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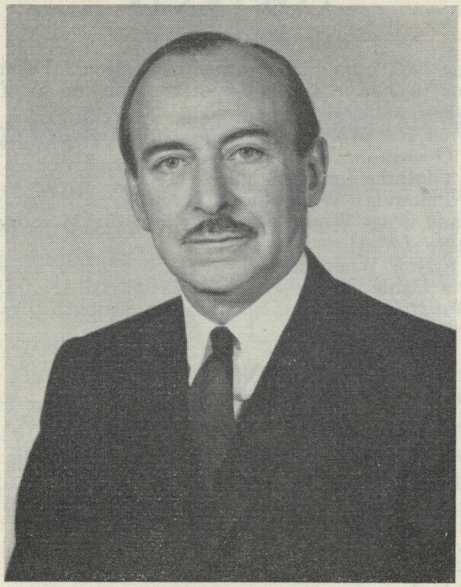
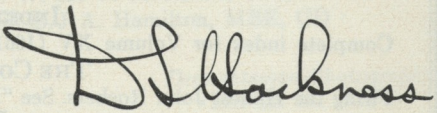


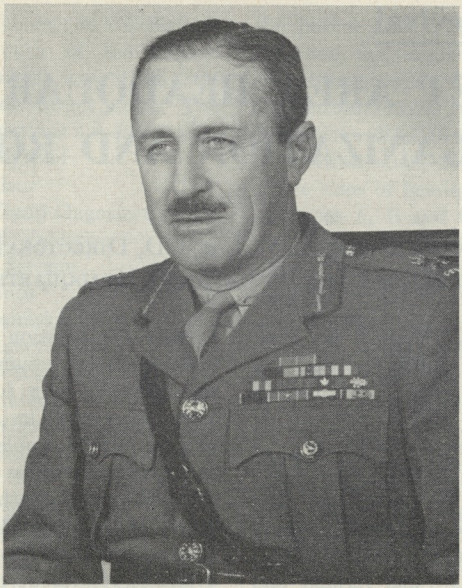
A Message for 1962 from The Minister of National Defence

I am delighted to take this opportunity to send my warmest greetings to the members of the Canadian Army through the columns of the Canadian Army Journal.

To all the officers and men and to their families, may I extend my best wishes for 1962. Canadians everywhere recognize and deeply appreciate the important contribution you are making in the interests of peace whether you are serving here in Canada or in one of the far-flung corners of the world.



(Douglas S. Harkness)
Minister of National Defence



A Message for 1962 from The Chief of the General Staff

It gives me much pleasure to extend to all ranks of the Canadian Army, and to their dependents, my best wishes for happiness and prosperity in 1962.

The Army has undertaken a great variety of tasks in many parts of the world and has brought credit to Canada through the manner in which duties have been carried out. I am confident that, in the coming year, each of you will continue to do your part in support of Canada's efforts in the cause of peace.

(Geoffrey Walsh)
Lieutenant-General

TARGET AREA HEADQUARTERS: ORGANIZATION AND ROLE

By

Lieut.-Colonel B. W. Lee, CD, Directorate of Survival Operations and Plans, Army Headquarters, Ottawa

In June 1959, by virtue of the passing of the Civil Defence Order, the Canadian Army became responsible for the rescue of persons trapped or injured by nuclear attack on this country. This was a new task for the Army and few members had any previous experience. A new directorate — the Directorate of Survival Operations and Plans — was formed and given the task of studying the problem and producing a basic plan.

As a result of the studies conducted by DSO&P certain facts became apparent and certain assumptions were made. It seemed likely that an all-out nuclear attack on Canada would affect at least 16 of our large populated centres and that large numbers of people would be killed, injured and trapped. The immediate results of such an attack could only be suffering and chaos on a scale almost beyond imagination.

It was obvious to all that the Canadian Army did not have anything near the resources required to cope with such an attack. Even if the Army swung into action, with the assistance of its own reserves immediately an attack occurred, it is unlikely it would accomplish more than 20 per cent of the rescue task. Further, under its present organization the Army could not expect to assume control of the situation or bring forces to bear for some hours after an attack. This presented a further problem for it appeared that trapped persons could not survive under average weather conditions for much more than 48 hours. Under severe weather conditions the time available for rescue could be considerably less.

The problems of the rescue task resolved themselves into two basic tasks of organization:

First, the Army must establish some sort of control over the damaged area as soon as possible after an attack.

Second, the maximum rescue forces must be brought to bear as soon as it is safe to enter. In some cases it will be safe to enter parts of the area of damage one hour after an attack.

The plan made by Army Headquarters for rescue in a damaged area envisages each target as a separate military action, controlled by its own headquarters, and having its own forces under command. Since no satisfactory headquarters existed is was necessary to create new ones. These are called Target Area Headquarters (TAHQs) and are small units of the Regular

Army. One has been established in the vicinity of each of the sixteen Canadian cities which have been designated as possible target areas. The present interim locations are as follows:

St John's — Holyrood
Halifax — Windsor
Saint John — Camp Gagetown
Quebec — Camp Valcartier
Montreal — St. Jerome
Ottawa — Almonte
Toronto — Newmarket
Hamilton — Hagersville
Niagara Falls — Welland
London — Centralia
Windsor — Chatham
Winnipeg — Portage La Prairie
Calgary — Olds
Edmonton — Wetaskiwin
Vancouver — Chilliwack
Victoria — Duncan

It was evident that if TAHQs were to control re-entry operations after a nuclear attack they must, themselves, survive the attack. Accordingly, arrangements were made to locate the TAHQs close enough to the target city to control the operation yet far enough away to escape damage by fire and blast. Also the question of fallout was considered and most units were located in the upwind direction. The ideal locations were found to be between 25 and 50 miles from the centre of the target cities. Since it was important to establish these units without further delay, there was no time to build suitable accommodation so interim sites which met the requirements as closely as possible and possessed suitable accommodation were chosen.

The size of the TAHQ varies slightly according to the size of the target city and consequently the potential size of the rescue task. For the sake of convenience, the target cities were divided into three groups:

Population 750,000 or over: Type A
Population 250,000 to 750,000: Type B
Population under 250,000: Type C

Three sizes of headquarters, designated as Types A, B and C, were authorized and allotted to targets of appropriate size. The establishments vary in strength from 15 to 20 officers and men. In the event of war this will be increased considerably by the addition of officers and men from both the Regular Army and the Militia.

These headquarters have now been charged with the responsibility of planning the operation to re-enter the target cities after a nuclear attack. The aim of this operation is to save lives by rescuing the trapped and providing first aid to the injured. In the event of an attack it is the task of the TAHQ to command and control the actual operation.

To carry out its function the headquarters must have the cooperation of governments at both the provincial and municipal level. Each municipality should have a plan to protect its citizens which should be coordinated with the Army's plan for rescue. A general knowledge of each other's plan is not sufficient: coordination must be reached in all fields and in all details. Some of these fields are discussed in the following paragraphs.

The police forces of provinces and municipalities must have a plan to control movement during a pre-attack evacuation. This evacuation may be planned or it may be spontaneous if sufficient warning time is received. At the same time the TAHQ must

plan for traffic control during re-entry. These two plans may well overlap if the city is attacked while evacuation is in progress. In any event it is likely that both plans will require the use of the same resources, and it is essential that mutual assistance and cooperation be arranged if this is to be achieved. It is necessary for a senior civil police officer to be appointed in each target area to act as adviser and liaison officer between the civil and military police forces.

The Army's re-entry forces do not contain any firefighting units, so reliance must be placed on municipal resources. Before these forces can be used for re-entry operations, plans must be made to designate areas of operation for all resources available. These plans must include the number of fire companies, their locations, assembly points, routes and tasks. Without the cooperation and assistance of municipal governments this would not be possible. Under these circumstances one senior fire chief must be appointed and he must have the power of decision involving all the fire forces of all the municipalities likely to be under attack or involved in re-entry.

If adequate coordination is to be achieved, the location of civil government headquarters in relation to TAHQ should be considered. Close liaison in the planning stage demands that municipal headquarters be located close to TAHQ. Since regions are now divided into zones for emergency control purposes, it follows that some zones may have one or more target areas within their boundaries. These zones will have to supply the bulk of the manpower and resources for the re-entry operations. Joint planning is vital here and it would help if the zone headquarters were adjacent to, or at least in the same town as, the TAHQ.

Once the TAHQ was located and had established liaison with civil governments, it was able to begin making an interim plan for the re-entry operation. The first step was to assess the task, the second to organize a system of control for the area, and the third to organize the forces available so that they might achieve maximum effectiveness in rescue and first aid. A fourth step, which was somewhat of a by-product at this stage, was to decide what additional units were needed and where they should be located to bring the strength of the re-entry force to a level adequate for its task.

Control is being achieved by dividing targets into sectors. The divisions made are based on the availability of routes for the re-entry forces, geographical barriers to movement, and the prevailing wind patterns which affect fallout. Each of these sectors must have a headquarters to control re-entry operations within its boundaries. Sites are being selected for these headquarters and communications established with TAHQ. The sites must not be affected by the attack if at all possible and therefore should not be closer than 20 miles from the centre of the target area. Sector headquarters will not be manned in peace. Instead, they will be manned by nearby Regular or Militia staffs whenever a warning is received and during exercises and rehearsals.

During the very early stages of the operation, control of movement on roads will be most important. If complete chaos and disruption of move-

ment is to be avoided, some means of controlling traffic must be in action as soon as people start to move after an attack. This is being accomplished by establishing traffic posts at all obvious points of traffic conflict on every road leading into a target area. Traffic control teams are being organized to man these posts. The teams will be made up of local people living or working in the area of the traffic post who can be enlisted into the Militia.

Traffic posts will be manned by the teams as soon as an alert warning is received. The traffic post teams on each route will be organized into a section with its headquarters at one post. The sections will be grouped into platoons with a headquarters at sector headquarters. Communications will be provided to link the posts with section headquarters and thence to platoon headquarters. Operational procedures will be developed which will include orders and rendezvous for civil police who are caught in the damaged area. These police will serve to reinforce the traffic control system and give it mobility in the early stages.

The problem of providing sufficient manpower for rescue in each target area is a formidable one. As mentioned before, not nearly enough forces are available, nor are the three services ever likely to have enough. It was decided, therefore, to rely on the citizens of Canada volunteering their services in an emergency. The Army, both Regular and Militia, will provide the organized framework and the trained leadership. To do this, both Regular and Militia units have been made into cadres to provide the skeletons on which rescue and support units can be built. Units in each town and village will be ready to accept volunteers and lead them in the re-entry task under the control of TAHQ.

This combination of a pre-attack control organization and a cadre system of re-entry units is expected to more than treble the original capability of the Canadian Army in rescue. If the citizens respond to the call for volunteers in greater numbers than our practical planners anticipate, the capability would be further increased.

The Army, by establishing TAHQs and planning re-entry, has taken the first vital steps, but there is a limit to our capability in national survival. It will require the support and resources of all Canadians if our country is to survive the devastation of a nuclear assault.

Man and Society

Let us not grow mechanical in head and in heart as well as in hand. The machine does not isolate man from the great problems of nature and society, but plunges him more deeply into them. In many countries, social development limps bewildered and protesting in the train of technical and economic practice.

We are faced with the task of developing social skills to meet the changing conditions. We cannot prosper with one foot in the twentieth century and the other in the eighteenth. — *From the Royal Bank of Canada Monthly Letter.*

SURVIVAL OPERATIONS EQUIPMENT

CONTRIBUTED BY THE DIRECTORATE OF SURVIVAL OPERATIONS AND PLANS, ARMY HEADQUARTERS, OTTAWA

Background

In the event of nuclear attack, it is essential that Canada should have a trained force which is prepared to rescue survivors from target areas. The rescue method which was developed in Great Britain has been used as the model which is best suited to our needs. The British system has also been adopted by other Commonwealth countries, the United States, and most of the NATO countries. The method was evolved from a study of both the National Fire Service and Civil Defence rescue operations in Great Britain during the Second World War. Rescue equipment for survival operations is similar to that used during the Second World War; however, because of the possibility of nuclear warfare in the future, it has been necessary to add additional protective and decontamination equipment to meet the new threats. In addition, Canadian geography, city/town construction methods and population densities necessitate some variation in the planned use of this equipment.

Much of the equipment needed for the services in the survival role is available from military stocks; the remainder, however, must be purchased as items new to the service. The additional equipment is chosen from normal trade patterns, whenever this is possible, in order to reduce costs and avoid special manufacture. The Civil Defence College has been very helpful in the production of specifications for equipment not previously used in the service.

General Equipment Uses

The survival operation will be controlled by a Target Area Headquarters with subordinate Sector Headquarters. Mobile Survival Columns and supporting units operate under Sector Headquarters, either on a pre-determined plan or as any given situation dictates. This chain of Command will be exercised by wireless or line communications. Vehicles and miscellaneous equipment similar to that used in the field army will be provided as required.

The survival columns need a variety of light rescue equipment. The support units, consisting of Engineers, Service Corps, Medical, Ordnance, Royal Canadian Electrical and Mechanical Engineers and Provost, require specialist equipment to carry out their functions. This includes engineer plant for road clearance, decontamination and laundry equipment and medical needs for the sorting and initial treatment of casualties. All units also require vehicles, wireless sets and other miscellaneous items of field equipment for re-entry operations. Radiac equipment is used by all units for the detection and monitoring of radioactive contamination.

Basic Rescue Equipment

Rescue companies will use hand tools and equipment for clearing debris, removing casualties and trapped individuals and breaking through walls. This equipment also enables rescue personnel to use material from damaged buildings for shoring up walls and debris during rescue operations. The companies also need clothing and equipment for the protection of rescue personnel during operations. All equipment used by a rescue company is man-transportable. A number of packboards are available for the pre-assembly of smaller items and subsequent carriage. The standard equipment for rescue includes:

1. Portable floodlights to aid the rescue sections during night operations or inside buildings. A portable generator supplies the power.

2. Slings, blocks and tackle, chains, hoists, blankets and stretchers are used in the removal of casualties from upper floors of damaged buildings. The blocks and tackle, chains and hoists, together with ropes and salvaged material, will also be used in the assembly of various derricks, "A" frames, tripods and jibs for use in the removal of debris which is hindering rescue operations.

3. Lightweight metal ladders are provided mainly for use in the removal of casualties from upper floors of damaged buildings. They can also be used as bridges or stretchers or with blocks and tackle to make temporary lifting devices.

4. Self-contained breathing apparatus is needed in each company to facilitate rescue operations in buildings or areas in which heavy concentrations of smoke or irritant or toxic gases are present. All rescue personnel require industrial safety masks to give protection against dust.

Heavy Rescue and Road Clearance Equipment

Power-operated and pneumatic equipment including drills, saws, borers and breakers are needed by the Composite Squadron, Royal Canadian Engineers, for breaking through floors and walls. Cutting torches are used in cutting through steel beams, girders and other metal objects. Truck-mounted derricks and crane shovels are necessary to carry out the heavy lifting and digging involved in debris clearance.

The angledozer is the basic road clearance equipment of the squadron. A tractor with semi-trailer is used to give it increased mobility. Power-operated saws, oxygen and acetylene torches, hoists and jacks are necessary for the clearance of trees, telephone poles, steel girders and other debris from roads.

It is the inteution to meet needs for such items as bulldozers, cranes, air compressors, etc., for engineer squadrons by requisition from civil resources.

Radiac Equipment

A comprehensive range of radiac equipment is needed by survival units for the detection and survey of nuclear radiation in the target area. This equipment falls into two groups:

1. Dose-rate instruments which are used to detect and assess the immediate hazard and to provide information needed to determine the subsequent hazard from radiation.

2. Dose-measuring instruments which are used to indicate the accumulated radiation dose received by the bearer. This enables commanders to determine the period for which personnel can be employed in a contaminated area with safety.

All personnel will be issued with a radiation exposure dosimeter in a small plastic case designed to be worn on a chain round the neck. This records the radiation received by the individual wearing it and must be read by means of a computor held at the unit headquarters. With this information, commanders are able to determine when an individual has received the maximum permissible dose.

Commanders and specialists need a self-reading tactical dosimeter which will give an immediate reading of the approximate dose received by a group. Decontamination and radiological survey crews will use technical dosimeters which give a more accurate indication of radiation received. These dosimeters are about the size and shape of a fountain pen and can be carried in the pocket.

Radiac chargers are needed in the unit headquarters to reset technical and tactical dosimeters after exposure to radiation.

Several different survey meters are necessary throughout the survival units and headquarters. These are used by radiation survey teams to detect and read radioactivity in an area or on equipment and supplies. By means of an area survey the commander can determine the areas in which re-entry and rescue operations can be undertaken safely. Survey meters are used in the specialist platoons of the support units to ensure that supplies and water are not contaminated and that decontamination of personnel and equipment is effective. Survey meters are under development which will be capable of measuring radiation while the instruments are on the move in vehicles or aircraft. Another meter which will give readings from remote locations is also under procurement. This latter instrument may be fitted with an automatic alarm which will provide a visual or audible signal when a predetermined radiation level is exceeded.

In addition to the above equipment, a radiac calculator will be supplied to the headquarters and most elements of the rescue column. This instrument is a circular slide rule and is used to determine the dose rate at any time after the event, the safe time of entry into, and duration of stay in contaminated areas, and predicted accumulated doses.

Decontamination Equipment

The Decontamination Company requires mobile laundry and bath equipment for the decontamination of personnel, clothing and blankets of survival elements. These are trailer-mounted and completely self-contained. Cleaning agents are identical to those used in commercial establishments. Special apparatus is also necessary for decontamination of vehicles and equipment. Small vacuum cleaners will be used for the removal of radioactive dust from vehicles and equipment.

Special protective clothing is required for personnel engaged on decontamination duties in this company and other units.

Water Supply Equipment

Water purification equipment is needed by the Composite Squadron RCE for the provision of safe water for cooking needed by the Composite Squadron RCE for the provision of safe water for cooking and drinking. Water trailers will be used to distribute water to all units for normal needs.

Communications

Communication equipment is necessary at all headquarters down to the rescue company level to ensure effective command and control during operations. Signal components of the more senior headquarters require some test and repair facilities to maintain the communication equipment in operating order.

Radio sets are installed in a number of vehicles throughout the organization to provide communications from the coordinating headquarters down to rescue company headquarters and to the headquarters of the support units. The reconnaissance elements are provided with this equipment to a lower sub-unit level to permit them to carry out their vital role.

Line equipment is needed within each sector to provide telephone communication between all support units when this is practicable. Quad cable and multi-channel equipment is required at each Target Area Headquarters to supplement existing commercial circuits if necessary.

Traffic and Crowd Control Equipment

In order to control movement of vehicles and personnel, including civilians, in the damaged area, the Provost Platoon needs appropriate traffic and crowd control equipment. The majority of this equipment is of a commercial type used by civilian police forces.

Transport

Sufficient vehicles are required to carry all equipment and include standard ¼-ton utility, ¾-ton and 2½-ton cargo trucks and various technical vehicles fitted with radio sets, repair equipment, etc. The Transport Company, Royal Canadian Army Service Corps, will also lift personnel.

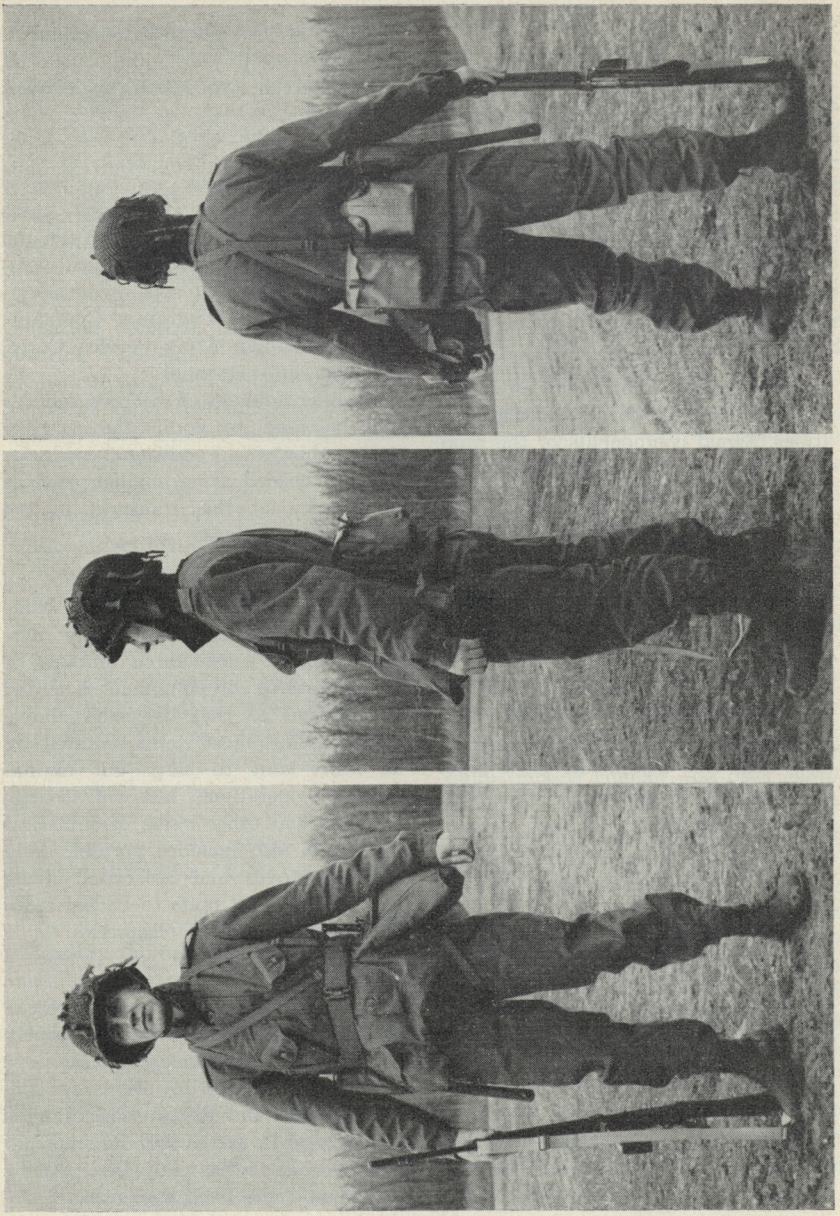
Existing holdings of military vehicles will be used to equip the survival units; however, additional vehicles will be needed from civilian sources to supplement this transport in the event of operations.

Miscellaneous Equipment

As units engaged in survival operations must be administratively self-contained, a considerable amount of military stores and equipment is needed in addition to that discussed above. This includes most items required by an army unit to carry out normal military operations less, of course, weapons and other items of a tactical nature. It also includes portable field gasoline stoves and associated items to allow re-entry units to be fed independently of civilian resources.

Conclusions

The indispensable part that rescue equipment may be called upon to play in survival operations has placed it high on the list of priorities for the procurement and distribution of military stores. It will enable Regular and Militia units to be ready for this new role should the need ever arise.



NEW COMBAT CLOTHING FOR CANADIAN ARMY

FROM A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

New combat clothing for Canadian soldiers, designed for all-weather use, will be brought into wear by the Army in approximately 12 months' time. This clothing is shown on the opposite page.

To go into production almost immediately is a General Service combat jacket, a combination shirt-coat, General Service trousers and eight-inch-high leather boots which do away with puttees.

A direct-molded sole type, the new boot will eliminate the need for repair in the field. In intensive field trials, it has proved itself able to stand up to a minimum of at least 18 months of hard usage before wearing out.

The new clothing is completely Canadian designed and developed and culminates three years of study and research by the Directorate of Inter-Service Development in Ottawa. Procurement action has been initiated by the Army and it is expected to be issued to the troops in 1963.

With the advent of the new clothing, the battledress and greatcoat will no longer be items of wear in the field but will continue to function as non-operational dress.

The fabric — 50 per cent nylon and 50 per cent cotton by weight—although light has been selected for its strength and hard-wearing properties. Ultimately, this basic design will go into the entire range of operational clothing for possible use from the tropics to the arctic.

Queen's Own Wins Shooting Trophy

The 2nd Battalion, Queen's Own Rifles of Canada, stationed at Calgary, Alta., has won the Hamilton Gault Trophy for rifle marksmanship for the year 1961, Army Headquarters has announced.

This is the fourth year of competition for the trophy donated to the Regular Army by the late Brigadier A. Hamilton Gault, founder of the Princess Patricia's Canadian Light Infantry.

The trophy is awarded annually to the infantry battalion of the Regular Army with the best shooting record for all its members, and not merely a few crack shots. Brig. Gault considered that a unit is "only as good as its marksmanship".

It was first won by the 2nd Battalion, The Black Watch (Royal Highlanders) of Canada, in 1958; by the 1st Battalion, Royal 22e Régiment, the following year; and by the 1st Battalion, Princess Patricia's Canadian Light Infantry, in 1960.

The presentation of the trophy will be made later this year.

Principles of Planning

WHAT GUNS?

By

MAJOR W. R. CHAMBERLAIN, MC, CD, (ROYAL CANADIAN DRAGOONS), DIRECTORATE OF MILITIA AND CADETS, ARMY HEADQUARTERS, OTTAWA*

British military history has no more unforgettable action than the famed "Charge of the Light Brigade". The student who reads the account of this incident in the book *The Reason Why* by Cecil Woodham-Smith † cannot fail to be moved to consider the basic defects that led to this blunder.

It is the aim of this article to briefly consider, firstly, the action at Balaclava and the basis of its tragedy and, secondly, the principles which become apparent from this consideration and to relate them to the problems of modern staff work.

From Lord Lucan's failure to conduct a proper reconnaissance to the ambiguous wording of Lord Raglan's scribbled attack order, crowned by the emotional atmosphere created by Captain Nolan's method of transmission of his orders, all seem so contrary to modern principles that one is first led to exclaim in relief, "Thank God, such things don't happen now".

Certainly Balaclava, in particular the famous "Charge", seems to have been a concentration of military errors. Basic principles of war would seem to have been violated at every turn. The mistakes made at Balaclava may be grouped under the following headings:

1. Reconnaissance
2. Communication
3. Objectivity

The Cavalry Division at Balaclava was in ignorance of ground and enemy dispositions due to the failure of its commander (Lord Lucan) to carry out a proper reconnaissance. With his divisional command situated in the bottom of the end of the North Valley, Lord Lucan was completely ignorant of the ground and enemy situation so clearly apparent to the Commander-in-Chief, Lord Raglan, located on the heights above. As a consequence, the orders given by Raglan were related to a set of circumstances unknown to the officer who was to carry out these orders.

The message giving the attack order was as follows:

"Lord Raglan wishes the cavalry to advance rapidly to the front, follow the enemy and try to prevent the enemy carrying away the guns. Troop horse artillery may accompany. French

**A graduate of the University of Toronto, the author served with a Reconnaissance Regiment — 4th Princess Louise Dragoon Guards — during the Second World War. He graduated from the Canadian Army Staff College in 1950, and has since served as a Staff Officer at Area, Command and Army Headquarters. He is due to retire from the Army in June of this year.*—Editor.

†See the book review "Theirs Not to Reason Why", July 1954 issue, Canadian Army Journal. — Editor.

cavalry is on your left. Immediate. Airy." It was a model of ambiguity, based on a knowledge of the facts available to Lord Raglan on the heights but denied to the recipient of the message, Lord Lucan, on the plains below. The essentials of good communication were lacking.

As a result, Lord Lucan was confused, and consequently became angry. He turned upon the impetuous *aide-de-camp* (Captain Nolan) who had brought the order, and asked the question that revealed his baffled exasperation, "Attack sir? Attack what? What guns, sir?"

Thus arrived the moment of decision and, as is often the case when calm reason is most needed, only emotion — hate, pride, prejudice, suspicion, arrogance — reigned supreme.

So from the viewpoint of objectivity, the charge was based on emotion with no consideration of the factors involved. The attack was launched by an angry commander on the taunt of a contemptuous subordinate. Indeed, the whole sorry story leading to Balaclava is full of such subjective influences as "prestige, family pride, furious anger".

Well so much for Balaclava and its tragic charge. It was magnificent, but it was *not* war conducted on sound principles. The individual pieces in this cruel game were thrown away by a sad lack of clear military thinking.

We are taught to profit from the lessons of military history, and its students have evolved a set of *Principles of War* to guide our present-day conduct. The tragedy of Balaclava, however, was largely due to the disregard of principles which are not included in the authorized list, namely, Reconnaissance, Communication and Objectivity.

Is the disregard of these principles — the "ghosts of Balaclava" — still haunting our military planning and peacetime staff work? Let us learn from history and pay attention to each principle in the light of its application: not to some past or contemplated military operation in the field, but to our every-day work as peacetime soldiers; for correct military thinking, or logic, is moulded by constant use and exercise, rather than by short courses in principles likely to be forgotten and seldom used.

Reconnaissance

In current staff training, the student is taught in the study of "Appreciations" to consider the Factors. This involves the principle of Reconnaissance, which is concerned with the accumulation and careful consideration of all information pertinent to the Aim of the operation. In peacetime planning the application of this principle cannot be over-emphasized.

It is not enough simply to consider all factors: they must be carefully scrutinized with an enquiring and, if need be, a doubting mind. All aspects must be examined, not merely one. Too often wishful thinking leads to a screening or "slanting" of information in favour of that which would aid in the attainment of the Aim, ignoring the unpleasant but unavoidable facts of life that may make the Aim unattainable. Indeed, one of the most useful results of a thorough reconnaissance is a testing of the feas-

(Continued on page 19)

CHAPEL'S STAINED GLASS WINDOWS KEEP FRESH THE MEMORY

The Good Shepherd — Saint Peter — King David — Saint Christopher — Dorcas — Saint Timothy

The six stained glass windows shown above may be seen in the Protestant Chapel of the Good Shepherd at the tri-service base at Fort Churchill, Manitoba. Major G. R. Laing, CD (RCASC), now employed with the Directorate of Movements at Army Headquarters, Ottawa, and formerly commander of No. 18 Company, Royal Canad'an Army Service Corps, at Fort Churchill, writes about these windows on the following page. — *Editor*.

TO KEEP FRESH THE MEMORY

By

MAJOR G. R. LAING, CD (RCASC), DIRECTORATE OF MOVEMENTS, ARMY HEADQUARTERS, OTTAWA

Over the years much has been written in various issues of the *Canadian Army Journal* about establishments and installations at Fort Churchill, Manitoba. This very fine coverage containing a formidable list of subjects outlines the various aspects of specialized training and some of the static services which support the Canadian-United States Joint Experimental Station on Hudson's Bay, north of the 58th parallel.

Another "establishment" at this northern base which I consider worthy of mention is the Protestant Chapel of the Good Shepherd, built in 1952 and one of the most active anywhere. To keep pace with its many activities, a large addition was found necessary and constructed in 1959. To mark its international character, the Canadian Red Ensign and the United States Stars and Stripes hang on opposite sides of the chancel.

Many hundreds of servicemen and their families, together with employees of other government agencies and civilian friends, representative of numerous Protestant congregations throughout the world, have worshipped at the Chapel of the Good Shepherd, participated in its services and contributed to its work. The Chapel Committee under the guidance of the chaplains who have served at Fort Churchill have enhanced the beauty of this northern service chapel by the addition of six stained-glass windows.

It is to this great army of worshippers that the photographs of the chapel windows reproduced on the adjoining pages are dedicated, to keep ever fresh in their memory the days spent "North of 58".

A description of the windows illustrated on the preceding pages follows:

The Good Shepherd: Christ depicted as The Good Shepherd (John 10:14).

Saint Peter: The patron saint of sailors, with an inscription from Psalm 107:23-24. It commemorates HMCS *Churchill.*

King David: The Warrior King. The inscription "Praise ye the Lord" is from the opening words of Psalm 135 and Psalms 146 to 150. It commemorates the Canadian Army contribution.

Saint Christopher: The patron saint of all travellers. It commemorates RCAF Station, Churchill.

Dorcas: The first woman worker of the Christian church, with an inscription from Acts 9:36. It commemorates the Women's Auxiliary.

Saint Timothy: Co-worker and missionary, with an inscription from 2 Timothy 4:7. It commemorates the forces provided by the Department of Defence of the United States.

PRINCIPLES OF PLANNING: WHAT GUNS ?

(Continued from page 15)

ibility of the Aim. If the Aim cannot be achieved due to any one factor, it is the duty of the staff officer to bring this fact to the attention of his superiors.

The knowledge of where to seek information comes with experience, reinforced by a desire to make a complete reconnaissance. The sources of peacetime information, by word of mouth or print, are abundant and available to all who know where to look for them. How often are they left unused! As Grey put it, "Full many a flower is born to blush unseen, and waste its sweetness on the desert air". Even a second-rate specialist who works consistently on one subject is a more reliable source of information than a first-rate "guesser". The planner or staff officer must not attempt to replace the specialist but must remain an organizer. The temptation to intrude with non-expert opinion can be fatal. At the same time, general knowledge is important to evaluate and organize information.

Policy statements must be examined as a factor by the planner who will then be guided accordingly. If there is no relevant authoritative policy, it should be sought. It need hardly be mentioned that sound policy is based on a logical consideration of relevant factors. It must be in permanent form — on paper or in stone. Its essence is stability and it therefore should not be transitory or personal, as personalities change with sometimes great rapidity. Indeed, the "cult of personality" so decried in the Communist camp has no greater validity in the realm of military policy-making.

Much planning is carried on as a simultaneous operation by several agencies. In such cases, the full exchange of information and close attention to terms of reference are necessary, followed by a careful coordination of the information so produced. The production of planning material by the wrong agency can lead to a poor plan. Consult only the expert during this reconnaissance phase.

The spirit of inquiry that should permeate the staff officer's mind must be mixed with patience and tenacity. If the factor is worth investigating it must be worth verifying.

In analysing the factors, the staff officer must avoid the collection of synthetic facts which are favourable to a preconceived plan. The resulting plan may be off to an optimistic start, but sooner or later the real facts of life will present themselves as unexpected and unplanned-for obstacles. The consequence may be expensive, time-wasting and frustrating. All the factors, both good and bad, must be carefully assessed before the plan is formed.

Communication

The problem of communication has been with military planners since our cave-dwelling forebears signified their intentions by grunts. Indeed, this method has not entirely fallen into disuse. It is important that information

flow clearly and unhindered both up and down, from and to the planner, the executor and the source of information on which the plan is based. Very often the intermediary who transmits the information interposes his own (and sometimes erroneous) views. Captain Nolan was a sad example.

The written word, the normal medium of peacetime staff communications, can be a frail and suspect vehicle. The meanings are often varied and may change from person to person. Careful selection of words, with every effort to avoid ambiguity or "mistiness", is an important lesson for the staff officer to learn. How invaluable are glossaries at the beginning of staff decuments! Frequent use of the Oxford Concise Dictionary helps to place all concerned on a common plane of word meanings and also aids in clearing out false meanings that have become lodged in our minds through usage.

Some documents, in their interpretation, require extraneous knowledge of the author and of the background subject matter before they can be properly understood. Veneration of the written word can be misleading, and is a common failing. The writer *could* be wrong, both with respect to the content of his subject matter and the omission of important considerations.

Communication of the spoken word, is, of course, the method most likely to contain error. This is particularly noticeable in Minutes of Meetings. How often, in his attempt to save words, does the officer who produces the minutes omit the very phase which is critical! Circulation of draft minutes to members of the conference will help to correct such errors. The production of useful and valid minutes is a fine art requiring skill in writing and a very good general knowledge of the subject matter of the conference.

It is no accident that hearsay evidence is inadmissable in certain judicial situations. What "somebody said" is not always a good fact on which to base a plan, but how often are we committed to its use?

It is of particular importance that policy be stated in clear and concise form, as policy statements must be a constant guide to the planner. Where the aim of the plan is affected by policy (and it should always be so affected) it is essential that this guidance be clear and unambiguous.

Objectivity

All officers are human, and a very great human failing is to introduce into one's deductions too much of one's own personal bias. There is no sense in trying to produce a perfectly objective staff planner — he would be a rare creature and might lack the warm human qualities that have a place in all planning; but the other extreme is much more dangerous and *much more* common.

Quite often a staff officer surmises or is told in advance what the plan is to be. Worse still, he may approach his reconnaissance of the factors with an *apriori* decision on the result of his search for and selection of factor material. How often has it been said, "you know what you're going to do before you make your reconnaissance". In most cases this piece of wisdom comes from the lips of an ex-regimental officer, and is based on some past sub-

unit battlefield experience. Under the conditions of most sub-unit actions there was an element of truth in this conclusion. The area in which the troop or platoon officer was compelled to fight was fairly restricted from the outset. He was given an objective with no alternative. Furthermore, his access to the vital information concerning ground and enemy was largely barred by the enemy. His main recourse then was to a preconceived "drill". It is dangerous to draw general conclusions from wartime experience for use in peacetime staff work where adequate time is available to the planner and the sources of information are almost unlimited. Moreover, mistakes caused by faulty peacetime planning cannot be buried!

The plan based on a "whim", frequently referred to as "flying a kite", can have disastrous results. Spur-of-the-moment decisions, made on a "let's have a go" basis sometimes paid off in battle, where the main factor was an enemy equally liable to irrational impulses. In peacetime the factors are much more stolid and cannot be frightened off by a show of daring or influenced by superior rank. The great danger of the plan based on "whim" is that it forces the staff officer either to disregard the factors and resign himself to "getting on with it", or to be selective in his choice of factors, retaining those which favour the *apriori* plan and rejecting the unpleasant ones which he knows make the plan undesirable if not impossible.

The influence of subjective thinking, which has coined that delightful slogan, "My mind is made up, don't bother me with facts", has also produced a "backward appreciation" method of tackling a problem, which is all too prevalent. A lack of moral courage — or concern for his career possibilities — forces the staff officer to start with the given plan in his mind and to consider "only those factors which are relevant". This results in a form of intellectual dishonesty that will have serious repercussions when that officer is called upon to do a completely objective appreciation.

"Staff training", whether conducted in a course or on the job, should consist largely in the development of the objective approach to problems. The staff officer should endeavour to clear his mind of *apriori* assumptions and suppositions and tackle the problem in a fresh, logical and inquiring frame of mind.

There is one further consideration regarding the contents of the plan itself, once the factors have been analyzed — the conformity of the plan with the accepted "principles of war". These are most useful criteria in assessing the merit of the plan. It is a mistake to consider these principles only for wartime or field use. They have validity in peacetime planning and should be applied in daily staff work. Constant use of these principles will result in an automatic and unconscious check being made by the staff-trained officer to ensure that his plan conforms to established principles.

Conclusion

Good staff planning must be based on facts — cold, unalterable and often unfriendly to our hopes and aspirations. To produce the staff officer who

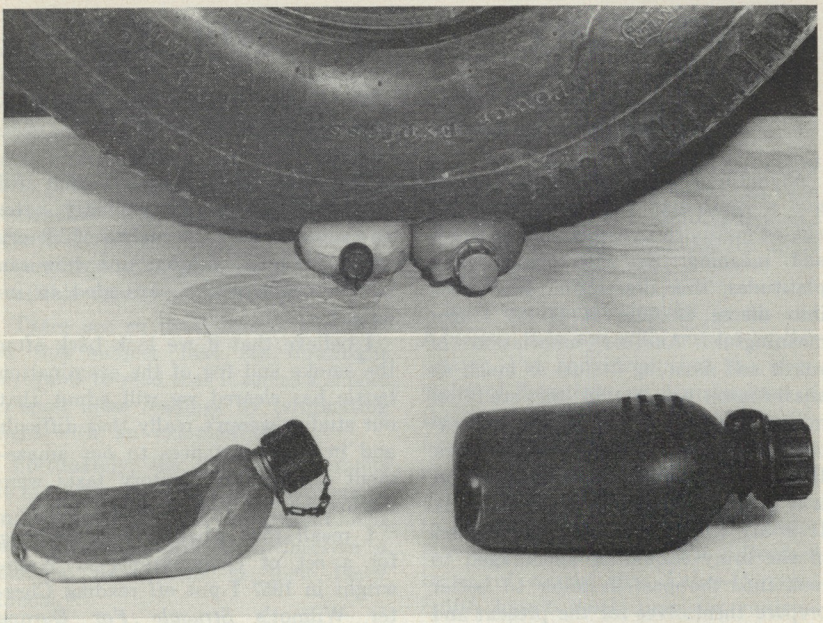
will fearlessly seek out these facts, we must encourage in our system of staff training an *objective* approach. If we allow other considerations to intervene, such as rank or position, or considerations of a non-military nature, such as politics, religion, self-interest, sentiment, "vested interests" and many others, we must be prepared for less than the best in our military planning.

The picture of the professional soldier must reflect a professional approach to staff problems, but not a doctrinaire-ridden rubber stamp. Unless the Army produces a fresh, inquiring and objective approach in its young staff officers, we need not look for progress. Rather, the subjective authority of the veteran of other wars and other conditions will cramp and stultify initiative and our officers will cease to be creative thinkers and leaders. A form of intellectual timidity, a desire to "play it safe" results. Creeping caution is confused with common sense — an entirely different matter. The picture is not pleasant.

The production of an objective-minded, logical and fearless staff officer should be the aim of our staff training. Recourse to new and different staff systems — of supervisory commissions and the introduction of outside "efficiency experts" — in an attempt to patch up the Army's production effort, is a vain illusion. Such gadgets are make-shift and their results — if any — are at the best, temporary. The effort and money expended on such expedients would far better be spent on the planned training of young staff officers.

Something should be said about that all-important principle of war, Maintenance of Aim. If the plan has been based on a careful, objective scrutiny and analysis of all factors which are relevant, it should be adhered to *as long as the factors remain unchanged.* True factors do not change quickly, or often. By "factor" is meant an objective fact, not a biased opinion or a whim which may change with every passing breeze. The result is not a rigid plan, but a consistent one, upon which reliance can be placed and in which faith will be instilled. True flexibility is present in a plan which is alert to follow changes only in the objective factors that control it. It is at this point that the properly trained staff officer or commander inserts the necessary changes — or reversals — that are necessitated by the changes in the true factors. Consequently there is a need for officers to be trained to distinguish between the relevant and the irrelevant factors.

In conclusion, how can we indoctrinate our young staff officers with the principles of planning? By education and by practice. Staff training should concentrate on instilling in its candidates a spirit or inquiry and objectivity. Greek philosophy dealt essentially with objective thinking and Canadian Army officer training would benefit from the inclusion of a course in formal logic. Stress should be placed on clarity in communication and intellectual honesty. In practice the staff officer must be encouraged to further develop these qualities in his daily work. Fortunately, the opportunity to effect this on-the-job training is available in our every day work at all levels of the staff. The results would more than repay our efforts.



Canadian Army Photograph

To test the new polyethylene water bottle described in the accompanying report, the novel experiment shown above was conducted by the Canadian Army. The photograph at the top shows the wheel of a 40-passenger bus passing over both bottles. Water is being forced out of the aluminum canteen (left) formerly used by the troops, but the new plastic container withstands the pressure and remains undamaged. Both the new and the old bottles are shown in the bottom picture after the test, the aluminum canteen having been crushed in the experiment.

New Water Bottle for Canadian Army

The increased use of plastics has resulted in a new water bottle for the Canadian Army, replacing the aluminum canteen. Manufactured by the blow-molding method, using polyethylene, the new canteen can be made for about one-quarter the cost of the metal type. Aluminum alloy did not lend itself to easy manufacture of the kidney-shape bottle.

Other advantages of plastic over metal containers, besides the cost, are better tasting water, lighter weight, greater durability and less susceptible to denting, according to designers at the Directorate of Inter-Service Development, National Defence Headquarters in Ottawa. During the en-

(Continued on page 24)

MILITARY HISTORY FOR ALL

MAJOR W. K. STIRLING, 1ST BATTALION, PRINCESS PATRICIA'S CANADIAN LIGHT INFANTRY, VICTORIA, B.C.*

At one time the expression "an officer and a gentleman" was a popular and almost indisputable association of words and meaning. As with many other platitudes, this description has fallen into disuse because it is no longer meaningful. Another association of words and meaning — just as much an anachronism — is that the study of military history is the private and exclusive field of commissioned officers. If we pause to consider the association, is it necessarily true today? I doubt it. It is my contention that all members of the army should be encouraged to look into the past in order to better prepare themselves for the present and the future.

I realize that this premise will appal many who have waded through the required reading in preparation for military history examinations.

The immediate reaction is that if I as an officer can and will only suffer an excursion into the realms of history under the prod of promotion, how can our subordinates be persuaded to indulge?

I believe that if we look back after the smoke and fog of the examination battle has cleared we will admit that our studies weren't really that difficult and in some instances to our amazement our military history texts were fascinating and illuminating.

I recall that when I was studying for a set of examinations in Wainwright in 1957 I put off reading Chester Wilmot's *Struggle For Europe* time and again because it appeared at a glance to be such heavy going, until I could delay no longer — Military History was to be written the next day. I forced myself page by page into the maze until suddenly I was caught up by the spirit and enthusiasm of the author. I read all night, completely fascinated, berating myself for having neglected such a magnificent treatise for so long. *(Continued on next page)*

**Enlisting as a private soldier in the PPCLI in 1943, the author served in North-West Europe during the Second World War. Graduating from the University of Manitoba in 1948 (B.A.), he was commissioned in his regiment in 1950 and saw service in Korea, where he was wounded. A graduate of the Canadian Army Staff College, he now commands "C" Company, 1 PPCLI.*—Editor.

New Water Bottle for Canadian Army

(Continued from preceding page)

gineering phase, the new plastic canteens filled with water withstood pressure tests of 2250 to 4000 pounds before bursting.

The new model is identical in size and shape to the old aluminum one and fits into the standard stainless steel mug carried in a cotton web carrier on issue to the troops.—*From a report issued by the Directorate of Public Relations (Army), Army Headquarters, Ottawa.*

I suspect that the reluctance I displayed in my studies is not uncommon. It was probably built up over the years by listening to unhappy examination aspirants and by reading a few obtuse texts on compulsory reading programmes. This reluctance to pursue the study of military history is understandable but will not bear up under exposure to the enlightened reading list available to any of us today.

There are so many books available on this subject that are downright enjoyable to read that it seems a shame to spoil these readings by terminating them with an examination.

Fortunately, the men in the ranks do not suffer from this shackle of study and may read with enjoyment and understanding, allowing themselves a selection as catholic as their fancy directs.

There would appear to be two problems in presenting this subject to our troops: first of all, does it have any appreciative value, and, secondly, how does one lead the men into this field without the promotion incentive?

The soldier today is an educated man in comparison with his predecessors. An illiterate individual cannot survive in modern military life as he could and did as late as the Second World War. This metamorphosis has come upon us with considerable speed and we must be prepared to accept, understand and utilize this phenomenon.

This higher standard of education has provided us with individuals who are more perceptive, and schooled in the faculty of correlating experience and knowledge when confronted with an unique situation.

Is this not why we study history — to gain knowledge from the experiences of others so as to be better prepared to meet the problems of today and tomorrow?

I well realize that almost every military history book of value has been written by or about commanders and would at first impression hardly apply to the man in the ranks.

First impressions can be wrong and I believe they are with respect to this matter. I'm convinced that the principles of Selection and Maintenance of the Aim, Maintenance of Morale, Offensive Action, Surprise and Flexibility apply as much to Lance-Corporal Smith fighting his section as they do to General Brown planning an assault in a major campaign — the difference being, of course, that Lance-Corporal Smith hasn't much time for contemplation, and his violation of principles brings much speedier retribution.

Contrary to a popular misconception, one does not study military history for principles of war alone. There are so many lessons to be learned that apply to the junior leader as well as to the senior. I will mention only a few, such as maintenance of leadership under duress, value of individual intelligence, man-management, definition and value of loyalty, the ability of an individual to change the course of battle and the commander's dependence on good soldiers.

Present-day thinking indicates that success on the nuclear battlefield will depend on junior leaders grasping the initiative and enforcing their plan with the help of the enlightened leadership of intelligent soldiers. If this type of

action is common across a front, the sum total will no doubt be successful.

There are many lessons to be learned from a study of military history that will help to equip our soldiers for this challenge.

The next question to be answered is, how can we interest the men in the study of military history? This is not nearly as difficult as it might appear at first thought. It is the approach to the subject that is important, and my experience indicates that the subtle or "the indirect approach", as Liddell Hart might call it, is the most successful.

I would not recommend that the subject "Military History" appear on a syllabus for senior NCOs or for any other training course below officer level. As a matter of fact, it is just as well to avoid if possible the use of the term with its various connotations.

Most men interested in their chosen profession are motivated by a desire to succeed, or by simple curiosity. This interest factor can be tapped in a most casual way by the provision of simple but exciting reading material for perusal during slack periods.

During the training period of one sub-unit in which I was involved, two mornings a week were devoted to exhaustive physical training. In order to salvage as much as possible of the remainder of the training day, I devised a recreational reading programme based on a number of books I had read and found to be very interesting and which could be obtained in paper-back editions.

The books were provided and the men were asked to choose any one book, read it and record their impressions on a single sheet of paper. I allowed two weeks for the project and was amazed at the results. I got my reports at the end of two weeks all right, but each man had not only read his own initial selection but also by interchange had read all the books provided. In addition, various members of the group brought forward other books they had read and asked that they be placed on the available reading list.

Throughout the three-month training period the provision and interchange of books went on until I was pushed to keep up with my reading of new titles submitted for the available list. It was obvious from the many comments and "break-time" discussions that the men were fascinated with their discoveries in print and were eager to progress further in their reading. It would be trite to say that a whole new world had been opened to them, but without fear of contradiction I can say that their horizons had certainly been broadened.

This reading programme I have described was introduced in 1959 and the results are still apparent. The men involved are better soldiers today because they have greater knowledge. They are no longer apprehensive of the written word, and accept the necessity of reading and studying pamphlets, papers and texts much more readily. They are proud of their knowledge and names like Guderian, Slim, Riel and Popski drop easily from their lips and they have a slightly condescending attitude towards the ill-informed within earshot. They still approach me from time to time and the opening remark is usually "Have you read . . .? Boy, it's a good book!"

This experience in training and subsequent observations have indicated to me that perhaps we should redirect our Military History programme to include *everyone* in the Army. All ranks can read, most enjoy it and there is value to be obtained by anyone who reads a good book by a good author about a good soldier — regardless of rank.

The following is not a bibliography but a suggested introductory reading list for men. I have found all these books to be easy reading, exciting, and of value, some much more of course than others. Many of them can be obtained in paper-back editions:

Genghis Khan, Harold Lamb.

Patrol, Fred Majdalany.

Defeat into Victory, Field Marshal Sir William Slim.

Story of a Soldier's life (2 vols.), Garnet J. Wolseley.

Rommel, Desmond Young.

Unofficial History, Field Marshal Sir William Slim.

Struggle for Europe, Chester Wilmot.

Memoirs of Field Marshal Montgomery.

Phantom Major, Virginia Cowles.

Bugles and a Tiger, John Masters.

Road Past Mandalay, John Masters.

We Die Alone, David Howarth.

Popski's Private Army, Vladimir Peniakoff.

The Longest Day, Cornelius Ryan.

Retreat from Kokoda, Raymond Paull.

Panzer Leader, Heinz Guderian.

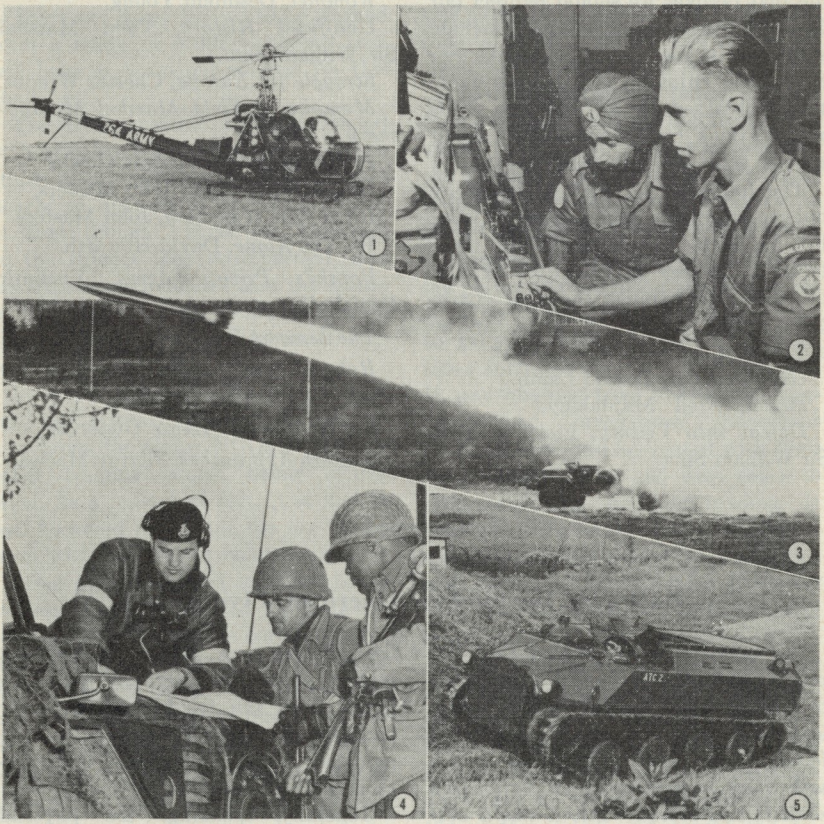
Eastern Approaches, Fitzroy Maclean.

Bullet v. Bayonet — American Civil War

One scholar has estimated that 900 pounds of lead propelled by 240 pounds of powder were required [in the American Civil War] to drop every Confederate who was killed. This was a somewhat worse record than Napoleon's soldiers had scored. But it was a better record than the bayonet made. Throughout the bloody struggles in the wilderness north of Richmond during May, June, and July of 1864 — where there was more hand-to-hand fighting than usual — 33,292 Union men received treatment for bullet wounds, only thirty-seven for bayonet thrusts. Nor are there any grounds to suppose that most of the bayonet casualties were lying dead on the battlefield. Heros von Borcke, a German soldier of fortune serving with the South, took the trouble to ride over battlefields, examining corpses, and he reported finding very few that displayed thrust wounds.

Generally speaking, the physical damage done by bayonet attacks was inflicted by bullets, and the issue decided before the two fighting lines closed with each other. In short, it was the threat of being run through, coupled with firepower, not the act itself that made attacks with the bayonet effective.—*From "Civil War Infantry Assault Tactics" by John K. Mahon in the Summer 1961 issue of Military Affairs (U. S.).*

Some Highlights of Canadian Army's Progress



Canadian Army Photograph

During 1961 the Canadian Army received or contracted for new equipment that will give it increased firepower, greater mobility and better reconnaissance. In 1961 the Army obtained the Hiller helicopter (1) for reconnaissance, the first contracts were let for the Bobcat (5) — a Canadian developed Armoured Personnel Carrier — and the "Honest John" missile (3) became a part of the arsenal of weapons. During the year the Army continued to have overseas commitments with the UN and NATO. Exemplifying this service, a Canadian signalman (2) sends a message for an Indian Army officer while on duty in the Congo; and (4) a Canadian Army NCO gives directions to Allied soldiers during a NATO exercise in Germany.

BRITISH ARMY'S NEW WEAPONS

FROM THE ARMY-NAVY-AIR FORCE JOURNAL (U.S.)

Britain's new battle tank, Chieftain, has been taken off the Secret List, and displayed to public view at the Fighting Vehicle Research and Development Establishment at Chertsey, near London. [See Fall 1961 issue, *Canadian Army Journal*].

Described by Minister of Defence Harold Watkinson as a "world beater", Chieftain made its first public debut with some of its features still cloaked by security. Compared with its immediate predecessors in the British Army — Conqueror (65 tons with a 120-mm. gun), and Centurion Mk. 9 (50 tons with a 105-mm. gun) — Chieftain is lighter, faster, has more power and punch and gives greater protection to its crew. Nearly 20 tons lighter than Conqueror, its 120-mm. gun is far more powerful.

The new tank has a multi-fuel engine which runs equally well on heavy diesel oil or high-grade gasoline. It is extremely fast across country and is equipped to swim across water obstacles, according to the official British Information Services. The deliberately squat design reduces target risk. The tank is driven from a "bed" rather than a driving seat, the driver lying on his back and operating with the aid of a periscope.

Chieftain is likely to go to Germany for technical user trials early in 1962. It was stated that two prototypes are to be made available to the West German Government.

Among other weapons under development or on trial with the British Army which attracted attention at Chertsey was a new 105-mm. tracked, self-propelled gun, the Abbot. Designed to provide close artillery support and capable of firing high-explosive, smoke, and anti-tank shells to a range of nearly 11 miles, this weapon, like Chieftain, can be made to swim rivers under its own power. The gun is mounted in a turret which can traverse 360°—a great advance on the limited traverse which until now has been a feature of self-propelled guns — and can fire a heavier shell for a much greater distance than the 25-pounder which it supersedes. Abbot is now undergoing trials prior to being taken into service with the Army.

Visitors also saw:

An 81-mm. mortar, to replace the present three-inch mortar, which has a range of more than three miles and fires with great accuracy at the rate of 30 rounds a minute.

A new radar, Green Archer, not yet taken into service, which tracks mortar bombs in flight and automatically calculates the position from which the mortar was fired.

The Vickers' Vigilant anti-tank weapon — a one-man pack, guided anti-tank weapon designed and produced by the British Aircraft Corporation. Vigilant is suitable for either infantry or armour and has a range of up to 1500 yards. It is directed on to its target by command signals sent along a wire from a controller, the wire being dispensed from the missile in flight. The decision on whether a weapon of this type will go into service with the

British Army has not yet been made.

A demonstration of the Hoversled, a simple platform supported on an air cushion which can be used to carry seriously wounded men over very rough ground, also was conducted [see Fall 1961 issue, *Canadian Army Journal*]. The air cushion is maintained by a motor-driven central fan, and the sled can be pushed or pulled by hand or towed by a vehicle. It is being developed as a private venture, and although tried out by the Royal Army Medical Corps is not an official project.

Britain's Blue Water surface-to-surface guided weapon, being developed to replace the U.S. Corporal missile, was also demonstrated. Blue Water, with much the same 70-mile range as Corporal, needs only two small vehicles for transportation, control and launching, and can go into action within a few minutes of arrival on site.

Most interesting of the bridge-building devices at the display was the Centurion bridge-layer — a Centurion hull carrying a bridge 52 feet long which it can launch across a span of 45 feet [see Fall 1961 issue, *Canadian Army Journal*]. The bridge is capable of bearing all vehicles normally used in forward areas.

Infantry aids included an infra-red weapon-sight which enables a man to see and shoot in the dark up to 150 yards, and infra-red binoculars which, used in conjunction with an infra-red lamp or light source, enable observation in the dark. These binoculars can be used for driving vehicles with infra-red filters fitted to the headlamps.

In all, the display incorporated more than 150 items ranging through every corps of the Army, and bore out the comment made by the Secretary of State for War, Mr. John Profumo, in his opening speech. Explaining that the display was designed to show the range of weapons which had been adopted by the British Army in the past two or three years and also to show those which would be introduced in the next two or three years, Mr. Profumo said: "Never before, in peace or war, has so much equipment come into service with the British Army as will be the case in this span."

TV System for Tanks

A closed-circuit television system being perfected by scientists of the U.S. Army Ordnance Tank-Automotive Command (OTAC) at the Detroit Arsenal, Warren, Mich., will provide the crew of a "buttoned-up" tank with panoramic vision of the area around the tank. Crews of closed tanks still are beset with daytime vision limitations.

With the television system now being tested a camera views the images of the surrounding area as reflected in a hyperbolic plastic mirror perched atop the tank turret.

To achieve 360-degree vision, the original image must be reflected, and consequently distorted, by a hyperbolic mirror. The television system projects this distorted image on to an elliptical surface (screen) which "undistorts" the image, at the same time giving a third-dimensional depth to the projection.— *ORDNANCE Magazine (U.S.).*

BRITISH ARMY'S CABLE BRIDGE

FROM *SOLDIER*, THE BRITISH ARMY MAGAZINE. REPRODUCED BY PERMISSION OF THE CONTROLLER, HER MAJESTY'S STATIONERY OFFICE

A recently-developed cable bridge has given greater mobility to the British Army. First experiments have been conducted by units of the Royal Engineers and the Royal Electrical and Mechanical Engineers, 19 Infantry Brigade Group, who are part of Britain's Strategic Reserve.

At present an 80-ton Bailey Bridge, requiring three aircraft to lift and 50 men working between six and eight hours to erect, is needed to cross a 200-foot gap. The new cable bridge, with all its equipment, weighs only 16 cwt. Dozens could be carried in one aircraft and 20 men could have it ready for use in three hours. An Engineer squadron could erect three simultaneously and, unlike the Bailey, they would be almost impossible to destroy by bombing.

The new bridge — named the Miller Bridge after an Australian Army offi-

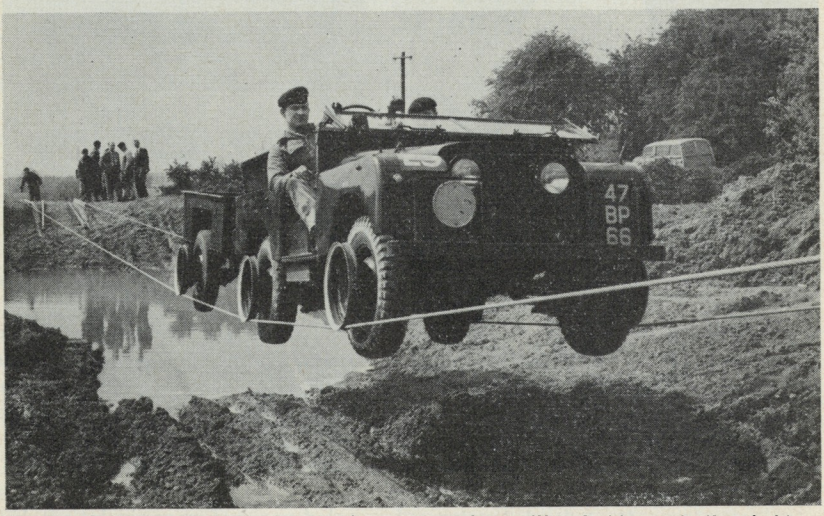
(Continued on page 33)

"Soldier" Photograph

Tightening the nuts which hold the flanged hubs to the wheels. The hard steel cable bites into the soft metal hubs and allows the vehicle to drive across the bridge under its own power.

"Soldier" Photographs

Engineers ensure that the cable fits into the hubs as the Land-Rover and trailer leaves the guide to cross a 200-foot gap. The bridge and its equipment can be carried in two Land-Rover trailers.



A Land-Rover and trailer are driven over the Miller Bridge. Similar bridges, erected to the required width, could also be used to carry most of the Army's light vehicles.

RED CHINA'S WAR POTENTIAL

When considering the economic war potential of Red China one must constantly bear in mind the fact that she is a backward country with a low, even primitive, standard of living, that her claims of industrial progress cannot be checked, and that assuming they might be roughly accurate they still fall far below the average figures of the Great (or even Lesser) Powers.

Industrially, Red China has made great strides, having built up what she now possesses from practically nothing at all. This progress will continue, but more slowly as it reaches its ceiling. Her normal peacetime internal needs will quickly swallow up whatever she can produce in the industrial field, and there will be little surplus available for other channels.

It can be said that Red China's war potential is great, but balanced. She has ample manpower, but may run into difficulties in food production; she has ample coal, but steel production is painfully slow in developing, and she has not enough petroleum, nor enough copper to produce ammunitions for herself without external aid. Her prospecting teams may yet locate deposits of essential minerals which would improve her war potential considerably.

If Russian technicians were suddenly withdrawn, her progress, especially in the field of nuclear research, and of manufacturing precision instruments, would stand still, if not regress.

For fuel oils, especially high grade, Red China is completely dependent upon Russia, and is likely to be so for several years. Visions of whole corps of mechanized troops motoring across Sinkiang into Russia, or to the borders of other adjacent countries, such as India, or of motoring anywhere in large numbers, are illusions for a long while yet.

The policy of Red China will be to continue to filter forward on foot through the most difficult country she can find, avoiding the wide open spaces.—*Major Edgar O'Ballance, "The Economic War Potential of the Peoples' Republic of China", Journal of the United Service Institution of India (New Delhi).*

British Army's Cable Bridge

(Continued from page 31)

cer who used a similar technique in Malaya — is simple to erect, costs virtually nothing to maintain and is rapidly dismantled.

All that is required is approximately 450 feet of steel cable, a winch and securing tackle. The track is pegged to the ground on each side of the gap, the cable strung to the opposite bank and back, fastened and winched to the correct tension. A vehicle fitted in five minutes with flanged hubs which fit over the wires then drives on to the cable and over the bridge under its own power.

The Royal Engineers are now working on another type of light cable bridge which supports a vehicle from above and below.

Canadian Army Photograph

A team of riflemen from the 1st Battalion, The Black Watch (Royal Highland Regiment) of Canada, captured the Small Bore Championship Trophy at Sennelager, Germany, outshooting the best riflemen in the British Army of the Rhine. Of a possible 1600 points, the Canadian team scored 1532. Members of the team with their trophies are, left to right, seated: Corporal Saxby Carter, Sgt. Ian Clarke, Capt. Gordon Breckman, Lieut. William Molnar, Cpl. Gordon Hammond, Cpl. Jack MacRae; left to right, standing: Cpl. Millard Smith, Pte. James Crawford, Cpl. David Isaacs.

The Black Watch Best Marksmen in Army Shoot

A REPORT ISSUED BY THE DIRECTORATE OF PUBLIC RELATIONS (ARMY), ARMY HEADQUARTERS, OTTAWA

Marksmen from the Canadian Army's Highland Battalion in Germany have out-shot the best riflemen in the British Army of the Rhine to win the coveted Small Bore Championship Trophy.

Representing the 4th Canadian Infantry Brigade Group, an eight-man team from the 1st Battalion, The Black Watch (Royal Highland Regiment) of Canada, defeated the best rifle teams from 12 British brigades in the annual BAOR small bore championships at Sennelager, Germany.

In the final day of the three-day competition, the Highland team chal-

MONTGOMERY ON LEADERSHIP

The beginning of leadership is a battle for the hearts and minds of men.

The capacity and the will to rally men and women to a common purpose, and the character which will inspire confidence.

Some say that leaders are born, not made, and you can't make a leader by teaching or training. I don't agree with this entirely. While it is true that some men have within themselves the instincts and qualities of leadership in a much greater degree than others, and some men will never have the character to make leaders, I believe that leadership can be developed by training. In the military sphere, I reckon that soldiers will be more likely to follow a leader in whose military knowledge they have great confidence, rather than a man with greater personality but without the same obvious knowledge of his job. To the junior leader himself the mere fact of responsibility brings courage; the mere fact that by his position as the recognized head of a group of men he is responsible for their lives and comfort, gives him less time to think of his own fears and so brings him a greater degree of resolution than if he were not their leader.

Leadership is based on truth and character. A leader must himself be a servant of truth, and he must make the truth the focus of his purpose. He must then have the force of character necessary to inspire others to follow him. Both are necessary, truth and character—with will-power in the character.

The first characteristic of the leader we must seek must be a deep, great, and genuine sincerity... Added to sincerity must be selflessness... Then comes the ability to dominate... Overall, then, it is "Captaincy" which counts, or leadership in the higher sense, together with the power of decision; this latter quality, decision, cannot be exaggerated. I would add to this, luck—which is seized with both hands and turned to boldness.—*The Infantry Journal, Infantry School, Mhow, India.*

The Black Watch Best Marksmen in Army Shoot

(Continued from preceding page)

ked up a conclusive victory by totalling 1532 points out of a possible 1600 in the final round. In second place was a team from the Berlin-based British 1st Durham Light Infantry who came up with a score of 1485.

The Black Watch team, edged out last year in the championship semi-finals, won the honour of representing the Canadian NATO Brigade in the British matches for the second consecutive year by scoring the highest aggregate in annual competition against the Brigade's four other major units.

The championships matches were held in the NATO all arms training centre at Sennelager using standard

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An Authoritative Analysis

A REPORT ON SOVIET FORCES

The following is the complete text of an authoritative report on Soviet ground forces made by Maj.-Gen. A.R. Fitch, U.S. Army Assistant Chief of Staff for Intelligence. He gave this assessment of Soviet capabilities, and a report on growing nuclear strength, before the eighth annual conference of Secretary of the Army Civilian Aides at Fort Monroe, Va. It is reproduced from the Army-Navy-Air Force Journal (U.S.). — Editor.

Shortly after the close of World War II, the armed forces of the Soviet Union, consisting of over 11,000,000 men, were reduced to a total of about 4,000,000, of which 2.8 million were in the ground forces. Except for a build-up during the Korean conflict, the strength of Soviet forces remained nearly stable until about 1958, after which some reductions were made by weeding out misfits, eliminating surplus officer and administrate personnel, and an over-all streamlining that accompanied the modernization and mechanization programme underway since mid-1947.

In January 1960, Premier Khrushchev announced that Soviet armed forces then numbered 3,623,000 and that during the 1960-61 period these forces would be reduced by one-third — or to approximately 2.4 million. Khrushchev had compelling reasons— political and economic, as well as military—for carrying out the cut he projected.

On the economic side, the growing Soviet industrial machine, a necessity to ensure a larger food supply and attempts to increase housing and consumer goods were contantly raising the demands for labour, both in industry and agriculture. While the labour demand was increasing the labour supply was decreasing. The number of persons annually reaching working age had been declining since the early fifties, a decline which will continue through 1962. The resultant manpower pinch was a strong motivating factor for a reduction in armed forces strength.

Politically, the reduction announcement was timed to obtain maximum benefits for the Soviet position on disarmament and to induce a slowdown in Western military programmes. Militarily, a reduction was made feasible by the modernization of the Soviet Army, the increasing confidence of the Soviets in their attainments in guided missiles and nuclear weapons, and their belief that these developments would permit the establishment of a smaller force without the sacrifice of military potential.

Throughout 1960 and into the opening months of 1961, there were indications that the Soviet armed forces were reduced by about half of the announced 1.2 million, that is from 3.6 million to about 3,000,000. Of this total the ground forces comprised about 2,200,000 men organized into about 150 line divisions.

By the spring of 1961, it became apparent that the armed forces reduction programme had been halted. In July 1961, Khrushchev publicly announced that manpower cuts had been suspended and that the Soviet military budget for 1961 would be increased by one-third. Together these actions would have allowed the Soviet to maintain for the foreseeable future a total armed force of 3,000,000, with about 2.2 million in a 150-division ground force.

Later, in September 1961, ostensibly because of the Berlin crisis, the Ministry of Defence announced that certain conscripts who were due for release from active duty would be retained until the signing of a peace treaty with East Germany. This measure was purportedly not designed to increase permanently the size of Soviet forces but as "a temporary measure forced by Western actions". It was probably undertaken to increase the combat readiness of Soviet units in Eastern Europe and the westernmost portions of the USSR and of *key* units in other areas of the USSR. Retention of selected conscripts, along with the induction of the normal annual class, will result in an increase, possibly temporary, in Soviet military manpower but the number of line divisions is expected to remain at around 150.

What sort of divisions are these and how will they be employed on the battlefield?

Today the Soviets in addition to the airborne division have two basic divisions: the motorized rifle division and the tank division. Although streamlined and re-equipped to increase flexibility, mobility and firepower, these divisions are very similar in organization to their World War II predecessors.

The motorized rifle division has over 200 tanks and is perhaps more accurately termed a "light armoured division". This division is composed of three motorized rifle regiments, a tank regiment, an artillery regiment, an anti-aircraft artillery regiment and appropriate service and support elements.

The tank division has over 300 tanks. It is composed of a heavy tank regiment, two medium tank regiments, a motorized rifle regiment, an artillery regiment, an anti-aircraft artillery regiment, and appropriate service and support elements.

The tank division and the motorized rifle division are grouped into two types of armies: a combined-arms army, typically consisting of four motorized rifle divisions and one tank division; and a tank army, normally containing four tank divisions.

Soviet tactical doctrine has been modified to incorporate nuclear weapons for delivery by both aircraft and missiles.

Emphasis is on the use of armour, dispersion, and mobility, both to exploit their own nuclear firepower and to minimize casualties from enemy nuclear fires.

Soviet tactical concepts visualize a ground offensive in a nuclear environment as having two major distinguishing characteristics. These may be summed up as follows:

First, sudden, simultaneous nuclear strikes at targets throughout the en-

tire depth of the enemy's defences.

Second, a fluid battlefield on which the nuclear strikes are exploited by rapid, deep armoured thrust to secure vital objectives and to prevent reorganization by the enemy.

Their scheme of deployment commits units in successive waves or echelons, with the intention of providing follow-up forces to engage by-passed enemy troops, to replace forward units that might be eliminated by an enemy strike, or to pass through the forward echelons to maintain momentum. Conventional artillery retains a prominent role, not only in preparation fires in coordination with nuclear strikes, but in accompanying and supporting the advancing units.

To reach objectives with minimum delay, it is planned to keep an advance moving night and day. Toward this end the Soviets have emphasized night operations in their training programme.

To maintain dispersion and rapid advance over the many water barriers of Europe and of western USSR, a rapid rivercrossing capability is essential. For this purpose the Soviets have developed a variety of excellent bridging equipment, a light amphibious tank, and amphibious armoured personnel and cargo carriers.

Protective technique against nuclear weapons include hugging tactics—that is, maintaining constant close contact with the enemy to discourage his use of nuclear weapons on forward echelons. Where a halt is necessary, the digging in of men and matériel is prescribed.

The Soviets have delivery means for nuclear support by all major echelons. Support for division operations can be provided by a free rocket and a guided missile, both mounted on a tracked chassis. The 203-mm. gun-howitzer, the 301-mm. gun, and heavy mortars from higher echelons, may also have a nuclear capability which could be placed in support of a division. For army and *front* targets there are guided missiles with longer ranges. Their delivery is carried out by elements of the *front's* organic air army.

The concept for defence is characterized by dispersion in depth, with troops, matériel, and supplies dug in, and with the troops so deployed that not more than one battalion would be destroyed by a medium-yield nuclear weapon. The plan is to defend obstacles and key terrain in order to delay and compress enemy forces into concentrations vulnerable to nuclear attack, and then to counter-attack enemy penetration with strong armoured forces. The doctrine instructs Soviet commanders to assume the offensive if the counter-attack is successful.

The Soviets have been modifying their logistical organization and procedures in an effort to meet the requirements of fully mobile and fast-moving forces in modern warfare. Recent developments include increases in the mobility and mechanization of supply operations, increases in the level of reserves of forward units, employment of cargo helicopters and cargo aircraft of good design, the establishment of a more mobile and flexible

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SOME NOTES ON QUARTERBLOKERY

REPRODUCED BY COURTESY OF THE IRISH DEFENCE JOURNAL (DUBLIN)
FROM AN ARTICLE ENTITLED "MORE ABOUT QUARTERBLOKERY"
BY "H. E. D. H."

The Quartermaster may be regarded as one of the first "specialist" officers in western armies. From the beginning, he has been recognized as an essential appointment and in an age when commissions were by purchase and/or nepotism, was almost wholly commissioned from long service NCO's. George III said in 1775: "The proper persons to be recommended for quartermasters are active sergeants . . ."

In a brilliant satire on British Army life which appeared about the same time, advice to various grades of officers was offered. To the Quartermaster it said: "The standing maxim of your office is to receive whatever is offered you, or you can get hold of, but not to part with anything you can keep . . . (You) are the steward of the Colonel; like a good steward, have regard for the master's servants, amongst whom is yourself . . . You must on all occasions endeavour to inculcate the doctrine of witchcraft and enchantment; it will be difficult to account on other principles for the sudden and frequent disappearance of various articles out of your magazine."

Mugs' Game

My first experience of the accounting methods of British Army quartermasters was when soon after enlistment I broke the "mug, drinking, earthenware, 1-pint" I had been issued with as part of my kit. I presented myself at the stores and after being kept waiting a suitable period I was given an audience with the RQMS In what I afterwards came to realize was a much reiterated piece of patter, he swiftly dealt with the doubtful value to the Army of people such as myself, the disturbance caused to the demanding, accounting and even production arrangements of mugs of this sort, and, finally, ruled that I could only resume drinking like the rest of my comrades by paying for two mugs, "the one wot I had broke" and the new one he was about to issue to me. In my dazed and frightened state I accepted without question his decision and the reasoning on which it was based.

It must not be thought that Quartermasters are dishonest — they are "sharp". They are, in fact, the businessmen of the army and a "good" QM will see that his regiment or battalion wants for nothing. Allied to his fellow QMs by many secret agreements, he is inclined to regard the rules and regulations about the issue and holding of stores as tests of his professional ability and knowledge of regulations in the way that businessmen and their accountant advisors study tax and anti-trust laws.

Influence of National Characteristics

National characteristics may influence the order of priorities but will not much change the methods of QMs. The Irish Guards History of the Second World War recounts a splendid story

of a French Quartermaster. The Guardsmen were in a position on a Norwegian fjord and had been told they were to be joined by a battalion of the famous *Chasseurs Alpins*. Later they beheld what looked like a Seine barge, very low in the water, coming up the fjord. When it came into shore, "a short, fat man wearing a huge beret jumped ashore. He explained that he was the Quartermaster of the *Chasseurs* and asked permission to land the advance party and essential stores." This was granted, "whereupon the Frenchmen began to roll ashore many barrels of wine."

The great French literateur, André Maurois, in his book, "The Silence of Colonel Bramble", gave an example of how such knowledge was put to use by the OC of a unit:

"Colonel Boulton commanded an ammunition depot. He was responsible, among other things, for fifty machine guns. One day he noticed that there were only forty-nine in the depot. All the enquiries, and punishment of the sentries, failed to restore the missing machine gun.

"Colonel Boulton was an old fox and had never acknowledged himself in the wrong. He simply mentioned in his monthly return that the tripod of a machine gun had been broken. They sent him a tripod to replace the other without any comment.

"A month later, on some pretext or other, he reported the sighting apparatus of a machine gun as out of order; the following month he asked for three screw nuts; then a recoil place; and bit by bit in two years he entirely replaced his machine gun. And correspondingly, bit by bit, the Army Ordnance Department reconstructed it for him without attaching any importance to the requisitions for the separate pieces.

"Then Colonel Boulton, satisfied at last, inspected his machine guns and found fifty-one.

"While he had been patiently reconstructing the lost gun, some damned idiot had found it in a corner. And Boulton had to spend two years of clever manipulation of his books to account for the new gun which had been evolved out of nothing."

A Question of Carts and Bottles

In the pre-1939 days, the British Army had a number of Reserve Army horsed cavalry regiments known as Yeomanry. A small permanent staff of sophisticated Regulars was attached from the affiliated Regulars regiments to the Yeomen to assist them in their training and administration.

Yeomanry regiments attracted well-to-do men who could afford to keep horses in private life and they looked forward to the annual fortnight's training in camp as a great get-together when they would work hard, train hard and play hard. When they came into camp, a "set" of camp equipment, including tentage, bedding and whatever vehicles and equipment was necessary for their sojourn, was issued to them by the local Ordnance Depot.

At the end of one of these camps, one regiment of Yeomanry found that they were, amongst other things, deficient of a water cart, or, as QM Argot would put it: "One, carts, water, MK. VI" (valued approximately at £120). As gentlemen, they cheerfully decided that they would have to pay up. But

they had a regular Quartermaster. "You don't want to do that, sir." he told the Colonel. "Leave it to me."

Stores were handed back and receipts obtained and at the same time certain minor deficiencies were admitted to, including a debit voucher for one "Bottles, Water, Mk. VI" (value 3/8½d) which may or may not have been missing. After a decent interval had lapsed, the QM, knowing the "system" well, and that all the documents would be pigeon-holed and in the charge of junior clerks, sent a somewhat scruffy routine memo to the Depot which stated tersely, "Ref. my DV/1994 (Q) d. 17.8.38 for 'bottles' substitute 'carts'." Such a nondescript piece of information was beneath the level of the Depot officers who scrutinize and, as the QM foresaw, it was dealt with by some plodding clerk who mechanically took the voucher out and made the amendment without any reaction.

Some time later, the question of the missing water cart was brought up by the Issuing Depot. After sending a number of polite but vague interim replies, the Yeomanry QM referred them to the fact that it had been paid for on his DV/1994, etc. Routine confirmation of this was obtained from the clerks and that, as far as the "Mummerset Yeomanry" were concerned, was the end of the matter.

Technique of Hand-over

As I have said, QMs are inclined to regard the various supplying agencies as fair game. When the Regimental Depot of the Royal Army Ordnance Corps moved from Woolwich to Portsmouth in the 1920's, they took over a barracks there from a brigade of field artillery. A Board of Officers presided over the "Marching In and Hand-over". Among the items to be taken over were a quantity of wooden trestle tables and six-foot wooden barracks forms.

These were duly found in a shed, beautifully stacked and "countable" — so good in fact that the professional instincts of the Ordnance "Quarterbloke" were aroused and he hesitated. "Get on with it," said the Board, who were by then getting fed up. "You can see they're all there." The Gunners nodded affirmatively. "I'm sorry," said the Ordnance man, "but I can't count them at the back; can we have them out?" The Gunners demurred, it would hold things up, unnecessary work, etc., but they began to dismantle the neat stacks.

The front stacks were correct, but the rear ones were found to be tables and forms cut neatly in halves and so laid that in the gloom of the shed the lack of length would not be apparent. Of course, no one felt outraged by this — it was part of the "system"... referred to, and the Gunners were just unfortunate in having an Ordnance "Q" man to hand over to.

On Active Service

QMs really come into their own on Active Service when the "interlocking" peacetime system of accounting is in abeyance and replacement stores can be demanded on a certificate. This method is not abused for personal gain, but only in the laudable but sometimes misguided feeling that they must have "a bit in hand". This is particularly so if the supply system is not working too well, and they do not feel confident about rapid replacement.

The "good" QM will have his "bit in hand". He will do it quietly and discreetly, and no one will ever know he's got it. The "bad" QM will acquire his reserve by crude skullduggery which will be spotted by the Staff and the Supply Service, and, worst of all, when the war suddenly gets mobile, he will bring lorry loads of stores into the divisional dump which neither he nor they can move.

Most regular Quartermasters are not indifferent psychologists either, and set out to find out the best method of softening up whoever they want to get anything out of. As a Divisional Ordnance Officer it was my job to tour units to see, by physical inspections, how scarce quantities of clothing could best be apportioned. One QM used to take me to his tent door and as we stood discussing our troubles a well-organized charade would take place for my benefit. Several men from different directions would come past, each one worsely arrayed than the one before him. Clean and polished, they would be threadbare, patched or newly torn, wearing shrunken suits or enveloped by ill-fitting garments many sizes too big. At last my heart would melt. "O.K. Send a truck into Division in the morning and you can have 100 sets of clothing."

When I was in the BEF most Ordnance Stores were scarce, and various forms of control were tried. In my Division we thought we would curb extravagance by keeping records of the comparative consumption of certain staple items, and then publishing our findings.

We produced these figures on a graph and this made the "bad" boys look really bad and the "good" boys very good; it told the story in a more striking form than numerals published in Routine Orders would, so the DADOS (f) decided that we would get all the QMs (some 30-40) and the Div Q Staff in to look at the graph instead.

The End of a Chart

Messages summoning them were sent out and we added a few frills to the chart and hung it up in the largest room in our offices. They were duly assembled, and, being astute men, at once spotted the graph and saw what it was about. At this point DADOS was called away to take a telephone call from the Base, and the QMs were left alone. When we returned it was to find several of them beating out the flames from what was left of the charred graph, it having been "inadvertently" set on fire by someone's cigarette whilst they were all standing around. Our dramatic evidence gone, our *dénouement* fell flat and all they got was a routine harangue on economy from the AQMG.

On another occasion in the BEF an order came out authorizing units to hold "small stocks" of medal ribbon on a scale of 1-inch per medallist to issue when torn or worn clothing was replaced. At my Divisional HQ we reckoned we knew our units pretty well and did a calculation based on their previous stations, make-up of personnel and such like. We checked their indents against this "control" and found most of them reasonable except one. This was from a TA battalion of a famous Highland Regiment which had recently come into the Division. Their

Q Merz

indent began "Ribbon, silk, medal, Victoria Cross, 36 inches". Incredulously, we sent it back with a note — "Please confirm that you have 36 holders of this decoration in your battalion." A few days later the Major Quartermaster, himself with two rows of ribbons, came in and explained. "Oh, he said, "we've no got them yet, but we'll have them alright and I want a wee bit by me when the time comes." Boastful? Not really; maybe a little arrogant, but this is the stuff of which fighting men are made. Poor gallant Highlanders; in action against overwhelming enemy forces, the whole battalion was captured at Saint Valery and passed into captivity.

To end on a lighter note, perhaps one of the best stories illustrating Quartermasters' minds and methods is told of an Irish Regiment in the old days. Bread had "come up" and the QM's private storeman was apportioning it to the companies.

"If you please, sorr," he said, "I am one loaf short — who shall I give it to?"

"Keep it yourself, Mick," was his master's reply.

The Black Watch Best Marksmen in Army Shoot

(Continued from page 35)

Lee Enfield rifles with a .22 calibre bore on indoor ranges.

The winning trophy and individual awards were presented by Brigadier Patrick Hobart, Commander, 20th Armoured Division, on behalf of General Sir James Cassels, Commander, British Army of the Rhine.

In making the presentations, Brigadier Hobart said: "I am particularly glad to give this cup to the Black Watch as I understand you are returning to Canada this year and will want to take the memory and evidence of your fine performance with you".

Team members were: Captain Gordon Breckman of Lundar, Man., team captain; Lieutenant William Molnar, Fort MacLeod, Alta., Sergeant Ian Clarke, Helensuurgh, Scotland; Corporals Saxby Carter, Amherst, N.S.; Jack MacRae, Sydney Mines, N.S.; Gordon Hammond, Toronto; David Isaacs, Stellarton, N.S.; Millard Smith, Kentville, N.S.; and Private James Crawford, Sydney Mines, as spare.

A Report on Soviet Forces

(Continued from page 38)

repair and recovery organization, expansion of the scope of medical treatment and evacuation, and the organizing, training, and equipping of rear units for rear area security and damage control.

Changes in Soviet tactical doctrine cannot be predicted with certainty. Current trends, however, clearly indicate that the employment of large armoured forces and conventional artillery will be continued, while nuclear delivery means within the *front* will be increased. It is likely, therefore, that the Soviets will retain a dual capability in their ground forces for the foreseeable future.


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Flashback No. 37

CANADIANS IN BERLIN, 1945

NARRATIVE SUPPLIED BY THE HISTORICAL SECTION,
ARMY HEADQUARTERS, OTTAWA

It is often forgotten that for a short time Canada was one of the Powers represented in the occupation of Berlin. From the 4th to the 27th of July, 1945, a composite battalion composed of representative companies of units from the 1st, 2nd and 4th Divisions (The Loyal Edmonton Regiment, Les Fusiliers Mont-Royal and the Argyll and Sutherland Highlanders) was stationed in Berlin.

Early in March 1945, at the request of 21st Army Group, planning began for an infantry brigade group to represent Canada in the Berlin Garrison. However, due to delays in the negotiations between the Allies and the shortage of accommodation in the ravaged city, this commitment was reduced to a composite battalion which was placed under the command of Lieut.-Colonel A. F. Coffin of the Argylls.

Even at that date the Russians were jealous of their zone and the companies of The Loyal Edmonton Regiment were stopped for nearly two hours at the entrance to the Russian Zone by a sentry whose only interpreted comment was "God Himself could not get through unless He has a pass from Marshal Zhukov".

The role of the battalion was mainly one of preparation for the Victory Parade on the 21st of July, and was complicated by the edict that drill had to be changed from threes to sixes. The Royal Marines led the march-past followed by the Grenadier Guards, 1/5 Queens, Devonshire Regiment and the Canadian Berlin Battalion.

On the 27th of July the companies were relieved by the Durham Light Infantry and returned to their formations in Holland.

The photograph on the opposite page shows a group of fusiliers from Les Fusiliers Mont-Royal inspecting the bullet-scarred statue of Queen Sophia Charlotte at one of the gates on Charlottenburg Clausee which runs alongside the Tiergarten.

Outlook Not So Discouraging

Many people immediately write off their chances for survival in an atomic attack. Others feel that survival is not worth while if it is to be the "stark, elemental, brutal, filthy, and miserable" life predicted by some congressional witnesses. However, realistic and reasonable evidence does not support such a discouraging outlook. — *Kendall D. Moll in "Survival in Nuclear War", ORDNANCE Magazine (U.S.).*

Book Reviews

SERVE TO LEAD

Reviewed by Lieut.-Colonel T.M. Hunter, CD, Historical Section, Army Headquarters, Ottawa

The trouble with education, both military and civilian, is that a full generation must pass before the results can be judged with any objectivity. By that time the circumstances, strategical and social, have probably changed so much that the lessons of earlier experience have only limited application.

We are reminded of this perpetual problem when we read a new history of cadet training in England, beginning in 1741 at Woolwich and culminating in the present Royal Military Academy Sandhurst.* The author is Brigadier Sir John Smyth, V.C., who has had a remarkable career as soldier, author, playwright, broadcaster and parliamentarian. With Ian Hay, he wrote two plays, and sportsmen are indebted to him for numerous commentaries and a history of lawn tennis. Four years ago, in these columns, we reviewed his *Before the Dawn*, a spirited account of the retreats from Dunkirk and Burma, in both of which the author participated.

Smyth's latest book is a sympathetic study of the growth and problems of "the Shop" at Woolwich and its counterpart at Sandhurst. Those who have had the privilege of attending, or even visiting, these establishments will not need to be reminded of their many colourful associations, their wealth of historic interest and their great achievements.

The author's method is to take us from the origins of cadet training through succeeding centuries, alternating between Woolwich and Sandhurst, until the two were amalgamated in 1947. This results in a certain oscillation of interest between the Academy and the College as the narrative proceeds; but it has the advantage of revealing contemporary developments at both places, and presumably the only alternative was to write two virtually separate books between one set of covers.

The original object of the Woolwich Academy was not merely to prepare cadets for the Artillery and Engineers, but also to instruct the Ordnance Corps generally in a wide range of subjects. These included arithmetic, algebra, geometry, fortification, mining, gunnery and bridge-building. In order to become a cadet, a boy required a nomination from the Master-General. There was no regulation governing the age of admission, which varied from 12 to 30! In 1750 one young hopeful wrote: "Since I have been at the Academy, I have drawn a Cannon and a Mortar-bed by a scale, and begun a Landscape after the Mezzotinto manner; the French master has been ill ever since I came, so I have not seen him." The emphasis on landscape drawing (we are reminded of the "pano-

**Sandhurst: The History of the Royal Military Academy, Woolwich, the Royal Military College, Sandhurst, and the Royal Military Academy Sandhurst 1741-1961*, by Brigadier Sir John Smyth, V.C. Published by Weidenfeld and Nicolson, London, 1961. Available from McClelland & Stewart, Ltd., Toronto 16. $7.95.

ramas" of a later generation) was particularly important in an age when maps of foreign countries were nonexistent or, at best, incomplete. In those days a quick sketch was the equivalent of a modern map reference.

The Royal Military College and the Staff College, originally located at Great Marlow and High Wycombe, respectively, owe their beginnings to the tireless efforts of a Channel Islander—Colonel (later Major-General) Gaspard Le Marchant. He recognized the close connection between military inefficiency and the lack of professional education for officers. Assisted by General Jarry, a French *émigré,* Le Marchant got Royal Warrants in 1801-2 inaugurating both the Staff College and its junior department, the Royal Military Cadet College. Incidentally, the author avoids a discussion of the scandal surrounding the purchase of land at Sandhurst from William Pitt at a price allegedly far in excess of what he had paid for it.

From the beginning, affairs at both Woolwich and Sandhurst were very much in the public eye. Numerous investigations were conducted with a view to improving both physical and intellectual conditions of study. Thus, in 1856, after a tour of military establishments on the Continent, a Commission reported on the influence of differences in national character: "In France highly rewarded competition is the mainspring of the whole system; in Prussia the chief object aimed at appears to be the attainment of a good average of general and professional education. In Austria, vigorous competition is the principle of the staff school with high competition for a small portion of the officers. Finally, in Sardinia there is again considerable competition. Everywhere there is an organization for education so systematic and so large in expenditure for the purpose as to show both the value attached in a military point of view to the teaching and training of officers and the position it occupies in the general education of the country."

It is encouraging to note that in spite of periods of neglect, partly due to wartime emergencies, the British authorities never completely lost sight of the importance of the broader aspects of education. A tendency towards excessive emphasis on the technical side of an officer's training is a natural, almost inevitable development under any system. Yet from time to time the balance is restored. In 1926, as Smyth points out, the War Office "still considered that too much time was given to military and technical training and not enough to general education, which it was thought should include a sound knowledge of general history as affecting the British Constitution, and of imperial and foreign affairs, of geography and economics." This direction has continued. Today at the Royal Military College Sandhurst the objects of all training are:

1. To give the officer cadet a broad view of his profession as a whole and his responsibilities as a servant of the State.

2. To develop in the officer cadet the essential military characteristics of leadership, sense of discipline and sense of duty.

(Continued on page 48)

A GREAT GENERALISSIMO

Reviewed by Colonel G. W. L. Nicholson, CD, Ottawa

Some years ago at the request of the Directorate of Military Training the Army's Historical Section compiled an *Introduction to the Study of Military History for Canadian Students.* Under the editorship of Colonel C. P. Stacey* this booklet progressed through a series of revised and enlarged editions. It furnished Canadian students of military history, and particularly junior officers, with a brief consideration of a number of campaigns of Canadian interest from 1690 to 1945, together with a concise account of the development of the Canadian Army.

In framing courses of study for officer training one of the problems which has always confronted those responsible for the subject of military history has been to select campaigns on which appropriate published reference material is readily available to all candidates taking the course. Unfortunately, many of the once standard works on the great campaigns—at any rate those prior to the Second World War—have long been out of print. While copies are to be found on the shelves of military and civilian libraries, this source is obviously inadequate to meet the requirements of the large number of officers who may be simultaneously studying the same assigned campaign. *(Continued on next page.)*

**Colonel Stacey (Retired) formerly was Director of the Historical Section. He was succeeded by Colonel Nicholson, the reviewer, who has also retired from the Army.*—Editor.

Serve to Lead

(Continued from preceding page)

3. To develop his physical fitness.

4. To lay the foundation of military and academic knowledge upon which the future arm or service studies of an officer can be built.

It is interesting to compare British practice with equivalent developments in the United States. In the latter field a notable contribution in recent years has been a carefully compiled volume, *Soldiers and Scholars,* by John W. Masland and Laurence I. Radway.* Their studies suggested that some American authorities tended to confuse education with training, in its narrower sense, and the writers concluded that "military education is weakest in cultivation of the creative, imaginative, analytical mind."

Smyth's volume is a most interesting and informative account. The illustrations are excellent; they include a fine photograph of the Adjutant riding up the steps of the Grand Entrance at Sandhurst, following a Sovereign's Parade. The author's strongly sympathetic treatment, his almost affectionate references to many facets of cadet life (especially athletics), and his tributes to the records of many gallant and distinguished ex-cadets in many lands give added significance to the Sandhurst motto: "Serve to Lead".

*See "Brass Hats and Mortar-boards", by present reviewer, in the *Journal* of January 1958.

The Directorate of Military Training, alive to the importance of the part played by extensive reading in stimulating interest in military history, recognized that the problem could not be met by issuing prepared *précis*, such as are not infrequently used in other subjects of military study. It asked the Historical Section to produce, as a sequel to its *Introduction to the Study of Military History*, a series of booklets that would provide army officers with a comprehensive study of some specified campaign or military leader. These booklets — they have varied in length from 168 to 250 pages — have been written particularly for the military student. Each is extensively documented and carries a list of additional sources for further consultation. Successive titles in the series have been *The Western Front, 1914, Marborough and the War of the Spanish Succession* and *The British Campaigns in the Peninsula, 1808-1814*. While, as we have said, these were primarily directed to officers of the Canadian Army, they have had some circulation farther afield and have been favourably reviewed by military and historical journals both inside and outside Canada.

A fourth booklet has recently been published, and shows every sign of maintaining the high standard of its predecessors. Written by Lieut.-Colonel T. M. Hunter of the Historical Section, it is a study of Marshal Ferdinand Foch*, and particularly of the qualities of leadership exhibited by the great generalissimo of the First World War. Although two years from now will mark the semi-centenary of the outbreak of the first of the total wars, the persistence of the controversies that arose concerning the manner in which it was fought has helped to maintain a keen interest in that struggle. Readers of Colonel Hunter's fully documented book will be grateful that he has provided as a background for his biography a survey (of necessity of a general nature) of the whole of the four years of fighting on the Western Front. His appended suggestions for further reading provide a very comprehensive bibliography of the great French marshal.

In developing his "study of leadership" the author examines the formative period of Foch's career, emphasizing the significance of the eleven years of preparation spent at the *Ecole Supérieure de Guerre* — as student, instructor and finally as Commander. Drawing from Foch's published lectures as chief instructor, Colonel Hunter shows that the future generalissimo's theory of war recognized three main elements: strategic "preparation" in assembling adequate forces at the right place before the outbreak of war; "mass" mobilization of all the physical and moral forces of the country; and "impulsion", or the employment of tactics involving mobility on the battlefield — an ironic precept in the light of the static conditions which were to characterize operations on the Western Front. Above all, he stressed the importance of attack: a defensive battle must end in an offensive action, "otherwise there is no result".

**Marshal Foch: A Study in Leadership*, by Lieut.-Colonel T. M. Hunter. Published by Directorate of Military Training, Army Headquarters. Copies available from the Queen's Printer, Ottawa, $1.50.

When war came, the rapid ascendancy of the defence over the attack resulted in some modification of these views. The failures of French offensives at Vimy Ridge and in Champagne in 1915 brought Foch to the realization that the enemy line was not to be pierced by mere force of numbers. In the following spring, when von Falkenhayn's campaigns against Verdun were seriously disrupting French preparations for the planned Allied attack at the Somme, he was to write pessimistically, "We are a long way from that wide, powerful offensive which has in view an attainable objective and which can keep going." Colonel Hunter defends Foch's modified proposals for a methodical programme of gaining limited objectives one by one until the enemy's reserves were exhausted as being more than "a simple policy of stark attribution". Indeed, after two more years of costly setbacks and stalemates, it was a similar strategy of attacking simultaneously, or in rapid succession at several points, unbalancing the enemy by the rapid movement of Allied reserves, that was to bring final victory.

By that time Foch was in supreme command of the Allied forces on the Western Front. It had taken the first of the great German offensives of 1918 to resolve the differences that had kept the Allies from achieving unified command. A decision in February by the Supreme War Council to create a strategic General Reserve which would be controlled by an Executive Committee under the presidency of Foch reached an impasse when Sir Douglas Haig refused to contribute any British forces. Yet it is to Haig's credit that four days after the Germans struck he took the first step that led to Foch's becoming Commander-in-Chief of the Allied Armies in France — an appointment that was to launch the Allies on the final road to victory.

How does Foch rank as a military leader? Colonel Hunter finds him better in strategy than in tactics — superior to Ludendorff in the former, inferior in the latter. While Foch recognized the dependence of both strategy and tactics upon *matériel,* he often failed to pay due attention to problems of administration and maintenance — he never fully grasped the significance of sea power. Yet whatever limitations Foch may have had, all will agree that his place in history is assured by his outstanding ability to coordinate the large-scale Allied operations of the final months of the war. He alone of all Allied generals could successfully undertake the great responsibility assigned to him — a responsibility for which his sense of dedication, his keen intellect and his forceful pesronality admirably fitted him.

Aptitude for War

"Aptitude for war," Napoleon insisted, "is aptitude for movement"; and in his day movement meant marching. "All the mystery of movement and combat," wrote Marshal Saxe. "is in the legs, and it is to the legs that we should apply ourselves." ...What the Western serviceman must try to achieve is a barbarian body controlled by a civilized mind.—*Major Reginald Hargreaves in the Military Review (U.S.).*

MEMOIRS OF A BRITISH SOLDIER

REVIEWED BY MAJ.-GEN. G.R. TURNER, CB, MC, DCM, CD, IDC, PSC, (RETIRED), OTTAWA

This is an autobiography* of General Morgan whose previous book, *Overture to Overlord,* recounted in detail his work as COSSAC (Chief of Staff to the Supreme Allied Commander (Designate)) in planning the invasion of North-West Europe. It covers the period of his boyhood, his service in the British Army from 1913 when he was commissioned in the Royal Artillery to the end of the Second World War, his work at UNRRA (United Nations Relief and Rehabilitation Agency) in 1945 and 1946, a tour as an "amateur civilian" in British Guiana, and finally his employment as Controller of Atomic Energy and Atomic Weapons from 1951 to 1955.

Among General Morgan's qualities are the ability to quickly detect the essentials of a problem, a capacity for

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**Peace and War* (A Soldier's Life). By Lieut.-General Sir Frederick Morgan, KCB. Available from Hodder & Stoughton, 103-107 Vanderhoof Ave., Toronto 17, Ont. $5.50.

THE TECHNIQUE OF CONSPIRACY

When in 1957 a Canadian army officer, Major D. J. Goodspeed of the Army Historical Section, published an article entitled "The Secret Army" in the NATO journal, *Revue Militaire Générale,* the Communist world was outraged.

The article analysed the technique of the *coup d'état,* drawing for illustration on examples from the Hungarian Revolution of 1956. It was in realty a serious military study of one type of operation, but the Communists chose to regard it as a blueprint for the overthrow of puppet governments. Mr. Valerian Zorin, the Soviet delegate at the United Nations, denounced Major Goodspeed in the UN General Assembly, and Communist newspapers throughout the world joined in the chorus of protest.

Now Major Goodspeed has published a full-length book on the same subject.* Entitled *The Conspirators: A Study of the Coup d'Etat,* Major Goodspeed's book studies in detail six twentieth century *coups,* three of them successful and three unsuccessful. The *coups* which succeeded are the murder of King Alexander and Queen Draga in Belgrade in 1903, the October Revolution which brought Lenin and the Bolsheviks to power in Russia in 1917, and Mussolini's March on Rome. The unsuccessful *coups* dealt with are the Easter Rising in Dublin in 1916, the Kapp *putsch* in Berlin in 1920, and the abortive bomb plot to kill Hitler in July 1944.

The *Canadian Army Journal* will be publishing a full review of *The Conspirators* in its next issue.

**The Conspirators: A Study of the Coup d'Etat.* By D.J. Goodspeed. Published by Macmillan and Company of Canada, Limited, Toronto, 1962. $5.00.

hard work and getting on with the job, deep convictions, strong moral courage and a sense of humour: all of these show up in this autobiography which is written in clear and easily understood language.

General Morgan held various regimental, staff and command appointments in operational theatres in the First and Second World Wars and, during the intervening period, in India, Malta and the United Kingdom. He therefore had excellent opportunities to experience at first hand the conditions confronting the British Army in two world wars and in the times of financial stringency between those wars. He has portrayed those conditions in a manner that makes his book of great value to all interested in the history of the British Army during that period.

In the course of his career General Morgan was associated with many of the top military and political leaders of the Commonwealth, the U.S.A. and other countries. His anecdotes regarding a number of them make entertaining reading.

Undoubtedly the most important — and arduous — of his military appointments and the one in which he made an outstanding contribution to the Allied war effort was as COSSAC when for the greater part of 1943 he was called upon to evolve a plan for the invasion of North-West Europe with very little definite information to guide him concerning the number of troops, landing craft, etc., and quantity and types of equipment that would be available. When General Eisenhower finally assumed the appointment of Supreme Allied Commander and, naturally, brought along General Bedell Smith (who had been with him in the Mediterranean theatre as Chief Staff Officer) to be his Chief of Staff, he appointed as his Deputy Chief of Staff General Morgan who served in that capacity until the end of the war.

General Morgan's tour with UNRRA did not end on a happy note but he emerged from that experience with his reputation enhanced for strong character and high moral courage. The chapter dealing with that experience is a "must" for anyone seeking authentic information on the problem of displaced persons and refugees in Germany following the Second World War.

General Morgan has been associated with Canadian troops more than most British Army officers whose service covered the same period. In the First World War he served in France and Belgium with the Lahore Divisional Artillery which supported, at times, the 2nd, 3rd and 4th Canadian Divisions; at the Staff College, Quetta, one of his fellow students was Major (later Lieut.-General) E.L.M. (Tommy) Burns; in 1940 as Commander of the Support Group of the 1st Armoured Division (British) in General McNaughton's VII Corps he had under command the Saskatoon Light Infantry and Royal Montreal Regiment of whom he writes, "two fine Canadian Machine Gun Battalions — what fine memories they evoked of great days twenty-five years earlier at Ypres, on the Somme and at Vimy". As COSSAC he had Canadians on his staff, and as Deputy Chief of Staff to General Eisenhower he saw much of 1st Canadian Army.

(Continued on page 53)

THE SERVICE CORPS' HISTORY

Reviewed by Captain R. H. Roy, Assistant Professor,
Department of History, Victoria College, Victoria, B.C.

This is the story of the Royal Canadian Army Service Corps from its origin to the present day.* As far as this reviewer is aware, it is the first history of a Canadian military corps to be published for many a year. Rather surprisingly, it is written by an ex-RCAF officer and represents his first effort as a military historian.

The RCASC is more than sixty years old. From the time it was formed an estimated 100,000 men have served in the corps. The duties of the corps, for the most part, revolved around supplying the army with ammunition, food, POL (petrol, oil and lubricants) and similar necessities ranging from sandbags to bridging material. As with the Engineers and Artillery, the Service Corps supported and supplied the Army on every battlefield in all theatres of war. At Hong Kong, Dieppe, Kiska, or in Italy or North-West Europe, detachments and companies of the RCASC were there seeing that the men at the front got what they wanted when they wanted it.

The means of supplying the troops, frequently under shellfire and often over difficult terrain, varied tremendously. Sometimes the Corps had its own ships, sometimes it used horses and mules, and of course it is best known by veterans today as using all types of vehicles from the "Jeep" to the huge trucks and trailers in the Second World War.

So ubiquitous was the Corps that it is hard to imagine a situation with which the RCASC was not concerned. If there were troops to move, the Corps "Movement Control" was on hand. If an attack were being planned, the Corps vehicles, loaded with ammunition of all types, prepared the dumps. If there was a river or canal to cross, the canvas assault boats or bridging equipment were delivered on the spot by the Service Corps. If a break-through occurred, the RCASC drivers worked around the clock to keep the advancing troops supplied no matter how far the roads lengthened from the base dumps.

It is a tribute to the Corps that the soldiers at the front accepted its efficiency without question. Yet had the services which they provided failed for two or three days, the fighting would shudder to a halt. Despite their vital role, the Corps has rarely if ever received the publicity of the other arms of the service. In this respect Churchill has written: "Victory is the beautiful, bright-coloured flower.

**Wait for the Waggon.* By Arnold Warren. Published by McClelland & Stewart (1961), 25 Hollinger Rd., Toronto 16, Ont. 413 pp. Maps. Illus. Index. $7.50.

Soldier's Memoirs

(Continued from preceding page)

Serving personnel in the Canadian Army will find this biography of historical interest and military value, and for many Canadian veterans who served during the period 1914 to 1945 it will bring back memories of their own experiences.

Transport is the stem without which it could never had blossomed."

Considering the difficulties inherent in writing the story of a Corps whose companies were scattered throughout all formations of the Army and performed such a variety of tasks, the author has done well to leave the reader with a good impression of all phases of Service Corps life in peace and war. The impression, however, is not without its blemishes. Numerous errors mar the pages of the text, especially when the author is not writing directly on his topic. A little research would reveal, for example, that the Crimean War did not end in 1867. And granted the desperate shortage of tanks in 1939, Canada did have more than two. To write that in 1914 German forces crossed the Polish frontier when Poland did not at that time exist suggests that the author might have taken greater note of the motto of the RCASC when writing military history.

Mr. Warren makes good use of personal accounts, though many of these could have been improved with editing. Further, the author's failure to quote many of his sources will not bother most readers, but it is a definite inconvenience to the historian and the serious student of military affairs. The text itself tends to be journalistic in style and quite readable except when the author feels it necessary to write page after page of organizational minutae which is all too frequent. Most of the book is concerned with the Second World War, but the part played by the Corps in Korea is dealt with in some detail.

Veterans of the RCASC will be pleased that their Corps history has been published, and an excellent selection of photographs will refresh their minds of bygone days. The contributions of the Service Corps in both wars have been overlooked. *Wait For The Waggon* will help to redress this situation.

Officer Solves Nuclear Problem

Captain Richard C. Wingerson, 32, whose proposal to use a revolutionary magnetic "bottle" with a "corkscrew" field to contain certain thermonuclear reactions has gained national recognition, has been appointed an Assistant Professor of Physics by the [U.S.] Air Force's Institute of Technology.

For a decade scientists have been attempting to find means of harnessing the enormous energy released in the thermonuclear reactions that occur between the nuclei of certain hydrogen atoms at extremely high temperatures. It would provide the world with a practically unlimited source of power. All previous schemes have proved unsatisfactory.

Captain Wingerson arrived at his proposal while doing reasearch in connection with his doctoral dissertation in nuclear engineering at the Massachussetts Institute of Technology. His proposal may be the solution to the 10-year scientific puzzle.—*From the Army-Navy-Air Force Journal (U.S.).*

"RENDER TO CAESAR . . ."

Reviewed by Lieut.-Colonel J. A. Stairs, MBE, CD,
Army Development Establishment, Army Headquarters, Ottawa

It is not surprising that the threat of nuclear war which is casting its lengthening shadow over mankind is also generating much thought and writing on what should be done. In this dilemma, all solutions offered by thoughtful and sincere people must be given careful consideration in the hope that some workable answer will be found. In his latest book*, Sir Robert Watson Watt, long famous for his work on radar, makes an interesting contribution to the literature telling us what action must be taken if civilization is to be saved.

The book is divided into five parts. In the first there is a broad description of the evolution of life, man and thought. Part Two traces man's development through three stages which the author calls savagery, barbarism and civilization. This deals with a number of things such as agriculture, the wheel, the growth of cities, the meaning of war, early cultures, Mesopotamia, writing, the priesthood, spivs, trade routes, the trading of ideas, and the invention of writing. It ends with the question of how the channels of communication can best be used to enlighten man and to prevent war.

Part Three deals with the difficulties of communication between groups with different outlooks. Classical scholars, scientists, Greeks and Romans, philosophers, theologians, epic heroes, politicians, technologists, "brass hats", and journalists are all dealt with briefly. More serious, in the author's view, is the inadequate way in which history is taught, and worst of all, the deliberate fouling of the well of truth by jamming, propaganda and brain washing. This part ends with a comparison of individuals and nations and a plea for the partial renunciation of national sovereignties and the establishment of a world authority (assembly, executive, law court, and police force) for the maintenance of world order.

Part Four reviews the NBC weapons now available and gives a number of estimates of what might happen under various kinds of all-out attack. It examines the possibility of war by accident and it ends by reinforcing the plea for a world authority and disarmament.

In the closing part of the book an attempt is made to relate man to God. Religion is seen in terms of corrupt priesthoods, pharaohs, divine right, Galileo, and holy wars and it is not surprising that this odd mixture is finally pushed aside to make way for a declaration of agnosticism and the glorification of man.

The main conclusion of the book is that man has a glorious future if he will save himself by establishing an authority that can limit war. No one can seriously argue that this is not a good idea. It is not particularly original

**Man's Means to His End.* By Sir Robertson-Watt. Published by McClelland & Stewart Ltd., 25 Hollinger Rd., Toronto 16, Ont. $6.50.

and it develops quite naturally out of past history, though this is not apparent from the book. Two thousand years ago when the city states of the Mediterranean world were tearing themselves to pieces, the creation of the Roman Empire became a political necessity. There have been many other empires established for the same reason: The Tsin and Han, The Ottoman, The Achaemenian, The Empire of the Four Quarters, The Middle and New Empires of Egypt and so on. The only real question today seems to be whether or not fear of nuclear destruction on both sides is sufficient to seriously alter the pattern for the warlike establishment of empire that has been followed on so many occasions in the past. But unfortunately Sir Robert sees only the technological development of man and draws few conclusions from the political and military past which he finds historically overrated.

Sir Robert also concludes that the world is now in trouble because of the failure to properly communicate truth from man to man and from generation to generation. This is probably so, but it raises a question that Sir Robert does not adequately answer: What is truth? On this, he considers only the world as investigated by science through the five senses and gives no thought to the mind itself. Yet if one fishes in an unknown sea with an unknown net, the size of the fish may reflect a property of the sea or it may reflect a property of the net and if one neglects the latter one may reach some very wrong conclusions about the sea.

To this reviewer it seems as if the mind is divided into two parts, one, the conscious, the other, the unconscious. There is a fundamental tension, or opposition, between these parts. Connected with these two parts of the mind are two kinds of truth: through the conscious comes knowledge of physical truth in rational and scientific form and through the unconscious comes knowledge of psychic truth in symbolic and mythological form. On physical truth man builds civilization while on psychic truth he builds religion. Man's interpretation of the universe around him, if it is not to be distorted, must reflect these two kinds of truth since they represent fundamental aspects of his mind. If his interpretation does not reflect the dual nature of his mind, then the fundamental tension between conscious and unconscious will be projected either into religion or into civilization and in both cases the distorted image becomes self-destructive. In the 20th century it is no longer possible to project good versus evil onto man-in-this-world versus the devil-in-some-other-world because the devil and the other world have both been abolished. The good versus evil tension therefore shows up entirely in this world between man and his neighbour, which on a national scale gradually intensifies into a highly destructive form of war. Although the two-world view of reality does not eliminate war, since nothing human is perfect, it does tend to minimize self-destruction since it more truly reflects the reality of the human mind and one cannot drop H-bombs on the devil.

We now return to Sir Robert's book and ask ourselves who is responsible for the distortion of the world view which by its overemphasis on physical

truth has led us to our present predicament? The Reformation is four centuries behind us, the Cartesian Age began over 300 years ago, the great century of scientific discovery was the Seventeenth. In glorifying man, Sir Robert makes it clear that he does so only after learning the discipline and humility taught by science. But this road to discipline and humility is not open to the bulk of mankind. Yet the bulk of mankind are impressed by science and are guided by what the scientist says. The end result for large portions of humanity is not the glorification of man but the abolition of God along with the counterbalancing symbols of religion. The psychic tensions thus released into the world will probably continue to grow until the increasingly distorted view is removed by a process similar to Natural Selection.

Sir Robert's book is of great interest because it illustrates the problem of our age more clearly than the author ever intended: he consciously tells us to form a bucket brigade while he unconsciously pours on gasoline with a hose. We will certainly be fortunate if we can follow his conscious advice in an effort to improve the immediate situation, but a long-term cure will need a wider understanding of the part played by the unconscious and a reprojection of the psychic tensions in a form less dangerous to mankind.

With all this, the general impression that the book leaves is a good one. It is well written, has lots of variety, and is always interesting. Many points are well taken and are thought-provoking in both their positive and negative aspects. It is recommended to anyone who thinks seriously on the human dilemma.

With Sword and Fire

The Infantryman has many weapons in his armory, all of them killers, but perhaps none is so feared by the enemy as the flame-thrower. In the volcanic caves of Okinawa and the mountain positions of Korea, this gigantic blowtorch proved its worth, destroying the enemy when he was impervious to other more conventional weapons. The Infantry's portable flame-thrower may seem modern, but it is actually one of the oldest devices of war. Armies used fire long before gunpowder was known, and flame-throwers are mentioned in the earliest military chronicles. Five centuries before the Christian area, the Greeks were hurling fire at their enemies. A tree trunk was hollowed out and mounted on wheels. At one end was placed a pot filled with burning coals, pitch and sulphur. Using a pair of bellowa, the ancient warriors would blow the flames through the tube in the direction of the enemy. Another primitive flame thrower, belonging to the medieval Turks, had a range of 100 yards. Other less scientific contestants in battles merely threw burning oil at each other. But it was not until the Japanese, fighting the Russians in 1904, used compressed gases to shoot burning liquids, that the modern flame-thrower was born. Today's portable flame-thrower is more than a deady Infantry weapon. It is a grim reminder of the days when our ancestors fought each other "with sword and fire". — *The Infantry Journal (India).*

CANADA AND THE COLD WAR

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

In a recent, concise book (174 pages) Dr. James Eayrs, an Associate Professor in the Department of Political Economy at the University of Toronto, has given us his views on problems of Canadian defence and international relationships in the context of the Cold War. Dr. Eayrs' book* is really a series of essays around the central theme of Canada's position in the dangerous world of the latter half of the twentieth century, and the book's title, taken from the first of the essays, is indicative of the central fact in Canada's position — her geographical proximity to both Russia and the United States. It is largely this geographical fact which makes so acute Canada's concern over such problems as the deterrent, aerial defence, neutralism, communist activity in the western hemisphere, and the future of the United Nations.

Northern Approaches is written in a refreshingly candid style and Dr. Eayrs frequently manages to be brilliant without abandoning the rhythms of ordinary speech. The book makes surprisingly easy reading, considering the difficulties and the gravity of the subject matter.

Of course, it would be impossible to write a worthwhile book on such a theme as this without being controversial. By no means everyone will agree with all that Dr. Eayrs has to say. This reviewer, for instance, found him considerably more convincing when he was analyzing past and present situations than when he was making predictions for the future. But since only the future will show who is right, *Northern Approaches* in the meantime should certainly be read by all those who are interested in the hard choices of Canadian defence policy.

**Northern Approaches: Canada and the Search for Peace.* By James Eayrs. The Macmillan Company of Canada Ltd., Toronto, 1961. $4.25.

"British Battles and Medals", 3rd Edition

The third edition of *British Battles and Medals* will be produced in July 1962, according to a letter received by the Editor of the *Canadian Army Journal* from the author, Major L. L. Gordon, Audmore, Gnosall, Stafford, England. This will be much larger than the previous edition and up to date to 31 December 1961.

As the number of copies will be, in the words of the author, "somewhat limited", those interested in obtaining this work are invited to make reservations at the address given above as soon as possible; also, to indicate whether they would prefer a copy to be mailed as soon as the book is available or await notification.

The price of this volume is £5.8s., including postage, payable in sterling only.

THE USSR AND CIVIL DEFENCE

Reviewed by Lieut.-Colonel B. W. Lee, CD, Directorate of Survival Operations and Plans, Army Headquarters, Ottawa

For the past fifteen years the subject of civil defence and later national survival has been a subject for public debate in Canada: all the facets of passive defence against nuclear attack have been argued and discussed by experts and laymen alike. The two main questions have been the probability of nuclear attack on our country and the possibility of any successful defence being devised. This should have brought up the further question of whether or not Russia has been preparing to defend itself against nuclear attack. Surprisingly enough there has been little public knowledge on this subject.

Leon Gouré, a senior staff scientist of the RAND Corporation of Santa Monica, California, has produced a weighty but quite readable work on this subject.* It is, generally, based on work undertaken by the RAND Corporation for the United States Air Force. There is no doubt that Mr. Gouré's book is the most exhaustive study available in the Western world of the Soviet leadership's views on war and civil defence. In addition, it is the first complete survey of the Soviet civil defence programme ever published outside the Soviet Union.

There is little doubt left in the reader's mind that the Soviet leaders are serious about civil defence and that the programme is adequate. The author states, "It is not a crash program, but one that seeks progressively to improve Soviet civil defence within the limits of a relatively modest annual expenditure of perhaps somewhere between 500 million and 1.5 billion dollars." He pieces together his evidence in very considerable detail and in a convincing manner and concludes that it is extremely likely that the Soviet Union has a civil defence much stronger than that of the United States. The case is strengthened by interesting illustrations including copies of Soviet plans for blast and fallout shelters, reproductions of civil defence posters and unusual photographs showing blast doors built into the passages of the Moscow subway.

Mr. Gouré has provided us with a rare and revealing look into what is taking place on the other side of the road. Those who doubt the value of national survival preparations can now see what others are doing. This book, without doubt, is long overdue and offers the services and public alike an opportunity to take a second look and perhaps change their minds on a subject of supreme importance to us all.

**Civil Defence in the Soviet Union.* By Leon Gouré. Published by the University of California Press, Berkeley 4, California, U.S.A. $2.45 (U.S. funds).

Time is an Innovator

He that will not apply new remedies must expect new evils; for time is the greatest innovator.—*Francis Bacon.*

Canadian Army History Now Available in French Language

La Campagne de la Victoire, the French translation of the final book of the three-volume Official History of the Canadian Army in the Second World War published by the Queen's Printer, Ottawa, has been placed on sale, Headquarters has announced.

The English version, *The Victory Campaign,* was published in January 1960 and the first printing of 10,000 copies has been nearly sold out.

The book, which tells the story of the Canadian Army's campaign in North-West Europe, was written by Colonel C. P. Stacey, OBE, CD, Director of the Historical Section at Army Headquarters, Ottawa, until his retirement in 1959. He also wrote the first volume of the official history, *Six Years of War (Six années de Guerre).*

The second volume, *The Canadians in Italy (Les Canadiens en Italie),* was written by Colonel G. W. L. Nicholson, CD, who succeeded Colonel Stacey as Director of the Historical Section and who has since retired from the Army.

The third volume describes in detail Canadian participation in the great battles of North-West Europe, from the landings in Normandy to the dramatic events that led to the German surrender on 8 May 1945. It rounds out the story with an account of the Canadian Army Occupation Force in Germany and the repatriation of the Canadian soldiers.

La Compagne de la Victoire, like its English companion, will be a cloth-bound book containing nearly 800 pages with 65 maps of which 16 are in colour. It is illustrated with a colour plate of a painting by a Canadian Army war artist and 44 photographs in black and white.

The book may be ordered from book stores, or direct from the Queen's Printer, Ottawa, at $4.00 postpaid. The complete set of three volumes in either French or English may be purchased at the special price of $10.00. — *From a report issued by the Directorate of Public Relations (Army), Army Headquarters, Ottawa.*

The Historian's Job

We human beings find it strangely dfificult to enter imaginatively into other people's experiences. We may know about these with our minds, but we do not easily feel them in our hearts, unless we have had at least a taste of the same experiences ourselves. The historian's job is to enter imaginatively into the experiences of large numbers of his fellow human beings; and, except when he is writing the history of his own times, his subjects will be people who are remote from him in time, and perhaps in space as well. It is evident that, for a historian, even the slightest experience of the kind of thing that he is setting out to record and to describe will be invaluable. — *Arnold Toynbee in "The Listener" (B.B.C.).*

ONE MAN'S JOURNEY

Reviewed by Captain R. F. Bornor, CD, Directorate of Military Intelligence, Army Headquarters, Ottawa

"The personal story of one man's journey through war to peace, and from youth through love to maturity...". Thus, the dust jacket of John Master's new book* describes what the reader will find in its pages. It is a chronicle of love and death, of courage and compassion, of gaiety and grimness, written with a splendid honesty which the military reader will at once appreciate as authentic. In his foreword, the author says "My story is not unique and I am not a hero, but an ordinary man, and I have written this narrative because I believe that many of you will recognize in it parts of your own life, and know that in writing of myself I have written, also, of you and for you".

The first volume of John Master's autobiography, *Bugles and a Tiger,* published in 1956, told the story of how a schoolboy became a professional soldier of the old Indian Army, and described a Gurkha officer's life in the dying years of the British Raj in India. It ended in 1939 with the 2/4th Gurkhas trained and ready for the war to come. This second volume finds the battalion taking part in operations in Iraq, Syria and Persia in the early part of the war with our "ordinary man" as adjutant. During these brief campaigns a deficiency in his military knowledge became apparent to him. Replenishments of rations, ammunition and petrol arrived at the correct map reference at the correct time. How did all this happen? Obviously, if one hoped to command troops in battle, more than a knowledge of their tactical employment was required. There was a great deal to learn about such things.

At the end of the campaign in Persia, the time came to attend a seat of learning where this knowledge could be gleaned — the Staff College at Quetta. Masters appears to have enjoyed the 5th War Course immensely despite the usual head swimming tasks that are associated with such an undertaking. He has this to say of this experience: "The DS* had taught us, but we'd done it. Therefore we could do it in real life. Many of us did, two years later, for it was in these classrooms and the equivalents in England and America that D-Day was made possible". At Quetta he met Barbara, who was to become his wife; and so underwent two great experiences simultaneously, an awakening to love and a progression toward military maturity.

After a spell as Brigade Major with the 114th Brigade he was posted to the Special Force being raised by Orde Wingate on the eve of his Brigade's departure for action in the Arakan "...always the bridesmaid and never the bride". But it was with the Chindits that he found the fulfillment he had been seeking. The long story of the second incursion by the Chindits

**The Road Past Mandalay.* By John Masters. Published by The Musson Book Company, Ltd., 103 Vanderhoof Avenue, Toronto 17, Ont. $5.00.

**Directing Staff.*

THE STORY OF A SPECIAL AGENT

REVIEWED BY CAPTAIN F. L. JONES,
LATE THE IRISH REGIMENT OF CANADA, BURLINGTON, ONT.

Books like this one* are of interest to soldiers whose Second World War experience was confined to regimental service. Although the Army asked one to do many strange things, there was a comforting orthodoxy about the average man's war which ruled out the chances of his being ordered to jump into Siam.

Peter Kemp did just that as an agent of Special Operations Executive. He was no stranger to this mode of entry into a country for he had already dropped into Albania and Poland to assist and organize partisans. In August 1945, he and his superior officer, Major Winn, parachuted into enemy-occupied territory near the frontier between Siam and French Indo-China.

Their job was to help the Siamese guerillas and gather intelligence about the Japanese. Practically nothing had come out of the area since the Japanese triumph in 1942. The bomb had been dropped on Hiroshima and in the event of a Japanese surrender, they were charged with guarding the interests of prisoners of war and French civilians. Readers who expect *The*

**Alms for Oblivion.* By Peter Kemp. Available from the British Book Service (Canada) Ltd., Kingswood House, 1068 Broadview Ave., Toronto 6, Ont. $6.00.

One Man's Journey

(Continued from preceding page)

into Burma is well told, although it may be repetitious for those who have studied this campaign. Masters served as Brigade Major to Joe Lentaigne who commanded the 111th Brigade until he was promoted to Force Commander on Wingate's untimely death.

Lentaigne selected Masters as his successor to command the Brigade. This was, perhaps, a unique promotion, but justified by the fact that Masters would have had a battalion in the 114th Brigade had not Brigadier Lentaigne asked for him as Brigade Major. He became aware for the first time of the utter loneliness of command, and the deaths of splendid young officers carrying out tasks at his bidding left him ill with grief. He was to experience the bitterness of defeat in his first command, made all the more bitter by his own belief that defeat was the result of the deliberate machinations of General ("Vinegar Joe") Stilwell who, he claims, had developed a psychotic dislike for all things British. Plagued with worry for his beloved Barbara, he left Burma with his spirit and courage near breaking point.

The honesty of the standards by which he judges himself both as a lover and soldier, the starkness of his accounts of battle and death, balanced with a wonderful sense of comedy, make this excellent book "a must" for all who love courage and beauty.

Bridge on the River Kwai or *The Guns of Navarone* in a jungle setting will be disappointed by what follows. Those who look for a straightforward account of a dangerous mission will find it in Peter Kemp's book.

Purists in matters regimental will be delighted by the opening scene. The two agents land with a splash in a paddy field. Kemp looks around and is rewarded by the spectacle of Major the Honourable Roland Winn covered with mud adjusting with infinite care the green and gold forage cap of the 8th King's Royal Irish Hussars which he had pulled from inside his bush shirt.

The collapse of Japan involved Kemp and his small group with French civilians who had been released from internment by the Japanese only to face attack and death at the hands of the Communist Vietminth. The Vietminth's main occupation during the war had been piling up arms for the day when the defeat of the Japanese would give them the opportunity to fill a power vacuum. Kemp engaged in gun running for the few French officers and men who were trying to reassert French authority. He had great admiration for these French soldiers who had managed to stay alive somehow and carry on guerilla operations for three years — and this without help from the outside world.

In the background are the Japanese. On one occasion Kemp calls on them for assistance to guard French civilians against Vietminth. The Japanese captain furnishes a guard and there is no further trouble. Kemp notes that Vietminth has a great respect for the Japanese army. Its methods are direct and discipline draconic. Kemp meets them again in Bali. A sentry fails to salute him. On making a complaint to the Japanese commandant, the offer is made to have the soldier shot at once for such a breach of military etiquette. The matter is settled by having the man put in a cage for a week.

There are humorous episodes. At a trying moment when Kemp is caught up in the conflicting interests of French, Vietminth, Siamese and Loatians, headquarters in Calcutta asks for a return of the number of serviceable elephants in his area. We are back in the world of files, the initialed minute, the return no one reads.

His work in Siam done, Kemp accepted the command of the Advanced Allied Mission to Bali and Lombok to prepare the way for Dutch reoccupation. A now familiar pattern emerges. Nationalist groups are active in making "political hay" during the handover period. There is unrest and terrorism. Peter Kemp is so taken with Bali and its people that one forgets for a moment that he is a man engaged on duties at the hazard of his life and not a tourist. Despite the temptation to indulge in "fine writing" about the golden-skinned girls and the scenery, he refrains from doing so.

The title is from one of Shakespeare's lesser known works, "Troilus and Cressida":

"Time hath, my lord, a wallet on his back,
Wherein he puts alms for oblivion."

The author reveals the source of the quotation at the beginning of the book. This reviewer is grateful. He has not read "Troilus and Cressida".

SURVIVAL COMES FIRST

Reviewed by Lieut.-Colonel B. W. Lee, CD, Directorate of Survival Operations and Plans, Army Headquarters, Ottawa

When the Japanese forces captured Corrigedor on 6 May 1942, Colonel Jack Hawkins, United States Marine Corps, was among the American prisoners taken. His experiences from that time until he was able to rejoin the American forces are told in his book, *Never Say Die*.* As soon as he was captured, Hawkins began to experience the appalling conditions under which the Japanese kept their American and Philippinos captured in the Pacific islands. He soon realized that personal survival had become his immediate and most pressing problem, and gathered a small group of officers together for this mutual purpose. During this period he saw how the same circumstances of miserable degradation and cruel suppression could destroy one man's spirit and will to live but at the same time uplift another to heroism. His analysis of trends in our modern society which may account for the human weaknesses revealed in prison camps is one more indictment of our methods of training our young people. He is not the first to reveal these facts but his account is likely to have as little effect as those of the others.

After prolonged stays in various prison and labour camps, Hawkins' group managed a daring escape. The story of this is one of patient determination, careful planning and risky action. Then came a period of several months during which they fought with the Philippino guerrillas, harassing the Japanese while they waited for an opportunity to rejoin the American forces. How this was finally achieved is not too well explained but perhaps security regulations prevented disclosure of too much information at the time of writing.

Hawkins' account of his time spent with the guerrilla forces describes a campaign little known to most Canadian readers. It is a good adventure story but hardly military history since it is doubtful if this campaign had any military significance other than to sustain local morale. The story does bring out the valour and stamina of the people of the Philippines who refused to accept defeat and remained loyal to one conqueror in preference to another.

Hawkins' style of writing is restrained, particularly when he refers to his own part in the experiences but it is graphic and the reader is left in no doubt as to what happened. For one who wants to know what it was like to be a prisoner of the Japanese, what it was like to fight as a guerrilla in the islands of the Pacific or merely likes a well-written true adventure story, this book is recommended.

**Never Say Die.* By Colonel Jack Hawkins, United States Marine Corps. Published by Dorrance & Company, 1715 Walnut St., Philadelphia 3, Pa., U.S.A. $3.00.

MORE OF CHURCHILL'S SPEECHES

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

Sir Winston Churchill's incomparable wartime speeches were long ago published in three volumes, and four volumes of his post-war speeches covering the years 1947 to 1952 have also appeared. Now — presumably on the theory that it is impossible to get too much of a good thing — we have been given a fifth volume* of the great man's post-war speeches, this time covering the years 1953 to 1959.

The title of this volume, *The Unwritten Alliance*, is Sir Winston's own phrase, taken from a speech he made to the English-Speaking Union in 1954. Like so many of his phrases, this one is both striking and just in its context. No one will deny that something very much like an unwritten alliance has in fact existed between the British Commonwealth and the United States during the troubled years since 1945

Whether or not the substance of the seventy speeches which appear in this book justify the title is another matter. Many of them deal with other, lesser subjects—domestic politics, agriculture, the building industry in the United Kingdom, or the adoption of a new army rifle.

The speeches themselves — it seems almost ungenerous to say so, but *Amicus Plato, magis amica veritas* — have little of the old Churchillian grandeur. However, when one considers that Sir Winston is now in his eighty-seventh year the wonder is not so much that he does not speak as well as formerly but rather that he speaks as well as he undoubtedly does.

Upon occasion, too, the ancient fire shoots forth. In 1958, for instance, on the occasion of his receiving the *Croix de la Libération* from General de Gaulle in Paris, Churchill began by saying:

"I am going to speak English today. I have often made speeches in French, but that was wartime, and I do not wish to subject you to the ordeals of darker days."

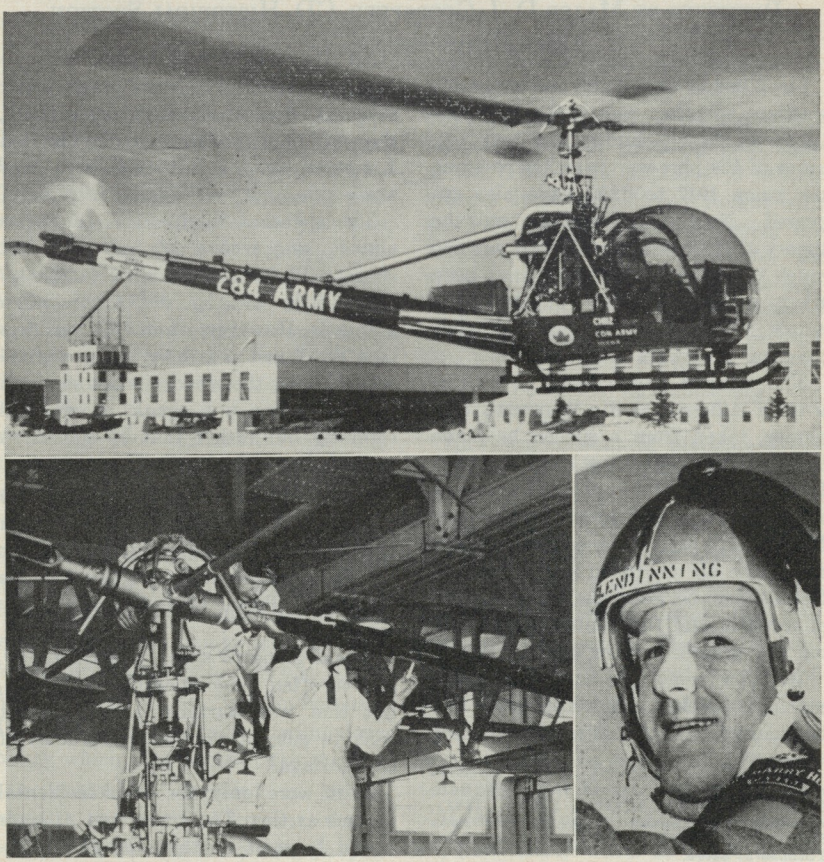
If it were only for such incidental charms as this, *The Unwritten Alliance* would be well worth reading.

*Winston S. Churchill, *The Unwritten Alliance: Speeches 1953 to 1959*, (ed. Randolph S. Churchill), (Cassell, London, 1961). Available in Canada from British Book Service (Canada) Ltd., 1068 Broadview Ave., Toronto 6. $8.00.

Self-made Villain

The Self-made Villain: *A biography of Trebitsch Lincoln* by David Lampe and Laszlo Szenasi. This is a sad little tale of an incompetent misfit with delusions of *grandeur*. Disinterring the ex-spy, ex-pastor, ex-MP and ex-journalist and holding his pathetic career up to close scrutiny would seem to be an exercise in brutality. Published by Cassell, London, and available in Canada from the British Book Service (Canada) Ltd., Kingswood House, 1068 Broadview Ave., Toronto 6, Ont. $5.25. —*H. F. W.*

Helicopters for Canadian Brigade



Canadian Army Photograph

The Canadian Army's first operational helicopters, nine CH-112 light utility aircraft (top), left for service with the Canadian Brigade in Germany early in March. They were dismantled (left) at the Canadian Joint Air Training Centre, Rivers, Man., and airlifted in three RCAF Hercules aircraft. Six will be employed on reconnaissance duties with the armoured regiment, under flight commander Captain Lorne Glendinning of Vancouver (right), one as an operational spare, and the other two for liaison duties.

A Letter to the Editor

Information Sought on Railway Corps

Editor,
Canadian Army Journal.

By way of introduction I wish to tell you that we receive the *Journal* here regularly and it is placed at the disposal of faculty and students.

I wonder if you can give me some help. I am toying with the idea of writing something about the Canadian Overseas Railway Construction Corps. I went to France with this outfit in 1915; the O.C. was Col. C. W. L. Ramsey.

However, although the Corps was mobilized and trained in Saint John, N.B., during the first months of 1915, I joined it only the day before it embarked. We went on board ship on Saturday and sailed on Monday, so I would like to get some facts about its organization and the first days of its training.

I am wondering if a letter in the *Journal* might bring results.—*Arthur J. Cotter, S. J., Librarian, Saint Mary's University, Halifax, Nova Scotia.*

* * *

(We have supplied Father Cotter with sources of information on this subject. However, readers having any facts which may help this correspondent in his research are invited to write direct to him.—*Editor).*

CAJ Cited as Reference

The following is reprinted from the Letters to the Editor Column in *The Ottawa Journal*:

Sirs:—Your readers who found Mr. James McCook's article entitled "Sharpshooting Librarian (in 1885)", published in the issue of Feb. 26, interesting will probably find another article dealing with the same historical events interesting and of historical value. I refer to "Near-Disaster at Cut Knife Hill, 1885", by Captain J. Mackay Hitsman, Historical Section, Army Headquarters, Ottawa, which appeared in the *Canadian Army Journal,* Volume XIII, No. 3, for July 1959. Readers of this second article will find it is illustrated by photographs, by a map of the battle area of Cut Knife Hill, and a panoramic view of the battlefield.—*J. A. E., 56 Sparks Street, Ottawa, March 11.*

Education

Education makes a people easy to lead, but difficult to drive; easy to govern, but impossible to enslave. — *Baron Brougham.*

CANADIAN ARMY ORDERS AND BRANCH INSTRUCTIONS

Listed below is a résumé of Canadian Army Orders and Branch Instructions for the information of military personnel. Details of these Orders and Instructions are available in all Army units. — Editor.

CAO 32-5

Marches and Calls

(Issued: 8 Jan 62)

This new order prescribes the policy governing authorization of marches and calls for corps, regiments and units of the Canadian Army. The titles and publishers of authorized marches are listed individually. The new pamphlet "Trumpet and Bugle Calls for the Canadian Army 1961" supersedes the pamphlet of the same title issued in 1950.

CAO 55-1

Command of the Army in Canada

(Issued: 19 Mar 62)

This amendment brings the CAO up to date by clearly indicating the responsibility for training of Category units and incorporating recent unit changes, including recently formed units, showing the redesignation of certain units, and deleting disbanded and dormantized units.

CAO 62-9

Courts Martial — Minutes of Proceedings

(Issued: 5 Mar 62)

This amendment provides for changes in the number of copies of the minutes of proceedings of Courts Martial and in their distribution. They will be produced in four copies when an accused is found guilty and in two copies in cases of acquittal on all charges. In either instance, one copy will be retained by the convening authority.

CAO 63-5

Summary Investigations or Boards of Inquiry — Injuries or Death

(Issued: 19 Mar 62)

This amendment to Annex B changes the occasions on which a Report on Injuries is required.

CAO 85-1

Duties of Staff Branches at Army Headquarters

(Issued: 5 Feb 62)

This revision includes new duties in national survival and combat development, and incorporates other minor changes and additions to clarify and amplify the order.

CAO 91-1

Education of Children — Canada

(Issued: 19 Mar 62)

New Orders in Council governing the education of dependent children in Canada necessitated revision of CAO 91-1. The Orders authorized the children of foreign government personnel, who reside at or near a defence establishment, to attend school at public expense. They also raised the upper age limits for free attendance at school to those higher limits prescribed by certain provinces. The new CAO also includes changes in the sequence and wording of paragraphs.

CAO 121-33
Deterioration of Matériel in Stock
(Issued: 19 Feb 62)

This new order provides instructions on the deletion from stock records of matériel which has deteriorated while in stock.

CAO 162-1
Leave and Pass
(Issued: 11 Dec 61)

This amendment authorizes the CGS to award an amount of Special Leave equal to the amount of leave surrendered by members of CA(R) who transfer to the Reserves and accept employment under CAOs 94-1 or 94-2. The need for individual application to the Minister is now eliminated.

CAO 212-10
Attendance Record—Local Training
(Issued: 8 Jan 62)

This amendment provides the recording of the attendance of officer cadets of the Canadian Officers' Training Corps at the rate of ¼ of a day for each hour of training time completed.

CAO 212-22
Marriage Allowance
and Supporting Assignments
(Issued: 5 Feb 62)

This revision establishes standard rates of minimum supporting assignments for members, regardless of where serving, who are in receipt of marriage allowance and who become entitled to separated family's allowance; i.e. $80.00 in the case of an officer or $60.00 in the case of a man, plus the applicable amount of separated family's allowance. In addition, the term "authorized" as used in certain parts of the order in relation to separated family's allowance has been changed by this revision to "entitled", because providing certain conditions contained in QR(Army) 205.24 are met, a member legally becomes entitled to the allowance.

CAO 212-40
Band Grants
(Issued: 5 Feb 62)

This revision clarifies the fact that expenditures from annual band grants for Canadian Army (Regular) and (Militia) units do not include expenditures for the maintenance of non-public band property. It also amplifies certain entitlements regarding purchase of music, minor repairs, maintenance of instruments, and other miscellaneous expenses.

CAO 212-68
Contingency and Clerical
Assistance Allowances
(Issued: 19 Mar 62)

This amendment embodies recent amendments to QR (Army) 210.42 concerning the procedure under which entitlement to Contingency Allowance for units of the Canadian Army (Militia) is determined.

CAO 270-8
Selection of Parachutists
(Issued: 19 Mar 62)

This amendment brings up to date the current reference to physical requirements required by applicants for attendance on the basic airborne course.

AGI 61/5
Administrative Policy — Military
Components, Canadian Delegation,
Indo-China
(Issued: 22 May 61)

This instruction sets out the "A" policy and procedure governing mem-

bers of the CA(R) selected to serve with the Military Components, Canadian Delegation, Indo-China.

AGI 61/6
45-Month Subsidization Plan — Medical Undergraduates
(Issued: 12 Jun 61)

This revised AGI incorporates the regulations now authorized for the 45 Month Subsidization Plan for Medical Undergraduates and prescribes the Army administrative requirements and procedures.

AGI 61/7
Dental Officer Subsidization Plan
(Issued: 26 Sep 61)

This new AGI replaces all previous dental officer subsidization plans and provides for subsidization of dental undergraduates for a maximum period of 45 months.

AGI 61/8
Canadian Armed Forces Training Team — Ghana
(Issued: 16 Oct 61)

The provision of this AGI will explain the "A" policy and procedures governing members of the Canadian Army selected to serve with the CAFTTG.

AGI 61/9
Civilian Career Planning Assistance
(Issued: 8 Nov 61)

This AGI is to inform CA(R) officers and men who are within five years of retirement by age in rank or who are to be compulsorily released on medical grounds about Civilian Career Planning Assistance available from personnel officers.

AGI 61/10
Extension of Service — CA(R) Lieutenants and Captains
(Issued: 8 Nov 61)

This AGI provides for the retention of CA(R) lieutenants and captains for five years past the compulsory release age for their rank.

The Defences of Peace

Since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed.—*Constitution of UNESCO.*

Armoured Reconnaissance Carrier

The United States Army has issued orders for quantity production of the new *T114* lightweight armoured vehicle. Designed for use as a command vehicle or for armoured reconnaissance roles, the *T114* weighs but 13,500 pounds combat loaded, is air transportable, air droppable, and amphibious. Light weight is achieved by extensive use of aluminum.

The initial order for 1215 vehicles is valued at more than $9,000,000. A separate contract authorizes the expenditure of nearly $6,000,000 on production facilities.

The new full-tracked vehicle carries a crew of three, but space is provided for a fourth man if desired. Test models were powered by a 175-horsepower gasoline engine and carried a turret-mounted 7.62 millimetre machine-gun.—*From a news report in the January 1962 issue of the "Military Review" (U.S.).*

THE ROYAL REGIMENT OF CANADIAN ARTILLERY

FIREPOWER: HONEST JOHN ROCKET

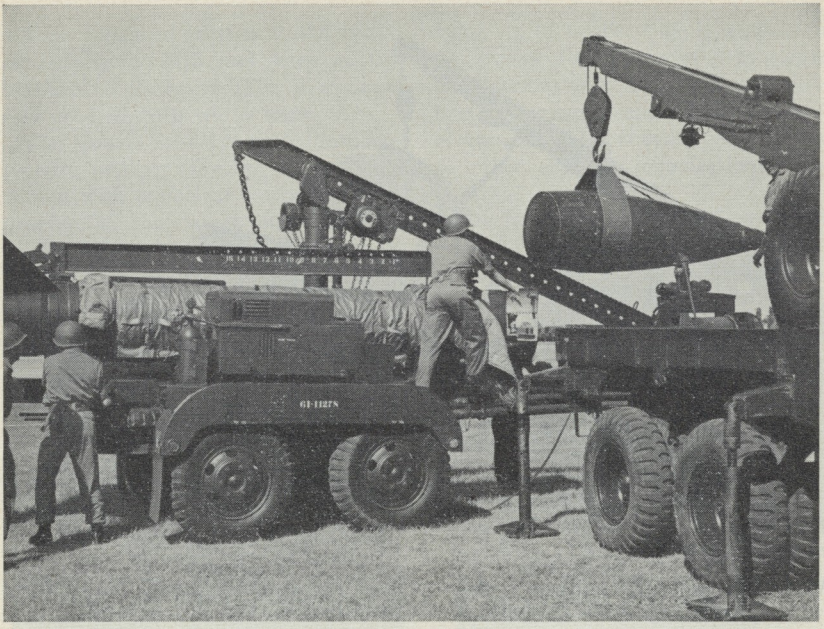
WRITTEN FOR THE *Journal* BY THE DIRECTORATE OF ARTILLERY, ARMY HEADQUARTERS, OTTAWA

As most readers will know, 1 SSM (Surface-to-Surface Missile) Battery armed with the Honest John *rocket is now serving with the 4th Canadian Infantry Brigade in Germany.*—Editor.

Success on the modern battlefield demands that any field force must have a high degree of mobility and devastating firepower. Until the 762-mm. rocket equipment (nicknamed by the U.S. Army *Honest John*) became a Canadian artillery weapon in 1961, there was a definite gap in the firepower available to Canadian ground forces; in fact it can be said that from the end of the Second World War up until 1961, only marginal improvements had been made in this respect. The adoption of the *Honest John* by the

Canadian Army Photograph

This Wind Measuring Set is used to measure the direction and speed of surface winds before firing the rocket. The wind speed transmitter attached to the top of the telescopic mast is elevated to a height of 50 feet, and the wind data is transmitted electrically to the firing pit.



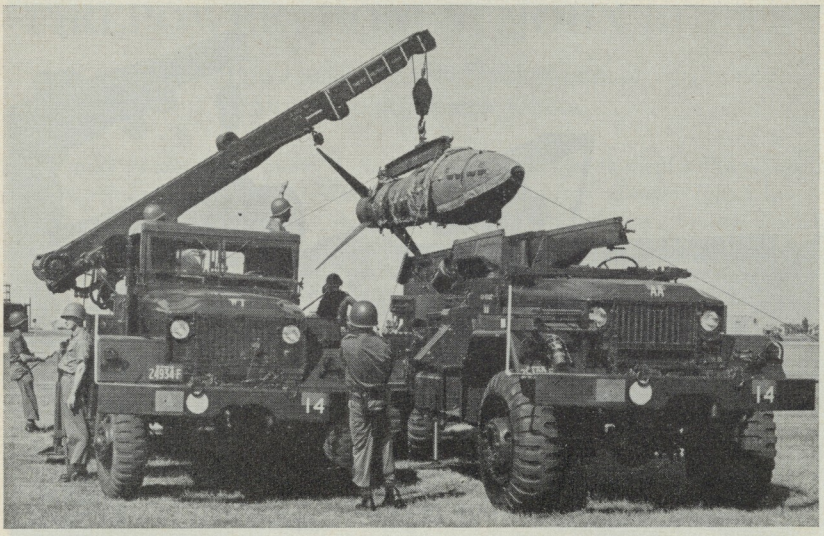
Canadian Army Photograph

The warhead being "mated" to the *Honest John* rocket motor. The motor is covered with its insulating blankets and is resting on its travelling trailer, or handling unit. The chain hoist mounted on the handling unit provides an alternative method of transferring the rocket to the launcher when a crane is not available.

Canadian Army has filled the gap and we now have a simple, medium range, fast moving, hard hitting weapon capable of firing either nuclear or conventional types of warhead.

The *Honest John* is a free flight solid propellant rocket, fired from a rail type launcher against ground targets. Being a free flight rocket, there is no way to alter the trajectory after the rocket is fired; therefore, there is no danger of electronic interference during the supersonic flight to the target. Since there is no requirement for complicated guidance equipment, the system is rugged and reliable, having an all-weather firing capability. The solid propellant, which requires little more than temperature conditioning and basic care in handling, provides thrust during the initial few seconds of flight. From this point on, with the completion of the powered flight, the rocket follows a ballistic trajectory comparable to that of an ordinary artillery shell.

The *Honest John* rocket consists of three major portions — the warhead section, the rocket motor and the fin assembly. The warhead section carries



Canadian Army Photograph

An *Honest John* rocket being transferred from the travelling trailer, or handling unit, to the launcher.

the payload — either nuclear or conventional — the rocket motor produces the initial thrust and the fin assembly gives stability. Four small spin rockets are located at the forward end of the main rocket motor. These are set at right angles to the main axis of the rocket and are ignited just after the rocket leaves the launcher. These four spin rockets start the rocket rotating and this together with the design of the fins ensures stable flight for the whole trajectory. The warhead is activated at the appropriate time by a time-fuze mechanism. The launcher at present in use is truck-mounted and the vehicle engine provides power for elevating the launcher rail. The final laying of the launcher is done with handwheels and sighting equipment almost identical to that used on artillery guns and howitzers.

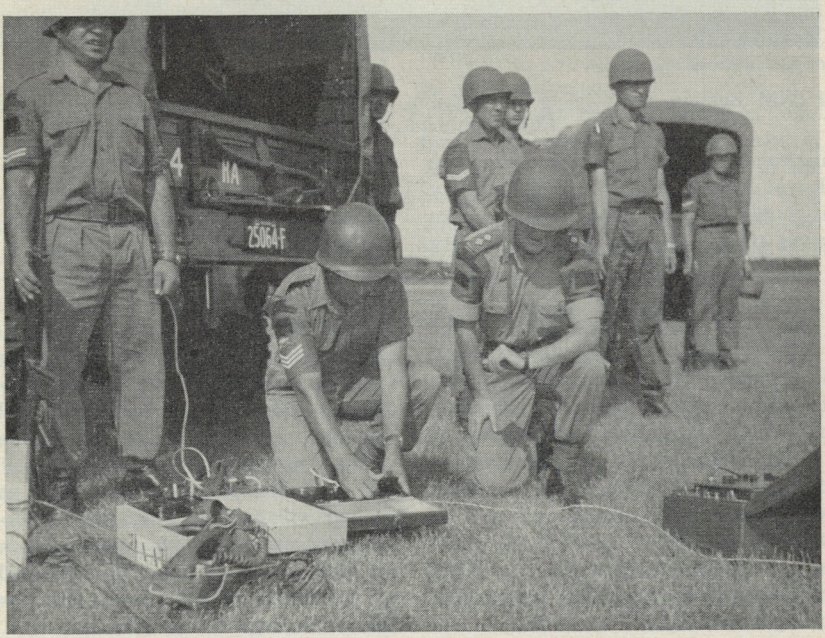
Free flight rockets of this size are very susceptible to the surface winds at the time of firing. To allow for this, equipment is provided to accompany each launcher, which allows the officer in charge to correct for surface wind speed and direction right up to the time of firing. The characteristic blast and flash created by firing the rocket and the resulting smoke trail in the sky necessitates "shoot and scoot" tactics. The mobility of the launcher is such that it can move rapidly from each position after firing in order to avoid enemy counter-bombardment.

Historically, rockets have been used as artillery weapons for many years. A rocket troop of 12-pounder rockets

did distinguished service at the battle of *Leipzig* in 1813 and later at the battle of *Waterloo* in 1815. They were also used in both world wars.

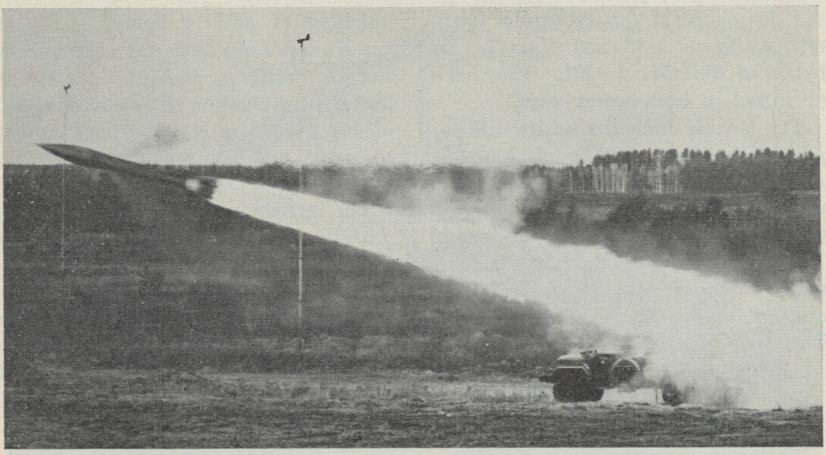
The *Honest John* fits neatly into the present artillery family of weapons. Armed with a nuclear warhead it can provide at the target end the destructive effect of thousands of tons of TNT. Thus it provides the Artillery with a weapon capable of deep penetration and overwhelming firepower. The well-tried principles relating to command and control and to tactical handling of artillery apply equally to the *Honest John* batteries as to gun or howitzer batteries, and the *Honest John* battery organization of two troops each of two launchers is really very similar to other artillery organizations.

The introduction of the *Honest John* into the artillery is but one example of the modernization of the Army. The ever changing threat and the intensity of the cold war will create demands on the Canadian Army which can only be met by the acquisition of



Canadian Army Photograph

The "Count Down": This photograph shows the last few seconds of the count down preceding the firing of the rocket. The Launcher Position Officer (looking at his watch) has the wind-measuring set indicator on his left and the Launcher Detachment Commander (sergeant) on his right. The latter has his thumb on the firing button of the firing panel box. This action would normally take place in a firing pit about 100 yards from the launcher.



Canadian Army Photograph

1 SSM Battery RCA firing the 762-mm. M50 *(Honest John)* rocket at Camp Petawawa, Ont., last October.

improved items of equipment. The Royal Regiment of Canadian Artillery is confident that the *Honest John* gives them a greatly enhanced ability to carry out one aspect of their traditional role of giving fire support to the armour and infantry and of winning battles.

Radiopharmacy Training

The [U.S.] Army Medical Service is lending increased emphasis to the training of commissioned pharmacy officers in the field of radiopharmacy.

The increased use of radiopharmaceutical preparations in the diagnosis and treatment of disease as well as their use in medical research has created a requirement for the capability of local formulation of radioactive dosage forms.

The projected operation of atomic reactors at Army Medical Service research facilities and the increased use of radiochemicals in the diagnosis and treatment of disease has made this instruction necessary. At present, a limited number of officers are being trained in radiopharmaceutical techniques as part of the Army Medical Service Graduate training programme in hospital pharmacy.

It is contemplated that officers so trained will also be given the opportunity to attend courses in radioactive material safety and handling conducted by the Public Health Service and the Atomic Energy Commission.

Officers selected for such education spend one year of academic study at leading civilian universities throughout the country and an additional year in a hospital pharmacy resident status.—*Army-Navy-Air Force Journal (U.S.).*

ROCKETS: YESTERDAY, TODAY AND TOMORROW

"Boanerges" in The Journal of the Royal Artillery (Britain)

A thing that is out of fashion one day is often very fashionable later on. In the case of rockets, the cycle has been roughly 150 years; but, from being only just acceptable then, they are now a "must" and any nation that does not possess some form of rocket is indeed a poor relation.

This article is in no way technical; it touches on the early uses of rockets in the army (they are surprisingly up-to-date), deals briefly with present-day missiles and then makes suggestions about the future.

The Past: 1805-1816

In 1805 one William Congreve, who had been experimenting with rockets for some years, at least was given official encouragement in his work. At that time he was engaged primarily in developing rockets for use at sea as the ships of that time were very suitable targets for this type of weapon. However, he turned his attention to land warfare and quickly realized that he had a most useful weapon in the rocket and one "which does not require ordnance to project it, and which, where apparatus is required, admits of that apparatus being of the most simple and portable kind".[1]

By September 1811 Congreve had progressed so far that a "Detachment commanded by Captain Richard Bogue in the Brigade of Royal Horse Artillery was ordered by the Master-General to carry on Experiments under the Direction of Lieut-Colonel Congreve". In May 1813 a Select Committee of Artillery Officers reported that "they were unable to offer any opinion as to their (the Congreve rockets) utility, and recommended that a trial should be made with them upon Actual Service". As a result "The Rocket Brigade", as it was now called, embarked in June 1813 for service with the Army of the North commanded by Charles Jean Bernadotte, then Crown Prince of Sweden, sometime Marshal of France under Napoleon.

The Rocket Brigade landed at Wismar in Northern Germany early in August. At first they remained in the north but on 7 September, Bogue, with half the Brigade, marched to join the main army; Lieutenant Strangways was left in command of the remainder of the Brigade with orders to follow Bogue on the 27th. Before the Brigade was re-united Congreve's rockets had been used in action for the first time.

The Battle of Gohrde was fought on 16th September 1813 between Walmoden's Corps of the Army of the North and a detachment of a French army under Davout based on Hamburg. The rockets under Strangways were used twice, once at too long a range when they were ineffective and once when their "commandant had taken up his ground close under the fire of the enemy's infantry".[2] The actual rockets themselves were most unreliable but those that did score hits created a great impression on the French.

After this battle Strangways rejoined Bogue and the Rocket Brigade was united by 30th September. Meanwhile events were moving towards the fateful battle of Leipzig. Napoleon decided to concentrate his army at that town and by 14th October he had there nearly 200,000 men; thus was precipitated "The Battle of the Nations".

Napoleon was facing three Allied armies, Schwartzenburg with the Army of Bohemia, the largest allied army, coming from the south and east, the Army of the North coming from the northeast and Blucher with his Prussians attacking from the north. The battle began in the south and east on 16th October but it was the 18th before the Army of the North began to take part. That afternoon Bogue and the Rocket Brigade, with a squadron of Dragoons as escort, were with the leading cavalry; the village of Paunsdorf, some three miles from Leipzig, was held by five French battalions. Bogue brought the Brigade into action at short range and their fire was so effective that the French began to retire, whereupon Bogue and his escort charged the French. A further rocket attack was made, after which resistance ceased and some 2500 French surrendered. The Brigade were then ordered to move and as this was going on "...Captain Bogue, alike an ornament to his profession and a loss to his Friends, received a Wound in the Head which has deprived his Country of his Services."[3]

The Brigade, now under the command of Strangways, took part in the successful attack on the next village but were withdrawn that night. Leipzig surrendered the next day and Napoleon had lost the Battle of the Nations together with some 60,000 men. Colonel E.C. Whinyates, who later commanded the Rocket Brigade, was an eye-witness of the battle at Paunsdorf and wrote: "I felt great satisfaction at witnessing, during this day, a species of improved warfare, the effects of which were truly astonishing and produced an impression upon the enemy of something supernatural".[4] The Rocket Brigade were the only British unit to fight at Leipzig and on 16th May 1815 the following Order was issued: "His Royal Highness the Prince Regent in the name and on behalf of His Majesty has been pleased to command that the Rocket Troop of Royal Artillery which was present at the Battle of Leipzic [*sic*] be permitted to bear the word Leipzic on their appointments in commemoration of their Services on that occasion". The Brigade also received the official thanks of the Crown Prince and a number of Swedish decorations were awarded to those who fought at Leipzig.

It may perhaps be of interest to note that the Rocket Troop of today still maintains its connection with Sweden. The background for the Troop Crest is in the Swedish colours; "Leipzic" goes below the crest. In 1954 the then Battery Commander, Major (now Lt.-Col.) J.A.T. Sharp, invited the Swedish Consul-General in Hamburg to attend the Leipzig Day Dinner; Herr Ekblad accepted the invitation and has been present at every Dinner except the last. In 1957 the link was further strengthened by the attachment to the Troop of Captain Scheutz, a Battery Commander in the Royal Wendes Artillery Regiment;

one of this Regiment's Battle Honours is "Leipzic" and Captain Scheutz came down from Sweden to be present at the Leipzig Dinner in October 1957.

While Bogue's men were fighting in Germany another detachment under Captain Lane were training in England. These men embarked in September 1813 and, after various changes of plan, finally arrived at Passages in Northern Spain for service under Lord Wellington who "thought very cheaply of rockets". After further training and a not very successful demonstration, Lane's detachment were used in the attack on Bayonne in February 1814. They were fired first at some French ships which tried to prevent the crossing of the Adour, the ships retired and the army started to cross the river. At dusk the French counter-attacked but Lane's men, who were posted in front of the infantry, fired a few rockets at them, which caused the French to fly in panic. Sir John Fortescue in his History of the British Army says: "Altogether this was a great day for the Rocket Battery, and Hope[5] was fain to admit that, when the range was short, rockets were effective on enclosed ground or on water, though very uncertain when used with any elevation".

Early in April Lane's detachment was again in action, this time at the attack on Toulouse. As before they were used against a French counterattack and "their noise and dreaful aspect" threw the French into confusion.

Waterloo saw the last of rockets in Europe for more than 100 years. This time it was the original Rocket Troop, now commanded by Captain E.C. Whinyates, who were in action. The Troop was armed with both guns and rockets and used both; the rockets were particularly useful on one occasion when the guns could not be brought forward but rockets could, and were used to hold up a column attacking La Haye Sainte.

In August 1816, although there was peace in Europe, a detachment from the Rocket Troop was in action but this time in a naval action, the bombardment of Algiers. For this operation, which was undertaken to destroy the pirate fleet and stronghold of the Bey of Algiers, eight small "rocket flats" were used; they were carried or towed by the main ships of the fleet. The Bey having rejected the terms sent to him, the bombardment began. In spite of the fact that Algiers was a most strongly fortified and garrisoned town the attack was completely successful. The rocket flats were used to fire at ships in the harbour and soon set most of them alight. Next day the surrender terms were accepted; the Rocket Troop detachment returned to England in September.

Shortly after this the Rocket Troop handed over their remaining rockets and reverted to guns. From then rockets as a weapon went into eclipse. They were not used to any extent until World War II.

1939-1945

The first real use the army made of rockets was as an anti-aircraft weapon. Many people will remember the "Z" Batteries which were established near most of the big cities, the most famous being the one in Hyde Park. No one would claim that the rockets employed were precision weapons, but it is known that their effect on the Ger-

man airmen, who had to fly through them, was considerable.

Those who took part in the Normandy landings and the fighting at Walcheren will remember the rocket craft. These were specially fitted craft which normally fired two salvoes of rockets from multiple projectors. They were designed to provide smothering fire on the beach defences; again not a precision weapon but an effective one.

It was about this time that the bombardment of London by *V. 2* began. This was a pure rocket and in many ways it marked a turning point in war, for it introduced what is sometimes known as the Missile Age. The *V. 2* had limitations and it was not by any standards either accurate or reliable, but it proved beyond doubt that the long-range bombardment of towns and similar large targets was a feasible proposition.

The three uses of rockets already mentioned were of value but none of them could be said to have been in any way devastating or decisive. It is probable that the most effective use made of rockets in the last war was as an air-to-ground weapon. The destruction caused by the rocket firing Typhoons in the Falaise Pocket might perhaps be said to have been the peak of their effectiveness, but, taken overall, the airborne rocket was a devastating weapon; it undoubtedly greatly influenced the course of the last year of the war. It must be remembered that aircraft can normally be used for this type of fighting only when the air battle has been won.

Rockets were used by both Germans and Russians, not as precision weapons but as a means of bringing a heavy concentration of fire on to a comparatively large area.

Let us sum up the past by saying that for ground-to-ground use the rocket is an excellent area weapon; for air-to-ground use it was, in 1944-45, an accurate and very effective weapon; it was the German *V. 2* however which pointed the way to the future.

The Present

The British Army lags behind the American, Russian and French armies in its employment of rockets and missiles. Considerable publicity has been given to the forming of *Corporal* regiments but this is an American production and it is a somewhat complicated missile. So far no mention has been made of any simple, short-range rocket or missile comparable with the American *Honest John* or the Russian *T. 5* and *T. 6*. It is true that there are various anti-tank rockets but these are designed for ranges normally less than 1000 yards.

As the *Corporal* is at present the only rocket in use, it might perhaps be useful to have a quick look at those of its characteristics which are not covered by security blankets. By artillery standards, it is a long-range weapon with a maximum range of about 100 miles and a minimum of 35 miles.[6] Its warhead could be either H.E. or atomic, but it is highly improbable that an expensive weapon of this type would ever be fixed without an atomic warhead. The Corporal is classified as a guided weapon: that pre-supposes some form of radar at the firing end and a complicated guidance system in the rocket itself. All these will require careful and accurate checking before the missile can be fuelled and prepared

for firing. The *Corporal* is therefore not a weapon that can be used in a hurry: its primary role would appear to be interdiction.

Apart from the *Corporal,* the artillery of the British Army of today is almost exactly as it was when the 1939-45 war ended; that is to say it is conventional in every respect. The weapons themselves, the 25-pounder, the 5.5 in. and so on, are all excellent but they are in many ways uneconomical. A gun is a fairly heavy piece of equipment which has either to be towed or mounted on a heavy-tracked chassis; the shell the gun fires is, from the pure killing effect, most inefficient as it has to be strong enough to stand the shock or discharge. The gun is, however, a relatively accurate weapon, a factor which is of course of great importance when close support of infantry is considered.

To sum up, the Royal Regiment of today has one complicated guided weapon with an atomic capability; all its other weapons are accurate but relatively inefficient conventional guns.

The Future

In an article in the *Journal* of October 1956 Major J.H.P. Curtis, an Infantryman, suggested that the medium gun firing an atomic shell would become the principal weapon on the battlefield, and that armour and infantry would be the supporting arms. Another article in the *Journal* of January 1958 [7] says that conventional field artillery is still very necessary although a new gun is required. It is suggested that the answer to many of the problems of the future is the rocket.

The rocket of yesterday was a relatively inaccurate weapon, but there has been tremendous progress in the development of fuels and motors; the *Honest John,* a free-flight missile, compares favourably for accuracy with guns of equivalent range and its H.E. warhead, let alone its atomic one, packs far more punch than a shell of the same calibre. Solid-fuel rocket are safe to handle, they can be quickly and easily loaded and they do not need a gun with a complicated recoil system and a heavy barrel to fire them. It seems unlikely, however, that an indirect fire rocket will be produced in the near future which will provide a battalion with the close and intimate support given now by the field-gun. Such support will be needed as long as there are infantry for dealing with patrols, infiltration and so on.

If we as a Regiment are to maintain and strengthen our position in the Army of today and on the battlefield of tomorrow we must surely move with the times and that means the rocket. Let us therefore ask for the following:

Field Artillery: A gun to continue the close support of infantry. The 25-pounder is adequate, in the light of expenditure, but it must have a very high proportion of V.T. fuzed ammunition.

Medium Rocket: A solid-fuel rocket with a range of at least 35,000 yards and a warhead of at least 100 lbs. It is for firing H.E. and not atomics; it should be self-propelled and mounted on some simple unarmoured vehicle with a reasonable cross-country performance: the essence of the thing being a good range, a good result at the other end and above all a weapon "which does not require ordnance to project it, and

which, where appartus is required, admits of that apparatus being of the most simple and portable kind".

Heavy Rocket: This should be on the lines of the *Honest John,* possibly a cross between it and the *Little John.* It must have an atomic capability but it must be reasonably quick to get into action and fire so that opportunity targets of a size to merit atomic warheads can be engaged.

Super-heavy Rocket: A weapon similar to the *Corporal,* but preferably slightly less cumbersome, designed entirely for atomic warfare.

The Regiment thus equipped would be capable of taking part in both limited and total war, it would be more mobile, hard-hitting and less expensive to maintain. Since the days of Napoleon the field-gun manned by artillerymen has been, if not the decisive then one of the most decisive weapons of war. Let our loyalty to the gun not tie us too strongly to it: the rocket is the weapon of tomorrow; it is also, for us, a weapon we used nearly 150 years ago. Let us accept it as such and thus regain our rightful place as a major and decisive arm.

NOTES

1. *The Details of the Rocket System* by Col. William Congreve, published 1814.

2. Despatch dated 20 September 1813 from Lt.-Gen. Walmaden to Earl Bathurst, Downing Street.

3. Despatch dated Leipzig 19 Oct. 1813 from Lt.-Gen. Sir Charles Stewart to Viscount Castlereagh.

4. Printed in *Proceedings* R.A. Institution, Vol. XXIV, 1897.

5. Sir John Hope commanding the force attacking Bayonne.

6. RUSI Journal, Vol. CII, p. 508.

7. *Field Artillery in Atomic Warfare,* Colonel M. St. J. Oswald.

Canadian Gunner Ceases Publication

The Canadian Gunner, oldest and largest Canadian Army newspaper which had been published weekly at Shilo, Man., since 1949, went to press for the last time on 25 January 1962. Steadily rising costs and declining revenue were given as the reasons for the closing down after 15 years of publication.

Since 31 January 1947 when the newspaper was first published as *The Bulletin,* a mimeographed Camp Shilo news sheet, later as *The Shilo Observer,* and finally, in 1949, as *The Canadian Gunner,* it continued to report weekly on the varied activities of The Royal Regiment of Canadian Artillery, both Regular and Militia. It carried news from units in Canada and overseas, and provided a news service for the Shilo community where the Royal Canadian School of Artillery is situated.

In 1959 the *Gunner* joined the 70-member Manitoba Weekly Newspapers Association, becoming the first Army newspaper authorized to affiliate with such a group.

Colonel E. M. D. Leslie, DSO, CD, Commandant of the Royal Canadian School of Artillery, was Editor-in-Chief and Captain D.T. Campbell was Editor when the newspaper ceased publication. Lieut. J. H. Fritch was Circulation Manager. — *Editor, Canadian Army Journal.*

THE ROYAL CANADIAN CORPS OF SIGNALS

Contributions Sought

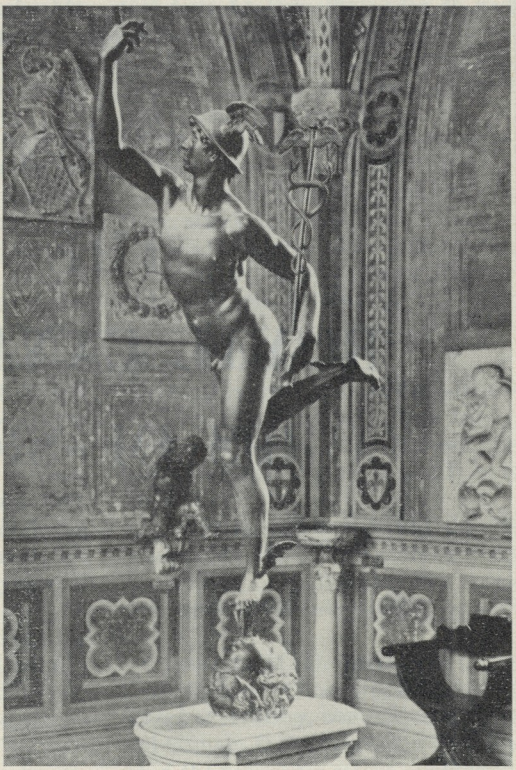
THE SIGNALS WAR MEMORIAL

By

LIEUTENANT F. W. PRATT, CD, RC SIGS,
ROYAL CANADIAN SCHOOL OF SIGNALS, KINGSTON, ONTARIO

Plans have been completed for a Royal Canadian Corps of Signals War Memorial to be erected this summer at Vimy Barracks near Kingston. The proposed memorial will take the form of a fitting monument at the entrance to the camp which has been the home of Signals for the past twenty-five years. It is to permanently honour the memory of the hundreds of members of the Corps who gave their lives for Canada in two world wars, and in more recent years during United Nations operations abroad.

A life-sized bronze statue of Mercury rising above a large pylon of Queenston limestone will be the central feature, situated on a grassed island at the main entrance to Vimy Barracks from No. 2 Highway. It will be flanked on either side by low curved stone walls, the whole being enhanced by selected trees, bushes, flowers and appropriate lighting. Bronze letters in English and French on the stone walls will identify Vimy Barracks to passing travellers. A bronze plaque on the face of the central pylon will bear



Giovanni di Bologna's famous statue of Mercury in the Italian National Museum, Florence, a replica of which is to be the central feature of the Signals Memorial.

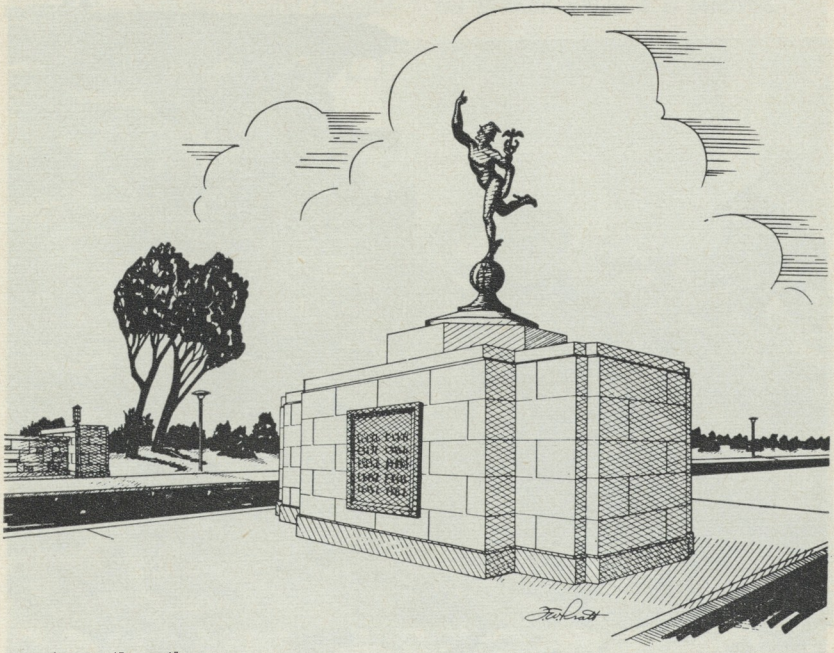
this simple legend, surmounted by the Corps badge:

"TO THOSE IN THE ROYAL CANADIAN CORPS OF SIGNALS WHO GAVE THEIR LIVES FOR THEIR COUNTRY".

"AUX MEMBRES DU CORPS DES TRANSMISSIONS ROYAL CANADIEN QUI ONT DONNE LEUR VIE POUR LEUR PAYS".

The bronze figure will be an exact replica of Giovanni di Bologna's famed statue of Mercury in the *Museo Nazionale,* Florence. It will be cast by Florentine craftsmen especially for the Royal Canadian Signals and shipped to Canada in early summer. This same figure of Mercury, more familiarly known as "Jimmy", is a traditional feature of the cap badges and buttons of signal corps throughout the British Commonwealth.

The start of construction this spring will be the result of the concerted efforts of a Corps Memorial Committee formed in 1960 with Maj.-Gen. A. E. Wrinch, CBE, CD, Major-General Survival at Army Headquarters, as chairman. During the fourteen years following the Second World War there



Drawing by the author

The proposed Royal Canadian Signals War Memorial to be erected at the entrance to Vimy Barracks, Kingston.

was much thought and discussion about ways and means of commemorating those in Signals who had given their lives for their country, but little was accomplished. In 1959 the Canadian Signals Association and the Corps Committee determined to proceed with this project with new vigour in order that it might be completed without further delay. The design was selected the following year from several prepared by the Royal Canadian School of Signals, and the memorial committee was organized to carry out detailed planning and costing and generally supervise the project. Much technical assistance and advice was given by the Directorate of Works at Army Headquarters and by other interested Departments, including Public Works and Veterans Affairs.

Simultaneously with the construction of the memorial by members and former members of Signals, the Department of National Defence plans to proceed with certain other complementary improvements to the camp entrance. These will include a small gatehouse some distance behind the monument and an extension of the present dual roadway farther into camp. Plans also call for moving a 60-foot flag staff

Canadian Army Photograph

Signals linemen in Flanders had their lighter moments, but all did not come back.

(erected in front of the Forde Building in commemoration of the Royal Visit of 1939) to the island behind the gatehouse.

The interest being displayed by serving and former members of the Corps indicates a widespread desire to assist in financing the Corps Memorial. It is estimated that the cost of the purely memorial aspects of the entrance to be raised by the Corps itself by 1 May 1962 will be approximately $20,000. The Royal Canadian Signals War Memorial Trust has been established to receive and administer contributions.

Lt.-Gen. S. F. Clark, CBE, CD, chairman of the National Capital Commission, Maj.-Gen. Wrinch and Brig. A.W. Beament, CBE, VD, CD, QC, have been appointed trustees. All are former Signals Officers.

A ceremonial unveiling and dedication is to take place after all the work has been completed, possibly in conjunction with Signals' forthcoming Diamond Jubilee.

Contributions should be made payable to The Royal Canadian Signals War Memorial Trust and forwarded to the Director of Signals, Army Headquarters, Ottawa, Ontario. The Trustees will issue an official receipt for all contributions made to the Trust. This receipt will be applicable to the income tax year in which it is received.

Canadian Army Photograph

Canadian signalmen installing a cable overseas during the Second World War. The proposed Signals War Memorial at Kingston, Ontario, will be dedicated to men such as these who died while wearing the Signals cap badge.

LIGHT BEAMS FOR SIGNALS

FROM THE ARMY-NAVY-AIR FORCE JOURNAL (U.S.)

Use of light — an ancient method of signalling — is undergoing a rebirth as a communications medium through use of a pencil-thin beam emitted by a device called the LASER. The Office of the Chief Signal Officer [U.S. Army] says that this light beam can carry messages, much like a radio wave does, and theoretically it has 10,000 times the capacity of the best radio link. One such light beam could carry more communications channels than all the nation's long-distance telephone lines combined.

Because of this great communications potential, the LASER (short for Light Amplification by Stimulated Emission of Radiation) is under intense study at the Army Signal Research and Development Laboratory, Ft. Monmouth, N.J. From some points of view it is considered as important an advance as the development of microwaves for communications during World War II, which also increased previous message-handling capability 10,000-fold, according to the Signal Corps.

The same type of LASER beam may also provide a means to improve the precision of future defence radar. One important characteristic of LASER light is that it is "coherent" — that is, the light waves are in step with each other, like soldiers marching in cadence. Light from an ordinary source, such as the sun or an incandescent lamp, is "incoherent" with its light waves radiating in an unpredictable pattern, much like a busy crowd at rush hour.

The Signal Corps announcement continued:

"Since coherent light waves proceed in strict formation, they closely obey the ideal laws of optics. It has been calculated that a LASER light beam a half-inch wide, when properly focused, will spread less than two feet in a mile. Sunlight focused the same way would disperse as much as 100 yards.

"LASER also produces for the first time light that is so orderly it can be treated like a radio beam. By use of advanced techniques now being explored, coherent light waves could be modified so that each wave carries a small amount of communications information. Since there are about 100 trillion such waves generated per second, an immense message-carrying capability is available. Much research is still needed to harness this great communications potential. In addition, LASER light is obstructed by fog, rain and other atmospheric conditions, and one way to overcome this might be to beam the light through hollow evacuated pipes for long-distance ground communications links.

"Another important characteristic of LASER light is its very sharply defined colour, or wavelength. At its particular point on the spectrum it is extremely intense — far brighter than the sun. In fact, it is dangerous to look right at the beam, for extensive damage could result to the eye, even at great distances.

(Continued on page 89)

COMMONWEALTH TELEPHONE LINK

In order to strengthen the trans-Atlantic telephone cable link, the British and Canadian Governments agreed at a meeting held in Ottawa in April 1957 to lay a second trans-Atlantic telephone cable linking Scotland and Newfoundland at a cost of about £8.5 million [approximately $25,330,000], to be shared between the two countries. This cable (known as CANTAT) was inaugurated by a conversation between Her Majesty the Queen and the Prime Minister of Canada on 19 December 1961.

The 1957 decision was followed by agreement in principle at the 1958 Commonwealth Trade and Economic Conference in Montreal to construct a coaxial telephone cable system around the world, covering a distance of about 30,000 miles and eventually linking all the independant countries of the Commonwealth. CANTAT is the first ocean link in this round-the-world system.

The complete project presents many technical and financial problems. It is likely to take some ten years to complete, and to cost about £88 million. The British share of the responsibility for financing, laying and maintaining the system is being carried by Cable and Wireless Ltd., working in partnership with the United Kingdom Post Office, which will be mainly responsible for the design and engineering of the cables. CANTAT is a single lightweight cable of new British design, developed specially for use with rigid, two-way repeaters, also designed in Britain, fitted at intervals of about 20 miles. The cable provides 60 two-way circuits, compared with the original 36 in TAT 1. The submarine section is 2000 nautical miles long.

The second major ocean link in the system will be across the Pacific Ocean, and will be one of the biggest telecommunications projects ever undertaken. The cable (COMPAC) will be more than 8000 nautical miles long and will have more than 300 submerged two-way repeaters, one about every 27 miles, both cable and repeaters being of British design as in CANTAT. In places, cables and repeaters will be laid at depths of nearly four miles. The cable will have capacity for at least 80 simultaneous conversations and any one of the telephone circuits can be used to provide about 24 telegraph channels. It is hoped to complete the cable in 1964. The cost of construction is estimated at £26.3 million, of which Britain will pay £8.3 million, Canada

(Continued on page 90)

Light Beams for Signals

(Continued from preceding page)

"This great chromatic light power is the basis of a potential radar-like device also being explored by Army Signal Corps scientists. By aiming the LASER beam at a far-off object and catching the reflection in a telescopic senser, the object's distance can be precisely measured. Such a LASER-radar would be extremely small and simple, and working with standard radar devices, it could well enhance present detection capabilities."

British Army Uses Thunderbirds

The British Army Regiments equipped with the mobile English Electric Thunderbird guided weapon system have reported outstanding successes with their missiles — even better than was achieved during trials with the weapon before it entered service.

At practice camps the regiments have had an average success rate of 90 per cent. Firings took place against high-speed aircraft targets which were manoeuvring and changing course when the missiles engaged them. In the pre-service trials, often under ideal conditions, the success rate was 84 per cent.

This means that the British Army now has its own most effective defence against enemy air reconnaissance and attack. The practice firings were done "in the field" under realistic conditions.

Some of the batteries achieved a 100 per cent success against the aircraft targets. These remarkably high success figures are particularly notable because they were achieved by the regiments right from the time when they took over the Thunderbird.

It also reflects the sound engineering of the Thunderbird which is a robust weapon designed to be used successfully by the troops under the worst possible conditions.

One of Thunderbird's key points is its mobility. Mounted on standard army vehicles it is capable of rugged cross-country journeys. The missiles themselves are rigorously tested at English Electric's factory to ensure that they remain operational over long periods and while exposed to bad weather. Ease of field maintenance, robustness and reliability were three of the main design requirements and they have been fully met.

A complete Thunderbird defence may be deployed on a site — and a "site" is any field — in under three hours. This time has been regularly achieved in all weather, by day and night, and is from the time that the weapon system is on the move to the time that it is fully deployed and engaging enemy aircraft.

For one practice camp one of the regiments travelled with their equipment for more than 200 miles, deployed it and went into action. One battery of this regiment achieved 100 per cent success and the other 75 per cent. One regiment is now on duty with the British Army in Germany.—*A report by the British Aircraft Corporation Ltd.*

Commonwealth Telephone Link

(Continued from preceding page)

about $25 million, Australia about £6.6 million and New Zealand £2.6 million. The laying of the cable will start from the Australian end and it is hoped that Sydney will be linked with Wellington this year. At the Canadian end the cable will be linked with CANTAT by lines across Canada. By 1964 the system will provide first-class telephone and telegraph communications half-way round the world, a route distance of about 14,000 miles.—*From "Background to Britain", British Information Services, Ottawa.*

THE ROYAL CANADIAN ARMY SERVICE CORPS

RCASC Reminiscences

THE RUSSELL TOURING CAR

By

MAJOR G. R. LAING, CD (RCASC), DIRECTORATE OF MOVEMENTS, ARMY HEADQUARTERS, OTTAWA

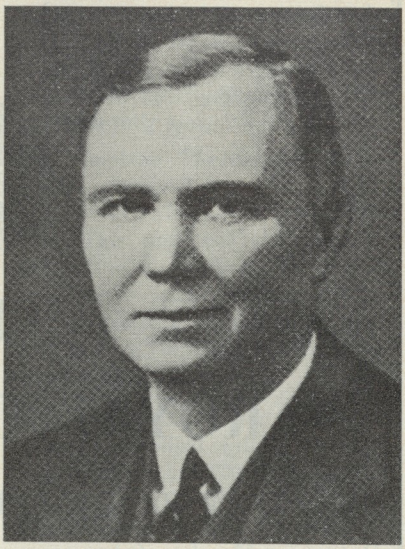
"Built up to a standard, not down to a price."

This was the slogan Thomas Alexander Russell, son of an Exeter, Ontario, farmer used to sell the products of the Russell Motor Car Company of Toronto. It is now more than forty-five years since an automobile dealer offered a Russell car for sale.

Accompanying this article is a photograph taken last year in Montreal of the only Russell vehicle known to exist—a 1914 Russell Touring car. This particular automobile was found in a junk-yard in the early 1930's among old car salvage, much of which was believed left over from the First World War. Rebuilt by Mr. J. H. Gest of Ile Perrot, Quebec, it is one of a large collection of vintage cars owned by Mr. A. J. O'Connell of Montreal.

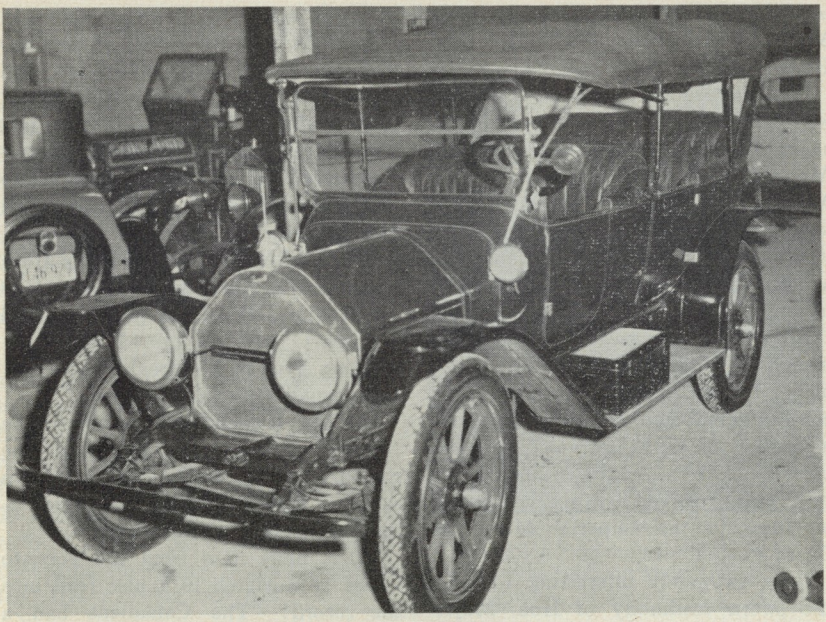
Seven 1914 Russell Touring cars were specially purchased for the Canadian Expeditionary Force. From available records, they are believed to have been allocated to Headquarters 1st Canadian Division, 1st Divisional Supply Column, Canadian Army Service Corps, and the Divisional Reserve Park, CASC.

Embarkation strength returns prepared by Lieut.-Colonel J. G. Langton, CASC, but doubtless the work of his chief clerk, Staff Sgt. H. J. Middleton, Corps of Military Staff Clerks, show that all seven Russell cars were shipped overseas.



T. A. Russell (1877-1940), president and founder of the Russell Motor Car Company, Toronto. This photograph is reproduced from the book "Harvest Triumph" (the history of Massey-Harris Ltd.) by courtesy of McClelland & Stewart Ltd., Toronto, publishers. Mr. Russell was president of Massey-Harris Ltd. from 1930 until the time of his death.

Major F. Lindsay Lloyd, Royal Engineers, Commanding Officer of Southern Command Mechanical Trans-



Army Public Relations Photograph

This 1914 Russell Touring car was rebuilt by J. H. Gest of Ile Perot, Que., after being salvaged from a junk yard. It is now in the possession of A. J. O'Connell, Montreal, who gave permission for it to be photographed. While on exhibit at the Canadian National Exhibition in Toronto during 1956 and 1957, it was viewed by at least 1,000,000 people.

port Depot, in his report of 19 January 1915 on the readiness state of Canadian Forces' wagons and other vehicles, writes: "...One of the two cars—a Russell—is in good working order. The other Russell was taken away from this unit [1st Canadian Divisional Supply Column] by the Headquarters of the Division and replaced by [another], which is now useless."

The 1914 Russell Touring was a five-seater of 28-horsepower developed by four cylinders. Tires were 36" x 4½" with a pressure of 65 lbs., headlights were electric and it had a self-starter. "Sliding" gears provided three speeds. The braking system was provided by expanding and contracting bands on the rear wheels only — four-wheel brakes were still in the future. Wheels were wooden with detachable rims. The retail price was $3250. The Department of Militia and Defence paid $2750 each for the seven automobiles bought specially for the Canadian Expeditionary Force.

Of interest are the remarks of the Quartermaster-General, Major-General Sir D. A. MacDonald, KCMG, in his annual report dated 22 September 1914

to the Minister of Militia and Defence, Major-General the Hon. Sir Sam Hughes, CB:

"Contracts for vehicles of all kinds were made by an extra-departmental agent, Mr. T. A. Russell of the Russell Motor Car Company, employed by the Minister. Mr. Russell's expert knowledge of the subject was of great advantage to the Department and the arrangement certainly was in the public interest."

Mr. Russell was gazetted as an Honorary Major on 19 Augst 1914 while he served as a vehicle and wagon purchasing agent, and he did a thorough inspection of CEF transport at Salisbury Plains by direction of the Minister. Later he served as a special adviser on fuses to the Imperial Munitions Board.

It is extremely interesting to read the sworn testimony of Hon. Major Russell given before the Royal Commission concerning the purchase of War Supplies and the sale of small arms ammunition which sat in Ottawa before the Hon. Sir Charles Peers Davidson, the Commissioner. The testimony was in answer to questions put by John Thompson, KC, who was retained as counsel to assist the Commissioner (see Canadian House of Commons 1917 Sessional Paper No. 60, Vol. 1):

(a) Mr. Russell came to Ottawa 14 August 1914 at the request of the Minister of Militia and Defence with his top salesman, Mr. J. H. MacQuarrie (later Honorary Major) from the Russel Motor Car Company of Toronto . . . "Our Company is in a position to supply a number of two-ton trucks for prompt delivery, 8-10, perhaps 12."

(b) "I sent out five telegrams to what I thought were Canadian firms that could supply them [cars and trucks], including Ford, McLaughlin, Reo, Graham, Brantford. In addition, I sent telegrams to American firms—Packard of Detroit, Peerless and White of Cleveland, Jeffrey of Kenosha and Pierce Arrow of Buffalo."

(c) "I [Russell] spent Sunday [13th of September 1914] with Colonel Biggar [then Director of Supplies and Transport] and Captain Lindsay inspecting ships in Montreal to ascertain their capability to carry trucks."

(d) Mr. Russell, in a letter to the Minister which was read into the record, wrote: "British officers have said the CASC, especially the mechanical transport, is unbeatable."

(e) A news item from the Toronto Globe of 2 March 1915, also read into the record: "The Canadians had a rousing reception in France . . . a fine compliment was paid to the mechanical transport section in the town of ..... (censored) where they were reviewed by a British General. 'The Canadian Division has the finest transport section of any Division I have seen,' said he."

(f) Speaking of the seven 1914 Russell Touring cars purchased for the CEF, the Commission Counsel asked: "Were they satisfactory?" To this Mr. Russell replied: "They gave very great satisfaction. After four months of the hardest kind of usage in Salisbury Plains, six out of the seven went forward with the CEF into France. The seventh was damaged in a very serious collision [in England] and that explains why it did not go forward."

(Continued on page 95)

MACHINE INVENTOR WINS AWARD

A Royal Canadian Army Service Corps officer stationed at Winnipeg, Man., has been awarded $400 by the Suggestion Awards Board of Canada for inventing a machine that will save the Armed Services an estimated $9500 in its first year of operation. He is Captain A.F.B. Danyluk of Edmonton, Alta., who returned late last year from a tour of duty in the Congo.

The machine, designed to fold and assemble towel and toilet tissue used in combat ration packs, was developed by Captain Danyluk when he was officer in charge of the Army Bulk Supply Depot in Montreal. He spent about 30 months working on the idea which reduces by 25 per cent the cost of packaging emergency ration boxes that feed five men for one day.

Prior to the invention, the Army purchased packaged towelling and tissue in single sheets for hand-folding. This method required 25 men working 2000 man-hours a year to prepare the tissues for 600,000 rations used by the Armed Services in training, search and rescue and other operations.

A lower cost roll-type towel and tissue is now used and one man working an eight-hour day can do the whole job in six weeks. The 24 men relieved of the tedious and time-consuming chore have been moved to other duties in the Depot's assembly line.

Canadian Army Photograph

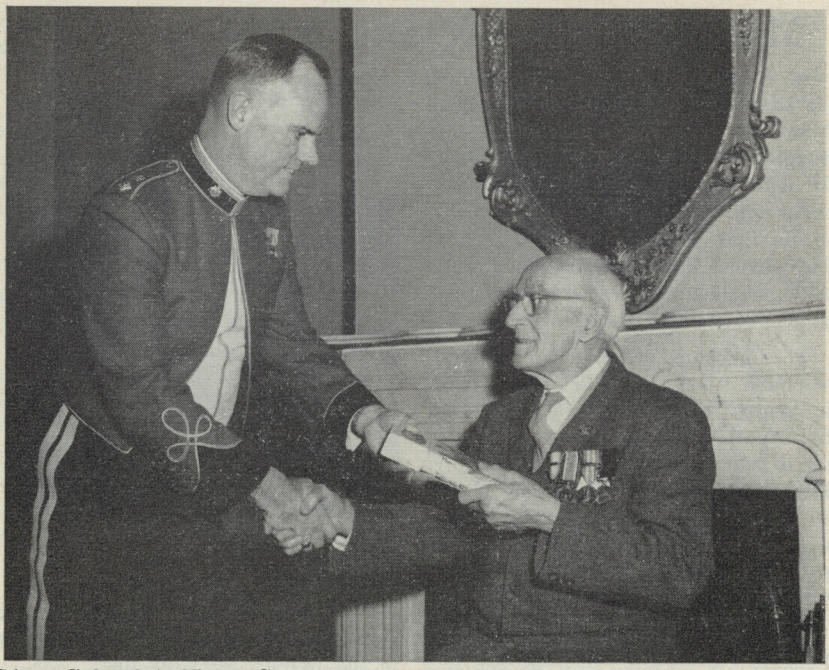
Brigadier Pangman presents award to Captain Danyluk.

Brigadier J.E.C. Pangman, DSO, ED, CD, Commander of Manitoba Area, presented the award to Captain Danyluk on behalf of the Suggestion Awards Board of Canada. The Board approved and recommended the machine after completing surveys and tests.—*From a report written by Captain R.B. O'Regan, Public Relations Officer, Manitoba Area.*

The Russell Touring Car

(Continued from preceding page)

The last Russell car was made in 1915, the vehicle becoming the victim of the competitive demand for the "mass-produced-ready-for-the-market" automobile instead of the custom-made model. Mr. Russell, who in the next 25 years was to become a prominent Canadian financial and industrial figure, thus terminated a career in automobile and truck manufacturing he had commenced with such vigour in 1903.



Lieut.-Colonel A. H. M. Greene, CD, Command Supplies and Transport Officer, Eastern Command, presents a copy of the recently published history of the Royal Canadian Army Service Corps, "Wait for the Waggon", to Major Louis Prikler, who at the age of 92 years is the oldest former officer of the Corps.

Veteran Member Receives New RCASC History

A retired Halifax army officer, at 92 the oldest former officer of the Royal Canadian Army Service Corps, was honoured at a Diamond Jubilee Mess Dinner of his Corps with presentation of a copy of *Wait for the Waggon,* the recently published history of the RCASC. This book is reviewed in the Book Review Section of this issue of the *Canadian Army Journal.*

He is Major Louis Prikler, who first joined the Army in the Imperial forces in 1888. Following six years' service in the Grenadier Guards, Major Prikler transferred to the Royal Army Service Corps, retiring for the first time 21 years later with the rank of Warrant Officer Class One. He emigrated to Canada, joined the Canadian Army Service Corps and served with distinction, being twice mentioned in dispatches in France during the First World War.

(Continued on page 112)

THE ROYAL CANADIAN ARMY CADETS

A Two-Year Review

CADET MARKSMANSHIP AT BISLEY AND CONNAUGHT

AN ARTICLE CONTRIBUTED BY THE DIRECTORATE OF MILITIA AND CADETS, ARMY HEADQUARTERS, OTTAWA

The first part of this article reviews the record of the Royal Canadian Army Cadet Team at Bisley, England, and the second part deals with the Canadian competitions held at the Connaught Ranges near Ottawa. The preceding article in this series was published in the October 1959 issue of the Journal. — Editor.

Selected from the top Cadet marksmen in Canada, a Royal Canadian Army Cadet Bisley Team has been making annual visits to Britain to participate in the National Rifle Association (NRA) Rifle Matches conducted at the Bisley Ranges since 1954.

The composition of the Canadian team is determined each year by a number of competitions conducted by the Dominion of Canada Rifle Association during the Annual Meet at Connaught Ranges near Ottawa. These are grouped to form a Cadet Bisley Team Aggregate, and from this aggregate Cadets are selected for the Bisley Team.

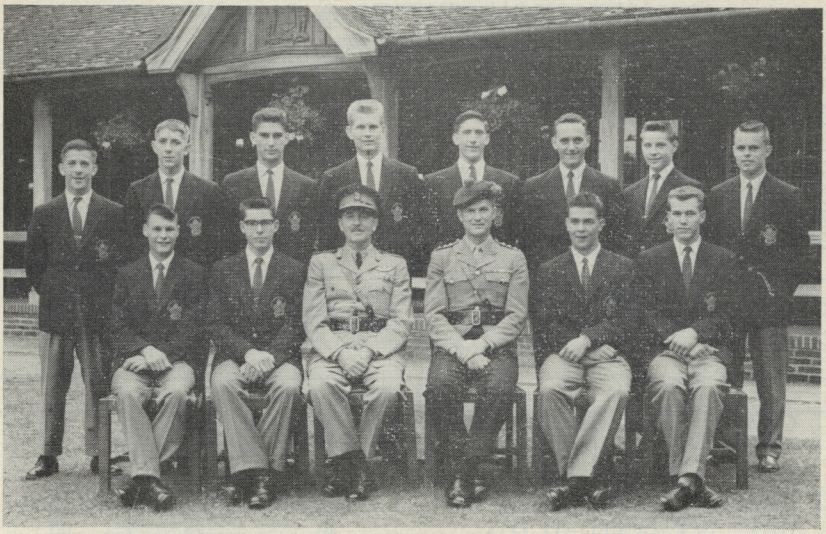
Main object in sending a Canadian team to Bisley is to compete against the British cadets in the Alexander Graham Bell Match. The trophy for this match was presented in 1955 to the NRA by the late Colonel D.B. Buell, who at the time of his death was Director of Militia and Cadets at Army Headquarters, Ottawa.

In this competition the Canadians fire against a composite team of British cadets from the Combined Cadet Force — the Army Cadet Force of Great Britain. The Canadian team won this event twice since 1955 — once in the year of its inception and again in 1960.

It should be understood that when Cadets fire at Bisley they compete as adult marksmen against other adults who are among the best rifle shots in the Commonwealth.

The 1960 and 1961 teams were conducted to Bisley by Colonel J.M. Delamere, MBE, ED, CD, Director of Militia and Cadets, Army Headquarters, Ottawa, who had as his Adjutant for the 1960 team Captain Peter Hall-Humpherson, CD, of Halifax, Nova Scotia and, in 1961, Captain John Barrett, Kingston, Ont. On arrival at Bisley the teams are quartered in the famous Honourable Artillery Company Hut, to experience their first taste of British hospitality, but almost directly they are out on the ranges practising. The Canadians find some difference in shooting conditions at Bisley, with varying degrees of light and wind, as compared to ranges in Canada, but the boys soon became acclimatized.

The year 1960 being the NRA's Centennial, rifle teams from all over the Commonwealth took part, and cadets were privileged to see the



Gale & Polden Ltd. Photograph

The Royal Canadian Army Cadet Bisley Team, 1960. *Front row (left to right)*: Cadet Staff Sgt. J. K. Downs, Cadet Sgt. R. P. Brehm, Colonel J. M. Delamere, MBE, ED, CD (Director of Militia and Cadets and Commandant of the team), Captain P. Hall-Humpherson (Adjutant), Cadet WO 2 D. B. Wilkinson, Cadet Major D. L. Scantland.

Queen who visited Bisley on the occasion of the centenary.

Taking part in individual and team matches the members of both teams did exceptionally well, being thoroughly indoctrinated in the ways of Bisley shooting and making an impressive name for themselves and the Royal Canadian Army Cadets both as marksmen and young gentlemen.

During their visit to Bisley cadets manage to see a good deal of the surrounding area on conducted tours, including such historic places as Windsor Castle and Eton College. At the conclusion of the shooting, the Cadet Bisley Team leave the ranges for a short tour of London to see places of interest, shop, and meet the Lord Mayor, Canadian High Commissioner, Chief of the Imperial General Staff and a number of other important personages. Leaving London for France the team spends a day in Paris and finishes up with a short visit to the Canadian Army Infantry Brigade Group in Germany. By the time they leave for Canada the cadets have become veteran tourists on a trip that will serve as a topic of conversation for years to come.

Following are some of the outstanding results obtained by members of the 1960 and 1961 Royal Canadian Army Cadet Bisley Teams in team and individual matches.

Alexander Graham Bell Competition — 1960

CANADA

CADET RANK	NAME	RANGE IN YARDS		TOTAL HPS*
		200	500	100
Maj.	THOMPSON, J. N.	48	49	97
WO 1	WILKINSON, B. D.	46	48	92
Maj.	SCANTLAND, D. L.	46	49	95
Lt.	DOWNS, J. K.	45	45	90
Maj.	DEARBORN, R. G.	45	47	92
Sgt.	BREHM, R. P.	44	46	90
Maj.	McCULLAGH, S. G.	43	46	89
Sgt.	COOK, D. S.	47	48	95
				742

ENGLAND

CSM	GOODRIDGE, M. D.	44	45	89
F/Sgt.	JANIKOUN, D. M.	47	47	94
Sgt.	WILKINSON, W. H.	47	47	94
A/B	COWAN, R. I. M.	46	45	91
Cpl.	HARRIS, A. D. E.	43	44	87
U/O	CRAWFORD, D. A.	46	44	90
Sgt.	FORBES, K. A.	48	45	93
Cpl.	BOON, G. P. R.	41	48	89
				727

1961

CANADA

Lt.	BELLAMY, D. E.	50	46	96
Maj.	CALLSEN, J. C.	46	45	91
Lt.-Col.	ENRIGHT, T. J.	45	44	89
S/Sgt.	FIDDES, J.	40	49	89
Cdt.	LEONARD, Y.	46	46	92
Capt.	SANFORD, M.	48	45	93
Cdt.	TREMBLAY, R.	47	50	97
WO 2	WAUD, W. R.	47	45	92
				739

ENGLAND

Sgt.	MARSHALL, T. L.	48	46	94
CSM	TATHAM, O. P. F.	47	49	96
F/Sgt.	HAYMAN, D. J.	46	43	89
F/Sgt.	GORDON, C. R.	45	47	92
Cpl.	HARPHAM, W. F. M.	47	47	94
Sgt.	TORRANCE, R.	45	46	91
Sgt.	BENNETT, R. G.	45	43	88
Cpl.	PANK, W. D. J.	48	49	97
				741

INDIVIDUAL COMPETITION HIGHLIGHTS
ROYAL CANADIAN ARMY CADET BISLEY TEAM — 1960

CADET RANK	NAME	MATCH	HPS *	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
Sgt.	YACKO, S.A.	Alexandra	50	47	130	1,094
WO 1	WILKINSON, D.B.	Alexandra	50	47	132	1,094
Sgt.	BREHM, R.P.	All Comers Aggregate	325	304	32	748
Maj.	THOMPSON, J.N.	Centenary Cadets Aggregate	70	69	3	132
Capt.	BISHOP, L.G.	" " "	70	68	10	132
Major	SCANTLAND, D.L.	" " "	70	68	11	132
WO 1	WILKINSON, D.B.	" " "	70	68	12	132
WO 1	WILKINSON, D.B.	Centenary SRA Aggregate	505	469	91	674
Major	DEARBORN, R.C.	The Century	70	68	18	674
Major	THOMPSON, J.N.	The Century	70	67	32	674
WO 1	WILKINSON, D.B.	Clementi-Smith Mem. Agg.	150	141	91	733
Sgt.	BREHM, R.P.	Corp'tion of City of London	50	46	12	962
Sgt.	BREHM, R.P.	Daily Mail	50	50	2	1,153
Drum Maj.	PHILLIPS, R.E.	" "	50	47	114	1,153
Major	McCULLAGH, S.G.	" "	50	47	175	1,153
Lt.	DOWNS, J.K.	" "	50	47	197	1,153
WO 2	FERRIS, D.	" "	50	46	206	1,153
Sgt.	BREHM, R.P.	Daily Telegraph	50	50	2	1,089
Capt.	BISHOP, L.G.	" "	50	48	57	1,089
Major	THOMPSON, J.N.	" "	50	48	87	1,089
WO 1	WILKINSON, D.B.	" "	50	48	92	1,089
WO 1	WILKINSON, D.B.	Donaldson Memorial	180	170	74	627
Sgt.	COOK, D.S.	Donegal Challenge Cup	50	49	35	1,086
Lt.	DOWNS, J.K.	" " "	50	49	51	1,086
Major	SCANTLAND, D.L.	" " "	50	48	148	1,086
Major	THOMPSON, J.N.	" " "	50	48	152	1,086
WO 1	WILKINSON, D.B.	Duke of Cambridge	b.50	45	52	967
WO 1	WILKINSON, D.B.	Duke of Gloucester	75	70	95	1,072
Drum Maj.	PHILLIPS, R.E.	Gale & Polden Pistol	35	29	19	2,202
Major	SCANTLAND, D.L.	Gale & Polden Pistol	35	27	43	2,202
Sgt.	BREHM, R.P.	Grand Aggregate	605	553	69	851
Sgt.	BREHM, R.P.	Monday Aggregate	200	182	82	646
Sgt.	BREHM, R.P.	Overseas Team Fund Agg.	250	234	60	363
WO 1	WILKINSON, D.B.	Overseas Team Fund Agg.	250	232	62	363
WO 1	WILKINSON, D.B.	Third Stage Queen's Prize	a.b.300	255	90	1,300 d.(100)
WO 1	WILKINSON, D.B.	Third Stage St. George's	150	133	61	1,099 (100)
Major	THOMPSON, J.N.	Saturday Aggregate	200	184	125	600
Lt.	DOWNS, J.K.	Schools Hundred	70	66	53	100
Major	THOMPSON, J.N.	" "	c.70	66	61	100
WO 1	WILKINSON, D.B.	" "	c.70	66	95	100
Sgt.	BREHM, R.P.	Stock Exchange	150	140	69	806
Drum Maj.	PHILLIPS, R.E.	" "	150	138	136	806
Major	McCULLAGH, S.G.		150	138	155	806
Sgt.	BREHM, R.P.	Wednesday Aggregate	155	141	69	589
Sgt.	YACKO, S.A.	Wimbledon Challenge Cup	50	47	35	1,132
Drum Maj.	PHILLIPS, R.E.	" " "	50	47	43	1,132
Sgt.	BREHM, R.P.	" " "	50	46	108	1,132
Major	SCANTLAND, D.L.	" " "	50	46	136	1,132
WO 1	WILKINSON, D.B.	Young Rifleman's Aggregate	205	197	5	64
Sgt.	BREHM, R.P.	Clementi-Smith Mem. Agg.	150	141	98	733

(See legend at top of page 102 for these competitions)

Legend for Competitions Listed on page 101

* Highest possible score.
a. Fired at 1,000 yards.
b. Fired at 900 yards.
c. These cadets competed in an all British Cadet Match as guest competitors.
d. 100 competitors qualified for Queen's third stage by attaining a high aggregate in the second stage.

INDIVIDUAL COMPETITION HIGHLIGHTS
ROYAL CANADIAN ARMY CADET BISLEY TEAM — 1961

CADET RANK	NAME	MATCH	HPS *	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
Cadet	TREMBLAY, R.	Alexandra	50	47	42	874
S/Sgt.	BOUDREAU, G.L.	"	50	47	47	874
S/Sgt.	FIDDES, J.	"	50	46	122	874
Lt.-Col.	ENRIGHT, T.J.	All Comers Aggregate	325	300	84	527
Lt.	BELLAMY, D.E.	All Comers Aggregate	325	296	121	527
Lt.	BELLAMY, D.E.	Centenary Schools Aggregate	70	70	1	122
S/Sgt.	FIDDES, J.	" " "	70	66	21	122
Major	CALLSEN, J.C.	" " "	70	65	27	122
S/Sgt.	BOUDREAU, G.L.	The Century	70	65	24	431
Capt.	SANFORD, M.	The Century	70	64	40	431
S/Sgt.	FIDDES, J.	Clementi-Smith Mem. Agg.	150	136	120	568
Lt.	BELLAMY, D.E.	Clementi-Smith Mem. Agg.	150	136	121	568
Sgt.	BOUDREAU, G.L.	Conan Doyle	b.50	46	28	671
WO 2	OSTASH, N.F.	" "	b.50	44	95	671
Major	CALLSEN, J.C.	" "	b.50	43	112	671
Lt.-Col.	ENRIGHT, T.J.	" "	b.50	43	114	671
S/Sgt.	BOUDREAU, G.L.	Corp'tion of City of London	a.50	43	38	950
Lt.-Col.	ENRIGHT, T.J.	" " "	a.50	41	77	950
Capt.	SANFORD, M.	" " "	a.50	40	118	950
Cadet	TREMBLAY, R.	Daily Mail	50	48	69	931
Major	CALLSEN, J.C.	Daily Mail	50	48	93	931
Lt.-Col.	ENRIGHT, T.J.	Daily Telegraph	50	49	13	870
Capt.	SANFORD, M.	" "	50	48	84	870
Lt.	BELLAMY, D.E.	" "	50	47	142	870
Lt.	BELLAMY, D.E.	Donaldson Memorial	180	167	85	444
Lt.-Col.	ENRIGHT, T.J.	Donaldson Memorial	180	167	88	444
Cadet	TREMBLAY, R.	Donegal Challenge Cup	50	48	60	804
Lt.-Col.	ENRIGHT, T.J.	Duke of Gloucester	75	71	24	828
Cadet	TREMBLAY, R.	" " "	75	69	108	828
WO 2	WAUD, W.R.	" " "	75	69	112	828
S/Sgt.	BOUDREAU, G.L.	The Elkington Aggregate	150	126	55	372
Lt.-Col.	ENRIGHT, T.J.	" " "	150	124	67	372
Major	CALLSEN, J.C.	" " "	150	124	68	372
Lt.-Col.	ENRIGHT, T.J.	Grand Aggregate	605	548	81	641
Major	LEFEBVRE, J.R.	Howard Wilkinson Chall. Cup	105	99	16	208
Lt.-Col.	ENRIGHT, T.J.	Howard Wilkinson Chall. Cup	105	97	55	208
Lt.-Col.	ENRIGHT, T.J.	Monday Aggregate	200	179	97	486
Lt.-Col.	ENRIGHT, T.J.	The Northland Aggregate	150	143	10	449
Lt.-Col.	ENRIGHT, T.J.	Ov'seas Teams Fund Long R'ge	175	152	10	225
S/Sgt.	FIDDES, J.	Third Stage Queen's Prize	a.b.300	261	84	c.1,050 (100)
Lt.	BELLAMY, D.E.	Second Stage Queen's Prize	150	140	51	c.1,050 (300)

INDIVIDUAL COMPETITION HIGHLIGHTS
ROYAL CANADIAN ARMY CADET BISLEY TEAM — 1960

(Continued from page 102)

CADET RANK	NAME	MATCH	HPS*	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
Lt.-Col.	ENRIGHT, T.J.	1st and 2nd Stages St. George's	150	140	116	864
Lt.-Col.	BELLAMY, D.E.	1st and 2nd Stages St. George's	160	139	141	864
Lt.-Col.	ENRIGHT, T.J.	Saturday Aggregate	200	179	93	461
Lt.	BELLAMY, D.E.	Schools Hundred	d.70	67	24	100
WO 2	WAUD, W.R.	Schools Hundred	d.70	65	82	100
Lt.-Col.	ENRIGHT, T.J.	Short Range Aggregate	225	214	26	446
Lt.	BELLAMY, D.E.	Short Range Aggregate	225	210	86	446
Lt.	BELLAMY, D.E.	Stock Exchange	150	139	121	612
Lt.	BELLAMY, D.E.	The Times	60	48	93	913
Lt.-Col.	ENRIGHT, T.J.	Wednesday Aggregate	160	136	80	442
Capt.	SANFORD, M.	" "	160	134	91	442
Cadet	TREMBLAY, R.	" "	160	133	93	442
Cadet	TREMBLAY, R.	Wellington and Iveagh	e.35	35	1	196
Capt.	SANFORD, M.	Wimbledon	60	48	11	898
Lt.	BELLAMY, D.E.	"	60	46	136	898
Lt.-Col.	ENRIGHT, T.J.	"	60	46	139	898

* Highest possible score.
a. Fired at 1,000 yards.
b. Fired at 900 yards.
c. 100 competitors qualified for the third stage having attained high scores in the second stage and 300 competitors qualified for second stage having attained high score in the first stage.
d. These cadets competed in an all British cadet match as guest competitors.
e. This cadet won the "Iveagh" trophy with a possible at 600 yards. The "Wellington" is fired at 200 yards.

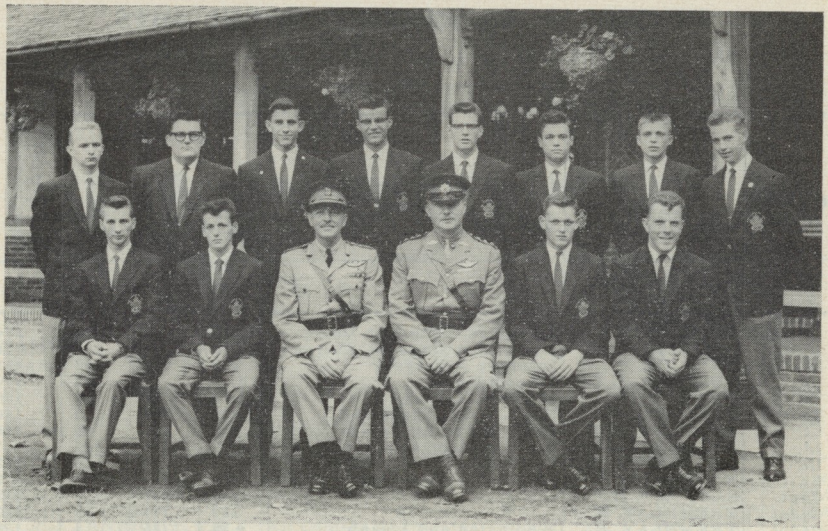
ROYAL CANADIAN ARMY CADETS IN DCRA MATCHES

During the past two years (1960 and 1961) a total of 200 Royal Canadian Army Cadets representing Western, Central, Quebec and Eastern Commands have travelled to Ottawa to participate in the Dominion of Canada Rifle Association (DCRA) Annual Rifle Matches held at Connaught Ranges which are located just outside the city.

In 1960, the DCRA's centennial year, 95 cadets attended from 7 to 13 August and, in 1961, 105 from 5 to 12 August.

For the first time since its organization in 1954, the Royal Canadian Army Cadet Bisley Team participated in the 1960 DCRA matches as a team. All but one member of the 1961 team took part.

The attendance and participation of 16 cadets from the United Kingdom was a highlight of the 1960 DCRA meeting, this being the first such visit



Gale & Polden Ltd. Photograph

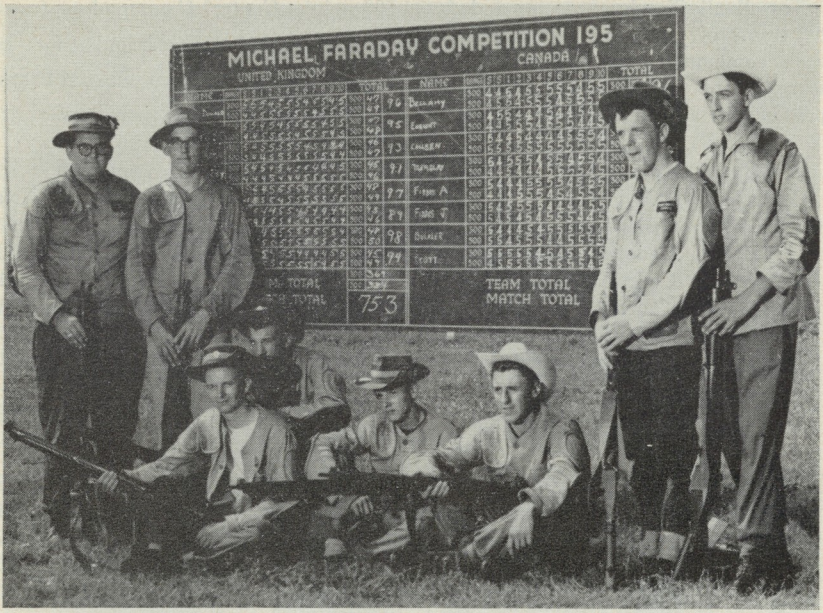
This photograph shows members of the Royal Canadian Army Cadet Team at the National Rifle Association Imperial Meeting at Bisley, 1961. *Front row (left to right)*: Cadet Lieut. D. E. Bellamy, Cadet R. Tremblay, Colonel J. M. Delamere, MBE, ED, CD (Director of Militia and Cadets and Commandant of the team), Captain J. J. Barrett (Adjutant), Cadet WO 2 W. R. Waud, Cadet Major T. J. Enright. *Back row (left to right)*: Cadet Lieut. J. C. Callsen, Cadet Cpl. J. Fiddes, Cadet Major C. P. Lewis, Cadet Sgt. N. F. Ostash, Cadet Sgt. M. Sandford, Cadet Staff Sgt. G. L. Boudreau, Cadet Capt. J. R. Lefefure, Cadet Y. Leonard.

of British cadets to Canada — and the DCRA — since 1957. A team of 14 cadets paid a visit to the DCRA in 1961. Many top shooting awards were carried off by this team, including the Michael Faraday Trophy, details of which appear elsewhere in this article. The coveted main prize of the DCRA, the Governor-General's, was won by the team's Adjutant, Lieutenant Geoffrey Martel, Bromsgrove, Worcestershire.

Following are some details and interesting results obtained by the cadets in team and individual matches.

The Lieutenant-General Otter Cadet Match is entered by a team of four cadets representing any one province in Canada. The highest possible individual score for the 1960 match was 100 making it possible for a team to obtain a total of 400 points. However, a change in the number of rounds fired was instituted in 1961 which lowered the individual score to 70 and the team possible to 280 points.

Following are the names of the winning teams, together with their scores, for the years 1960 and 1961:



Canadian Army Photograph

The Michael Faraday Imperial Cadet Trophy Match was won in 1961 by the British Cadet Rifle Team, the Athelings. Shown here are members of the Royal Canadian Army Cadet team, runners-up in this competition. *Front row (left to right)*: Cadet Major John Callsen, Cadet Lieut. Dennis Bellamy, Cadet Richard Tremblay, Cadet Sgt. Ronald Buckler. *Standing (left to right)*: Cadet Staff Sgt. John Fiddes, Cadet Cpl. A. Henderson Fiddes, Cadet Lieut.-Colonel Terrence Enright, Cadet Sgt. Raymond Scott.

1960	Cadet Major	George McCullagh	96
Ontario	Cadet Captain	Lloyd Bishop	92
	Cadet Lieut.	Kingsley Downs	91
	Cadet Major	Robert Dearborn	90
		TOTAL:	369
1961	Cadet Major	D. S. Scantland	66
Quebec	Cadet	R. Tremblay	66
	Cadet S/Sgt.	J. R. Fiddes	64
	Cadet	Y. Leonard	64
		TOTAL:	260

The Buell Trophy is competed for by teams of eight cadets representing each command. The highest possible score in this match is 100 making it possible for a team to score a total of 800 points. Central Command captured this trophy for the second time in two consecutive years. Listed below are the winners and their scores:

1960	Cadet Major	T. J. Enright	93
Central	Cadet Major	C. P. Lewis	84
Command	Cadet Captain	D. G. Clarke	77
	Cadet Lieut.	J. C. Callsen	82
	Cadet WO 2	W. K. Waud	81
	Cadet Sgt.	J. H. Handford	81
	Cadet Cpl.	R. E. Miller	86
	Cadet	E. Prokopchuk	79
		TOTAL:	663

1961	Cadet Lieut.-Col.	A. Johnston	68
Central	Cadet Major	F. Schutt	91
Command	Cadet Lieut.	B. J. Bannister	82
	Cadet Lieut.	N. S. D. Esdon	76
	Cadet Lieut.	B. L. Fuller	85
	Cadet Lieut.	D. A. Skinner	82
	Cadet S/Sgt.	T. Kierans	80
	Cadet	E. Kern	79
		TOTAL:	643

The Michael Faraday Imperial Cadet Trophy is competed for by two teams of eight cadets. One team, comprised of cadets from the visiting British Cadet Team, represents the "Home" cadets; the other team of selected cadets from the Royal Canadian Army Cadet contingents attending the DCRA represent five Canadian Cadets.

The match was conducted in 1960 for the first time in four years, and on this occasion the British team won the trophy by a close margin of two points. The highest possible score that a team may achieve is 800. It was captured again in 1961 by an increased margin of five points. Following are the statistics: (*See page 107.*)

Common Sense

Common sense is the most widely shared commodity in the world for every man is convinced that he is well supplied with it.—*Descartes.*

Canadian Army Photograph

Shown here are the 1961 winners of the Buell Trophy competed for at the annual rifle matches conducted by the Dominion of Canada Rifle Association. *Front row (left to right)*: Cadet Lieut. Brian Fuller, Cadet Lieut. Bruce Bannister, Cadet Staff Sgt. Thomas Kierans, Cadet Lieut. David Skinner. *Back row (left to right)*: Cadet Lieut. Norman Esdon, Cadet Earl Kearn, Cadet Major Frank Schutt, Cadet Lieut.-Colonel A. Johnston.

BRITISH TEAM	1960	CANADIAN TEAM	
Cadet M. D. Goodridge	95	Cadet D. L. Scantland	94
Cadet W. H. Wilkinson	90	Cadet J. Fiddes	91
Cadet K. G. Craigie	90	Cadet L. G. Bishop	92
Cadet J. P. Honeywill	93	Cadet D. S. Cook	84
Cadet C. J. Wearn	90	Cadet R. E. Dearborn	87
Cadet M. A. Wisdom	89	Cadet J. K. Downs	87
Cadet F. P. Wolff	82	Cadet S. G. McCullagh	92
Cadet D. Birkmyre	89	Cadet W. R. Waud	89
TOTAL:	718	TOTAL:	716

BRITISH TEAM 1961		CANADIAN TEAM	
Cadet A. K. Aldridge	98	Cadet D. E. Bellamy	96
Cadet D. J. Hayman	94	Cadet J. C. Callsen	94
Cadet C. R. Gordon	93	Cadet R. A. Buckler	93
Cadet D. J. E. Huxley	91	Cadet R. J. Scott	96
Cadet W. D. G. Handyside	97	Cadet A. Fiddes	93
Cadet W. F. N. Harpham	89	Cadet J. Fiddes	92
Cadet W. D. McDonald	96	Cadet T. J. Enright	91
Cadet A. D. E. Harris	95	Cadet R. Tremblay	93
TOTAL:	753	TOTAL:	748

The United Empire Trophy is awarded to teams of four cadets representing any province who have achieved the highest aggregate scores in each of three individual matches — the Tyro, the MacDougall and the Bankers. Listed below are the names of the winning teams and their scores for 1960 and 1961:

1960		1961	
Cadet Major J. N. Thompson	230	Cadet Lieut. D. E. Bellamy	235
Cadet Lieut. H. D. Jones	205	Cadet WO 2 J. S. Akins	220
Cadet Sgt. N. F. Ostash	228	Cadet S/Sgt. E. W. Pash	211
Cadet Bdr. R. E. Morton	223	Cadet Sgt. R. A. Buckler	228
TOTAL:	886	TOTAL:	894

Highest possible aggregate team score that may be achieved in this competition is 1000.

The Viscount Wakefield Cadet Aggregate Challenge Cup is awarded to cadets who achieve the highest aggregate score in three individual matches — the Tyro, the Connaught and the MacDougall. Listed below are the names of the winners and runners-up for 1960 and 1961:

1960	Cadet Malcolm Goodridge, British Cadet Team	212
Runner-up	Cadet Terry Enright, Royal Canadian Army Cadets, Central Command	211
Highest possible aggregate score		225
1961	Cadet W. D. McDonald, British Cadet Team	192

Runner-up
Cadet C. R. Gordon 191
British Cadet Team
Highest possible aggregate score 200

In 1961 the DCRA introduced a challenge trophy presented by the Royal Hamilton Light Infantry Rifle Association in memory of LAC Russell G. Potter, RCAF, who was accidentally killed on 14 August 1960. Russell Potter was a former Royal Canadian Army Cadet and a member of the 1955 Royal Canadian Army Cadet Bisley Team.

The trophy is awarded to the competitor between the age of 18 and 19 who places highest in the DCRA's Grand Aggregate made up of seven individual matches, i.e., Bankers, MacDougall, MacDonald, Connaught, President's Qualifying Stage of the Governor General's and City of Ottawa.

The trophy was won by Cadet Richard Tremblay, LaTuque, Quebec, a member of the 1961 Royal Canadian Army Cadet Bisley Team, by a score of 627 points out of a possible 675.

INDIVIDUAL COMPETITION HIGHLIGHTS
ROYAL CANADIAN ARMY CADETS
DCRA — 1960

CADET RANK	NAME	COMMAND	MATCH	HPS*	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
WO 2	FERRIS, D.M.	Eastern	Tyro	50	48	14	387(115)
Major	THOMPSON, J.N.	Western	"	50	47	20	387(115)
Lt.	BELLAMY, D.E.	Western	"	50	47	21	387(115)
Major	ENRIGHT, T.J.	Central	"	50	47	26	387(115)
Sgt.	SANFORD, M.	Eastern	"	50	47	34	387(115)
Lt.	WILSON, G.R.	Eastern	"	50	47	39	387(115)
Cadet	TREMBLAY, R.	Quebec	"	50	46	53	387(115)
WO 1	WILKINSON, D.B.	Western	"	50	46	63	387(115)
Major	ENRIGHT, T.J.	Central	The MacDougall	100	96	15	521(224)
WO 2	BARCLAY, P.	Western	" "	100	95	23	621(224)
Major	THOMPSON, J.N.	Western	" "	100	95	34	621(224)
Capt.	BISHOP, L.G.	Central	" "	100	95	46	621(224)
Sgt.	BREHM, R.P.	Western	The Bankers	100	93	59	618(253)
Lt.	BELLAMY, D.E.	Western	" "	100	92	107	618(253)
Cpl.	FIDDES, A.J.	Quebec	" "	100	92	130	618(253)
Lt.	DOWNS, J.K.	Central	The President's	75	70	13	618(224)
Cpl.	FIDDES, A.J.	Quebec	" "	75	68	74	518(224)
Sgt.	OSTASH, N.	Western	" "	75	68	96	518(224)
WO 2	FERRIS, D.M.	Eastern	" "	75	58	102	618(224)
Major	SCANTLAND, D.L.	Quebec	The Connaught	75	73	23	623(224)
Drum Maj.	PHILLIPS, R.E.	Quebec	" "	75	71	79	623(224)

INDIVIDUAL COMPETITION HIGHLIGHTS ROYAL CANADIAN ARMY CADETS DCRA — 1960

(Continued from page 109)

CADET RANK	NAME	COMMAND	MATCH	HPS *	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
Lt.	DOWNS, J.K.	Central	The Connaught	75	70	105	623(224)
WO 2	WAUD, W.R.	Central	The MacDonald	125	119	27	619(264)
Sgt.	COOK, D.S.	Eastern	" "	125	118	40	619(264)
Major	DEARBORN, R.G.	Central	" "	125	118	42	619(264)
WO 2	FERRIS, D.M.	Eastern	" "	125	118	53	619(264)
Lt.	DOWNS, J.K.	Central	" "	125	117	84	619(264)
Major	McCULLAGH, S.G.	Central	Alexander of Tunis	a.50	46	16	612(200)
Sgt.	COOK, D.S.	Eastern	Alexander of Tunis	a.50	45	28	612(200)
Major	McCULLAGH, S.G.	Central	Final Stage Gov. General's Prize	b.250	223	32	614(300)
Capt.	BISHOP, L.G.	Central	" " "	b.250	220	72	614(300)
Major	SCANTLAND, D.	Quebec	" " "	b.250	215	156	614(300)
Major	SCANTLAND, D.	Quebec	City of Ottawa	100	92	55	614(224)
Major	McCULLAGH, S.G.	Central	" " "	100	92	57	614(224)
WO 2	BLANKE, B.	Quebec	" " "	100	91	69	614(224)
Cadet	TREMBLAY, R.	Quebec	" " "	100	91	71	614(224)
Lt.	DOWNS, J.K.	Central	" " "	100	91	75	614(224)
Major	THOMPSON, J.N.	Western	" " "	100	90	109	614(224)
Lt.	MARSHALL, C.G.	Western	The Letson	105	95	49	394(137)

* Highest possible score.

a. Fired at 900 yards.

b. Fired at 300, 600, 900 yards.

Note: Figures in brackets indicate total number of firers with qualifying scores to count.

(Continued on page 111)

Consolidation

Military objectives must always correspond to the forces and other means available for their attainment. From a purely tactical point of view it is not enough simply to reach an objective: consolidation upon the objective is also essential. If this is not achieved, the forces involved will have overreached themselves, and the offensive operation, no matter now attractive the target, will contain within itself and from the beginning the germ of failure if not actual defeat. — *Colonel-General Kurt Zeitzler in discussing the German defeat at Stalingrad.*

INDIVIDUAL COMPETITION HIGHLIGHTS

ROYAL CANADIAN ARMY CADETS

DCRA — 1961

CADET RANK	NAME	COMMAND	MATCH	HPS *	SCORE	PLACE	TOTAL NUMBER OF COMPETITORS
Cadet	LEFEBVRE, G.	Quebec	Tyro	50	49	4	318(123)
Cadet	WEBB, P.	Central	"	50	49	13	318(123)
S/Sgt.	FIDDES, J.	Quebec	"	50	48	18	318(123)
Cadet	FIDDES, A.	Quebec	"	50	48	19	318(123)
Major	SCHUTT, F.	Central	"	50	47	39	318(123)
Sgt.	McALLISTER, L.W.	Western	"	50	47	40	318(123)
Major	JACKSON, C.E.	Eastern	"	50	47	41	318(123)
Cadet	LEROUX, C.	Quebec	"	50	47	49	318(123)
Major	SCANTLAND, D.S.	Quebec	The MacDougall	100	96	70	561(217)
Cadet	TREMBLAY, R.	Quebec	" "	100	95	91	561(217)
S/Sgt.	KIERANS, T.	Central	" "	100	95	93	561(217)
Major	LEWIS, C.P.	Central	" "	100	95	98	561(217)
Cadet	FIDDES, A.	Quebec	The Bankers	100	95	40	560(271)
WO 2	ISAACS, R.	Western	" "	100	94	54	560(271)
Cadet	VEZINA, P.	Quebec	" "	100	94	77	560(271)
Cadet	BINETTE, R.	Quebec	" "	100	93	93	560(271)
Sgt.	SCOTT, R.J.	Western	The President's	50	49	3	553(217)
Cadet	BINETTE, R.	Quebec	" "	50	48	26	553(217)
Cadet	LAWRENCE, P.	Quebec	" "	50	47	38	553(217)
Cadet	FIDDES, A.	Quebec	" "	50	47	50	553(217)
S/Sgt.	FIDDES, J.R.	Quebec	The Connaught	50	49	11	556(219)
Cpl.	McMURCHY, I.A.	Western	" "	50	49	37	556(219)
Cadet	TREMBLAY, R.	Quebec	" "	50	48	47	556(219)
Lt.-Col.	ENRIGHT, T.J.	Central	The MacDonald	125	117	54	558(261)
Sgt.	SCOTT, R.J.	Western	" "	125	116	107	557(261)
Lt.	ESDON, N.S.	Central	" "	125	115	120	557(261)
Cadet	TREMBLAY, R.	Quebec	A'exander of Tunis	50	47	30	496(200)
Major	SCANTLAND, D.S.	Quebec	Alexander of Tunis	50	46	65	496(200)
Major	CALLSEN, J.G.	Central	Final Stage Gov. General's Prize	b.250	222	90	549(275)
Lt.-Col.	ENRIGHT, T.J.	Central	" " "	250	221	111	549(275)
Major	SCANTLAND, D.S.	Quebec	" " "	250	221	114	549(275)
Lt.	ESDON, N.S.	Central	City of Ottawa	100	93	53	556(217)
Major	CALLSEN, J.C.	Central	" " "	100	92	59	556(217)
Cadet	TREMBLAY, R.	Quebec	" " "	100	92	61	556(217)
Sgt.	SCOTT, R.J.	Western	" " "	100	92	69	556(217)
Lt.-Col.	JOHNSTON, A.S.	Central	" " "	100	92	71	556(217)
Capt.	SANFORD, M.S.	Eastern	" " "	100	92	79	556(217)
Cadet	WEBB, P.	Central	The Letson	105	95	73	177(130)

* Highest possible score.

a. Fired at 900 yards.

b. Fired at 300, 600, 900 yards.

Note: Figures in brackets indicate total number of firers with qualifying scores to count.

Shooting: A Plea for Publicity

What place is given to shooting in our newspapers, radio and television today? Why shouldn't shooting have a regular column in the newspapers of our communities? Why are the results of matches and leagues not mentioned on the radio? Why shouldn't it have a regular TV programme? Bowling has, and it certainly is not more interesting to watch ten pins being knocked down than to see a trap or skeet bird being blown to pieces, or holes being closely grouped on a target.

How come there is no money (or not much) in shooting that would encourage some shooters to become professionals? Other sports have it. Golf has purses and professionals, also hockey, baseball, bowling, tennis and so on. I think it would be healthier for the minds of the young ones, and the older ones too, to watch a good shooting match than to watch wrestling, westerns or crime stories.—*Leo Brouillette in the November 1961 issue, "The Canadian Marksman".*

Gun Fires 6000 Rounds Per Minute

The world's fastest firing gun, now a weapon of the air, may soon be adapted for a down-to-earth job in the West German Army. It will fire 6000 rounds per minute.

A Vulcan gun, the same weapon that gives the F-104G *Starfighter* its 4000 rounds-per-minute rate of fire, will be mounted on an armoured personnel carrier by a West German manufacturer to demonstrate the greatly increased firepower the gun would give the West German Army.

General Electric, which makes the Vulcan at its Missile and Armament Section, is proving technical assistance to the manufacturer, Mauser-Werke, in the design of a gun mount.

The six-barrel gun, patterned after the Gatling gun, can fire at a rate of one round to more than 6000 rounds per minute. At the 6000 rate, this is more rounds than an infantry rifle company can shoot in 20 minutes.

The Vulcan is used by the U.S. and West German Air Forces in the F-104G and by the U.S. Air Force in the F-105D fighter bomber, B-58 supersonic bomber and the B-52H bomber. —*From a report by General Electric, New York.*

Veteran Member Receives New RCASC History

(Continued from page 96)

On his return to Canada he was posted to Halifax as a captain and military landing officer, retiring in 1920 for the second time. In 1924 Major Prikler organized and commanded "B" Company of the Annapolis Regiment, retiring in 1929 for the last time as a major.—*From a report issued by the Directorate of Public Relations (Army).*

HYDROSTATIC TRANSMISSION

From "Background to Britain" issued by the British Information Services

An announcement that a new hydrostatic transmission system, developed at the National Engineering Laboratory of the British Department of Scientific and Industrial Research (DSIR) was being fitted to a bus and that plans were being made to test it in a small automobile, draws attention to a development which has been referred to as the most important contribution that the laboratory has made to industrial research since it started in 1948. It has been described as a break-through in propulsion comparable to Whittle's jet engine. For his outstanding research work on this invention, Mr. Donald Firth, an engineer at the Laboratory, won the DSIR's Wolfe Award for 1960.

The idea of hydrostatic transmission has attracted mechanical engineers for more than 50 years. It offers four major advantages over other transmission systems (or systems to transmit the power produced in prime movers into propulsion): it is steplessly variable so that in vehicles no gear changes are required; it has a high power-to-weight ration and is suitable for very heavy vehicles; it allows rapid reversing; and the driven end can be some distance from the driving end.

Fundamentally the "super cell", as it has been called, converts power from the driving-shaft of an engine into high pressures in an oil-fired bank through a system of pistons and valves. Until Mr. Firth's development, no practical design had attained a sufficiently high efficiency, long life and silent operation. Mr. Firth has succeeded in developing two types of hydrostatic transmission, both simple and economic. One is highly efficient over a comparatively wide range of operating conditions, is relatively quiet, has a long life, and is suitable for use in ships, heavy-load vehicles and earth-moving equipment.

The first application was for naval service and Mr. Firth was able to meet the very stringent noise requirements of the Admiralty. A 500-horsepower capacity machine has been designed, and still larger machines are being studied. The second, somewhat cheaper, unit is already being used commercially to improve the performance of machine tools, and a vertical boring mill incorporating a hydrostatic drive was shown at the Machine Tool Exhibition at Olympia, London, in 1960. Providing constant cutting speed with changing diameter and eliminating gear changing while in the cut, it gives both improved surface finish and easier control. The time taken for a typical facing operation may be halved compared with that taken by a standard machine. This development is likely to have a profound effect on the future design of a wide range of machine tools. The British Government has taken out some 50 patents on the new invention, and at least 14 British and two United States firms are said to be working on designs.

INDEX... 1961

This index has been prepared for the convenience of readers who want a ready reference for all subjects dealt with in Volume XV (1961) of the Journal. *The majority of the subjects have been cross-indexed: e.g., the title "Anti-Tank Weapons and Their Influence in Battle" is also listed under "Battle..." and "Weapons...". In practically all cases, the subject matter of an article is indicated in the title. In the case of book reviews, the title of the book is enclosed in brackets under the title of the review article.* — Editor.

New Snowshoes for Canadian Soldiers

The Canadian Army has adopted a new magnesium-frame snowshoe, woven with nylon covered aircraft cable, to replace the wooden-frame model with cowhide or "babiche" stringing, used for centuries in Canada's northland.

The new model is the result of several years of study and research by the Directorate of Interservice Development, Department of National Defence in Ottawa. The snowshoes will also go to the Royal Canadian Air Force for use in their survival kits.

Mobility in the northland has been a prime concern with the Army for the past decade. Through exercises, tests and trials, individual mobility for the soldier operating under winter conditions has received considerable attention.

Conventional snowshoes did not meet the requirements of the soldier. Its main drawbacks were maintenance, rapid deterioration, and poor storage life. The wooden frames warped in storage and the moose or cowhide stringing was an easy prey for vermin. Temperature and humidity also affected the snowshoe while in use.

The new magnesium-alloy model is now in production for the Army and, to a lesser degree, the RCAF. Although the ratio of initial cost is approximately 3 to 1 in favour of the wooden snowshoe, the service life of the metal item is estimated to be ten times that of the wooden snowshoe.

The weight of the new snowshoe is about the same as the old. As a result of this development work by the Department of National Defence, snowshoes of a similar type are now available on the commercial market in Canada.—*From a report written by the Directorate of Public Relations (Army), Army Headquarters, Ottawa.*

Sound Idea

50 Years Ago: So common is flying in France now that the new official decree regulating the use of aeroplanes has been made very severe. Aircraft must carry three lights a[illegible] a motor horn, the horn for use in fog.—*From the files of the Army-Navy-Air Force Journal (U.S.).*

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