THE CANADIAN GUNNER

1968


UBIQUE
QUO FAS ET GLORIA DUCUNT

THE CANADIAN GUNNER

Volume 4 **December 1968**

Captain-General
Royal Regiment of Canadian Artillery
Her Majesty The Queen

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Royal Regiment of Canadian Artillery
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FOREWORD

by

Colonel D.W. Francis, CD, Commandant RCSA

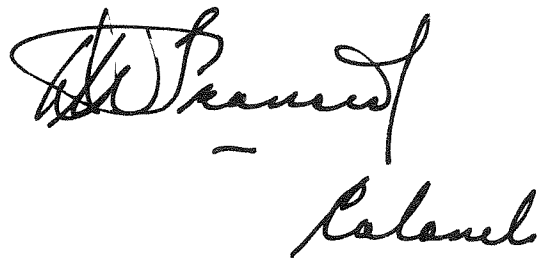
The past year has had its share of difficulties for the Regiment, difficulties borne of the need to adjust to changing times and conditions. Particularly distressing has been the phasing-out of several regular force units, each of which, in its span of service, has contributed to the life and tradition of the Regiment. Perhaps the writer may be forgiven for making nostalgic mention of the loss of both of our regimental bands. What a shame that the colour and tradition embodied in these fine bands is to be forever buried with the past.

In place of those units which have passed into history we are pleased to welcome several new ones and we know that the spirit and pride which has been our heritage will make them worthy members of the Gunner family. Units come and go, but the Regiment goes on and will go on as long as there are guns to serve and men to serve them.

The past year has seen the phasing-out of old equipment and the introduction of the new. Few tears will be shed at the demise of the much maligned 4.2 inch mortar; suffice to say, in spite of its many faults, it filled a need at a particular time, and Gunners extracted maximum value from its marginal capabilities. Of the new equipments possibly the most exciting is the M109 self-propelled 155mm howitzer which will give our mechanized regiments the mobility and firepower they need to do their job on the modern battlefield.

These and other changes have brought problems which have taxed our imagination and skill. We are living in times of great change and we must be prepared to change with the times, casting aside those ideas which are no longer useful and substituting new ones to meet the challenges which face us. At the same time we must be very careful indeed not to change simply for the sake of change. Many of our principles are as valid today as they were in the past; let us not make the mistake of throwing them out because of mounting pressures brought on by peacetime soldiering and uninformed opinion.

In this, the 1968 issue of the Canadian Gunner, your editors have endeavoured to maintain the high standards set in earlier editions, and we hope that there is material here which will be of interest to all Gunners. If this has been achieved, it is due not only to the hard work of the editorial and advertising staff, but also to support from units and individuals in the form of literary material and advertising sales. Inevitably, in putting the material together, a certain amount has to be omitted or re-arranged, but without your assistance we cannot hope to produce a worthwhile magazine. I would therefore ask for your continued support and request that an early start be made on submission of material for the 1969 issue.



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The Wild GAK 1 is a lightweight gyro attachment (of the "Rellensmann System" type) which converts any normal theodolite into a North seeking instrument. The GAK 1 is merely set up on the special bridge, with forced-centering, which is mounted permanently on the theodolite's standards. True North is found with a standard deviation (m.s.e.) of ±30" of arc, in 20 minutes of time, including the setting-up of the instrument. This is possible under almost all weather conditions and within a temperature range of -22° F to +122° F (-30° C to +50° C).

The GAK 1 is ideally suited for the Wild T16 and T2 Theodolites.

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Editorial Comment

WHAT IS A GUNNER?

The present massive reorganization of the Canadian Armed Forces is accompanied, inevitably, by periods of self-appraisal and doubt. With so much change taking place, with so many strange terms and new organizations, one tends to lose orientation and become confused. In the four years since the White Paper, this has been largely a personal problem. Where do I, as an individual, fit in? Who is looking after my interests? What is my future in the new set-up? These have been the selfish, but human, doubts in our minds. There have been repercussions at unit level too, where restrictions or disbandments have occurred but these have been recognizable as necessary economies or in the long term interests of the Regiment. Only lately, when we find such terms as "regiment" and "corps" being edited to read "list" or "branch", does one wonder whether the whole corps system, as we know it, is in jeopardy.

Whether or not there is substance for this apprehension, it is a good time for all members of the Royal Regiment of Canadian Artillery to reflect for a moment on the nature of being a Gunner. What is his real identity? What sets him apart? It is axiomatic to say that a Gunner must know his job. He must be capable of doing intricate calculations under pressure, quickly and accurately. He must be skilled in the use of such complicated instruments as theodolites and computers. He must be an effective member of his team – his gun detachment or his troop. However, these same abilities may be required of a skilled worker in business or industry.

But the Gunner doesn't work for Eaton's or General Motors. He does his job in battle and battle is not a management exercise. When the chips are down and lives are at stake, more is required than a knowledge of behavioural patterns or skill at a trade. Success in battle demands guts, leadership, loyalty and self sacrifice. These old-fashioned qualities, essential in a Gunner, are less important in a civilian job than the right to strike for higher pay. So it is service on one hand and self-interest on the other, that distinguish the Gunner from the civilian.

It would be better to consider the Gunner only in terms of his battlefield environment. How does he rate in relation to an Infanteer or a Trooper? Is he simply an expert in handling a crew-served weapon? Someone who can get through on a radio? Someone who understands graphs and can do the sums necessary to produce indirect fire? No, other soldiers do all these things.

The Gunner is much more. He's the No 3 centering his bubble meticulously in spite of enemy CB. He's the recce party surveyor working on regimental grid beyond our FDLs. He's the FOO who climbs a tree to do his job, when everyone else is ducking. He's the GPO on duty round the clock to make sure the fire of his guns is available, instantly. The Gunner is unique among soldiers in that his sole function in battle is to support others with fire and he must be ever mindful that a minor error on his part could mean death for the troops he is supporting.

But it's not so much what the Gunner does, as how he does it, that sets him apart. It's his state of mind, his dedication to service that is unique – his whole reason for existence being to produce the best fire support possible, so that the other arms can live and get on with their job. So let's not become unduly concerned about semantics – whether its a "corps" or a "branch" isn't really important. What is important is that our intangible but vital Gunner spirit is preserved and that lessons learned in the past at such cost are not forgotten.

In the bad old days of promotion exams, it was fashionable to summarize common weaknesses of students. Top billing on this list was always given to the inability of officers to express themselves in writing. This short-coming seems to have disappeared with the exams. Or is it that most junior officers now find themselves with nothing more demanding to compose than a covering letter for today's strength return? One way to find out how good you are with a pen is to enter this year's Brook's Memorial Essay Competition. The subject "Aerial Artillery" (see page 1 for details) is an easy one, requiring a minimum of research and a maximum of imagination. Try it – it may help your career and your bank account too.

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THE COLONEL GEOFFREY BROOKS MEMORIAL

PRIZE ESSAY COMPETITION

1969

Prizes First $100.00
Second $ 50.00

Subject *The evolution of artillery is a continuing process. One aspect that is attracting the attention of gunners throughout the world is the employment of armed helicopters as aerial artillery. Discuss the implications to be considered in replacing conventional artillery equipments with such delivery means.*

Eligibility Regular and Militia officers of the Royal Canadian Artillery, and Officer Cadets enrolled under the Regular Officer Training Plan, the Officer Candidate Training Plan and the Canadian Officers Training Corps, who have completed their first phase of training and who have selected the Royal Canadian Artillery as their corps.

Rules Essay entries should be between 3500 and 5000 words in length. They must be typewritten and submitted in quadruplicate.

The title and page of any published or unpublished work to which reference has been made, or from which extracts have been taken, must be quoted.

Authorship of entries must be strictly anonymous. Each competitor will adopt a motto or "nom de plume" which will be quoted at the top of the entry.

A sealed envelope will be enclosed with the entry. This envelope will contain the service number, rank, name and address of the competitor but will have the appropriate motto or "nom de plume" only, typewritten on the outside.

Entries are to be addressed to the Editor of the Canadian Gunner, CFB Shilo, Manitoba, and marked "The Colonel Geoffrey Brooks Memorial Prize Essay Competition" on the envelope. They must reach the office of the Canadian Gunner by 31 July 1969.

Judging The Head of Corps will arrange for a committee to judge the entries. The decisions of this committee will be final.

Results will be made known in the next issue of the Canadian Gunner, and the winning essay will be published in that issue.

If, in the opinion of the judges, no entry is of the required standard, prizes will not be awarded.

The Editor and Staff of the Canadian Gunner cannot be held responsible for the loss or return of any essay submitted; nor shall they incur any liability whatsoever in connection with the receipt, dealings, judging and reports of essays.

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AIR DEFENCE FOR THE CANADIAN LAND FORCES

by MAJ F.R. McCall, CD

Canadian Forces Liaison Officer
United States Army Air Defence Centre
Fort Bliss, Texas

The following article is a general discussion on air defence, with particular emphasis on the needs of Canadian Land Forces. Its purpose is to remind Canadian Gunner Officers that although the Canadian Forces have not taken an active part in air defence since the disbandment of the First Light Anti-Aircraft Artillery Regiment in 1960, the problem of air defence, although sometimes ignored, has in no way diminished. It would be folly to consider that Canada could put a force into the field without any air defence capability and expect it to survive.

The article includes a brief description of the weapon systems in the current air defence inventory, and suggests a combination which might be suitable for the Canadian Forces. The opinions expressed are entirely those of the author and do not necessarily reflect official Canadian doctrine.

When the airplane was first introduced to the battlefield in World War 1, its potential as a weapon of war was not immediately appreciated. The slow flying cumbersome machines of struts and linen were the playthings of dreamers, and had no place in the plans of the Grand Strategists. Battles were won with bayonets, guns and valor and not with toys.

Within a very few months the playthings were providing valuable assistance to their field commanders and were becoming a nuisance to the enemy. They were flying about unmolested and their pilots were casting their gaze into areas that heretofore had been considered secure from the prying eyes of the enemy. They began dropping ordnance from the skies, directing artillery fire, and gathering intelligence.

Something had to be done to squash these young upstarts who had the impertinence to affect the plans of the General Staff. Thus was born a new dimension in the art of war...air and counter air. The importance of this dimension can be realized by considering its impact on the strategy of warfare and the design of materiel.

In order to counter this threat from the air a new generation of guns came into being. Trunnions were raised, cradles deepened, barrels lengthened, muzzle velocities increased, elevating arcs enlarged, traversing rings designed, new sights devised. Radar and computers were employed in an attempt to keep pace with the rapid development of the airplane. In a few short years the guns could no longer cope and missiles, requiring highly sophisticated electronic guidance, control, and surveillance complexes were developed. The cost of dealing with the dreamer's toy had become horrendous.

The strategy of warfare had to undergo a marked change as well. Battles could not be won and armies conquered until air superiority was attained and enemy aircraft were denied free access to the skies over friendly cities, industrial complexes, logistic installations, sea lanes, air dromes and battlefields. Operation "Sea Lion", the proposed invasion of England during World War 2, was wholly dependent on the Luftwaffe winning the Battle of Britain. When the Germans failed to destroy the RAF, Sea Lion was no longer considered feasible and was, therefore, cancelled. The subsequent reverse in air superiority resulting in the bombing of German cities and industry plus the close air support provided for the Allied Armies, hastened the end of the war. The German veterans of the Western Front remember the effects of air superiority and the Wehrmacht of today considers air defence to be paramount in their military planning. More recent history records that Egypt was defeated primarily because her air force was all but destroyed in the early hours of the six day conflict. The Israelis realized the importance of air power and considered air superiority to be their first objective.

It should be quite evident to any student of military history that air power has become one of the major tools of war, and that it has played a principal role in every major armed conflict since its introduction. It should also be evident that future battle commanders, at all levels, must consider the air threat to be a primary factor in the appreciation of each operation they plan, whether it is a major battle or merely a counterinsurgency task.

The preceding paragraphs have served as an introduction to the aim of this article, which is to discuss air defence for the land element of the Canadian Forces. Before determining what air defence weapons should be employed by the Canadian Land Forces, we must consider the existing air threat and environment in which air defence weaponry will have to operate.

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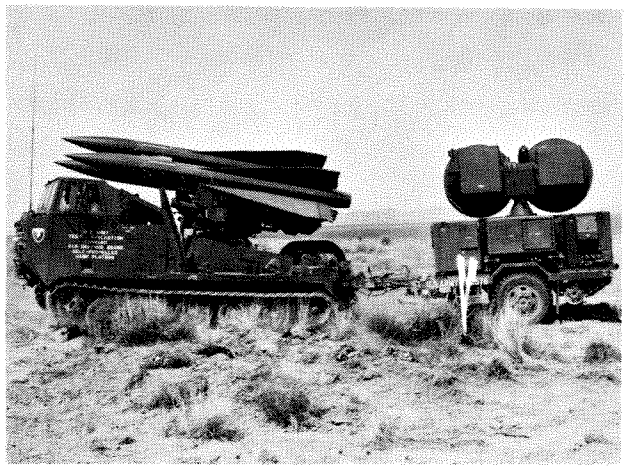
The field commander of today is faced with not only the responsibility of protecting himself from air attack, but also with a relatively new problem---the control of the airspace over his battle area. Throughout the evolution of wheeled and tracked vehicles he has successfully employed staff officers to control the flow of transport over the available routes within his formation boundaries, and he has attempted to adopt the same principle for control of aircraft using his airspace. However, this is becoming an increasingly complex problem as the airspace over the battlefield is being saturated with a widely diversified variety of air vehicles, including aircraft and helicopters (both tactical and logistical), surface-to-surface missiles, surface-to-air missiles, artillery and mortar shells, and surveillance drones, of both enemy and friendly forces. In addition, the airspace is filled with electronic emissions covering the complete length of the electronic spectrum. It is becoming increasingly difficult to discriminate between enemy and friendly users by either visual or electronic means. The field commander will not be able to deliver his weaponry through his airspace to the target without due regard for all airspace users. The undesirability of launching an IR seeking missile at a target while friendly aircraft are operating in the area is self evident. Therefore, before deciding on the best weapons to be employed, it is necessary to consider weapon characteristics such as acquisition and guidance methods, trajectories and degree of discrimination, not only in the light of the expected air threat, but also with regard to the characteristics of the other airspace users.

Before discussing the air threat, it is necessary to make a few assumptions regarding the employment of the Canadian Land Forces. It is assumed that Canada will not field a formation larger than a Division, and most likely will be limited to Brigade or Combat Groups. When not operating independently as a United Nations force, Canadian formations will undoubtedly integrate with US or British Corps and Divisions and, subsequently, will come under the protection of their Corps and Division air defence weapon systems. Therefore, it can be further assumed that Canada will require only forward area self defence weapons. Based on these assumptions, the air threat for which Canadian Forces will be responsible can be confined primarily to self defence against low level tactical strike and reconnaissance aircraft, helicopters, surveillance drones, etc. The weapon systems employed will only have to deal with an air threat from 0 to 10,000 feet and speeds of 0 to Mach 1.5. When operating independently, early warning and target identification will have to come from Canadian resources. When operating with other armies, some of this information may be provided from Corps and Division facilities. The same will be true of command and control of weapon systems and airspace.

Let us now consider some of the forward area air defence weapon systems which are available to cope with the existing air threat.

The Hawk missile system was designed to control the low altitude threat. The system is reliable, mobile and accurate, has the capabilities of engaging two targets simultaneously, and several missiles can be in flight at the same time. Semi-active homing guidance is used in the Hawk system for missile control during flight. Ground-based, continuous-wave (CWAR) radars acquire and track the target. The missile receives radio frequency



SP Hawk Launcher
Towing a Pulse Acquisition Radar

energy reflected from the target and uses this energy in the development of steering commands to direct the missile to the target. To detect targets, the system uses two acquisition radars...one of these, the CWAR, covers the low altitude zone, the primary zone for consideration of Hawk. The other detection radar, the pulse acquisition radar, complements the coverage area of the CWAR by providing a middle altitude, middle range detection capability to the system. Synchronized rotation of the two acquisition radars permits coordinated continual searching for targets. The missile continually searches its target through an on-board tracking antenna, while the semi-active homing guidance system continually adjusts the missile's course to ensure successful intercept. Although the Hawk system is considered to be a corps weapon, the employment guideline is to position the fire units well forward along low altitude

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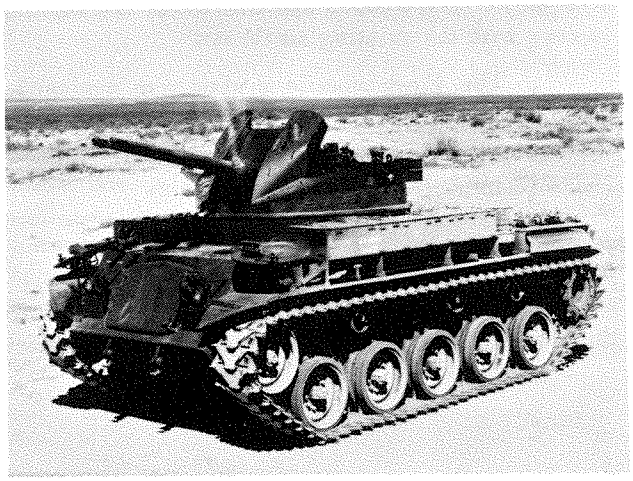
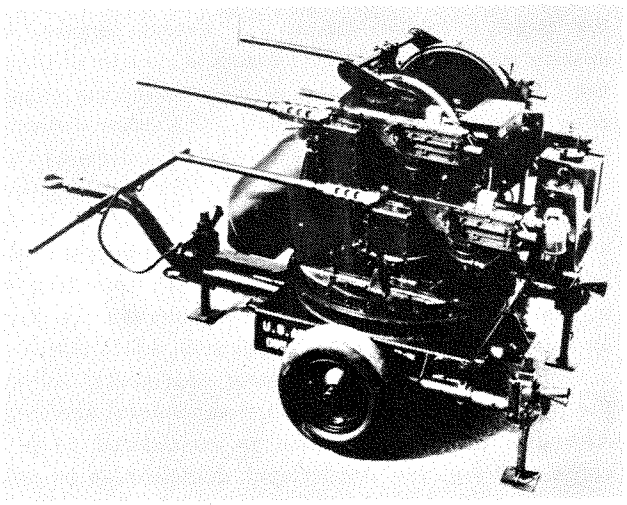
routes of approach to effect target destruction prior to weapon release, regardless of the delivery technique employed. In this respect it may be considered to be within the family of forward area air defence weapons.



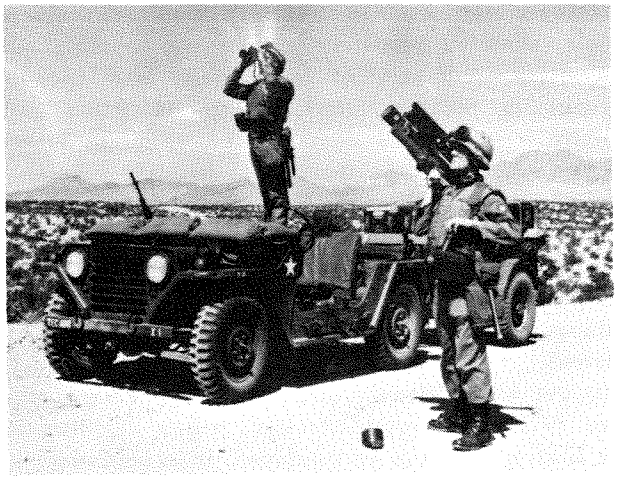
40mm SP M-42 (DUSTER)

The Twin 40mm Self-Propelled, Fully-Tracked Gun M-42 is a light armoured air defence artillery weapon. This vehicle was designed for employment with Divisions for air defence, but because of its rapid rate of fire, it has also proved a valuable support weapon against ground targets. It has a cruising range of 100 miles, at speeds up to 45 mph, a fording depth of 40 inches, and weighs approximately 25 tons. Major armament is the dual 40mm automatic gun, which is a high-velocity, flat-trajectory, clip-fed automatic-loading weapon capable of firing 240 rounds per minute.



Multiple .50 Calibre Machine Gun M-55

The Multiple, .50 Calibre, Machine Gun, trailer mounted, M-55 is a power-driven, semi-automatic gun mount with a self contained power unit. The mount is constructed to accommodate four .50 calibre, heavy barrelled, turret-type Browning machineguns. The mounts are designed to be traversed through 360° and elevated through an arc of −10° to plus 90° from the horizontal. It is fundamentally an automatic weapon fired by means of a solenoid and will automatically fire and load as long as pressure is applied to one or both triggers located in the control handles.



Redeye Team – Observer and Gunner With Block III Redeye Launcher

The Redeye weapon is a man transportable, shoulder fired air defence system used for protection of front line troops against attack by low altitude aircraft. Redeye is capable of engaging a wide variety of targets to include jets, helicopters and reconnaissance aircraft. It is composed of two basic elements...missile and launcher. The missile comes sealed in the launcher and cannot be removed in the field except by firing. The missile is stabilized by four fins in the rear and steered by two movable fins near the front. It has an IR homing guidance system, an eject motor, a sustainer motor, and a high explosive warhead. The missile is fired from a launcher approximately four feet long and three inches in diameter. It weighs approximately 29 pounds. It is operated by one man and requires a minimum of organizational maintenance. It uses IR homing and proportional navigation.

Chaparral is a self-propelled, fair-weather guided missile system being fielded to protect the forward area of the field army against attack by helicopters and piston-driven and jet aircraft operating at low altitudes. The system consists of a full-

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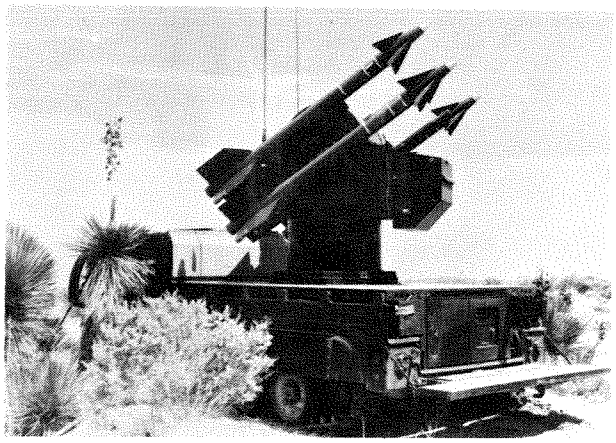
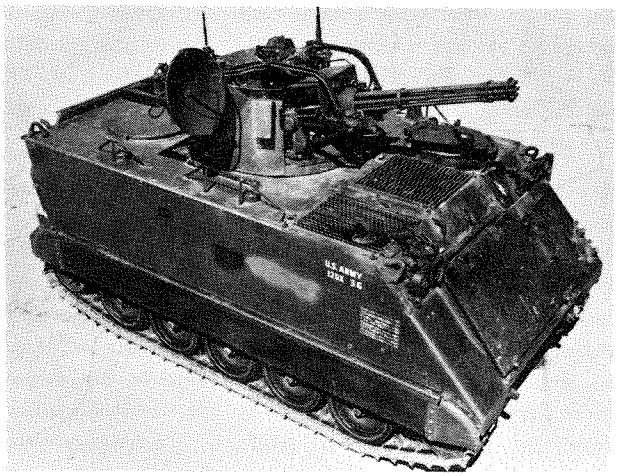


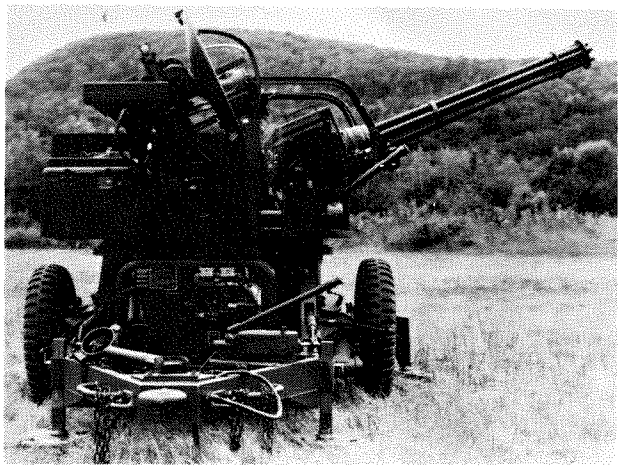
Chaparral with Turret Extended Ready for Action

tracked vehicle, carrying a Chaparral unit which mounts four missiles ready to fire on a movable turret. The system is fully mobile having a top speed of 40 mph, a cruising range of about 300 miles with cross country and stream fording capabilities. The Chaparral is a modification of the Navy Sidewinder and uses passive IR homing and proportional navigation to intercept its target. The fire unit is manned by a crew of five men consisting of a crew chief, a senior gunner, the driver and two observers. The gunner operates the weapon system while sitting inside the fully enclosed mount. Targets are visually detected by the observers and tracked by the gunner.



20mm Vulcan (SP)

The 20mm Vulcan automatic gun is fully mobile and has an extremely high rate of fire capable of engaging both aerial and ground targets. When Vulcan is employed it will augment the Army's capability to defend forward area units against both ground and air attacks, and its effective range complements the minimum range limitation of the Chaparral system. The Vulcan will have a four man squad. The Vulcan is an adaptation of the Air Force's gun system – externally powered, six barrel, rotary action weapon. Each barrel has its own bolt mechanism which chambers, fires and extracts each time the barrel clusters make a complete revolution; thus six rounds are electrically fired during each revolution of the barrel cluster. The firing rate of the Vulcan air-to-air application has been 4000 to 6000 rounds per minute, however, a rate of 3000 rounds per minute has been selected for the ground-to-air application. The fire control system will consist of a lead computing sight, a sight current generator and a radar. A towed version has recently been accepted by the US Army.



20mm Vulcan (Towed)

The Rapier air defence system is being developed by British Aircraft Corporation to meet the requirement for a low level anti-aircraft artillery defence weapon capable of operating in a wide variety of roles. When in action, the system is operated and controlled by one man. A second man is required to act as relief operator and when necessary, assist in re-loading missiles. Rapid deployment into action is a special feature of the system and normally requires a detachment of five men. It can, however, be deployed using a minimum detachment of three men. The system incorporates a search radar, which employs a beam to scan continuously a volume of space about the horizontal. When a target is detected, it is automatically challenged and if no friendly reply is received an alarm is sounded to alert the operator. At the same time as the alarm is sounded, the optical head of the tracker and the missile launcher are automatically aligned to the direction of the target. The operator will search in elevation to acquire the target in his optical sight and will switch to missile tracking. The system computer will

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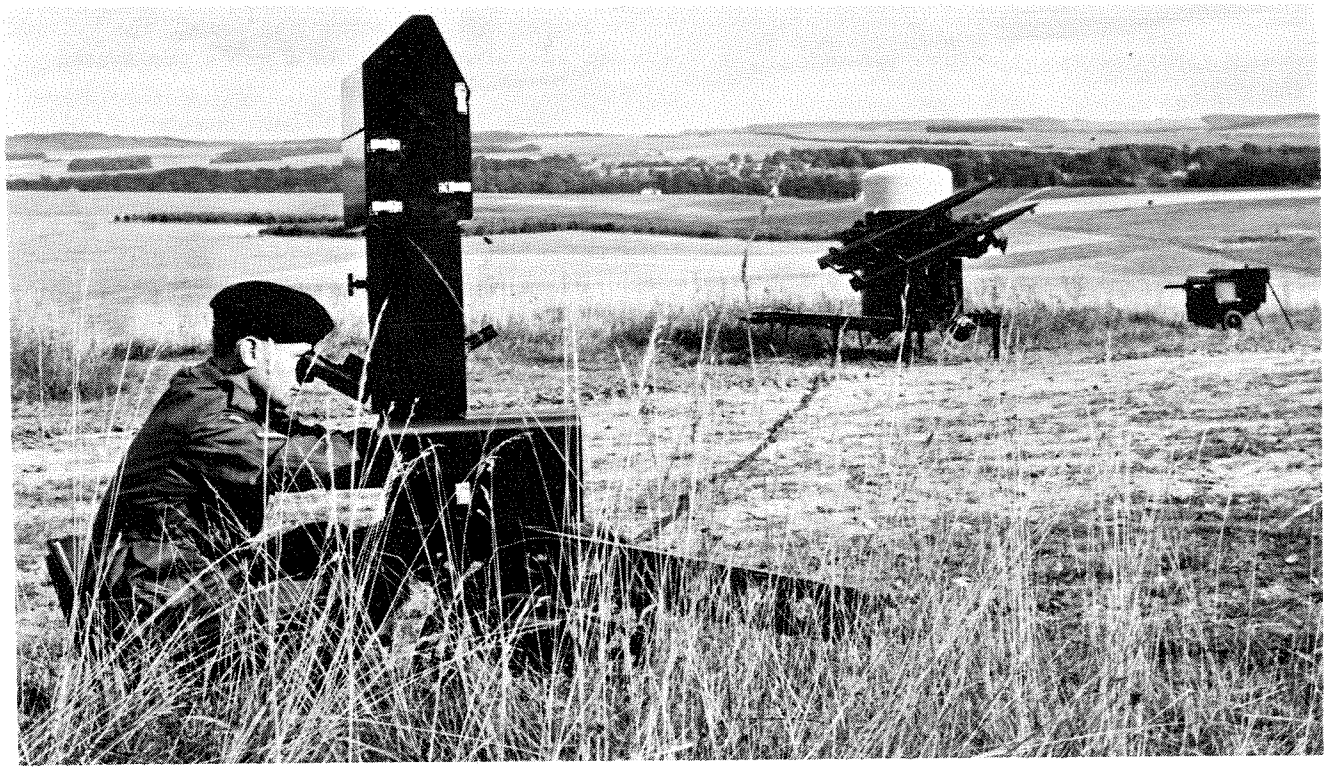
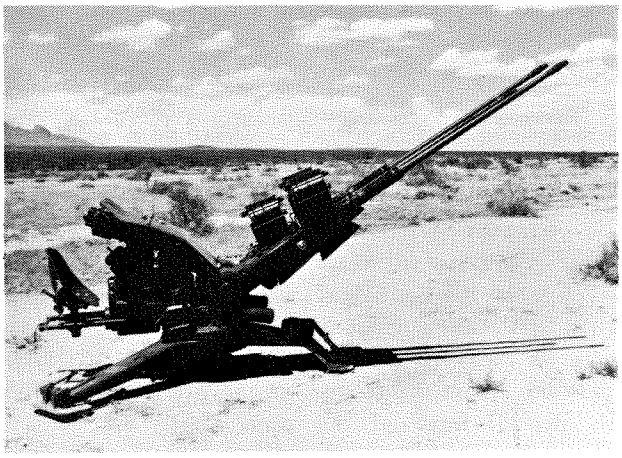


Rapier Air Defence System

signal the operator when the target is engageable and a missile can be fired. The operator will continue to track the target throughout the engagement and as a result will automatically direct the missile to impact at his point of aim. The missile carries rear mounted flares, which are seen in the tracking head, and any deviation of the missile from the sight line to the target is measured and processed by the computer into missile commands, which are relayed to the missile by a command link to maintain the missile on a collision heading.



Hispano/Suiza 820/665
Tri-Barrel 20mm Gun System

The Hispano-Suiza 820/665 tri-barrel, 20mm gun system is capable of firing 1000 rounds per barrel, per minute, for a total of 3000 rounds per minute. It is a lightweight towed gun system which utilizes a self-contained fire control device and power source for anti-aircraft and ground support use. The overall weight in the transport configuration is approximately 3300 pounds. The system is 181 inches long 71 inches wide and 92 inches high.

None of the weapon systems described, with the exception of Hawk and Rapier, have a surveillance capability. To overcome this discrepancy, the US has developed a forward area alerting radar (FAAR) to provide early warning for Chaparral and Vulcan. FAAR is a mobile, lightweight radar that transmits early warning information in digital form to the Chaparral/Vulcan (C/V) squads by radio. There are 12 FAAR radars in the C/V battalion organized under a FAAR platoon. To receive the information transmitted from the FAAR radar site, each C/V squad is equipped with a rapid alerting and identification display (RAID) unit. The RAID unit is a receiver that allows each C/V squad to receive the information transmitted from the FAAR radar site. RAID displays approximate direction and location, and indicates tentative identification of aircraft. Positive visual identification is still required before the squad can engage an aircraft.

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Which of these systems would best suit Canadian needs is dependent upon initial costs, training costs, availability, maintenance and spares, airportability in Canadian transport, as well as suitability consistent with the tasks, which the Canadian Forces may be called upon to perform. In an independent operation targets can be expected to approach from any direction and in the case of strike and reconnaissance jet aircraft will be visible for only a matter of seconds. They will fly low at supersonic speeds and give very little warning of their approach. Slow flying, light reconnaissance and transport aircraft and helicopters will fly low taking advantage of ground cover. Engagement times for this type of target should be longer than for a supersonic jet, but even they will attempt to limit their exposure time to less than one minute. On the other hand, surveillance drones may be programmed to fly a specific pattern and rely upon speed and their relatively small size for protection. Therefore, any forward area weapon system selected will have to have a fast reaction time, a high kill probability, be adaptable to probable Canadian missions, and have some surveillance capability.

When choosing a weapon system, another factor to consider is its head-on capability. Most missiles employing IR seeker systems are primarily tail chase weapons and cannot truly be considered as self defence weapons, but rather attrition weapons. However, they are generally far more efficient than guns as far as target kills are concerned. This may suggest a mix of guns and missiles, such as the US concept of mixing Chaparral and Vulcan. The British Rapier has a head-on capability, but employs a command guidance system which is susceptible to ECM and, therefore, should be provided with a passive weapon backup. This could be accomplished by combining it with a gun system, or with a passive guidance missile system such as Chaparral or Redeye.

All available gun systems, with the possible exception of the M-55, have considerable disadvantages for the Canadian Forces in that they are large and heavy, require a great deal of logistic backup, are expensive in manpower, and have no surveillance capability. The M-55 does not have all of these disadvantages, but it is relatively ineffective against high speed aircraft. The US Chaparral/Vulcan mix has the disadvantages listed above, but in even greater proportions. In addition, they are very expensive to purchase, maintain and supply.

It would appear from the foregoing that a mix such as Rapier and Redeye would best suit the needs of the Canadian Land Forces. They fulfill the requirements of a forward area air defence system to meet the air threat, as well as any other combination of weapons which are available now or in the foreseeable future. Of the available effective weapon systems, they are the least expensive in cost and manpower, they are easily airportable in Canadian aircraft, and they require the least logistic backup. Redeye is small enough to accompany the initial elements of a task force to provide a modicum of air defence in the early stages of the battle. Improved versions of these systems should be operational in the near future and in each case the complete system is available from either the US or Britain, which is a more desirable situation for Canada than dealing with other foreign powers.

It was not intended that this article should constitute a complete thesis on air defence for the Canadian Land Forces, but that it should serve as a reminder that air defence is a prime consideration in all operational planning and that the Canadian Forces must have an air defence capability. The weapon systems described do not include all the air defence weapons, which might be available to Canada. There are a number of others under development such as the US SAM-D, a highly sophisticated system designed to replace Nike and Hawk; Roland, a French-German collaboration; the French SP, 30mm, Dual Gun System, and the British shoulder operated Blowpipe. The disadvantages of these systems for Canadian needs will outweigh the advantages of a Rapier/Redeye mix by reason of their state of development, size and complexity, or the necessity of dealing with a collaboration of two or more foreign powers.

There is no plenary solution to the air defence problem available to the field commander now or in the immediate future and, therefore, Canada must acquire the best weapons available consistent with Canadian needs and the Canadian purse. Considering the present state of the art, this would appear to be a mix of the US Redeye and the British Rapier.

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Australian Gunners in South Vietnam

by
MAJ M.E.P. Burge, RAA

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Similarities in organization, training and weapons between the RAA and the RCA make the experiences and observations of 1 ATF in South Vietnam particularly interesting to Canadian Gunners. The RAA approach to the employment and mobility of light howitzers provides useful lessons especially for those units slated for similar equipment in the Canadian Armed Forces.

Background

Thirty two miles south-east of Saigon, and fifteen miles north of its Logistic Support Group Base at Vung Tau, is situated the 1st Australian Task Force (1 A.T.F.) Forward Operational Base. The task of this formation is to secure the Province of Phuoc Tuy, within which it lies, and so permit the Government to re-establish control throughout the area. The major units available to the task force commander to enable him to accomplish this task are two infantry battalions, an A.P.C. squadron, a field regiment, a field engineer squadron and a S.A.S. squadron.

These units are deployed in a rubber plantation, around a hill feature named Nui Dat, and astride Inter-Provincial Route 2 which joins the provincial capital of Baria to the town of Xuan Loc. This route, which is barely wide enough to take a 2½ ton truck and is in a state of bad repair, is surfaced almost entirely with laterite except for a few sections which have been bitumenized. The continual flow of both tracked and wheeled heavy vehicles takes an increasing toll of the already poor surface. The feature Nui Dat (which as far as can be ascertained means 'mound of earth' and is one of many in the Province) is about 300-ft high and permits observation of the surrounding area out to about 8000-metres.

A gunner on his way to the forward operational base would land in either a chartered civilian aircraft or R.A.A.F. Hercules at Saigon's Tan Son

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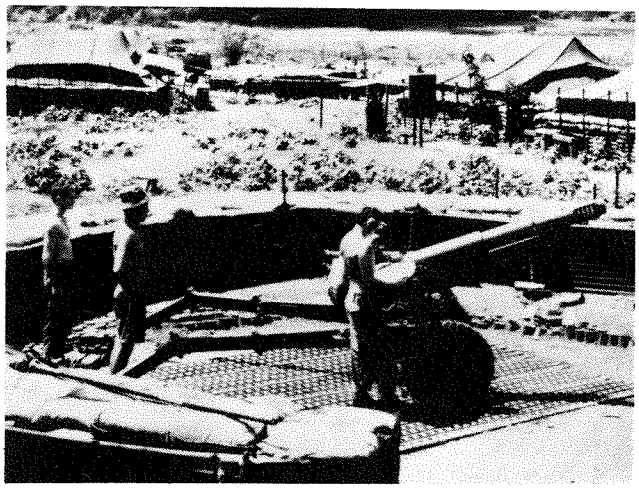

NUI DAT – 103rd Field Battery Gun Position

Nhut International Airport or the medium range transport airstrip at Vung Tau. For those landing at Vung Tau (under French rule named Cap St. Jacques) it is a matter of transferring to either a short range tactical transport aircraft (Caribou) or a medium lift helicopter (Chinook) and flying for about six minutes across mangrove swamps and paddy to the forward base area.

Those landing at Tan Son Nhut would probably catch one of the 'Wallaby' flights from this airport ot the airstrip at Nui Dat twenty minutes away. The 'Wallaby' flights are courier runs operated twice daily by the R.A.A.F. with Caribou aircraft. While waiting for a flight new arrivals would not be bored as they watched the parade of aircraft at one of the most fascinating and busiest airports in the world. In the space of thirty minutes it is not unusual to see several ground-strike aircraft take-off, loaded with ordnance, followed by a dozen transports, ranging from Caribous to the huge four-jet Starlifters. Then Air France and Pan Am civil Boeing 707 jets, landing after having circled for an hour awaiting clearance, and after these an Air Vietnam civil Boeing 727 departing. At Tan Son Nhut the might of the American war machine can be seen in operation. It is staggering to those not used to such large forces.

During the twenty minute flight from Tan Son Nhut the aircraft passes over the once beautiful but now war torn and over populated capital of Saigon. It flies along the Saigon River crammed with shipping awaiting unloading, then over patches of secondary and primary jungle and rubber plantations, until reaching the expanisve patchwork quilt pattern of paddys which form one of the richest rice areas of Vietnam. To the South are the rugged Nui Dinh, Nui Thi Vai and Long Hai hills which rise almost directly from the sea and then fall abruptly into the paddy. The paddy which is not interrupted by these hills merges into mangrove swamp, cut by numerous channels, which in turn merge into the South China Sea. The new arrival would also see numerous small battered villages dotted over the area and linked by an irregular pattern of red laterite roads.

The climate, as might be expected in such an area, is hot and humid all the year round. From the air, during the wet season, most of Phuoc Tuy Province looks as though it has submerged. In the dry season, what was deep red or grey mud turns to an equally uncomfortable powdery dust, eventually covering every item of equipment and personal property.

Establishing of the Forward Operational Base

Prior to the arrival of 1 A.T.F., Phuoc Tuy Province was almost completely under Viet Cong (V.C.) domination, the Government forces (the Army of the Republic of Vietnam, A.R.V.N.) being virtually confined to defended villages from which they rarely moved. A United States Advisory H.Q. did exist in the capital of Baria and some advisers were allotted to A.R.V.N. compounds throughout the Province.

At that time there was little doubt that Communist Revolutionary Warfare in the area had developed to a stage between the active phase and counter-offensive. Control of the Province was essential to the V.C. as it provided one of their major sources of food, as well as secure areas for the entry of arms and equipment by sea from the North. The major V.C. forces in Phuoc Tuy and adjacent provinces consisted of a highly trained and skilful group of local guerillas, a well equipped and enterprising regional force battalion (D.445), and the 5th V.C. Division of three regiments plus numerous resupply groups. The operation to establish the forward operational base at Nui Dat was a combined United States and Australian heliborne assault. The U.S. 173 Independent Airborne Brigade provided the security to allow the Australian Force to get its feet on the ground. The gunners, much to their surprise, found themselves holding approximately one third of the occupied portion of the perimeter. The western edge of the defended area was secured by a minefield which could be covered by fire from Nui Dat and the cavalry squadron area. The reason for this was two-fold; firstly, with only two battalions, there was insufficient infantry to secure the necessary perimeter, and secondly, there was a requirement to use high-angle due to local crest problems. The already appreciated problem of the minimum high-angle range of the Italian Pack How-

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itzer became a reality, as it did on subsequent operations to extend the controlled area. Battalion mortars provided indirect fire support for the gun areas.

The Gunners set about their task of establishing gun areas, adjusting and recording D.Fs., and developing local defence arrangements, with an energy somewhat inspired by the ever present threat of attack. Again the much discussed methods of defending gun areas became a reality. There is no doubt that it is difficult, particularly in adverse climatic conditions when dial sights continually fog-up, to provide continuous support for the infantry, develop the gun area, and establish the sophisticated system of defensive devices required as part of a forward operational base perimeter.

Other unanticipated problems became apparent. It was necessary initially to use three trails cranked, as with trails straight they sank deep into the mud and this again limited minimum high-angle range. The requirement for 6,400 mil shooting; drainage of the built-up gun pits; sinking of wheels into the mud; ammunition storage; as the areas developed, typical gunner initiative found ways and means of overcoming these and many other problems.

With the overall development of the forward operational base, it was possible to relocate one battery near the centre of the Task Force area. This battery was then capable of providing fire support for all units on the perimeter and was relieved of the heavy burden of holding part of the wire.

Artillery Available to the Task Force and its Allocation

Artillery available to the Task Force consisted of a field regiment of two Australian batteries with one New Zealand battery under command, and two United States batteries, one medium and one heavy, allocated from the Corps Artillery reinforcing the Task Force. For those now familiar with the proposed A.B.C.A. terms, the U.S. term 'reinforcing' approximates to our allotment 'in support and at priority call'. Also under command of the field regiment were a survey section, a mortar-locating radar section and a task force artillery intelligence section from the divisional locating battery.

Originally, all batteries of the field regiment had Italian Pack Howitzers. Gradually U.S. 105 mm M2A2 howitzers were brought to the theatre and eventually the whole regiment was equipped with these. The medium battery was equipped with six 155mm M109 howitzers and the heavy battery normally maintained two 8-in S.P. howitzers and two 175mm S.P. guns with the ability to change to either four of one or the other, depending on the

105th Battery Gun About to Move to A New Position

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task, in the very short time of forty minutes.

As might be expected, two of the field batteries were allotted in direct support of the infantry battalions, the third remaining in support of the Task Force. The ever present threat of an attack against the operational base necessitated the continual provision of liaison, communications and observation to the directly supported battalion, for the complete period of a battery's tour of duty in the theatre. Consequently battery commanders and forward observers only occasionally visited the gun areas and regimental mess. During any such visit a stand-in was usually required at the battalion.

In counter-revolutionary warfare it is desirable to have one forward observer available to each infantry company, but our establishment allows for only three forward observers in each battery. Fortunately the problem was overcome by using forward observers from the supporting battery or the U.S. batteries, who were only too pleased to provide any assistance necessary. Operational control of the U.S. batteries was vested in the Task Force Commander and it was remarkable how readily they accepted our British procedures and methods of operating, although the A.B.C.A. agreements on artillery fire direction procedures had not been fully implemented by the U.S. Artillery. Overall, their assistance to the Task Force was invaluable and excellent relations existed. These were assisted by the exchange of gun numbers and by various social and sporting activities.

Operations

As the operational base developed and the intelligence network was established, operations were commenced to extend the controlled area. The first was to destroy a V.C. fortified village, not more than five kilometres south-east of the base, and to resettle the villagers into another on Route 2, about three kilometres south of Nui Dat. Without doubt there was some resentment from the displaced villagers but the operation clearly showed the local population that the Australians did not intend to remain within the confines of their defended area and that they were a force to contend with. Fire support for this operation was easily provided from the base gun areas.

Prior to this operation contact had been established with the Province Military Chief who seemed to be most reliable and anxious to assist in every way. With the development of mutual confidence his assistance and that of his forces was excellent, which unfortunately could not be said for some other Provinces.

During this period Gunner fears about the standard of maps and survey control points were dispelled. Overall, the standard of survey available is relatively high, the country having been well covered by the French; maps have proved reasonably reliable, and massive United States cartographic assistance is gradually improving the situation.

The pace of operations increased rapidly. Because of the necessity constantly to maintain the security of the base, and have a reaction-force readily available, operations were usually limited to battalion-battery actions lasting anything from one or two days to just over two weeks. The type of operations undertaken are common to counter-revolutionary warfare in any theatre, and covered cordon and search, search and clear, search and destroy, fix and destroy, route-securing and of course routine and constant patrolling tasks.

The work load on forward observer parties was tremendous. In a situation where a platoon patrol could find itself involved with anything from two V.C. couriers to a regiment, it was advisable that some gunner element should accompany all patrols down to platoon level. The forward observer and his assistant had to share these tasks and as a result carried out more patrols than the average infantryman. Of constant concern to the battery commander, and also fortunately to the battalion commander, was the danger of exhausting forward observer parties. To get a company commander to accept a 'stand-in' forward observer, so that his usual gunner could be rested, was possibly one of the most difficult tasks the battery commander had to face.

Rarely were forward observers actually able to see targets and adjustment was mainly carried out by ear, an art by no means new but seldom practised in peacetime exercises. Most forward observers became extremely proficient in this method of adjusting fire but were always fully aware of the dangers of becoming over-confident, of difficult map-spotting, and of tree bursts when fire was required very close to our troops. Close target calculations must become second nature, although the tactical situation will rarely allow for the full time-consuming process to be completed.

As the controlled area was expanded, and for operations which were based on definite intelligence information, it was necessary to move guns out of the base area. Gun areas, as statistics show, are a favourite target of the V.C., and assistance in defending these areas was always given high priority. To my knowledge no gun area has had less

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Gun of 105th Field Battery Opening Fire A Few Minutes After Being Landed by Helicopter

than a company of infantry to assist in its protection. This assistance has been willingly given by the infantry and has helped tremendously in establishing good gunner-infantry relations. What it really boils down to is that gun numbers must get to know the people they are supporting and that infantrymen must see what goes on at the gun position. This may appear to be an uneconomical use of an infantry company but the loss of a battery of guns is not an acceptable alternative.

The main V.C. offensive action against the base consisted of isolated mortaring. Initially however they attempted their well-known tactic of drawing out a portion of the force, engaging it, and ambushing the reaction-force. In defeating the V.C. on this occasion the guns were the major factor, as they accounted for the majority of the enemy killed and wounded.

Operations were mostly indirect in nature, such as attempting to destroy enemy base camps, rice and arms caches, cutting lines of communication and squeezing out the village communist cadres by cordon and search. This proved more economical and rewarding than attempting to chase and close with a shadowy enemy through almost limitless, unfamiliar jungle areas. Whenever intelligence reports were considered reliable enough, intense efforts were made to achieve direct contact with V.C. units. These have rarely attained the degree of success hoped-for in the planning stages.

Movement

Of the many equipments of modern war none has had such a profound effect in Vietnam as the helicopter. Our initial deployments outside the base area were however by wheeled or tracked vehicles. Although successful these were not without their problems.

The task force was deployed on light scales compared with British scales of equipment. For a field regiment the organic transport is forty ¾-ton vehicles. The movement of a battery, therefore, must inevitably be reliant upon assistance from R.A.A.S.C. 2½-ton vehicles or the M113, A.P.Cs. Under these circumstances, the requirement for artillery to provide continuous support at the right place and time is hampered by being completely dependent on the ability of the staff to produce the means to move both guns and ammunition. Consequently, as most operations were at battalion group level, the direct-support battery was usually placed under command of the infantry for movement. Even with good co-operation some difficulties arose, undoubtedly due to lack of understanding of mutual problems.

Movement by road in Vietnam is uneconomical, insecure and time consuming. Considering the limited number available to us, it is also uneconomical to move the guns by utility helicopters. The U.S. has come to the rescue and on most occasions guns are now moved by the medium helicopters

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(Chinook). This has proved most satisfactory. The Chinook will comfortably lift a howitzer, its stores detachment and some ammunition, even with the loss of load-carrying capacity due to the South East Asian climate. Daily maintenance requirements are easily moved by our own Iroquois but ammunition is far more economically resupplied by the Chinook, which will carry 168 rounds in fibre containers. The return of empty cartridge cases, necessary to ensure they do not fall into V.C. hands for subsequent use in booby traps, is accomplished by sending them back with the Iroquois after their daily maintenance sorties.

Fire Support Co-ordination and Communications

In a war where there are almost unlimited forms of fire support available, and where the number of aircraft flying at any one time over the area of operations rarely comes below dozens, fire support co-ordination presents a problem. Initial attempts to find a solution were not without their difficulties, but a simple clear-cut system evolved which was satisfactory to all concerned. The air warning net ('Kangaroo Control') operated extremely well and, under normal circumstances, clearances for artillery and mortars were received before the equipments were ready to fire.

'Arty Tac' grew in size to cater for the responsibility of co-ordinating R.A.A.F., U.S. Army Aviation and U.S. Airforce requirements, as well as the operation of the air warning net. The latter was manned by a detachment from a flight of the divisional army aviation regiment. It was not uncommon to hear U.S. airborne forward air controllers calling for fire missions from any of the batteries. Although they used fire discipline which was unconventional, to say the least, they usually achieved the desired result.

Battalion Commanders, I am sure, have rarely been so well off for fire support. Through his battery commander, the infantry C.O. can obtain the services of gun ships (Iroquois fitted with machine guns and rockets) in a matter of minutes, ground strike aircraft usually in about twenty minutes, and occasionally a destroyer, in addition to the Task Force artillery. The more uncommon requests, such as for surveillance aircraft and "puff the magic dragon" (a D.C.3 fitted with mini-guns down one side and literally filled with belts of ammunition), take a little longer.

Communications naturally play a major role in fire support co-ordination as they do in all other aspects of war. The U.S. A.N./P.R.C.-25 radio has proved excellent as it is reliable, has good range and also, very important to those walking with it on their back, it is light. When normal V.H.F. communication difficulties arise through screening the problem is rapidly solved by making use of a helicopter or a light fixed-wing aircraft as a relay station. Minor problems have arisen with the incompatability of the 25-set frequency range and that of the radios mounted in aircraft, and also of the type of squelch circuits with different sets. However, steps are being taken to obviate both troubles.

The major problem with communications was interference between nets, both local and distant, due to poor frequency spacing. The lack of suitable frequencies in the V.H.F. range can be readily appreciated when the number of channels required by a force approaching half a million is considered.

Application of Fire

There was nothing new in the types of fire support. Much use was made of preparatory bombardment and harassing fire, the preparation of L.Zs. being the most usual preparatory bombardment task. Fire support available to the battery commander may include the whole of the task force artillery, air strikes, and ships of the U.S. Navy, which posed problems in co-ordination usually overcome by a very efficient system of liaison. Thus the flight path of the helicopters must be clearly defined, as H-hour for such airborne assaults is the time the first chalk touches down on the L.Z.

Of our available types of fire support harassing fire had been given scant attention in training. This is perhaps understandable considering that, with the expected problems of ammunition supply, it had generally been accepted that few or no rounds would be available for such use. In this theatre, fortunately, ammunition is readily available and H.F. has become one of the major forms of application of fire. Although time-consuming in its production, and the subject of perpetual discussion by gunners who had to serve their guns at all hours of day and night, H.F. has apparently achieved excellent effects. Concrete results are not easy to obtain but some prisoners and deserters from the V.C. ranks have stated that this form of fire is the most uncomfortable aspect of their daily life, and more than one deserter has expressed the continual fear of harassing fire as the reason for leaving the enemy ranks. Programmes were carefully compiled and were based on agent reports, known base areas, V.C. tactics and daily routine. For example, the current periods used by V.C. for their daily siesta and movement at night (during which they tend to

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move rapidly along major track systems) were ideal times for H.F. It was very much a process of measure and counter-measure, the timings changing immediately new information about their routine became available. It has also resulted in an increase in their malaria rate. Because of H.F., V.C. cannot afford to sleep under mosquito nets, in which they become entangled when trying to reach their pits.

Civic Action

One of the most important aspects of a counter-revolutionary war is civic action and the gunners assisted in this programme. The assistance given to villages was mostly in the form of help in community projects, medical and dental attention and similar matters. Each major unit of the task force was allocated a village in the Province to sponsor. This field regiment was given the responsibility of a Roman Catholic village, in the north of the Tactical Area of Responsibility, occupied by North Vietnamese who had moved south after the Geneva Accords in 1954.

The Vietnamese are proud people and have traditional customs which are strictly adhered-to. For this reason the forms of assistance given were carefully controlled to ensure the local population was not alienated. Visits by doctors and dentists were most welcome by village priests and elders. Soldiers to help in building such things as schools, hospitals and dispensaries were also appreciated. Hand-outs direct to villagers were strictly forbidden; food and clothing sent from Australia were given to the village chief or priests for distribution, to comply with local customs. In an effort to impress upon villagers the sincerity of our actions one or two gunners lived almost permanently in our adopted village. This had the effect of showing the local population that the assistance was to be continuous, rather than sporadic and available only when the tactical situation allowed. Naturally those soldiers were a valuable source of intelligence, though their lonely and vulnerable position in such a village was not to be envied.

Conclusion

What, then, has the war in South Vietnam taught us? No experienced soldier will be surprised when I state that lessons have been learnt or, more precisely, old lessons re-learnt. We can summarise a few. Firstly, the 105-mm pack howitzer is an excellent equipment for the purpose for which it was designed, but is not robust enough for sustained firing, particularly with high charges, over a protracted period. Secondly, helicopter movement of guns has dispelled fears that artillery would not, in South East Asia, be able to produce fire at the time and place needed. Thirdly, after having had the opportunity to study the gunnery methods employed by our allies, confidence in the British system remains steadfast. Fourthly, our training pamphlets are good and, although more emphasis must be placed on certain techniques in training, nothing new has evolved from the war in this respect.

I believe that Australian Gunners have adapted themselves well to the variety of situations that the complex war in South Vietnam has produced. These situations are little different from those previously encountered by British and Australian Gunners during the emergency in Malaya. Rest assured that our mutual experiences there have provided an excellent basis for training for South Vietnam, or any other counter-revolutionary warfare campaign in South East Asia.

TWENTY MILLION FRENCHMEN CAN'T BE WRONG

The following is an exerpt from "A History of Militarism" by Alfred Vagts on artillery during the French Revolution:

"It had accepted the revolution readily, most of its officers being sympathetic, and the revolution found it advisable and practical to leave its personnel untouched. Dumouriez, who had called the artillery "the strength of the French Army", could not persuade any part of this branch to follow him in his desertion to the Austrians. All this the victorious revolution appreciated by changing the precedence in the army in 1797, giving the artillery, once ranked behind the 64th regiment of infantry, the lead over all other branches, being followed by the engineers, and then the infantry and cavalry. Honour corresponds to usefulness, according to bourgeois notions."

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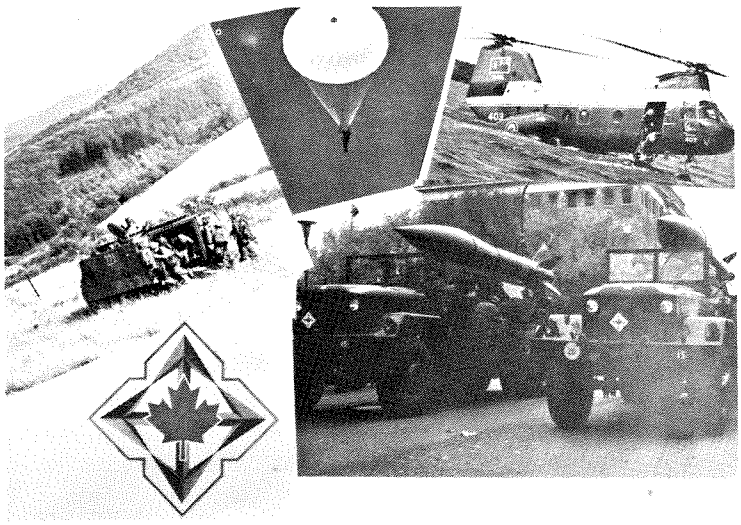

MOBILE COMMAND TODAY

On 27 September 1968, Lieutenant General W.A.B. Anderson, OBE, CD, Commander Mobile Command and Senior Serving Gunner, addressed the annual meeting of the RCA Association being held in Shilo. During his talk General Anderson reviewed the current situation in Mobile Command. Extracts from the address follow.

"I should like to review the structure of Mobile Command as it is now emerging. It was four years ago that the White Paper on Defence said that we were going to reorient the land forces from the structure in which they had been cast for the best part of fifty years; i.e., oriented towards an expeditionary force for Europe. This was expressed in terms of greater mobility, with emphasis on air transportability in order to give us more flexibility to deploy quickly anywhere in the world. The White Paper said as well that the land force would be transformed into an integrated land/air force by the addition of a tactical air force. You will remember that the RCAF ended the war with widespread experience of tactical aviation. This had withered during the past twenty years to a single squadron of tactical aviation because of the priority which had been given to air defence and the air division in Europe.

Let me review the situation in Mobile Command today. The Brigade Group in Europe is finally a fully mechanized Brigade Group. There are now tracked vehicles for every arm and the supporting services so that the whole force is "cross-country mobile". The M109s for the artillery make this an up-to-date effective military force. The greatest problem lies in a replacement for the Centurion as the main battle tank. This is not an acute problem for the next several years but is obviously an important military factor in the policy review which is now taking place.

The second largest overseas contingent of Mobile Command is the force in Cyprus. On the initiative of the UN, this is being reduced from a large battalion group to a small battalion group; a reduction of about 25%. For the second time we have had a gunner battery doing six months duty in an infantry role in order to get experience of peace-keeping operations. Mobile Command also has responsibility for the other overseas peace-keeping forces in Indo-China, Viet Nam, Laos, Kashmir and Palestine.

At home, we have reorganized the three infantry brigade groups into four combat groups. These are not fighting formations as such. They are simply groupings of units on our bases for purposes of training and operational readiness. The concept is that Mobile Command might have to field a task force which was strong in sappers if there were community services to be rehabilitated, or strong in land or air reconnaissance or, alternatively, a balanced brigade group. We will build up the order of battle from the battle units within the combat groups. The four combat groups are located in Gagetown, Valcartier, Petawawa and in the West, this latter being centered on Calgary with outlying units in Winnipeg, Chilliwack, and Esquimalt. The combat group in Gagetown is mechanized; that is to say, the armoured regiment there is equipped with Centurions and the artillery regiment with M109s which are not airportable. The other three combat groups will consist of light air-transportable vehicles. Their gunner regiments will be equipped with the L5 pack hows. All of these major units of the combat arms in Canada are less one squadron, battery or company; hence they are not able to take to the field as such. Thus to field a 24 gun regiment, we should have to reinforce with a battery from another regiment. This reflects the limitations which have been imposed on our manpower.

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Our new tactical air group has recently come into being. 10 Tactical Air Group, with Headquarters in St Hubert, has taken command of all Mobile Command aviation except for the artillery air OPs and certain other light aircraft.

The Tactical Air Group will include the CF-5 fighter bombers which are being built by Canadair. These are just starting to come off the production line, and delivery will continue into the first few months of 1970. There will be two operational squadrons – one in Bagotville and the other either in Edmonton or Cold Lake. There will also be an operational training squadron to train pilots for the CF-5. Also in the group is the de Havilland Buffalo, a short take off and landing fixed wing aircraft with very impressive performance for field logistics. It carries a good pay load, and can take off and land without elaborately prepared fields. The third member of our family is the Voyageur, a medium supply helicopter which has been in service now for some time. The Voyageur, along with the Buffalo, will really transform our whole field logistical system. This is not just an addition to our logistical system; it is a transformation. Logistics in the field have been confined to wheeled and tracked vehicles. The system is now redesigned to use four equipments; wheels, tracks, rotary wing and fixed wing. The fourth type in the Tactical Air group is the Bell utility tactical helicopter which we have called the Iroquois – so well known as the Huey in Viet Nam. "Tactical" describes this helicopter in that it forms an integral part of the ground-air reconnaissance team of the light armoured regiments, introduces vertical tactics for the infantry, and evacuates casualties from the forward areas. The other type of helicopter, not forming part of the Air Group, is the light observation helicopter to replace the L19 for artillery spotting, and to provide command and liaison for the armoured and infantry commanding officers. There will be two of these in every infantry and armoured regiment so that the CO is not road-bound as he used to be.

Finally, in the structure of Mobile Command, there is the new Airborne Regiment. This is an all arms force, excluding armoured reconnaissance but including an airborne battery with pack howitzers. It is just forming but already a most robust training programme is going on. Based in Edmonton there is a detached sub-unit in Valcartier which will be moving to Edmonton as soon as suitable French-speaking schooling for dependents can be arranged there. All members of the regiment are parachutists.

This then is a rundown of Mobile Command's new structure: forces in Germany, Cyprus and elsewhere overseas; four combat groups and a tactical air group at home, together with an airborne regiment. The intention of the White Paper of 1964 is finally taking shape and things are really looking up for the RCA, where one sees the mechanized branch completely re-equipped with its SPs, the light branch receiving its first 30 howitzers by Christmas, the airborne battery giving a new dimension to the Regiment and the drone troop adding a new sophisticated flavour."

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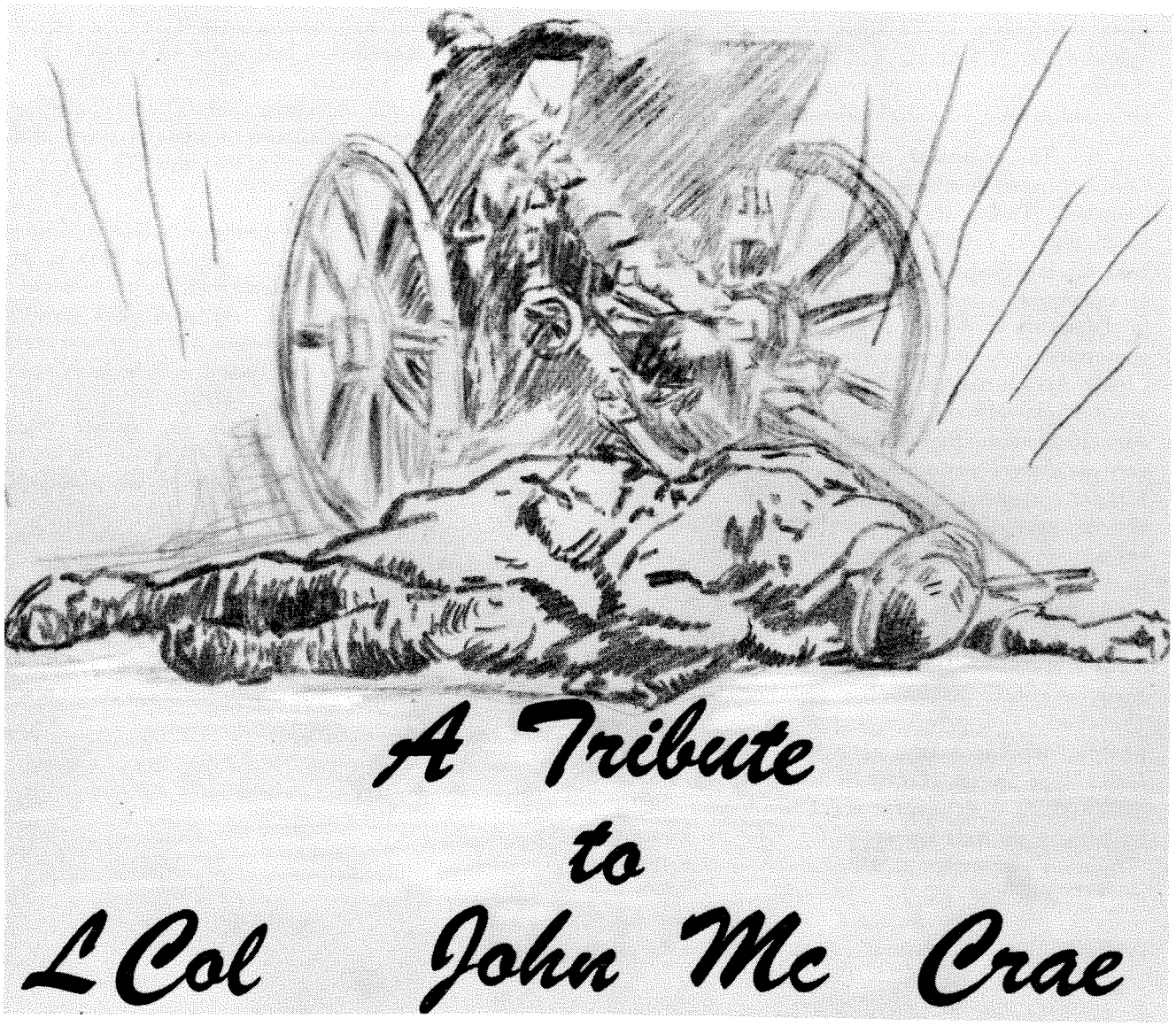

A Tribute to LCol John Mc Crae

*by LCOL D.G. Ingram, CD**

Senior non-commissioned officers of the 11th Field Artillery Regiment in dress uniform and members of the Royal Canadian Legion formed the guard of honour lining the walk which leads to the McCrae Memorial. It was a bright day on 26 August 1968, when the Governor General, the Right Honourable Roland Michener, officially opened the birthplace of LCOL John McCrae at Guelph, Ontario, as a National Historic Site. His Excellency was accompanied by his wife and members of his staff, including BGEN L.F. Trudeau.

Several hundred people gathered to watch the ceremony as the Governor General laid a wreath on the McCrae Memorial and cut the ribbon to officially open the house where John McCrae was born and spent much of his early life. The poet being honoured had served for many years in the militia and in the South African War as an artillery officer. During the First World War he was a medical officer in the First Brigade of the Canadian Field Artillery when he wrote the poem *"In Flanders Fields"* which gained him immortal fame.

His Family

John McCrae came from a family which itself figured prominently in the early artillery history of Canada. His father, David McCrae, came to Canada from Scotland in 1849. At the age of twenty, he was commissioned into the 47th Lancashire Regiment of Imperial Regulars which was stationed at Hamilton. In 1866 he helped establish the Guelph Battery of Garrison Artillery (now the 29th

*LCOL Ingram formerly commanded 11th Field Artillery Regiment.

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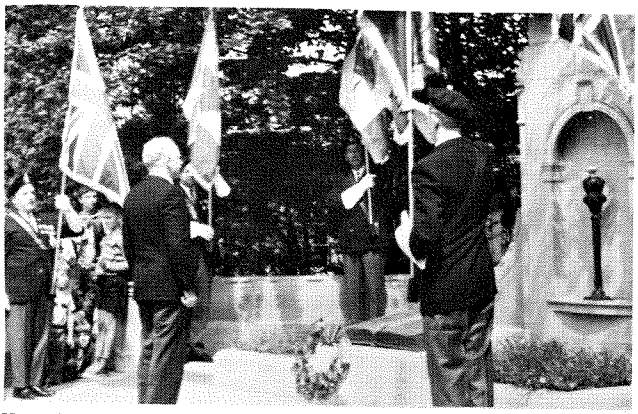

His Excellency, the Right Honourable Roland Michener, CC, CD, Governor General of Canada lays a wreath on the McCrae Memorial.

Battery) which was formed in response to the Fenian Raids. In March 1878 he organized the Ontario Battery of Field Artillery (now the 16th Battery) and was its first commander. This Battery won the prize for being the most efficient unit in Canada three years in succession. After a tour of duty as Deputy Assistant Adjutant General at Deseronto, David McCrae returned to Guelph and took command of the 11th and 16th Batteries, a position he held for many years. On 24 March 1880, these two batteries were incorporated into the First Provisional Brigade of Field Artillery thus establishing Canada's oldest artillery regiment.

After relinquishing his command, LCOL David McCrae went on the reserve officers list until the outbreak of the First World War when he volunteered for active duty and at the age of 70, recruited the 43rd Battery in 1915. He took this battery to England in 1916 but to his disappointment, he was not permitted to go with it to France. On his return to Canada, he was appointed to the board formed under the Military Service Act. After a long and outstanding life as a citizen and soldier, LCOL D. McCrae died on 30 October 1930, one of the most beloved citizens of Guelph.

John McCrae – Soldier, Physician, Poet

John McCrae was born on 30 November 1872 in the attractive stone house overlooking the Speed River at Guelph. Here he spent his youth and obtained his early education. In 1888 he received a scholarship at the University of Toronto. His studies were interrupted by illness but he graduated in the honours biology course in 1894. He then studied medicine and obtained his medical qualification in 1896, receiving the gold medal. He continued his medical career in Toronto, the United States and Montreal and was considered to be an outstanding physician.

His military career began at the age of fourteen when he joined the Guelph Cadet Corps. He was commissioned into the 16th Battery in 1893. He volunteered as an artillery officer for the South African War and served gallantly with D Battery in the Special Force. After his return to Canada, he continued his service in the 16th Battery and rose to the rank of Major.

Major McCrae was on a ship bound for England when World War 1 broke out. Upon his arrival in England, he cabled back to Canada offering to serve as an artillery or medical officer according to the immediate requirements. His offer was accepted and in September 1914 he was appointed medical officer to the First Brigade of Canadian Field Artillery at Valcartier. The Brigade proceeded to France and saw much action in the first year of the war while Major McCrae was with them.

He did not relish the promotion which removed him from immediate contact with the artillery when he was promoted to Lieutenant Colonel on 1 June 1915, and was appointed commander of the medical services of Canadian Hospital No. 3, the McGill Unit, at Boulogne, France. He retained this command until his death on 28 January 1918, which followed a short illness. A few days before his death he was appointed Consulting Physician to the British Armies in France.

LCOL John McCrae never married but he was always very fond of children and animals. His dog, Bonneau, was a familiar sight in the hospital where he followed LCOL McCrae on the rounds of the wards. On 29 January 1918, LCOL McCrae's coffin, mounted on a gun carriage and followed by his horse Bonfire, was borne to the cemetery at Wimereaux. The funeral procession was led by Sir Arthur Currie, the Corps Commander, and General E.W.B. Morrison[1], the Commander of the Canadian Corps of Artillery. A long parade of soldiers and nursing sisters followed to the cemetery where, after final military honours, the body was committed to the grave.

In Flanders Fields

The poem is believed to have been inspired by the death of LT A.H. Helmer of Ottawa, on 2 May 1915, during the Second Battle of Ypres. McCrae was deeply moved by Helmer's death and it was while visiting the plot where his friend was buried that he conceived the idea of the poem. It has been claimed that the poem was written while sitting in back of an ambulance or that it was written in the First Canadian Artillery Headquarters dugout at Essex Farm which was one and a half miles north of Ypres. In any case, the poem was written early in

[1]See photo on page 37.

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May 1915 and as General Morrison wrote in 1918, "This poem was literally born of fire and blood during the hottest phase of the Second Battle of Ypres".

In Flanders Fields was first published in the 8 December 1915 issue of the famous English weekly Punch. The poem was unsigned but several friends recognized it as the work of LCOL McCrae. Its enduring and poignant beauty soon led to universal recognition. The British and Allied Armies adopted the poem as their own for the soldiers knew its meaning in their hearts and responded to it. Over the years this poem has continued in its popularity until it has become one of the greatest classics and one of the most widely quoted poems of our language. This poem was largely responsible for the adoption of the poppy as the symbol of remembrance of those who gave their lives in our wars. Last year the Poppy Campaign in Canada collected nearly a million and a half dollars for the welfare of war veterans.

Many people mistakenly believe that *In Flanders Fields* is the only poem written by John McCrae. In fact he published about thirty poems. The first collection of his poems was published by Sir Andrew MacPhail in Toronto in 1919. This book contains an essay on the character of John McCrae.

The John McCrae Birthplace

The fine old limestone house in Guelph where John McCrae was born was offered for sale in 1966 and there was a threat of demolition. To prevent its destruction a group of local citizens, with the help of the LCOL John McCrae Memorial Branch of the Royal Canadian Legion, formed the Birthplace Society. They were able to obtain ownership of the house and have extensive restoration carried out before opening it to the public.

The Governor General, also a former artillery officer, is Honorary Patron of the Society. He paid tribute to all who had been concerned with the task of obtaining and restoring the house which is over one hundred years old. The opening ceremony, held outside the house, was presided over by Mr. Alan Westcott, the Chairman of the Colonel John McCrae Birthplace Society. The Honourable John Turner, Minister of Justice, was present at the ceremony and in an eloquent address paid tribute to John McCrae as a valiant soldier, distinguished physician and inspired poet. Mr. Turner's wife, who accompanied the Minister, is a relative of John McCrae. Several other members of the McCrae family also attended and many of these had generously contributed relics and mementos pertaining to

The COL John McCrae Birthplace with the McCrae Memorial on the right.

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Interior of the restored house.

the life and work of the poet. An extensive collection is on display in the house.

Among the special out-of-town guests were COL L.M. Cosgrave , who served with John McCrae in France, and several representatives of the Royal Canadian Legion.

LCOL John McCrae made a major, and in some ways a unique contribution to the Canadian Artillery and the Canadian fighting forces. More than any other, the poem *In Flanders Fields* captures the mood of persistence and sacrifice of the Canadian soldiers in combat. It serves as a constant reminder of the selflessness and dedication of those who gave their lives that we might remain free. It is fitting that its author should be remembered and honoured.

In appreciation of a contribution to the Canadian Gunner by 30 Field Regiment RCA(M).

[2] See photo on page 37

LOCATION AND STRENGTH SUMMARY

Regular gunner officer strength is concentrated in four provinces and one foreign country. Ontario leads by far with 205 officers presently serving there. Following, as might be expected, are Manitoba 103, Quebec 52 and New Brunswick 47. The figures as of 1 January 1969 indicate Alberta with 18, British Columbia with 13, Nova Scotia nine, Saskatchewan five and Newfoundland two.

Just under 20% of total gunner officers are serving in foreign countries. West Germany has the most with 66. Eight are serving in the US and six each are serving in Palestine and the UK. Five are in India/Pakistan and four in Cyprus. Three serve in Belgium, two in Tanzania, while we have one representative in Holland, Turkey, Cambodia, Ghana and Italy.

Gunner officer strength appears to be undergoing a steady decline. A rough count* of the figures since 1965 indicates the following breakdown:

	1965	1966	1967	1968
LGEN	0	1	1	1
MGEN	2	2	2	2
BGEN	6	5	6	4
COL	13	12	11	9
LCOL	42	45	46	46
MAJ	147	160	160	143
CAPT	239	209	253	268
LT/2LT	180	168	116	86
SUB TOTAL	629	602	595	559
CWO	Not available	42	41	35
MWO		99	93	73
SUB TOTAL		141	134	108
TOTAL		743	729	667

* Figures are as of 1 November for that respective year, and are taken from the Canadian Gunner Location List.

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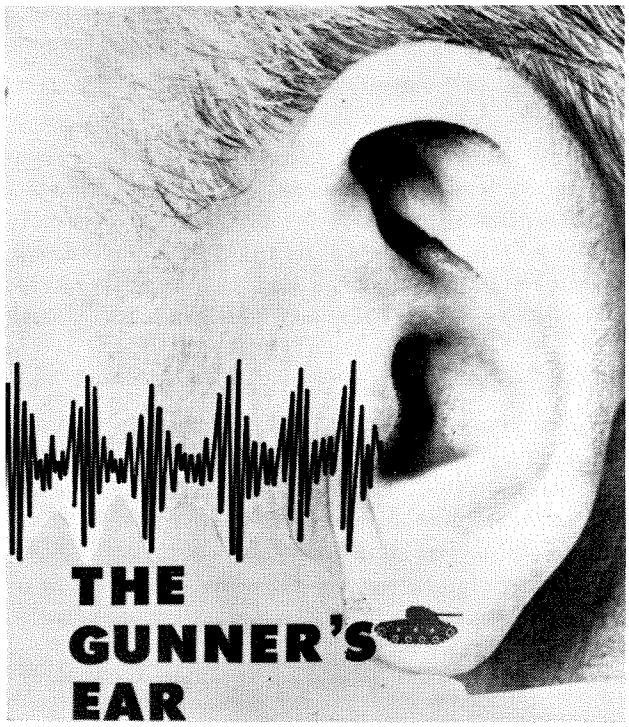

by
MAJ R.T. Chatterton, RCAMC
and
*CAPT D.B. McGibbon, RCA**

Introduction

A few years ago it was almost considered heresy for any individual to protect his ears during the firing of guns. Today, however, we have come to realize the importance of protecting our hearing during firing practices. We know there are many older members of the artillery (and many other people of varied walks of life for that matter) who have medical categories because they no longer have the ability to hear properly. In many cases this hearing loss has been directly attributed to exposure to excessive noise – such as the firing of artillery pieces. Knowledge of these effects has resulted in greater emphasis on the wearing of ear plugs and ear muffs to protect hearing. Why have certain people suffered hearing loss from prolonged artillery firing and not others? What effect does noise have on the human ear? What protection do ear plugs and ear muffs offer from noise?

Background

In order to answer these and other questions, the following experimental test was carried out at Canadian Forces Base Shilo last fall. Simple in concept, it involved 45 recruits and instructors from the former RCA Depot. The purpose was to determine the protection afforded by both ear muffs and ear plugs; and by ear plugs alone, from the effects of battlefield conditions simulated by intense small arms firing.

Audiograms were conducted for all personnel and any candidate with subnormal hearing was rejected prior to the tests. Having thus ensured that only "good" candidates were involved, the test subjects were broken into three separate groups of fifteen each. The first group was fitted with ear plugs and ear muffs; the second group with ear plugs only; and the third was given no protection. A great deal of care was taken by the medical staff to ensure that a proper fit was achieved.

The three groups were then mixed and assembled along the firing point of a small arms range. Distribution of the different groups was such as to ensure that a distance of six feet was maintained between men and that every third man belonged to the same group.

Each man was then given an FN C1, FN C2 or SMG and 150 rounds of ammunition. Under controlled range procedure, firing commenced and all members expended their ammunition at the targets down range. In addition, artillery simulators and thunderflashes were exploded throughout the firing practice. On completion of firing, all subjects were tested again for hearing sensitivity, using the audiometer. Results were recorded using the standard audiogram and equipment available at Shilo.

The Audiogram

Before discussing the results it is perhaps worthwhile to take a moment to explain the audiogram and associated terminology. The term decibel, abbreviated "dB", is a term that is used as a figure to determine the hearing sensitivity at different frequencies. A logarithmic ratio for the term "dB" may be mathematically defined; however, for practical purposes, a hearing loss of zero to 30 dB at a particular frequency means that hearing is normal.

Hearing loss implies that the ear can no longer detect or hear at various frequencies. As the ability to hear at a particular frequency decreases, a measure of this loss is described in decibels. For example, a 60 dB loss at 3,000 cycles per second (cps) is a precise measurement of the loss of hearing at that frequency. The audiogram is a graphical representation of decibels versus frequency, and the completed audiogram has a plot of hearing ability at different frequencies. Frequencies normally in the area of interest are from 500 to 6000 cps. The human speech range is from 500 to 3000 cps.

*MAJ Chatterton is the Base Surgeon, CFB Shilo. CAPT McGibbon is presently a student at the Royal Military College of Science, Shrivenham, England.

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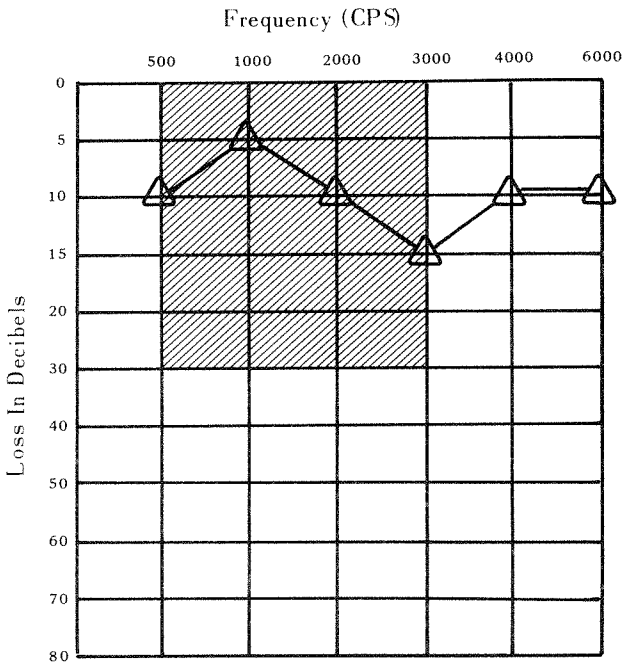
Figures one, two, and three are example audiograms. Figure one is normal and hearing of speech is normal; figure two is subnormal but hearing of speech is normal; figure three is more subnormal and hearing of speech is impaired. These three audiograms can represent the deafness progressing as the gunner's career progresses. The shaded area on each of the first three figures represents the zone of normal speech sensitivity.

Test Results

Test results were averaged for each group and plotted on a normal audiogram form. Figure four shows the results of this experiment and also a similar test conducted in the USA. The baseline average audiogram (i.e., before firing) was essentially the same for each group. At one hour after firing, the average loss was minimal for both protected groups, but a definite temporary hearing loss is clearly seen for the unprotected group.

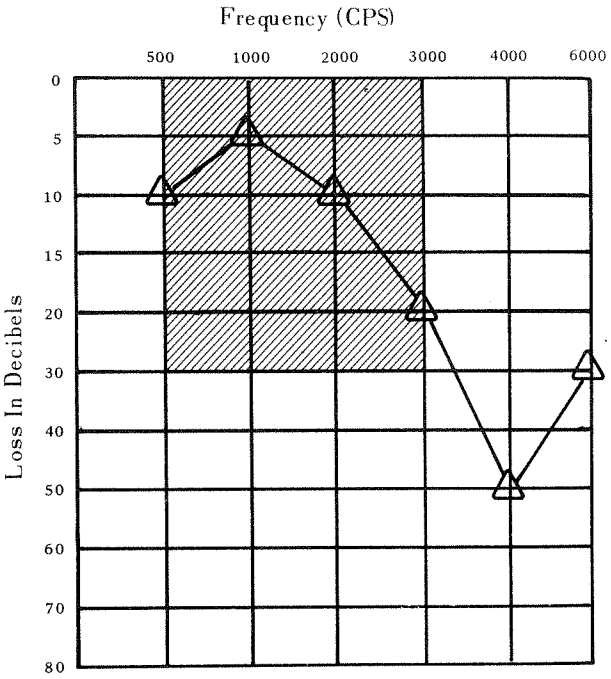
It should be noted here that the results as shown are *averages*. In a comparison of the different groups it is readily seen that there was little or no hearing loss for the groups wearing some form of protection. The group not wearing hearing protection *on the average* had a hearing loss of up to 30 decibels at different frequencies.

Figure One



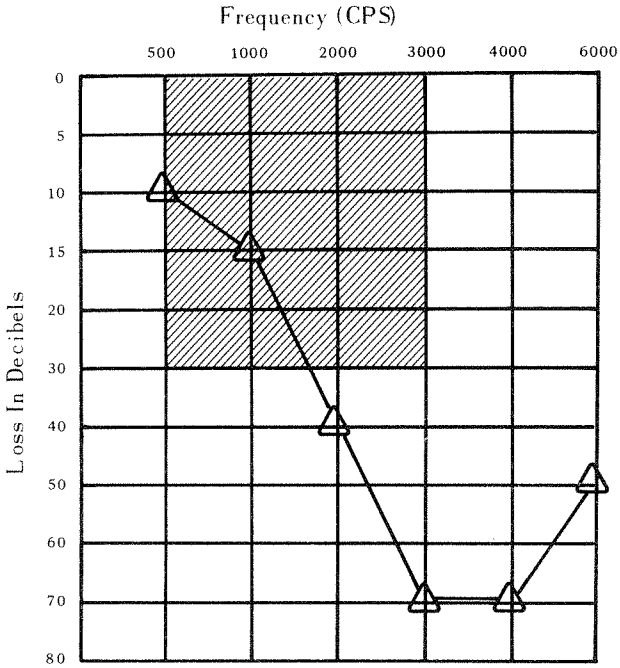
Hearing Sensitivity
Decibel Loss (dB) versus Frequency (CPS)
Normal Ear

Figure Two



Hearing Sensitivity
Decibel Loss (dB) versus Frequency (CPS)
Early Hearing Loss

Figure Three



Hearing Sensitivity
Decibel Loss (dB) versus Frequency (CPS)
Significant Hearing Loss

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To complete the experiment, all members were retested until their hearing returned to normal. In most cases the hearing was completely restored within a forty-eight hour period, but one unprotected man took a week to recover.

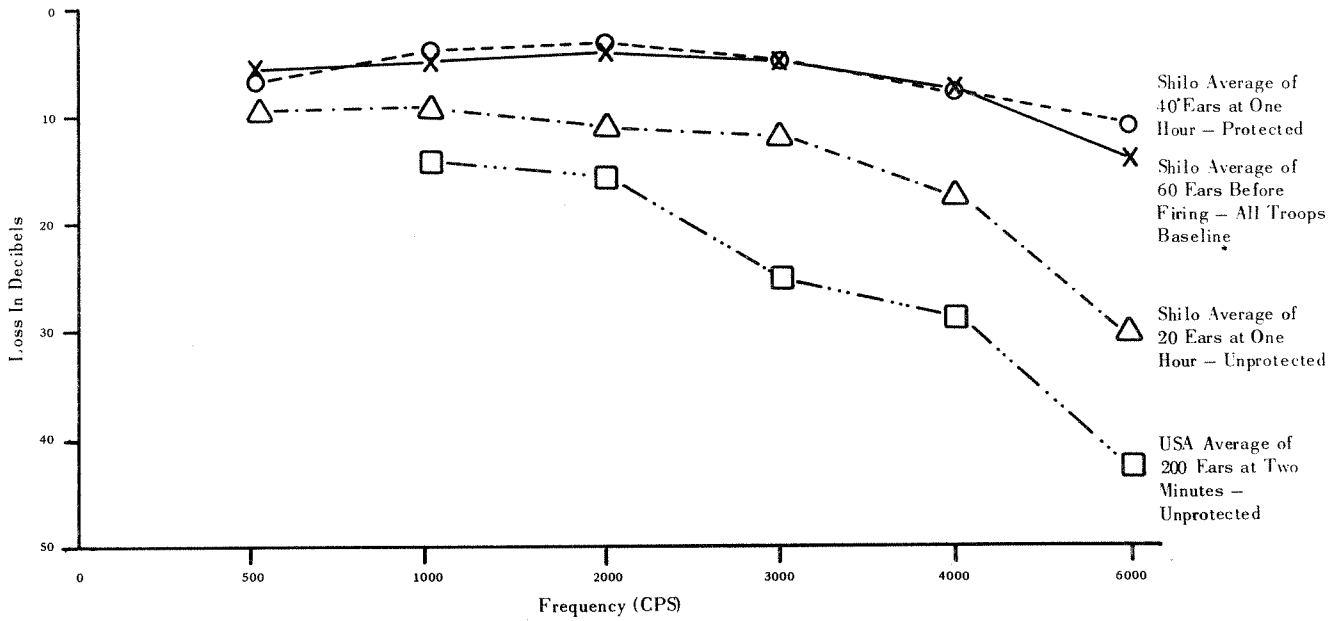
Similar test results from the United States gave an indication of a greater degree of temporary hearing loss; however, their audiograms were completed within two minutes of completion of firing; therefore, less recovery had occurred. It is interesting to note that the results obtained at Shilo paralleled those from the United States.

In a close analysis of the unprotected group it was found that only certain individuals suffered hearing loss. Some individuals without protection heard as well after firing as they did before; others had a considerable hearing loss immediately afterwards. This is an important aspect to remember – the effect of noise on individual ear drums varies widely from one individual to another, but it cannot be predicted to which group you will belong. It is certain though that you will suffer some degree of hearing loss if you expose yourself to loud noise without protection – the degree of loss varies with the individual.

A Word of Advice

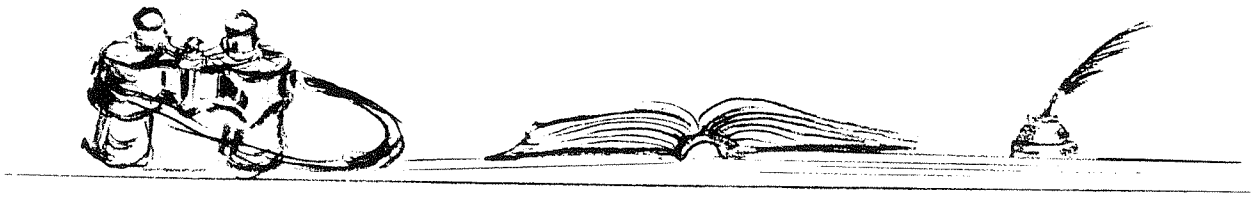
Repeated noise exposure, whether continual exposure to a noisy engine, or repeated exposure to explosions from small arms or artillery fire will eventually cause hearing loss. The degree of loss depends on individual susceptibility. Early loss usually starts at about 4,000 cps, i.e., above the normal hearing range for speech. (See figure two). Therefore your audiogram tracing can predict your deafness several years before you notice it. By the time you complain of noises in your ear, a problem distinguishing individual voices in a crowded Mess, it is far too late; the damage is done, and *cannot be undone*. The best you can hope is that it will not get worse. But remember that all people suffer some degree of hearing loss as they get older, and this will increase your deafness from exposure to noise. The time to protect is now. By the time you have proved that we are right, your ear plugs will only slow down the progression of your deafness. If you start early in your career, with properly fitted plugs, you will be able to enjoy a bright, sprightly old age without a hearing aid.

Figure Four



Hearing Sensitivity
Decibels (dB) versus Frequency (CPS)
Test Results

ED. NOTE: The term acoustic trauma, often used in medical diagnosis, means the loss of hearing from any loud noise. "Gunner's ear" is acoustic trauma from repeated exposure to gunfire.



From the CP Log

His Excellency the Right Honourable Roland Michener, *CC, CD, Governor General of Canada is a former gunner. He served with 9/15th (Reserve) Field Battery from 1942 to 1945. This battery was part of 32nd (Reserve) Field Regiment. The Governor General was promoted 2nd Lieutenant on 2 October 1942 and Lieutenant on 1 April 1944. He was transferred to the CRO on 30 September 1945.*

* * *

On 6 May 1968, a French-speaking field artillery regiment was added to the regular list of the Royal Regiment of Canadian Artillery. 5e Regiment d'Artillerie Legere Canadienne, (5e RALC), was formed at CFB Valcartier as a part of 5 Combat Group. The Commanding Officer is LCOL J.A.R. Vandal, CD. The regiment is equipped with the 105mm howitzer, but will soon get the L5 pack howitzer.

* * *

Brigadier General E.M.D. Leslie, DSO, CD, assumed the appointment of Chief of Staff for the United Nations forces in Cyprus in July 1968, replacing Brigadier H.M.N. Harbottle of the British Army. He is the first Canadian officer to hold this appointment. At the same time, he became Commander of the Canadian Contingent in Cyprus.

His Excellency the Right Honourable Roland Michener, *CC, CD, Governor General of Canada.*

* * *

A combined Gunner team of 1 RCHA and 1 SSM Battery RCA won the 4 CMBG Major League hockey finals and playoffs. The Gunners also won the 4 CMBG Major League fastball finals and playoffs. 1 RCHA light and heavy tug-of-war teams represented 2 (Br) Division in the BAOR finals, but were beaten. The light team represented the BAOR in the British Army finals but was beaten again.

Canadian Artillerymen are represented in the Hall of Fame at Fort Sill's Artillery Officer Candidate School, following presentation of a plaque on 29 October 1968. Sent to Fort Sill by COL D.W. Francis, CD, Commandant of the RCSA, on behalf of the Royal Regiment of Canadian Artillery, the plaque was presented by MAJ J.J.A. Doucet, CD, Canadian Liaison Officer at Fort Sill.

COL T.W. Watson Jr., Commander of the Artillery Officer Candidate Brigade at the US Army Artillery and Missile School, Fort Sill, accepts the plaque from MAJ Doucet, while candidate Per Hang-Jensen of class 515-68, who represented his fellow candidates, looks on.

* * *

1968 was the 50th anniversary of the Allied victory at Mons, Belgium. Thirty-three much decorated Canadian survivors of the 1918 liberation returned to the town they freed from German occupation in the early hours of 11 November, 1918. One of these was Brigadier General J.S. Stewart, CMG, DSO, ED, DDS, of Lethbridge, Alta. Pte Stewart first served with the Lord Strathcona Horse in the South African Campaign from 1900-1901. There, he won the Queen's Medal with four clasps. In 1908 then a Major, he organized the 25th Field Battery. In 1915, he was appointed to command the 7th Brigade CFA, which trained at Camp Hughes, near Shilo, and sailed to the UK in August 1915. In January 1916, the 7th Brigade went to France, equipped with 18 pounders. LCOL Stewart was wounded in the winter of 1916, and took command of the 4th Brigade in June 1916. Prior to October 1917, he was appointed CRA 3rd Canadian Division with the rank of Brigadier General, a post he held until 1919. BGEN Stewart was awarded the French Croix-de-Guerre, twice mentioned in despatches and was twice wounded. He served many years in the service of the provincial and federal government after retirement. During the commemorative ceremonies in France last fall, he was made an honorary citizen of Mons.

"A" gradings were achieved on courses at RCSA during the past year as follows:

Artillery Staff Course	*– MAJ F.J. Bochnowski (US Army), CAPT J.E.F. Bryce and CAPT B.A. Reid.*
Fire Planning Course	*– CAPT R.D. Moon.*
OCTP Phase Two	*– Cdt B. Hunt*
Artillery Technician Pay Level 6	*– Cpl G.M.J. Sim.*
Artilleryman Pay Level 6	*– WO R.C. Goodwin and Cpl J.P.E. Robitaille.*
Artillery Surveyor Pay Level 6	*– Cpl T.M.W. Meindl.*
Artillery Technician Pay Level 4	*– Cpl T.J. Harcourt.*
Artilleryman Pay Level 3	*– Ptes K.A. Barraclough, A.J. Cawson, J.L.A. Harvey, D.F. Wheeldon and M.J. Zaremba.*

* * *

Fort Qu'Appelle, the new home of 1 SSM attery RCA was officially opened on 1 July 1968 LGEN W.A.B. Anderson, OBE, CD, Commander obile Command. The new Fort in Iserlohn, West ermany, is the combined home of 4 Services and ransport Company and 1 SSM Battery. Formerly own as Mons Barracks, home of the British Guards rigade, Fort Qu'Appelle perpetuates the name of an rly pioneer settlement in the Canadian West.

Fort Qu'Appelle, Germany

* * *

There are still a number of volumes of THE GUNNERS OF CANADA, Volume 1, available from the Secretary-Treasurer, RCA Central Fund, Shilo. This volume is priced at $8.00. A payment of $15.00 will ensure delivery of Volume 1, with Volume 2 being forwarded when it is published. Written by Colonel G.W.L. Nicholson, the Gunners of Canada is the most authoritative and concise book ever published on the history of the Royal Regiment of Canadian Artillery.

* * *

In the 1967 issue of the Gunner, the name of MAJ L.W. Beaumont, CD was incorrectly listed as commanding officer of the 53rd Field Artillery Regiment, RCA. The regiment was at that time commanded by LCOL T.G.K. Hegan, CD. Although this regiment has since been deleted from the list of active militia units, we offer our apologies to LCOL Hegan. Unfortunately we have no means of checking the accuracy of such information which we receive from higher headquarters.

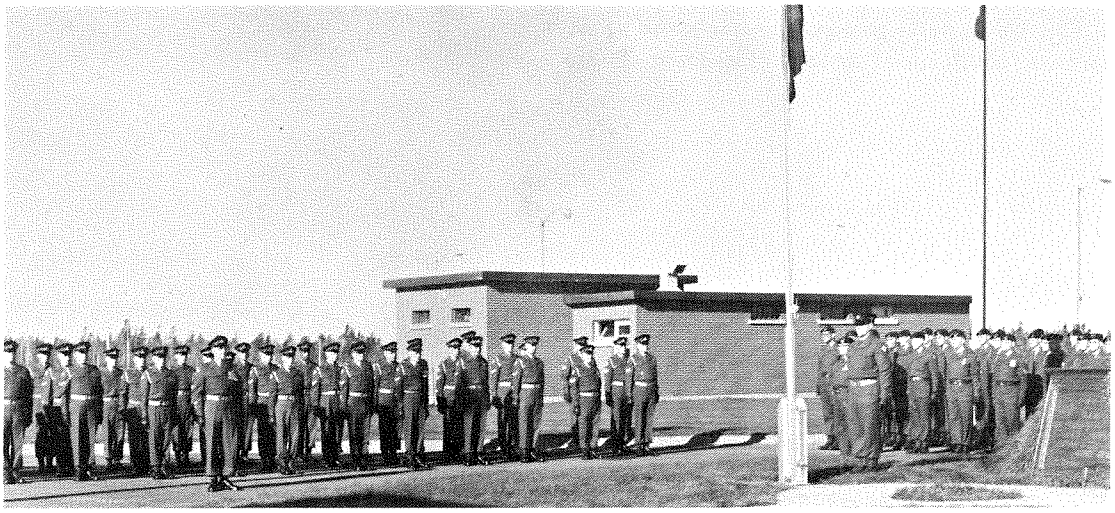
In New Brunswick, 2 RCHA swept the CFB Gagetown sports scene winning the Don St John Trophy for base hockey, the "Little Grey Cup" football game, Base and NB/PEI volleyball championships along with the baseball and basketball championships. In addition, 2 RCHA's Nordic Ski Team won the NB provincial ski meet, the NB Winter Games ski meet and the Viking Winter Games ski meet.

Sports Trophies Won by 2 RCHA 1967/68

* * *

Gunners may perhaps be excused some conceit in considering their guns as the only deserving means of firing official salutes, since it is to us that this responsibility and honour is customarily given. An excerpt from the monthly magazine, "The Legionnaire", indicates that other forms of salutes were used to appropriately honour visits by the Governor General in remote areas of Quebec and Newfoundland. At Crow Head, near Twillingate, Nfld., the residents fired a 21-gun salute on old muzzle-loading sealing guns. At Sept-Iles, Que., Indians in the nearby Seven Islands Reserve gave him a 21-gun welcome with shotguns.

* * *



As a memorial to the support rendered by D Battery, RCA at the Battle of Leliefontein in 1900, the Royal Canadian Dragoons, many years ago, presented a trophy depicting a mounted rifleman, to the officers' mess of the artillery unit nearest their station. The trophy was handed over from 1 RCHA to 2 RCHA on the latter unit's arrival in CFB Gagetown in 1967. That year, for the first time since the Boer War, D Battery joined the Dragoons for their regimental reunion on the weekend of 7 November, the anniversary of the Battle of Leliefontein. Above, D Battery and the Royal Canadian Dragoons parade to commemorate the battle.

We trained very hard – but it seemed that every time we were beginning to form up into teams we would be reorganized.

I was to learn later in life that we tend to meet every new situation by reorganizing, and a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization.

PETRONIUS ARBITER – 210 BC

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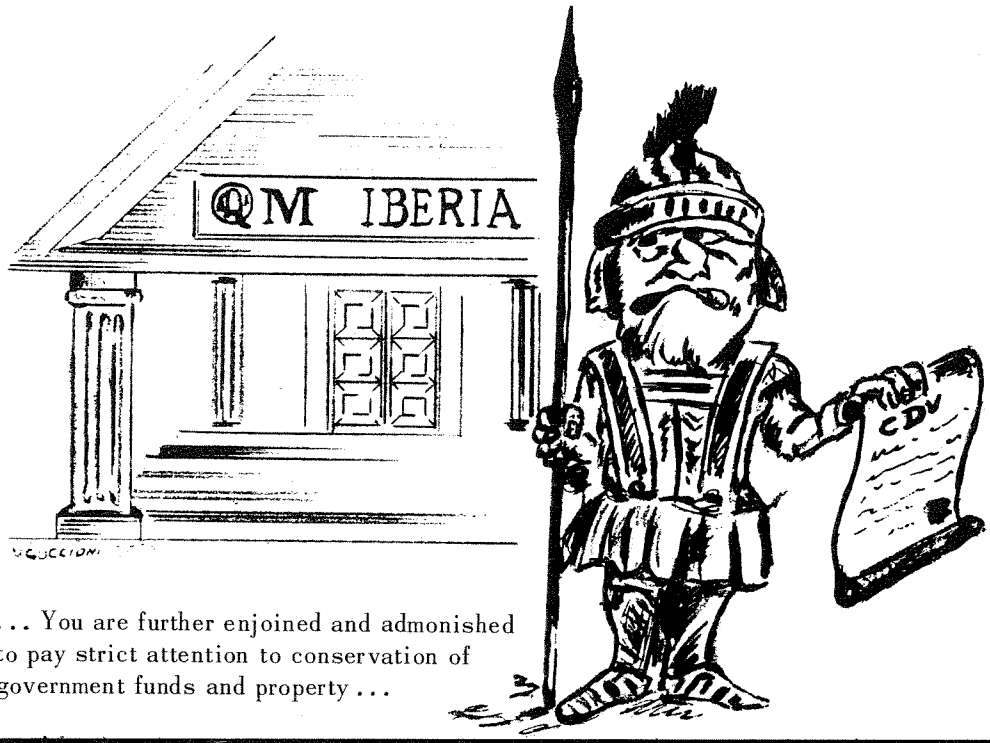

... You are further enjoined and admonished to pay strict attention to conservation of government funds and property ...

A Medal for Horatius

Original Written by COL W.C. Hall, US Army

Rome
II Calends, April, CCCLX

SUBJECT: Recommendation for Senate Medal of Honour

TO: Department of War, Republic of Rome

I. Recommend O-MCMXIV Gaius Horatius, Captain of Foot, for the Senate Medal of Honour.

II. Captain Horatius has served XVI years, all honourably.

III. On the III March, CCCLX, during the attack on the city by Lars Porsena of Clusium and his Tuscan Army of CXM men, Captain Horatius voluntarily, with Sergeant Spurius Lartius and Corporal Julius Herminius, held the entire Tuscan Army at the far end of the bridge, until the structure could be destroyed, thereby saving the city.

IV. Captain Horatius did valiantly fight and kill one Major Picus of Clusium in individual combat.

V. The exemplary courage and the outstanding leadership of Captain Horatius are in the finest tradition of the Roman Army.

Julius Lucullus
Commander, II Foot Legion

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MINUTE I

IV Calends, April, CCCLX

To Operations:

For Comment

L.J.
Adjutant General

MINUTE II

IX Calends, May, CCCLX

To Intelligence:

I. For comment and forwarding.

II. Change paragraph III, line IV, from "saving the city" to "lessened the effectiveness of the attack." The Roman Army was well dispersed tactically; the reserves had not been committed. The phrase as written might be construed to cast aspersions on our fine army.

III. Change paragraph V, line I, from "outstanding leadership" to read "commendable initiative". Captain Horatius' command was only II men – only I/IV of a squad.

J.C.
Operations

MINUTE III

II Ides, June, CCCLX

To Adm and Pers:

I. Omit strength of Tuscan forces in paragraph III. This information is classified.

II. A report classified CONFIDENTIAL states that the officer was a Captain Pincus of Tifernum. Recommend change to "an officer of the enemy forces".

T.J.
Intelligence

MINUTE IV

IX Ides, January, CCCLXI

To Judge Advocate General:

I. Full name is Gaius Caius Horatius.

II. Change service from XVI years to XV years. One year in Romulus Chapter Cub Scouts had been given credit for military service in error.

E.J.
Adm and Pers

MINUTE V

II Calends, February CCCLXI

To Adjutant General:

I. The Porsena raid was not during wartime; the temple of Janus was closed.

II. The action against the Porsena raid, ipso facto, was a police action.

III. The Senate Medal of Honour cannot be given in peacetime (AR CVIII-XXV, paragraph XIIC).

IV. Suggest consideration for Soldier's Medal.

P.B.
Judge Advocate General

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MINUTE VI

IV Calends, April CCCLXI

To Adm and Pers:

Concur in paragraph IV, minute V.

L.J.
Adjutant General

MINUTE VII

I Calends, May CCCLXI

To Adjutant General:

I. Soldiers' Medal is given for saving lives. Suggest Star of Bronze as appropriate.

E.J.
Adm and Pers

MINUTE VIII

III Calends, June, CCCLXI

To Judge Advocate General:

For Opinion

L.J.
Adjutant General

MINUTE IX

II Calends, September, CCCLXI

To Adjutant General:

I. XVII months have elapsed since event described in initial leter. Star of bronze cannot be awarded after XV months have elapsed.

II. Officer is eligible for Papyrus Scroll with Metal Pendant.

P.B.
Judge Advocate General

MINUTE X

I Ides, October, CCCLXI

To Adm and Pers:

For draft of citation for Papyrus Scroll with Metal Pendant.

L.J.
Adjutant General

MINUTE XI

III Calends, October, CCCLXI

To Intelligence:

I. Do not concur.

II. Our currently fine relations with Tuscany would suffer, and current delicate negotiations might be jeopardized if publicity were given to Captain Horatius' action at the present time.

E.J.
Adm and Pers

MINUTE XII

VI Calends, November, CCCLXI

To Adjutant General:

A report, classified SECRET, partially verified, states that Lars Porsena is very sensitive about the Horatius affair.

T.J.
Intelligence

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MINUTE XIII

X Calends, November, CCCLXI

To Adm and Pers:

I. In view of information contained in preceding XIth and XIIth minutes, you will immediately prepare orders posting Captain G.C. Horatius to one of our overseas peace-keeping units.

II. His attention will be directed to paragraph XII, Manual for the Preparation of Overseas Movement, which prohibits interviews or conversations with newsmen prior to arrival at final destination.

L.J.
Adjutant General

* * *

Rome
II Calends, April, CCCLXII

SUBJECT: Survey, Report of DEPARTMENT OF WAR

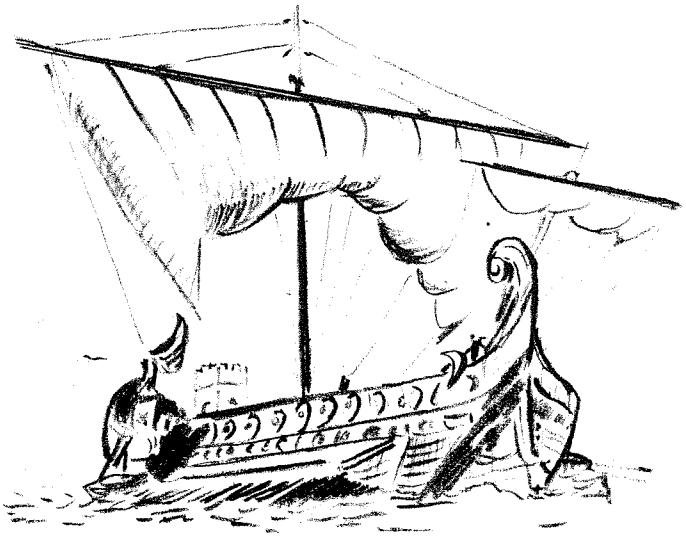
TO: Captain Gaius Caius Horatius
III Legion of Foot, V Phalanx, APO XIX
c/o Postmaster, Rome.

I. Your statements concerning the loss of your shield and sword in the Tiber river on III March, CCCLX, have been carefully considered.

II. It is admitted that you were briefly in action against certain unfriendly elements on that day. However, Sergeant Sparius Lartius, and Corporal Julius Herminius were in the same action and did not lose any government property.

III. The Finance Officer has been instructed to reduce your next pay by II I/II talents. (I III/IV talents cost for one, each, sword, Officers; III/IV talents cost of one, each, shield, M-II).

IV. You are further enjoined and admonished to pay strict attention to conservation of government funds and property. Our defence budget may not exceed last year's and the cost of swords and shields continues to rise.



H. Hocus Pocus
General of Horse
C-in-C

A B C A Developments 1968

*by MAJ J.A. Cotter, CD**

1968 was an extremely important year for the Royal Regiment of Canadian Artillery from the ABCA point of view. (ABCA is the abbreviation for a quadripartite agreement by America, Britain, Canada and Australia, aimed at achieving standardization of equipments, procedures and concepts between the member nations.) During June 1968 Australia hosted the Fifth Quadripartite Artillery Conference. (These conferences are held approximately every four years with each member nation in turn acting as host.) Canada was represented by COL J.P. Beer, LCOL G.O. Brown, LCOL J.E.G. de Domenico, MAJ J.A. Cotter, and MAJ R.H. Duke. In addition Canada provided two members to the secretariat, MAJ G.N. Mastine, and CAPT J.H. Rennie.

The Fifth Quadripartite Artillery Conference was the culmination of four years endeavours by the subordinate working groups. The working groups which report to the Quadripartite Artillery Conference are:

The Surface-to-Surface Artillery Equipment Working Group;

The Air Defence Equipment Working Group;

The Combat Surveillance and Target Acquisition Equipment Working Group; and

The Sound Ranging Working Group.

These four working groups are responsible for all aspects of artillery not just equipment as their title might allude.

The working groups in turn delegate particular problems to special working parties, correspondence groups, etc, in order to resolve clearly defined problem areas as expeditiously as possible. An example of this is the Special Working Party authorized by the Surface-to-Surface Artillery Equipment Working Group to develop the QSTAGs on fire direction procedures.

The system used to develop ABCA agreements is that the Quadripartite Conference approves or rejects the reports as submitted by the Working Groups. The Conference then assigns tasks to the Working Groups for study and resolution over the next three or four years. The Working Groups in turn meet annually or biennially to review the progress and developments of their subordinate elements and member nations. Reports are then prepared for submission to the Quadripartite Conference and to member nations for approval, ratification and eventual implementation.

Over the past fifteen months each artillery working group has met. Each working group was represented at and submitted a report to the Fifth Quadripartite Artillery Conference during June 1968. Canada participated in all of these meetings.

Throughout this whole process of conferences and meetings what, in concrete terms, has been achieved? From Canada's point of view a great deal has been accomplished.

a. Agreement has been reached on the Fire Direction Procedure QSTAGs.

b. A standardized means of calling for naval gunfire support has been drafted.

c. Operational concepts for the period 1970-1980 have been ratified and refined.

d. Operational concepts for the period 1980-1990 have been started.

e. Agreement has been reached on air defence terminologies.

*MAJ Cotter is Staff Officer Artillery, Office of the Chief of Artillery, HQ Mobile Command.

f. Standardization programmes and objectives have been delineated for most artillery equipments and ammunitions.

g. Progress has been made on resolving the problem of the control of airspace in the forward battle area.

h. Conceptual standardization of artillery tactics for all member nations has been attained.

j. Priorities have been assigned to national development projects.

k. The development of artillery ammunition scales to meet present and future requirements has begun.

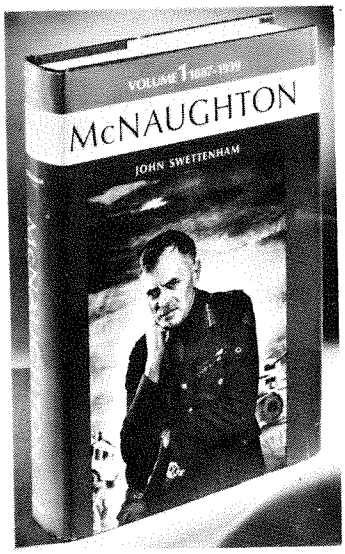
m. Detailed requirements for automated fire control equipment and sighting systems have been defined.

n. The redefining of artillery tactical missions has commenced.

Each of the above items represents major advancements in the field of standardization. Standardization between four member nations each with unique problems and diverse responsibilities is a very difficult procedure. Miracles are not achieved easily but evolution is possible and evolution will lead to not just interoperable and compatible systems but eventually to complete standardization in all essential fields. A great deal of evolutionary progress has been accomplished in 1968 and with continued enthusiastic cooperation much more will be achieved in the future.

Don Quixote

"Blessed be those happy ages, that were stranger to the dreadful fury of these devilish instruments of artillery, whose inventor, I am satisfied, is now in hell, receiving the reward of his cursed invention."



Mc NAUGHTON

Volume 1 1887 – 1939

*A book review by LCOL J.D. Cambridge, CD.**

John Swettenham has assayed a monumental task in this biography of General A.G.L. McNaughton, the best known of all Canadian Gunners. Written as a Centennial project and partially subsidized by the Centennial Commission, he had the active co-operation of the McNaughton family and the opportunity of discussing many aspects of the book with General McNaughton himself prior to the latter's death in 1966. As suggested in the title, this is the first of two volumes, with the second planned for publication in 1969.

The author is very well qualified to write on General McNaughton. He has served in the Armed Forces Historical Directorate, is currently the official historian with the National War Museum in Ottawa, and is the author of a number of books on military history including the well-known *To Seize the Victory: The Canadian Corps in World War I.*

This reviewer, like most people who will read this book, had little knowledge of General McNaughton's life prior to his prominence in World War 2 as Commander of the Canadian Army overseas. And what a life it was! Born to a pioneer family on the Prairies, educated at Bishop's College and McGill University, he gave early evidence of the keen inquiring intellect that was ever to be his trademark in war and peace.

Gunners will be particularly interested in his early military career, which began in 1908 while at McGill. At this time he qualified for a British Army Commission, and only illness in his family prevented his acceptance of an offer of a posting to the Indian Army. Instead, the following summer he joined B Battery in Kingston, and so started his long association with the Gunners.

Returning to McGill, he obtained his master's degree and stayed on as lecturer in the new field of electricity. He quickly won prominence for his pioneer work in this field, and his studies and experiments at this time proved invaluable in his future work in sound ranging and other scientific aspects of gunnery.

While still at McGill, he joined the 3rd Montreal Battery in 1910, and such was his ability and enthusiasm that in 1911 he was one of four Canadian Officers sent to England to compete in field battery competitions, which were won in competition with the best British field gunners, regular and territorial.

The outbreak of World War 1 in August 1914 resulted in the mobilization of McNaughton's battery, and the commencement of his long and distinguished career as a professional soldier. By the end of that war, the young Montreal battery commander had become Brigadier-General McNaughton commanding all the Canadian Corps Heavy Artillery, and his work as Counter-Battery Staff Officer for the Corps had made him famous internationally.

The nature of the fighting on the western front in World War 1 is too well-known to call for any description to readers of this review. It is sufficient to say that the combination of barbed wire and machine gun fire stultified all efforts to fight in the traditional war of movement. New methods were called for, and to a Gunner with McNaughton's technical training, keen insight and intelligence, artillery could and was adopted to meet the new requirements. In his own words:

> *"What the artillery required for the attack were improved maps and intelligence, precise location of targets, calibration of guns, the ability to shoot close over the attacking infantry, and an instantaneous fuse for wire cutting. And there would have to be supporting fire to paralyze the enemy at the time when the attacking troops were in the greatest danger."*

*LCOL Cambridge was president of The Royal Canadian Artillery Association in 1967-68.

On his arrival in France in 1915, as Commander of the 11th Artillery Brigade, McNaughton threw himself into the solution to these problems. To ensure greater accuracy of artillery fire, he had barometric pressures, air temperatures, and wind speeds and directions carefully noted, as well as the temperature of the charges. He instituted a rudimentary flash spotting system using infantry as well as artillery observers. But all this was still only preparatory to his future work.

The disastrous series of actions in the summer of 1916 known as the Battle of the Somme in which the British Army had 60,000 casualties in the first twenty four hours with virtually no gains to show for this vast carnage, illustrated the wire and machine gun problem with ghastly clarity.

The assessment of the results of the Somme battles led to the appointment of a Counter-Battery Staff Officer to co-ordinate the efforts of the artillery in retaliatory fire. McNaughton was the first in this appointment at the Canadian Corps Headquarters.

In his new appointment he investigated all the latest methods being used in the Allied armies, and quickly realized the value of sound ranging which had been used experimentally in the British Army. He also discovered during his investigation that a Canadian in the British Army, Harold Hemming had developed a practical and accurate optical flash spotting procedure, a method used almost unchanged in World War 2. McNaughton also appreciated the importance of aerial reconnaissance and photography in the counter-battery role.

With his enthusiastic approach to his new appointment, McNaughton quickly built up a counter-battery organization unmatched in any other army, allied or enemy. The first big test of his new organization was the assault on Vimy Ridge, Easter Monday 1917. With results beyond the most optimistic hopes of the Allied High Command, the value of the new planning was fully vindicated. Scientific gunnery had come of age.

The Canadian Corps was spared the full horrors of the 1917 British campaign in Flanders known as Passchendaele, however at the end they were involved, capturing Hill 70 and Passchendaele Ridge. Once again the combination of careful planning and scientific use of all artillery means available was a decisive factor in the Canadian success.

1918 opened ominously for the Allies, giving little hint of the victorious ending in eleven months. The collapse of Russia freed millions of troops for service on the western front, the French Army had not recovered from the mutinies of the previous year, the British losses in the Passchendaele campaign had not been made good, and only a trickle of U.S. troops had arrived in Europe.

At the end of March the German armies struck, and the greatest advances since 1914 were recorded as the British 5th Army literally disappeared under the onslaught. In this crisis, General Sir Arthur Currie withstood tremendous pressure from the Allied High Command to have his Canadian Corps committed piecemeal to the battle. He was successful, arguing that the Corps' record of success was due to its teamwork as a single entity, and the Corps was preserved for the coming final drama.

By this time, McNaughton had become famous enough in his special field of counter-battery that he was offered the Counter Battery Staff Officer appointment at British 1st Army, an appointment which he declined. It is interesting to note that this appointment was then offered to and accepted by LCol A.F. Brooke, later Field Marshal Alanbrooke of World War 2 fame. Relations between McNaughton and Brooke, previously strained by disagreement on the artillery programme at Vimy, were not enhanced when Brooke discovered he was second choice. The author suggests that some of McNaughton's problems in World War 2 originated in this rivalry.

The Allied counter campaigns of 1918 started with the battle of Amiens, a spectacular success. The Canadian Corps fully justified Currie's position previously described, and demonstrated the superb and professional fighting qualities that had developed in the Canadian armed forces. Nowhere were these qualities better displayed than in the handling of the Canadian artillery.

The battles of Arras, Canal du Nord and Valenciennes quickly followed, with McNaughton now holding the dual appointment of CB Staff Officer as well as commanding the Corps Heavy Artillery. The pursuit and change from positional to movement warfare was smoothly engineered by McNaughton, who had correctly assessed the problems that would arise with the changeover. Typically, the Canadian Heavy Artillery were the only Allied Heavies to keep up with the pursuit to the Rhine.

So ends Part 2 of Volume I, the most interesting portion of the biography from a purely Gunner standpoint. Shortly after the Armistice, when McNaughton was considering returning to the academic life at McGill, he was offered the CGS appointment of the Canadian Army. After some hesitation, he accepted.

With the intelligence and energy he had displayed as a Gunner, he now tackled the more general problems of the Armed Forces of a country supremely uninterested in maintaining armed forces.

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G.O.C., R.A., CANADIAN CORPS AND STAFF – Passchendaele, November 1917

Left to right, front row: Captain H.D. Fripp, attached to staff, G.O.C., R.A.; Lieutenant-Colonel A.G.L. McNaughton, Counter-Battery Staff Officer; Brigadier-General, E.W.B. Morrison, GMC, DSO, GOC, RA, Canadian Corps; Major A.F. Brooke, DSO, Staff Officer to GOC, RA.; Major L.V.M. Cosgrave, DSO, Staff Officer, Reconnaissance. Back row: Lieutenant L.P. Napier, Orderly Officer to CBSO; Captain H.L. Featherstonhaugh, MC, Staff Officer, R.A. Captain G. Tyndale-Lea, MC, Staff Officer, Heavy Artillery.

His problems made those facing the armed forces after World War 2 seem very trivial indeed.

McNaughton quickly realized that the chief hope of maintaining armed forces was to stress their non-military utility. An air force *per se* could not be justified, but an organization to use aircraft to map Canada's uncharted North was a saleable proposition. Similarly, the justification for the existence and development of the Royal Canadian Corps of Signals (RCCS) was the operation of the Northwest Territories and Yukon Radio system and weather reporting.

He had now reached the point where he was of international stature, and he was increasingly called upon for advice by the government of the day on non-military matters, with results that are still important to us today. A fervent Canadian nationalist always, he early recognized the importance of preserving Canada's sovereignty in the vital matter of international air transport, even in the days when such traffic was just a dream of the future. As early as 1923, through his interest in RCCS problems, he promoted research in the cathode ray direction finder, the forerunner of radar by nearly two decades.

The onset of the great depression of the 1930s compounded the problems of trying to keep an armed force in being. However, once again McNaughton used forces in being to cope with a non-military problem.

The vast army of unemployed in an age without unemployment insurance created a crisis

[1] Colonel Cosgrave was official signatory for Canada at the surrender of Japan on board U.S.S. Missouri, 2 September 1945.

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situation. Under the aegis of the Department of National Defence, labour camps were established, and soon thousands of single men were housed in camps across the Country. Although bitterly attacked as a back door approach to militarism, the camps performed an important task in the rehabilitation of Canadians who had lost all hope in those desperate days, and as established by an official enquiry into their operation, were operated at a per diem cost that sounds incredible in 1968, – 16¢ per day to feed a man. McNaughton, with his customary forethought, seized the opportunity to utilize the available labour to build air fields across Canada that were to play an important part in the development of both civil and military aviation in the days ahead.

The last part of the book deals with McNaughton's presidency of the National Research Council, 1935-39. This civilian organization originally looked askance at the appointment of a General to head it, but with the typical drive and energy that always marked his actions he promoted the affairs of the NRC, and his critics became his warmest supporters and friends. Upon his departure with the outbreak of World War 2, his successor at NRC was to declare:

> *"...he had an eye for the future; he saw great things. He was always ahead of his time in his thinking... His work at NRC during those four years, viewed in terms of lasting benefit, may well turn out to be the most important he ever did."*

A fascinating and warm-hearted man, and a great Canadian: to quote Colonel Charles Stacey's assessment:

> *"This country has never had a son who served her with more single-hearted devotion. Like other great men, General McNaughton made mistakes; his judgment, perhaps, was never quite the equal of his powerful intellect. But his greatness is really beyond question. I shall always remember him as the most compelling personality I have ever known. History will certainly remember him as one of the greatest Canadians of the 20th Century."*

The author has written a well documented and extremely readable biography, handsomely printed and illustrated. A criticism I would make is the foot notes, a distraction always in reading, and only justified if very pertinent to the material. But all in all, this is a great biography of a great Canadian. I eagerly look forward to the second volume.

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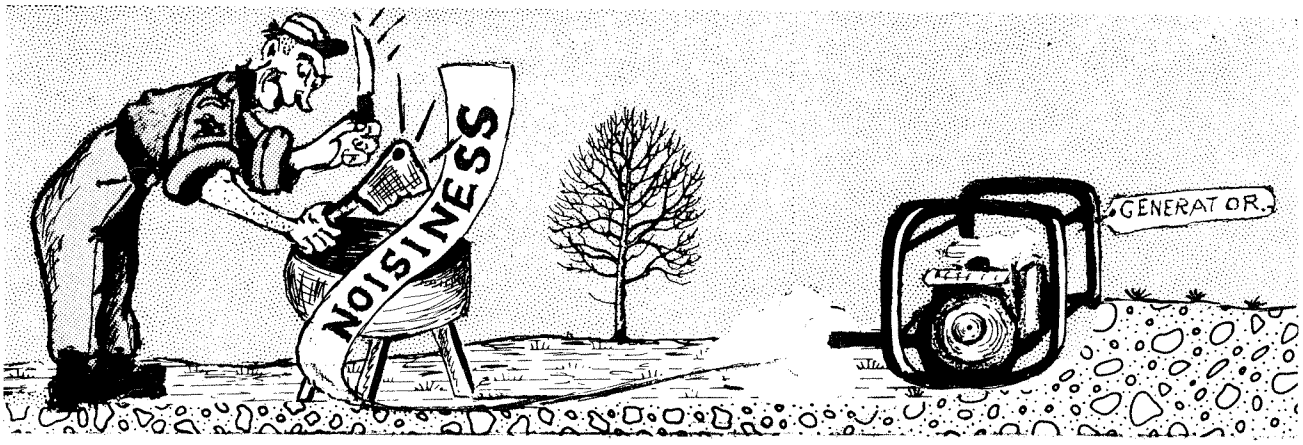

MILITARY USES OF FUEL CELLS

Condensed from an article by CAPT D.B. McGibbon

Introduction

Anyone who has been employed in a command post at night, or day too for that matter, and listened to the staccato beat of the "chore horse" in its noisy struggle to keep batteries charged, will appreciate the requirement for a silent power source that is both portable and reliable. This requirement is not peculiar to artillery, nor has it been solved by adoption of M113s or M577s, since they too require periodic starting of their engines to recharge batteries.

Land forces today have an ever increasing need for electric power. Introduction of modern technical weapons and equipment multiplies this need yearly. It is imperative that the power necessary to operate these devices is available when and where needed and from efficient reliable sources.

One primary area of research to meet this need is the field of the gas turbine because of attractive power densities, inherent multi-fuel capability, simplicity and potential long life. Another, and also promising solution is that of the fuel cell. Fuel cells have a high conversion efficiency and potential for meeting not just silent power requirements, but most of the land forces' power requirements.

Categories

Power requirements for modern land forces may be grouped as follows:

a. Tactical Type. Power level from 0.05-5.0 KW. Silent, portable and reliable, the former two being most important.

b. Multipurpose Type. Power level from 0.5-200 KW. Mobile, reliable and low noise, the former two of these being most important.

c. Strategic Type. Power level from 500-10,000 KW. Must be both efficient and reliable.

The fuel cell comes under category A.

Theory

How does the fuel cell work? A look at the simplest and most highly developed fuel cell, the gaseous hydrogen/oxygen type provides the basic analogue for all fuel cells. Hydrogen gas(H_2) is fed to the anode, where, assisted by a catalyst, it is dissociated (i.e., becomes H^+ and H^+ with the superscript indicating the charge of the ion or radical). These two dissociated positive ions recombine with two negatively charged hydroxyl ions (OH^-) and form two molecules of water. In the process, two electrons are freed. The origin of the hydroxyl ions will become evident in a moment. The two freed electrons are conducted out of the cell, through the load, and back to the cathode, thus we have current flow and power generation. Gaseous oxygen (O_2) is fed to the cathode. In the presence of water and the two free electrons whose source was previously described, it dissociates then recombines to produce the hydroxyl ions needed for the reaction at the anode. Thus a continuous electron flow is maintained and the overall process can be simply written as:

$$H_2 + \tfrac{1}{2}O_2 \rightarrow H_2O + \text{Electrical Energy} + \text{Heat}$$

Of course, it is optimistic to presume that gaseous hydrogen and oxygen would be available in suitable form under field conditions; therefore, liquid fuel cells have been developed. One of these that shows great potential is the liquid hydrazine (N_2H_4) – air fuel cell. Hydrazine, a liquid at fuel cell operating temperatures, releases hydrogen with a minimum of power loss, does not require large

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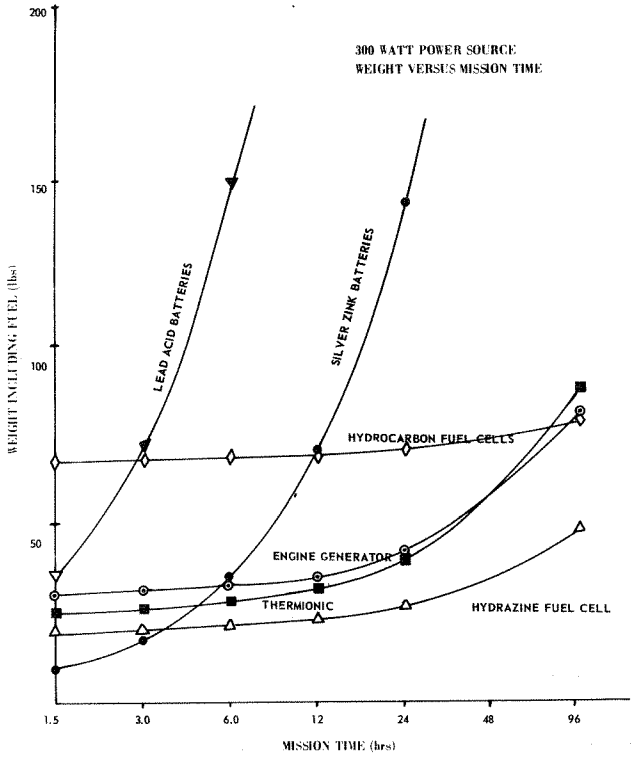
amounts of expensive catalysts, is reasonable to handle, has simple by-products (nitrogen and water) and has a high fuel energy density, one KW per pound. The chemical reaction is

$$N_2H_4 + O_2 \rightarrow N_2 + 2H_2O$$

How does the fuel cell compare to other power sources? The graph below shows a weight analysis for various 300 watt power sources versus operating time. The graph includes the weight of the fuel required to operate for the times required. Due to the high efficiency of the fuel cell, it can be seen that as time increases, all other power sources increase in weight more rapidly than the fuel cell.



Outstanding Properties

Outstanding properties of fuel cells can be summarized as:

High thermal conversion efficiency,

Few mechanical parts,

Quiet operation,

Weight and volume requirements in the order of $^1/_{10}$ to $^1/_{100}$ of customary batteries,

Economical production potential and low cost operation,

Ruggedness,

Possible lifetime in the order of 1000 hrs operating time,

Low performance in low temperatures.

This last property would be of major concern under operations in a Canadian winter environment.

Present Developments

A 300 watt hydrazine-air fuel cell has been developed by the United States Army Engineer Research and Development Laboratories. The hydrazine is supplied to the power source in a disposable, resealable container which is applied directly to a fixed needle on the power source. The fuel supply may thus be emplaced or removed with no contact of hydrazine with the operational personnel. This power source with fuel weighs 33 lbs. Using PRC 47 radio set data (transmit – 320 watt, receive – 21 watt) it is found that the fuel consumption rate would be one gallon of hydrazine in 82 hours. Note that a C42 radio set transmits at a power of 15 watts. The disadvantage, previously mentioned, is that this fuel cell has low performance at low temperatures. This particular module was designed for use in jungle type warfare where low temperature operation is not a criterion. However, because heat is produced by the chemical reaction producing the electrical energy, this module has an inherent "bootstrap" effect, in that it brings itself up to operating temperatures after a short period of time. The noise level of this module is 40 DB at 500 cps; therefore, for all practical purposes it would be undetectable to the human ear at a distance of 100 feet under all conditions.

Another power source using a 5 KW hydrazine-air fuel source has been designed for field operations under the following operational requirements:

4.5 KW, 26-34 volts, direct current,

Inaudible at 50 feet,

50 hour unattended operation with remote, multiple start capability,

Ambient conditions from 32°F to 105°F,

Weight of approximately 200 pounds without fuel.

This system operates with very simple control mechanisms. Heat exchanger fans turn on at air inlet temperatures of 125°F. The hydrazine feed system is controlled by an electronic circuit facilitating a reference voltage. If the cell is operating below this reference voltage, more hydrazine is injected into the system. This system will use approximately 1.3 litres of hydrazine per hour with a load of 100 amperes output at the rated voltage. The major limitations of this system are ambient operating temperatures and relatively short life of the fuel cell.

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Other military research has included applications of these power sources to powering of a vehicle. Eight of the 5 KW sources described above have been used to power a 40 KW power plant installed in a ¾ ton truck at the primary power source. Civilian research has been devoted also in this area to developing power sources for electrically powered cars. However, the limited operating ranges and poor low temperature operating characteristics must be significantly improved before these vehicles can be considered for practical purposes. It is worthwhile noting, however, that an electrically powered car built by the Ford Motor Company reached speeds in excess of 130 mph on a test track in the USA during November, 1968.

Conclusions

Under the present "state of the art", the fuel cell very definitely has a place in category "A" (tactical) and possibly category "B" (multi-purpose) power source requirements, within the limitations set by operational temperature.

The hydrazine-air type of fuel cell appears to be the most promising of those under development.

Both the 300 watt and 5 KW power sources have characteristic performance data which appear to make them operationally feasible.

The basic characteristics of the fuel cell apply well to land force power requirements. Developments in research in this field should be watched carefully as the success of future tactical situations may well depend on having suitable power supplies.

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THE ROYAL CANADIAN ARTILLERY ASSOCIATION MEETS AT SHILO

The annual meeting of the Royal Canadian Artillery Association was held at the Royal Canadian School of Artillery, Shilo, during the period 25-28 September. Fifty-one delegates attended, representing Canadian Forces Headquarters, Training Command Headquarters, RCSA, all Artillery Training Headquarters and most regular and militia artillery units across Canada.

The conference took the form of executive meetings on the first two days, followed by general meetings for all delegates. Special speakers were LGEN W.A.B. Anderson, Commander Mobile Command, COL J.P. Beer, the Chief of Artillery and COL M.H. Bateman, Director of Land Reserves. Extracts from GEN Anderson's speech are published elsewhere in this volume. Social events included a Guest Night and a Mixed Buffet to meet Shilo officers and their wives.

Great interest was shown in a field demonstration staged by the School of Artillery and featuring live firing by the M109 155mm self propelled howitzer. Also shown were the M577 armoured command post, the M548 ammunition carrier, the AN/MPQ 501 counter mortar radar, the armoured recovery vehicle, Fennel theodolite and the Collimator. Everyone was impressed by this new equipment for which we have waited so long.

A number of resolutions were presented during the general sessions and adopted for subsequent submission to CFHQ. These included items concerning pay for summer camp, the trade of radio operator, a reduction in qualifying time for promotion to bombardier, the issue of coloured forage caps, regulations concerning commanding officers' attendance at summer camps and a review of contingency allowances.

Considerable discussion was held on the subject of the training of junior officers. Here a major problem is resulting from the present arrangements under which officers receive their first formal artillery training on the Captain Qualifying Course at the School of Artillery. It was agreed that there is a requirement for an artillery course at an earlier stage to train the officer as a GPO/CPO. It was suggested that the present Captain Qualifying Course, which is broken into two parts, be revised so that part one would train an officer to be a GPO and part two would be oriented towards producing a troop commander. This would enable lieutenants to obtain technical training at RCSA earlier in their career. The proposal was agreed for submission to D Land R, CFHQ.

A new executive was elected with LCOL W.D. Elsdon becoming president. A vote of thanks was extended to the outgoing executive and to the president LCOL J.D. Cambridge. Next year's meeting of the RCAA will be held at Ottawa.

Delegates Attending the 1968 Association Meeting in CFB Shilo, Man

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Executive at Work

From bottom left centre going left: LCOL J.D. Cambridge, President, LCOL E.C. Scott, LCOL E.R. Clemis, LCOL R.J. Connor, LCOL L.O. Grose, LCOL O.F.C. Cook, LCOL A.V. Taylor, LCOL D.G. Ingram, MGEN H.A. Sparling, LCOL G.M. Platt, LCOL J.H.E. Day, LCOL B. Shapiro, LCOL J.H. Turnbull, LCOL W.D. Elsdon.

Artillery March Past – 1917

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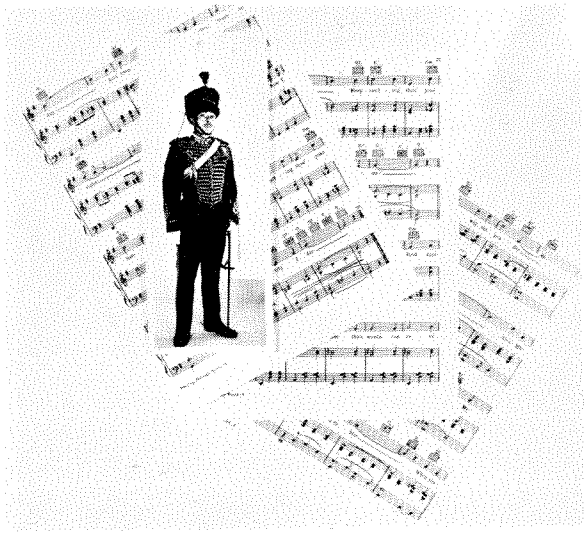

RCHA BAND 1905-1968

On 23 October 1905, at a General Militia Council Meeting, the Adjutant General proposed and recommended the organization of the Band of the Royal Canadian Horse Artillery with an establishment of 25 members, including the Bandmaster. The Adjutant General stated that "Such a Band would be of great assistance in recruiting for the RCHA and of advantage in many other ways, tending as it would to elevate moral tone, and create an *esprit de corps* amongst the members of the Regiment." This recommendation was approved, and on 1 December 1905, General Order 280 authorized its formation. Prior to this, a small unofficial Band of approximately 20 members was functioning under Trumpet-Major K.L. McKinnon, who controlled the Band during the first two years of its official status and according to records, "worked most conscientiously" to establish the Band.

In 1908 it was decided to appoint a Bandmaster from the Imperial Army and Bandmaster A.L. Light was selected, and took over as Bandmaster in May of that year. The Band, during its early years, became very famous in Eastern Canada for both its distinctive dress and standard of music, and was frequently called upon to take part in many of the State occasions at Government House, Ottawa. The Band was also a great feature at the Quebec Tercentenary celebrations in 1908. During World War 1, the Band was kept extremely busy and its value to the Canadian Militia (as it was at this time) is readily seen in an order by the Commander of Military District Number 3, Kingston, who, upon receiving applications from band members to serve overseas in the fighting lines, promptly replied in the following vein, "You will kindly point out to these men that their patriotism in volunteering for Active Service has been noted and is much appreciated. The authorities, however, consider that their services are of more value to the Empire in their present appointments. It has been estimated that one hundred men have been enlisted for, and through the music of each bandsman retained at home." The outcome of his action was that each man was awarded The Distinctive Badge of Honorable Service, Canada.

In 1928, after long service, Bandmaster A.L. Light retired at the age of 71 years, and was succeeded by Lieutenant F.W. Coleman, who directed the Band through many important functions during the next fourteen years, including a visit to Europe in 1936. The purpose of this visit was to take an official part in the unveiling ceremony of the Vimy Memorial in France. The Band was in very great demand during this tour, and played in both London, England and Paris where it was much feted, as is noted in a very interesting letter on record written by Band Sergeant H.N. Longshaw, who gave a vivid impression of the Band's activities during this period, including a performance at Buckingham Palace in the presence of King Edward VIII.

During 1940 the Band moved from Kingston, Ontario, to Petawawa and, owing to World War 2 commitments, became greatly reduced in size. However, it continued to maintain a standard which enabled it to fulfill its many duties adequately.

In 1942, Major F.W. Coleman retired and the Band was taken over by WO1 H. Tidman who nursed it through the difficult years until 1945. He was relieved by Bandmaster B.J. Lyons, who held the appointment for the next two years, when once again Mr. Tidman resumed command. In 1946 the Band moved to Shilo, Manitoba, but due to post-war circumstances lost many of its former members,

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RCHA Band in 1910 – Petawawa Camp, Ontario

and until 1952, operated under difficult circumstances with an approximate strength of twenty members.

In 1952, by the time the Band was nominated for a tour of duty in Central Europe, its members had increased to thirty-one, and it was once again outfitted with full-dress uniforms. Due to ill health, Lieutenant H. Tidman was replaced by Lieutenant C.A. Holt who took the Band on the tour of Europe from June 1952 to January 1953, where it met with great success.

While in Europe, the Band strength increased to forty-four members from British and Dutch sources and it could be acclaimed as an outstanding ensemble which was still fulfilling the original intention of the Adjutant General almost fifty years before "To elevate the moral tone and create *esprit de corps* amongst the RCHA Corps and the Army generally."

The Band returned to Canada in January 1954 and after a short period of reorganization carried on. At this time the Historical Section of Army Headquarters did some research into the history of the Band prior to 1935. In interviewing an older veteran he stated that he only knew three bands which could play "God Save the Queen" properly. They were the Royal Canadian Mounted Police Band, the Band of the Canadian Grenadier Guards and the Royal Canadian Horse Artillery Band.

In 1956 the RCHA band became the only Regular Force Band in Prairie Command. Over a four year period it visited every city and town in Manitoba, Saskatchewan and the Lakehead area. Tours averaged two to three weeks. In addition to performing for Army ceremonial parades and other military functions, the band gave public concerts wherever and whenever possible. Most concerts were open to the general public free of charge, and in some cases were sponsored by local Militia units. The success of the band was usually attributed to: a most polished performance, judicious programming and professional presentation.

Lieutenant Ferland, who had replaced Captain Holt in 1956, was posted to the Royal 22nd Regiment Band in Quebec in 1961. Leiutenant A.L. Lee was appointed Director of Music in October, after graduating from the Royal Military School of Music. He travelled extensively like his predecessors. The band continued to play concerts, assist with clinics, rodeos and attended the opening of the Manitoba Provincial Legislature. Most schools in the Winnipeg area heard the band perform special educational and entertaining programmes.

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The Red River Exhibition became an annual engagement and trips were made to the Flin Flon Trout Festival; Moose Jaw Band Contest; Williston, North Dakota Festival; and Sioux Lookout Anniversary. On these occasions the band wore the colourful full dress uniform, adding dignity to all engagements. The full dress uniform consisted of blue serge overalls, with a wide scarlet stripe, a blue tunic embossed with yellow braid across the breast and whorls on the back. It had a high scarlet collar, and was topped off by a black fur busby with red tongue, and plume of red vulture and white ostrich feathers, surrounded by a gilt ring at the base. Wellington boots and dress spurs completed the uniform.

The band was continually travelling by bus and plane during 1962 to provide music for soldiers and civilians all over the Prairie Provinces. Early in 1963 the Scottish Society of Winnipeg decided to stage a Highland pageant. The Queen's Own Cameron Highlanders Pipe Band under Pipe Major WO1 A. Graham, and the RCHA Band under Lieutenant A.L. Lee, were employed to stage a two hour spectacular pageant which drew large crowds and played to a packed audience in Minto Armoury.

The RCHA Band featured prominently in closing ceremonies at Fort Churchill. Previously, many trips had been made to the frozen North by RCAF "box-car". On 14 February 1964 the band flew for the last time to play for troops, Indians and Eskimos in the land of the midnight sun. Four days later the official closing down had been completed.

On 26 June 1964 another flight was made, this time to Whitehorse in the Yukon. It was another sad occasion and an historic one, as the Canadian Army in Camp Takhini bade farewell and withdrew from another outpost in the North, leaving the Department of Transport to maintain highways and control the Northern Territories.

In January 1965, a tri-service conference was held at the School of Music, HMCS Naden, Esquimalt, BC. The new policy on integration of the Armed Forces had eventually enveloped bands. The Chief Inspectors of Bands from the Army, Navy and Air Force moved to one central office in Ottawa. Bands became a part of the "Ceremonial" section under the new concept, and history was again made when Directors of Music from all three services

RCHA Band in 1967 – Winnipeg, Manitoba

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travelled in one plane across Canada and met for the first time to discuss the future policy of bands.

With the integration of bands last year, the RCHA Band ceased to exist, except as a fond memory for the public and the many gunners who have listened to and enjoyed their music for over 60 years.

Directors of Music

Royal Canadian Horse Artillery Band

A.L. Light	1908 - 1928
F.W. Coleman	1928 - 1942
H. Tidman	1942 - 1945
B.J. Lyons	1945 - 1947
H. Tidman	1947 - 1953
C.A. Holt	1953 - 1956
A.J.P. Ferland	1956 - 1961
A.L. Lee	1961 - 1968

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RCA TRADE STRUCTURE

by
*CAPT D.E. Rousseau, CD**

On 1 October 1966, a new trade and rank structure was introduced in the armed forces. Its impact was overshadowed by the pay implications accompanying the new structure. Little information has been published since that time about the new trades and the changes which have now taken place. The artillery structure consists of the following trades:

021 – Artilleryman
022 – Artillery Technician
023 – Artillery Surveyor
024 – Artillery Locator
025 – Chief Artilleryman
026 – Chief Locator

The Artilleryman trade covers pay levels three to six. At pay level three the candidate receives instruction in artillery equipments, communications and driving. He takes on-job training at pay levels four and five as a gunner, communicator, or driver. It is during pay level five training that the tradesman receives junior leadership training. At pay level six, the candidate receives a senior NCO leadership portion and a technical portion covering artillery equipments, communications, maintenance, administration, demolitions and supervision of junior tradesmen.

The Artillery Technician initially covered pay levels three to six but it was decided that a common pay level three course should be given to all recruits, and in August 1968 the Artillery Technician and Surveyor were raised to start at pay level four, and the Locator trade to pay level five. (See Diagram). At pay level four the Artillery Technician candidate receives basic technical instruction at troop level, and at pay level five receives junior leadership training and additional troop and battery technical on-job training, including work at the observation post. At pay level six the tradesman receives a senior NCO portion and a technical portion covering map using, communications, survey computation, fire planning, observation of fire, mathematics and slide rule, air photo reading, calibration and the supervision of junior tradesmen.

The Artillery Surveyor includes pay levels four to six with the intake coming from the Artilleryman pay level three course. At pay level four the candidate receives basic survey, instrumentation and computation, and at pay level five takes on-job training on additional survey with emphasis on the computing centre and junior leadership training. At pay level six the candidate receives a senior NCO's leadership portion and a technical portion covering map using, communications, survey computation, and supervising junior tradesmen.

The Artillery Locator covers pay levels five and six with the intake coming from the Artillery Surveyor trade. At pay level five the candidate receives radar, sound ranging and communications required in this trade. He will also receive his junior leadership training. At pay level six the candidate will receive a senior NCO's leadership portion and a technical portion covering radar, sound ranging, communications, administration, and supervising junior tradesmen.

The Chief Artilleryman is at pay level seven with intake coming from Artilleryman and Artillery Technician trades. On the course, the candidate will receive artillery equipments and ammunition, survey, nuclear target analysis, air photo reading, tactics and organization, artillery

* Capt Rousseau is OC Training Standards Section, RCSA

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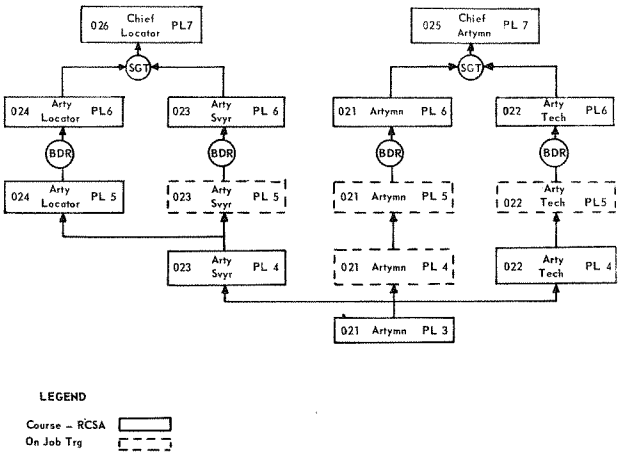
PRESENT RCA TRADE STRUCTURE – 22 AUGUST 1968



intelligence, methods of instruction, safety procedures, calibration, demolitions, and administration. The Chief Locator is a pay level seven also, with the intake coming from Artillery Surveyor or Artillery Locator trades. On the course the candidate receives counter-bombardment, air photo reading, survey, duties with locating units, deployment, methods of instruction and administration.

There is little variance in trade content between our present and the old structure, but a new training concept, and new formats have made the production of training documents a lengthy process. At present the course training standard (CTS) for Artilleryman pay level three is complete and in use. The on-job training standards (OJTS) for Artilleryman pay levels four and five are in the hands of the units and a pilot course for Artillery Technician is now being conducted using the new CTS. Many other standards are in draft but are being held in this form because of the uncertain future of the trade structure.

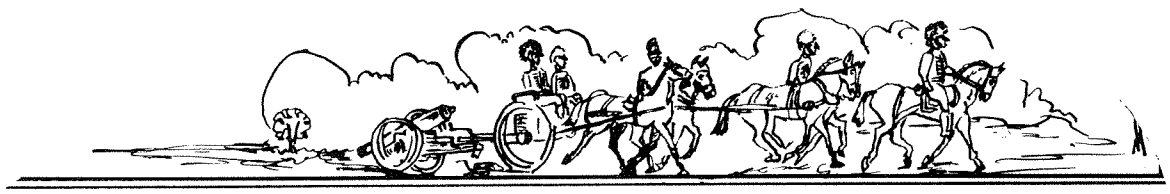
The present structure was a natural evolution of the original structure born out of a better understanding of the Canadian Forces Trade Structure System. A major reorganization of the artillery units in Mobile Command this summer has shown, however, that the present structure is inflexible to meet these changes. The disbandment of 1 Locating Battery RCA brought a split of the Locator trade, with the radar portion going to some field regiments and the sound ranging portion to 1 Drone Troop, RCA. The disbandment of 2 SSM Training Battery RCA has transferred responsibility for training on Honest John to the Royal Canadian School of Artillery. An analysis of personnel employed in artillery trades has shown that only 12% of corps personnel are employed in the locating, survey and Honest John fields. To maintain the present structure in the light of these changes would limit the advancement and employment of personnel in these trades and would make a build up slow if these trades were enlarged in the future.

In the reassessment of artillery trade requirements it was recommended that a Unitrade structure should be developed along the lines of the other combat arms based on the following guidelines:

> The trade structure must conform to the Canadian Forces Trade Structure and Management System.
>
> It must be flexible to meet changes in the future.
>
> It must provide in the trade a common field of artillery skills.
>
> There must be sufficient incentive built into the structure to ensure that the tradesman has the required trade specialties he needs at the various trade levels.
>
> It must allow all personnel in the trade equal opportunity for promotion.
>
> Personnel must not be employed in units which preclude him from receiving on-job training.

The proposed Unitrade structure can not be dealt with here as it has not yet been approved. Suffice it to say that the system being considered promises to produce a more broadly trained, and flexible tradesman, who will never again be in danger of becoming locked in a narrow, specialist field.

[1] Unitrade – a term denoting a combat arm career field having only one trade and the remaining trade requirements as trade specialties.



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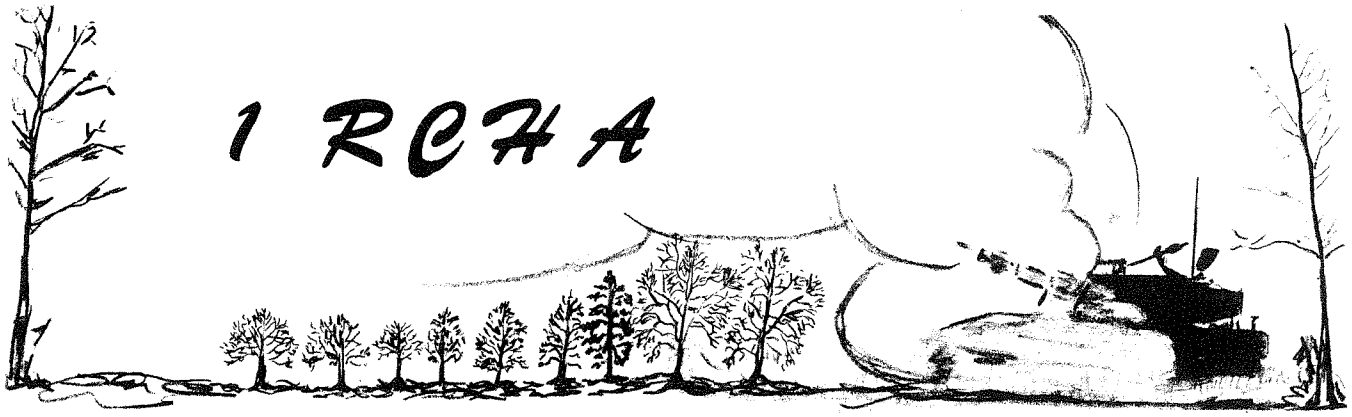

Exercise KEYSTONE
Debut of the First Regiment's M109s

The First Regiment's newly acquired M109s and their crews were put to the test for a gruelling ten-day period in the attractive setting of Westphalia, West Germany this past October. The guns and their artillery equipment had arrived at Fort Prince of Wales in varying numbers during July and August and an intensive conversion course for the batteries left few idle moments or feelings of complacency after the CRA's exercise in the spring. An initial indoctrination of things to come was provided at Soltau in September when the batteries in turn fired their weapons and participated in a two-day battalion group exercise.

Exercise *"Keystone"*, this year's annual NATO Fall Exercise of the Second (British) Division to which 4 CMBG is assigned, was to be the Regiment's debut with her sister regiments. Nearly 20,000 troops, 160 tanks, 1,200 tracked vehicles, 2,800 wheeled vehicles and 60 helicopters were involved, in addition to 90 self-propelled guns. This fast-moving exercise covered more than 150 miles in its two phases. For those veterans of 4 CMBG, the importance of controlling damage to civilian crops and fields has steadily risen to the point of providing damage control teams to rectify any minor damage caused, such as the sweeping of mud caused by tracked vehicles from roads.

The first phase of this brigade controlled exercise included a defence and a withdrawal over 70 miles. During this operation, the Regiment was bolstered by the addition of 94 Battery, 42 Medium Regiment RA, and 11 Battery of 34 Light Air Defence Regiment RA.

The second phase covered a larger area for manoeuver and included a night withdrawal of the division over the Weser River by way of floating bridges and heavy ferries. A successful counter stroke from the new defensive positions east of the Weser employing conventional artillery (nuclears were employed on a flank brigade front) climaxed this phase. For this operation, 1 RCHA had the resources of the entire divisional artillery. In addition to 42 Medium Regiment (M109) and 2 and 5 Field Regiments equipped with Abbots, there was 32 Heavy Regiment (175mm), 11 Battery, 34 Light Air Defence Regiment and the nuclear punch of 1 SSM and 50 Missile Regiment (Honest John and 8 in). Placed under direct command of LCOL DR Baker for the "crunch" were one medium, two heavy and two SSM batteries. Approximately half of the division's conventional and nuclear artillery was at the disposal of 4 CMBG at the conclusion of the exercise. One of the major problems of having a large amount of additional artillery placed in support of a brigade group, is coordinating movement and finding the necessary real estate, including alternate positions. The clearance of these areas (upwards of 20 grid squares) had to be confirmed with the battle groups at the outset of planning. This was especially true in difficult country such as the area of Kassel.

As in past years, the division was kept "honest" by a considerable enemy force composed of a balance of infantry/armoured units which included two squadrons of Special Air Services. Therefore, local defence and concealment were paramount and it was proven by the end of the exercise that in many gun positions our newly found weapons could be hidden. Only one battery was spared a full fledged attack of their position during the exercise, but despite one or two precarious moments, no guns were lost.

Without doubt, the individuals deserving most credit for a successful and accident-free exercise are the M109 drivers who, with a minimum of training, tamed their new chargers to provide the regiment with increased firepower and mobility.

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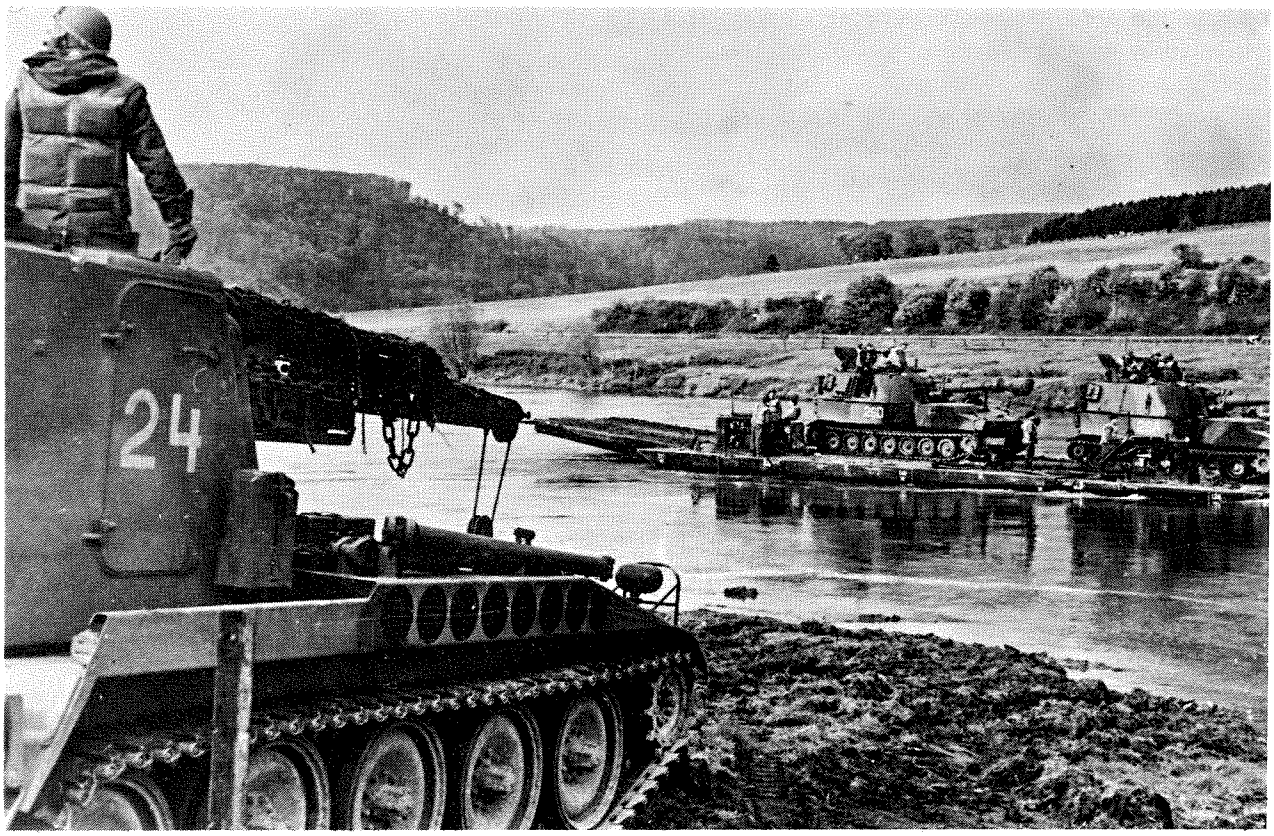
"I hadn't counted on much of a harvest from this field anyway".



Two M109s of B Battery crossing the Weser by heavy ferry.

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Exercise HOMEWARD BOUND 1

Three historic water routes of Western Germany were the setting for a week-long adventure training exercise named *"Homeward Bound 1"*, undertaken by seven members of C Battery, 1 RCHA last fall. Transportation was to be by assault boats, and the mission: to gather intelligence about all aspects of the waterways travelled and details of the surrounding terrain. The journey began 0710 hours, 2 October 1968, when the men, Bdrs E.W. Chandler, J.L. Decoste, W.R. Flatekval, T.M. Glowa, J.J. McAllister, C.E. Nutley and D.W. Perry, launched their assault boat in the Mosel River at Trier near the German-Luxembourg border.

The first leg of the trip, from Trier to Wolf took two days. The river current was from six to eight knots, the average depth from three to five metres. The first of many locks were encountered, about 200 metres long and requiring from five to ten minutes to fill and empty. In spite of the almost constant rain, the log records that morale remained high. The second leg on 4-5 October brought the crew to Burgen, where a lay-over of 24 hours was required to dry out crew and equipment. On the afternoon of 6 October, the expedition reached Koblenz, the point at which the Mosel empties into the Rhine. There, details were recorded of various military establishments and of the hectic shipping traffic in the area. Supper, consisting of fish, was contributed by a local fisherman.

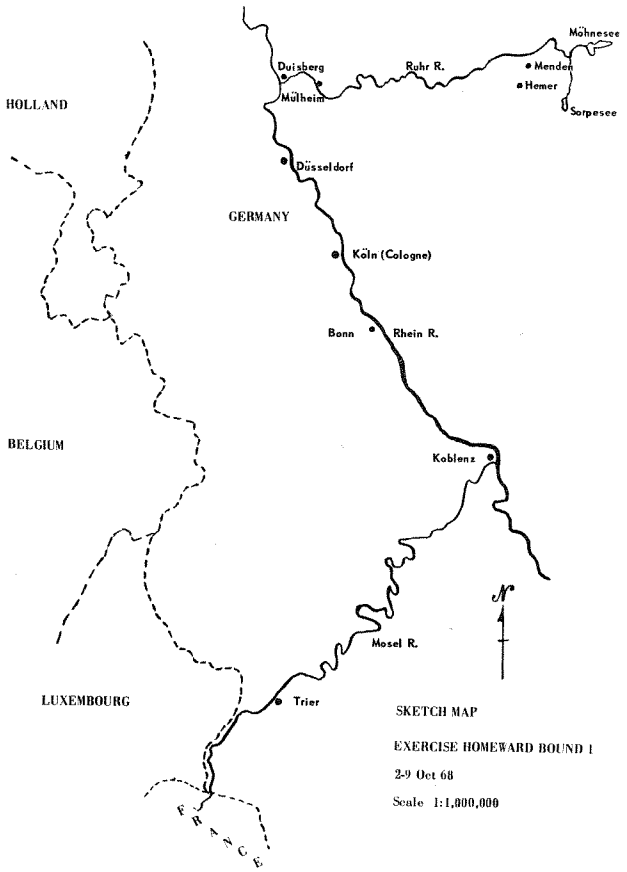
Somewhere on the Mosel. Note the flag carried in the manner of the early explorers.

The route now angled to the northwest, on one of the busiest and most picturesque rivers in Europe – the Rhine. The crew departed early on 7 October bound for Linz. The river was higher than normal, and consequently, many intended camp sites were washed out. Finally a suitable overnight site was found in Oberkassel. The log, slightly paraphrased, indicates the changes encountered on the Rhine.

The boat being towed from the shore near Mulheim.

> "The Rhine is much faster and rougher than the Mosel. Shipping is very heavy in both directions ... impossible for APCs to cross due to strong current. Most boats going north (downstream) empty. Those going upstream heavily laden and being towed by tugs ... many fuel tankers ..."

Departure the next morning, 8 October, was at 0700 hours. The rudder, which had broken the previous day, was repaired but it only lasted for three hours. Thus, the crew drifted through Cologne cheered on at



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one point by workers at the Ford plant who thought them crazy. Characteristically, the Germans were found to be very curious and friendly and many instances of help and assistance during the trip were logged.

9 October. Departure 0645 hours. A unique look at the famous German industrial complex. Langenfeld, Krefeld, Dusseldorf, Rheinhaussen, Duisberg. Duisberg marks the mouth of the Ruhr River and it was decided to go on to Mulheim. The current was very swift, approximately 11 kph. After a nip and tuck battle to reach the locks before closing, a tow was obtained from a small government floating laboratory to the Mulheim lock. One and one half kilometres past here, the river finally proved too swift to continue – 13-15 kph, and the expedition was ordered off the river by the water police. The last night was spent in a yacht club at Mulheim. Total distance travelled by water – approximately 240 miles.

1 LOCATING BATTERY RCA DISBANDS

On 16 August 1968, 1 Locating Battery RCA, following an inspection and address by the Chief of Artillery, COL J.P. Beer, MBE, CD, marched off Fort Osborne parade square for the last time, ending a brief but active life.

"1 Loc" as it came to be known, came into existence on 15 June 1965 with arrival in Winnipeg of selected personnel to form the nucleus of the new unit. Many personnel, who would eventually don "1 Loc" Battery flashes, had already been employed for several months at Yuma Proving Ground, Arizona, where they had been involved in the CL 89 Drone trials. Others continued to arrive during the summer of 1965, from locating batteries which had been part of field regiments, from RCSA, ERE jobs and the like.

The first major commitment in the fall of 1965 was to support sound ranging trials being conducted at Shilo by the National Research Council. This was the beginning of an almost continuous series of trials the unit was to undertake, in addition to normal training and tasks in aid to the civil power. Thus, 1966 activities included such diverse events as the Winnipeg blizzard, Red River floods and the trials of the AN/MPQ/501 Radar. 1967 began with sound ranging trials in Ottawa. The Battery then returned in time to join 3 RCHA in preparation for the Pan American games. Unit personnel converted to desk clerks, traffic directors and custodians in support of the athletic best of the Western Hemisphere. At the end of the Pan Am Games, Captain J.P. Cheevers replaced Major J.O. Ward as commanding officer.

In the fall of 1967 the battery once again moved to Shilo to do simultaneous drone and sound ranging trials. For this, battery strength drastically increased with the addition of specialist personnel, a battery from 3 RCHA and contingents from Britain, West Germany and the United States. New skills were rapidly acquired to cope with drones, data links and computers. Past skills in the use of M33 and 504 radars were also used. It was necessary to work around the clock due to the unco-operative weather.

With the completion of the trials, 1 Locating Battery officially ceased to exist on 1 July 1968. A hectic period of personnel dispersal followed. Many went to form the new Drone Troop, while a small rear party worked to disperse stores and equipment. One humorous problem created by disbandment was the refusal of the CFHQ Message Centre to accept posting instructions addressed to an officially non existent unit. In spite of this, 1 Locating Battery managed to muster 54 "*non-existent men*", some of whom returned from leave to participate, to search for a lost child. By late August 1 Locating Battery RCA had actually ceased to exist.

The memories of the comradeship and spirit of the unit will always be remembered by those who were privileged to serve in it. Members of the battery can take pride in having participated in important trials which will benefit not only those who perpetuate the target acquisition traditions in the Canadian Forces, but other countries as well. Throughout its brief career, "1 Loc" met many and varied requirements, and in the tradition of the Royal Regiment, was never found wanting.

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Ceremonial Retirement of the 105mm Howitzer and Introduction of the M109 – LT R.N. Crooks

On 1 June 1968, the brigade groups in Canada were reorganized into combat groups. Each infantry battalion lost one company, the armoured regiment one squadron, and, in keeping, the artillery regiment was reduced by one battery. Thus, as a part of the new Third Combat Group at Canadian Forces Base Gagetown, the Second Regiment, Royal Canadian Horse Artillery became a two battery mechanized regiment. Along with the change came the eagerly awaited M109 self-propelled howitzers to replace the 105mm towed howitzers.

The changeover was formally observed on Friday, 6 September 1968, by a visit to the regiment by MGEN A. Bruce Matthews CBE, DSO, ED, CD, Colonel Commandant of the Royal Regiment of Canadian Artillery. The day began at 0900 with the arrival of General Matthews and his inspection of the Regimental Quarter Guard. The Colonel Commandant was then received by the Commanding Officer of 2 RCHA, LCOL J.G. Henderson and briefed on the new guns and establishment. This was followed with a tour of the regimental lines to view the equipment and facilities.

At noon, the Colonel-Commandant and Mrs. Matthews attended a luncheon in the Officers' Mess where they met the regimental officers and their wives, the Commander of Third Combat Group, BGEN J.L. Drewry and Mrs. Drewry and COL J.P. Beer, Chief of Artillery.

In the afternoon, General Matthews received a general salute and inspected the regiment. 2 RCHA then marched past under the command of LCOL Henderson to the music of the Black Watch Pipe Band.

At the conclusion of the march past, LCOL Henderson gave "take post", whereupon the gun detachments broke ranks and took up their positions at the 105mm howitzers which had been lined up at

The Colonel Commandant inspects E Battery accompanied by the Battery Commander, MAJ G.M. Guy.

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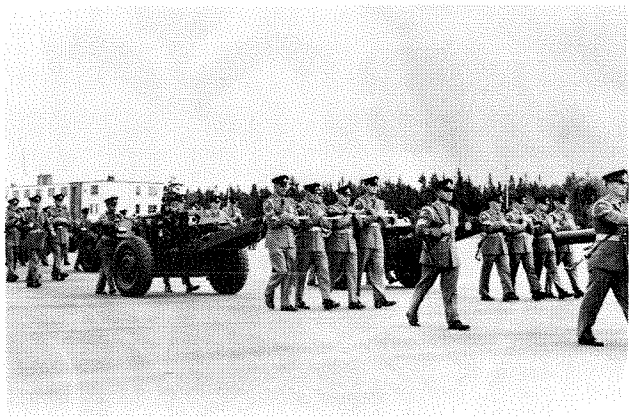
the end of the parade square. On the command "walk march", they slowly and proudly marched these colours past the reviewing stand for the last time in a tribute to the guns that have served the regiment so well. Thus, was the 105mm howitzer retired by 2 RCHA.



The guns being walked past the reviewing stand for the last time.

The regiment then marched off to prepare for the second half of the ceremony, the introduction of the new colours. While all was made ready, the large crowd of officers and men, dependents and friends of the regiment enjoyed a tea sponsored by 2 RCHA.

After tea, the Colonel Commandant mounted the reviewing stand once more to take the salute from the roll past led by LCOL Henderson and escorted by L19 aircraft of the 2 RCHA Air Observation Troop. The impressive display included the new colours, the M109 self-propelled howitzer, as well as the other tracked vehicles: the M113 armoured personnel carrier, the M577 armoured command post vehicle, the M548 ammunition carrier and the M578 armoured recovery vehicle.

Sgt H.L. MacDonald passes the reviewing stand in his new M109.

The day ended for General and Mrs. Matthews with cocktails in the Sergeants' Mess and a buffet at the Officers' Mess attended by the officers of the regiment and their wives, General and Mrs. Drewry, COL Beer and invited officers from Base Gagetown and Fredericton.

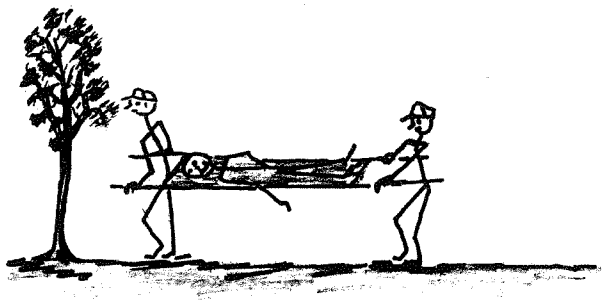
Lost and Found

2 RCHA was called out in Aid to the Civil Power on the evening of 13 May 1968, to assist in the search for Mr. Adrian Myles. On 12 May, Mr. Myles, an eighty-two year old diabetic, had set out for a Sunday afternoon walk from his farm house in Bagdad Settlement, Queens Co., N.B. He had failed to return.

E Battery arrived on the scene and started to search an assigned area in the early hours of 14 May. On the following day, D Battery and elements of RHQ joined the search. The RCMP, Air Force Search and Rescue Teams, New Brunswick Forestry personnel, and volunteers were also committed.

The search area consisted of dense stands of evergreen and heavy bush interspersed with abandoned saw mills, small streams and beaver dams. Searching the area was painfully slow and exhausting work. Unseasonal near-freezing temperatures prevailed at night. Fortunately the days were dry and sunny.

To the surprise of everyone, Mr. Myles was found hale and hearty at 1100 hrs on 15 May. Protesting loudly at being carried, he was evacuated by army stretcher-bearer and then by Air Force helicopter to St. John. It is to his credit that the tough New Brunswick woodsman survived three days and three cold nights without fire or food, and dressed only in light flannel shirt and denim trousers. He won the ungrudging admiration of all those who had worked so hard to find him.



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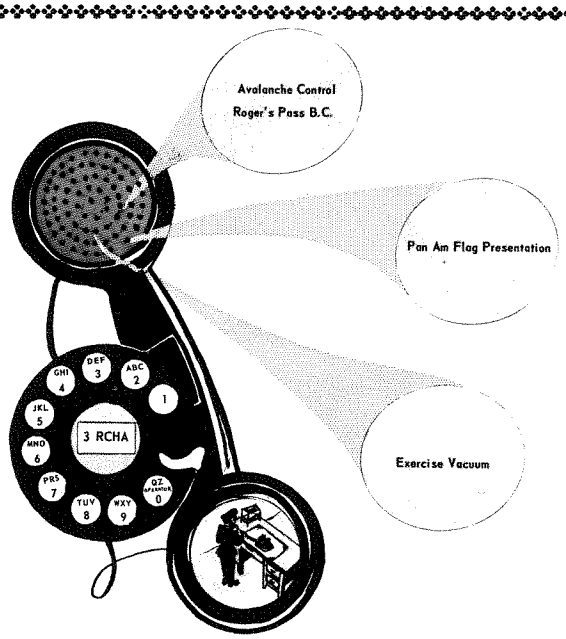

3 RCHA

Exercise VACUUM

An exercise in chemical warfare and tactical training was held 9 September to 8 October 1968 by 1 Combat Group in DRF Suffield, Alta. J Battery and RHQ of 3 RCHA were detailed for a piece of the action – and they got what they bargained for. A 72-hour airlift from CFB Winnipeg took the Gunners to the land of the setting sun for a rendezvous with the other Western Canada units and companies from Britain and the USA.

Buffalo disgorges men and equipment in Suffield

1 Combat Group HQ, with yet more miles of nothing.

Avalanche Control, Roger's Pass B.C.

Once again the thunderous avalanches and dangerous snowfalls conspire to keep a gun detachment from 3 RCHA on duty in Roger's Pass, B.C. By shooting out buildups of snow, the avalanche is activated when desired – and unsuspecting motorists on the Trans Canada Highway can proceed free from worry.

Avalanche!

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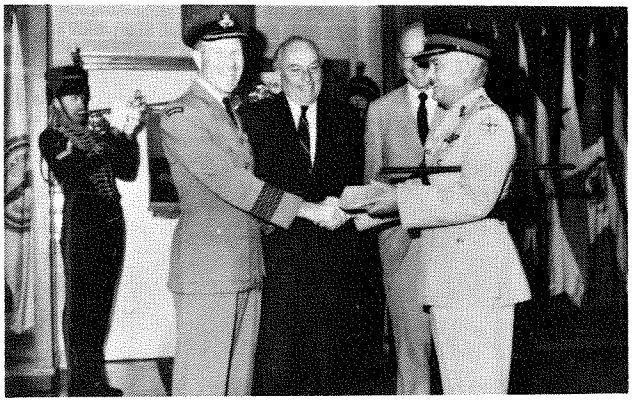
Avalanche control is provided by 3 RCHA in 5 week stints commencing in November and ending in early April. This year, detachment commanders were successively CAPT W.D. Gowanlock, LT E.C. Hague, LT R.N. McAlpine, LT J.W. Nixon, and LT T.P. Ross.

Pan Am Flag Presentation

The flags of all the nations participating in the V Pan-American Games were presented to CFB Winnipeg on 30 August 1968 by LCOL R.G. Heitshu, CO 3 RCHA. As the Regiment could not be in Winnipeg at all times; it was decided that the flags should be given to the permanent military establishment.



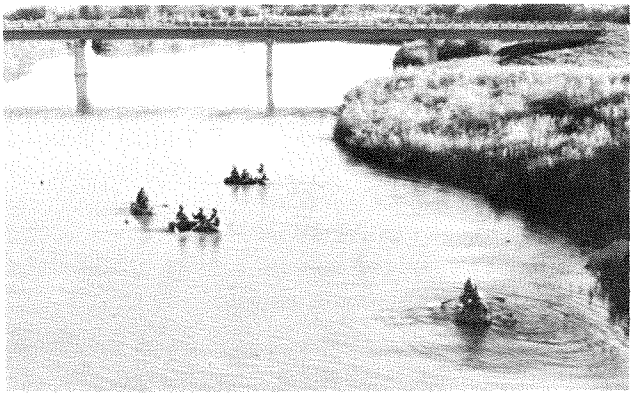
Receiving the flags is COL W.A. Hockney, Base Commander of CFB Winnipeg. Looking on are Mr. Culver Riley, President of the Pan-American Games (1967) Society, and Mr. Jack Hopwood of the Society.

Presentation of trophy by LCOL R.G. Heitshu to MAJ J. Lawrence, BC of Chestnut Troop.

Junior Leader Training

Exercise *People's Infiltrators* was designed to give the Junior Officers and Junior NCOs a taste of adventure training. And "adventure" it was as the teams found out. A multi-mile trek all in the rain, through Whiteshell's swamps, a comprehensive recce of a hamlet, a night watch patrol in Shilo, and escape by rubber raft via the Assiniboine to Portage la Prairie.

Each team was composed of one officer and two Junior NCOs to tackle the tough tasks. The eventual winner of the competition was the team of LT R.C. Henley, Cpls Frail and Aires.



Adventure Training in the Whiteshell

Visit From Chestnut Troop 1 RHA

After completing some rigorous winter training at Shilo, Chestnut Troop was invited to 3 RCHA for some fun and relaxation 29 February to 4 March 1968. A round robin sports tourney was arranged, parties in the appropriate messes, and exchange of gifts and trophies was effected.

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Battery in the Service of Peace

Cyprus 1968

by
*CAPT M.W. McQuinn**

In April 1968, X Battery 3 RCHA became the second Canadian artillery unit to become a part of UNFICYP (United Nations Force in Cyprus) two years after the departure of W Battery 4 RCHA.

In September 1967 the Regiment received the electrifying information that it would provide a battery to supplement the 1st Battalion Princess Patricia's Canadian Light Infantry of Edmonton who had been warned for service in Cyprus. Upon completion of support to the sound ranging trials in Shilo X Battery reorganized into its Cyprus establishment and commenced training.

Emphasis was placed on security operations, physical fitness, signalling and driving. To give all personnel going to Cyprus a headstart on the problems and circumstances they would face on the Mediterranean island, Operation Co-operation was devised and conducted at Hamilton Gault Barracks in Edmonton on 16-18 January. This consisted of an extensive briefing including movies and slides by members of 1 QOR of C who had served in Cyprus the previous summer, and then a two-day telephone exercise to familiarize people with names like St Hilarion Castle, Boghaz, Kyrenia, Dhikomo and many other names that would be part of our daily vocabulary in Cyprus. Since only the officers and Snr NCOs of the battery made the trip to Edmonton the 1 QOR of C briefing team was brought to Winnipeg where the remainder of the battery was briefed. Even the wives of battery personnel had an opportunity to see where their husbands would be serving.

Finally on 30 March an advance party of two officers, five Snr NCOs and five bombardiers left Winnipeg for Edmonton to join the 1 PPCLI advance party which left Canada that night. The remainder of the battery left Winnipeg on 14 April, Easter Sunday night, aboard a Yukon aircraft destined for Nicosia, Cyprus. The rifle battery landed at Nicosia International Airport after a long flight of twenty three hours plus a nine hour delay in Lahr. The battery was met by Major Parenteau who had come over on the advance party and LCOL A.M. Potts, the commanding officer of 1 PPCLI. The battery was quickly transported to Camp Maple Leaf, the home of the Canadian Contingent Support Group where they were cleared into Cancon and allowed to exchange money into local currency.

*CAPT McQuinn served with X Battery in Cyprus.

On the Move

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The thirty members of the battery, mainly drivers and signallers who were to work directly for the battalion were taken away and the remainder were then transported to the Tjiklos Company area in the Kyrenia Mountains where A Company 1 RHC were anxiously waiting to be relieved. By nightfall the battery was well settled in the base camp and five of its six OPs. The next morning the OP crew for Hilltop was flown in by helicopter to complete the rotation.

MAJ Parenteau, BC X Battery, and Sgt Blowers study the town of Aghirda which lies beneath Saddle OP.

The first few days in Cyprus were spent adjusting ourselves to the climate and scenery of our new home for after the flat prairies of Winnipeg, the Kyrenia Mountains and the panoramic view from the Tjiklos base camp and the OPs was breathtaking.

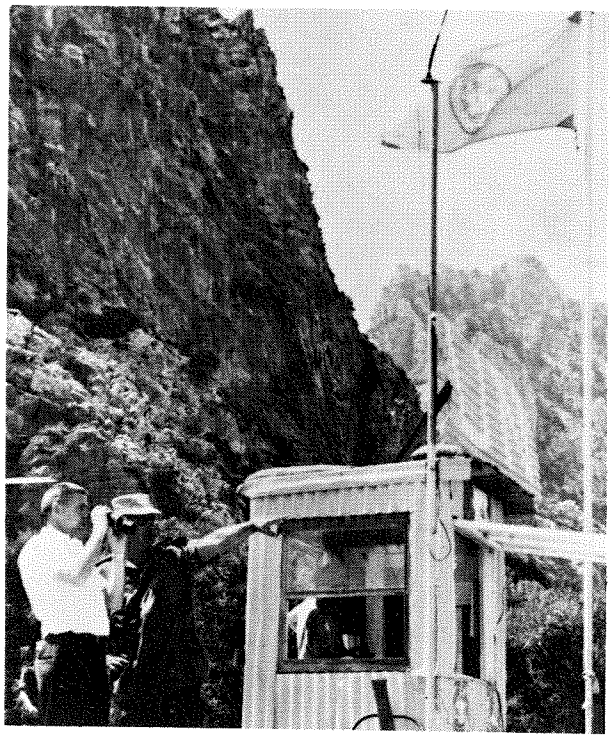
The battery learned quickly the frustrations of peace keeping duties as it was soon tested by both factions to see how these new Canadian troops would react. There was the usual rash of attempted bribes and ficticious problems and 'shotreps' that each new unit receives when it takes over in Cyprus but once the Canadian soldier proved that he could handle these nuisances the familiar letters NTR (nothing to report) appeared again on our daily sitreps.

The tasks of our personnel varied according to their location i.e., base camp or outpost and from one outpost to another. In addition to the basic task of observing and reporting, some OPs had arduous patrol tasks to carry out. Some of these were bunker patrols but there were also many 'goat patrols'. Some of the battery personnel are now qualified Gp 1 shepherds from the amount of time they spent chasing Turkish owned goats back through no man's land away from the Greek FDLs. Personnel were frequently rotated from base camp to OPs and between OPs so that most people served some time in the OPs.

In order that everyone would have an opportunity to take his "two weeks' special leave" while in Cyprus it was necessary to start sending personnel on leave two weeks after we had arrived. It turned out that most of the battery spent one or even both weeks of their leave on the sandy beaches of Famagusta which is 'the' resort area on the east coast of Cyprus. However a few adventurous people took their leave in Israel and Lebanon and a couple even returned to Europe for their leave. A good number of battery personnel took advantage of the weekend bus tours around the island to see some of the historic and famous landmarks of Cyprus.

The Artillery Birthday was well celebrated in Cyprus with a battery smoker, a reception at the battery sergeants' mess and a cocktail party at the Coeur de Lion Hotel, the battalion officers' mess. It was a very international artillery celebration as gunners from all of the other contingents were invited and took part in the celebrations.

On Whit Monday, 3 June, the battery provided personnel to the Cancon choir that sang in the Inter-Denominational Service held at the Salamis outdoor theatre near Famagusta. Our personnel handled the French hymn and reading in the French/English contribution of the Canadian Contingent.



Sgt Keller, Trail's End OP commander, points out landmarks to one of the many Canadian newspapermen who visited the contingent,

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June dragged by slowly amidst rumours of a force reduction when the UN mandate in Cyprus was to be renewed at the end of June. However, when 26 June came about, the mandate was renewed without a reduction of troops as inter-communal talks were commencing between the Turks and Greeks. The battery celebrated 1 July still at Tjiklos but then packed up and moved out of the relative coolness of the Tjiklos plateau down into the oven of Oneisha Farm. The area of responsibility here was the hot and desolate plain between Nicosia and the Kyrenia Mountains. Oneisha Farm was a most difficult area because of the heat and distances between OPs. Communications and resupply were much more time consuming but the battery came through with its usual fine performance and set a record by keeping the fifty three miles of telephone line in working order longer than any other company. During the first three weeks at Oneisha Farm the temperature soared well over a hundred degrees in the shade every day and at the outposts the only shade is inside the buildings. However every afternoon there were swim parades to the battalion beach five miles west of Kyrenia on the north coast or to the pool at the Dome Hotel in Kyrenia. With the battalion officers' and sergeants' messes located in the Coeur de Lion Hotel, twenty two paces from ten feet of cool Mediterranean Sea it is needless to say that a great deal of time was spent in Kyrenia.

In the second week of August the battery was on the move again, this time from the oven back over the Kyrenia Mountains to Kyrenia Company area which was on the coastal side of the mountains. What a relief to go from a hot barren plain to green plush orchards and to have the Mediterranean in view once again.

From our move to Kyrenia everything was downhill for the final six weeks although the battery wasn't aware of the amount of work that lay ahead. A decision had been made that for a number of reasons an approximate twenty-five percent reduction would be made in all contingents. This called for a complete reorganization in the Canadian Contingent because we were to close down over half of our OPs. There was little difficulty in selecting the OPs to be abandoned as many of them were just not required at this time. The proposed new look for the Canadian Contingent called for one observation company in the field, one reserve company in Camp Maple Leaf along with the normal Administrative Support Group. This meant a reduction of one company, the recce squadron and a few elements of the battalion and contingent headquarters. The result of the reorganization was that two base camps as well as ten OPs had to be closed down in short order. The battery was kept very busy during its second to last week as it was responsible for closing down Kyrenia Company base camp. During the four years that the United

GEN Martola reviewing the battery after presentation of UN Cyprus medals. From left to right: MAJ Parenteau, BGEN Leslie, Commander Canadian Contingent, LCOL Potts, CO 1PPCLI, GEN Martola and aide.

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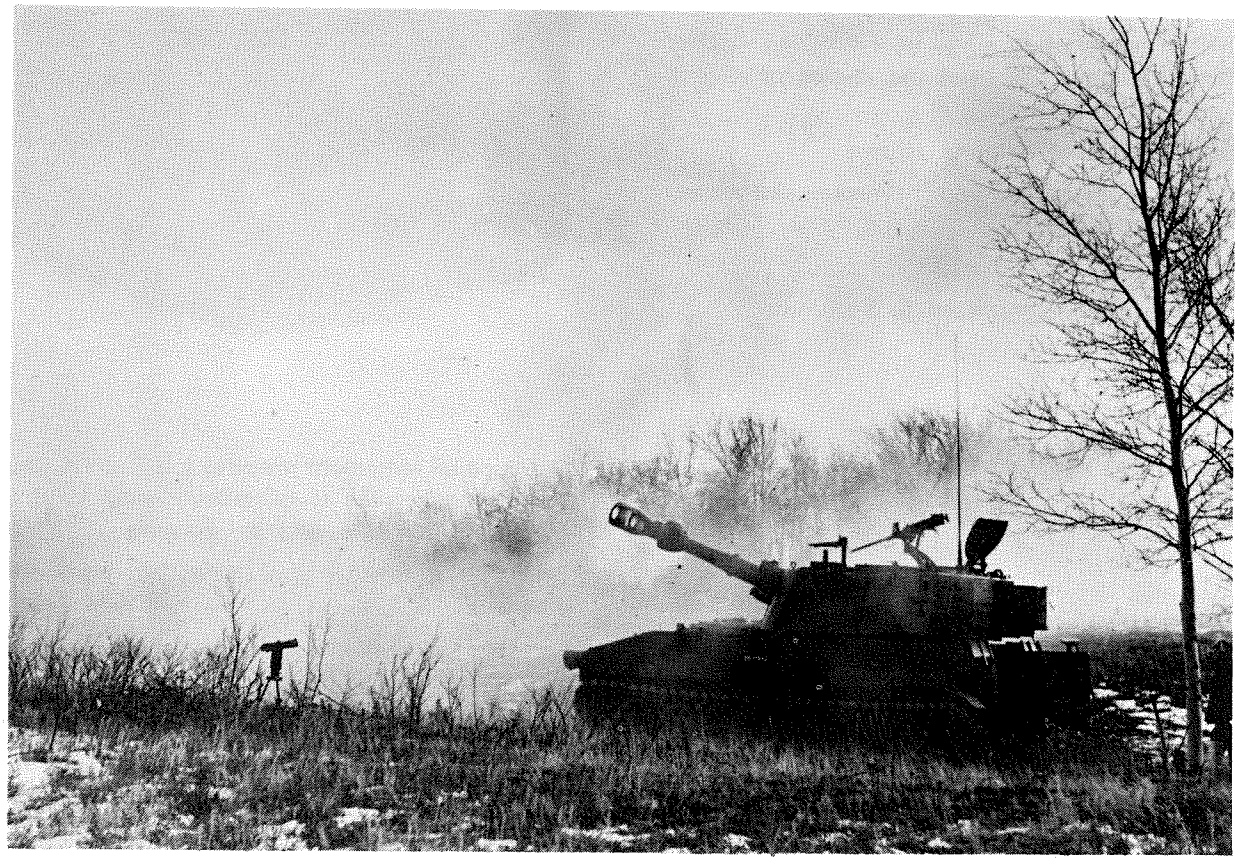
Nations had been in that area, a number of buildings had been erected and these all had to come down before we could turn the property back to the owner. On 16 September X Battery became superfluous to the new establishment for Cyprus and was able to devote its full time to dismantling its base camp. As buildings and accommodations were dismantled, personnel moved into Camp Maple Leaf where they were to be housed till they left Cyprus. The battery finished its closing down tasks one week before it was scheduled to leave the island. Some last tours were taken during the final week but most people were content to sit and wait for that very important day. On 26 September General Martola the UN Force Commander in Cyprus, inspected the battery and presented its personnel with their UN Cyprus medal.

On 1 October the battery commenced its clearance from Cyprus and finally on Wednesday, 2 October 1968 X Battery left the island of love. After another long but enjoyable flight, the wheels of UN flight 5103 touched the runway at Winnipeg sending a resounding cheer throughout the plane from a very happy X Battery.

Operationally, X Battery's tour in Cyprus was quiet, very quiet, just the way a peace keeping force likes to see it. Peacekeeping anywhere can be both interesting and frustrating. We have seen these ingredients in Cyprus. But each and every member of X Battery has memories of Cyprus, memories that will last the rest of our soldiering days and the rest of our lives.



"Shot 2"! An M109 fires at Shilo. Note Collimator left foreground.

"It is not that generals and admirals are incompetent, but that the task has passed beyond their competence. Their limitations are due not to a congenital stupidity – as a disillusioned public is so apt to assume – but to the growth of science, which has upset the foundations of their technique... a scientific habit of thought is the last thing that military education and training have fostered."

CAPT B.H. Liddell Hart (1935)

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Consommation moyenne de courant: 3,7 ampères.

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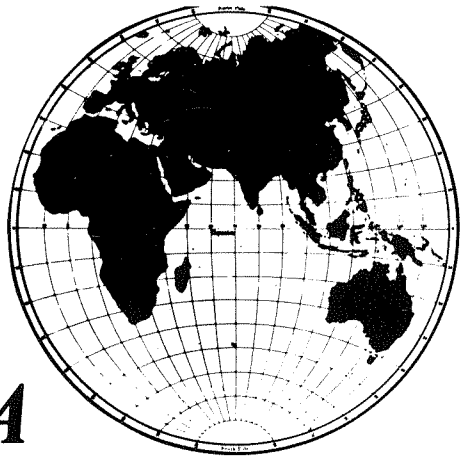
4 RCHA



The Fourth Regiment enjoyed a busy, productive 1968, highlighted by two NATO AMF (L) exercises overseas, a change of command, and finally, by extensive re-organization in keeping with current changes in Canadian Forces structure. Sandwiched between these activities have been numerous exercises with our affiliated battalions and various militia units, all of which have contributed to an active, enjoyable year.

Exercise ANNUAL BARBARA 68

After several weeks of preparatory training, M Battery 4 RCHA arrived in Borris, Denmark in late April for Exercise "*Annual Barbara 68*", the Allied Command Europe Mobile Force (Land) artillery concentration in which contingents from six nations participated. The units involved were the Heavy Mortar Platoon 1 (BE) Parachute Battalion (120mm mor), M Battery 4 RCHA (4.2 in mor), 2 Battery 265 (GE) Para Artillery Battalion (105mm pack how), B Battery 1 (UK) Regiment RHA (105mm pack how), the Heavy Mortar Platoon 3 Battalion 70 (US) Armour (4.2 in mor APC mounted), and a Force Artillery Headquarters provided by 1 (UK) Regiment RHA and 22 (UK) Locating Battery RA.

From the start it was obvious that this exercise presented a special challenge to all taking part. It was difficult to imagine how such a conglomeration of artillery units speaking several different languages could be moulded into anything resembling a cohesive, effective force with the ability to provide quick, accurate fire. In his opening address the Force Artillery officer, LCOL K. Perkins, CO 1 RHA, reassured the doubtful: "It can work; it will work!" he said. His words proved true.

The exercise was well-planned and efficiently coordinated. The program progressed logically from command post exercises and dry (non-firing) deployments to live firing from relatively static positions and finally to live fire and movement.

The language difficulties were essentially solved through the use of a "round table" of bilingual liaison officers from every nation who were on duty at the Force Fire Direction Centre to sort out any misunderstandings which arose during the passing of fire orders or information. This device greatly enhanced the degree of cooperation possible between the various elements of the Force.

M Battery participated enthusiastically in all phases of the exercise and earned a good deal of praise for fine shooting, an admirable feat using 4.2 in mortars in competition with units equipped with the L-5 Pack Howitzer. As the FAO said later, "The Canadians simply proved that proper artillery procedures will produce the required results, no matter what weapon is used". The more modest members of the battery will concede however that the inevitable spread of rounds on force targets helped make their fire look even better than usual.

A particularly enjoyable and interesting aspect of the exercise was the sports competition for the Annual Barbara Trophy. All contingents fielded teams for a soccer and a volleyball tournament. Although their efforts in the former were only slightly short of disastrous, the Canadian volleyball squad, led by CAPT T.A.H. Sparling, hustled its way to a well-earned victory. The cocktail party which they held to celebrate their losing the Barbara Cup (won by the Italian contingent for the highest aggregate of points in both sports) was a decided

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MGEN G.A. Turcot, CD, Commander Ace Mobile Force, is shown flanked by the Canadian contingent volleyball team after presenting them with the AMF plaque as tournament winners on Exercise Annual Barbara, Denmark. The team consisted of M Battery personnel and augmentees from the Regiment. From left to right are Bdr L.G. Spurrell, Sgt A.W. Sage, MGEN Turcot, Gnr J.F.B. Thibeault, Sgt M.D. Thivierge, Capt T.A.H. Sparling and Bdr F.W. Worsley.

social highlight which reached the pinnacle of success when our Italian friends gleefully contributed a stock of their finest wines and liqueurs. Viva Italia!

Perhaps M Battery's one regret on returning to Petawawa was that there was little free time to sample the delights of Danish hospitality. All enjoyed the time available however; most were able to visit neighbouring towns and some enterprising individuals reached the famed city of Copenhagen. The reminiscing about these fun-filled excursions will no doubt continue for months to come.

After two weeks on Danish soil the battery returned to Canada feeling that it had performed well and that its efforts were appreciated. Exercise Annual Barbara was certainly both enjoyable and instructive, and excellent opportunity to learn from and with our NATO allies.

Exercises PANTHER LEAP and POLAR EXPRESS

As part of the Canadian Battalion Group, ACE Mobile Force, L Battery 4 RCHA supported the 1st Battalion, Queen's Own Rifles in two major exercises this year. The first, Exercise *"Panther Leap"*, was held in the Chilcotin area of British Columbia; the second, Exercise *"Polar Express"*, took place in northern Norway.

Exercise *"Panther Leap"* from 10 – 24 April 1968 was a shakedown exercise prior to the NATO Exercise *"Polar Express"*. *"Panther Leap"*

A composite gun detachment poses with a Canadian mortar on Exercise Annual Barbara 68. Nations represented are from left to right: Canada, United Kingdom, Belgium, Italy, United States, Germany, and Canada.

was conducted on seventy-five square miles of private and public land extending from Williams Lake to Alexis Creek; rugged ranch land set between snow-capped mountain ranges. This area of the Caribou Country was very similar to the exercise site chosen in Norway and was an introduction to the communications and gunnery problems that were to be encountered later. It was also L Battery's first chance to meet and work with the officers and men of 1 QOR of C.

L Battery's contribution to *"Panther Leap"* consisted of the Battery Commander's party, two OP parties, the battery command post and two troop command posts. This complement of twenty officers and men was airlifted from CFB Uplands to Williams Lake in three chalk loads by the C-130 E Hercules of 435 Squadron. As the battery was deployed in a hunter's paradise, MAJ C. Justice and his skelton crew of "poachers" were allowed no firearms, not even mortars!

The Battalion Group was deployed against a controlled enemy recruited from the 2nd Battalion, QOR. The enemy force did its job well and the gunners were reminded of some neglected considerations in local defence. We also relearned valuable lessons concerning artillery-infantry co-operation.

After Exercise *"Panther Leap"* and three weeks of Regimental Practice Camp, L Battery departed feeling thoroughly prepared for Norway and Exercise *"Polar Express"*. The aim of this exercise was to demonstrate and practice NATO's ability to deploy a multi-national force in northern Norway if that strategically important area is threatened with aggression. Once the NATO force was deployed on Norwegian territory a "key" company from each battalion was advanced to the immediately threatened

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area to "show the flag" to the aggressors and the local populace. The remainder of the NATO force was held in a staging area around Bardufoss.

Artillery support for the AMF (L) was supplied by three batteries: The Susa Artillery Battery from Italy, the Chestnut Troop, 1 RHA, and L Battery, 4 RCHA. Force Artillery Headquarters was again commanded by LCOL K. Perkins, CO 1 RHA. L Battery's contribution consisted of a reduced strength of sixty-three officers and men. The Battery Commander's and Troop Commander's parties were complete, but the gun detachments, and command posts had skeleton crews. This enabled us to make the overseas trip with seven vehicles and four mortars in two C-130 E Hercules loads. Once on the ground, six ¾ ton Land Rovers were borrowed from the Chestnut Troop to deploy the mortars and B echelon. L Battery were able to send one gun detachment to the Chestnut Troop, their sister troop, for valuable on-job training on the L-5 pack howitzer.

The exercise was divided into three phases: the deployment phase from 3-9 June, the operations phase from 10-15 June, and the redeployment phase from 16-22 June. Throughout this exercise in the land of the midnight sun, Laplanders, snow capped mountains and blue green fjords presented unforeseen problems. The entire exercise area lay deep inside the Arctic Circle at a latitude where the sun stays above the horizon continuously from the third week of May until the fourth week of July. Spring thaw begins in late May and mobility is seriously restricted until June. Since the exercise was held from 3-22 June, secondary and even main roads were badly cut up by the unaccustomed traffic of heavy military vehicles. Visibility is poor during most of June as there is usually 80% cloud cover and often heavy mist in the mountains.

During the deployment phase the Canadians spent the daylight hours (all twenty four of them) entertaining the local children, touring the nearby villages of Olsbourg and Andselv, and fighting off hardy Norwegian mosquitoes with snowballs.

When the operation phase began, the rains came down. All fields were reduced to quagmire. Mobility was further restricted by the narrow mountain valleys; there was very little space in which to deploy or manoeuvre. Nevertheless the advance continued along the Lakselv-Dalen. The enemy force – composed of HQ, Royal Marines Brigade (UK); 3rd Battalion, Brigade North (NO) and 45 Commando, Royal Marines (UK) – frustrated the NATO forces with their helicopter-mounted assaults and vigorous blocking actions, but the "war" ended on 15 June 1968 with the NATO forces victorious.

The last week of the exercise was spent in staging out. After a week of slogging through moss and mud everyone who could savoured the comforts of a Norwegian sauna and spent some time souvenir hunting in Tromso or Narvik.

The lessons learned on this exercise were often self-taught by extreme discomfort, but they will stay for a long time. The trip to Norway was a few hours of pleasure and many days of tedious but vital work. The Canadian gunners and riflemen alike earned a great deal of respect and showed their ability to soldier where duty calls.

Change of Command and Reorganization

On Friday, 19 July 1968, the Regiment held a formal Change of Command Parade marking the hand-over of the Regiment from LCOL Baumgart, CD, to LCOL A. Sosnkowski, CD. MGEN A.B. Matthews, CBE, DSO, ED, CD, Colonel Commandant, Royal Regiment of Canadian Artillery, attended the parade as reviewing officer.

The ceremony itself was simple and effective. The Regiment, dressed in combat clothing and bearing arms, marched onto the square where LCOL Baumgart took command. Following the arrival of the Colonel Commandant and the inspection, the Regiment marched past in column of route. MGEN Matthews then accepted the hand-over from LCOL Baumgart, addressed the troops and witnessed the signing ceremony and presentation of the Regimental Pennant to LCOL Baumgart. LCOL Baumgart gave a short farewell address in which he praised the members of the Regiment for consistently performing their duties in a truly professional manner. LCOL Sosnkowski was then introduced. He spoke briefly, acknowledging his new post and thanking LCOL Baumgart and the Regiment for holding the parade a month before the effective Change of Command date, in order to avoid problems created by the intervening leave period. Finally, LCOL Sosnkowski led the Regiment in a mounted "Drive Past" and Air OP "Fly Past" while LCOL Baumgart took the salute given in his honour.

The Change of Command was soon followed by a thorough re-organization to a two battery regiment for peacetime training purposes. The two AMF (L) Batteries, L and M, have been brought up to full strength. Though L Battery will turn over her NATO commitment to G Battery 3 RCHA on 1 January 1969, and therefore probably reduce her overseas training, 4 RCHA looks forward to another busy year both at home and abroad.

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MGEN A.B. Matthews, CBE, DSO, ED, CD, Colonel Commandant, Royal Regiment of Canadian Artillery witnesses the signing ceremony as LCOL L.C. Baumgart, CD, hands 4 RCHA over to the new Commanding Officer LCOL A. Sosnkowski, CD.

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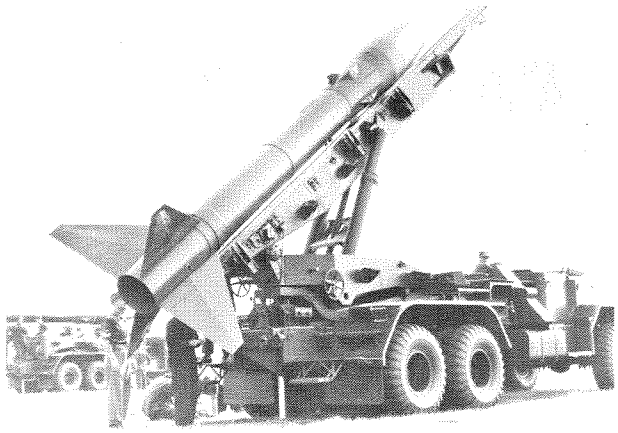
1 SSM BTY RCA



The Nijmegen Marches

Prompted by an active adventure training programme within the unit and to ensure continued Gunner representation within the contingent representing Canada's NATO brigade, 1 SSM Battery made preparations to enter a march team in the 1968 International Marches at Nijmegen, Holland. Because these marches are so well known throughout Western Europe and because of the popularity of Holland among Canadian soldiers, volunteers for the march team were recruited quickly.

On the return of the Battery from its Annual Training Test in early June the march team was organized and began five weeks of intensive training in preparation. As the training progressed the daily marching distances increased until the 40 kilometer distance was achieved.

During the third week of training the march team completed "*Keechee Pimpatawin*", the walk of the forts, a 4 CMBG sponsored activity to promote physical fitness within the brigade. The training period rapidly came to an end and the team looked forward with anticipation to putting their training to the test in Nijmegen.

On Sunday, 14 July 1968, the 1 SSM Battery March Team consisting of seventeen marchers and one bicycle orderly left Fort Prince of Wales to participate in the 52nd international four day marches. The march team was entered in the military division and was required to march 40 kilometers a day for four days, each member carrying 22.5 lbs of equipment.

Sponsored by the Royal Netherlands League for Physical Culture the marches are not a competition but are designed to promote good health through walking. They have become one of Holland's largest annual events with an estimated 17,000 military and civilian marchers from 25 countries participating this year.

On arrival at Nijmegen, the team, as part of the Canadian contingent, settled into the military tent camp at Heumensoord and friendships were quickly established with members of other national teams. After registration the team attended a very impressive flag raising ceremony which marked the official opening of the marches.

The marches began the next morning and the team settled down to serious marching and displayed a high level of team spirit, determination and endurance throughout the four days. The starting point for the march each day was the entrance to Camp Heumensoord with the march route winding its way through picturesque cobbled roads and canal paths surrounding the ancient city.

The medical orderly's cart with rockets painted on each side and a "road runner" on the back readily identified the team to both spectators and other marchers. The team was greatly impressed with the friendliness of the Dutch people who offered us refreshments and flowers along the route and gave us additional pride and determination to complete the marches as a team with shouts of "Canada, Canada" as we marched by. This easy companionship applied to members of other national teams as well and we shouted words of encourgagement as we passed one another along the route.

It was soon learned that the best way to keep your mind off your feet and make the time pass quickly was with cadence counts, songs and as an

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1 SSM Battery RCA march team leads the Canadian Forces Contingent past the finish line on final day of the 1968 Nijmegen Marches. COL C.P. MacPherson, Commander, CFB Soest and the Canadian Ambassador to the Netherlands are on the saluting base.

added attraction some impromptu rifle drill on the march as we passed through villages and towns.

During the third day of the marches the 1 SSM Battery team marched through the town of Groesbeek and stopped to lay a wreath at the Canadian War Cemetery located there. This cemetery marks the final resting place of 3,000 Canadian soldiers killed during the liberation of Holland in the Second World War. It impressed us very much to see other national teams stop briefly to pay their respects to the fallen. As we marched into the cemetery we noticed a Swiss team just departing after laying a wreath at the altar and a German Bundeswehr team presenting arms in front of the altar.

On the final day of the marches the blaze of coloured bunting, flags of the participating nations and music from several national contingent bands gave the city of Nijmegen a festival appearance.

After completing the final day of the marches the six Canadian teams formed up outside Nijmegen and marched into the city as a contingent with the 1 SSM Battery team leading. Present in the reviewing stand as the Canadian contingent marched past was the representative of the Queen of the Netherlands and the Canadian Ambassador to Holland along with many other dignitaries.

For successfully completing the marches as a group without losing a man the 1 SSM Battery March Team was awarded the bronze KNBLO team medal. In addition each individual member of the team received a medal to commemorate his participation in the marches.

Adventure Training in Norway

This year as part of annual adventure training, CAPT R.W. Chaulk and 16 men of 1 SSM Battery RCA spent twelve days in the mountains and fjords of Norway. The party divided into two groups, with each group spending four and a half days on canoeing and a similar time mountaineering.

The Outward Bound Centre at Ilsaefer is

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a 1 (BR) Corps organization which provides training in canoeing, trekking and mountain climbing for individuals, and also acts as a base of operations for special expeditions for units from 1 (BR) Corps. The Centre has two main locations; a canoeing and watermanship centre at Ilsaefer, Norway, and a trekking and mountain climbing centre at Kanute mountain, 60 miles north of Christiansand.

Two days were spent travelling through Northern Germany and Denmark before arriving at Ilsaefer. A sidelight of this journey occurred at Hirtsals with an opportunity to visit the abandoned German defensive works from World War 2. Many of the tank obstacles and gun emplacements are still preserved in their original condition, in grim contrast to the scenic village with its harbour full of fishing vessels.

Arriving at Ilsaefer in the early morning of 11 July, the group was allowed a short sleep and then spent the rest of the morning on canoeing instruction. The afternoon was spent moving to the start point. The plan was for one of the groups to canoe north along the length of Byglandsfjord while the second group trekked the 70 km over the mountains bordering the fjord. They would meet at the 700 foot waterfall near the town of Ose, exchange equipment and return.

The canoe group were initially prejudiced against the kayak which was the type of canoe in use. Most of the party preferred the open canoe, which is more popular in Canada, but familiarity and experience changed most opinions in the end. The consensus after the expedition was that, although the kayak cannot carry the load of an open canoe, it is superior due to its stability and manoeuverability.

The expedition visited the town of Byglands during the canoeing phase. This is the place where the "Heroes of Telemark" were executed after they had destroyed the German Heavy Water plant in World War 2. Close to their monument in the village cemetery were found the graves of the crew of the first Allied aircraft shot down in Norway. Two Canadians were among the crew of the aircraft, which still lies in an uninhabited valley on the east side of the fjord.

The trekking route taken was an old shepherd and hunter path, marked only by huge stones every few hundred meters. The path is non-existent today and the only buildings are hunter cabins in a very poor state of repair. The only occupants of this part of the country are sheep which graze in the mountains during summer.

Everyone had a great sense of achievement after the trek. Many had believed that they could not cover the 70km over mountains, cliffs, and peaks covered with bog and muskeg. However, everyone completed the route although they were in much better shape at the start than at the finish.

The group returned to 1 SSM after nine days. It was a very satisfying exercise for all. Everyone gained in self confidence and enjoyed the change in scenery.

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Airborne Gunners

*by CAPT D.B. Fenny**

All was quiet near Bushy Head Hill in Wainwright, Alberta, on 10 September 1968. It was like everything else in Wainwright – dusty, cattle scarred, and unseasonably hot. Two fly specks drone onto the horizon, level off, and move slowly towards the open area below the hill. Green indication smoke drifts across the dry grass and twirls to the sky. The two specks are now CC115 Buffalo aircraft and they are almost overhead. In less than a blink they each deposit a litter of jumpers behind them. 1 Airborne Battery is in the air. The first para drop of an artillery unit since 1956 is complete and satisfactory. Bushy Head Hill has now taken on special significance, particularly for 1 AB Battery RCA.

Only after years of diligent and sometimes frustrating planning could this important occasion be realized. In 1966, after a thorough investigation of Canada's defence requirements, Headquarters Mobile Command proposed the formation of a unit which would be available at a high state of readiness for national defence or international involvement. The unit had to be highly mobile, able to operate in any environment, and its members had to be physically fit and specialists in their trade. To meet this requirement, the Canadian Airborne Regiment was authorized as a unit of all arms, to be manned by volunteer parachutists.

A planning staff was established at Headquarters Mobile Command in the spring of 1967 and the Regiment, with a total strength of 898 all ranks, was authorized on 8 April 1968. Integral to the Regiment was 1 Airborne Battery with a personnel strength of eighty all ranks.

The Battery consists of a small headquarters element and two troops. Both vehicle and ammunition scales are as light as possible while still being able to produce the required fire support. The Battery can provide two troops of three pack howitzers or two troops of six 81mm mortars, or a combination of both. The unit is designed to provide fire support to the Regiment in all environments, whether it be an operation countering an enemy threat to Canada, conducting peacekeeping operations, or assistance to the civil authority.

To meet this task, and so that maximum flexibility can be realized, all ranks have to be skilled not only in gunnery, but also in other functions. Although we are most eager to impress upon other members of the Regiment that we are gunners, we must be capable of fighting as infantry if the need arises.

It was decided that the Airborne Regiment, less 1 Commando, would be located at CFB Edmonton. 1 Commando would be established in CFB Valcartier until suitable dependents' schooling in the French language can be provided in the Edmonton area. During August and September of 1968, gunners from all artillery units began arriving in Edmonton. Housing in the area was, and continues to be, in very short supply, so that initially many soldiers are separated from their families. Nevertheless, all ranks realized the urgency and importance of training for their assigned roles, and work began immediately to mould the Battery into a fighting unit.

As personnel arrived, they took a one week parachute refresher course with plenty of physical training. Within the first week many had recorded five or six descents from Hercules, Buffalo and Otter aircraft. A number of NCOs had not parachuted in over ten years. For those who had qualified more recently, it was still a new experience to bounce down the floor of an Otter on their behinds or to

*CAPT Fenny is a Troop Commander in the newly formed 1 Airborne Battery, RCA.

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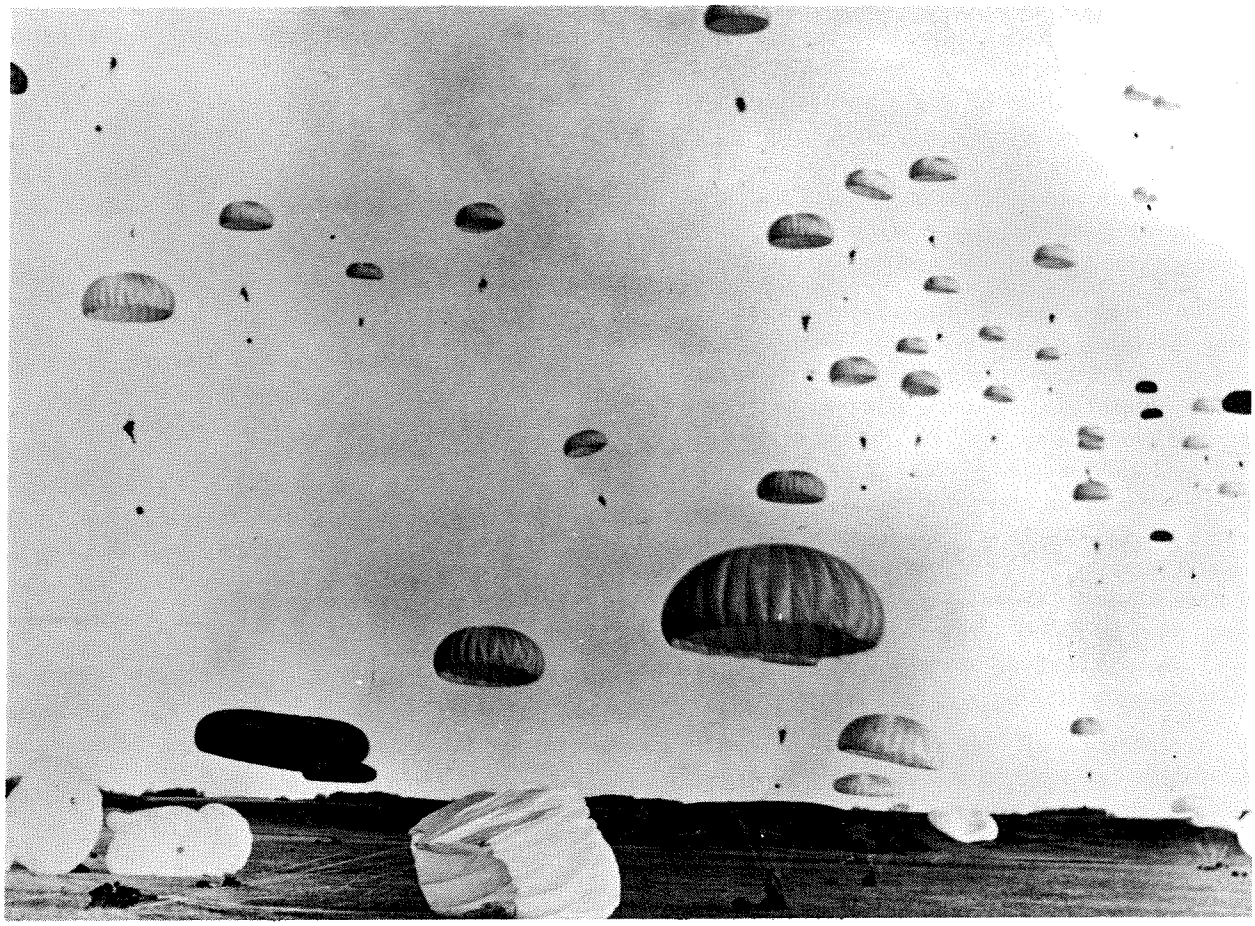
follow the "thin red line" off the ramp of a Buffalo. This quick introduction to active training fostered a spirit of interest and professionalism in all ranks.

Parachute training is continuous in the Battery. At least thirty descents per man per year have been scheduled. Of course the aim of the training is to achieve the highest possible standard, so that we can carry out our tasks with the minimum risk of injury. Because parachuting is merely a means of transportation and our task is to provide fire support on the ground in any environment, personnel of the Battery will receive special training. They will be trained in arctic, desert, jungle and mountain warfare. We will participate in seaborne, airmobile, and peacekeeping exercises at least once a year. We will also conduct training on internal security operations. Some will have the opportunity to develop special skills such as "high altitude low opening" (HALO) parachuting, scuba diving, advanced skiing, snow shoeing, and mountain climbing.

During this September "A" Troop developed their boating skills on Exercise *"Athabaska Patrol"*. This exercise was a 150 mile trip, in assault boats, down the Athabasca River from Hinton to Whitecourt, Alberta. The consensus of opinion, after four days on the river, was that the discomfort caused by the cold and wet was definitely outweighed by the enjoyment of riding the hair-raising white water of the rapids.

Also during September, a number of Battery personnel were involved with Exercise *"Skyline Ramble"*. This was a long range mountain patrol carried out in Jasper National Park.

While awaiting the arrival of our equipment, we spent a week in Wainwright completing our annual classification and parachuting. Each man had to qualify as either a marksman or a first class shot with his personal weapon. It was in Wainwright that Sergeant A.J. Christensen developed his round-up and stampede drills for clearing the cattle from



Saville Farm DZ Wainwright Alta – 21 October 1968 at 'P' Hour – Members of 'A' Troop, 1 AB Battery RCA participated in Exercise "Pegasus Jump" the first airborne exercise carried out by the Canadian Airborne Regiment.

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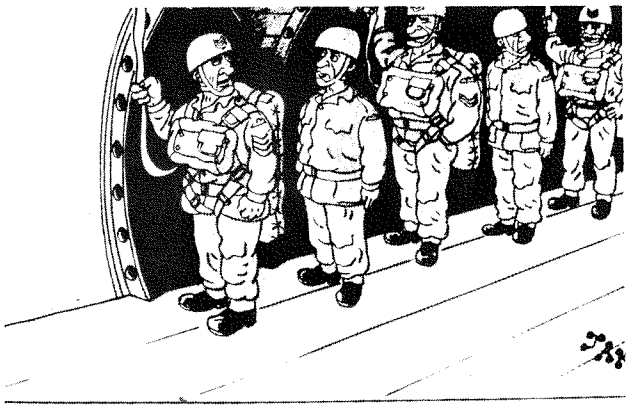
the Saville Farm drop zone. Trooper G.A. Todd landed in the trees on Bushy Head Hill drop zone and did not enjoy hanging there till he was rescued by his fellows. The Battery officers also held their first unofficial dinner in the pots and pans section of the Wainwright Officer's Mess kitchen, exhibiting complete flexibility in planning when the dining room was booked for a private affair.

Our mortars arrived in early October, and we immediately began to establish the speed and efficiency which is so necessary in close support of a Commando. Within the principles of gunnery, we developed, nursed, and adopted those drills and SOPs best suited to accomplish our given task. The procedures which we have established are, as far as possible, compatible with the use of the pack howitzer, and the Battery eagerly awaits the arrival of that weapon.

During late October, the Airborne Regiment conducted Exercise *"Pegasus Jump"* in Wainwright. This exercise gave the Battery valuable experience in airborne and airlanded operations. We are now looking forward to our next exercise which will be conducted during November and December 1968 in the mountains and jungles of a much warmer climate than Alberta.



"Look, son, somebody's got to make economies!"

Although service in an airborne unit is a new experience and a great adventure to most of the gunners of the Battery, we realize that we are perpetuating the traditions and performance of former airborne artillery units. Fortunately, the maroon beret and cordite are inseparable.

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RCSA

STAFF CHANGES

The appointment of a new Chief Instructor of Gunnery, LCOL D.H. Gunter, along with a complete change in Senior Instructors, marked the beginning of a new training year at RCSA. MAJ F.W. Bayne became SI Gunnery, MAJ J.M.A. Hulsemann SI Target Acquisition and MAJ K.S. Pickard became SI Missiles, MAJ W.J. Ready took over Trials and Evaluation, Establishment, and after the closing down of 2 SSM Battery, MAJ G.N.R. Olson became SI Tactics. MAJ H.K.C. Collins remained British Exchange IG while MAJ J.B. Howard arrived from Fort Sill to become US Liaison Officer. Many of the former IGs and CGAs left for new postings, being replaced by new arrivals or recent graduates from School courses.

OFFICER CADET TRAINING, SUMMER 1968

Unification was displayed in its purest form at CFB Shilo this past summer. Two hundred and twenty-two officer cadets of both land and air environment, from service and civilian colleges, were subjected to parade square, elementary tactics and leadership training in two parts. In the first part 63 cadets from civilian universities undertook training to bring them up to the standard of the service college cadets in foot drill, small arms handling and physical fitness. The second part began with the arrival of 159 service college cadets. Lectures, demonstrations and exercises on this phase gave the cadets training in leadership, military studies and ground defence. Since this training was basically army tactics, most of the instructors were land forces personnel.RCSA provided most of the instructors but some additional personnel were provided by Training Command.

After refresher training for COTC and ROTP cadets from civilian universities, Phase Two training began in earnest with the arrival of service college cadets and OCTP cadets from Chilliwack. The 32 cadets were formed into two troops and began training in gun drill, gunnery procedures and instrument work with the object of producing officers capable of performing the duties of GPO and TL in a field unit. Along with communications and a competitive sports program, training included several range practices and exercises. The training culminated in the four day exercise *"Ubique II"* during which cadets acted as technicians, gun numbers, GPOs, TLs and TSMs.

On the Obstacle Course

Ten OCTP Shilo veterans were joined by eight cadets from service college to begin Phase Three training. In order to develop leadership qualities through practical infantry exercises, the first portion of the course was used to teach all arms tactics and included staff duties and military writing.

After a few night and day attacks, always up hill, cadets were more than ready for the technical gunnery training. In order to develop leadership qualities, this portion was devoted to performance of the duties of command post officer and training in the duties of forward observer. In the final exercise *"Ubique II"*, the Phase Three cadets occupied the positions of CPO, and troop commander, thus gaining practical and valuable experience in actual command situations.

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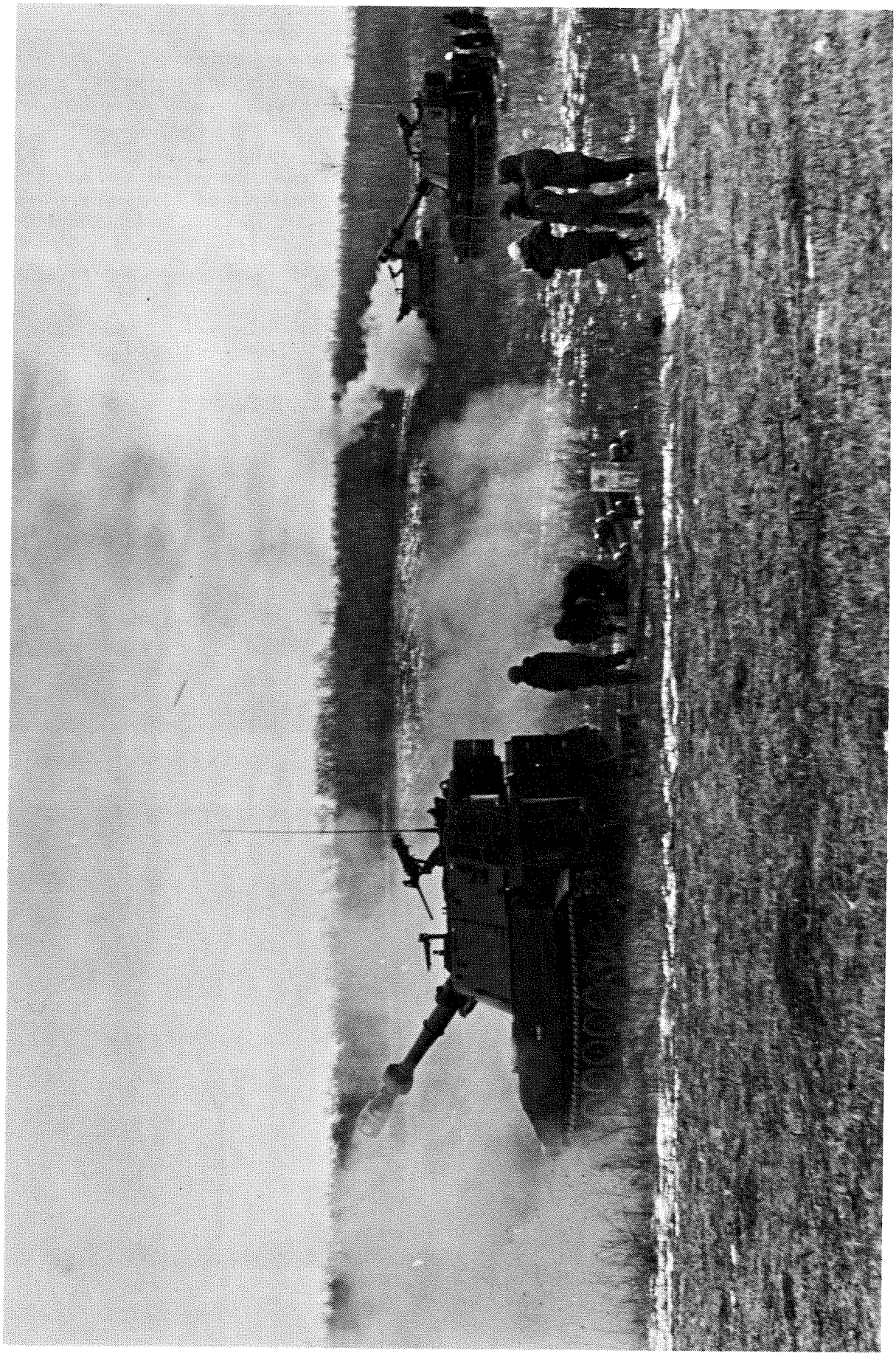

M109s firing at CFB Shilo in early December 1968. Note projectile centre of sky.

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Ten newly commissioned lieutenants from service college arrived in Shilo on 10 June to attend a 20 day refresher course called Phase Four, prior to joining their units across Canada. Designed to bring candidates up to date on the latest artillery techniques, the practical application of knowledge is stressed with 12 of the training days devoted to field exercises. The officers were practised in GPO duties and refreshed in OP duties.

COURSE SUMMARY

A total of 654 students were graduated from the RCSA in 1968, as follows:

Artillery Staff	- 19
Artillery Staff Duties	- 11
Locating Troop Commanders	- 7
Fire Planning	- 18
OCTP/ROPT/COTC Phase 2	- 41
OCTP/ROTP Phase 3	- 31
ROTP Phase 4	- 11
Captain Qualifying (Militia)	- 15
Chief Artilleryman Pay Level 7	- 18
Senior NCO	- 139
Artilleryman Pay Level 6	- 43
Artillery Technician Pay Level 6	- 18
Artillery Surveyor Pay Level 6	- 16
Artillery Technician Pay Level 4	- 16
Artilleryman Pay Level 3	- 233
Senior NCO Qualifying (Militia)	- 18

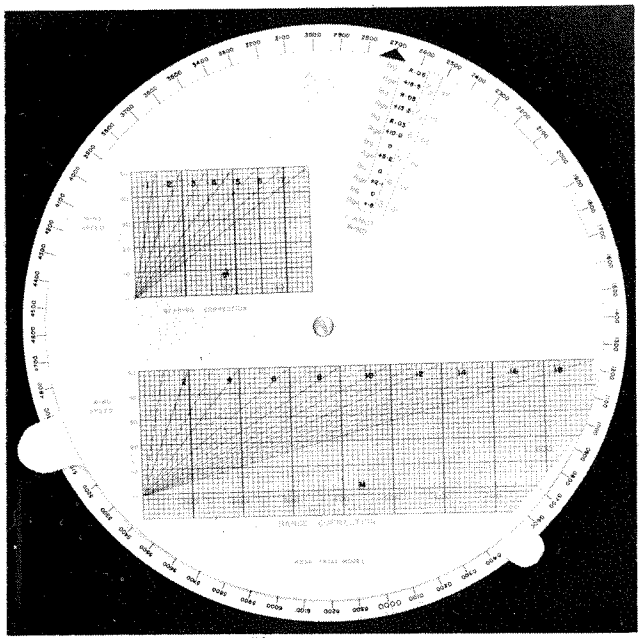
NEW EQUIPMENT

M109 SP

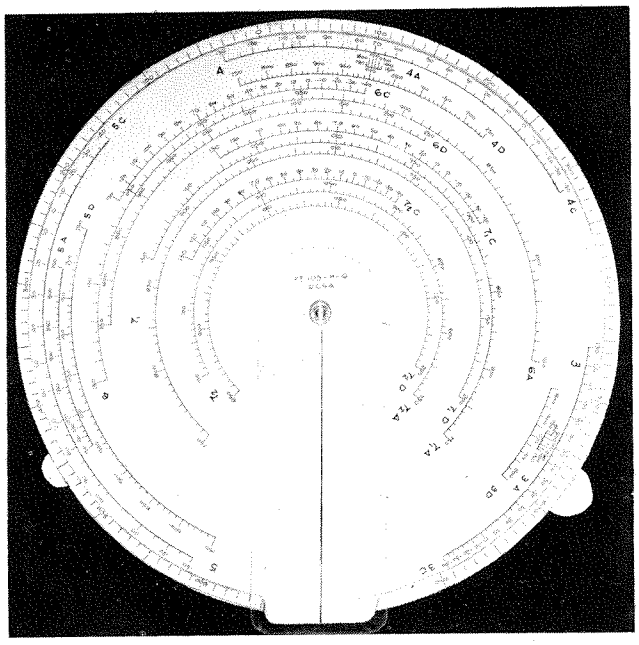
The first M109 arrived in Shilo in early spring and by September, the full complement of ten was on the ground. The Armament Training Section was set up and given responsibility for conducting trials and all training on the new weapon, including driving, maintenance and gunnery.

Reid Graph

Production of timely and accurate predicted fire data continues to be a major area of interest in the artillery. Wide zones of fire and the limited validity of meteorological data compound the problem. However, methods are being developed continually to improve the present standard. One of these is the "Reid Graph", developed by Captain B.A. Reid, RCSA, to speed up adoption and computation of "met".



Reid Graph – Wind Resolution Disc



Reid Graph – Charge Temperature, Air Temperature and Air Density Graph

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Two methods presently exist for the computation of met data; graphical, which is fast and accurate but slow to set up, and numerical, which is accurate but slow to compute. The Reid Graph replaces both these systems and, in addition, makes provision for wide zones of fire.

Using the Reid Graph, corrections for wind are the only meteorological corrections that change as the bearing of fire changes. Corrections for wind are computed by setting pointers to the bearing of fire and wind direction on a protractor. The corrections for charge temperature, air temperature and air density are computed by moving a correction disc against a graduated scale. The two results are combined and plotted on the graphical firing table.

The system's accuracy and speed has been proven in tests. A battery can be completely set up and firing on new data within five minutes of reception of a met message. Data can be easily computed on the move as well. Graphs for the M109, L5 and M2A2 howitzers are being produced and will be issued on a scale of one per plotter. The graph and its protective cover are designed to be transportable inside the carrying case of the plotter.

Slant GFTs

One inherent drawback of the linear GFTs in current use is the range over which registration corrections are valid. The use of registration corrections when plotted on the GFT is subject to range limitations of ±1500 metres for ranges under 10,000 metres, and, of ±2,000 metres for greater ranges. These restrictions are necessary because the GFT-produced correction is based on the assumption that the "rate of change in magnitude of correction", (K), is constant. Although this assumption is incorrect, it provides an acceptable solution when used within the above registration limits.

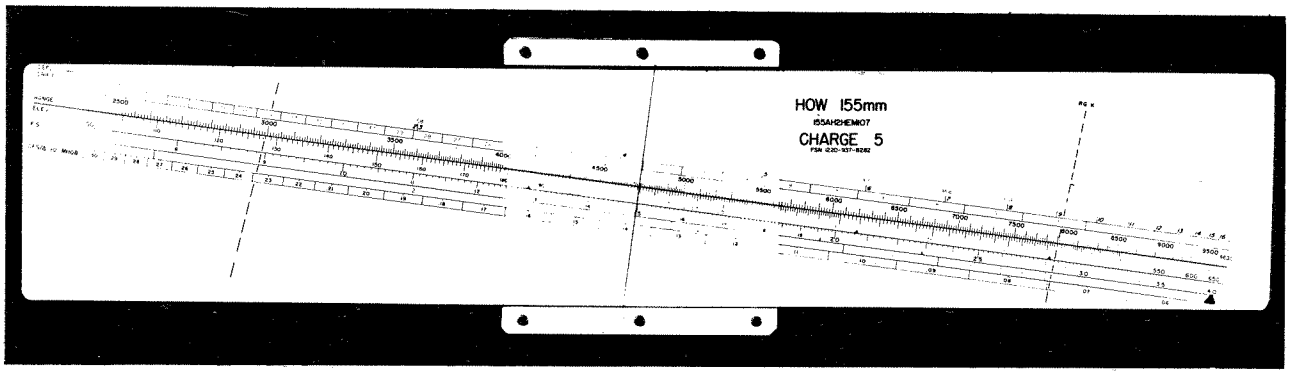
The slant GFT provides the means of applying a variable range "K". The scales run at an angle from the upper left to the lower right corner of the stick. The hairline on the cursor is also slanted, thus movement of the cursor varies the point on the hairline at which the scales are read. This effectively represents a varying fuse and range "K". With calculations made from a single registration point, which must be within certain range limits for each charge, an increase in the current registration limits is obtained for charges 4-7. For example, at charge 5, such data is valid over a range of 4,080 metres, and at charge 7, 5,180 metres. This data is based on the slant GFTs for the 155mm howitzer.

Plotting the results of a single registration, although increasing the distance over which the registration is valid, is not the most effective manner of using the GFT. To improve this, two registrations for a given charge are plotted, one in the lower third and one in the upper third of that charge's range coverage. The two plots are then joined with a straight line resulting in an "elevation gauge line" which can then be used over the full range of the GFT. It is possible, by conducting more than two registrations, to further increase the accuracy; however, the value of this increase in accuracy must be weighed against the time and ammunition required to achieve it.

It is expected that the GFTs to be issued shortly for the M109 Howitzers will be of the "slant" design, while those for the L5 pack howitzer, with its shorter range, will be the familiar linear pattern.

Collimator M1

The "Infinity Aiming Reference Collimator M1" is an optical device which is used as a reference point for laying a gun in indirect fire. One



Slant GFT

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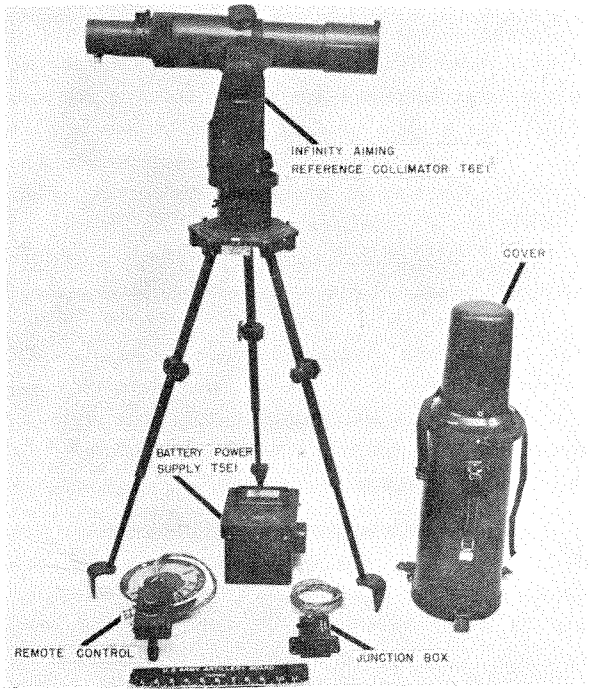


Figure 1. The infinity aiming reference collimator T6E1, and associated equipment.

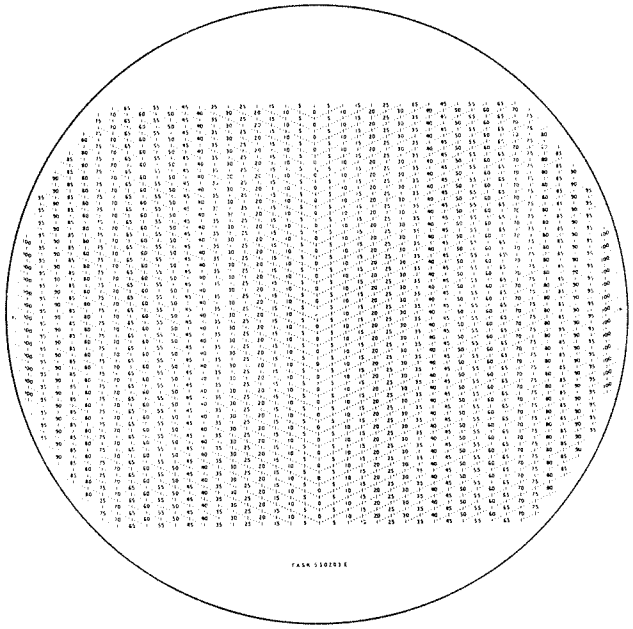


Figure 2. The reticle of the infinity aiming reference collimator T6E1

main advantage over aiming posts is that it does not require positioning as far away from the gun platform. Once the gun has been positioned, the instrument is set up, left front, 15-48 feet from the panoramic telescope. The best results, depending on the gun in use, are obtained when used at a distance of from 17-35 feet. A trained detachment can set up the device in less than two minutes.

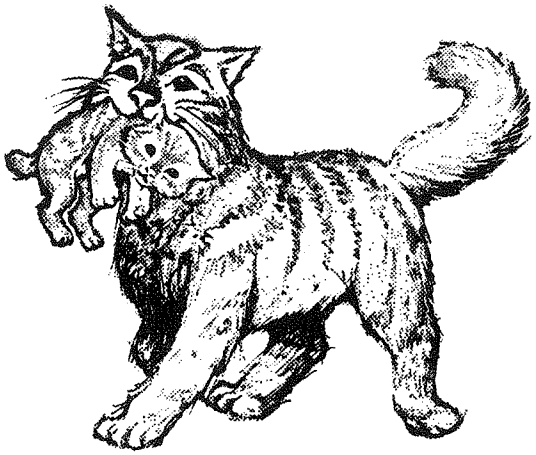
The Collimator has a special reticle pattern which can be illuminated for night firing. This reticle pattern is graduated every mil and numbered every 5 mils. The layer simply lines up the reticle pattern of his panoramic telescope with the corresponding graduations on the collimator. The device has proved to be particularly useful under combat conditions in Viet Nam where terrain difficulties and the enemy threat have made it unwise to move away from the gun platform to plant aiming posts.

While collimators represent a big improvement on paralleloscopes or aiming posts, they will not be in general use in the Canadian Artillery for some time. They have been received on the scale of one per M109, as part of a package buy. Additional funds must become available before they can be purchased for other weapons.

CLOSING OF THE RCA DEPOT

The graduation of Squad 164 marked the end of a long and productive career for the RCA Depot. On 15 May 1968, the RCA Depot closed for good, after producing soldiers for the RCA and other corps for some 12 years. Although closed, its memory will live on in the minds of most of the soldiers and NCOs now serving who, for better or worse, received their introduction to military life there. They will remember it mainly as a challenge, probably the first real one for many, that was met and passed.

The depot was first formed at CFB Shilo in the summer of 1956. Its task was to train all recruits for the Royal Canadian Artillery. This entailed an initial period of six weeks "depot training" followed by twelve weeks of "recruit training". The first Commanding Officer of the RCA Depot was MAJ M.S.M. Ferguson. CAPT G.R. Nicholls was the first Chief Instructor. Many distinguished guests inspected RCA Depot parades and graduation exercises, a measure of the importance attached to its function. Among these were BGENA.J.B. Bailey, DSO, OBE, CD, then Director of Artillery, 27 March 1957; Hon Georges R. Pearkes, VC, then Minister of National Defence, 19 February 1958; LGEN G. Walsh, CBE, DSO, CD, then GOC Western Command, 26 May 1960; BGEN P.A.S. Todd, CBE, DSO, CD, then Honorary Colonel Commandant of the Royal Regiment of Canadian Artillery, 23 September 1960; COL E.G. Brooks, DSO, OBE, CD, then Director of Artillery, 15 November 1960; General the Honourable A.G.L. McNaughton, CH, CB, CMG, DSO, CD, 9 June 1961; MGEN J.M. Rockingham, CB, CBE, DSO, CD, then GOC Western Command on 6 June 1962; and LGEN W.A.B. Anderson, CD, then Adjutant General of the Canadian Army on 27 October 1962.



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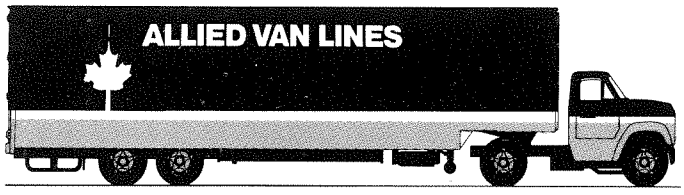

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RCA Militia Highlights

1968 was a busy and productive year for RCA Militia Units. The assignment of new roles and responsibilities to these units in line with the new forces structure has sparked interest and activity. As a result, a pride of accomplishment borne of keen interest in training is more noticeable than at any time in many years. Highlights of the year's activity for various units are recorded here to illustrate this new spirit.

3rd Field Artillery Regiment (The Loyal Company)

A busy training year began in January, with an Artillery Technician Refresher Course. Then the Easter concentration in April continued training emphasis in observation post, signals and command post work. In early July, elements of 89th, 90th and 115th Batteries participated in the Gunnery Training Exercise for the Mobile Command Reserve. It was one of the best exercises in many years. Senior NCO training during the summer, and annual classification in the fall completed the training schedule.

The anniversary of the founding of the city of Saint John, Canada's oldest incorporated city, on 18 May, was of special significance for the Regiment. The Regiment, founded in 1793 by Captain Colville, honours the occasion each year by the firing of a Royal Salute. This year, Her Majesty Queen Elizabeth congratulated the Regiment on the occasion of its 175th anniversary and thanked the officers and men for their expression of continuing loyalty.

The Regiment was saddened by the loss of LCOL G.A. Gamblin, who commanded the Regiment from 1926 to 1930. Present at the funeral in Amherst, N.S., were LCOL J.H. Turnbull, Regimental Padre Major J. Jones and the Regimental Director of Music, Captain B. Holder Jr., who played the last post.

3rd Field Artillery Regiment (The Loyal Company) march past on Loyalist Day, 18 May 1968 at Saint John, N.B. thus marking the 175th anniversary of Canada's oldest artillery regiment.

The Regiment is pleased to acknowledge the support of 2 RCHA. Both in the use of equipment and personnel, 2 RCHA has been most generous.

30th Field Artillery Regiment

Although not strictly current business, 30th Field's participation in Canada's 100th birthday can now be summarized. The Centennial Troop fired salutes for 52 Heads of State visiting the nation's capital. The Trumpet Band and 9 pounder gun detachment in full dress uniforms gave performances at eight Ottawa Valley communities. Other special tasks were undertaken at Parliament Hill, the DCRA meet, the annual reunion of 1/5 Medium Regiment, Grey Cup Parade, and the anniversary celebration of the RC Sigs School at Barriefield. Minute guns were also fired on the occasions of funerals for the late Governors-General Vanier and Massey, and for General F.F. Worthington.

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Sgt J.R. Dubuc and gun detachment during live firing exercises at Petawawa

On 1 September 1967 LCOL N.F.E. Scardina took command of the Regiment. A formal parade was held on 23 September to mark the occasion. At the Regimental Dinner four days later, the annual awards were made, and on the final parade of the year on 13 December, COL L. Barclay, CD, ADC, District Commander (M) presented Centennial Medals to several members of the unit.

An important aspect of the unit's organization and training was that occasioned by the tasking of the unit to Mobile Command Reserve. 1 Battery, commanded by MAJ B.G. Brule, became the FMC Battery. 2 Battery under MAJ K.G. Farrell was given the added responsibility for supplying and training recruits, and 25 Battery went to the supplementary order of battle on 1 September 1968. MAJ J.J. Shaver, the last BC of this battery, became training co-ordinator.

Throughout 1968, the unit was kept busy with training and courses for recruits, Artillerymen,

Presentation of awards for 1967-68 Training Year at the Regimental Dinner, 2 October 1968 – Left to right: LCOL N.F. Scardina, Hon COL G.E. Beament, Hon LCOL A.H. Birks, MAJ D. Maclaren (Ret'd), and recipients Sgt Allen (Best Sgt), Bdr Ring (Best Bdr), and Gnr Brown (Best Gnr).

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Artillery Technicians, Signallers, Drivers, OP parties and CP staffs. With strength bolstered by a successful recruiting drive in the spring, advantage was taken of the many professional advancement and trades qualification courses that were offered in various schools and centres. As a result, it is expected that the numbers qualified in trades and as Junior NCOs will be the highest in many years.

The "Regimental Senate" was enriched on 14 June 1968 with the appointment of the noted Ottawa barrister and former distinguished gunner BGEN G.E. Beament, OBE, ED, QC, as the unit's Honorary Colonel. In this capacity, BGEN Beament joins an old comrade-in-arms, LCOL A.H. Birks, who is our Honorary Lieutenant-Colonel.

We believe that 30th Field had a most successful training year. Every member of the unit gave unsparingly of his time and effort. Our successes were the result of a concentrated team effort at all levels.

50th Field Artillery Regiment

In addition to maintaining the required standard as an artillery unit and producing an Infantry Strike Company, this was our first year as a component of the Regional Reserves. Many members of the unit attended qualifying courses and several were attached to Regular units in Germany for the summer. A highlight of summer camp occurred when our Strike Company entered the Infantry Patrol Competition and came second to a team from the Governor-General's Footguards, thus beating out four or five infantry units at their own game.

A Change of Command Parade was held on 5 May 1968, to mark the retirement of LCOL O.F.C. Cook, CD, and to witness the appointment of LCOL I.P.F. MacLeod, MM, CD, as new Commanding Officer. COL L. Barclay, CD, ADC, District Commander (M) officiated at the ceremonies. Good weather and an excellent turnout of both service and civilian spectators marked the event.

In October, a rifle team led by the new commanding officer took part in the Ontario Rifle Association Service Rifle Matches held at CFB Borden. Although some team members brought home individual honours, the biggest prize was winning, for the first time in competition, the "Lorne Scots Trophy" awarded for the highest aggregate scores of the top four new shooters on the team. All members of the team were new shooters, except LCOL MacLeod. The calibre of this team is shown by the fact that they only missed the overall match trophy by one point.

SECOND SURFACE TO SURFACE MISSILE BATTERY HOLDS LAST PARADE

LGEN W.A.B. Anderson, OBE, CD, accepts on behalf of the RCA Museum, the nose cone from the last Honest John rocket fired in Canada from the Commanding Officer, MAJ G.N.R. Olson, CD.

Early in September 1968, as a result of changes in the Mobile Command force structure, the decision was taken to close out the Second Surface to Surface Missile (Training) Battery, RCA.

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On a clear, bright morning, 26 September 1968, the Battery, commanded by MAJ G.N.R. Olson, CD, formed up on L Parade Square, Shilo, for its final ceremonial parade before passing into the history of the Royal Regiment of Canadian Artillery. LGEN W.A.B. Anderson, OBE, CD, Commander. Mobile Command, inspected the Battery, reviewed the march past and received the final salute. As a memento of the occasion, LGEN Anderson, on behalf of the RCA Museum, accepted the nose cone recovered from the last Honest John rocket fired in Canada. This rocket was fired on 13 February 1968 during the visit to CFB Shilo of the Honourable Leo Cadieux, Minister of National Defence.

Throughout its short history 2 SSM (Trg) Battery performed the important function of training over 700 replacements in SSM specialties for 1 SSM Battery in Europe.

The unit, commanded by MAJ J.N. Robertson, was formed in Picton, Ontario, in 1960 and remained there until July 1962 when it moved to Shilo, in order to more closely co-ordinate its training function with that of the Royal Canadian School of Artillery. In 1963, while continuing its primary training role, it became part of 1 Canadian Infantry Brigade Group and participated in Summer concentrations held in Camp Wainwright, Alberta. In this year MAJ (now LCOL) J.G. Henderson, CD, became Commanding Officer. He was succeeded by MAJ J.L. Mantin in January 1966. In early 1967 the Battery was placed directly under command of Headquarters, Mobile Command, and in July of that year MAJ G.N.R. Olson, CD, became its last Commanding Officer.

LGEN W.A.B. Anderson, OBE, CD, inspects the Battery during its final parade.

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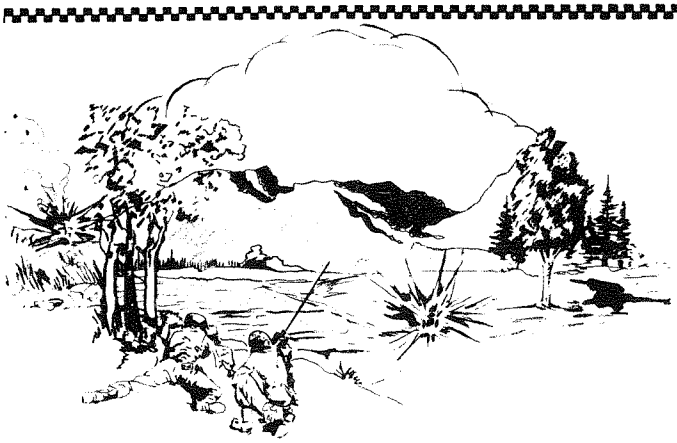


A GUNNER AT THE COMBAT ARMS SCHOOL

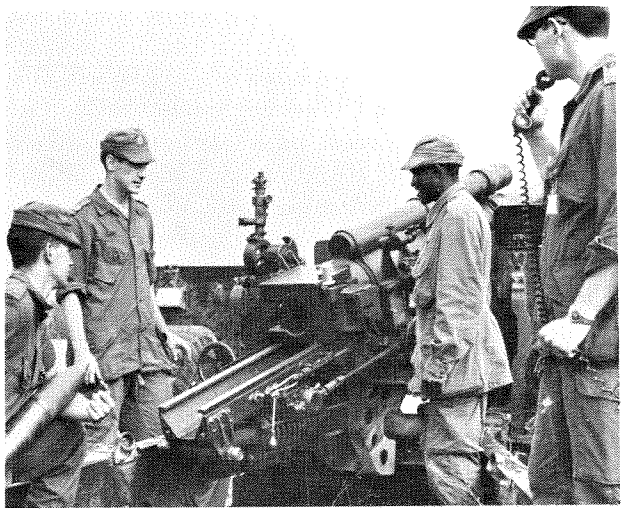
by MAJ H.P. Stickley, RCA Liaison Officer
Combat Arms School

The Combat Arms School (CAS) located at CFB Borden, Ontario was formed when the Royal Canadian Armoured Corps School and the Royal Canadian School of Infantry amalgamated. The former position of Artillery Adviser with the School of Infantry became that of the RCA Liaison Officer to CAS when the two Schools united.

The function of CAS includes training of armoured and infantry personnel to the standards required. Just as it is important that gunners understand the roles, functions and tactics of the armour and infantry, it is equally important that the latter have a good understanding of how gunners fit into the battlefield picture and especially what they can expect from us in the way of fire support. My duties include helping armoured and infantry personnel attending courses at CAS obtain an understanding of artillery, so that they will be better able to carry out their roles on the battlefield.

CAS, commanded by COL D.E. Holmes, is organized into technical and tactical departments each headed by a lieutenant colonel. The technical department is concerned with equipments such as tanks, APCs, infantry support weapons and communications, while the tactical department deals with tactics and doctrine.

Though I am available to both departments, I work out of tactics and doctrine division which is part of tactics department. This particular division includes the exchange instructors and liaison officers from the United Kingdom and the United States who, with the regular CAS staff, prepare and conduct tactical exercises without troops, cloth model exercises and other presentations for a variety of courses. My responsibility here is to provide instruction in where and how we, as gunners, fit into the combat teams or battle group and how we will provide artillery support to assist the battle group to achieve its aim. The subject material varies from organization, roles and characteristics of artillery support, application of fire and fire planning to indication of targets and adjustment of artillery fire using target grid procedure.



RCAC and RCIC officers familiarization with the 105mm howitzer.

One of my tasks is to arrange for artillery support to provide practical training for CAS courses, and sub-units of 4 RCHA have provided first class support at the Meaford Range for various courses. The gunners of 4 RCHA have shown their versatility and skill with both 105mm and 155mm towed howitzers, in addition to their normal weapons. Demonstrations generally try to show the various types of artillery ammunition and procedures, fire planning at the platoon or company level and students are usually able to practise the adjustment of artillery

Adjusting fire. Meaford – October 1968

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fire. The practical training has proven of considerable value as the opportunity for armoured and infantry personnel to practise arranging for and correcting artillery fire has been very limited in the past.

It is a privilege to work so closely with armoured and infantry personnel at the Combat Arms School. I have found them anxious to know how we as gunners contribute to the battle and appreciative of our capability to produce fire power.

ARMY CADETS AT SHILO

Last summer, over 700 army cadets from Northwestern Ontario, Manitoba, Saskatchewan, Alberta and the Northwest Territories undertook the summer training program at CFB Shilo. The aim of the Royal Canadian Army Cadets is to develop in youth the attributes of good citizenship and leadership, to promote physical fitness and to stimulate their interest in the sea, land and air elements of the Canadian Forces. The program was designed to allow each cadet to develop leadership qualities to the best of his ability.

Having summer camp at CFB Shilo offered several advantages including a chance to see and use current military equipment and training areas. As sidelights, cadets had an opportunity to watch 105mm howitzer firing demonstrations, ride in Otter aircraft, visit the Manitoba desert, see the RCA missile display and the RCA museum.

The two week course included military subjects such as drill, rifle training, shooting with a .22 rifle; however, the greatest portion was spent at sports, physical training and a comprehensive games schedule. As a finale, the cadets conducted a graduation parade, with cadets holding all command positions on the parade.

A six week course was conducted for cadet band training. Thirty selected cadets with musical ability were brought together, under the capable instruction of regular bandsmen. At the end of two weeks, the cadets' band could perform satisfactorily, and at the end of six weeks, it was able to put on an interesting musical program.

1 DRONE TROOP RCA

Authorized by CFHQ as an independent unit under the direct command of HQ FMC, 1 Drone Troop was established on 1 July, 1968. The troop began forming at CFB Shilo in mid-August when a small nucleus arrived from 1 Locating Battery. Captain A.V. Harris took command on 3 September. Because of the many roles it is or may have to perform, personnel were chosen having backgrounds in the AN/USD 501 Surveillance Drone, Sound Ranging, Survey, Radar and Counter Bombardment fields. Specialists in the 501 Drone include personnel who can service and provide operational support such as photographers, photographic interpreters, instrument and electrical mechanics, airframe mechanics, radar technicians and metal workers. The unit is presently equipped for a sound ranging and survey role, until delivery of the Drone.

Preparations for the AN/USD 501 Surveillance Drone Demonstration of Conformance Trial will begin in 1969. This is to be completed by a tripartite team of British, German and Canadian troops working with Canadair, the prime contractor. The first flight is scheduled to take place at Shilo in August 1969. Prior to this, selected personnel will train as part of the instructional staff. Part of the tripartite troop will spend six weeks at Canadair during June and July. Others of the troop will be conducting the survey and radar training required for the trial.

PICTONIANS IN ARMS

Gunners, especially those from Nova Scotia, may be interested in reading a book recently published on the military history of Pictou County, Nova Scotia. Called "Pictonians in Arms", several chapters of the book trace the history and service of artillery units from that area. In addition, the book contains biographies hitherto unpublished on two senior former gunners, LCOL the Honourable J.K. MacKay, DSO, and LCOL J.J. MacKenzie, OBE, MC.

The author, MAJ (Retired) J.M. Cameron, a native of New Glasgow in Pictou County, is himself a former gunner with 22 years of continuous service, including six years active service.

AN/USD-501 Surveillance Drone... Soon to be an effective item in the Canadian Forces inventory.

The Canadair AN/USD-501 was developed for the governments of Canada, Great Britain, and the Federal Republic of Germany. Its purpose: effective target acquisition and battlefield surveillance, to provide improved battlefield target information.

CANADAIR
LIMITED MONTREAL

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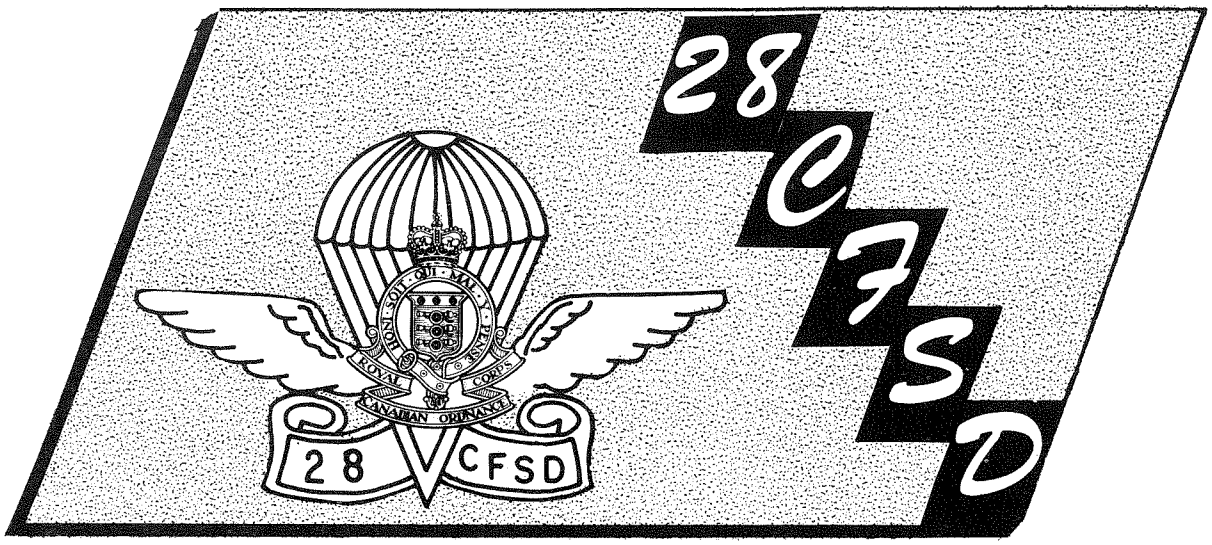


The formation of the Airborne Regiment, and 1 AB Battery calls to mind the activities of a unit which, although not a gunner unit, has had a long association with gunners, having been located in Shilo for many years. Their motto is:

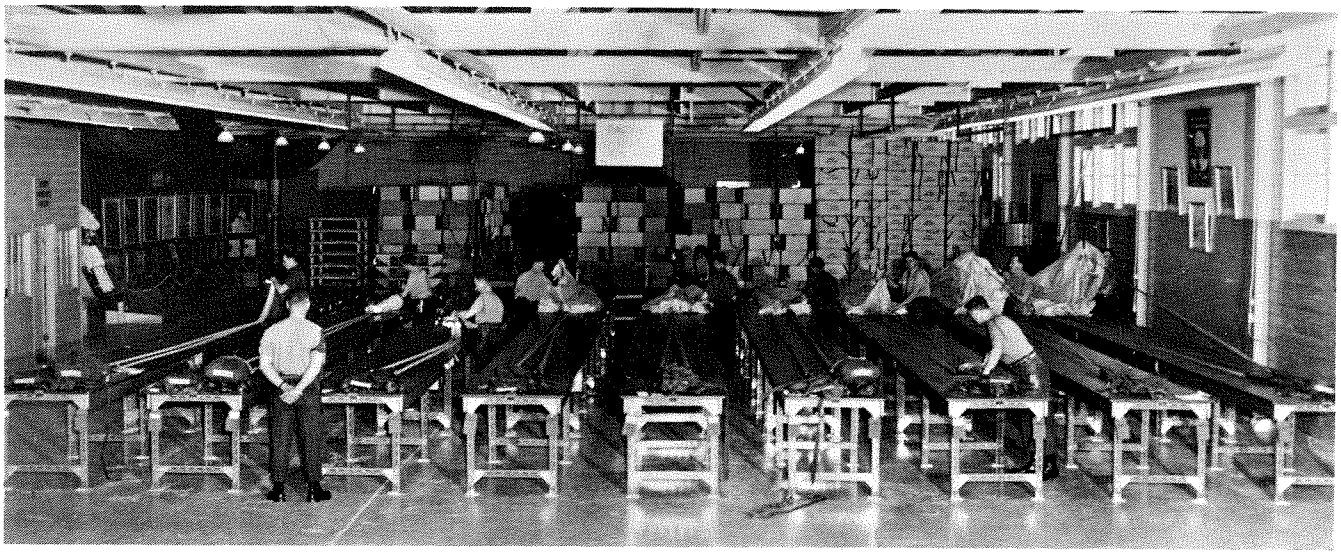
"Our Job – Their Safety, Our Aim – Perfection"

Stuck away in a corner of Shilo, home of the artillery, is a small mysterious organization which not only looks, acts and feels different, but is different. 28 Canadian Forces Supply Depot is the smallest of the former Central Ordnance Depots.

Although small in numbers, 28's mission is of major importance, as it is charged with the responsibility of purchasing, packing, maintaining and issuing parachutes, air drop, and associated airborne equipment to the land forces across Canada.

With the formation of the Canadian Airborne Regiment, this responsibility has doubled and will eventually triple. With a total establishment of three officers, 53 soldiers and three civilians, 28 can repack 450 troop type parachutes weekly. To give *"customers"* what they want, it must eventually be capable of repacking up to 800 parachutes a week.

Unification has amalgamated the Air Force's safety systems technicians and the Army's para rigger; any increase in establishment will there-



No 1 Packing Section at Work

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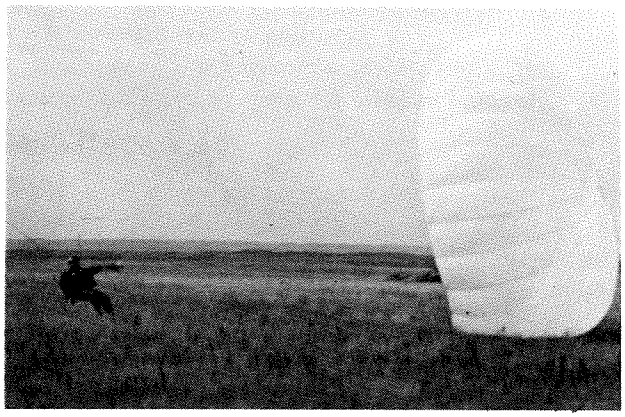
fore eventually result in a truly integrated blue and khaki unit – all in maroon berets and jump boots.

28 CFSD was officially formed on 1 November 1950 as 28 Central Ordnance Depot RCOC. The history of the unit actually dates back to 1941 and the formation of A-35, The Canadian Army Parachute Training Centre. In the early days, parachutist trainees were taught to pack their own parachutes but this system was soon discarded as impractical and the packing and maintenance of parachutes became a centralized operation.

After World War 2, the training of army parachutists was transferred from Shilo to the Joint Air School, later known as the Canadian Joint Air Training Centre at Rivers, Manitoba. The parachute packing and maintenance function remained in Shilo as a detachment of this organization and was staffed by personnel from various corps. In 1949 the responsibility for all army parachutes and associated airborne stores was given to the Royal Canadian Ordnance Corps.

In addition, 28 CFSD trains and qualifies all safety systems technicians (para rigger specialty) for the airborne field of the land element. When a para rigger has completed the courses offered at the unit, not only is he a competent unit para rigger, but is fully qualified to pack all parachutes and repair the majority of allied airborne equipment now in use. The major airborne units are thus provided with trained personnel who are responsible for the complete serviceability of each parachute and piece of equipment used for air dropping personnel and cargo.

All unit officers and safety systems technicians are active parachutists and regularly engage in continuation parachute training. As the unit is active in military parachuting, physical fitness is of prime importance to each member. Because of the high physical fitness standards required, the unit's past record in sports competitions is enviable. 28 CFSD is commanded by MAJ F.H. Tudor, CD, who was formerly a Quartermaster of 2 RCHA during its last tour in Germany.



Landing on Proctor Field at Shilo

ACHTUNG!

"Alles touristen and Non-technischen Lookens Peepers! Das Machine control is nicht for Gerfingerpoken und Mittengrabben. Oderwise is Easy Schnappen der Springgenwerk, Blowenfuse, und Poppencorken mit Spitzensparken. Der Machine is Diggen by Experten only. Is Nicht fur Gerverken by das Dummkopfen. Das Rubbernecken. Sightseenen Keepen das Cottonpicken Hands in das Pockets. So Relaxen und Watchen das Blinkenlights."

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COMMANDING OFFICERS RCA(M)

1st (Halifax-Dartmouth) Field Artillery Regiment
LCOL L.W. MacDonald, CD

2nd Field Artillery Regiment
LCOL J.H.E. Day, CD

3rd Field Artillery Regiment
(The Loyal Company)
LCOL J.H. Turnbull, CD

6th Field Artillery Regiment
LCOL J.C. Samson, CD

7th Toronto Regiment
LCOL D.A. Reed, CD

8th Field Artillery Regiment
LCOL H.D. Chapman, CD

10th Field Artillery Regiment
LCOL L.P. Wilke, CD

11th Field Artillery Regiment
LCOL R.G. French, CD

15th Field Artillery Regiment
LCOL G.M. Platt, CD

18th Field Artillery Regiment
LCOL R.A. Jacobson, CD

20th Field Artillery Regiment
LCOL A.G. Lynch-Staunton, CD

21st Field Artillery Regiment
LCOL R.P. Ritter, CD

26th Field Artillery Regiment
LCOL W.G. Ames, CD

27th Field Artillery Regiment
LCOL J.D. Flewwelling, CD

30th Field Artillery Regiment
LCOL N.F.E. Scardina, CD .

49th (Sault Ste Marie) Field Artillery Regiment
LCOL D.W. Geddes, CD

50th Field Artillery Regiment
(The Prince of Wales Rangers)
LCOL I.P.F. MacLeod, MM, CD

56th Field Artillery Regiment
(Dufferin and Haldimand Rifles)
LCOL E.E. Cox, CD

57th Field Artillery Regiment
(2nd/10th Dragoons)
LCOL L.M. Salmon, CD

62nd (Shawinigan) Field Artillery Regiment
LCOL T. Hogue, CD

5th (British Columbia) Field Battery
MAJ A.E. Sherwin, CD

84th Independent Field Battery
MAJ R.E. Dease, CD

116th Field Battery, 40th Field Regiment
MAJ B.H. Findlay, CD

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OFFICERS' AND WARRANT OFFICERS' LOCATION LIST

LGEN	WAB	Anderson, OBE, CD	Commander, Mobile Command
MGEN	RP	Rothschild, MBE, CD	Deputy Comptroller General, CFHQ
MGEN	DAG	Waldock, CD	Deputy Chief Engineering, CFHQ
BGEN	AJB	Bailey, DSO, OBE, ED, CD	Director, National Defence College
BGEN	GRA	Coffin, CD	Commander, Ontario Region
BGEN	JL	Drewry, DSO, CD	Commander, 3 Combat Group and CFB Gagetown
BGEN	EMD	Leslie, DSO, CD	Chief of Staff, UNFICYP
COL	JP	Beer, MBE, CD	Chief of Artillery, HQ Mobile Command
COL	DW	Francis, CD	Commander CFB Shilo and Commandant RCSA
COL	RE	Hogarth, DSO, CD	Secretary Defence Staff (Army), CFHQ
COL	RG	Kingstone, MBE, CD	Canadian Forces Staff College
COL	JS	Orton, MBE, MC, CD	Canadian Forces Attache, Turkey
COL	PJ	Paterson, CD	Canadian Army Design and Experimental Establishment
COL	NW	Reilander, CD	Deputy Commander, CFB Petawawa
COL	KA	Toms, CD	Commander, Prairie Region
COL	WW	Turner, CD	Director of Operations, CFHQ

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LCOL	DC	Badenoch, CD	CDLS(W) CLO USA MATCOM, Virginia
LCOL	CR	Baker, MC, CD	NATO ARM CTTEE, Brussels
LCOL	DR	Baker, CD	CO, 1 RCHA
LCOL	LC	Baumgart, CD	Canadian Land Forces Command and Staff College
LCOL	RER	Borland, CD	SSO OE 10 Tactical Air Group, St Hubert
LCOL	GO	Brown, CD	Directorate of Armament Engineering, CFHQ
LCOL	RP	Bourne, CD	SO to the Privy Council
LCOL	RGG	Buell, CD	CO, Artillery Regiment Training HQ, Borden
LCOL	JEJ	Caryi, CD	Secretariat of Defence Staff, CFHQ
LCOL	MLA	Chabot, CD	SMA Cambodia
LCOL	DB	Crowe, CD	Canadian Land Forces Command and Staff College
LCOL	JD	Crowe, MC, CD	UNMOG (IP)
LCOL	LV	Cushing, CD	Deputy Secretary Defence Staff, CFHQ
LCOL	JEG	de Domenico, CD	Directorate of Equipment Requirements Land, CFHQ
LCOL	JE	de Hart, MC, CD	CO, Artillery Regiment Training HQ, Gagetown
LCOL	DF	Elkins, CD	SSO Arty, HQ Mobile Command
LCOL	JK	Ewing, CD	Director General Operations Land, CFHQ
LCOL	JP	Francis, CD	SHAPE, Brussells
LCOL	DE	Gayton, CD	Directorate of Manpower Programming and Control Establishments Records, CFHQ
LCOL	C	Giokas, CD	CFB London
LCOL	DH	Gunter, CD	CIG, RCSA
LCOL	RG	Heitshu, CD	CO, 3 RCHA
LCOL	JG	Henderson, CD	CO, 2 RCHA
LCOL	JA	Hilliard, CD	Director General Personnel Plans Requirements, CFHQ
LCOL	W	Johnston, CD	Seconded to the Department of Defence Production, Ottawa
LCOL	PDS	Lafferty, CD	CFB Edmonton
LCOL	SV	Lloyd, CD	CAFATT, Tanzania
LCOL	AB	MacKenzie, CD	Director General Senior Appointments, CFHQ
LCOL	JW	MacNaughton, CD	Directorate of International Plans, CFHQ
LCOL	RN	McKay, CD	Office of the Chief of the Defence Staff, CFHQ
LCOL	JOVF	Menard, CD	NATO Planning Staff, Evere, Belgium
LCOL	OR	Monette, CD	CFB St Jean
LCOL	SA	Mooney, MC, CD	CJATC Rivers
LCOL	JF	Pendergast, CD	HQ AFCENT,Brunnsum,Holland
LCOL	JSG	Peterson, CD	Director of Policy Implementation, CFHQ
LCOL	GH	Reid, CD	CFB Winnipeg

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LCOL	WO	Roney, CD	HQ Western Ontario District
LCOL	WE	Sills, CD	Directorate of Strategic and Force Planning, CFHQ
LCOL	W	Simcock, CD	SSO HQ NB District
LCOL	A	Sosnkowski, CD	CO, 4 RCHA
LCOL	JC	Stewart, CD	HQ Eastern Ontario District
LCOL	RAD	Stokes, CD	CO, 2 Service Battalion
LCOL	DG	Struthers, CD	LO CONARC, Ft Munro, Virginia
LCOL	JM	Sutherland, CD	SSO P&O Ontario Region
LCOL	JAR	Vandal, CD	CO, 5e RALC
LCOL	HH	Winter, CD	Directorate of Project Formulation and Management, CFHQ
MAJ	EY	Adkins, CD	Fleet School, Esquimalt
MAJ	FW	Bayne, CD	SI Gunnery, RCSA
MAJ	AK	Beare, CD	BC, 1 RCHA
MAJ	CE	Beattie, CD	HQ Mobile Command
MAJ	RP B	Beaudry, CD	Queens University (To 5e RALC Jun 69)
MAJ	SB	Benton, CD	HQ Atlantic Region, PWC
MAJ	JC	Berezowski, CD	Artillery Regiment Training HQ, Borden
MAJ	EJ	Berris, CD	CDLS(W), Exchange Officer, Office of Personnel Operations
MAJ	T	Boldt, CD	Director General Communications and Electronics Systems, CFHQ
MAJ	CF	Burant, CD	HQ UNFICYP
MAJ	FA	Bussieres, CD	2IC, 5e RALC
MAJ	C	Butler, CD	Directorate of Equipment Requirements Land, CFHQ
MAJ	MD	Calnan, CD	BC, 3 RCHA
MAJ	FS	Card, CD	HQ Pacific Region
MAJ	LL	Charest, CD	Directorate of Organization, CFHQ
MAJ	JP	Cheevers, CD	Directorate of Armament Engineering, CFHQ
MAJ	DH	Clark, CD	CDLS(W) Armament Officer
MAJ	WS	Conrod, CD	Directorate of Land Reserves, CFHQ
MAJ	RS	Cork, CD	Administrative Unit, CFHQ
MAJ	JA	Cotter, CD	HQ Mobile Command
MAJ	ELK	Cowan, CD	Directorate of Project Formulation, CFHQ
MAJ	WD	Creighton, CD	HQ Ontario Region
MAJ	JE	Crosman, CD	CO, 1 SSM Bty
MAJ	CJ	Crowe, CD	RMC Course Director
MAJ	JD	Currie, CD	Personnel Management Information Services, CFHQ
MAJ	AW	Curry, CD	Director of Land Operational Research, CFHQ

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MAJ	MW	Dauphinee, CD	Administrative Unit, CFHQ
MAJ	CR	Davidson, CD	DS Canadian Forces Staff School
MAJ	FA	Davies, CD	DAQMG Canadian Land Forces Command and Staff College
MAJ	PW	Davis, CD	HQ Mobile Command
MAJ	WR	Dawes, CD	BC, 1 RCHA
MAJ	JK	Devlin, CD	HQ Mobile Command
MAJ	JJ	Donahue, CD	Student, United States Command and General Staff College
MAJ	JJA	Doucet, CD	CFLO, Ft Sill, Oklahoma
MAJ	RR	Doyon, CD	HQ Mobile Command
MAJ	SS	Drew, CD	HQ Atlantic Region
MAJ	RH	Duke, CD	Exchange Officer, Ministry of Technology, London, England
MAJ	FJR	Ervin, CD	UNTSO, Palestine
MAJ	RA	Finney, CD	2IC, 4 RCHA
MAJ	DC	Fitzgerald, CD	Deputy Chief Plans, CFHQ
MAJ	DR	Foster, CD	Comd, 4 RCHA AOP Tp
MAJ	WES	Gamblin, CD	Directorate of Armament Engineering, CFHQ
MAJ	RN	Gleason-Beard, CD	HQ Mobile Command
MAJ	THC	Goodfellow, CD	Financial Management Development Project, CFHQ
MAJ	JE	Goodine, CD	Directorate of Nuclear Weapons, CFHQ
MAJ	RE	Gorham, CD	Director General Intelligence, CFHQ
MAJ	RD	Gowland, CD	Directorate of Military Courses and Training, CFHQ
MAJ	T	Graham, CD	Defence Chemical Biological Radiation Laboratory, DRB, CFHQ
MAJ	GM	Guy, CD	BC, 2 RCHA
MAJ	GF	Hammond, CD	2IC, 3 RCHA
MAJ	PDA	Harrison, CD	HQ Pacific Region
MAJ	PF	Heenan, CD	Directorate of Personnel Requirements Control, CFHQ
MAJ	WB	Helman, CD	Directorate of Manpower Distribution Control Centre, CFHQ
MAJ	DA	Henderson, CD	Directorate of Personnel Career Policy, CFHQ
MAJ	GM	Henderson, CD	Directorate of Flight Safety, CFHQ
MAJ	EC	Hipwell, CD	Officer Cadet Squadron, RCSME, CFB Chilliwack
MAJ	GH	Howitt, MC, CD	CFB Shilo
MAJ	RR	Howsam, CD	Directorate of Scientific and Technical Intelligence, CFHQ
MAJ	JMA	Hulsemann, CD	SI Target Acquisition, RCSA
MAJ	SP	Hunter, CD	Exchange Officer, Department of the Royal Artillery, War Office
MAJ	MD	Kearney, CD	HQ UNFICYP
MAJ	EA	Keenan, CD	Central Ontario District Logistics and Administrative Staff (M)

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MAJ	JC	Kennedy, CD	HQ Mobile Command
MAJ	TJT	Kennedy, CD	HQ Ontario Region, PWC
MAJ	E	Lasch, CD	UNMOG (IP)
MAJ	KD	Lavender, CD	Artillery Regiment Training HQ, Shilo
MAJ	VJ	Legere, CD	Canadian Army Design and Experimental Establishment
MAJ	HF	Leggett, CD	HQ Mobile Command
MAJ	OJ	Lester, CD	Directorate of Land Operations Research, CFHQ
MAJ	WDW	Lewis, CD	Directorate of Strategic Force Planning, CFHQ
MAJ	JM	Liston, CD	Western Ontario District I Staff (M)
MAJ	DM	MacDonald, CD	HQ Atlantic Region
MAJ	AGM	MacIsaac, CD	Directorate of Equipment Requirements Land, CFHQ
MAJ	EB	MacLatchy, CD	CO, 1 Airborne Bty
MAJ	NM	MacLean, CD	Directorate of Integrated Defence Programmes, CFHQ
MAJ	RB	Mallory, CD	CO, CFS CARP
MAJ	JL	Mantin, CD	CAFATT GHANA
MAJ	H	Marston, CD	Director General Operations Land, CFHQ
MAJ	EH	Martin, CD	Directorate of Armament Engineering, CFHQ
MAJ	PB	Martin, CD	Directorate of Scientific and Technical Intelligence, CFHQ
MAJ	GN	Mastine, CD	Comd, 5e RALC AOP Tp
MAJ	FR	McCall, CD	CFLO Ft Bliss, Texas
MAJ	JB	McCanse, CD	UNMOG (IP)
MAJ	GA	McDonald, CD	Comd, 1 RCHA AOP Tp
MAJ	J	McGregor, CD	Eastern Ontario District Logistics and Administrative Staff (M)
MAJ	FE	McLean, CD	Directorate of Organization, CFHQ
MAJ	HA	McLellan, CD	Directorate of Postings and Careers Land Operations and Logistic (Artillery Officers), CFHQ
MAJ	AC	Moffat, CD	Student, NATO Defence College
MAJ	RF	Morrison, CD	CFB Gagetown
MAJ	GR	Mummery, CD	Student, Canadian Forces Staff College
MAJ	ESTJC	Murdoch, MC, CD	CFB Gagetown
MAJ	TW	Musgrave, CD	2IC, 2 RCHA
MAJ	CA	Namiesniowski, CD	Directorate of Operations, CFHQ
MAJ	MT	O'Brennan, CD	BC District I Staff (M)
MAJ	GNR	Olson, CD	SI Tactics, RCSA
MAJ	CEDEL	Panet, CD	HQ Training Command
MAJ	GBC	Parenteau, CD	BC, 5e RALC
MAJ	NM	Pettis, CD	2IC, 1 RCHA

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MAJ	KS	Pickard, CD	SI Missiles, RCSA
MAJ	DG	Porter, CD	Directorate of Armament Engineering, CFHQ
MAJ	PF	Pride, CD	UNMOG (IP)
MAJ	GR	Proulx, CD	HQ Quebec Region
MAJ	NE	Ramsey, CD	Directorate of Equipment Requirements Air, CFHQ
MAJ	WJ	Ready, CD	OC Trials and Evaluation Establishment, CFB Shilo
MAJ	DJ	Redknap, CD	DAA&QMG, HQ CCUNCYP
MAJ	ME	Rich, CD	Exchange Officer, 2 British Division
MAJ	JK	Robertson, CD	Directorate of Armament Engineering, CFHQ
MAJ	NA	Robertson, CD	Administrative Officer, CDLS(L)
MAJ	WG	Robson, CD	Emergency Measures College, Arnprior
MAJ	MJ	Sadler, CD	Canadian Forces Part 1 Establishment, Short Range Recce Drone System, Ottawa
MAJ	HD	Saxon, CD	Exchange Officer, School of Artillery, Larkhill, Salisbury Wilts, UK
MAJ	EL	Schrader, CD	Student, Canadian Land Forces Command and Staff College
MAJ	JM	Selman, CD	HQ Mobile Command
MAJ	CR	Simonds, CD	HQ Mobile Command
MAJ	JM	Skinner, CD	Director General Operations Land, CFHQ
MAJ	RD	Smyth, CD	Directorate of Armament Engineering, CFHQ
MAJ	DD	Snow, CD	CAFATT, Tanzania
MAJ	HJ	Stein, CD	BC, 1 RCHA
MAJ	IC	Stewart, CD	CFB Calgary
MAJ	HP	Stickley, CD	Artillery LO, Combat Arms School, Borden
MAJ	WB	Stoddart, CD	UNTSO, Palestine
MAJ	DE	Stothers, CD	BC, 2 RCHA
MAJ	RL	Strawbridge, CD	Directorate of International Plans, CFHQ
MAJ	RW	Strickland, CD	DS Canadian Forces Staff College
MAJ	JEY	Theriault, MC, CD	Canadian Army Design and Experimental Establishment
MAJ	BE	Thorsteinson, CD	Directorate of Electronic Systems Equipment, CFHQ
MAJ	WJ	Tippett, CD	Canadian Forces Part 1 Establishment Seconded to the Department of Defence Production
MAJ	CA	Van Allen, CD	Standardization, CFHQ
MAJ	GE	Walker, CD	LETE, CFHQ
MAJ	RK	Wallace, CD	Directorate of Continental Plans, CFHQ
MAJ	DJ	Walters, CD	BRIXMIS
MAJ	JO	Ward, CD	HQ Mobile Command
MAJ	BRH	Watch, CD	UNTSO, Palestine

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MAJ	DW	Wellsman, CD	HQ Northern Army Group
MAJ	CME	West, CD	Director General Programmes
MAJ	LE	West, CD	BC, 3 RCHA
MAJ	WJ	West, CD	HQ Training Command
MAJ	GL	Wetherup, CD	SI Officer Cadet Training, RCSA
MAJ	HR	Wheatley, CD	DAA&QMG, HQ 3 Combat Group
MAJ	T	Wheeler, CD	BC, 4 RCHA
MAJ	PA	White, CD	Student, Canadian Forces Staff College
MAJ	ML	Williams, CD	UNTSO, Palestine
MAJ	WMJ	Wolfe, CD	BC, 4 RCHA
CAPT	EJ	Adams	RCSA
CAPT	RI	Adams, CD	4 RCHA AOP Tp
CAPT	PJ	Addis, CD	CFB Kingston
CAPT	LC	Adkins	1 RCHA
CAPT	RF	Alessio, CD	CFB Shilo
CAPT	PT	Alward, CD	Directorate of Intelligence Services, CFHQ
CAPT	EH	Anderson, CD	NB/PEI District I Staff (M)
CAPT	FK	Anderson, CD	CFB Edmonton
CAPT	CJLH	Archambault	1 RCHA
CAPT	TH	Argue, CD	HQ Prairie Region
CAPT	RV	Armishaw, MBE, CD	Directorate of Policy Implementation, CFHQ
CAPT	RB	Armstrong	1 RCHA
CAPT	RL	Armstrong	2 RCHA
CAPT	FC	Ayers	Directorate of Equipment Requirements Air, CFHQ
CAPT	JJ	Baker, CD	Directorate of Armament Engineering, CFHQ
CAPT	P	Baldaro, CD	1 RCHA AOP Tp
CAPT	NH	Barrett, CD	Student, Canadian Land Forces Command and Staff College
CAPT	RJ	Beardmore	1 RCHA
CAPT	DJ	Beatty	RCSA
CAPT	EB	Beno	1 RCHA
CAPT	MV	Bezeau	CFB Rockcliffe, RSO
CAPT	DB	Bianco	1 RCHA
CAPT	JGR	Bigras	Western Quebec District I Staff (M)
CAPT	RW	Boadway	3 RCHA
CAPT	JNGG	Boudreau	Student, Arty Staff Course RCSA
CAPT	JP	Bouvette	Canadian Armament Design and Experimental Establishment
CAPT	SJ	Bowers, CD	Directorate of Ceremonial, CFHQ

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CAPT	ABC	Bowles	4 RCHA
CAPT	GWR	Bowman, CD	HQ Training Command
CAPT	LA	Branum	1 SSM Bty
CAPT	TE	Brewster	RCSA
CAPT	JJ	Brotherton, CD	CFB Kingston
CAPT	DH	Brown	1 RCHA
CAPT	FS	Brown, CD	Western Ontario District I Staff (M)
CAPT	MC	Brown	2 RCHA
CAPT	SA	Brown, CD	CFPSU, Vancouver
CAPT	JEF	Bryce	RCSA
CAPT	JE	Bulger, CD	HQ Prairie Region
CAPT	AF	Cameron, CD	CDLS (L) Ministry of Defence
CAPT	CN	Cant	3 RCHA
CAPT	AW	Carnell	RCSA
CAPT	RV	Carriere	1 RCHA
CAPT	AP	Carroll	3 RCHA
CAPT	AJ	Casey, CD	Saskatchewan District I Staff (M)
CAPT	RA	Cathcart	RCSA
CAPT	RJ	Chamberlain	Student, Canadian Land Forces Command and Staff College
CAPT	FH	Champion-Demers CD	5e RALC
CAPT	JP	Chartres	1 RCHA
CAPT	RW	Chaulk	1 SSM Bty
CAPT	WB	Cheadle, CD	HQ Atlantic Region
CAPT	JD	Chown, CD	Directorate of Land Reserves, CFHQ
CAPT	MF	Clark	1 RCHA
CAPT	PW	Colbert, CD	Fleet School, Esquimalt
CAPT	SA	Colburne	2 RCHA
CAPT	NH	Connolly	HQ Mobile Command
CAPT	AVA	Coroy	4 RCHA AOP Tp
CAPT	AK	Court	1 RCHA
CAPT	JA	Crowder, CD	Directorate of Armament Engineering, CFHQ
CAPT	LWF	Cuppens	1 RCHA
CAPT	JA	Davidson	1 SSM Bty
CAPT	HL	Davis, CD	CFB Borden
CAPT	GA	Decker	HQ 4 CMBG
CAPT	RA	Diespecker	HQ Training Command
CAPT	JT	Dolan, CD	CFRC, Ottawa

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CAPT	JA	Dorman	RCSA
CAPT	BG	Earl	1 RCHA
CAPT	HC	Ellery	1 RCHA
CAPT	DA	Elrick	1 RCHA
CAPT	RG	Elrick	RCSA
CAPT	WA	Emery	Student, Canadian Land Forces Command and Staff College
CAPT	DB	Fenny	1 Airborne Bty
CAPT	DR	Ferguson	3 RCHA
CAPT	TAD	Fetterly	1 SSM Bty
CAPT	H	Finestone	RCSA
CAPT	JC	Fleming	Student, Canadian Land Forces Command and Staff College
CAPT	PW	Forsberg	RCSA
CAPT	AR	Fowler, CD	HQ Atlantic Region
CAPT	JJ	Fraser	RCSA
CAPT	FL	Furness, CD	HQ Western Ontario District
CAPT	IWC	Gibbons	Student, Arty Staff Course, RCSA
CAPT	RG	Glover	4 RCHA
CAPT	H	Goertzen, CD	Directorate of Armament Engineering, CFHQ
CAPT	WE	Gordon	2 RCHA
CAPT	WD	Gowanlock	3 RCHA
CAPT	GF	Gower	1 RCHA AOP Tp
CAPT	BM	Grace	4 RCHA
CAPT	PJ	Graves	HQ Newfoundland District (To Defence Services Staff College Wellington India Jan 69)
CAPT	SD	Green	HQ 1 Combat Group
CAPT	OL	Greenizan	1 SSM Bty
CAPT	DA	Greensides	Canadian Forces Language School, St Jean
CAPT	LL	Greig, CD	Eastern Ontario District I Staff (M)
CAPT	DA	Gronbeck-Jones	5e RALC
CAPT	TJ	Guiler	Artillery Regiment Training HQ, Gagetown
CAPT	RG	Hall, CD	RCSA
CAPT	MJ	Harmston, CD	Directorate Operations Land, CFHQ
CAPT	AV	Harris, CD	Tp Comd, 1 Drone Tp
CAPT	DB	Harrison	HQ Pacific Region
CAPT	EH	Hague	HQ 5e Combat Group
CAPT	DW	Hawthorne	Canadian Forces Recruit Station, Cornwallis
CAPT	JE	Hawthorne	1 SSM Bty

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CAPT	FC	Haynes, CD	Directorate of Manpower Distribution Control Centre, CFHQ
CAPT	JD	Hetherington, CD	HQ Pacific Region
CAPT	MW	Hewes	Student, Arty Staff Course RCSA
CAPT	RP	Hill, CD	RCSA
CAPT	WM	Hill, CD	Administrative Officer, Canadian Land Forces Command and Staff College
CAPT	GR	Hirter	1 Airborne Bty
CAPT	JM	Hoffman	Student, Canadian Land Forces Command and Staff College
CAPT	DR	Hopper	5e RALC
CAPT	JE	Howes	Directorate of Manpower Programming and Control
CAPT	NF	Hull	3 RCHA
CAPT	FC	Hummel, CD	Alberta District I Staff (M)
CAPT	RG	Hurley	Student, Canadian Land Forces Command and Staff College
CAPT	JR	Hutchison, CD	HQ Eastern Ontario District
CAPT	RY	Hutton	Directorate of Operations, CFHQ
CAPT	DGH	Hyman	ADC to his Excellency, The Govenor General
CAPT	RM	Hyslop	1 RCHA
CAPT	GF	Ireland	CFB Portage
CAPT	TT	Itani	2 RCHA
CAPT	RK	James	Directorate of Policy Implementation, CFHQ
CAPT	WR	Johnston	CFNBCWS, Borden
CAPT	NW	Johnstone	HQ 4 CMBG
CAPT	GH	Jussup, CD	Directorate of Project Formulation, CFHQ
CAPT	JM	Kavanagh	Student, Arty Staff Course RCSA
CAPT	LC	Kempffer, CD	1 RCHA
CAPT	DJ	Ker-Hornell, CD	3 RCHA
CAPT	GD	Kerr	RCSA
CAPT	WF	Kirk, CD	Deputy Secretary Defence Staff, CFHQ
CAPT	ST	Klubi, CD	CFB Edmonton
CAPT	DC	Knight	1 SSM Bty
CAPT	MA	Kryzanowski	1 RCHA
CAPT	FK	Laforge	1 RCHA
CAPT	GB	Larson	3 RCHA
CAPT	PR	Learmonth	1 RCHA
CAPT	SW	Lobban, CD	UNTSO, Palestine
CAPT	DA	Lockridge	CFRC, Toronto
CAPT	G	Logan	CFB Soest
CAPT	RJ	Lovell	102 KU Det UNMOG (IP)

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CAPT	JA	Lowe	412 Transport Squadron
CAPT	RJ	Lucas	RCSA
CAPT	MJ	MacDonald	1 SSM Bty
CAPT	JM	MacFie, CD	CJATC Rivers
CAPT	JG	MacGregor	1 RCHA AOP Tp
CAPT	JA	MacInnis	1 RCHA
CAPT	JM	MacInnis	1 Drone Tp
CAPT	AA	MacLeod, CD	BC District I Staff (M)
CAPT	WR	MacNeil	2 RCHA
CAPT	JOA	Maher	RCSA
CAPT	MD	Maher	HQ Western Ontario District
CAPT	R	Malcolm, CD	RCSA
CAPT	JAG	Marceau	5e RALC
CAPT	CW	Marmo	Student, Arty Staff Course RCSA
CAPT	RB	May, CD	1 RCHA
CAPT	RA	McClenahan, CD	HQ Ontario Region
CAPT	JP	McConville, CD	Artillery Regiment Training HQ, Borden
CAPT	JE	McCorkell, CD	Directorate of Armament Engineering, CFHQ
CAPT	DB	McGibbon	Student, RMC of S, Shrivenham
CAPT	BTN	McGrath	1 RCHA
CAPT	JA	McKay	5e RALC
CAPT	RW	McKinlay	Student, Arty Staff Course RCSA
CAPT	L	McKinnon, CD	Directorate Ordnance Systems, CFHQ
CAPT	RL	McLellan, CD	HQ Training Command
CAPT	WE	McLeod	1 RCHA
CAPT	AD	McMillan	Student, Canadian Land Forces Command and Staff College
CAPT	LH	McMorran, CD	2 RCHA AOP Tp
CAPT	WL	McMullen, CD	RCSA
CAPT	MW	McQuinn	3 RCHA
CAPT	CJ	Mialkowski	HQ Mobile Command
CAPT	KL	Miller	CFB Chilliwack
CAPT	AG	Mills	4 RCHA
CAPT	LTB	Mintz	1 RCHA
CAPT	CA	Moogk	Student, Arty Staff Course RCSA
CAPT	RD	Moon	4 RCHA
CAPT	SR	Moore, CD	Directorate of Postings and Careers Land Operations and Logistics Artillery (Men), CFHQ
CAPT	JW	Mortlock	1 RCHA

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CAPT	N	Mulikow, CD	RCSA
CAPT	AW	Nethercott, CD	Comd, 3 RCHA AOP Tp
CAPT	JDE	Niles	Canadian Forces Recruit Station, Cornwallis
CAPT	RL	O'Banion	CFRC, Hamilton
CAPT	GJ	Oehring	HQ Mobile Command
CAPT	GW	Oliver	RCSA
CAPT	AF	Ouelette, CD	Manitoba District I Staff (M)
CAPT	JW	Owen, CD	HQ Eastern Ontario District
CAPT	CMJ	Pachal, CD	HQ Training Command
CAPT	RC	Pachal	Squadron Officer, Royal Roads
CAPT	AZ	Palmer	Student, Arty Staff Course RCSA
CAPT	JA	Parnham, CD	HQ Mobile Command
CAPT	WL	Pender	1 Airborne Bty
CAPT	RE	Peterson, CD	Directorate of Personnel Career Policy, CFHQ
CAPT	M	Pisnook, CD	Western Ontario District I Staff (M)
CAPT	MAS	Pittman, CD	HQ Ontario Region
CAPT	JR	Pleasance	HQ 3 Combat Group
CAPT	N	Plishka, CD	CFB Edmonton
CAPT	JA	Poh, CD	1 RCHA
CAPT	WF	Pollock, CD	450 Squadron, St Hubert
CAPT	HT	Posten, CD	Administrative Unit, CFHQ
CAPT	TG	Power, CD	Central Ontario District I Staff (M)
CAPT	G	Prior, CD	Graphic Arts Sub-Section, CFHQ
CAPT	GDL	Protz, CD	NSAWS NNR, North Bay
CAPT	WJ	Quinn, CD	HQ NB/PEI District
CAPT	LG	Ramsey, CD	Directorate. Ordnance Systems, CFHQ
CAPT	EW	Rance, CD	Seconded to the National Research Council
CAPT	BA	Reid	RCSA
CAPT	CHG	Reid, CD	CFB Calgary
CAPT	SJ	Reid	4 RCHA
CAPT	WB	Rendell, CD	Sub Base St Johns, Newfoundland
CAPT	JH	Rennie, CD	RCSA
CAPT	DM	Robb	Exchange Officer 3 RHA, Germany
CAPT	TE	Roberts, CD	4 RCHA
CAPT	LH	Robitaille, CD	Directorate Electronics Systems Engineering, CFHQ
CAPT	TAW	Robson, CD	HQ Ontario Region
CAPT	RB	Rogers	3 RCHA AOP Tp

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CAPT	JA	Roszell	3 RCHA
CAPT	JGVN	Rouleau	HQ Quebec Region
CAPT	DE	Rousseau, CD	RCSA
CAPT	RDC	Rowdon	Student, Arty Staff Course RCSA
CAPT	JH	Ryan	5e RALC
CAPT	RA	Salisbury, CD	CFB Soest
CAPT	JK	Sangster, CD	HQ Saskatchewan District
CAPT	GH	Sawatzki	Student, German Staff College
CAPT	DG	Schott, CD	1 Airborne Bty
CAPT	GDC	Scott	Student, Arty Staff Course RCSA
CAPT	WM	Scott	HQ Training Command
CAPT	FE	Seely, CD	NS District I Staff (M)
CAPT	JD	Shaver, CD	Directorate of Recruiting, CFHQ
CAPT	GM	Shellard, CD	2 RCHA AOP Tp
CAPT	P	Sherrick, CD	Artillery Regiment Training HQ, Shilo
CAPT	M	Shewchuk, CD	Central Ontario District I Staff (M)
CAPT	JFLP	Simard, CD	CFRC, Montreal
CAPT	KA	Smee	RMC Assistant Professor of Chemistry
CAPT	AHC	Smith, CD	Student, Canadian Land Forces Command and Staff College
CAPT	GR	Smith	2 RCHA
CAPT	HK	Smith, CD	Directorate Communications and Electronic Systems, CFHQ
CAPT	MW	Smith, CD	Canadian Army Design and Experimental Establishment
CAPT	SM	Smith, CD	CFB Petawawa
CAPT	WL	Smith, CD	CFRC, Vancouver
CAPT	TAB	Sparling	4 RCHA
CAPT	A	Spooner, CD	Directorate of Clothing and General Engineering, CFHQ
CAPT	JA	St Louis, CD	Eastern Quebec District I Staff (M)
CAPT	SS	Takahashi	HQ 4 CMBG
CAPT	JJG	Tanguay, CD	1 RCHA
CAPT	JER	Tattersall	RCSA
CAPT	LU	Thibedeau, CD	Comd, 2 RCHA AOP Tp
CAPT	RG	Thomason, CD	RCSA
CAPT	HD	Thompson	4 RCHA
CAPT	RV	Thompson, CD	Directorate of Operations, CFHQ
CAPT	PJ	Tomashewski	2 RCHA
CAPT	GE	Trainor, CD	RCSA
CAPT	VA	Troop	Student, Artillery Officers Advanced Course, Ft Sill Oklahoma

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CAPT	KD	Varey	1 SSM Bty
CAPT	HA	Walinsky	Student, Arty Staff Course RCSA
CAPT	D	Walker, CD	Directorate Ordnance Systems, CFHQ
CAPT	TJ	Walsh	Directorate of Land Reserves, CFHQ
CAPT	DB	Walton	RCSA
CAPT	RB	Wark	3 RCHA
CAPT	WR	Watling	1 SSM Bty
CAPT	JAS	Watts	RCSA
CAPT	AR	Weeks, CD	HQ Alberta District
CAPT	DI	Whalen, CD	UNTSO, Palestine
CAPT	ET	Whalen, CD	3 RCHA AOP Tp
CAPT	AJ	Wilson	3 RCHA
CAPT	JR	Wilson, CD	CFB Toronto
CAPT	CE	Wormell, CD	Directorate Ordnance Systems, CFHQ
CAPT	NA	Wright, CD	Directorate Ordnance Systems, CFHQ
CAPT	WF	Wright, CD	4 RCHA AOP Tp
CAPT	GL	Younger-Lewis, CD	Standardization, CFHQ
CAPT	AM	Zamoyski, CD	Eastern Quebec District I Staff (M)
CAPT	WL	Zawyrucha	Student, Arty Staff Course RCSA
LT	JP	Abbott, CD	CFB Moose Jaw
LT	CR	Anderson	4 RCHA
LT	JW	Beese	4 RCHA
LT	JD	Briscoe	4 RCHA
LT	JF	Bryan	1 RCHA
LT	JZC	Chamberland	CFRC Det, Chicoutimi
LT	KL	Clarke	4 RCHA
LT	RC	Coleman	2 RCHA
LT	GR	Conway	Central Ontario District I Staff (M)
LT	GA	Cook	CFB Halifax
LT	AB	Cooney	4 RCHA
LT	RN	Crooks	2 RCHA
LT	HRJ	Eamor	4 RCHA
LT	FG	Earl, CD	NSAWS NNR, North Bay
LT	MD	Elkins	1 RCHA
LT	TA	Favier	2 RCHA
LT	W	Filonik	1 Airborne Bty
LT	FJ	Forsyth, CD	Canadian Army Design and Experimental Establishment

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LT	RM	Foster	2 RCHA
LT	AG	Gallant	5e RALC
LT	GA	Gallop	1 RCHA
LT	WF	Gee	3 RCHA
LT	JV	Glaus	3 RCHA
LT	WH	Groom, CD	NSAWS NNR, North Bay
LT	CO	Gustafson	1 RCHA
LT	RL	Hanbury	2 RCHA
LT	TP	Haney	3 RCHA
LT	FH	Hansford	4 RCHA
LT	MN	Hargest, CD	Alberta District I Staff (M)
LT	RN	Haslett	3 RCHA
LT	RP	Hitchman	2 Flight Training School, Moose Jaw
LT	RP	Hodgson	2 RCHA
LT	JV	Howard	4 RCHA
LT	R	Hoyland	4 RCHA
LT	GB	Hunt	3 RCHA
LT	EA	Hynes, CD	RCSA
LT	MK	Jeffery	2 RCHA
LT	JB	Knapp	4 RCHA
LT	JDL	Krauter	1 Airborne Bty
LT	RG	Kyle	4 RCHA
LT	DJ	Lacey	1 Airborne Bty
LT	JP	Lapointe	1 RCHA
LT	BM	Lees	4 RCHA
LT	RJ	Lees	2 RCHA
LT	RN	McAlpine	3 RCHA
LT	TJ	McBurney	4 RCHA
LT	TS	McCoy	4 RCHA
LT	DG	Miller	2 Flight Training School, Moose Jaw
LT	DG	Miller, CD	Canadian Army Design Experimental Establishment
LT	JE	Miller	2 RCHA
LT	KR	Mitchell	3 RCHA
LT	ML	Moldaver	3 RCHA
LT	MB	Morrison	2 RCHA
LT	HP	Mundell	4 RCHA
LT	JW	Nixon	3 RCHA

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LT	BW	Olynick	3 RCHA
LT	GS	Paech	3 RCHA
LT	JAR	Paquette	5e RALC
LT	WJ	Parton	2 RCHA
LT	KW	Pizer	2 RCHA
LT	AE	Roach	2 RCHA
LT	DJ	Rooke	2 RCHA
LT	TP	Ross	3 RCHA
LT	PS	Sanderson	3 RCHA
LT	BS	Saunders	2 RCHA
LT	RJM	Selman	1 RCHA
LT	WM	Shellnut	2 RCHA
LT	JMA	Siple	4 RCHA
LT	WA	Stenton	2 RCHA
LT	JB	Stephens, CD	Central Ontario District I Staff (M)
LT	BE	Stephenson	2 RCHA
LT	JC	Stewart	4 RCHA
LT	AG	Stoddard, CD	Directorate of Personnel Requirements Control, CFHQ
LT	DB	Struthers	2 RCHA
LT	JR	Toogood	2 RCHA
LT	SM	Tolson	4 RCHA
LT	GW	Trimble	3 RCHA
LT	DG	Tudin	4 RCHA
LT	RS	Usher, CD	Directorate of Land Operations Research, CFHQ
LT	OE	Van Rooyen	2 RCHA
LT	JM	Vanstone	3 RCHA
LT	WB	Wheaton	2 RCHA
LT	MR	Wilson	RCSA
LT	RS	Wilson	1 RCHA
LT	MJ	Winter	4 RCHA
LT	VW	Zaharychuk, CD	Canadian Army Design and Experimental Establishment
CWO	JFW	Barham	Artillery Regiment Training HQ, Borden
CWO	LF	Binkley	RCSA
CWO	AJ	Brim	Directorate Ordnance Systems, CFHQ
CWO	WT	Chilton	BC District I Staff (M)
CWO	HA	Clarke	Eastern Ontario District I Staff (M)

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CWO	JO	Dube	SMIG, RCSA
CWO	MJ	Fraser	HQ Mobile Command
CWO	GA	Griffiths	CFB Petawawa
CWO	RF	Hanlon	Western Ontario District I Staff (M)
CWO	SR	Holtom	NB District I Staff (M)
CWO	FG	Hooper	Canadian Army Design and Experimental Establishment
CWO	DL	Hughes	CFB Shilo
CWO	G	Jackson	Alberta District I Staff (M)
CWO	R	Jackson	CFB Edmonton
CWO	FE	Johnston	1 RCHA
CWO	JA	Kolmer	Directorate of Postings and Careers Land Operations and Logistics, Artillery (Men), CFHQ
CWO	EC	Lemaire	Central Ontario District I Staff (M)
CWO	GN	Malcolm	3 RCHA (5e RALC 1 Jan 69)
CWO	GW	Miller	Canadian Army Design and Experimental Establishment
CWO	DA	Moreside	NS District I Staff (M)
CWO	RD	Nickerson	Directorate of Armament Engineering, CFHQ
CWO	JS	Richmond	4 RCHA
CWO	W	Sonnenberg	RCSA
CWO	KJ	Stinson	Directorate of Armament Engineering, CFHQ
CWO	RG	Sutherland	Directorate of Manpower Programme Control, CFHQ
CWO	R	Syrette	2 RCHA
CWO	E	Tremblay	Western Quebec District I Staff (M)
CWO	LJ	Vallee	1 RCHA
CWO	RA	Vidler	RCSA
CWO	LE	Walker	Directorate of Armament Engineering, CFHQ
CWO	FD	West	CFB Gagetown
CWO	DE	Williams	Canadian Army Design and Experimental Establishment
CWO	PA	Winter	RCSA
CWO	SG	Witt	Manitoba District I Staff (M)
CWO	FC	Wood	NATO Brussels
MWO	GS	Armstrong	2 RCHA
MWO	JP	Begin	5e RALC
MWO	ER	Bell	1 RCHA
MWO	DD	Bittle	Director General Ordnance Systems, CFHQ
MWO	EJ	Blackwell	2 RCHA
MWO	JE	Boyle	4 RCHA
MWO	AF	Brown	1 RCHA

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MWO	EA	Brown	Directorate of Land Operational Research, CFHQ
MWO	RB	Byer	3 RCHA
MWO	KA	Cameron	Western Ontario District I Staff (M)
MWO	TH	Campbell	1 RCHA
MWO	JA	Charles	NATO Brussells
MWO	LH	Clarke	Directorate of Personnel Requirements Control, CFHQ
MWO	PD	Cloutier	1 SSM Bty
MWO	EF	Cobham	4 RCHA
MWO	W	Conway	2 RCHA
MWO	MJ	Cove	RCSA
MWO	DJ	Crawford	3 RCHA
MWO	WD	Darling	HQ Atlantic Region
MWO	RJ	Fenske	RCSA
MWO	WM	Fleet	2 RCHA
MWO	LE	Gargan	HQ Atlantic Region
MWO	AL	Giles	4 RCHA
MWO	WE	Grover	Directorate of Ammunition, CFHQ
MWO	C	Harrup	HQ Alberta District
MWO	DW	Hawkes	1 SSM Bty
MWO	RT	Hibbett	4 RCHA
MWO	T	Holodiwsky	Canadian Army Design and Experimental Establishment
MWO	RR	Hooper	RCSA
MWO	CK	Jenkins	RCSA
MWO	BE	Johnson	1 RCHA
MWO	DM	Larkin	3 RCHA
MWO	TL	Larkin	3 RCHA
MWO	SWJ	Lentle	1 RCHA
MWO	WM	Lunan	4 RCHA
MWO	DB	MacDonald	3 RCHA
MWO	FJ	MacDonald	RCSA
MWO	JAR	MacDonald	2 RCHA
MWO	MN	MacDonald	1 RCHA
MWO	CB	McBay	2 RCHA
MWO	JE	McCabe	RCSA
MWO	BR	McMillan	RCSA
MWO	AE	McTaggart	1 RCHA
MWO	FE	Moss	RCSA

MWO	AJ	Mulherin	Central Ontario District I Staff (M)
MWO	LJ	Nesdoly	3 RCHA
MWO	TW	Niles	4 RCHA
MWO	JCW	Parsons	RCSA
MWO	EE	Patrick	1 RCHA
MWO	RL	Patrick	4 RCHA
MWO	RG	Pyke	RCSA
MWO	RMI	Rhyno	Directorate of Armament Engineering, CFHQ
MWO	HJ	Rice	4 RCHA
MWO	M	Roman	RCSA
MWO	MR	Sauve	RCSA
MWO	R	Sawatzky	1 RCHA
MWO	J	Scully	3 RCHA
MWO	RH	Speare	RCSA
MWO	N	Stammers	3 RCHA
MWO	W	Stephenson	Directorate of Engineering Plans and Co-ordination, CFHQ
MWO	A	Sterritt	4 RCHA
MWO	DC	Thomas	1 SSM Bty
MWO	RL	Thomson	3 RCHA
MWO	WE	Tripp	Assistant Director General Ordnance Systems, CFHQ
MWO	J	Turner	3 RCHA
MWO	GH	Wade	1 Drone Tp
MWO	BB	Walker	Directorate of Policy Implementation, CFHQ
MWO	FH	Walsh	Central Ontario District I Staff (M)
MWO	EE	Wells	1 RCHA
MWO	SG	Williams	Eastern Ontario District I Staff (M)
MWO	SG	Wilt	1 SSM Bty
MWO	CC	Yavis	2 RCHA
MWO	ER	Zecca	CFB Borden
WO	CH	Arnold	2 RCHA
WO	JB	Aucoin	HQ Pacific Region
WO	WR	Bader	RCSA
WO	EG	Barrett	3 RCHA
WO	JM	Brawn	RCSA
WO	DW	Brown	1 RCHA
WO	HC	Clifton	4 RCHA
WO	PE	Fournier	HQ Quebec Region

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WO	FJ	Gardner	RCSA
WO	RC	Goodwin	2 RCHA
WO	JA	Gordon	Central Ontario District Logistics and Administrative Staff (M)
WO	WE	Hebner	Saskatchewan District I Staff (M)
WO	RA	Heitshu	1 SSM Bty
WO	WF	Higgins	CAFATT, Tanzania
WO	CA	Hogan	1 RCHA
WO	EB	Jarvis	3 RCHA
WO	A	Kehler	Alberta District Logistics and Administrative Staff (M)
WO	CK	Kitching	Western Ontario District I Staff (M)
WO	MJ	Landry	Eastern Quebec District I Staff (M)
WO	LP	Leblanc	5e RALC
WO	MA	Lepage	4 RCHA
WO	AM	MacLean	BC District I Staff (M)
WO	RO	MacLeod	2 RCHA
WO	GE	McCormick	Directorate of Engineering Standardization and Services, CFHQ
WO	EJ	Morris	RCSA (PL 7 Course)
WO	GL	Parkinson	RCSA
WO	IB	Parsons	NS District I Staff (M)
WO	WK	Perry	Western Ontario District Logistics and Administrative Staff (M)
WO	RA	Pilch	3 RCHA
WO	WS	Pittman	RCSA (PL 7 Course)
WO	JE	Puff	3 RCHA
WO	EP	Ryan	RCSA
WO	MR	Sabean	RCSA
WO	E	Schoen	RCSA (PL 7 Course)
WO	GW	Schofield	RCSA
WO	EJ	Shouldice	Alberta District I Staff (M)
WO	D	Snell	2 RCHA
WO	KJ	Surrette	RCSA (PL 7 Course)
WO	JR	Villebrun	Western Quebec District I Staff (M)
WO	FG	Wagg	1 RCHA
WO	HS	Walker	RCSA
WO	NW	Watmore	CFB Chilliwack
WO	AT	Wolfe	3 RCHA

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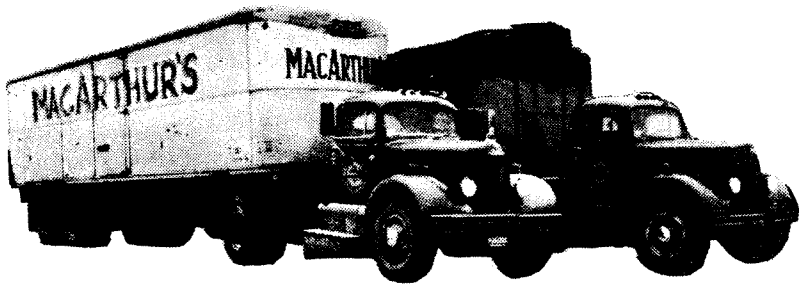

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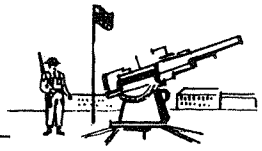
BRANDON

DAILY OVERNITE SERVICE

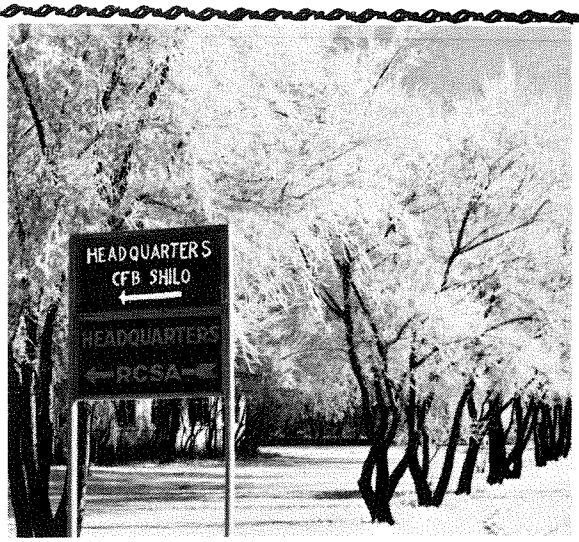
WINNIPEG



SHILO

Interline Service With All Interprovincial and International Carriers Serving Winnipeg

MacArthur & Son Ltd



A familiar locale to most gunners. Junction of Gunner Rd and Aldershot Rd looking East.

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