not have the requisite degree of cross-country performance. Contrary to the opinion of any, suspension characteristics not only affect the ride of the vehicle but also the ability of the vehicle to propel itself. A reduction in cross-country speed is caused not only by sinkage in soft ground but also by the power loss caused by the suspension system being unable to cope with the uneven ground.

It is probable that most people really mean flotation when they speak of mobility. The Second World War focussed attention on the problems of amphibious landings and the crossing of inland waterways. They will be extremely important in any future war because the likelihood of having

bridging or bridges on inland waterways is remote indeed. To achieve flotation, either a vehicle must be of very light weight compared to its bulk or special flotation kits must be provided. If the vehicle is floatable in itself, then it will not have any degree of armour, nor will it have any heavy armament. It will, however, have a fairly generous cubic content. For vehicles that require flotation and are not floatable in themselves, adaptor kits are the only answer. These, of course, take time to manufacture and install. They occupy space in supply lines and generally tend to be cumbersome. It is unfortunate that flotation or flotation kits do not provide the complete answer to overcoming many water obstacles. The exit and entry problem still exist. The entry problem is usually easily solved, as that area is normally in friendly hands and machines can prepare a suitable entry site. However, the exit will normally be made in an area that is enemy controlled. Thus two problems remain in that the entry must be prepared and the enemy must be driven off so that machines can prepare the exit.

Possibly the most controversial item in vehicle design today is armour protection. However, protection is one of the characteristics which transforms an ordinary ground vehicle into an armoured fighting vehicle. Armour protection is relative to the weight of the vehicle and any increase in protection will cause an increase in weight. Of course, as weight affects all automotive features, the design of most automotive features are influenced by the desire to achieve armour protection. As opposed to the disadvantage of increasing the weight, armour protection is the essential characteristic that produces immunity to the majority of small and medium calibre weapons. When considering the level of armour protection that is desirable, it must not be forgotten that a 20-mm. weapon can make an insufficiently armoured vehicle as immobile as can a river which is a mile wide.

The other factor which completes the transformation of an ordinary vehicle into a fighting vehicle is firepower, for only if the vehicle has sufficient firepower can it be considered to have battlefield mobility. Firepower, like armour protection, affects vehicular size not only because of the size of the weapon system but also because of the space required for ammunition stowage and crew servicing. Firepower contributes to the battlefield mobility of the fighting vehicle in that it provides the capability of destroying the enemy and once the enemy is destroyed, freedom of movement is gained. Firepower, in this case, is nothing more or less than a means of surmounting an obstacle.

From the above factors, especially protection and firepower, stems another factor which is often not considered, and that is confidence of the crew members. Only if the design and capabilities of the vehicle engender confidence in the crew will that vehicle be used in its proper manner. Lack of confidence, on the other hand, will cause hesitant action, lack of forward drive and will nullify many of the factors which would otherwise provide mobility.

Having seen how the various characteristics of the vehicle affect mobility, we must consider the types of mobility that are of military interest. These are:

1. Strategic Mobility.
2. Tactical Mobility.
3. Battlefield Mobility.

Strategic mobility deals with the ability to move forces to a theatre of battle. This movement may be accomplished by land (rail and road), sea or air. Movement by land or sea is generally easily accomplished, though a decrease in the weight and size of the equipment will make the task easier. The requirement to move a vehicle by air, which is by far the quickest, may drastically curtail both the size and weight of a vehicle. Therefore, in strategic mobility the only factors that are of importance are those which affect our ability to move the equipment quickly over long distances. Other factors such as firepower, protection and fuel consumption really have no bearing on mobility in this context except insofar as they affect weight and size.

Tactical mobility, which is essentially cross-country performance, is defined as "the ability to move forces about in a theatre of battle". It represents the capability of ground vehicles to negotiate all kinds of terrain including swimming or fording inland waterways. Tactical mobility depends on special military design features such as ground pressure, ground clearance, power to weight ratio, suspension characteristics, cruising ranges, capability of survival in heat, cold, mud, dust, and reliability and durability characteristics which are related to freedom from mechanical failure. In discussing mobility the term tactical mobility is often confused with battlefield mobility. If one refers again to the definition of tactical mobility, it will be seen that it only allows the movement of forces in a theatre of battle. Nothing is said regarding the ability to seal off the enemy or take any other positive action. Strategic and tactical mobility are necessary in a combat vehicle but they are not sufficient. A vehicle that can move and is able to be moved can easily be designed, but it may well have little or no ability to fight and survive on the battlefield. Firepower and protection are needed to give a vehicle complete mobility.

Battlefield mobility is the active capability of the vehicle to negotiate varied terrain, combined with adequate firepower and protection characteristics. From this combination of characteristics a combat vehicle derives its potential to move about the battlefield in the presence of those forms of enemy attack common to its battle environment while performing its basic role. An illustration of a combat vehicle that had tactical mobility but little or no battlefield mobility was the Second World War tank destroyer. This vehicle provided good off-road performance characteristics compared to the Sherman tank. However, it had limited armour protection and was particularly vulnerable to overhead artillery fire as well as to various forms of direct fire attack. This relative inadequacy of armour protection made ambush type tactics necessary and seriously limited the utilization of

(Continued on page 65)

New Residence for Nursing Sisters

Canadian Army Photograph

Flanked by nursing sisters, Major-General W.A.B. Anderson, OBE, CD, Adjutant General, cuts a ribbon during ceremonies held in September to officially open Emma Pense Hall, the new residence for nursing sisters at the Canadian Forces Hospital, Kingston, Ont. The name of the residence was chosen in recognition of the service given by Lieut.-Colonel Emma Florence Pense, RRC, of Kingston, a retired member of the Royal Canadian Army Medical Corps who was the first Matron-in-Chief of the nursing service in the Second World War.

Quick March in Spain

75 Years Ago: An English paper gives some interesting figures as to the regulation pace in European armies. The length of the Russian pace is 71 centimeters; the German, 80; French and Italian, 75 centimeters. The Italians march 98 yards per minute; the Germans, 96; the English, 95; the French, 93. The Spanish are the fastest infantry marchers on the continent. — *From the files of the Army-Navy-Air Force Journal and Register (U.S.).*

RECRUITING UNDER DIFFICULTIES

by

J. MACKAY HITSMAN*

The difficulty experienced recruiting the New Brunswick Fencibles during the opening decade of the Nineteenth Century is a near-perfect example of the disinterestedness of most Canadians in military matters and their belief that it is sufficient to take up arms only after war has broken out and actual danger draws near. It also damages the persistent myth that Canadians prefer to serve in units mobilized in their own localities, and alongside friends and neighbours.

Most of the pioneers of British North America were fully occupied trying to improve their standard of living. Except when their own families might be in danger from an immediate enemy, they were content to carry on as usual and leave any actual soldiering to the patriotic or adventurous few, the chronically unemployed and other landless men who hoped to secure a future stake in the economy as a bonus for a spell in uniform. This attitude was helped by geographical isolation from most of the conflicts of the time. This often made it possible for settlers to benefit from the rising prices these engendered.

During the earlier War with Revolutionary France (1793-1802) an understrength provincial regiment had been raised in each of the Maritime Provinces and in Canada for local defence and to release British regular troops for service elsewhere. There had been no difficulty obtaining sufficient officers and sergeants from amongst Loyalist veterans of the American Revolution and former British regulars who had mistakenly sunk their resources in unfamiliar farming operations. In the case of the King's New Brunswick Regiment, however, it had never been possible to recruit better than 364 of the 600 authorized rank and file (*i.e.* corporals and privates). Once the casual labourers and the foot-loose men in this primarily backwoods province were enlisted, the supply of recruits had been exhausted: for, irrespective of the size of the bounty money, no alert citizen was likely to abandon his farm after a long and hard struggle to clear the land in exchange for a poorly paid and humdrum existence in uniform.[1]

The Peace of Amiens in 1802 was quickly followed by orders to disband all provincial corps, but peacetime economies and reduced military establishments were short-lived because war with Napoleon was resumed during May 1803. On 1 August the Duke of York, Commander-in-Chief of the British Army, authorized Brigadier-General Martin Hunter to raise a New Brunswick Regiment of Fencible Infantry for service anywhere in British North America.[2] Unlike its predecessor in that province, this regiment was to be borne on the regular army establishment, even though the name "fencible" denoted that it was intended for primarily defensive oper-

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ations. The authorized strength was 10 companies, each of three officers and 107 other ranks, together with the necessary headquarters and staff. The two field officers, four of the captains and six of the lieutenants were to be found from existing regiments of the line, while four of the ensigns could be given permanent commissions. But the remaining officers would be entitled to receive neither promotion in the regular army nor half-pay of their rank whenever the fencible regiment should be reduced.

These last were found without much difficulty, for there proved to be sufficient gentlemen in the province preferring soldiering to homesteading, and there were a number of ex-members of the King's New Brunswick Regiment suitable for appointment as sergeants. But Brigadier-General Hunter was a realist and soon convinced himself that there was little hope of enlisting more than 200 rank and file in New Brunswick, even with the inducement of a bounty of six guineas. Therefore he instructed Lieut.-Colonel George Johnstone, who had been a major in the 29th Regiment of Foot, and other regular officers in England when appointed to seek recruits in the Highlands of Scotland.[3]

Fencible regiments were being raised in each of Nova Scotia and Newfoundland but only the Canadian Fencibles had been belatedly authorized to recruit in the two Canadian provinces, so Brigadier-General Hunter sought and received permission from the British Commander at Halifax, Lieut.-General William Bowyer, to send a recruiting party to the Canadas to enlist 100-200 men.[4] Major J. White, who transferred from the 32nd Regiment of Foot, appears to have sailed directly from England to Quebec to head this project. At any event the bilingual *Quebec Gazette* of November 24, 1803 carried the following notice:

GOD BLESS THEIR MAJESTIES!

"Major White takes this mode of Communicating to high Spirited Lads willing to Serve His Majesty King George the Third; — That he is just arrived at this place for the purpose of Recruiting Men, for His Majesty's New Brunswick Regiment of Fencible Infantry; Commanded by that Good and Gallant Officer Brigadier-General Martin Hunter.

"That the said New Brunswick Regiment of Fencible Infantry is not to serve any where out of His Majesty's Settlements in North America.

"Major White recommends Young Men of Spirit to be speedy in their applications as he has just now an opportunity of promoting them immediately to the Rank of Non Commission'd Officers exclusive of the usual Bounty.

"Application to be made to Major White at Madame Le Blanc's, Quebec, from 10 o'Clock in the Morning until 6 in the Evening.

"N.B. No Apprentices need apply unless their Engagements are given up; nor will any Man be spoken with, who may make application when the least in Liquor."

GOD SAVE THE KING

Quebec, 18th November, 1803.

On 21 February 1804 Major White reported that he had enlisted 70 men,

dispatched another recruiting party to Montreal and hoped to have nearly 200 men before the end of May.[5] Presumably he must have met his requirement of potential N.C.Os., for the recruiting notice appearing in *The Quebec Gazette* of March 1 read as follows:

GOD BLESS THE KING
Long may he Live!
HIS MAJESTY'S NEW-BRUNSWICK REGIMENT OF FENCIBLE INFANTRY
Commanded by
Brigadier-General Hunter.
This Fencible Regiment is to be raised to serve in *America and not Elsewhere.*

"All young Men who are willing to step forward in times like the present, when every Man in England, young and old, are in Arms for the Defence of their KING and COUNTRY, may depend on meeting with the greatest Encouragement, and as an instance of the good intentions of Government, every Man who enters himself into the New-Brunswick Regiment will have Land given him in that Province, at the reduction of the Corps. They are desired to apply to any of the Recruiting Parties of the New-Brunswick Regiment.

"*N.B.* The Land to be given may be 500 Acres, but not less than Two Hundred to any Individual.

FIVE GUINEAS

will be paid to each RECRUIT, *three* of them on being attested and the other *two* to be laid out in necessaries."

Quebec, 24th February, 1804.

(The sixth guinea was to be expended on the surgeon who made the rudimentary medical examination, the recruiting sergeant, and any others involved in this venture.)

On 17 March Major White died suddenly, after what could have been only a short illness. In view of the spirited correspondence that shortly transpired, however, his last days must have been troubled. On 24 April Brigadier-General Hunter wrote the Military Secretary to the Commander at Halifax complaining of the treatment that had been accorded Major White and his recruits by Major-General Gother Mann, the well known officer of the Royal Engineers who had only recently been promoted to the command at Quebec. Major-General Mann had refused to permit the proper allowances to be made to the 150 recruits collected for the New Brunswick Fencibles and, despite the extremely cold winter, had refused to issue fuel, candles and bedding (even some that had been condemned by the Board of Ordnance.) According to this letter, "had Major White been recruiting for the French Army, he could not have met with more opposition to the Service he was sent upon".[6] In a letter written the same day to the Secretary at War in London, Brigadier-General Hunter added that Captain Campbell, who had taken over the recruiting duty, was afraid that his men would be refused passage by sea from Quebec to Saint John, New Brunswick.[7]

On 7 May Lieutenant-General Bowyer at Halifax made Major-General Mann's conduct the subject of a stiff protest to Lieutenant-General Peter Hunter, Commander of the Forces in the Canadas and Lieutenant Governor

of Upper Canada: this conduct "if as represented, appears to have been harsh in the extreme, unmilitary & tending to hurt the recruiting Service in general, & of that Corps in particular".[8] This letter then suggested that a recruiting party for the Canadian Fencibles would have been properly treated at Halifax. "I did think of sending Br. Genl. Hunter's statement of the Usage his Recruits seem to have met with at Quebec to His Royal Highness the Duke of York by the Packet, which sailed for Scotland on Saturday last," General Bowyer concluded, "but upon consideration, I shall now probably defer doing so, till I hear from you or Major Genl. Man [*sic*] on the subject".

The Duke of York did hear, however, and ruled that Major-General Mann's action had been "extremely ill-judged and inconsiderate", even though the latter had considered that he was only carrying out the orders of his own immediate superior.[9] The Duke seems to have appreciated that General Mann had considered the New Brunswick Fencibles to be interlopers who should be "frozen out" of the Canadas, but he pointed out that Major White and his party should have been accorded proper treatment. Recruits for the New Brunswick Fencibles were henceforth to receive their due allowances and be transported by sea to New Brunswick.

Since the Duke of York had already approved of all the fencible regiments recruiting anywhere in British North America, the New Brunwick Fencibles now merely shifted recruiting activities to Kingston and York in Upper Canada. A strength return for 1 January 1805 showed the New Brunswick Fencibles with 330 rank and file. The July strength return showed 466 rank and file. Early in 1806 authority was given to enlist promising young boys aged 10 - 14 for unlimited service (five per company).[10] Authority was granted in 1808 to increase the bounty from six to 10 guineas.[11] But this was a greater financial inducement than that held out by the Canadian Fencibles, which the Governor-in-Chief, Sir James Craig, was finally endeavouring to complete because of worsening Anglo-American relations. Therefore the New Brunswick recruiting parties were ordered to cease their activities and leave the Canadas.[12] The measure of their success there may, however, be measured by the subsequent admission that one half of the rank and file (roughly 400 men) had been recruited in these inland provinces.[13] This, it should be emphasized, greatly exceeded earlier expectations. Recruiting continued, of course, in New Brunswick.

An application by the officers in 1810 to have the New Brunswick Fencibles converted into a regular regiment of the line, and to have its area of possible service extended beyond North America, was approved in London. But the Military Secretary wrote from the Horse Guards on 18 September 1810 that the new 104th Regiment of Foot should remain at its existing strength of 800 rank and file until sufficient men were available in North America to augment it to the normal establishment of 1000 rank and file.[14] The proposal advanced during February, 1811, to recruit a second battalion which in an emergency might be used to reinforce the 104th Foot,

seems to have been ignored.[15] And rightly so, for the strength of the 104th Regiment of Foot was only 831 rank and file by the end of August, 1811.[16]

The outbreak of war in 1812 altered everything. In the dead of winter, 1813, the 104th Foot marched overland on snowshoes from Fredericton to Quebec (less companies at Charlottetown and Sydney) and thereafter performed creditably in the defence of Upper Canada.

On 30 September 1812 the Secretary of State for War in the Colonies wrote Lieut.-Colonel Sir John Sherbrooke at Halifax that Lieutenant-General John Coffin's memorial to raise another Corps of Fencible Infantry in New Brunswick had been approved. This was to consist of 600 rank and file, organized in 10 companies, with the customary number of officers and non-commissioned officers. A bounty of £5 was to be offered and service was to be limited to New Brunswick and Nova Scotia, unless Lieutenant-General Sir George Prevost, Governor-in-Chief and Commander of the Forces in North America, should consider that the unit was needed in the Canadas.[17] Although American attempts to invade the Canadas had been repulsed in 1812, Sir George Prevost was not looking forward to fighting the coming campaign with the limited resources at his command and his dispatch of 7 February 1813 was far from optimistic in tone. He would do his best to recruit men anywhere in North America for the new corps, "though I am apprehensive the period is very remote, when the Corps will become of sufficient strength to aid, with any effect, in the defence of the British American Provinces".[18]

Recruiting did prove slow and a strength return of 25 January 1814 showed only eight officers, 16 sergeants, seven drummers and 191 rank and file as being at Fredericton.[19] According to Sir George Prevost's dispatch of March 12, however, there were nearly 100 recruits in the Canadas awaiting transfer to Fredericton, where he was now optimistic enough to believe that the New Brunswick Fencibles had a strength of about 300 all ranks.[20] This was, however, at variance with the report of little progress submitted earlier from Halifax by Lieutenant-General Sir John Sherbrooke. He had suggested that the unit should be completed to establishment with negro slaves who had escaped to freedom from Virginia on ships of the Royal Navy which had been operating in strength off the American coast since the previous summer.[21] The Duke of York was agreeable, provided this should not "prove obnoxious to the Opinion & prejudices of the People of that Province, or of the men already Enlisted".[22] But the war in Europe was soon over, Napoleon was banished to Elba and thousands of Wellington's Peninsular veterans were on their way to North America to carry war home to the Americans. Therefore this decision was reversed at the Horse Guards on 12 July and the New Brunswick Fencibles ended the war with an actual strength of 27 officers and 415 other ranks — and without experiencing any fighting.[22] Considering that reinforcements had had to be provided for the 104th Regiment of Foot

fighting in the Canadas, and its distance from New Brunswick, whose safety was never threatened by the neutrally-minded New Englanders, this recruiting record could have been worse.

On 24 February 1816 the Corps of New Brunswick Fencible Infantry was disbanded. On 24 May 1817 the 104th Regiment of Foot was disbanded at Montreal. Officers of both units were placed on the half-pay list and all ranks were eligible for land grants, or a small cash gratuity in lieu.[23] This facilitated their return to civvy street, or possibly rather more correctly, to the backwoods.

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Edison, The Electrician

75 Years Ago: At Newport, Mr. Edison, the electrician, has brought before the Navy the subject of distant signalling by means of throwing electric light rays in combinations of short and long flashes.—*From the files of the Army-Navy-Air Force Journal and Register.*

Prevention and Self-Reliance:

Keywords of the Army's Financial Welfare Programme

By

MR. H. C. CHADDERTON*

***This article has been written at the request of the Board of Directors of the Canadian Army Welfare Fund. The Canadian Army Financial Welfare Programme is supported by contributions from Army Institutes and Maple Leaf Services. It consists of the Canadian Army Maple Leaf Loan Fund, and grant assistance through the Army Benevolent Fund, together with case work and counselling services carried out by Army officers and by the staff of the Army Benevolent Fund organization. Full details regarding this programme were given in an article published in the Winter 1961 edition of the* Canadian Army Journal. — Editor.**

During a visit to Army establishments in March 1962, I overheard a subaltern remark that he was not favourably disposed towards the Army's Financial Welfare Programme. As he put it, "This is establishing the walfare state for the soldier".

It is understandable that these views can prevail—unless there is a full appreciation of the work which is done under this Financial Welfare Programme and, more significantly, of the philosophy upon which the programme has been founded.

Later that same day I addressed a meeting at which this young officer was present. He came to me at the conclusion and expressed his appreciation for what he termed his "first insight" into this welfare programme.

This episode illustrates the need for more publicity— and a better general understanding—of the underlying principles adopted by the Board of Directors of the Canadian Army Welfare Fund with respect to this programme.

Preventive Measures

The first—and most important—of these principles is summed up in the word *prevention.* It has never been the intention to spoon-feed the soldier or put into effect for him a "welfare state" which would give him complete coverage to meet any problem from enrolment to release. In fact, the whole direction of the programme has been to encourage the soldier towards the goal of self-reliance in his financial management.

A brief examination of the various segments which go to make up the Financial Welfare Programme will demonstrate how this principle has been

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adhered to. Firstly, extensive counselling procedures have been adopted. These include lectures for all ranks during various phases of training in the Army. These lectures are reinforced by the issue of published material dealing with budgetting, the use of consumer credit, legal advice, etc. The latest in the list of published material is the booklet "Dollars and Sense" issued by Army Headquarters in April 1961. This booklet is being followed by the issue of Financial Welfare Bulletins for use of Commanding Officers. The object of these counselling procedures is to furnish information to the soldier which will enable him to handle his domestic finances in a realistic and proper manner.

The second segment provides emergency loans usually in amounts between $100 and $150. These loans are often "preventive" as they are used in payment of a judgement or some other debt which, if not handled immediately, could result in a major problem for the soldier. They represent the classic example of the "stitch in time saves nine" situation.

Preventive welfare loans make up the third segment of the programme. It is the specific purpose of such loans to assist the soldier where he has a requirement to purchase essential goods or services. They may be made for any good purpose at the discretion of the appropriate Loan Fund Committee. The most important factor in both emergency and preventive welfare loans is that the soldier is encouraged to discuss his problem with his unit officers who can provide counselling.

The fourth and final segment of the Financial Welfare Programme is the grant assistance administered by the civilian committees of the Army Benevolent Fund organization. The Commanding Officer must submit a recommendation on each grant case to ensure that requests are made only on behalf of deserving soldiers and/or where grant assistance is considered to be essential and in the interests of the Service.

The Army Benevolent Fund organization does not believe in the type of solution which involves an outright grant to clear up the entire debt problem. In the first place the soldier must, if possible, put up a portion of the required assistance by way of a loan. As an alternative, the soldier may be given a grant to cover only that portion of his indebtedness which he cannot meet through his income, and he may be left with a practical debt retirement plan under which he can continue to make regular payments to the remainder of his creditors.

It can thus be seen that the Financial Welfare Programme is based on the principle of a complete "preventive screen". This screen involves counselling, emergency loans to deal with urgent problems and preventive welfare loans to provide financing help. The last resort is the grant procedure which commences with a referral from the Commanding Officer and provides a case work plan involving participation from the soldier himself to the extent of his own resources, together with an outright grant where the debt problem is beyond his capabilities.

Developments Arising from Use of Consumer Credit

The need for a financial welfare programme in the Regular Army is

readily apparent, but it is necessary to understand that the changing circumstances have brought about the requirement to amend and up-date the programme to meet with the changing aspect of the financial welfare problems among Army personnel.

When this programme was implemented in 1953 the typical financial problem was one where the soldier had unusually heavy medical expenses incurred for his dependents. Most service families now have adequate medical and hospital insurance which has resulted in a decreasing need for this type of help.

However, with the passage of time the financial welfare programme has added another category. This is where the family has become a casualty of the consumer credit explosion which has occurred in the past few years. In explanation, consumer credit as of 31 December 1960 amounted to $4,286,000,000 among Canadian families. This includes personal loans through chartered banks, small loan companies and credit unions; life insurance policy loans; instalment credit through acceptance corporations, department stores and other retail dealers. It does *not* include home mortgages and such personal debt as medical bills, hospital bills and rental arrears. The comparative figure for 31 December 1954 was $2,394,000,000. It will be seen that the increase in six years has been $1,892,000,000, or almost 79%. Moreover, the amount of consumer credit debt carried by a family is not in direct proportion to its income. In fact, the larger the income, the less the consumer credit debt. Therefore, Canadian families in the lower income brackets—including many Army families—are carrying between $1300 and $1400 per family spread among banks, loan companies car dealers, merchants and others.

This consumer credit explosion has affected families in different ways. For example, if the family has a thorough knowledge of money management, based on a high educational level and/or sound training by parents, no problem should arise from the use of consumer credit. If, on the other hand, the family has had no opportunity to learn the fundamentals of domestic financing they can very often fall prey to highly-developed sales practices and easy credit.

It is becoming abundantly clear that a certain type of family suffers a very great disadvantage when it comes to merchandising and credit from the standpoint of the consumer. Some people lack the "built-in" instincts which could warn them away from shoddy merchandising deals and high-blown advertising claims. These people frequently succumb to slick sales pitches. They have never had an opportunity to develop a sound sense of "buymanship" and obviously they cannot be blamed if they are taken in by the fast-talking salesman and the easier-to-get but more costly types of credit.

Many of these families have a critical lack of knowledge regarding interest rates, carrying charges, conditional sales contracts, charge accounts, revolving budgets and other forms of financing which must be readily understood if the consumer is to chart a safe course for himself through the maze represented by consumer advertising, "gimmick" selling and merchandising techniques—all of them of-

fering an all-too-easy invitation to financial disaster.

Where the soldier becomes a casualty due to his inability to understand and/or manage his finances in this era of the consumer credit explosion, it is necessary to determine whether the financial difficulties were due to wilful extravagance or, alternatively, to a genuine lack of understanding of domestic finance. If, upon close examination, it can be clearly demonstrated that the soldier's debt problem is due to circumstances beyond his control, he can qualify for assistance under this programme.

In a case of this nature, counselling and advice is the prime necessity—and where it can be established that the family will follow a strict budget and will apply the knowledge of domestic management which can be given to them, help can usually be justified.

Factors Inherent in Service Life

Some financial welfare problems are peculiar to Service life. The young officer who objected to the establishment of the "welfare state" was asked whether or not he had ever stopped to consider the plight of the many Army families with three or maybe more children living on the pay of the private or corporal. To give this officer his due, he admitted that this had perhaps escaped him and we sat down to go over some facts and figures. The maximum pay received by many Army families is about $275 a month, most of which is required to meet day-to-day living expense. This leaves practically no surplus to meet an unusual expenditure or family crisis.

In addition to the cost of living, which affects both Army and civilian families alike, the Army family must face a number of special contingencies which are inherent only in Service life. The first of these is relocation due to postings, and the special problems which can arise therefrom. To cite an example, the frequent disturbance in the economic way of life which takes place in moving from one community to another can seriously upset the family budget. A typical case lies on my desk as I write this article. This family moved from the East Coast to its first posting in suburban Toronto. It took six months of adjustment before the family income and outgo were in balance. Two years later the man was posted to Germany and his dependents followed. Once again they encountered a complete change in the economy and another six-month period of adjustment was necessary. In 1961 the family returned to Canada and again the husband, his wife and the children had to learn to live in still another new environment with different circumstances and different merchandising techniques.

Another effect—often misunderstood or not considered at all—arises from the separation of the wife from the environment of her parents and family friends. This means that she is not in ready contact with those to whom she would normally turn for help and advice. She is unable to take advantage of hand-me-down clothing and the many other forms of help which can save countless thousands of dollars for young families busily engaged in the matter of raising children.

Still another situation which arises out of postings is brought about by the lack of adequate and inexpensive civilian housing. Not every Army family can obtain government accommodation, and very often they must pay an uneconomic rent for civilian quarters. Moreover, many families have found that they have to make two and even three moves in a period of a three-year posting in order to obtain a reasonable house or apartment.

Hence, in the administration of the Financial Welfare Programme cognizance is taken of the special welfare problems which can arise directly from Service life.

Administrative Problems

The final category is spelled out under the heading of "administrative problems". In this age of automation, the Army will probably remain as one organization which must get most of its jobs done by individual skills. This takes many thousands of personnel who are trained specifically for functions which are peculiar to the Canadian Army. It is obvious that when a soldier who possesses a valuable trade—and who is performing a useful service—becomes a financial casualty it is often in the interests of the Army (and the taxpayer) to retain his services. Accordingly, many welfare cases are solved in an effort not only to help a soldier and his family, but to salvage a good man for the Canadian Army.

Another type of case which should be considered when measuring the value of this programme is where the Commanding Officer has been faced with an administrative problem arising out of the financial welfare predicament of an Army family. A case which comes to mind is that of a soldier who incurred considerable indebtedness in a small community—all of it warranted. He was killed in an accident not connected with service, leaving a widow and three small children. This posed a number of problems including the fact that the only insurance— his $3000.00 supplementary death benefit —was insufficient to meet the debts. Also, it was necessary to arrange the move of the dependents to civilian accommodation. In this case, the welfare programme produced a solution to the satisfaction of all concerned.

It might be said that, in handling these administrative problems, the government is receiving benefit from the expenditure of monies which are contributed by Army personnel through Maple Leaf Services and Army institutes. This is true, but it should be borne in mind that the Government contributes to these funds through the provision of Service personnel to staff these institutes and furnishes other "overhead" facilities. Accordingly, the Chief of the General Staff has the prerogative, under Section 39 (1) of the Department of National Defence Act, to direct the manner in which such profits may be expended. Most of these profits are returned for the benefit of a soldier and his dependents, even though in occasional cases there may be some direct or indirect benefit to the government, as explained in these administrative problems.

Financial Aspects

The funds for the Financial Welfare Programme have always been far short

of requirements. The programme was commenced in April 1953 with a capital of some $90,000 which had been built up in the previous six months through contributions from Regular Force institutes. In the ensuing nine years, these institutes, together with contributions from the Maple Leaf Services, have provided a total of $2,167,982. This has been sufficient to finance assistance as follows:

Loans for Regular Force Personnel	$4,711,320
Grants in Financial Welfare Cases	$ 987,902
Total	$5,699,222

Of the total loans of $4,711,320, the sum of $3,790,043 has been repaid and the loans receivable at 31 March 1962 were $915,973. The loss through write-offs has been only $5304.

In addition, the Second World War Army Benevolent Fund has been able to contribute $589,148 during the nine years of this programme, directed for expenditure on behalf of Second World War Army veterans still serving in the Canadian Army.

As the number of Second World War veterans decreases, the expenditure from the Second World War Army Benevolent Fund monies will have to decrease accordingly. Therefore, it will be necessary with the passage of time for the Canadian Army Welfare Fund to bear a larger portion of the cost of grants.

The monies allocated for loans have increased from $16,500 at inception to an approximate figure of $100,000 monthly as at 1 April 1962. Surveys taken among Commanding Officers have indicated that the need for loans — particularly of the preventive welfare nature — is increasing, and it is apparent that the existing allocation of $100,000 monthly is insufficient. For example, this allocation provides for the sum of approximately $6000 a month for Camp Borden which has a total strength of 3500. This figure is considered to be far below the requirement for essential loans in a camp the size of Camp Borden.

Since contributions from Institutes and Maple Leaf Services will never be sufficient to meet all requirements of the financial welfare programme, the Board of Directors of the CAWF is actively engaged in attempting to develop other sources of funds. In this regard, the Board of Directors has expressed the hope that friends and former members of the Canadian Army will continue to take an active interest in the welfare of the Regular Force, and should they wish to make a donation or bequest it would be most acceptable.

Donations to the Canadian Army Welfare Fund are deductible for income tax purposes and receipts will be issued. Should former members wish to make a bequest to the Canadian Army Welfare Fund they are requested to instruct their solicitors, notaries in the Province of Quebec or officials of Trust Companies to make the necessary provision in their wills.

A form of bequest which could be used for this purpose follows:

> I give and bequeath to the Canadian Army Welfare Fund the sum of $..... for its use in accord-

ance with the purposes of the Fund.

Another form, which could be used where a donor desires to set up a bequest for a specific use and/or as a memorial trust, could be worded as follows:

I give and bequeath to the Canadian Army Welfare Fund the sum of $..... (or designated portion of my estate) for the purpose of financial assistance on behalf of members or former members of the (insert name of Corps, Regiment, etc.), such sum to be held in trust under the name of "The (insert donor's name) Memorial Trust". If the (.....) Memorial Trust, in the opinion of the Chief of the General Staff of the Canadian Army, cannot be used or continue to be used for the purposes set out herein, then it may be used in accordance with the purposes of the Canadian Army Welfare Fund.

What do we Mean by "Mobility"?

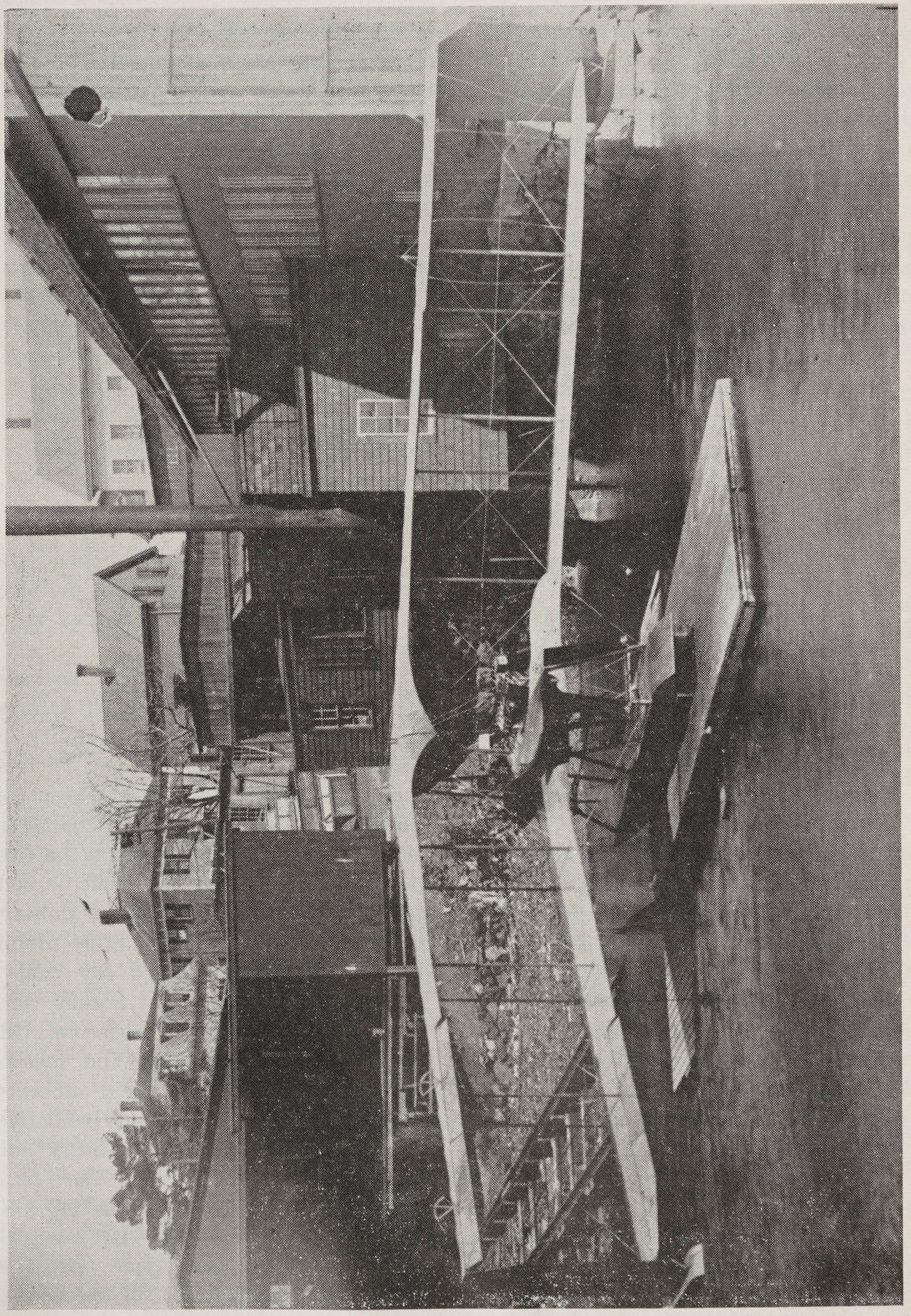
(Continued from page 51)

the tank destroyer units in the assault phase of operations.

Battlefield mobility is the least understood of all aspects of mobility. Many persons do not seem to have grasped the fact that if a vehicle cannot swim a river or withstand a 20-mm. shell, it is then immobile against either of these obstacles. If the force cannot go forward to carry out the commander's wishes, then it does not have mobility and if it cannot do this in the face of the enemy, then it does not have battlefield mobility.

Superimposed over the whole picture, be it a force or an individual vehicle, is the problem of command and control. The force or the vehicle must arrive at the right place at the right time or all its mobility goes for naught. This, however, is a problem that is common to all types of mobility. Command and control does not in itself confer mobility on a force or vehicle, but upon the excellence of the command and control will depend the proportion of the available mobility of the unit or equipment that is in fact used.

To summarize, there are three basic types of mobility: strategic, tactical and battlefield. Strategic mobility in a function of weight and size. Tactical mobility depends to a great extent on running gear/power plant characteristics with special emphasis on the firepower and protection. It must be concluded, therefore, that in a military sense it is impossible to define mobility for all situations. To say that a load-carrying vehicle and a tank both have good mobility is nonsense. One may have good strategic and tactical mobility with no battlefield mobility, while the other has excellent battlefield mobility, fair tactical mobility and poor strategic mobility. The same comment applies to forces as well. Therefore, the term mobility has little meaning unless the type (strategic, tactical or battlefield) is specified.



RCAF Photograph

Flashback No. 39

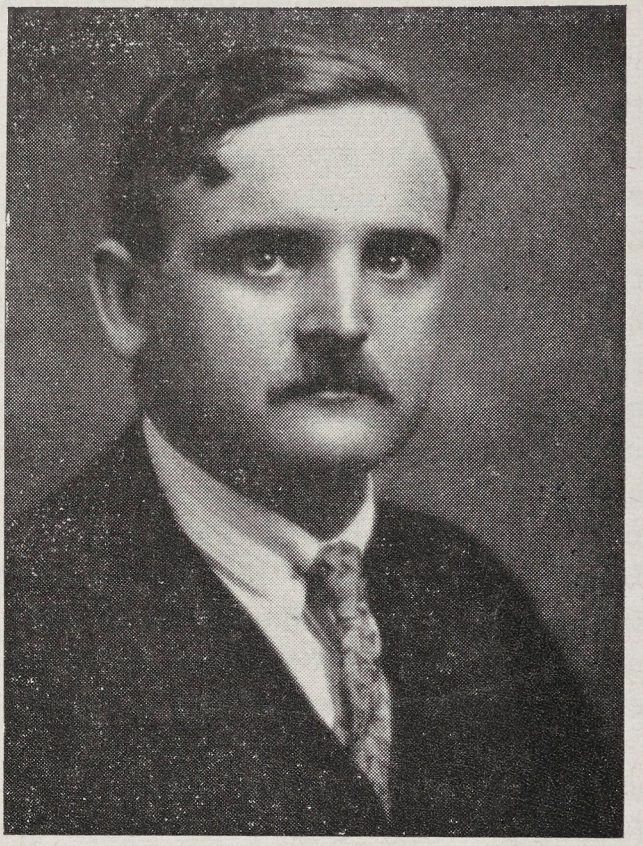
The Canadian Aviation Corps

NARRATIVE PREPARED BY THE HISTORICAL SECTION,
ARMY HEADQUARTERS, OTTAWA

The odd looking aircraft pictured on the opposite page was the first and only aircraft in the Canadian Expeditionary Force. It represented the complete equipment of a strange little unit called the Canadian Aviation Corps.

The Canadian Aviation Corps was authorized through the novel medium of a short memorandum dated 16 September 1914 with "OK" and the Minister of Militia's initials, "S.H." [Sir Sam Hughes], pencilled on the bottom of it. The Corps had a total strength of two officers and one staff sergeant. Captain E.L. Janney was appointed Commandant, and Lieutenant W.F. Sharpe was the other pilot. There are indications that Janney had never flown an aircraft of any sort, but Sharpe appears to have had considerable experience barnstorming around North America.

The Corp's one piece of equipment, a Burgess-Dunne biplane, was purchased in Marblehead, Mass., for $5000, flown to Valcartier, and then loaded aboard the *Athenia* for passage to England with the first Canadian Contingent. The machine arrived in England with "...the canvas badly torn, the wires and girders... bent in all directions, and the wings twisted badly out of shape." The aircraft was left in this state, sitting in a railway yard at Amesbury, for about two weeks. From there it was moved to Salisbury to be left on the side of a road, until Lieutenant Sharpe moved it to a shed at the Central Flying School Upavon. On 28 December the plane, which was now beyond repair, was shifted to one of the new sheds at Larkhill — its last known resting place. By the time "Canada's first military aircraft" was mentioned again, Sharpe had been killed in a training crash and Janney had resigned and returned to Canada.



RCAF Photograph

Captain Janney.

The Corps' one-man ground crew, Staff Sergeant H.A. Farr, was released in May 1915 on the "disbandment of

MILITARY HISTORY: THE CULT OF DENIGRATION

by

BRIGADIER C.N. BARCLAY, CBE, DSO*

Most students of history will agree that the military writers of old — up to the end of the nineteenth century — were, as a rule, kinder to the generals and their troops than twentieth-century historians. There were exceptions, but comparatively rarely do we find that campaigns or battles were mismanaged, or that the troops behaved in a manner other than with skill and gallantry. Anything that might be unpalatable was eschewed. That was the fashion of the times; but apart from these perhaps excusable omissions the military historians compiled their records with diligence and accuracy.

Before this century, generals occasionally wrote accounts of events; but following World War I the spate of military literature by senior commanders was much greater than ever before. This was not surprising in view of the unprecedented scale of operation and the comparatively long duration of the struggle. On the whole the generals wrote with restraint, confining themselves to facts. Only rarely were they critical of their superiors or subordinates — or even their enemies.

Also between the wars there emerged in Britain a small group of specialist military writers, prominent among whom were Captain B.H. Liddell Hart and Major-General J.F.C. Fuller. Their aim was to relate military history, particularly the experiences of 1914-18, to post-war and future needs. Judged by Britain's standard of preparedness for World War II they were not very successful; but perhaps they accomplished more than most people think. Although little was done in the material sense to prepare for the second war against Germany, there was, nevertheless, a great deal of forward thinking, and many of the successful commanders of 1939-45 may have acquired, possibly without realizing it, ideas from

**Brigadier Barclay is Editor of* The Army Quarterly and Defence Journal *(Great Britain) in the April 1962 issue of which this article appeared. It is reproduced by courtesy of that publication.* — Editor.

The Canadian Aviation Corps

(Continued from preceding page)

the Corps". By the end of the First World War, Farr had been commissioned in the Royal Flying Corps, and Janney, after variously trying to manufacture planes, open flying schools and promote flying schemes, had served with distinction as an officer in the Royal Canadian Naval Volunteer Reserve.

To this day no one is quite sure what ultimately happened to the Burgess-Dunne biplane.

the better military literature of the inter-war years. A few even admit that this was so!

The two writers mentioned, and a few others, were highly critical of the conduct of operations in 1914-18, and the manner in which the Army was reorganized, equipped and trained between the wars. Nevertheless, their views were usually supported by sound and balanced argument, and when they critized operations, they invariably made due allowance for the commander's circumstances and difficulties at the time. They did not make the cardinal error of some modern writers, of assuming that the general in the field was as well informed about the enemy and topography as an historian who had spent months, or years, poring over the war diaries and other records of both sides, and who wrote in retrospect. They were responsible men who wrote critically. They were not always right, but they very rarely made statements of fact, or expressed opinions, which they were not prepared to substantiate. The literary standard of these writers was high.

We can summarize the military writing between the wars, as it affected operations in World War I, by saying that the highly critical book or article was the exception rather than the rule, and when there was criticism it was restrained and usually well supported.

To-day the situation, in relation to World War II, is entirely different. Vastly more war books and articles have been written, and a much larger proportion are highly critical than was the case after World War I.

Many more senior officers—mostly generals—have written books and articles in the press; not only in our own country but in other countries—particularly America and Germany. In some cases they have not written direct, but provided the information to enable professional historians or journalists to write on their behalf, or to edit their own accounts. Much of this literature is of the highest quality; but in many the generals have criticized the conduct of their political chiefs, their Service superiors and subordinates and our Allies in a manner, and to an extent, which is new. It can almost be said that the generals set the fashion in the "cult of denigration". This being so, they can hardly complain if their own actions are criticized by other writers.

The official historians in the United Kingdom series on World War II, and those of other Commonwealth countries—whose work in many cases is still incomplete—have produced detailed and balanced accounts, supplemented by splendid maps and illustrations, which are, as they should be, of the highest standard. But here again they have been granted, or taken, a latitude for criticism which is unusual in officially sponsored accounts of military operations.

In addition to the literature mentioned above there have been a multitude of war books dealing with the years 1939-45—not all of which come within the classification of military history—giving a wide variety of points of view. Many of these are excellent; but again a high proportion are critical of the higher direction and conduct of operations and in some cases the behaviour of the troops.

So far there is little to complain about. Many people will not agree with all the criticism they read, and, in some cases, it may be considered unfair, or that the authors have gone beyond the bounds of good taste. On the whole, however, the kind of military literature described has added vastly to our knowledge of events and is of definite value as a guide to the future—which should be the main purpose of all history. This is a critical and enquiring age in every field, and we cannot expect the military writer to be an exception to the prevailing trend.

Now, and lastly, we come to another class of author—fortunately in the minority, but, nevertheless, fairly common the past few years. Most readers will be familiar with the type of book in which one has only to read a few pages to realize that the author's object is to break down some respected reputation; to ridicule some old-established institution; to show that a campaign or battle previously thought to have been well conducted was mismanaged or that the troops behaved badly when earlier accounts had described their conduct as creditable. No one can object to this kind of criticism if it is based on reliable new evidence and balanced argument; but in the kind of book now under reference this is too often lacking. The authors denigrate for denigration's sake, in the same way as others, in another field, pull in the more unpleasant aspects of sex because they believe it will sell their books—and unfortunately they are very often right.

Characteristic of this sort of military book is the impression they give of having been hastily written and carelessly compiled. They abound in elementary errors. Individuals are given the wrong ranks and their names misspelled; officers are assigned to wrong or non-existent appointments; units and formations are wrongly designated; dates and times are incorrectly stated; and accounts of operations frequently bear no relation to the established facts. Great reliance is always placed on eyewitness accounts of battlefield incidents, whereas the experienced military historian knows full well that long after the event the eyewitness is often a bad witness. Indeed, it is exceptional to get even two out of three or four witnesses to agree on a battle incident which happened some years before.

When one reads a book in which many factual details are wrong, it is not unreasonable to assume that the author's judgment in matters which are not factual, but controversial, will be equally faulty.

Intolerance of the previous generation has existed throughout the ages. It is probably no greater today than in the past: only the means of venting it are so much easier—through the popular press and the publisher's office. The middle-aged and elderly, who are the objects of this criticism, should certainly not resent it. Much of it is true and they were probably just as critical of the generation before them, but they were mostly muzzled by lack of opportunity to express their views.

Whether we like it or not the highly critical young—or mostly young—military writer has come to stay. We would ask that in this writing he should remember two things:

(a) When writing history meticulous factual accuracy is very important. A careless author, whose book is full of elementary mistakes, cannot expect to be taken seriously when he comes to criticize, and pronounce judgment, on some military venture.

(b) Criticism of military operations is valueless unless the circumstances at the time are taken into consideration. In particular the information about the enemy, and the topography, in the commander's possession on the day—or what he could reasonably be expected to have found out— are of paramount importance. A writer who assumes that the general knew as much as he, the writer, has gleaned from close study, over perhaps a period of years, merely makes a fool of himself. There are not many who do this, but there are a few, and there are quite a number who, whilst they give some consideration to these matters, do not do so with the care which those who read their books and articles have a right to expect.

By all means let us have criticism of military operations—and also peacetime military affairs. It is a great stimulant to thought and the best means of improving our knowledge, and our technique in the art and science of war. A glance round the world seems to indicate that this knowledge is as important today as it was in the past.

Canadian-U.S. Exercise in 1963

A STATEMENT ISSUED BY THE DEPARTMENT OF NATIONAL DEFENCE, OTTAWA

A joint combined Canadian and United States winter mobility and logistics exercise will take place on the Alaska Highway in February 1963.

The manoeuvre—called "Polar Pass" — will involve approximately 10,000 troops of ground and air forces of both countries as well as some U.S. sea-going elements. The exercise will highlight training in winter warfare techniques, air transportability and mobility, sea transport training and training in joint and combined procedures.

The exercise will take place along the axis of the Alaska Highway from Whitehorse, Yukon Territory in Canada to Tok Junction, Alaska, in the United States. The actual ground manoeuvre will last 13 days.

Manoeuvre Director and Commander of the exercise joint and combined forces will be the General Officer Commanding the Canadian Army's Western Command, Major General J. M. Rockingham.

Deputy Manoeuvre Directors and Deputy Commanders will come from Sixth U.S. Army, Tactical Air Command, U.S. Air Force, and the Royal Canadian Air Force. Aggressor force for the exercise will be troops from the Alaska Command.

Troops involved in the exercise will come from the Canadian Army, the Royal Canadian Air Force, the United States Army, and the United States Air Force. The United States Military Sea Transport will also take part in the exercise.

STANDARDIZATION PROGRAMME UNITES THREE ARMIES

By

LIEUT.-COLONEL KENNETH G. GROOM*

Differences in weapons, ammunition, field equipment, procedures and doctrine often hindered battlefield performance when the United States, British and Canadian armies fought side by side in The Second World War. Through the American-British-Canadian (ABC) Standardization Programme the three armies are resolving differences and enhancing ability to fight together effectively in any future war.

Standardization of matériel and non-matériel items has progressed notably through this programme during the past 15 years. Effort is directed toward the greatest possible economy for armies of the governments concerned through use of combined technological and scientific resources.

Exchange of information among the ABC allies includes sharing of procedures governing tactical doctrine, organization, intelligence, operations, administration, logistics, research and development, and the design of weapons and equipment in which there is a common interest.

The broad aim of standardization is to ensure that there will be no operational, matériel or technical obstacles to full cooperation and collaboration among the American, British and Canadian armies to achieve the greatest benefits at lowest practicable cost.

Collaboration in research is directed toward solution of mutual problems by pooling knowledge and combining talents of top-ranking scientists in each of the member nations.

None of the ABC armies is legally compelled to agree to a standard or to join in collaboration and coordination leading to a possible standard. Once an army has approved a standard, however, it is morally obligated to conform unless released by agreement of the other armies, or unless the standard item is replaced by a new development. Insofar as manufacturing techniques permit, ABC matériel and non-matériel items will be identical. As a minimum, items of equipment will have interchangeable parts and assemblies.

For example, if current effort is successful, the Tripartite 81-mm. mortar will satisfy a mutual requirement. It will have a British tube and bipod, a Canadian baseplate and sight, and U.S. fuzing for the ammunition.

An example of "partial" standardization is the development of the 7.62-mm. rifle cartridge for use in different weapons of the three armies. It was

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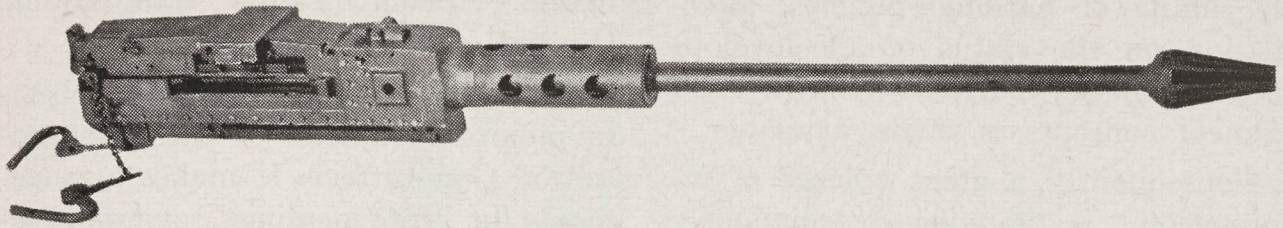
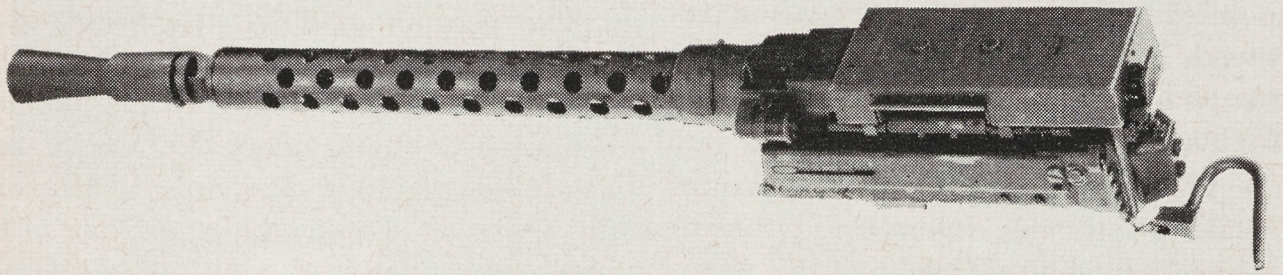
**The author is Chief of the Standardization Branch, International Division, Office of the Chief of Research and Development, U.S. Army.* *This article is reproduced from the March 1962 issue of the Army Research and Development Newsmagazine by courtesy of that publication.* — Editor.



U.S. Army machine-guns, 50-calibre M85 (above) and 7.62 mm. M73, are undergoing tests in Canada and Great Britain for possible mounting in tanks.



adopted by the NATO countries under the Mutual Weapons Development Programme (MWDP).

The U.S. Army standard machine-gun M60, which fires the NATO 7.62-mm. cartridge, is undergoing tests in Britain and Canada and may be adopted as standard by these two countries.

In the matériel field, there are now more than 100 active, formalized ABC Army Standards and 40 more in the process of completion. In addition, as of Dec. 31, 1961, there were more than 180 specific agreements which do not require publication of a formal ABC Army Standard.

The standards list includes items ranging from spark plugs to vehicles, telephone cable to radio sets, trucks to aircraft, pistol ammunition to medium gun shells, and rifles to missiles.

In the non-matériel field, approximately 100 active procedures and studies have been approved for standardization. The procedures include such diversified items as operation orders, techniques for minefield laying and recording, adjustment of artillery fire, relief of combat troops, and military mapping. In standardization parlance those are called SOLOGs, an acronym used to describe operational and logistical areas.

Standardization of both matériel and non-matériel items requires agreement on the need for standardization and application of the principle of reciprocity. The reciprocity concept among the three armies extends to funding and to the exchange of personnel, matériel, information, visits and joint use of facilities. The principle covers, for example, the loan of equipment by one army to another for test and evaluation, on a non-reimbursable basis, even though the matériel loaned may be destroyed in tests.

Perhaps the keystone of the ABC programme is the principle that a full exchange of information and opinion among the armies is effected with a minimum of formal procedure. Within

the limits of national policies, information on the status of all development projects, current doctrine and tactical concepts is made available.

Consequently, a great volume of information is moving continuously among the armies, on a variety of subjects. Standardization would be virtually impossible without this exchange. Of course, each army has agreed to safeguard classified information received from the others in a manner comparable to that found in the originating army.

Differences over standardization or collaboration are referred to higher levels for resolution as early as possible. Differences do arise on occasion, but the ABC agreement provides a suitable channel for mediation.

In the interests of economy, each army has agreed that it will make maximum use of existing agencies and procedures. The possibility of sharing the work of research and development is under constant review.

The ABC Standardization Programme is administered by the Washington Standardization Offices (WSO) headed by Maj.-Gen. Dwight E. Beach, Deputy Chief of Research and Development, U.S. Army, and the Commanders of the British and Canadian Army Staffs in Washington, D.C.

The WSO is assisted by the Primary Standardization Office (PSO). Col. David G. Gauvreau, Chief of the International Division, Office of the Chief of Research and Development (OCRD), is the U.S. member of the PSO. The British and Canadian members, Col. Thomas S. Foster and Lt.-Col. John S. Ussher, respectively, are liaison officers in the International Division, OCRD.

The PSO works on a full-time basis to monitor activities of the Standardization Committees. It makes arrangements for WSO meetings, reviews progress, recommends action to the WSO, records mutual arrangements, and informs the WSO of any difference between the armies.

The permanent Tripartite Standardization Committees, consisting of U.S., United Kingdom and Canadian members, meet about every six weeks to establish, maintain and review lists of all projects. The committees activate and assign matériel and non-matériel projects to armies for monitorship, foster collaboration, monitor standardization requirements, publish Army Standards, coordinate all ABC Army standardization matters, and recommend formation of working groups when required.

Seven of the committees are involved in the standardization of end items of matériel. Their names correspond to the U.S. Army Technical Service with which they are involved, namely: Ordnance, Signal, Engineer, Chemical, Transportation, Medical and Quartermaster. Others are the Research Coordination Committee, the Technical Procedures Committee, and the Non-matériel Committee.

The Tripartite Research Coordination Committee (TRCC), as its name implies, is responsible for coordination of research among the armies. It was founded under the direction of the WSO in 1953, and organized under the Basic Standardization Agreement among the ABC armies. The TRCC

This standardized mine detector can be mounted on vehicles of all three ABC Programme countries.

consists of one member and one alternate from each army.

Dr. Richard A. Weiss, Deputy and Scientific Director of Army Research, is the Army member of the TRCC and Dr. Leonard S. Wilson, Chief of the Earth Sciences Division, U.S. Army Research Office, is alternate.

Major areas of research coordination of the TRCC include: human resources, operations, arctic environment, offroad ground mobility, infrared and ultraviolet, combat surveillance, mapping and medical services.

The Technical Procedures Committee is responsible for coordinating stan-

dardization in the field of technical and industrial procedures such as measurement standards, design practices and component repair parts.

The non-matériel Committee coordinates standardization matters dealing with doctrine and procedures, leading to publication of SOLOGs.

Liaison arrangements among the three countries are designed to effect close coordination and unity of effort. On the U.S. Army side, there are two standardization groups, each under the operational and administrative control of the U.S. Army Chief of Research and Development. The group in London maintains liaison with the British War Office, Ministry of Aviation, and various UK Army field agencies; it also handles NATO and Mutual Weapons Development Programme standardization matters. The group in Ottawa provides U.S. Army representation at Army Headquarters, the Defence Research Board and other Canadian Army field agencies. Each group consists of highly qualified members of the U.S. Army Technical Services and the combat arms.

The Tripartite Ad Hoc Working Group on Priority Standardization Effort met in Washington last November and attained results termed "most gratifying". This high-level group gave added impetus to the ABC Programme and reached prompt agreement in

This full-track carrier, XM-571, is being developed by Canada to meet a U.S. Army requirement under the ABC Standardization Programme.

fostering increased collaboration in research and development. Shortly thereafter, their recommendations were all approved by the three countries with very slight modification in one or two instances. Implementation of these recommendations should result in tripartite standardization of a number of major items.

An important offshoot of the ABC Programme is the U.S. Army - Canadian Development Sharing Programme. Under provisions of Army Regulation 1-25, procedures have been set up whereby: (1) qualified Canadian industry may competitively bid on contracts for U.S. Army development projects; (2) the U.S. Army participates in projects which have their inception in Canada; and (3) the U.S. Army may nominate projects which, if acceptable to Canada, may be developed there, utilizing Canadian funds and facilities.

Much of the activity in the U.S. Army-Canadian Development Sharing Programme has been in the third category, wherein Canada develops items to fulfill U.S. Army requirements and pays the R & D costs. Of course, by making this financial commitment, Canada has its sights on production of items which may result following a successful development. An important fringe benefit of this programme is that the item eventually developed by Canada may be well suited for ABC standardization.

Over the past 15 years the ABC Army Standardization Programme has matured to the point where it now provides an effective organization to achieve its aims. Meeting in Washington recently, the WSO issued the following statement:

"It has become increasingly evident in recent years that a better correlation of R & D programmes of the ABC countries will ease the load on all countries... It is sincerely hoped that all three countries will fully appreciate that the success of the ABC Programme is largely dependent on early cooperation on new projects so that parallel and competitive development will be held to a minimum".

In a spirit of mutual trust and cooperation, the American, British and Canadian Armies are ensuring that the problems of yesterday will not rise on the battlefield of tomorrow.

Sick — and Hurt

Until 1806, when it was amalgamated with the Transport Board, the medical department of the navy was administered by the Sick and Hurt Board, the commissioners of which were appointed by the Admiralty. When the commissioners were chided for their want of system and it was suggested that they might work longer hours, they replied that "six hours a day is as long a time as official business can be prosecuted with alacrity and effect". It is scarcely suprising that they disappeared from history with little official sympathy.—*From "Medicine and the Navy", Vol. III, 1714-1815, by Christopher Lloyd and J.L.S. Coulter (London, 1961). Contributed by Capt. F.L. Jones (Retired), The Irish Regiment of Canada, Burlington, Ont.*

COMPETITION SHOOTING RESULTS

Official standings in the Regular Army small arms competition held last summer at Connaught Ranges, Ottawa, have been announced by Army Headquarters.

An Army Headquarters team from the Adjutant-General's branch won the rifle championship for all Canada. Eastern Command was second with a team from the 1st Battalion, The Black Watch (Royal Highland Regiment) of Canada from Camp Gagetown, N.B. Western Command came third with a team from the 1st Battalion, Princess Patricia's Canadian Light Infantry, from Victoria, B.C. Fourth and fifth were teams from the 2nd Battalion, Royal 22e Régiment, Valcartier, Que., and the Royal Canadian School of Infantry, Camp Borden, Ont.

The champion pistol team came from the 1st Battalion, Princess Patricia's Canadian Light Infantry. Second and third were the Royal Canadian School of Infantry and the 1st Battalion, The Black Watch.

Sub-machinegun champions are the 2nd Battalion, Princess Patricia's Canadian Light Infantry, from Edmonton, Alberta. Second and third were the Royal Canadian School of Infantry and the 3rd Battalion, Royal 22e Régiment, Valcartier, Que. Fourth was the 1st Battalion, The Black Watch.

The shooting trials also established the Regular Army's markmanship teams for 1962-63 which competed with top U.S. Army teams in October at Fort Benning, Georgia, as follows:

The rifle team was composed of Capt. S. P. Northrup, Lt. K. D. Lidgren, and Cpls. R.J. Purdy and A.R.S. Ruttan of the Royal Canadian School of Infantry; Cpls. A.W.J. Conners and M.A. Smith of the 1st Battalion, The Black Watch; Sgts. E.P. Leben and R. R.H. McKay of Army Headquarters; Lance-Cpls. J.R. Labrecque and R.L.A. Perrault, Royal 22e Régiment; Cpl. R. M. Ranson, Lord Strathcona's Horse (Royal Canadians), and Lance-Cpl. J. W. Matthews, 1st Battalion, Princess Patricia's Canadian Light Infantry.

The Army pistol team was composed of Capt. A.R. Weeks, 2nd Regiment Royal Canadian Horse Artillery; Lt. R. J. Walsh, 2nd Battalion, The Canadian Guards; Lt. G.R.J. Bellavance, Royal 22e Régiment; Sgt.-Major R.G. Buxton, 1st Battalion, Princess Patricia's Canadian Light Infantry; Staff-Sgt. L. A. White, Royal Canadian School of Infantry, and Cpl. M.A. Smith, 1st Battalion, The Black Watch. — *From a report issued by the Directorate of Public Relations, Army Headquarters, Ottawa.*

Achieving the Impossible

Winnipeg. — The RCAF now has a satellite-tracking camera whose manufacturers claims it can photograph a single snowflake at a range of 300 miles, says Wing Cmdr. R. P. St. John of the RCAF base at Cold Lake, Alta.

It's a dandy camera, he said, but the RCAF hasn't been able to find a lone snowflake 300 miles away to check the claim. — *Canadian Press Despatch.*

Soldier Wins Award for MG Mount

A 33-year-old soldier with a flair for inventing things has won his second award in four years for suggesting and developing improvements for Army equipment.

Sergeant A. J. Frasson in September received a money prize and commendation certificate for his part in designing an improved mount for 30-calibre machine-guns carried on Army Scout cars.

A weapons technician, Sergeant Frasson is stationed at Winnipeg, Man., with No. 213 Workshop, Royal Canadian Electrical and Mechanical Engineers. He said the new design is not patentable, but is a radical improvement on original equipment fitted into this type of vehicle.

It was developed with help from Craftsman T. B. O'Mara while the pair were on duty with Canada's NATO Brigade in Europe.

"The old one worked all right," Sergeant Frasson said, "but it took too long to mount and dismount in action. Ours lets the gun slip on and off in seconds and also gives a 180-degree field of fire as well as increased up and down movement. We tested it in exercises and it proved to be pretty handy for house clearing and ditch fighting."

The designers worked in their spare time and used scrap material to build a working model. Their interest in the project was aroused when soldiers using the old mount mentioned the restricted field of fire of their guns.

The two men split a $40.00 award made by the Suggestion Award Committee who tested the new mount for the Department of National Defence at the Army Proving Grounds in Ottawa. Each received $17.00 after taxes.

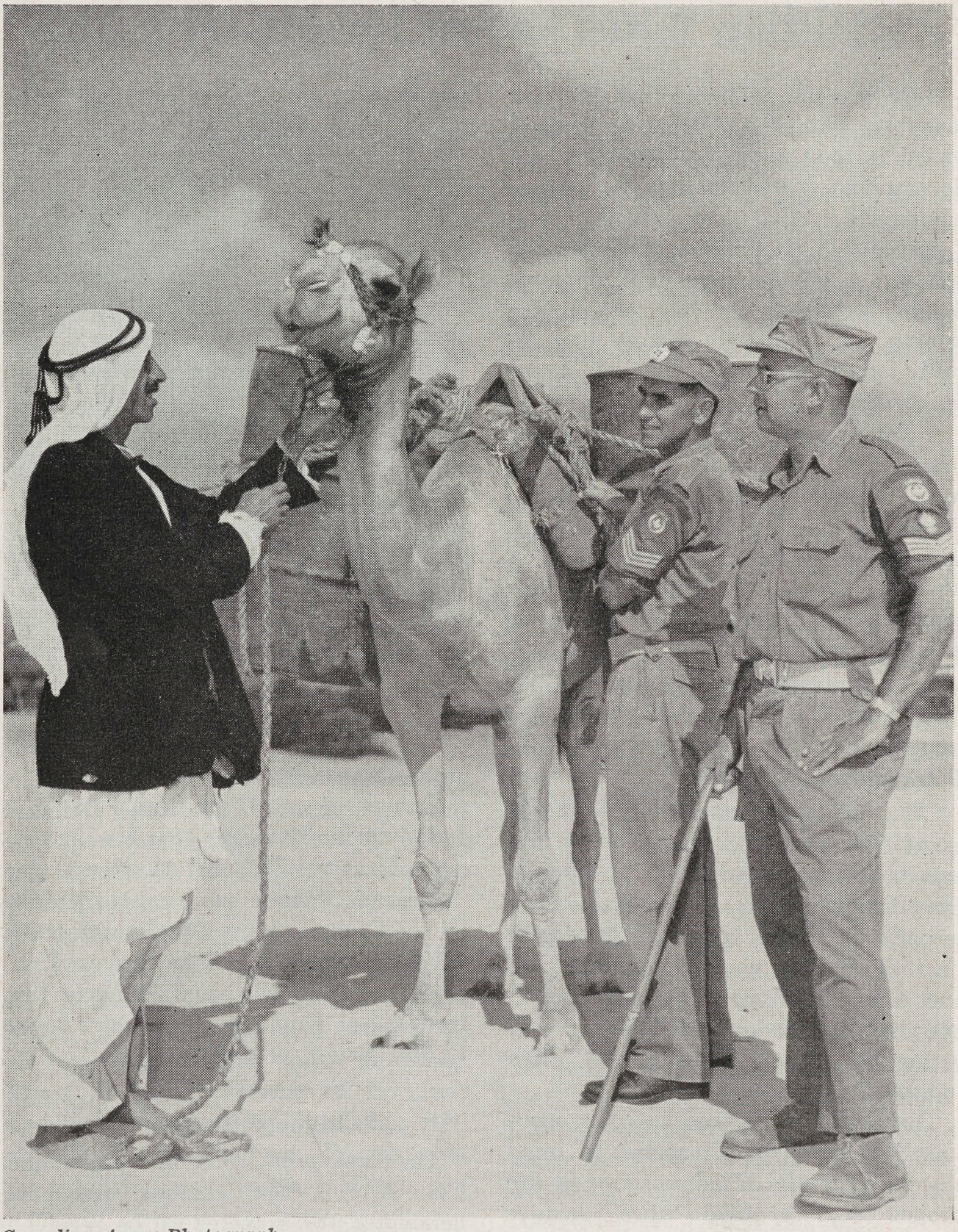
Canadian Army Photograph

Inventor Frasson at work.

Sergeant Frasson was awarded $108.00 by the Committee in 1958 for designing a ladder carrier which is now used on Department of National Defence fire trucks. — *From a Canadian Army Public Relations news release.*

"Chinook" Production

The first production models of the U.S. Army's new chinook transport helicopter are expected to be received soon. Current contracts call for production of 40 of the new aircraft. — *News item from the December 1962 issue of the "Military Review" (U.S.).*



Canadian Army Photograph

The "Ship of the Desert" came into its own this past summer when Sergeants C. Mason and G. Grundy (right) of the Corps of Royal Canadian Engineers employed a camel for transport on a UNEF construction project near their Rafah base.

Engineers' "Camel Corps"

Desert Beast Used on Project

FROM A MIDDLE EAST REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS, ARMY HEADQUARTERS, OTTAWA

Rafah, Egypt: United Nations Emergency Force Engineers bypassed the modern age this past summer by hiring a camel to assist in an engineering project. And the result saved time and money.

The job was to prepare the nearby Khan Yunis rifle range for the annual UNEF competition in September. During project planning, Works Officer Captain Mervin Palmer of Vancouver, and Foreman of Works Sergeant George Grundy of Peterborough found the desert sand too soft and too fine for military vehicles unless a one-quarter mile metal track was laid down as a makeshift road.

With the idea of using a camel in its age-old role of hauling materials, the two Canadians turned a costly project into a cheap and simple task. Once the idea was approved, Sergeant Grundy lost no time in arranging the hire of the animal and its Bedouin driver.

Major Karl Snider of Toronto, Commander of the UNEF Engineer Company, said the most modern engineer vehicles and equipment are available to them, but all projects are checked for ways of paring costs and saving time. He commended his men for their skill in developing a simple but effective plan for the use of the camel.

Sergeant C. Mason of Arnprior, Ont., was given the job of supervising the camel and its driver, as well as completion of the rifle range project. Mason, who finds his work here quite different from the engineer tasks he performed in Canada, used the animal to haul prefabricated targets, target frames and other materials.

Major Snider jokingly said the Engineers had considered buying the camel, but were deterred when no sapper could be found who was qualified to drive four-legged transport. Anyway, camel driving is not an acceptable or authorized trade in the Royal Canadian Engineers.

Civil Defence

Civil defence is the combined effort of our governments at all levels and the people to assure ourselves that we will not be destroyed by a hostile power equipped with weapons of destruction that pose the issue of survival to the rest of the world. A realistic, thoroughly organized programme is essential to our national security. — *Lieut.-General Clarence R. Huebner, U.S. Army (Ret.).*

Glossary of Space Terms

Abort: A space mission aborts when it fails to accomplish its purpose for any reason other than enemy action. An abort may occur at any point from start of countdown to final destination.

Absolute zero: The temperature at which all thermo motion or heat action ceases: approximately minus 273.16 degrees C., minus 459.69 degrees F. or zero degrees Kelvin.

Acceleration: The rate of increase of velocity.

Aerodynamics: That field of dynamics which treats of the motion of bodies relative to the air and the forces which act upon the body, especially as they relate to flight through the air.

Aeronomy: The science that treats of the earth's atmosphere, or the atmosphere of other celestial bodies, especially in respect to its properties, motions, and reactions.

Air-breathing: The term air-breathing refers to the engine which requires the intake of air for combustion of the fuel, as in a ramjet or turbojet. This is contrasted with the rocket engine which carries its own oxidizer and can operate beyond the atmosphere.

Anoxia: An absence of oxygen in the blood, cells or tissues of the body.

Antigravity: The hypothetical effect upon any mass by which some still-to-be-discovered energy field would cancel or reduce the gravitational attraction of earth (or any other body).

Aphelion: The point at which a planet or other celestial object is farthest from the sun in its orbit about the sun.

Apogee: That point in an elliptical orbit of a satellite at which the distance is greatest between the orbiting body and its primary.

Artificial satellite: A man-made object placed in orbit.

Astrionics: Electronics as applied especially to astronautics.

Astronaut: One concerned with flying through space, or one who actually flies through space.

Astronautics: The science and technology of space flight.

Astronomical unit: The mean distance of earth from the sun: 92,907,000 miles.

Astrophysics: The study of the physical and chemical nature of celestial bodies and their environs.

Atmosphere: The body of air surrounding the earth; also, the body of gases surrounding or comprising any planet or celestial body.

Ballistics: The science or art that deals with the motion, behaviour, appearance or modification of missiles acted upon by propellants, rifling, wind, gravity, temperature or any other modifying substance, condition or force.

Biopropellant: A rocket propellant consisting of two unmixed or uncombined chemicals (fuel and oxidant) fed to the combustion chamber separately.

Booster: A propulsion unit used in initial stage of flight.

Boost-glide vehicle: A rocket-boosted winged vehicle under aerodynamic control capable of leaving the atmosphere, entering space and reentering the atmosphere by gliding.

Burnout: The point in time or trajectory when the propellant of the

spacecraft is exhausted or cut off, resulting in the end of combustion.

Celestial mechanics: The study of motion in space, natural or man-made.

Centrifugal force: The apparent force tending to carry an object away from a centre of rotation.

Circular velocity: The speed required to maintain a body in circular orbit.

Cislunar: Space between the earth and moon.

Closed ecological system: A system which provides for the body's metabolism in a spacecraft by means of cycling carbon dioxide, urine and other waste matters chemically or by photosynthesis, to convert them back into oxygen and food.

Countdown: The step-by-step process leading to space vehicle launching. It is performed in accordance with the predesigned time schedule and marked by a count in inverse numerical order. The countdown ends with T-time, that is "T minus 60 minutes" indicates 60 minutes from launching, except for holds. At the climax the countdown narrows down to seconds, "4-3-2-1-blastoff."

Deceleration: Negative acceleration (slowing down).

Doghouse: A protuberance or blister that houses an instrument on an otherwise smooth skin of a rocket.

Doppler principle: A principle of physics that states, "as the distance between a source of constant vibrations and an observer diminishes or increases, the frequencies appear to be greater or less."

Early warning satellite: A reconnaissance satellite used to detect enemy ballistic missile firings early enough to give warning.

Eccentricity: The degree of deviation from a circular orbit.

Ecliptic: The plane of earth's orbit around sun.

Egads button: A button used by the range safety officer to "destruct" a missile in flight. The word "egads" is an acronym for Electronic Ground Automatic Destruct Sequencer.

Environmental space chamber: A chamber (sometimes a simulated spacecraft) in which humidity, temperature, pressure, fluid contents, noise and movement may be controlled so as to simulate different space conditions. It is normally used for astronaut training.

Escape velocity: The velocity which if attained by an object will permit it to overcome the gravitational pull of the earth or other astronomical body and to move into space. The escape velocity from earth's gravity field is approximately seven miles per second.

Fission: The release of nuclear energy through splitting of atoms.

Flight profile: It is the graphic portrayal of the spacecraft's line of flight as seen from the side, indicating the various altitudes along the route.

Free fall: The motion of any unpowered body travelling in a gravitational field.

Fusion: The release of nuclear energy through uniting of atoms.

"G" or "G force": This is the force exerted upon object by gravity or by reaction to acceleration or deceleration, usually from a change of direction. One "G" is the measure of the gravitational pull required to move a body at the rate of ap-

proximately 32.17 feet per second per second.

Gimbal: A gimbal is a mechanical frame with two mutually perpendicular intersecting axes of rotation. A gimballed rocket motor is mounted so as to have two manually perpendicular axes of rotation to provide corrective movements in the pitching and yawing of the vehicle.

Gravity: Gravity is that force that tends to pull bodies toward the centre of mass. It is the resultant effect, at the earth's surface, of the earth's gravitation and of the centrifugal force of the earth's rotation upon a free-falling body. It is measured by the acceleration produced in the free-falling body toward the centre of the earth. The acceleration due to gravity (at latitude 45 degrees) is 32.1740 feet per second per second. A body starting at rest falls 16.085 feet in the first second, 48.255 feet in the next second, 80.425 feet in the next second and so on.

Ground Support Equipment: GSE is all ground equipment (part of the complete space exploration system) that must be furnished to insure complete support of the space system. It includes all implements, tools and devices either mobile or fixed, required to inspect, test, adjust, calibrate, appraise, gauge, measure, repair, overhaul, assemble, disassemble, transport, safeguard, record, store or otherwise function in support of a space vehicle. This takes in the research and development phase and the operational phase. (GSE is not considered to include land or buildings).

Gyroscope: A device consisting of a wheel so mounted that its spinning axis is free to rotate about either of two other axes perpendicular to itself and to each other. Once set in rotation the gyro axle will maintain a constant direction regardless of the fact the earth is turning under it.

Hard landing: A hard landing is the deliberate, destructive impact of a space vehicle on a predetermined celestial target. The vehicle is destroyed upon impact, hence "hard landing". The object of such a space shot is to test propulsion and guidance and to prepare the way, normally for a "soft landing".

Interplanetary: Between planets.

Interstellar: Between stars.

Ion: An atom that has lost or acquired one or more electrons.

Ionosphere: A layer or region of the atmosphere characterized by ionized gases.

Light-year: The distance light travels in one year at 186,284 miles per second.

Liquid propellant: A rocket propellant in liquid form.

Lunar: Of or pertaining to the moon.

Mach: A unit of speed measurement for a moving object equal to the speed of sound in the medium in which the object travels. Mach 1, under standard conditions at sea level, is about 759 miles per hour. It decreases with altitude.

Mass: The quantity of matter in an object.

Mass ratio: The ratio of a rocket's mass at launch to its mass at burnout.

Monopropellant: A rocket propellant consisting of a single substance, es-

pecially a liquid containing both fuel and oxidant, either combined or mixed together.

Nose cone: The cone-shaped leading end of a rocket, missile or rocket vehicle.

Orbit: Path of a body relative to its primary.

Orbital curve: Is one of the tracks over the surface of the primary body being orbited which has been traced by a satellite orbiting about it several times a day in a direction other than due east or due west. Each successive track is displaced to the west by an amount equal to the degrees of rotation of the primary body between each orbit.

Orbital velocity: The speed of body following a closed or open orbit, most commonly applied to elliptical or near-circular orbits.

Payload: Useful cargo.

Perigee: The point at which a moon or an artificial satellite in its orbit is closest to its primary.

Perihelion: The point in an elliptical orbit around the sun which is nearest the sun.

Perturbation: The effect of the gravitational attraction of one body on the orbit of another.

Primary: The body around which a satellite orbits.

Probe: An unmanned projectile sent into space to gather information.

Propellant: A liquid or solid substance burned in a rocket for the purpose of developing thrust.

Radiation: The emission and propagation of energy through space or a material medium in the form of waves. It is energy travelling as a wave motion. The term when unqualified usually refers to electromagnetic radiation—gamma rays, X-rays, ultraviolet rays, visible light, infrared rays and radio waves.

Retro-rocket: A rocket fitted on or in a vehicle that discharges counter to the direction of flight, used to retard forward motion.

Revolution: Orbital motion around a primary.

Rotation: Rotary motion on an axis.

Satellite: A body moving around a primary, especially a celestial body.

Satelloid: An artificial body or vehicle like an artificial satellite except that it is under engine thrust (intermittent or continuous) in its orbit.

Soft landing: The process of landing on the moon or other spacial body "softly" enough to prevent damage or destruction to the vehicle.

Space: That part of universe between celestial bodies.

Space platform: A large orbiting satellite conceived as a habitable base in space with scientific, exploratory or military applications. Also known as a space station.

Spatiography: The science of space. Spatiography is especially concerned with the charting and magnetic fields, radiation belts, and meteoroid belts.

Specific impulse: The thrust produced by a jet-reaction engine per unit weight of propellant burned per unit time, or per mass of working fluid passing through the engine in unit time.

Speed of light: The speed at which light travels, approximately 186,284 miles per second. This is considered to be the ultimate speed for space travel. Distances in space are meas-

ured in light years. One light year is equal to 5,880,000,000,000 miles.

Stationary orbit: A circular orbit in which the satellite moves from west to east at such velocity as to remain fixed above a particular point on the equator; sometimes referred to as a 24-hour orbit.

Sustainer Engine: An engine that sustains or increases the velocity of a spacecraft once it has achieved its programmed velocity from the booster engine.

Telemetering: A system for taking measurements within a space vehicle during flight and transmitting them by radio to a ground station. The spacecraft telemeter collects and transmits data on such things as speed, temperature, pressure and radiation.

Terrestrial: Of or pertaining to the earth.

Thrust: The amount of "push" developed by a rocket; measured in pounds.

Tracking station: A station set up to track an object moving through space, usually by means of radio or radar.

Trajectory: The path described by a space vehicle.

Translunar: Beyond the moon.

Weightlessness: The absence of any apparent gravitational pull on an object. Absolute weightlessness is obtained only by a body falling freely in a vacuum. An orbiting satellite is a special case of freefall. The condition of weightlessness is also induced when a body moves at a speed sufficient to counteract the gravitational attraction of any other body upon it.

Reprinted from "Space—The New Frontier", National Aeronautics and Space Administration, U.S. Government Printing Office, Washington, D.C. —Editor.

Doctrine — An Army Creed

Doctrine is indispensable to an Army — or to any military organization, for that matter. This is true because doctrine provides a military organization with a common philosophy, a common language, a common purpose, and a unity of effort. Doctrine influences, to a major degree, strategic thinking as well as the development of weapons, organization, training, and tactics. Doctrine is the cement that binds a military organization into an effective fighting unit.

I am speaking now of doctrine in its broadest sense. This doctrine includes not only the tactical employment of forces ... but also the fundamental principles or tenets of Army thinking. These concern such matters as the strategic conditions under which Army forces should be employed, the relation of these forces to those of other services, the operational environments of the field forces, and the basic principles which govern the operations of dual-capable Army forces which can fight in either nuclear or non-nuclear war. In this sense, we might consider doctrine as an Army creed which spells out the way we view our purpose in life and our relation to others. — *General George H. Decker (U.S. Army).*

THE ORTONA MURAL

by

COLONEL T. F. SLATER, CD*

A fine large painting known as "The Ortona Mural" is mounted in a place of honour in the Prince of Wales Armouries in Edmonton, Alberta. It is now the property of the Loyal Edmonton Regiment (3rd Battalion, Princess Patricia's Canadian Light Infantry), and certainly this is proper as it depicts the battle for Ortona fought during the Italian Campaign in the Second World War. This battle is famous in the annals of the Edmonton Regiment, which was granted the prefix "Loyal" on 7 July 1943.

The mural is 48 feet long and eight feet high; it was done in oils and really is a most realistic and life-like portrayal of the action which took place in Ortona in late December 1943 when the Edmonton Regiment were driving the Germans from the town. The soldiers shown are from the Edmonton Regiment, and the tank, which is giving them covering fire from the right foreground, is from the Three Rivers Regiment.

The mural was painted in 1947 by Mr. Gerald Trottier of Ottawa at the request of the late Colonel H. A. Campbell, then Commandant of 26 Central Ordnance Depot located at Plouffe Park in Ottawa. The subject was chosen because it was a famous Canadian battle fought during the Second World War and because it was a battle which had been well documented with facts and photographs.

Mr. Trottier and an assistant, Mr. John Parsons, produced this excellent mural in the record time of some two or three months.

The mural was mounted in the Men's Canteen in the Ordnance Depot in Ottawa where it held a place of honour and was admired by all who saw it. In 1954 the Depot was moved to Cobourg, Ontario, and as there was no suitable place to display such a large painting, it was carefully packed and stored away. In 1959, when it was apparent that the mural could not be suitably exihibited at the Depot, another location was sought.

With the assistance of Lieut.-General Geoffrey Walsh, Chief of the General Staff (then General Officer Commanding Western Command), and Major-General R.W. Moncel, the Quartermaster-General, arrangements were made to donate the mural to the Loyal Edmonton Regiment.

On 28 October 1961, the writer presented the mural on behalf of the members of 26 Central Ordnance Depot to the Regiment. Lieut.-Colonel E. L. Boyd accepted the painting on behalf of the Regiment.

It is particularly interesting to note that Brigadier J. C. Jefferson, who was the Commanding Officer of the Regiment at the Battle of Ortona, was present at the ceremony. He tendered the thanks of the Loyal Edmonton

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**Colonel Slater is Commandant of 26 Central Ordnance Depot at Cobourg, Ontario.* — Editor.

Amphibious Artillery

British Information Services

An Abbot self-propelled 105-mm. gun, fitted with a flotation screen, noses into the water during an Exhibition of British Military Vehicles at the Fighting Vehicles Research and Development Establishment, Chertsey, England, recently. The screen enables the gun to make deep water, river, or estuary crossings.

The Ortona Mural

(Continued from preceding page)

Regiment for the mural. Present were officers of the Regiment who had fought in the battle, and this, along with the excellent arrangements made by the Regiment for the presentation, made the ceremony a very fine and impressive one.

This was the first large mural painted by Mr. Trottier, who has had considerable success since that time. He now lives in Ottawa where he is employed with the Canadian Broadcasting Corporation as director of Television Design. He has undertaken a large mosaic mural in marble and glass which will be an outstanding feature of the new Science Building at the Carleton University in Ottawa.

Causes of War: A Research Project?

From "Editor's Notes" in the May 1962 issue of
The Royal United Service Institution Journal (Great Britain)*

It must surely appear as more than a little odd in this century and age of vast technological and clinical research that there has been no serious attempt to initiate any research project into the causes of war. Some of us may know vaguely through historical reading how and why some wars of the past were caused. In those cases where we as a nation have been actively concerned, there may be a few people who possess a reasonably acute understanding of the national reasons for involvement. A far smaller proportion may even know something of the international attitudes which led to war — in other words, the other side's reasons for overstepping diplomatic exchange into the final criterion of war.

But in general our knowledge of this particular subject is neglected and woolly. We — and by that is not meant only the British people but the whole of mankind — are very apt to allow our thought processes on the subject of war to be governed by slogans. "Wars are inevitable". "War is a recurrent curse of humanity." "There have always been wars and there always will be wars." "War is a natural phenomenon of the human race." And so on. We (and again the whole of mankind is included in the word) have come to accept these sayings as truisms without any real attempt to analyse them, to discover why wars happen periodically and what are the basic causes of them. It is virtually a state of mind attuned to the inevitability of war as something in the nature of an earthquake, uncontrollable by human endeavour.

We have, by the expenditure of thought, endeavour, money, eliminated or brought under control many diseases which used to afflict mankind. We can, by the expenditure of more of each, eliminate or bring under control many more. We can and do wage war on the many pests which, by research, we discover to spread disease. And there are many other fields besides disease in which, through similar expenditure, a better world for more people is being achieved.

Yet one of the few subjects which has never been tackled in this way is the incidence of war, surely as great a curse of mankind as any of the diseases to which we have devoted so much thought and treasure. So far as is known, no real research project has ever been consciously directed into discovering the real reasons why wars develop, and how and why a nation may reach the stage where it is prepared to risk its very existence to achieve a national aim. Obviously there are some reasons which will consciously impel a nation to war, but do we really know what they are? Can we put our finger on the one

**The Editor of the RUSI Journal is Lieutenant-Commander P.K. Kemp, R.N., F.S.A., F.R.Hist.S. — Editor.*

particular incident, or belief, or event, which constituted the actual cause of war? Too often we wrap it up in a woolly phrase or catchword. We wage a war "to resist aggression", or "to defend our way of life", or "to protect the rule of law", or "safeguard the future of democracy", or some similar vague phrase which defies strict analysis. And yet behind these vague expressions there must lie one last point, one overriding decision, one ineradicable belief which impelled the decision to resort to war.

If we knew, by research and analysis, exactly what in every case these points, decisions, beliefs were, we might then be some little way along the road towards the elimination of war as an expression of national policy. But we must first know, with exactitude and precision, what the basic causes are. Is this so impossible a task? Could we not, by diligent research, discover those basic causes and bring them into the public view? The records are available if the will to use them exists. And surely it would well be worth the expenditure of time and thought and money on a serious project that could lead to so much good for all of us. How revealing such a study could be, laying bare the inconsistencies and absurdities which were allowed, through ignorance, distrust, or a breakdown in communication, to fester and develop into beliefs so vast and so impressive that they could no longer be avoided or sidestepped, and to which in the end there was no other answer but war.

Of course, it is a vast and complex undertaking, but in today's world we should no longer be frightened by vastness and complexity. It would need eventually to be international in scope, but if a start were made nationally it could well develop by natural growth and interest into an international concept. It would need patience and industry and understanding — above all, understanding — but is there any lack of these virtues among the peoples of the world? And finally it would need to be authoritative, but if the national will exists the authority would not be lacking.

What would such a study be worth to mankind? To know definitely and realistically the fundamental and exact causes of former wars would at least present the possibility of avoiding those particular causes in the future. Knowledge such as this could be used positively in day-to-day diplomacy, and the course of international discussion and discord steered away from the defined danger points. All in all, it would surely be a study that could achieve positive results in the uncertain world of international argument and negotiation.

There is no lack of adequately constituted bodies which could organize and conduct such a study, communicating and cooperating with similar institutions in other parts of the world. The Institute for Strategic Studies is such a one in this country, or even our own Royal United Service Institution, with its equivalent counterparts in other nations. It would be a supremely worthwhile task, and one that, used with wisdom and understanding, would be capable of producing a dividend that could possibly provide a stepping-stone into Utopia.

THE STRUGGLE OF THE DRAGON

The following has been adapted and condensed from an article by Béla Bokor in the International Peasant Union Bulletin, *January 1961. We reprint it from the March 1961 issue of the* Military Review *(U.S.).* — Editor.

Red China, with a population of perhaps 670 million inhabitants, is undergoing a population growth at a rate of two to 2.2 percent yearly. This is an annual increase greater than the combined populations of New York City and Tokyo, Japan. The problem of feeding this mass of people has never been adequately solved.

The present régime has made tremendous efforts to improve food supplies, and year after year it has published official data showing impressive growth in agricultural production.

Nevertheless, at the end of 1960 the Red Chinese officials reported that the harvest in more than half of the cultivated area of the country had been curtailed by bad weather. In a country where the arable land averages only about 0.4 of an acre per capita, crop damage of this extent constitutes a calamity.

But here a rather surprising element enters the picture. Free World observers have received the official Chinese statement with a great degree of skepticism; Japanese weather observers have not noticed or reported the occurrence of such extraordinarily bad weather during the past year. Furthermore, there are estimates showing that last year's crops in Red China are perhaps a little better than those of the previous year. If this is so, what is the real situation and what is behind the official statements of the Communist government?

Most probably the food situation is not very rosy, and this year it will be even worse than in the past. But the human element, not the weather, should be held accountable. Perhaps the favourite experiment of the régime, the communes, did not produce the best results; perhaps the limitations of human endurance were reached by the Chinese peasants and this was responsible for at least a part of the harvest failure.

Western observers suspect another even more important element: the industrialization of the country. It is most probable that the harvest was not so bad, but that investments in industry required a greater proportion of the agricultural output than before.

In general, China seeks to exchange farm products, minerals, and manufactured items for industrial supplies and equipment. If the natural calamities were not as bad as reported, if the harvest was not as bad as declared, and if the ambitious industrialization programme is more responsible for the food shortage than the other factors, then the question arises almost of itself: What are the Chinese officials trying to do?

The answer may be that they are trying to explain to their own people why they should make more sacrifices in their diet. On the other hand, it may be that the Chinese Government is seeking to ease the burden of its industrialization programme in the field of foreign trade.

Aside from all these considerations, the subtle Chinese may have struck upon another idea: perhaps they have realized that someone has always had to pay a price for rapid industrialization in the Communist orbit. In almost every Communist country the lowered standard of living of the population in general and the extraordinary burdens carried by the peasantry in particular were the price paid for industrialization programmes.

Why should this payment of the hitherto terrible price not be shifted from the domestic levels to the international arena? Why could not the much wealthier Soviet Union and the more advanced European countries of the Soviet bloc take over more of these burdens? From the Chinese point of view this seems only natural.

Is it merely a coincidence that almost immediately after the Chinese announced their harvest failures, the Soviet leaders began to complain about their own agricultural shortages and even had the Soviet Minister of Agriculture removed from his post? Perhaps both countries have really had a bad year agriculturally, but it may very well be that the Soviets are not too eager to pay any part of the price of Chinese industrialization.

The announcement of the precarious Chinese food situation evokes another sad aspect of the problem. The population explosion of the world and the deficient diets of hundreds of millions pose a serious challenge for mankind. All efforts should be combined to face it. It is sad that in the land of the ancient Chinese the main obstacle to solution of the food problem is the over-ambitious industrialization programme directed toward rearmament.

Christmas Dinner with a Punch

During Christmas day [1859] two regiments — 2nd battalion 25th and Tower Hamlets Militia — quartered in the east block [at Camp Aldershot, England] were disputing as to which had the best dinner. The dispute became so hot that the men ran to their barracks rooms and opened fire on each other. The space between the barracks was covered with glass. Every man had possession of ten rounds of ball cartridge, which he kept in his pouch. Every reasonable means was used to stop the firing, but they still kept it up. At last it was found necessary to bring up a battery of artillery, and the rioters were warned that if they did not cease firing the battery would open fire upon them. In a short time they ceased and the rioters were made prisoners, later tried by court-martial and sentenced to long terms of imprisonment. Fortunately no one was killed, and the only casualty was a drummer slightly wounded. The next day both regiments returned their ammunition to the magazine. The Tower Hamlets were ordered to their headquarters, London, and disbanded. The 25th were sent to Spike Island, a convict settlement near Queenstown, Ireland. — *From "A Soldier's Life" by Edwin George Rundle (William Briggs, Toronto, 1909). Contributed by Staff Sgt. R. C. Wellstood, Historical Section, Army Headquarters, Ottawa.*

Book Reviews

The Bombing of Germany 1939-1945

A REVIEW ARTICLE BY COLONEL C. P. STACEY, OBE, CD*

We know a good deal now about what went on backstage during the Second World War; and we owe a fair proportion of our knowledge to the British Government's official history. The military series edited by Sir James Butler began appearing later than the civil series edited by Sir Keith Hancock. Inevitably the volumes of both have been of uneven quality; but on balance they have commanded respect from informed readers, and have added materially to the sum of public knowledge. They have been, on the whole, strikingly frank, and they have usually been admirably written. Their worst defect from the scholarly viewpoint has stemmed from the decision to maintain an outdated tradition and publish the history without documentation. Sir Keith Hancock wrote (W. K. Hancock and M. M. Gowing, *British War Economy,* London, 1949, p. xii): "It has been decided not to clutter the published pages with references to official files which are not yet generally available to students. ... The complete documentation has been given in confidential print. ... No doubt it will become available in due time to the historians of a future generation. The official historians of this generation have consciously submitted their work to the professional verdict of the future." It must have occurred to some readers that those historians had in fact pretty successfully avoided submitting their work to the verdict of their own time. In this respect the project has the appearance of having been planned by civil servants rather than by scholars.

This is one aspect in which the impressive latest item in the military series, the four-volume account, by the late Sir Charles Webster and Dr. Noble Frankland, of the R.A.F. Bomber Command's offensive against Germany,[1] breaks new ground. These volumes are documented to the extent that papers used are identified by author, addressee and date, though not by their whereabouts. Just why this unwonted concession to modern standards of scholarship was made we are not told; the reader can only conjecture that perhaps Webster, an historian of great reputation, refused to publish an undocumented history, and that in the

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[1] *The Strategic Air Offensive against Germany 1939-1945.* By Sir Charles Webster and Noble Frankland, 1961. (London: Her Majesty's Stationery Office. Volume I. *Preparation,* xiii, 522 pp. Volume II. *Endeavour,* ix, 322 pp. Volume III. *Victory,* ix, 332 pp. Volume IV. *Annexes and Appendices,* xiii, 530 pp. 42/-each volume.)

end he had his way. The book commands a proportionate degree of confidence. It is clearly based on very thorough investigation of Royal Air Force and German sources. And it is an extremely important and frequently a fascinating piece of work.

The story is told in great detail and the treatment is sometimes unnecessarily repetitive. (It is just as well that the essence is given in a 27-page summary at the end of Volume III; nevertheless, anyone who reads only this will miss a great deal.) Much new information is put before us. Not the least poignant relates to the cost in life of the campaigns over Germany. Bomber Command's fatal aircrew casualties, operational and non-operational, numbered more than 55,000; and of these just under 10,000 were members of the Royal Canadian Air Force (Vol. IV, Appendix 41.) The figure is appalling: more than half the R.C.A.F.'s overall loss (17,000), and not much less than the whole loss of the Canadian formations of First Canadian Army in its eleven-month campaign in North-West Europe. Nobody appears to know how many R.C.A.F. men served in Bomber Command, and indeed this book nowhere seems to give us Command personnel strengths for comparison with the casualty figures. (We do learn however that by the beginning of 1945 just about twenty-five per cent of all Bomber Command's "pilots" (aircrew?) were Canadians (Vol. II, p. 4).) It seems very likely that there was no large command in any of the three services in the Commonwealth in which casualties were so heavy in proportion to the strength engaged.

Almost equally disturbing are the revelations of Bomber Command's operational inefficiency in the early years of the war. In August 1941 "Mr. Butt", working under the auspices of Lord Cherwell, analysed photographs taken during night bombing. ("Mr. Butt", like many people who figure in histories written in England, appears to have had no Christian name.) He concluded that of the aircraft recorded as attacking their target, "only one in three got within five miles"; over the Ruhr, the proportion was *one in ten* (Vol. IV, Appendix 13.) The evidence, including that from German sources, leaves no doubt that at this stage Bomber Command was doing Germany very little harm. And in spite of improvements in aids to navigation and target-marking technique, there were very gross errors at much later times; in one Berlin attack in August 1943, "the bombing eventually extended backwards for thirty miles along the line of approach" (Vol. II, p. 163.) The actual inability of Bomber Command to hit any target smaller than a large city had a good deal to do with the adoption of "area bombing". The great though not the earliest landmark here is a directive to the Command dated July 9, 1941, which instructs the Commander-in-Chief to direct his main effort "towards dislocating the German transportation system and to destroying the morale of the civil population as a whole and of the industrial workers in particular". Listing railway centres which "lie in congested industrial areas and near concentrations of workers' dwellings", it notes, "These objectives are therefore

to be considered as suitably located for obtaining incidental effect on the morale of the industrial population" (Vol. IV, p. 136.)

This plunges us into the most controversial issue in the book: the bombing of civilian populations. Although something was known of this before, it will come as a shock to some readers to find the British Government authorizing and encouraging such operations, with only the most distant bow to the old decencies of war. The authors emphasize the responsibility of civilian ministers; at the beginning of 1941 they speak of the "increasing insistence of the Prime Minister and of members of his government on a more ruthless bombing policy" (Volume I, p. 162.) (Curiously enough, they never directly quote or cite any minute by Churchill on the subject.) But service officers had been preparing the way for these policies long before the war. We learn something of this not only from Webster and Frankland, but also from Andrew Boyle's new and valuable biography of Lord Trenchard, Chief of the Air Staff in 1918 and again in 1919-29.[2] Trenchard was prominent in the inter-war years in the attack on the classic Clausewitzian doctrine that the vital object in war is the defeat of the enemy's armed forces in the field. In a paper of 1928 quoted by Boyle and printed at length by Webster and Frankland (Vol. IV, Appendix 2) he argued that the new air arm could and should make a direct attack upon "the centres of production, transportation and communication from which the enemy war effort is maintained" and incidentally upon the morale of the enemy's working population. "Whatever we may wish or hope", he wrote, "...there is not the slightest doubt that in the next war both sides will send their aircraft out without scruple to bomb those objects which they consider the most suitable." He turned out to be right.

The morality of area bombing is an awkward question, and Webster and Frankland perhaps tend to sidestep it. The impossibility of bombing accurately gives them every opportunity. The moral issue, they say, "was not really an operative factor". "It may be a crime to attack a cathedral, but it is only war to miss a railway station" (Vol. II, pp. 22-3.) It comes to the same thing for the people near the target area. This is clever as well as cogent, yet many people will be shaken by learning that a minute of 1942 by Sir Charles Portal, Chief of the Air Staff, prescribed that Bomber Command's aiming points were to be "The built-up areas, *not,* for instance, the dockyards or aircraft factories..." (Vol. I, p. 324.) (What could a Nazi prosecutor not have done with that paper if we had had the misfortune to lose the war!) Read the reports by the Police President of Hamburg on the raids of July and August 1943 (Vol. IV, Appendix 30) and you will realize something of what a dreadful form of warfare this bombing was. Nevertheless, we may as well face one of the great and nasty facts of modern history: all recent experience shows that it is utterly useless to try to "civilize" war by prescribing rules for its conduct. Time

[2] *Trenchard.* By Andrew Boyle, 1962. (London: Collins, 768 pp. $8.95.)

and effort are better spent on trying to prevent it. The advent of nuclear weapons has merely rendered it quite impossible to make the distinction between military and civil targets which was already so difficult to draw in 1939-45.

There are other arguments against area bombing besides the moral one, however. Militarily it was largely ineffective. The British consistently underrated the Germans. Trenchard, long retired but still giving advice on his old line, wrote in May 1941, *"History has proved that we have always been able to stand our Casualties better than other Nations...* There is no joking in the German shelters as in ours..." Civilian morale, he argued, was the German weak point and the R.A.F.'s proper target (Webster and Frankland, Vol. IV, Appendix 10.) Whether the Germans joked or not, their morale did not crack under an ordeal fiercer than anything London faced in 1940-41. The British authorities also underestimated the strength and resilience of the German economy, and deluded themselves into thinking that the bombing was seriously affecting it at times when production was in fact expanding. German aircraft production, as is now well known, continued to increase until September 1944.

In spite of all this, Webster and Frankland commit themselves fully to the proposition that in the end the strategic air offensive, British and American, had a decisive effect upon the outcome of the war; and they marshal powerful arguments. By 1944 Bomber Command was capable of precision as well as of area attacks, of day as well as night operations. In the late summer of that year, as the result of various circumstances, the German night fighter force virtually collapsed. The *Luftwaffe* generally had already been greatly weakened. The result was that in the last months of the war vast damage was done to German oil production and communications. German operations in these months were often hindered by shortage of fuel for tanks and aircraft. It seems doubtful that the final defeat of the German armies in the field was to a major extent a direct result of the strategic air offensive. Indirectly, of course, it was very important, though we cannot assess its influence mathematically. Notably, we could never have invaded Normandy without air superiority; and to the achievement of that the Anglo-American strategic bomber operations certainly made a great contribution. And even if they did not directly cause the German armies' collapse in 1945, it is pretty evident that they had produced a situation which would have made it impossible for Germany to go on fighting very much longer.

This, of course, does not prove that the air forces could have won the war by themselves — that Germany could have been defeated by strategic bombing alone. The British Air Staff never officially embraced that doctrine. The C.-in-C. Bomber Canmmand in 1942-45, Sir Arthur Harris — a leader to whom Webster and Frankland are always conscientiously polite — did embrace it. Whereas Sir Charles Portal considered that the great role of the strategic air offensive before June 1944 was to prepare the way for the Nor-

mandy invasion, Bomber Harris thought that it could be a substitute for the invasion. The official authors give little countenance to such an idea; and incidentally they emphasize the relevant fact that the greatest damage done the German economy by the strategic bombers came after the invasion and not before. As the Allied armies advanced across Europe the Germans lost the early-warning system they had possessed in France and the Low Countries; they lost their advanced fighter bases; and the Allied bombers now had ground radar stations and emergency landing fields on the Continent. These conditions finally hamstrung the *Luftwaffe* and enabled our formations to strike at Germany almost as and when they chose.

One thing Webster and Frankland do not do is to describe Bomber Command's work in support of the Allied armies. On the whole they seem to be in sympathy with what they describe as the Air Staff's conviction that "the true role of an air force was strategic bombing" (Vol. I, p. 13) — the only role, by the way, in which it could operate quite independently of the other services. They quote Portal's opinion in 1944 that the constant use of heavy bombers in support of the Army "when its only purpose is to save casualties" must ultimately demoralize the Army (Vol. III, p. 68.) The discussion here is one-sided; there is no examination of Army records, and it is rather amusing that one of the great triumphs of Bomber Command's precision bombing, the cutting of the Walcheren dykes in preparation for the other services' attack, is hardly mentioned. No one would gather from this book that recriminations about air support for the Walcheren attack produced one of the bitterest inter-service controversies of the war. If taken to task for this, the authors would undoubtedly reply, quite logically, that these things were not part of the strategic air offensive against Germany.

One wonders whether the full story of inter-service difficulties over air support will ever be told. People at Headquarters First Canadian Army in 1944-45 often wished that they could have had an R.C.A.F. instead of an R.A.F. group headquarters to work with; for the R.A.F. sometimes seemed to be working on the principle that nothing should be done for the Army until it had asked three times, and then as little as possible. Certainly, if it considered strategic bombing the highest form of air activity, army co-operation appeared to be regarded as the lowest. Perhaps part of the explanation is to be found in the R.A.F.'s struggle for survival in the twenties. Boyle's account of this, based on Trenchard's papers, is the most detailed this reviewer has seen. Funds were short and inter-service competition for them bitter. The Army and, even more, the Navy would gladly have put an end to the Royal Air Force, and several times seemed fairly close to doing so. In his battles with his fellow Chiefs of Staff on the issue Trenchard always won, and it is just as well he did; but it is hard to avoid feeling that the long conflict implanted in the R.A.F. a suspicion of the other services so deep and lasting that it went a long

DANGEROUS COMMITMENT

Reviewed by Colonel A. James Tedlie, DSO, CD,
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"Unless all three services are prepared to face the strain of maintaining adequate forces up to strength the holding of the island is a dangerous commitment." Thus concluded the appreciation made by the GOC in C of the British Forces in Greece, Field Marshal Henry Maitland Wilson, on the 28th of April 1941 less than a month before the German attack on Crete. Just how dangerous this commitment really was is the subject of a new, vivid and concise account* of military operations on Crete during the Spring of 1941.

In addition, in *Battle for Crete* John Hall Spencer has done an excellent job of describing the political and military prelude to the defence of the island, which as the legendary Mediterranean home of Zeus was a fitting amphitheatre for such a struggle between the Titans.

To his credit the author has resisted the temptation of using hindsight to proffer censure as so often happens in accounts of military failures. Therefore the search for a scapegoat, which frequently becomes a national blood sport in the country which has suffered defeat, finds little place in this book. Instead he has drawn heavily on eyewitness accounts from both allied and enemy sources and with a fighting man's eye for what really matters in battle has set down an account which combines the suspense of a good novel with a worthwhile historical account of the "why" and the "how" of this short but important island campaign.

Although the strategic value of the island was obvious there is no indication that Hitler had an operation against Crete in mind when he launched the German attack on Greece and although the British Navy may have considered that Suda Bay on the north coast of the island should become a Mediterranean "Scapa", it was not until the allied attempt to hold the Grecian mainland had failed that anything more than the most rudimentary defensive preparations had been made on Crete.

When one includes the Greek Gendarmerie, there were some 42,500 allied men under arms on the island during the battle. However, it was, as one historian has aptly put it, "a garrison which owed its composition more to accident than design". The men making up the bulk of the force had been evacuated from the mainland under great German pressure during the dying days of April 1941, and were woefully deficient in weapons and personal gear.

**Battle for Crete* by John Hall Spencer. William Heinemann Ltd., London, 1962. (In Canada: British Book Service (Canada) Ltd., Kingswood House, 1069 Broadview Ave., Toronto 6, Canada). $8.00.

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way towards inhibiting that goodwill and "desire to co-operate" which official military doctrine rightly proclaims as essential at all levels. One hopes that the sense of security produced by the triumphs of the Royal Air Force in the Second World War has brought about a better situation.

The lack of supporting aircraft, tanks and artillery no doubt doomed the defence to eventual failure, but perhaps the greatest deficiency was in signal equipment, a deficiency which prohibited anything but the most primitive communication system with which to control the decisive engagements. Add to these material shortages the shortage of time the newly landed evacuees from Greece had to prepare their island bastion, and the resulting chaos was entirely understandable.

Against this ill-prepared allied garrison was launched an assault force some 23,000 strong, the cream of the German Army, backed up by one of the most savage air support operations in the history of war. Somme, Messines and Passchendaele were "mere picnics" compared to the fury of the aerial bombardment on Malme during the daylight hours of May 20th, 1941. This, the judgement of one who had been in all these battles, Brigadier L. W. Andrew, VC, DSO, of the New Zealand forces, gives a good indication of the Luftwaffe's endeavours to assure the success of the airborne landing. Yet, despite their superiority in equipment and support, Crete was for Germany a dearly-won success. About 7000 were killed or seriously wounded and General Student, who was prevented from personally commanding his beloved paratroops in the assault, has said "Crete was the grave of the German parachutist".

John Hall Spencer's book is a well reasoned account of what took place during the thirteen days the battle raged. We are invited to join the German airborne forces in the assault and re-live with them their drop into danger. We can exult in the courage of the defenders regardless of their nationality and agree with the official New Zealand history of the campaign when, in describing the exacting standards of bravery demanded by the battle, it states: "soldiers never fought better than they fought at Crete". But this is not only a story for soldiers. With a marine's regard for the Senior Service, the author has captured the spirit of a hardpressed Navy coming to the rescue of the "pongos" as they so frequently and so magnificently did throughout the history of allied operations in the war. The allied air force played a less conspicuous part in the battle for Crete but here again the author endeavours to give "the reason why" rather than trying to place upon it the onus for failure.

The book, as any authentic book on men locked in gladiatorial strife must be, is sometimes an unpleasant one. The stories of atrocities against the island inhabitants who defended their homes, and the mass shooting of hostages in villages which gave succour to the allies are not the stuff of which pleasant books are made. But the author never loses his sense of balance and the overall product is highly recommended to both the serious student of military history and to the casual reader who is searching for entertainment mingled with enlightenment.

Forget and Smile

Better by far you should forget and smile, than that you should remember and be sad. — *Christine Rossetti*

Turning Point in South-East Asia

Reviewed by Captain John A. Swettenham, RCE,
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A battle, fought out with dogged fury on the frontier of India and Burma in 1944, proved to be just as decisive to the South-East Asia campaign as did Alamein to that in North Africa. The Japanese intended it to be — and so did the British. But there were differences. The desert, wide and open, seemed made for battle: you could see your man. But in the jungle-mountain country of Assam, this you can rarely do.

The background of the fighting was briefly this. Japanese forces at this stage of the war had conquered vast areas, including most of Burma, but shipping losses in the Pacific were beginning to tell. A great strategic success was necessary if their widely dispersed armies were to avoid slow strangulation, and it was by thrusting west from the north of Burma that they looked for this. Destruction of British forces in that area was the least they could hope for; there were other, and brighter, prospects. China would be completely isolated and must capitulate; India, ripe for revolt as they thought, would fall into their hands. In all, these were glittering prizes which might, if gained, have changed the course of the Second World War. Thus the Japanese drew up plans for a breakthrough in Assam.

For the British, the impending Japanese invasion offered a great chance. They were already planning to re-enter Burma from the north but to do so through such terrible jungle country would offer little hope of success unless Japanese strength could be broken first. They wanted, therefore, a battle *before* they went into Burma and were as eager as the Japanese to make it decisive. Both sides were playing for high stakes, since the outcome of defeat to the loser meant disaster; there was no doubt that the coming struggle would be a hot one.

What happened in Assam after the Japanese struck on 7 March 1944 is the subject of a recently published book by two men who fought there in General William Slim's Fourteenth Army.* But they do not give the whole story. Japanese thrusts developed in three main directions — first, against Kohima, north of Imphal; second, against Imphal itself, and, third, through the Chin Hills in the south towards Imphal. The first was countered by 33 Corps at Kohima; the second and third by 4 Corps around Imphal. This book, in the words of the authors, purposely concentrates on the "events around Imphal" and refers little to the "grim fighting at Kohima" though the greatest land defeat the Japanese had yet suffered in all their history was inflicted at Imphal-Kohima as a whole. It is a pity that some account, no matter how brief, is not given of operations at Kohima to keep the full

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**Imphal,* by Lieutenant-General Sir Geoffrey Evans and Antony Brett-James. Published by The Macmillan Company of Canada, 1962. 348 pp. $7.25.

course of the battle in proper focus. However, the authors' problem of "not what to include but what to omit so as to keep the book within reasonable limits" must have been a real one.

Absent, too, is what might be termed the "Command approach". Something is said of the problems confronting the British commander, and of his decision to give up the territory he had in Burma and pull back to Assam. We know why he chose to defend the Imphal plain. But very little is said as to how he planned his battle, and how it was fought. Nowhere, succintly, are these matters aired and summarized though it could quite easily have been done, perhaps by quoting Slim himself. The authors make clear that to answer these and like questions is not their purpose — that should be left to official historians — but without the overlying business of strategy and plans, the actions of this and that unit become confusing and hard to follow.

Nevertheless, this is a book which should not be dismissed lightly. In its descriptive powers, it is magnificent. The very feel of the country is powerfully evoked, the battle scenes are vivid and exciting and have the merit of authenticity, while the horrors of the jungle and of disease become nauseatingly real. All good authors have their secret springs to enliven prose. Churchill, for instance, does not have his troops marching flatly to the sound of drums; they march to the beat of *surly* drums. So it is with Evans and Brett-James, whose jungle hamlets betray their presence by *a curl* of smoke, a *bare* splash of soil, and the barking of a *bony* dog. The plain is *splodged* with lakes, while, in an original simile, tracer bullets fly about like "jet-propelled fireflies".

During the concentration phase of the battle, operations in the jungle had all the fantasy of a disjointed movie, shadowy interludes where friend and foe grope about oblivious of the other, sharp passages in clear outline lit by bursts of small arms fire as rival patrols stumble into each other, and quiet moments with villages in moonlit glades where Japanese soldiers "accompanied by their lady friends" relax with gramophones. There are eerie silences, broken by the crackle of teak leaves and the vibrations of tanks lumbering blindly along the jungle tracks and, as war is not fought in a vacuum, attractively dressed Burmese women going about their daily village life totally unaware that they are in "No Man's Land" which might burst at any moment into sudden flame.

Then, by 29 March, British and Indian troops of 4 Corps had been cut off from their supply bases, except by air, solely dependent on the largest and longest air supply operations in the history of war. They were further hampered by lack of intelligence — little was known of Japanese plans or movements. Aerial reconnaissance, where observers looked down upon an expanse of green jungle under the dense foliage of which Japanese movements took place, picked out practically nothing of value; and the results of bombing, more often than not, could never be assessed. Ground patrols proved equally abortive, for to be taken prisoner was the lowest form of degradation and to avoid it the Japanese soldier would literally fight until

he was killed; he was a formidable opponent.

During four months' operations at Imphal, only one hundred prisoners fell into British hands, and then only because they were either too badly wounded or diseased to make an end of themselves. When captured, however, they proved extremely co-operative, probably because no one expected them to be taken prisoner, and so had not bothered to give them any security training. The story is told of one of them, broadcasting over the Indian Field Broadcasting Unit in an attempt to induce his comrades to give themselves up, starting off in this way: "Men, your position is hopeless. You are half starving. But do you know what I had for midday meal today?" Then followed a description of his bully-beef, soya-link splurge at battalion headquarters. "And how are you doing for cigarettes?" he went on. "Still smoking grass? I am smoking glorious V cigarettes." No wonder they did not surrender!

How air-supply problems and intelligence difficulties were overcome makes fascinating reading. So does the period of attrition, as week after week in hand-to-hand fighting each strove to wear down the other's strength and break his will. The bitter struggle during this period may be epitomized by the description of two bodies, lying side by side. One, that of a Gurkha soldier, was found shot through the mouth and with limbs shattered by a grenade alongside a dead Japanese whose skull had been cleft by a kukri-stroke. "The kukri had finished up almost halfway down the Jap's breast-bone", reported the Ghurka's adjutant. "I could not prise the kukri out with my hands or with a bayonet and finally had to shoot it out with a tommy-gun." But it had its lighter side. There was the Tommy with the bandaged arm. "Been wounded, chum?" asked his sergeant. "Course I have," replied the man stonily. Then, looking down at his white-swathed arm, "What do you take me for. A bloody umpire?"

The battle bogged down into static warfare and jungle hills, formerly rife with vegetation, became reminiscent of the Somme, almost thirty years before. Broken tree stumps, ground pock-marked by shells or torn by trenches, stretched out on every side. Then, with the coming of the monsoon, gradually but with increasing momentum, the British turned to the attack, smashing for ever the legend of the invincibility of the Japanese.

The story is proudly recounted and full credit is given to the part played by British, Indian, or Gurkha units. One British unit, for example, the 3rd Carabiniers (Prince of Wales's Dragoon Guards) lost every one of the officers in one squadron taking a place with almost unpronounceable name of Nungshigum. The Squadron Sergeant-Major then took over and pressed home the attack to complete success. "After the war the Carabiniers adopted Nungshigum as their Regimental Day, which is celebrated year by year. Conspicuous among the functions on this special day is a regimental parade. B squadron takes its place on the parade ground — but with no officers. In proud and fitting recollection of the deeds on Nungshigum, it is commanded by the Squadron Sergeant-Major." Most of the martial races of India —

Compulsory Military Service: A Medieval Dilemma

A REVIEW BY RICHARD A. PRESTON, PROFESSOR OF HISTORY, ROYAL MILITARY COLLEGE OF CANADA, KINGSTON, ONT.

Conscription, with its political implications, has caused much trouble and heart-burning in modern times. It is, however, no new problem. The duty of the individual to serve in the defence of his state has a long and eventful history that is rich with examples of attempts at enforcement which were as often unsuccessful as not. Furthermore, the opportunity provided by that duty, and even more by the struggle over its enforcement, to those who sought thereby to increase their own individual interest, to enhance their personal liberty, or to influence the policy of government, also reaches back to the beginning of recorded history.

Professor Michael Powicke of the University of Toronto has examined these problems in Medieval England in a book which, because large areas remain to be explored, may not be the last word but will surely stand for a long time without a rival.* His study, a masterpiece of erudition and scholarship written primarly for the medieval specialist, will probably seem much too technical to many readers, even those with a taste for history, since it abounds with medieval Latin and some Old French phrases, almost all of which are not translated and few of which are adequately explained. Some of his references to the work

**Military Obligation in Medieval England: A Study in Liberty and Duty.* By Michael Powicke. Published by the Oxford Univesity Press, 480 University Ave., Toronto, Ont. $6.75.

Turning Point in South-East Asia

(*Continued from preceding page*)

Baluchis, Dogras, Jats, Mahrattas, Patialas, Punjabis, Rajputs, and Sikhs — march through these pages and we can almost hear the Gurkha battle shout *"Ago Gurkhali"* and see the sweep of their kukris as these gallant hillmen hurl themselves upon the Japanese.

One objection, a minor one, is that the various British commanders, all of the right school, imperturbable in battle, invariably cheerful, grow a bit wearying in time. Perhaps they were all of these things. But it would be refreshing to read of one of them, with moustache bristling, asking what the hell the troops were doing!

From the soldier's point of view, this book might well be read alongside Field-Marshal Sir William Slim's *Defeat into Victory,* which covers the Imphal battle. On its own, it is well worthwhile; as a source of detail to supplement Slim's masterly book, it is superb.

of other scholars, and some of his uses of political history, are unintellible to all except the expert. Nevertheless this volume is a mine of information about the English medieval army and also throws much light on one of the most remarkable aspects of Western civilization, namely its achievement of effective military power in states in which individual liberty is also able to exist.

Most readers will think of medieval warfare as a product of the feudal system in which feudal armies were raised from lords and tenants by feudal contract. It will come, therefore, as a surprise that in a book on *Military Obligation in Medieval England* almost no space is given to the discussion of feudal recruitment and there is no investigation of the nature and complications of the feudal military obligation. The English military forces of the middle ages apparently included, in addition to feudal warriors, troops raised by mercenary contracts, and even at times by "general public contract". It is to these that the author gives almost all of his attention. He is at pains to trace the descent of Norman armies from the ancient practices of military service in Anglo-Saxon England and he does not stop to explain what happened to that Norman feudalism which William the Conqueror is usually stated to have introduced. He makes a convincing case for a strong thread of continuity from pre-Conquest times; but he leaves one with the uncomfortable feeling that, at least during the Norman period, he is showing only one side of the picture.

Perhaps his most important revelation is that the most serious fighting, even in Norman times, was done by professionals. These were raised by any method that came to hand and the Norman kings had both feudal tenants as well as the Anglo-Saxons who had a traditional obligation upon which to draw. Mr Powicke suspects that the practice of accepting money in lieu of military service from feudal tenants goes back to the very beginning of Norman feudalism in England and he thinks that there was probably never anything resembling a purely feudal army in the country. The armies which early medieval kings of England recruited usually included a substantial proportion of mercenaries obtained from feudal Norman cavalry and the English foot of the old *fyrd,* and could therefore be organized according to the prevailing doctrine of tactical formation or the commander's own whims without respect to the source or nature of the original contract by which they served. They were capable of far more effective operation on the battlefield than was a purely feudal army, if such a thing ever existed.

The old Anglo-Saxon practice of levying of troops on the basis of the amount of land that an individual subject held, but as a national obligation rather than as a feudal contract, was used even more widely and more readily for immediate local defence than for the king's overseas expeditions or the defence of remote parts of his domains. The ingenuity of English monarchs in exploiting an infinite number of variations of writs for call-up for both purposes, which the author demonstrates fully, would seem to be

incidental evidence of the unsatisfactory nature of such recruitment. But when the practice was used to recruit for distant service that was more onerous than local defence, it naturally aroused the more opposition. Apparently medieval English kings, despite their retention of the Anglo-Saxon powers of compulsion, had much trouble in finding a workable method of raising armies to defend the realm — or to serve their dynastic ambitions.

In the Norman and early Plantagenet periods, most of the evidence used in the book consists of occasional phrases in the writings of the monkish chroniclers. The unsatisfactory nature of such evidence may make the reader uneasy about the validity of the author's interpretations. Like an archaeologist, a medievalist can build a civilization out of little more than a piece of potsherd; and the non-expert has perforce to accept the specialist's authoritative word blindly.

From the time of King John, however, the volume of evidence grows. State archives on rolls of parchment contain much detailed evidence. Litigation about military obligation is plentiful and provides much information about the nature of service and contract. More ample evidence carries greater conviction.

Mr Powicke shows that King Edward I's excessive ambition to conquer the whole of the island and part of France, and his success in obtaining the cooperation and even the enthusiasm of his vassals and subjects, led him to be casual about various rights which earlier kings had enforced, albeit not always successfully. For instance, to build up effective expeditionary forces, he resorted more often to the practice of paying men who might legally have been required to give free service. He thus established precedents for or restrictions upon military obligation that were to be used later to weaken his successors. Furthermore, in the course of time the new practice of raising paid troops by commissions of array became a two-edged sword since similar processes could also be used by the great magnates in a bastard form of feudalism where men owed personal service to a lord without any relation to feudal tenancy or land-holding. The inevitable result was a weakened monarchy and anarchy.

Edward's success was thus ephemeral and short-lived. The moral would appear to be that the creation of an effective military defence force may defeat its own object, a theme which many philosophers have preached. Certainly, in England in the Middle Ages, opposition to recruitment led first to individual resort to law and then to cooperative resistance that eventually became part of a wider constitutional limitation of the monarchy as well as of a debilitating anarchy. The dynastic purposes for which Edward I, Edward III, and Henry V had built royal armies were thus not permanently achieved. On the other hand, though this is outside Mr Powicke's period, the principle of consent to which their failure led was, in the remote future, to lead to a yet more powerful form of state and one which would be more effective also in its military aspects, namely, modern democracy.

The Initial Clash of 1914

Reviewed by Major D. J. Goodspeed, CD, Historical Section, Army Headquarters, Ottawa

Some periods of history have a fascination all their own. Books about them multiply until whole libraries could be filled with volumes describing the events and personalities of one particular decade. The Napoleonic era and the American Civil War, for instance, may well have their special devotees for centuries to come.

There are some signs that the opening weeks of the First World War are likely to exercise a similar attraction. This would not be surprising, for there have been few more dramatic or significant campaigns than the one which began in August 1914 with Germany's invasion of Belgium and which drew to a close with the German retreat from the Marne. During these short weeks the great armies loosed over the hot August countryside of Western Europe could still march and manoeuvre, and general staffs and peoples alike could still find a basis for the illusion that the war might be decided quickly, by some major battle or some sudden strategic stroke.

This is the story Mrs Barbara Tuchman tells in her best-selling new book, *The Guns of August*.* Although Mrs Tuchman adds nothing that is new to our knowledge of the period, *The Guns of August* is likely to be one of the best books of the year and thoroughly deserves its popular success. The political and military moves which led to the final catastrophe are described in vivid detail; the personalities of soldiers and statesmen are sketched in with a sure hand; and even when it comes to the actual movement of armies in the field Mrs Tuchman never fails to hold her readers' interest. This, surely, is an almost unique achievement for a woman writing what is, after all, military history.

The story itself, of course, is breathtaking in its tragic sweep — the Battle of the Frontiers where so many young Frenchmen, still wearing the blue tunics and scarlet pantaloons of 1870, died in gallant, futile attacks against German machine-guns; the wide-wheeling German left wing pushing down the dusty roads of neutral Belgium to encircle Paris in accordance with the Schlieffen Plan, which had been modified, fatally as it turned out, by von Moltke; the retreat from Mons; the sudden, sick despair experienced in government circles in Paris and London; General Joffre's imperturbable courage and his long-pondered decision to turn and fight; Gallieni's "taxi-cab army"; and the final miracle of the Marne. This is the natural stuff of great drama, and Mrs Tuchman makes the most of it.

She is as good or better when it comes to delineating the characters of her main actors. All the important personages of this stage of the western war pass across her pages—the brilliant,

*Barbara Tuchman, *The Guns of August*. Collier Macmillan Canada Ltd., Galt, Ont. 1962, pp. 511. $6.95.

vain and erratic Kaiser, the weak Tsar, the stolid Sir John French, the iron-willed Foch, the enigmatic Kitchener, and the uncertain von Moltke. These people live in Mrs Tuchman's book and as we read we are able to realize again something of the inexorable tragedy of those summer days.

Historically there are perhaps two weaknesses in Mrs Tuchman's presentation. The first and less important is that despite the title of the book, only the events in the western theatre are described in any detail. This is a common error. We have, for instance, had immensely successful popular histories of the Second World War which have scarcely mentioned the campaigns in Russia. But it is nevertheless an omission which contributes to a basic failure in perspective.

Somewhat more serious is Mrs Tuchman's obvious partiality for the Allies and her deep dislike of the Germans, which leads her to certain injustices in judgment. The immediate cause of the war, the murder of the Austrian Archduke Ferdinand in Sarajevo by a Serbian nationalist, is dismissed in half a dozen lines with a contemptuous reference to Bismarck's prophecy that the next war would be started by "some damned foolish thing in the Balkans". Looked at from any reasonable human point of view, the Serbian-Russian-Austrian intrigues in the Balkans, with their murderous secret societies and paranoic ambitions, could fairly be called "foolish" and most certainly were damnable, but they had at least as much to do with the outbreak of the First World War as had the personality of the Kaiser or the arrogance of the German officer corps.

These points apart, *The Guns of August* is excellent reading and good history. Also — a matter of no small importance — the book has what to my mind is one of the best and most intriguing titles to appear for many a long day.

New Material on Wolfe

New material about General James Wolfe, the victor at Quebec in 1759, has recently come to light in the village of Gaydon, Warwickshire, England.

The papers include three journals describing the troubles immediately following Wolfe's defeat of French Canada on the Plains of Abraham and 12 letters from Wolfe to one of his officers. The last, written shortly before the battle, shows the general's confidence. He anticipated "very little loss unless the whole French army chance to move to their left and fight us."

The letters were discovered by H. T. Kirby, a tutor at Birmingham University, among documents inherited by a woman who operates a local cafe.

Kirby also found several papers defending Wolfe, who was fatally wounded in the battle, against charges then current in London clubs that the credit for the victory should not have gone to him.—*From a Canadian Press news dispatch.*

First World War History Published

The official history of the Canadian Army in the First World War has now been published and will be reviewed in the next issue of the *Canadian Army Journal.*

The book, entitled *Canadian Expeditionary Force 1914-1919,* presents an authentic account of the achievements of the officers and men who wore the badge of Canada in that great struggle. It is directed primarily to the general reader, and particularly to the Canadian reader who wishes to know what the Canadian Corps accomplished and why its operations in France and Belgium took the course they did.

It further deals with the activities of those Canadian forces who served outside the Corps, some of them in theatres far removed from the Western Front.

Problems of organization and administration receive careful attention, particularly the controversial question of the introduction of conscription in 1917.

The author, Colonel G.W.L. Nicholson, CD, is a former Director of the Historical Section of the General Staff.

The book is issued under the authority of the Minister of National Defence and is published by the Queen's Printer.

Canadian Expeditionary Force 1914-1919 is the product of extensive investigation into Canadian, British, French and German records, both published and unpublished. For the benefit of the student of military history the text has been extensively documented.

Colonel Nicholson's book is a cloth-bound volume of 594 pages, with 71 maps, 16 of which are in colour. It is illustrated with a frontispiece in full colour and 47 photographs in black and white.

It is obtainable from the Queen's Printer, Ottawa, at $5.00 per copy postpaid.

Bedrolls into Battle

If only indirectly, the soldier's load affected assaults. The Confederate infantrymen began the war lightly loaded and remained so. Stonewall Jackson exploited their lightness so well that he set records in the swift movement of foot troops. In contrast the Union forces had to achieve lightness by discard. Very early they began to throw away the issue knapsack and, as the Confederates did, roll their extra things up in their blankets and sling these in a horseshoe over the shoulder. The custom was to pile the bedrolls in a heap before an action, but since there was not time, the bedrolls often went into battle too. Weapons were not exempt from discard; indeed there are many records of men throwing away their bayonets, especially in the western armies.—*From "Civil War Infantry Assault Tactics" by John K. Mahon in the Summer 1961 issue of Military Affairs (U.S.).*

An Anthology of Insurrection

Reviewed by Lieut.-Colonel B. W. E. Lee, CD,
Commandant, The Canadian Provost Corps School,
Camp Borden, Ontario

"In this age of missiles and nuclear weapons, there is a growing and pernicious assumption that all of the older modes of warfare have been rendered obsolete. One of the most pressing problems confronting the military establishments of the Western Allies springs from the West's relative lack of experience in coping with guerrilla strategy".

This statement made by Colonel Vergil Ney, U.S. Army (Retired), is found in Part One of this book.* It illustrates exactly the purpose Osanka seems to have had in mind when he collected and edited his work, which is in fact a textbook for students of irregular tactics in war.

This book is divided into nine parts with an introduction by Samuel P. Huntington. The nine sections contain in all contributions by 37 authors. Part One is a review of guerrilla warfare in the past and its modern strategic uses and it is followed by seven parts each dealing with the application of guerrilla principles in different areas of the world. The areas discussed are Soviet Russia, China, The Philippines, Greece, Indo-China, Malaya, Cuba and Algeria. Part Nine deals with procedures and policies for counter-guerrilla action. Many other successful guerrilla and counter-guerrilla actions have not been included, and the reader can only assume that since these wars were not Communist inspired or exploited they were not considered worthy of study. However, it must be said that to include all cases of irregular warfare deserving of study would result in a work of many volumes. Since the editor is concerned with Communistic tactics in war he has selected the most typical examples. He is quick to point out that the Communists did not originate guerrilla warfare. Instead, they seized upon it as a weapon of world revolution, mastered the tactics and used social, economic and political weaknesses (particularly in less industrialized societies) as major assets to guerrilla operations.

In a volume derived from so many sources and consisting of a collection of original works, it is impossible to comment on writing style. It is sufficient to say that some of the contributions are extremely well written and easy to read while others remind one of a training manual or a textbook. Since the Editor's purpose was to offer advice on methods of opposing Communist guerrilla tactics, it is the information that matters, and concise military terminology may not be amiss, particularly in the case of the serious student of modern warfare. In brief, the information contained in this vol-

*_Modern Guerrilla Warfare_. Compiled and edited by Franklin Mark Osanka. Published by the Free Press of Glencoe, N.Y., and available in Canada from Collier-Macmillan (Canada) Ltd., Galt, Ontario. $8.25.

ume is complete all the way from background causes, irregular tactics, successful and unsuccessful operations to the national policies of both sides. There are studies of irregular warfare, accounts by successful guerrillas, eyewitness accounts of successful and unsuccessful counter-guerrilla campaigns. There is a section on the policies and procedures for action against irregulars recommended by authorities on guerrilla warfare, including a statement on "Countering Guerrilla Attack" by Walt W. Rostow, Counsellor of the U.S. State Department and Chairman of the Policy Planning Council.

At the end of the book is a research bibliography on the subject of guerrilla warfare. The Editor claims that it is the most complete yet available on the subjects of guerrilla and unconventional warfare. This bibliography covers 32 pages and contains more than 600 references. It is arranged by geographical areas and in historical sequence. In addition to this, each section of the book ends with a list of suggested reading. Truly a monumental piece of research!

The Editor, Franklin Mark Osanka, is an American by birth and is a veteran of service in the U.S. Marines where he received training in amphibious and commando warfare. He graduated in sociology, anthropology and psychology from Northern Illinois University where he taught as a graduate assistant. He is currently a member of the social science research staff of George Washington University where he is concerned with special warfare problems as they effect the U.S.A.

To the reviewer's knowledge, this is by far the most complete work on unconventional warfare ever assembled. Any reader who feels as Osanka does, that we are more likely to engage in guerrilla than in nuclear warfare, should study this book. If one feels that a period of all-out nuclear war could be followed by a period of guerrilla warfare, then this book is also essential reading. In fact, any serious student of tactics or military history will find his studies incomplete if *Modern Guerrilla Warfare* is not included.

Frustrating?

The elder Moltke, as a student at war college in 1823, gained a lasting interest in geography, physics, and military history. Very poor, he turned to his pen for additional income. Besides short stories and historical essays, he translated for publishers. Once, "in order to purchase, without which he could not accept a commission on the general staff, he translated six Volumes of Gibbon's history only to discover that his publisher was insolvent." (Falls, *The Art of War;* see also *The German General Staff,* Walter Görlitz.)

Throughout his long and successful career Moltke continued to study and write, and indeed "became one of the foremost writers of German prose".—*From an article in the Marine Corps Gazette (U.S.).*

The Cavalry Spirit

Reviewed by Major R.F. Bornor, CD,
The Canadian Provost Corps School,
Camp Borden, Ontario

This book* begins with an account of the last soldier in the British Empire to ride in battle in a mounted attack. It ends with the story of a famous British cavalry regiment, the 17th/21st Lancers which had exchanged its horses for tanks but yet retained the spirit of dash and chivalry shown by their forefathers at Balaklava.

Charge to Glory is not a history of the cavalry but a series of examples of the cavalry "spirit" which the author describes as a combination of independence of thought, quickness in decision and boldness in action. The author, Lt-Col James D. Lunt, 16th/5th The Queen's Royal Lancers, is a serving officer in the British Army. He is an excellent historian whose writings include his experience with the Arab Legion under Glubb Pasha, and many others dealing with military history.

The cavalry played the dominant role in all ten battles described in the book, which range from Marengo in 1800 to Fondouk in 1943, and include Toungoo, Garcia Hernandez, Aliwal, Brandy Station, Mars-la-Tour, Little Big Horn, Beersheba and Moreuil Wood. The last-named battle, fought in France on 30 March 1918, is of particular interest to Canadians as it was here the Canadian Cavalry Brigade commanded by Brigadier General J.E.B. Seely made the magnificent charge which will always remain one of the most famous incidents in the history of the Canadian cavalry.

The brigade consisted of two regular regiments, the Royal Canadian Dragoons and Lord Strathcona's Horse (Royal Canadians); a milita regiment, the Fort Garry Horse; and two batteries of Royal Canadian Horse Artillery. The brigade commander, having gone forward on a reconnaissance, was dismayed to find Moreuil Wood in German hands. He appreciated that if the enemy captured the ridge overlooking the main line from Amiens to Paris both the French and British armies would be compelled to retire. It has been said that if this had happened the entire course of the First World War might have been changed. The gallant story of Canadian conduct on that day is one to quicken the pulse and will be read by Canadians everywhere with intense pride.

The story of Toungoo is equally stirring. On 21 March 1942 Captain Arthur Sandeman of The Central India Horse was riding at the head of a mounted detachment of the Burma Frontier Force. He rode into an ambush and was caught in murderous fire from concealed Japanese machine-gun emplacements. He immediately drew his sword and gave the order to his trumpeter to sound the "Charge!" Neither Sandeman nor any of his

**Charge to Glory,* by James D. Lunt. Longmans, Green and Co., 137 Bond St., Toronto 2, Ont. $5.25.

brave men reached the enemy and few escaped to tell the tale of the last mounted charge ever to be made in the long and glittering history of British cavalry. In this last gallant yet pathetic gesture the death knell of an era surely was sounded.

In all ten stories recounted by the author there comes a supreme moment in the life of each man which is seized with alacrity. Whether mounted on a horse or in a tank, all the heroes possess that gaiety of spirit which the French call *élan*. In the final words of the book he says "Man still remains the first weapon of battle. We may girdle the earth with spaceships, bombard the moon with rockets, and invent increasingly terrible weapons, but when all has been said and done, it is the things of the spirit which will prevail. The cavalry spirit is a proud inheritance which we who fight mounted will do well to preserve". Perhaps the author can be forgiven for his obvious belief that such a spirit belongs to the mounted arm exclusively!

This is an intensely exciting book of gallant men and great deeds which stir the heart of every reader. The style is somewhat reminiscent of Cecil Woodham Smith's "The Reason Why" and the indestructible spirit present in the events portrayed has been brilliantly recaptured. Each episode is illustrated with an adequate map which enables the reader to better understand the course of some of the lesser known battles. This book is recommended to all who like adventure and serves as a grim reminder of the days when man was certainly the first weapon of battle.

1962 Air Force College Journal

The 1962 *Air Force College Journal* now off the press contains articles contributed by the following authors: General Freiherr Geyr von Schweppenburg, German Army (retired); Brigadier-General S.L.A. Marshall, United States Army (retired); Dr. Peyton V. Lyon, University of Western Ontario; Colonel A. A. Jordan and Lieut-Colonel W. F. Schless, United States Army; Squadron Leader H. Bird, Royal Air Force; Mr. G. D. Kaye, Defence Research Board; Colonel G. M. C. Sprung, Director of the Historical Section, Army Headquarters, Ottawa; and Mr. Mark Gayn, an authority on Soviet Affairs.

The following books have been reviewed this year: Trenchard by Boyle; History of Soviet Air Power by Kilmarx; Sino-Soviet Conflict, 1956-61, by Zagoria; Arms and Arms Control by Lefever; Air Bombardment—The Story of its Developments by Saundby; The Conduct of War, 1789-1961, by Fuller; Guerrillas in the 1960's by Paret and Sly; and Mao Tse Tung on Guerrilla Warfare, by Griffiths.

As usual, the *Journal* contains the best of the essays submitted in the 1962 Essay Contest.

Price of the *Journal* is $1.00 per copy. Subscriptions should be sent to The Editor, *Air Force College Journal*, Air Force College, Armour Heights, Toronto 12, Ontario. Payment may be sent with the subscription or on receipt of an invoice. Cheques, including exchange, should be made payable to the *Air Force College Journal*.

Life Remade: A Gallant Journey

Reviewed by Lieut.-Colonel J.M. McAvity (Retired),
Lord Strathcona's Horse (Royal Canadians)

This is a story of a personal triumph —the intimate autobiography of a soldier who passed from daylight to darkness in a moment and who won his way back to a normal life. It is the story of John Windsor who was blinded in Italy while fighting with Lord Strathcona's Horse (Royal Canadians) in the drive to the Melfa River near Cassino in the Italian Campaign of the Second World War.*

The foreword to this biography refers to it as "a Canadian saga", and the phrase is not extravagant. It is a book about a courageous Canadian veteran who had to learn to be blind so that he could once again be a part of the life around him.

The author touches on his early life in Calgary, Alberta, before the outbreak of the Second World War took him to the Royal Military College of Canada for professional military training. He tells of his months in "The Stone Frigate" at RMC, followed by a commission in the Royal Canadian Armoured Corps and service in England. Then followed Italy where as a tank commander he lost his sight when his tank was hit. Recalling this moment, he writes:

"We went forward again, edging through the orchard, and a feeling of exhiliration began to take hold. Others had been hit but I was indestructible. Then it happened. One moment the world around me was full of vivid colour, green and blue, red and brown, yellow and golden; there were trees and grasses, mountains and people, then suddenly, in the fraction of an instant, everything had turned to inky blackness. It was rather like being in a brightly lighted room when suddenly the electricity fails and everything is plunged into darkness..."

Following an operation at No. 14 General Hospital at Caserta in which his eyes were removed, Captain Windsor goes back to England. Eventually, he undergoes plastic surgery at St. Dunstan's hospital. "In a way those wards reminded me of a dolls' hospital, only here, instead of broken dolls, there were broken men awaiting repair..."

Repatriated to Canada, he settles in Vancouver where he starts to rehabilitate himself in a wage-earning world—machine operator in a mattress and spring factory, personnel worker, smallholding farmer and, finally, a writer.

John Windsor gives his readers a restrained but colourful account of a

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*_Blind Date_ by John Windsor, with a foreword by Major-General the Honourable George R. Pearkes, VC, PC, CB, DSO, MC, Lieutenant Governor of British Columbia, and an introduction by Lord Fraser of Lonsdale, Chairman of St. Dunstan's, a school for the war blinded in England. Drawings by Peter Whyte. Gray's Publishing Canada, Box 718, Sidney, British Columbia. $3.25. (20¢ postage).

The Tyrant Who Was Just

Reviewed by Major T.F. Howard, CD,
Lord Strathcona's Horse (Royal Canadians)

"I am deeply proud of this regiment... I hope one day I shall live to command it". With this short seemingly bumptious speech Lieutenant High Montague Trenchard, the youngest newly-joined subaltern of the Royal Scots Fusiliers, introduced himself to his mess-mates on his first guest night in the Punjab in India. In the event he did not; but he did rise to become the first Chief of Air Staff of the Royal Air Force and, fittingly enough, Colonel of the Regiment.

Though his remarks were lost in the ribaldry with which they were greeted, Trenchard meant them. The unswerving determination and strength which prompted these remarks were to be the hallmarks of this man all through his life and were to lead his critics to describe him as "A stubborn unapproachable dictator whose dynamic ambition was bounded only by organizing ability and cunning". Conversely, his admirers (and they were many in high places as well as low) thought of him in the words of one of his aides as "One of the few big men of the world, incomparably finer and better than anyone I have met in my life; big brain, lightning intuition as well as an obstreperous overwhelming character, personality and drive".

Arthur Boyle has traced the life of this controversial physical and mental giant, born 3 February 1873 the son of a well-to-do solicitor, from his boyhood through his several careers as a resourceful and enterprising Army officer, the founding father and great leader in the development of the Royal Air Force, Police Commissioner of London and finally to the entombment of Lord Trenchard in the Battle of Britain Chapel of Westminster Abbey in 1956 at the age of 83.*

A poor scholar who failed his way into the Army in 1893, Trenchard gave early signs of the paradoxical contrast of overwhelming strength of character and unexpected humaness which were salient features in his make-up. Though reticent and abstemious, he was not above ordinary horseplay such as dousing a sleepy martinet-major attempting to escape from his collapsed tent or peering long and impishly into the empty box on being presented by the Viceroy with the medal for all the All-India Rifle Championship, the medal having not arrived. Nor was he above persisting, in the face of a disapproving commanding officer, in

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Life Remade

(Continued from preceding page)

gallant journey back from a shattering experience to a normal and independent life with his wife and children who help him to make the journey possible.

**Trenchard—Man of Vision* by Andrew Boyle. Collins, Dyas Rd., Don Mills, Ont. $8.95.

the formation of a polo team or in pulling strings to get himself out of India to the Boer War in 1899 where the British Army was re-learning the old lessons of mobility and firepower at the hands of the Boers.

In South Africa he quickly put his love for polo and skill with horses together with his good sense to form and train a mounted company of Australian Scouts to beat the Boers at their own game. In this instance his initiative led to disaster. Shot through the lungs and half-paralyzed from the waist down he was sent home in December 1900 with little prospects for the future.

Sent to St. Moritz for his lung condition and unable to ski or skate because of his legs, he enthusiastically took up bob-sledding on the Cresta Run. A particularly violent spill somehow restored the use of his legs and a week later Trenchard won the Freshman and Novice Cup — a remarkable feat by a man who had so recently been a half-paralyzed cripple.

Unable to convince the War Office that he was fit for the field he slipped aboard a troop-ship and returned to the Boer War unexamined and unannounced in May 1901. Lord Kitchener singled him out and gave him the task of reforming a mounted unit which had previously been decimated in a Boer ambush. Here also he came into contact with the Canadian Scouts and gained their respect by the quick understanding he struck with their leader Major Charlie Ross who had recently won the DSO for gallantry. Trenchard had nothing but admiration for these "great hearted ruffians and natural fighting men".

Following the Boer War Trenchard undertook a military expedition as commander of the South Nigerian Regiment, into unexplored regions of Nigeria for the Foreign Office from 1903-1909. His singular success won him the DSO and the respect of the Colonial Governor.

Trenchard returned home seriously ill in 1910 aged 37 and was promptly put down to the rank of Major. Bored and unused by regimental life he cast unsuccessfully about the whole of the colonial service for an outlet for his energies and finally paid his own tuition to become a pilot in the Royal Flying Corps in 1912, aged nearly 40.

The value of aircraft in operations had been proven to the Army and Navy in manoeuvres and with the First World War I looming on the horizon the Royal Flying Corps began to grow in importance and size with Trenchard well up in the van. From Commandant of the Military Training Squadron he succeeded to the Command of the RFC in France in August 1915, and here his intelligent concept of the use of air power gained the Corps an unparalleled reputation. He developed the theory of the offensive use of aircraft to gain and maintain air superiority and this his pilots and machines did under his ruthless pressure despite the technical inferiority of their equipment and losses of 1270 aircraft in three months, which are staggering even by Second World War standards. Paradoxically, he refused to consider parachutes for his pilots and yet was in favour of armouring the aircraft to give the crews a better fighting chance against the enemy. To Trenchard's mind, a chance to escape

was not at all the same thing as a better "fighting" chance. And yet he could often be seen standing on the tarmac anxiously counting his men and machines as they returned.

Back in England controversy raged over proposals to amalgamate the Royal Flying Corps and the Royal Naval Air Service into a single separate service. Pressure was also mounting for a greater effort on bomber aircraft to retaliate for German bomber attacks on England which grew in intensity in 1917. Although a new Air Ministry and the Royal Air Force was formed in December 1917, with Trenchard as its first Chief of Air Staff, little was achieved in the way of resolving the more important divergent views, particularly that of the Navy which persisted in its claim for its own Air Arm until this was finally achieved in 1937.

Trenchard saw in the formation of the Royal Air Force the chance to use the available air power to best advantage in support of sea and ground operations. In this he disagreed with the Air Minister, Lord Rothermere, who envisaged a greater role for air power and felt more resources should be devoted to expanding it. In Trenchard's view, the capabilities of the current machines were such that greater use of the air could not have a significent effect on the overall outcome of the war. This divergence of views led to his resignation. Ironically enough, he returned to take over Bomber Command and it is surprising to read of one thousand tons of bombs being dropped on German cities and installations in one month and Super-Handley-Page's carrying bomb loads of three tons, admittedly over short distances, in the closing days of the First World War.

In 1920 Trenchard returned as Chief of Air Staff and the fledgling Royal Air Force had great cause to be grateful for his iron determination and strength which nurtured the young service through the financial and political crises of the 1920s. Intuitively he adapted the training programme to cater for the growth and technical skills required to fly and maintain the equipment. Cranwell, the Air Force equivalent to Sandhurst, came into being as did the short service commission.

A great many pages are devoted to detailed accounts of inter-service argument, political wrangling and threatened resignations as the various governments and the services struggled to remain viable in the face of mounting economic problems and the underlying pacific aftermath of the First World War.

T. E. Lawrence appears as an interesting sidelight. He prevailed upon Trenchard, for whom he had a deep admiration, to use his influence to obtain for him the oblivion he apparently wished for in the ranks of the Royal Air Force.

The pacification of Syria and Iraq, pioneering on air routes from Cranwell to Karachi and Singapore to Japan, and the evacuation of six hundred beleaguered Europeans from Kabul in Afghanistan served to demonstrate the capabilities of air power and to keep the RAF before the public eye. The Royal Auxiliary Air Force was formed. Technical development was nurtured and culminated in the

development of the Supermarine Napier which won the Schneider Trophy, emblamatic of world air speed supremacy, in 1929. Out of these efforts came the men and machines which were to write one of the most glorious pages of British history in the Battle of Britain in 1940.

Trenchard retired in 1929 but not before imparting to his own force his vision of air power of the future and there is no doubt that his theories had an influence on developments and the methods adopted in other countries, particularly the United States.

After a period of inaction he was persuaded in 1931 to accept the appointment of London Police Commissioner to restore public confidence in the force and carry through some much needed reform. Initially his efforts were resented; however, their ultimate benefit was quickly seen and cooperation followed. His introduction of "flying squads" and increased use of radio imparted a spectacular degree of mobility to police operations. His task completed in 1935 he again retired aged 63.

The dawn of the Second World War saw Trenchard, now nearly 70, languishing on the side lines. Though he was offered important posts, including one with the British Commonwealth Air Training Plan, none were really to his liking and he became a sort of super-Inspector-General for the Royal Air Force. He lived to see his theories of air power vindicated and Berlin in ruins.

Trenchard added a new dimension to war and justly deserves the accolade of "Father of the Royal Air Force"—a term he loathed. None who read this book can be other than impressed by this strong, forthright and righteous man and the success of his several careers. Perhaps his most fitting epitaph came from the lips of a woman Member of Parliament who had argued unsuccessfully with him for two hours. Storming from his house she left these words ringing in his ears. "You are the most dangerous man in England, because you are too just".

Some Summary!

The following remarks were written by a senior officer on a multi-page report of a minor meeting, complete with many annexures and appendices: "Please note this excellently detailed report. Would you be kind enough to summarize on one sheet 8″ x 11″, leaving room for notes." — *Contributed by Major G.T.J. Barrett, Surgeon General Staff, National Defence Headquarters.*

Humans Second to Horses

One of Abraham Lincoln's more bitter jests was about a Civil War brigadier-general who had got himself captured along with some horses and mules. "I don't care so much about brigadiers," the Commander-in-Chief was reported to have said. "I can make them. But horses and mules cost money." — *From Army Information Digest (U.S.), August 1961.*

FILM REVIEWS

PREPARED SPECIALLY FOR THE JOURNAL BY THE
DIRECTORATE OF PUBLIC RELATIONS, ARMY HEADQUARTERS, OTTAWA

Middle East (MF-7-9744). Running time 27 minutes. Available from Joint Services Training Film Bureau, National Defence Headquarters, Ottawa.

The film deals very briefly with the geographical and social structure of the countries of the Middle East. It discusses the political and industrial life of each country, and crosses the ethnological boundaries to show the close association one country has with the other.

The film emphasizes the strategic location of these countries, and the progress to independence from colony status or protectorates, such as the Jordan and the Aden Protectorates. The forms of government in the Middle East group and the historical religious and cultural backgrounds are explained. It deals with the agricultural development in Israel, and the major export — oil — from Saudi Arabia, Iran and other nations, as well as the imports required by these countries.

Western influences are graphically illustrated, and social patterns and general development are given prominence. Reference is made to European and American oil interests and there is a commentary on the work of British advisers to Middle East leaders.

Although released in 1957, this film might well be part of indoctrination for personnel proceeding on duty to the Middle East to give them an understanding of the social, cultural and physical conditions of the nation in which they will serve.

Basically, the film is a travelogue of the 14 countries that comprise the Middle East. It is a *good* travelogue, and these films are always interesting.

* * *

Mapping for Defence. Canadian Army Film (CA-69). Kodachrome. Running time 27 minutes. Available from the Joint Services Training Film Bureau, National Defence Headquarters, Ottawa.

This film was made for the Canadian Army by the National Film Board in conjunction with the Army Survey Establishment and the Department of Mines and Technical Surveys.

The planning and actual surveying is dealt with in considerable detail, and while this is a somewhat technical subject the presentation is clear and quite easy to follow.

The cameras follow the Army Survey Team through some of Canada's most beautiful scenery by air and land. The establishment of control points and the methods used to accurately map the uncharted parts of this country is a story in itself. This 30-minute film is of interest to more than the budding survey engineer. It is ideal for units taking their "map using" phase of basic military training.

Filmed in 1957, this movie has no security classification and can be screened for any group interested in the Canadian Army's part in the mapping of Canada.

CANADIAN ARMY ORDERS

Listed below is a résumé of Canadian Army Orders for the information of military personnel. Details of these Orders are available in all Army units.—Editor.

CAO 5-1

Allotment and Rules of Occupancy of Married Quarters and Allotment of Garages

(Issued: 12 Nov 62)

This amendment permits the family of an officer or man to occupy married quarters for a maximum of 120 days to prevent disruption of schooling, completion of special medical treatment for serious illness and on other extreme compassionate grounds.

CAO 5-5

Private Vehicle Facilities

(Issued: 17 Sep 62)

This revision enlarges the order to include married quarters garages, contains change in policy regarding installation and charges for block heater outlets, increases the charge for garage space at Whitehorse, Y.T., and includes amended procedures for the collection of charges.

CAO 20-1

Regular Officer Training Plan

(Issued: 20 Aug 62)

This amendment provides for clothing and equipment necessary for first theoretical phase training to be issued upon enrolment at personnel depots to officer cadets of the ROTP attending university and clarifies regulations and instructions for dress. In addition present details prescribing Army policy in commissioning and promoting ROTP officer cadets have been deleted and substituted by a cross-reference to CAO 256-3.

CAO 21-3

Use of Works and Buildings for Other Than Army Purposes

(Issued: 17 Sep 62)

This amendment includes a reference to the use of works and buildings for recreation programmes organized at a station or unit under QR (Army) 4.61; and the procedure for dealing with requests for use of works and buildings by recognized political parties.

CAO 55-1

Command of the Army in Canada

(Issued: 3 Sep 62)

This amendment designates the Army Tactics and Organization Board as a Category "B" establishment.

CAO 57-16

Army Sports — Boxing Competition

(Issued: 12 Nov 62)

This new order prescribes the instructions governing boxing competition in the Canadian Army (Regular). It details the manner in which the Canadian Army will conduct an annual series of boxing matches to determine the amateur champions in each class and weight.

CAO 57-23

Participation in International Sports Competitions

(Issued: 6 Aug 62)

This new order replaces QR (Army) 16.21 concerning special leave to attend

the Olympic and British Empire and Commonwealth Games. It provides for Canadian Army participation in selected international military and civilian sports competitions. Members of the Canadian Army authorized to participate in international sports competitions or team trials will now do so on duty.

CAO 83-15
Identification Cards
(Issued: 17 Sep 62)

This amendment writes into orders provision for a procedure already in existence, i.e., the issue of the Emergency 'I' Card (CAFIB 13). Its issue is for a short-term basis, i.e., to the Reserves when necessary, and also within the CA(R) for temporary use pending issue or re-issue of the regular 'I' Card.

CAO 94-2
Permanent Assistance in Militia Orderly Rooms and Quartermaster Stores
(Issued: 17 Sep 62)

This amendment prescribes the circumstances under which AHQ may approve the employment of assistants in excess of existing ceilings. This change in policy was previously notified in HQ 2720-2 (DMC) dated 4 Jun 62.

CAO 112-3
Canadian Army Central Fund Constitution and Policy
(Issued: 12 Nov 62)

This amendment includes the Comptroller-General as a member of the Central Committee, Canadian Army Central Fund.

CAO 121-33
Deterioration of Material in Stock
(Issued: 12 Nov 62)

This amendment redefines the categories of Medical Supplies. It also adds Base and Advance Ordnance Units and Ordnance Field Parks as authorities to remove from stock records items which have deteriorated in stock.

CAO 128-37
Order of St. John
(Issued: 17 Sep 62)

This new order provides general information concerning recommendations of officers and other ranks for consideration of the Most Venerable Order of the Hospital of St. John of Jerusalem, and gives assistance for preparing recommendations and citations.

CAO 130-7
Control of the Sale of Food Products on Defence Establishments
(Issued: 15 Oct 62)

The scope of the order is enlarged to include all food products. It also provides the necessary administrative instruction so that detailed orders concerning food or drink products which for medical or hygienic reasons should be prohibited can be incorporated in Canadian Forces Medical Orders.

CAO 139-5
Supplementary Death Benefits Plan
(Issued: 6 Aug 62)

This revision brings the order in line with recent amendments to the Public Service Superannuation Act.

CAO 143-3
Institutes — Disposal of Non-Public

Property
(Issued: 6 Aug 62)

This amendment notifies that the name of the "Dormant Funds Account" has been changed to the "Army Holding Account" effective 28 Jun 62.

CAO 143-9
Movement and Storage of Non-Public Property
(Issued: 6 Aug 62)

This new order sets out the limitations, terms and conditions that the Chief of the General Staff prescribes to enable a unit of the Canadian Army (Regular) to move and/or store its non-public property at public expense pursuant to QR (Army) 210.90.

CAO 174-44
Reporting of Communicable Diseases— Dependants and Civilian Personnel
(Issued: 17 Sep 62)

This revision amends the list of communicable diseases by deleting two diseases (Paratyphoid fever "C" and Glanders) and adding seven diseases (Malaria, Aseptic or Viral Meningitis, Diarrhoea of Newborn, Botulism, Relapsing Fever, Tetanus, and Yellow Fever.

CAO 212-35
Subsistence, Quarters and Ration Allowances
(Issued: 29 Oct 62)

This revision clarifies that entitlement to Subsistence, Quarters or Ration Allowance is determined by the availability of quarters and/or the provision of rations.

CAO 212-40
Band Grants
(Issued: 6 Aug 62)

This revision of Annex B extends the scale of band grants payable to units of the Canadian Army (Militia) to include those bands operating on unit establishments not previously specified in the order.

CAO 215-3
Air Photographs
(Issued: 29 Oct 62)

Amendments provide that the Joint Photographic Intelligence Centre is now responsible for handling requests for air photographs previously handled by Air Force Headquarters. In addition, requests are now required in triplicate and the new photo coverage dates have been changed to 1 March for summer photography and 1 August for winter photography.

CAO 219-5
Powers — Commander, Canadian Army Liaison Establishment, London
(Issued: 6 Aug 62)

This revision sets out the powers and authorities of Commander, Canadian Army Liaison Establishment, London, which supersede those previously authorized for the Senior Canadian Liaison Officer, UK.

CAO 242-10
*Confidential Reports — Officers, Warrant Officers and Non-*Commissioned Officers
(Issued: 1 Oct 62)

This revision, while maintaining the essential principles of the existing order, regroups the paragraphs in a more comprehensive sequence and seeks to clarify some paragraphs which may

have been somewhat obscure in the previous order. The principal changes are as follows:

a. change in dates of submission of confidential reports;
b. requirement for reporting officer to comment on physical fitness of member;
c. requirement for reporting officer to comment on failure of individual to qualify for promotion where this is applicable;
d. procedure for handling reports of lieutenant-colonels and majors carrying out collective training in another command.

CAO 256-6

Terms of Service — Militia Other Ranks

(Issued: 17 Sep 62)

This revision incorporates changes in the terms of service, the majority of which have been notified by other media.

CAO 256-7

Terms of Service — Officers and Other Ranks of the Supplementary Reserve

(Issued: 20 Aug 62)

This amendment provides that doctors and dentists who do not have COTC qualifications may be promoted to the rank of lieutenant on enrolment in the Supplementary Reserve.

CAO 263-1

Disclosure of Information Respecting Members or Ex-Members of the Canadian Army.

(Issued: 17 Sep 62)

This amendment permits the release of medical information in respect of an officer or other rank for the purpose of pursuing private claims, when requested by the officer or other rank or his properly authorized solicitor.

CAO 271-1

Movement of Dependants, Furniture and Effects

(Issued: 17 Sep 62)

This revision embodies amendments made to QR(Army) 205.40, 209-84 and 209.88; and also includes a definition of the term "furniture and effects" which will assist in the application of the regulations governing the movement of these personal belonging at public expense, and other minor changes of a procedural nature.

CAO 271-5

Transfers Between Corps

(Issued: 3 Sep 62)

This revision sets forth the current procedures for effecting voluntary and compulsory corps transfers.

CAO 272-6

Transportation When Proceeding on Leave

(Issued: 12 Nov 62)

This revision provides that a member shall be handed an information sheet concerning certain aspects of his claim before he proceeds on leave, and on which he will obtain the signature of a responsible official as proof that the member actually proceeded to his home while on leave.

CAO 273-1

Travelling Claims — Members Authorized to Travel at

Public Expense
(Issued: 12 Nov 62)

This amendment provides that a man travelling on duty may claim an additional baggage allowance when his duties require him to carry a tool kit and outlines the entitlement of a member to claim reimbursement of actual and reasonable expenses, with limitations, when he is travelling on duty and hires an automobile from a rental agency. Provision is also made for an officer in receipt of Representation Allowance to claim actual and reasonable expenses when travelling on duty, and a new requirement is included that members in receipt of travel advances who remain in travel status for more than 60 days must submit interim travel claims.

CAO 273-2
Claims Arising From the Movement of Dependents, Furniture and Effects
(Issued: 20 Aug 62)

This amendment notifies limitations on the payment in interim lodgings and meals when members obtain accommodation at other than commercial establishments.

CAO 273-7
Entitlement at Time of Enrolment — Canadian Army (Regular)

This revision amplifies QR(Army) 209.61 which was amended effective 25 Jan 62, to provide that an applicant for enrolment who resides in the vicinity of the recruiting unit and is directed to report for an interview shall, when quarters and rations are not available, be paid actual expenses not exceeding $1.50 for one meal per day.

RCEME Has Best Marksman

Khan Yunis, Egypt: A Canadian NCO, Staff Sergeant A. Walker, of Victoria, B.C., and Wainwright, Alta., a member of the Royal Canadian Electrical and Mechanical Engineers serving with the United Nations Emergency Force, was awarded a trophy as the best marksman in the 5000-man, seven nation force here in September.

Staff Sergeant Walker edged out Lance Corporal H. Singh of India in a tense sudden-death match after they both scored 74 out of a possible 75 points during the UNEF competition.

The Canadian soldier's award was presented by the UNEF commander, Lieut.-General P.S. Gyani.

During the competition both soldiers shot ten consecutive bulls-eyes from 270 yards followed by 24 out of 25 points each in snap-shooting from 180 yards.

In the tie-breaking shoot both scored bulls on their first shot. On the second shot the Canadian scored a bull and the Indian soldier just missed it.

Both fired weapons now in use in their respective armies — the Canadian used the FN (C-1) rifle and the Indian the Lee Enfield service rifle.

In team practices Sikh soldiers of India swept all events.

Team standings in the international event were: India 660, Yugoslavia 599, Sweden 559 and Canada 554 out of a possible 750 points.

Britain's Effort in Nuclear Field

Although the British effort in the nuclear field is manifestly smaller than that of the United States or the USSR and only amounts to some 10 per cent of the nation's defence resources, the British contribution to the Western strategic deterrent is significant. It is sufficiently potent to make a potential aggressor fear retaliation involving destruction beyond any acceptable level. Moreover, the British nuclear force adds considerably to the flexibility and dispersal of total Western nuclear forces and their retaliatory power.

Britain's safety lies in the success of the common defence of the North Atlantic area and it is therefore the British Government's aim to ensure that NATO forces are balanced and NATO strategy flexible. — *From "Background to Britain" (April 1962) issued by the British Information Services.*

March Not on Moscow – Monty

London, England: Viscount Montgomery told the House of Lords the first two rules of war for Britain are: March not on Moscow and keep troops out of Red China.

During a debate on the Army estimates, the 74-year-old Montgomery said:

"We must first declare about certain rules of war. Rule One on Page One of the Book of War is: 'Do not march on Moscow.' Various people of tried it, Napoleon, Hitler — it is no good.

"Rule Two is: 'Do not go fighting with your land armies in China.' It is a vast country with no very clearly defined objectives, and an Army fighting in China would be engulfed by the People's Soldiers."

He said he had reached the conclusion that in future war, air and sea power would provide the main offensive. Land power would be mainly defensive — to protect vital territory and supplies.

"Our task is so to organize our fighting services that they will use the new weapons most effectively, realizing that weapons will usually outstrip strategy and tactics, and that the gap today is bigger than ever before."

He claimed there was a tendency, checked in recent years but not altogether, toward self-sufficiency in Britain's present organization.

"In future war the decision will go to that side which can take the appropriate initial action the quickest, and which uses its armoury of weapons in the best way from the outset. That involves a very clear definition of the object, and then all pulling on the same rope.

He called for greater inter-service cooperation, and for a scaled-down Army, prepared to fight in an all-out nuclear war.

"It must not only be a good Army, but must be *seen* to be a good Army, and it would be a deterrent then for a cold war, for a limited war, and for a nuclear war." — *From an Associated Press news dispatch.*

THE ROYAL CANADIAN CORPS OF SIGNALS

A VISIT FROM THE COLONEL-IN-CHIEF

by

LIEUTENANT F. W. PRATT, CD *

Her Royal Highness the Princess Royal, Colonel-in-Chief of the Royal Canadian Corps of Signals since 1940, honoured Vimy Barracks with her second visit last June. Her Royal Highness was in Canada at the invitation of the Royal Regiment of Canada, the Toronto Militia unit of which she became Colonel-in-Chief last year, to present new colours on the occasion of its 100th anniversary.

The visit to Vimy Barracks began at 12:45 p.m. on Tuesday, 19 June, with the arrival of the royal cavalcade at the saluting base in front of the Forde Building. Her Royal Highness was accompanied in an open car by Brigadier C. S. McKee, CBE, ED, Honorary Colonel Commandant, and inspected a guard of honour of Signalmen apprentices, all under 19 years of age. The guard was commanded by Major D.H. Thomson, the apprentice squadron commander, and both the subalterns were former signalmen apprentices. Following the inspection a number of civilian and military dignitaries were presented, all of whom then joined the royal party at a small luncheon in the officers' mess. Captain C.A.W. Adams, CD, conducted the string orchestra of the corps band during the luncheon.

At 3 p.m. a very brief ceremony was held amid the disarray of construction work at the entrance to Vimy Barracks. There, before a considerable audience, the Honorary Colonel Commandant invited her Royal Highness to break the ground for the Corps War Memorial. She expressed admiration for the design and for the magnificent response of the contributors.

Shortly after this event, a large group of officers and their wives gathered in the ante-room of the officers' mess. There, in the presence of Her Royal Highness, a portrait of Lieut-General S.F. Clark, CBE, CD, (Ret.), by the Toronto artist Cleeve Horne was unveiled by Maj.-General A.E. Wrinch, CBE, CD, a Signals officer who in his appointment of Major General Survival is now in charge of National Survival operations for the Canadian Army. The portrait was presented to the mess by Lieut.-General Clark's brother officers in recognition of his attainment of the rank of lieutenant-general and the appointment of Chief of the General Staff—the first Signals officer to achieve this distinction. A smaller portrait by the same artist was presented to Mrs. Clark, after which those present followed the royal party to join a larger group on the mess lawn for a memorable tea and reception. In all about 400 attended this function, con-

**The author is serving at the Royal Canadian School of Signals.*—Editor.

Her Royal Highness the Princess Royal, accompanied by RSM (WO 1) J. Addy, meets SSM (WO 2) G. R. Heppenstall at the Sergeants' Mess outdoor tea.

sisting in the main of present and former Signals officers and their wives.

As the corps band played in the background, Her Royal Highness graciously received a number of guests in the royal enclosure and later circulated among the gathering accompanied by the Honorary Colonel Commandant.

That evening the royal party dined privately at Fort Frontenac, their residence while in Kingston.

Wednesday morning, 20 June, was given over to civic functions arranged by the City of Kingston. These consisted of demonstrations by Girl Guides and Brownies, in whom Her Royal Highness has been interested for many years, at the Kingston Memorial Centre, a motor tour of the city, and a luncheon at the new Salvation Army Citadel.

The major event of the visit, a large ceremonial parade, took place that afternoon on the parade ground at Vimy Barracks. All 700 troops on parade were from the Royal Canadian School of Signals. At precisely 3:15 p.m. Her Royal Highness arrived, heralded by the corps fanfare trumpeters. Looking very soldierly in the trim uniform of a full general, the Colonel-in-Chief mounted the saluting dais to receive a very smart royal salute. On the third movement of the present-arms, Her Royal Highness' personal standard broke from the flag pole which had been erected to commemorate the visit of her brother, King George VI, in 1939.

About to leave Kingston at the end of her visit, Her Royal Highness the Princess Royal thanks Signalman Apprentice R. Raymond for an album of photograhs taken during her visit. In the centre at the rear is her Royal Highness' equerry, Major L.G. Doiron, RCR.

Using a specially-prepared open jeep, Her Royal Highness inspected the entire parade and then returned to the dais for the march-past. In a short address to the troops on parade the Colonel-in-Chief admired their steadiness and turn-out, and paid royal tribute to the way her corps had risen to the challenge of its recently increased responsibilities in Canada and abroad. She also spoke highly of the corps spirit demonstrated in the highly successful war memorial campaign, and of the several fine new buildings erected at Vimy Barracks since her last visit in 1955.

Immediately following the parade Her Royal Highness was taken by Maj.-General Wrinch to view the statue of Mercury, plaque and memorial models on display in the Forde Building.

Before proceeding to the Sergeants' Mess for afternoon tea, the Colonel-in-Chief graciously sat for a group photograph with the officers of her Corps.

At the Sergeants' Mess Her Royal Highness was welcomed by the Regimental Sergeant Major and the President of the Mess Committee, after which she signed the visitors' book. The tea was held in the beautiful garden of the mess, where Her Royal Highness was pleased to receive a number of members and their wives.

The final function of the visit was a Corps mess dinner at the officers' mess on Wednesday evening.

During the latter part of the dinner Her Royal Highness was presented with a large Eskimo carving in the form of an owl as a token of affection by her officers. The Princess, who has collected china, glass and metal owls of all kinds since childhood, made a charming impromptu reply, saying that she was deeply touched by the presentation of this carving (which she thereupon named "Simon", after the Eskimo who had carved it especially for Her Royal Highness), and that she had greatly enjoyed her visit.

On Thursday morning the Colonel-in-Chief again inspected her apprentice guard, this time at the Kingston airport, and took a final royal salute. Her Royal Highness received from a young Signalman apprentice an album of photograhs taken during the visit, and then said goodbye to the assembled officials as she left for Toronto.

The Dignity of Man

Our lives need a purpose; we need a direction in which to point our efforts. And we should aim high. When we raise our sights, when we pursue the highest goals of our society, we are taking part in the never-ending effort of man to realize the best that is in him. When man reaches toward the highest goals that he can conceive, his efforts, his achievements give meaning to the phrase — 'the dignity of man'. — *Admiral Arleigh Burke in the Military Review (U.S.).*

Who Has the Problem?

From an Instructor's Report: This student suffered slightly from a language problem. He worked at this porblem and inproved.

From Spare Parts to Spare Ribs

The following extract from the minutes of the Regimental Funds Committee of No. 4 Ordnance Field Park, Royal Canadian Ordnance Corps, stationed in Germany, is a typical example of the traditional versatility of Canadian troops serving in a foreign country. The extract reads:

The following is a chronological account of the latest developments in connection with the outstanding debt of DM[*] 230 owed to the 4 OFP Regimental Fund by the previous swill contractor:

12 Nov 59 — Indebted farmer instructed to arrange sale of the pig which he had been supposedly fattening over the past six monts to offset the outstanding debt.

17 Nov 59 — The farmer stated that he had been unable to collect any money for the pig because it had been confiscated by a butcher to whom he was also indebted, when he tried to arrange the sale.

After much haggling the farmer finally agreed to settle payment by giving this unit one sheep (approximately 130 lbs.) and three piglets (approximately 20 to 30 lbs. each).

Arrangements were then made to temporarily accommodate these animals at two separate farms in the vicinity of Bettinghausen.

19 Nov 59 — Negotiations were conducted with a butcher who agreed to purchase the sheep on 23 Nov 59 at 80 Pfennigs per pound.

It was established that the piglets were too small for marketing. Therefore, the farmer on whose property they were housed agreed to fatten one for this unit in exchange for the other two piglets.

The sale of this pig is to be arranged approximately 15 Apr 60, at which time it should bring anywhere from DM 200 to DM 300, depending on weight and market prices.

23 Nov 59 — Sold sheep for DM 124,80 (80 Pfennigs per lb., wt. 156 lbs.). This money turned over to Treasurer Regtl Funds (Extra Messing). Paid out DM 6 in payment of feed and accommodation for this sheep during period 17 to 23 Nov 59.

24 May 60 — Pig sold for DM 182.62. Money turned over to Treasurer for deposit to Regimental Fund (Extra Messing).

SUMMARY

Revenue

Sale of sheep	DM 124,80
Sale of pig	DM 182,62
Total.....	DM 307,42

Expenses

Feed & accommodation ..	DM 6,00
Gross profit	DM 301,42
Original debt	DM 230,00
Revenue over and above collection of original debt	DM 71,42

(Contributed by No. 4 Ordnance Field Park, RCOC, Germany.)

[*] *Deutsche mark — approximately four to $1.00 (Canadian).*—Editor.

THE
ROYAL CANADIAN
ARMY SERVICE CORPS

McARTHUR MEMORIAL TROPHY

CONTRIBUTED BY THE DIRECTORATE OF SUPPLIES AND TRANSPORT, ARMY HEADQUARTERS, OTTAWA

The McArthur Memorial Trophy — a silver bowl mounted on a walnut base — commemorates the contribution made to the Army by the late Lieut.-Colonel G.C. McArthur, VD, ED, a well known officer of the Royal Canadian Army Service Corps.

Lieut.-Colonel McArthur served with the old Royal North-West Mounted Police from 1910 until he volunteered

Canadian Army Photograph

The McArthur Memorial Trophy.

for the Army in 1914 on the declaration of war. He was made a drill instructor and served with several units of the Canadian Expeditionary Force during the next four years.

Between the wars he served with the Non-Permanent Active Militia, and on the outbreak of hostilities in 1939 he was Commander, Royal Canadian Army Service Corps, at London, Ontario. He reverted to the rank of Major to go overseas with the Canadian Active Service Force and subsequently was appointed CRASC of 1 Canadian Division.

The trophy was presented in memory of their uncle by Mr. W. A. McArthur, a former officer of the RCASC, and his brother, Captain K.S. McArthur, Officer Commanding No. 20 Company, RCASC, at St. John's, Newfoundland. It was accepted on behalf of the Corps at a ceremony in Toronto by Lieut.-Colonel H.E. Patrick, Assistant Director of Supplies and Transport at Army Headquarters, Ottawa.

The purpose of the trophy is to stimulate interest in safe driving. It is to be awarded annually to the Royal Canadian Army Service Corps Company of the Regular Army with the lowest accident rate per 100,000 miles of vehicle operation. The first winner of this trophy, awarded for the 1961 calendar year, is No. 4 Transport Company, RCASC, of Winnepg, Manitoba.

New in Surgery: Electric Anaesthesia

Developed under contract with the U.S. Army Medical Research and Development Command, electric anaesthesia promises to be a major medical research advance with considerable potential for surgery under combat conditions and for civilian medicine.

The process was first successfully employed on humans early last year at the University of Mississippi Medical Centre, Jackson, Mississippi. It was developed by Dr. James D. Hardy, Professor and Chairman, Department of Surgery and Director of Surgical Research at the Centre. His work was conducted as part of a general Army contract on surgery, metabolism, shock, burns wound healing and surgical apparatus and techniques.

Through continuous electrical impulses, the anaesthesia sends a patient into varying degrees of unconsciousness. Recovery is prompt, without nausea or other unpleasant post-operative after-effects. There is no pain and the patient, on awakening, remembers nothing about the operation.

The equipment costs about $150.00. It consists of an oscillator or frequency generator that provides 700 cycles of current through an amplifier connected to a patient's temples by electrodes about the size of a half-dollar. An "airway tube" is inserted in the mouth to insure unobstructed breathing. The patient awakens in a matter of seconds when the current is switched off. Simplicity of the new method, and ease and speed with which patients recover, promise significant application to both military and civilian medicine. — *May 1962, Army Information Digest (U.S.).*

POSTINGS AND APPOINTMENTS

Listed below are postings and appointments for Regular Force officers of the Canadian Army of the rank of Lieutenant-Colonel and above, effective on the dates shown. Owing to limitations imposed by space, it is not possible to include in this list the names of those under the rank of Lieutenant-Colonel. This information was prepared specially for the Journal *by the Directorate of Public Relations, Army Headquarters, Ottawa.* — Editor.

MAJOR GENERAL

Kitching, G., From Chairman CJS (London) to GOC Central Comd, 21 Jun 62.

Lilley, L.G.C., from Comd Northwest Highway System to Comptroller General, 1 Aug 62.

Moncel, R.W., from Quartermaster-General to GOC Eastern Command, 3 Sep 62.

Rothschild, R.P., from Comd CALE to Quartermaster-General, 30 Aug 62.

Rowley, R., from Vice Adjutant-General to Comd ATOB, 1 Sep 62.

Ware, C.B., from Comd 4 Cdn Inf Bde Gp to Comd National Defence College, 30 Aug 62.

BRIGADIER

Chubb, A.G., from Chief of Staff Central Comd to Comd CALE, 14 Aug 62.

Cooper, P.S., from Senior Military Advisor MCCD Laos to Vice Adjutant-General, 4 Sep 62.

Dare, M.R., from Comd 3 Cdn Inf Bde Gp to Comd 4 Cdn Inf Bde Gp, 25 Aug 62.

Leech, G.C., from Comd 2 Cdn Inf Bde Gp to Comd Alberta Area, 4 Sep 62.

Macdonald, B.F., from Executive Assistant to Chairman CJS(W) to Comd 1 Cdn Inf Bde Gp, 23 Aug 62.

Peck, C.A., from Student — National Defence College to Senior Military Advisor MCCD Viet Nam, 5 Sep 62.

Purves, R.L., from Comd Camp Borden to Coordinator Joint Staff, 1 Sep 62.

Ross, J.S., from Comd Alberta Area to Comd East Ont Area, 4 Sep 62.

Sterne, H.W., from Chief of Staff CAS(W) to Military Advisor MCCD Laos, 17 Jul 62.

Turcot, G.A., from Comd 1 Cdn Inf Bde to Director Gen Mil Trg, 23 Aug 62.

Webb, E.H., from Student — National Defence College to Comd and Chief Engineer Northwest Highway System, 22 Aug 62.

Wilson-Smith, N.G., from Chief of Staff — G3 Plans HQ NORTHAG to Comd 3 Cdn Inf Bde Gp, 9 Aug 62.

COLONEL

Allan, J.C., from MCCD Laos to Comd, Royal Canadian School of Infantry, 6 Jul 62.

Bennett, R.T., from DMA MCCD Viet Nam to Student National Def College, Aug 62.

Bingham, P.R., from Director of Infantry to Student, Tri-Service Language School, 4 Sep 62.

Bourgeois, R.M.E., from Team Officer MCCD Viet Nam to DMA MCCD Viet Nam, 10 Aug 62.

Brady, A.L., from Student Joint Services Language School to Military Attache, Turkey, 19 Jul 62.

Carson, R.J., from Comd Fort Churchill to Chief Engineer, 21 Aug 62.

Cowan, E.C., from GSO 1, (DS) CASC to Director of Army Budget, 9 Jul 62.

Derby, A.C., from Commanding Officer, Cdn Forces Hospital, Kingston to Chief of Surgery, Cdn Forces Hospital, Kingston, 1 Jul 62.

Edwards, L.H., from Commanding Officer, 1 Cdn Base Med Unit to National Defence Medical Centre, 26 Jul 62.

Fosbery, H.T., from Director of Staff Duties to Director of Military Intelligence, 6 Aug 62.

Galloway, A.S.A., from Student — National Defence College to Comd Fort Churchill, 21 Aug 62.

Graham, R.J., from Col GS East Comd to Military Attache, India, Oct 62.

Henselwood, E.W., from Military Attache, Bonn to Director of Financial Management, 6 Aug 62.

Hogarth, R.E., from Director of Military Intelligence to Col GS Eastern Command, Oct 62.

Hunt, W.S., from Military Attache, Belgrade to Comd Camp Shilo, Oct 62.

Keane, R.A., from Director General of Military Training to Director of Staff Duties, 6 Aug 62.

Kerr, A.L., from Comd Medical Officer, Central Command to CO 1 Cdn Base Med Unit, 26 Jul 62.

Lawrence, M.W., from Assistant Quartermaster-General Eastern Command to Director of Movements, 1 Sep 62.

McConnell, W.W.K., from Military Attache, Japan to Student National Defence College.

McCoy, T.R., from Comd, Royal Canadian School of Infantry to Asst C of S, G3 Plans HQ NORTHAG, 28 Jul 62.

Mendelsohn, A., from Comd Royal Canadian Electrical and Mechanical Engineering School, to Director of Electrical and Mechanical Engineering, 16 Aug 62.

Munro, E.T., from Student, Tri-Service Language School to Military Attache, Belgrade, 20 Aug 62.

Nantel, G.A.M., from Asst Adjt-Gen, Directorate of Administration to Assistant Judge Advocate General, Quebec Command, 13 Aug 62.

Radley-Walters, S.V., from Cdn Sec SHAPE, HQ to Comdt RCAC School, 16 Jul 62.

Seamark, W.H., from GSO 1, Directorate of Military Training to Chief of Staff Central Comd, 26 Jul 62.

Stevenson, G.F., from Comd CBUME to Comd Camp Petawawa, 2 Aug 62.

Sutherland-Brown, M.C., from Military Attache, Israel to Director of Survey, 23 Aug 62.

Toms, K.A., from Joint Services Language School to Military Attache, Bonn Germany, 6 Aug 62.

Ward, K.R., from GSO 1, CAS(W) to Comd RCEME School, 7 Aug 62.

Watson, WdeN., from Directing Staff, Camberley Staff College to Director of Infantry, 4 Sep 62.

LIEUTENANT-COLONEL

Abbott, A.J., from Working Staff Member MAS to GSO 1 Comptroller NSAWS, 3 Jul 62.

Anglin, W.W., from 13 Dent Coy to 15 Dent Coy, 19 Aug 62.

August, J.A., from 57 CDN Sig Unit to GSO 1 D Sigs, 23 Aug 62.

Black, R.M., from US Armed Forces Staff College to GSO 1 CAS (W) 30 Jul 62.

Brown, G.G., from Exch Offr HQ 1 (Br) Div BAOR to CO 1 PPCLI, 13 Aug 62.

Brown, L.J., from Comd Engr Offr Central Comd to Deputy Director of Works, 3 Jul 62.

Brown, R.E., from 11 Dent Coy to RCDC School, 1 Aug 62.

Bruce, R.F., from CO 1 PPCLI to GSO 1 (DS) CASC, 27 Aug 62.

Burdett, T.H., from Comd & Sr SO TAHQ London to AA&QMG HQ West Ont Area, 4 Sep 62.

Carmichael, D.A., from ADOS to AHMG DQOP, 1 Aug 62.

Chabot, M.L.A., from Sr SO TAHQ Montreal to CO 1 RCHA, Aug 62.

Clarkson, J.M.E., from HQ NORTHAG to GSO 1 Eastern Command, 16 Aug 62.

Cullen, F.R., from Institute of Avn Medicine to Toronto Mil Hosp, 1 Jul 62.

Cunningham, D.H., from Sec'd to EMO to GSO 1 DMT, 4 Sep 62.

Davidson, A.M., from Toronto Mil Hosp to CLO Office of Surg Gen US Army, 2 Jul 62.

Drewry, J.L., from Student National Defence College to Spec Emp AHQ (Army Rank & Trade Structure Cttee), 21 Jul 62.

Edmondson, J.S., from GSO 1 DMT to Attending US Armed Forces Staff College, 11 Aug 62.

Ellis, W.H., from Chairman Elec Standards Sub Cttee to Deputy Director and Equipment Engineering, 31 Aug 62.

England, L.L., from AJAG HQ 4 CIBG to AAG D Adm, 13 Aug 62.

Fawcett, W.G., from AA&QMG HQ Central Ont Area to UNMOG (IP), 5 Sep 62.

Ferris, H.R., from CO 40 COR to CO 15 ROD, 10 Sep 62.

Fournier, R., from CO 5 Det RCAMC to CO 3 Det RCAMC, 1 Aug 62.

Fromow, D.L., from CJATC to GSO 1 DMT, 11 Aug 62.

Galloway, J.D., from Toronto Mil Hosp

to CO Cdn Forces Hosp Kingston, 1 Jul 62.

Garber, W.E., from GSO 1 (DS) CASC to GSO 1, DMT, 4 Sep 62.

Gillett, J.H., from SHAPE to TWO 1 D Sigs, 27 Jul 62.

Grant, W.E., from GSO 1 D Sigs to AA&QMG HQ Sask Area, 23 Aug 62.

Hall, D.H.M., from Fort Churchill Mil Hosp to CO Petawawa Mil Hosp, 20 Aug 62.

Harber, J.W., from DAA&QMG HQ CBU-ME to GSO 1 DMT, 16 Jul 62.

Hazen, J.D., from AD Wks to CO NWH Maint Estb, 31 Aug 62.

Hetherington, R.N., from Toronto Mil Hosp to Cdn Forces Hosp Halifax, 9 Jul 62.

Janigan, D.J., from TSO 1 CADEE to Sec'd to DRB, 27 Aug 62.

Johnson, H.S., from Sr SO TAHQ Windsor to GSO 1 CALE, 9 Aug 62.

Lable, B., from CO 36 OAD to ADOS, 4 Sep 62.

Lahaie, R.H., from AQMG DQOP to CLO Office of Deputy C of S Mil Ops US Army, 6 Jul 62.

Leger, F.A., from DJAG East Que Area to Office of JAG, 1 Jul 62.

Lewis, W.H.R., from Comd EME HQ Que Comd to DMCM, 27 Aug 62.

Lithgow, C.H., from GSO 1 DMT to GSO 1 ATOB, 4 Sep 62.

Lizotte, A., from 57 CDN Sig Unit to Surg Gen Staff NDHQ, 30 Sep 62.

Luker, R.I., from UNTSO Palestine to CPM Central Comd, 18 Aug 62.

MacDougall, G., from RCDC School to 11 Dent Coy, 1 Aug 62.

MacKay, R.F., from GSO 1 Eastern Command to MCCD Viet Nam, 8 Aug 62.

MacLennan, D.S., from GSO 1 (DS) CASC to GSO 1 (DS) Camberley Staff College, 19 Jul 62.

MacMurdo, J.G., from Exch Offr RASC Trg Centre to Comd S&TO West Comd, 31 Jul 62.

Mahony, J.B.P., from CO 15 ROD to ADOS, 10 Sep 62.

Markham, H.R., from 26 COD to Comd OO East Comd, 19 Jul 62.

McLaren, A.G., from CO 8 Det RCAMC to PG Trg University of Toronto, 27 Aug 62.

McQuaig, K.D., from CO 3 Fd Amb to Surg Gen Staff NDHQ, 13 Aug 62.

Menard, J.O.V.F., from CO 1 RCHA to Sr SO TAHQ Montreal, 24 Aug 62.

Milne, A., from Comd Ordnance Offr East Comd to Exch Offr Central Ord Depot, UK, 19 Jul 62.

Moore, T., from GSO 1 DMT to Military Advisor to Cdn Rep United Nations, 4 Sep 62.

Nedved, N.P., from ADOS to 27 COD, 31 Jul 62.

Nicol, S.A., from DAQMG HQ Quebec Comd to Comd & Sr SO TAHQ St John's, 17 Sep 62.

Noble, R.H., from GSO 1, CALE to Student, NATO Defence College, Sep 62.

Orton, J.S., from Instructor Civil Defence College (Arnprior) to Deputy Director of Military Trg, 20 Aug 62.

Paisley, J.S., from Sr SO TAHQ St John to SHAPE, 4 Sep 62.

Paris, R.L., from Area Engr BC Area to AD Wks, 31 Aug 62.

Preston, W.R., from AA&QMG HQ West Ont Area to DD FIN M, 4 Sep 62.

Price, J.G., from DAQMG HQ 4 CIBG to Sr SO TAHQ Windsor, 9 Aug 62.

Prichard, E.A.C., from Area Engr HQ East Ont Area to Comd Engr HQ Central Comd, 3 Jul 62.

Potts, G., from Deputy Director of Military Training to Student National Defence College, 20 Aug 62.

Rankin, W.J., from AQMG DQOP to GSO 1 (DS) CASC, 1 Aug 62.

Reeves, J.H., from CO NWH Maint Estb to Area Engr BC Area, 31 Aug 62.

Robertson, D.K., from MCCD Viet Nam to AAG D Pers, Oct 62.

Robinson, H.M., from Deputy Director, Electrical and Mechanical Engineering to Comd, Electrical & Mechanical Engineering, Quebec Command, 27 Aug 62.

Rodgers, R.A., from GSO 1, DMO&P to MCCD Laos, 8 Aug 62.

Ross, J.A., from Cdn Sec SHAPE to Student National Defence College, 14 Aug 62.

Saul, W.J., from MCCD Viet Nam to AA&QMG Central Ont Area, 4 Sep 62.

Sevigny, J.G., from MCCD Viet Nam to CO R22eR Depot, Oct 62.

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