



THE CANADIAN GUNNER

1970





THE CANADIAN GUNNER

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

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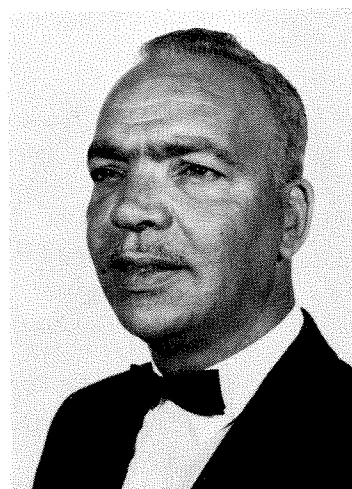
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Message From The Colonel Commandant

As we approach the end of another year in the long history of our Royal Regiment of Canadian Artillery I welcome this opportunity to address a few words to all of you who "serve the guns".

The many adjustments in the configuration of both the Militia and Regular components of our Regiment which have been dictated by the current Forces structure have been carried out during the year with dignity and despatch. While it is natural that we regret the loss of a number of units in both components, we must now look to the future and fulfill with spirit and skill our continuing duties in the defence requirements of our country. The Royal Regiment of Canadian Artillery has always been in the forefront in playing its essential part and will continue to do so.

Of the many events which have taken place within our Regiment in recent months two call for special note. The first took place in Vancouver when the 15th Field Artillery Regiment celebrated the 50th Anniversary of the Vancouver Gunners. The second was the formation of the Peterborough Artillery Association to keep alive

the spirit of the disbanded 50th Field Artillery Regiment so that it will be ready to foster an active regiment whenever the call may come. The Regiment extends its best wishes to the 15th Field Artillery Regiment as it embarks on its next half century, and to the Peterborough Artillery Association in its determination to continue the role of good Gunners and citizens.

Turning to 1971, an event of major significance in the fortunes of Canada requires to be acknowledged when on October 20th the 100th anniversary of the birth of the first of Canada's Regular Armed Forces will occur. On that date in 1871 "A" Battery and "B" Battery of Garrison Artillery and Schools of Gunnery came into being in Kingston and Quebec City with a total authorized strength of 10 officers and 285 other ranks. Our Regiment, and perhaps others, will recognize this historic event.

Finally, a word of appreciation is due from the Regiment to the Editors and staff of The Canadian Gunner and to all who contribute to its content. The Canadian Gunner is an outstanding contribution to the well being of our Royal Regiment of Canadian Artillery. We must ensure it will continue to flourish.



Major General H.A. Sparling, CBE, DSO, CD

H.A. Sparling

Forward From The Director Of Artillery

In my foreword to the 1969 issue of *The Canadian Gunner* I outlined some of the consequences of the major changes which were to come about as a result of force re-structuring. During this past summer the physical changes took place, marked by appropriate ceremonial, and the Regiment now finds itself in its new posture, extremely thin on the ground, and fighting to maintain its standards of proficiency in the face of economic and other pressures. The loss of 4 RCHA, 1 SSM Bty, 1 Drone Tp and the Canadian Forces School of Artillery, all in the course of the past year, has made this struggle extremely difficult.

One of our major problems lies in the need to prevent the loss of expertise in the fields of air defence, locating, missiles, rockets, nuclears and the command and control of formation artillery. Much of this knowledge has already disappeared, but we are trying to retain as much as possible by courses abroad, attachments and exchanges with other armies.

All of the deficiencies previously noted concerning the artillery structure still remain, but it is not my intention to dwell further on them in this piece. Rather, my aim is to outline some of the plus values and offer encouragement to those Gunners who labour faithfully in the service of the Regiment and of Canada.

Perhaps the most noteworthy achievement has been the record of the Artillery in the recent Internal Security operations. All of the Gunner units in Canada with the exception of one battery were committed. As might be expected, artillery units acquitted themselves well and were found highly suited to this task because of their rank structure, communications and mobility. Once again, Gunners proved their versatility and it is profoundly to be hoped that this may result in a growing realization that artillery has a true dual capability which is indispensable to the effectiveness of the armed forces and to the well-being of the nation.

Further in this vein, an awakening of concern is being detected in our sister arms with regard to the need for balanced artillery support for possible future land force operations. There is also a growing conviction that an air defence capability within the land forces is essential.

On the equipment side, artillery units are fortunate in having an inventory which is well-suited to our current needs. We still have an excellent close support weapon in the M109 for mechanized operations, and we have now completed the introduction of the L5 light pack howitzer for our light regiments. In addition, we are gradually acquiring those items of ancillary equipment, such as the gyro orienter, the MV chronograph and improved meteorological equipment, which will improve the speed and accuracy of fire. Items in short supply are mainly common user items which we hope will soon be rectified.

The personnel problem has not yet been resolved as there are still fairly large numbers of trained artillerymen surplus to establishment and this has had an adverse effect on promotion. However, great strides have been made in reducing the surplus by remuster and retirement, and a "trickle" promotion scheme has been implemented which will help to raise morale.



Colonel D.W. Francis, CD

We still have some way to go in settling some of our regimental affairs, including ultimate disposition of the RCA Museum and protection of regimental property of historical and sentimental value. However, these matters are under continuous review and I am confident that suitable solutions will be found. I would hope, too, that ways and means will be found to keep The Canadian Gunner in operation. For this year we are indebted to the Commanding Officer, 3 RCHA for carrying out the duties of Editor and to Commander CFB Shilo for assisting with production.

This past summer has seen the repatriation of the Chief of Artillery from Mobile Command Headquarters to CFHQ and redesignation as Director of Artillery. The wheel has thus come full circle, and DArty's views will be brought to bear at the policy-making level. At the same time, it was with genuine regret that we left Mobile Command, the parent formation of all our units, both regular and reserve, with the exception of 1 RCHA in Germany. A consequence of this move is that future organizational changes in CFHQ are bound to affect DArty and it is difficult at this time to forecast what the ultimate effect may be on the fortunes of the Regiment.

In summary, while it will be some time before full recovery from the effects of re-organization and reduction, the Royal Regiment of Canadian Artillery is well aware of its problem areas and Gunners are striving constantly to put things right. I am confident we shall succeed.

W. B. Pearson
Colonel



DEATH OF THE MASTER GUNNER

Canadian gunners were saddened to learn of the death of General Sir Robert Mansergh, GCB, KBE, MC, Master Gunner of St James's Park, on 8 November, 1970.

Born in South Africa 12 May, 1900 General Mansergh was commissioned in the Royal Artillery from RMA Woolwich in 1920. During the 1930s he served in Iraq with the British Military Mission, winning the Military Cross in the operation in Kurdistan. He was almost continuously on active service throughout the Second World War, mainly in the Middle and Far East. He rose from Battery Commander in Eritrea and Abyssinia in 1940 to become CRA of the 5th Indian Division in the Western Desert. Subsequently he became Commander of this famous division in the Burma Campaign, which ended victoriously in the capture of Rangoon and the liberation of Singapore. At the end of the war General Mansergh went to command the 15th Indian Corps in Eastern Java and was Commander-in-Chief of the Allied Forces in the Netherlands East Indies. From 1947 to 1949 he held important posts at the War Office, then was appointed Commander British Forces, Hong Kong. He became Deputy Commander-in-Chief, Allied Forces, Northern Europe in 1951 and two years later became Commander-in-Chief.



It was in his honorary appointment as Master Gunner of St James's Park since 1960 that General Mansergh was best known to Canadians. He was especially interested in strengthening Commonwealth ties and this he achieved by maintaining a close contact with members of the Royal Regiment all over the world. His visit to Canada in 1962, which took him from coast to coast, not only gave him an insight into the Canadian Gunner scene which was unique, but cemented a personal relationship between himself and Canadian Gunners which lasted until his death. Typical of his charm and interest was the warm welcome given members of the Royal Canadian Artillery Association and their wives who made a trip to England in 1964.

General Lord Bourne writes in the London Times:

"Bob Mansergh was much more than an ordinary man. Humility and modesty were the characteristics we best remember about him. Nothing was ever too much trouble and he treated all, great and small, as equally important.....He believed utterly in the values of loyalty and service.....He was at his best in the 250th Anniversary celebrations in 1966 when men from all over the world came largely to meet again the Master Gunner whom they knew well."

The following message was forwarded to the Director Royal Artillery by the Director of Artillery:

"Colonel Commandant and all ranks Royal Regiment of Canadian Artillery send sincere condolences on the death of the Master Gunner General Sir Robert Mansergh."

On Friday, 11 December, 1970, a memorial service for General Mansergh was held at Westminster Abbey. The Royal Regiment of Canadian Artillery was represented by the Director of Artillery, Colonel D.W. Francis, CD and by Lieutenant-Colonel J.D. Crowe, MC, CD. This service, moving in its simplicity and beauty, was a fitting tribute to a great gunner whose ashes, by his request, are to be scattered over the Larkhill ranges from an Air OP aircraft.

editorial fallout

- The Editorial Staff offer no apologies for the delay in production of the 1970 edition of the Canadian Gunner. The varied commitments of a field unit have continuously interfered with their activities, and difficulties were encountered in finding a suitably qualified varitypist when the production stage was reached. It is hoped that our readers feel the final product justifies the delay.
- Again the Editor would like to urge all officers and senior NCO's to submit articles for the 1971 Edition of the Canadian Gunner. Feature articles are somewhat difficult to procure, and the more voluntary submissions the editors receive the easier their task is. This year we once again have been extremely fortunate in that our feature articles are all interrelated and are of a high calibre both from a professional interest and a "reader" point of view. But as you read, think about what articles you could pen, what contribution you could make to a CORPS journal.

Publishing an annual journal is a costly undertaking, and in the final accounting publishing costs are usually several hundreds of dollars in excess of revenues. Accordingly there are two alternatives open to us: firstly, reduce production costs so that they do not exceed revenues, or secondly, increase revenues. (This is working on the assumption that a Professional Journal has a place in a re-organized and re-structured force no matter what the cost implications.) To reduce production costs to cover revenues would result in an annual journal of about sixty-pages, thereby reducing content and reader appeal, restricting the "professional" aspect of the book and certainly limiting the future of The Canadian Gunner. The second alternative, to increase revenues, would appear to be the only viable alternative; but how? Not by increasing Officer subscriptions to the RCANPP Central Fund, but by an increase in the amount of advertising carried in the book. For years now, Brandon has been footing 80% of the production costs for the book, even though there must be retail outlets near every other Artillery unit in Canada who occasionally advertise somewhere.

Thus the task is clear: seek advertisers for the Canadian Gunner. And once an entrepreneur has advertised, patronize him and tell him why you are in his store. With a little foot-slogging and a few direct questions, OUR revenues could sky-rocket. Who knows — perhaps the time will arrive when this book will cost "you" nothing. Help us to help yourselves.

- The Committee appointed to judge the 1970 COLONEL GEOFFREY BROOKS MEMORIAL ESSAY COMPETITION was of the opinion that the entries did not meet the required standard. Consequently, in accordance with the competition rules, no prizes have been awarded.

Entries were very limited in number and the main weaknesses noted were lack of fully developed arguments and failure to carry these arguments through to logical conclusions.

The subjects for the 1971 competition, as shown on the opposite page are considered to be topical and do not require a specialists' knowledge. All officers are encouraged to enter this competition in the hope that an increased number of entries will be received for 1971.

- The Editors would like to acknowledge a special debt to Colonel L.C. Baumgart, Commander of CFB Shilo, whose interest, encouragement and advice has contributed much to this publication.



The Colonel Geoffrey Brooks Memorial Prize Essay Competition

1971 TOPICS

- (1) *During the emergency in Canada in 1970 artillery units were widely employed in Internal Security operations. Comment on this task, its possible effect on future structure of the forces in general, and its possible effect on the organization, training and equipment of artillery in particular.*
- (2) *In the Canadian Forces in the 70s the effects of unification and modern concepts of management appear to denigrate the need for the corps and regimental system. Indeed, it has been suggested that the time is perhaps not far off when existing corps and regiments should be disbanded in favour of a "Combat Corps" comprised of individual specialists such as Crewmen, Artillerymen, Infantrymen, etc. Analyze this concept and its implications. Discuss its probable effect on the ability of the Armed Forces to fulfil their present and future roles.*

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 Reserve Officers University Training Plan, who have completed their first phase of training and who have selected the Royal Canadian Artillery as their corps.

RULES

Any one of the above subjects may be chosen.

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 Curator, RCA Museum, CFB Shilo, Manitoba, and marked "The Colonel Geoffrey Brooks Memorial Prize Essay Competition" on the envelope. They must reach the office of the Curator by 30 September 1971.

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 nor 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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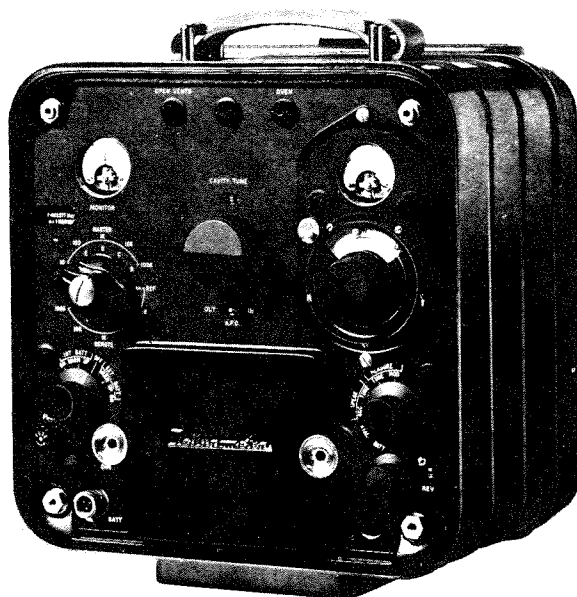
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A Study In Response Times For A Field Battery

by
Major D.B. McGibbon

"The Guns are slow this morning!". In fact, the guns are not slow this morning — they fire the projectiles at about the same speed each day. However, the system of responding to the call of fire may be causing a slow response — the gunners had a bad night, the technicians' fingers froze on the pencils, or perhaps the GPO's tongue got twisted around the microphone. Some have gone so far as to suggest that our procedures may be late Salvation Army or early depression!

Many technological break-throughs have taken place in the last twenty years. Was it only last year that man walked on the moon? Perhaps it is time that we took a fresh look at our procedures in the field artillery, and, applying a different approach, see if we can improve system effectiveness.

The response times of artillery units has always been vitally important. In many cases, the fastest times possible have been reached with present equipment and procedures. However, these times may not be fast enough for mechanized warfare, especially where we are required to hit a moving target.

How may response times of field artillery be improved? A study in detail of present methods of answering calls for fire is necessary in order to ensure that the best benefits may be achieved from future developments. 'Pet' theories of 'gunners', although they may be correct in part, cannot be applied until a study is made of the full spectrum of response times.

This paper will deal primarily with response times of a field battery. By applying the same principles, larger units could be assessed in a similar manner.

AIM

The aim of this paper is to suggest ways of improving the response times of a field battery.

ARTILLERY REQUIREMENTS

To engage mobile hard targets our field artillery must have improved characteristics. Probably the most important requirement is to neutralize tactical groups of Armoured Fighting Vehicles (AFVs) moving cross-country at about 15 miles per hour or 400 meters per minute. If we can do this, then we will also be able to engage stationary targets more rapidly and effectively than we do today.

The requirement, then, is to neutralize moving targets of AFVs with rounds of effective fire. In order to do this we must have:

- Minimum response time
- Anti-AFV ammunition

This paper deals only with the response time aspects of this problem.

RESPONSE TIME

For the purposes of this paper I am going to define what I consider to be response time. The reader should note that the meaning of 'response time' varies widely from person to person and from manual to manual. In broad terms, response time is the time interval between the Commander requesting a fire mission and the fire-power being provided in a useable form. More precisely, response time is defined as the time from target acquisition (i.e. when the decision to engage is made) to the time that the first rounds of fire for effect arrive on the target.

Assuming a target speed of 400 meters per minute, it can be shown that for most types of terrain the observer must have the ability to place effective fire on the predicted location within 90-120 seconds. Therefore, the required response must be as fast as possible but must be less than two minutes to be effective against a moving target. This time can be mooted, but it is based on studies of exposure time of targets. These studies are outside the immediate interest of this paper.

PERFORMANCE EVALUATION REVIEW TECHNIQUE (PERT)

In preparing my analysis, I have developed a series of PERT/TIME diagrams to make assessments of present and proposed methods of answering calls for fire. Time durations for each activity, as developed for subsequent discussion, are predicted averages in seconds. They are a combination of optimistic times, most likely times and pessimistic times. Wherever possible time measurements for the different activities, as we know them today, have been made with a stop-watch, otherwise they are estimates.

Computation of the response time for each example is carried out in the following manner:

- A PERT/TIME diagram is developed and the critical path is analyzed in accordance with methods described above. The critical path is an unbroken series of activities through the diagram in which the activity durations occupy the entire time frame between the observer initiating the engagement and effective fire arriving on the target. In order to reduce the length of this article PERT/TIME diagrams have not been reproduced.

In analyzing the PERT/TIME diagram, the response time has been broken into six different areas of interest. By doing this, percentage calculations can be made to determine where the most likely improvements can be made: 1

- OP Drills
- Communications from OP to Battery Command Post (BCP)
- Computations at the Gun Position
- Communications from BCP to Guns
- Activity at the Guns
- Time of Flight



Note 1: Where more than one activity takes place during the same time duration, the different areas of responsibility concerned are allotted proportionate parts of the time for that duration. In this way, balanced scores for each area of interest are achieved.

CHANGES FROM NORMAL

Two important changes have been made to the basic equipment and organization for subsequent discussion. These are the inclusion of a battery command post computer, and the exclusion of the troop command posts in the fire control sequence.

I do not wish to dwell on the arguments in support of a computer, for I feel that it is just a matter of time and/or money until we have computers operational in our artillery. Nevertheless, the computer is a necessary part of subsequent arguments for the fast handling of data and and 'on line' input/output devices for target and firing data. A latter article in this issue discusses various aspects of computerized fire control.

By including a computer at the battery level, it is difficult to argue in favour of retention of troop command posts. It is difficult not to become emotional of this problem, but to retain troop command posts to act as 'relay stations' for data transfer is hard to substantiate. By deleting the troop command posts and 'beefing up' the battery command post staffs, the computer can indeed be cost-effective. Here again, it may be necessary to consider a restructuring from the two eight-gun batteries per regiment to three six-gun batteries per regiment. These are major considerations in times of manpower shortages.

THE SIMPLE CONTROLLED SHOOT (SCS)

As a basis for subsequent comparison, I have developed a PERT/TIME diagram for a simple controlled shoot, as it exists today, except that a computer has been included at the battery command post and the troop command posts have been deleted from the fire control sequence. The shoot can be broken down as follows:

- Initial Orders: Time from target acquisition to time the first round arrives in the target area.
- Adjustment: Typically, four rounds.²
- Fire for Effect: Six (or eight) guns fire.

A breakdown of the times for the different areas of interest for the simple controlled shoot are shown in Table A.

DISCUSSION - SCS

The response time for this simple case is 526 secs, or very nearly nine minutes. This represents the average time today for effective fire to be brought to bear against a stationary target.

Time of flight represents 34% of the response time. Because it is necessary to fire, on the average, five rounds prior to FFE, there is a "multiplication effect" on the response time. Therefore, to reduce the time of flight the highest charge possible should be fired and, within reason, deployment should be as close to FEBA as possible. It is also apparent, and perhaps more important to note, that as long as present adjustment procedures are maintained, the requirement for a fast response time (i.e. under two minutes) for effective fire cannot be met.

Time for communications from the OP to the BCP and from the BCP to the Guns represent 40% of the response time. By using different methods of data transmission, it should be possible to significantly reduce the time necessary to communicate. The first two development stages will deal with possible ways of improving communications through the introduction of data links.



Note 2: I have assumed that the observer would normally make one correction on to the line "observer-target", then three adjustment rounds, giving him a positive bracket of ± 100 meters (or ± 50 meters), to be split, prior to ordering fire for effect.

TABLE A

RESPONSE TIMES - SIMPLE CONTROLLED SHOOT						
SERIAL	AREAS OF INTEREST	TIME FOR INITIAL ORDERS (SECS)	TIME FOR EACH ADJUSTMENT ROUND (SECS)	TIME FOR FFE (SECS)	TOTAL TIMES (SECS)	PERCENTAGE OF TOTAL %
1.	OP Drills	30	5	5	55	10
2.	Communications OP to BCP	50	10	10	100	19
3.	Computation	15	(0)	(0)	15	3
4.	Communications BCP to Guns	35	10	31	106	21
5.	Activity at Guns	20	10	10	70	13
6.	Time of Flight	30	30	30	180	34
	TOTALS	180	65	86	526	100

FIRST DEVELOPMENT STAGE

The importance of good communications has been, is, and will continue to be, of paramount importance to gunners. If we cannot communicate on the battlefield, then we cannot respond to requests for fire.

Our present means of communicating by voice may be adequate only under certain battlefield conditions. I seriously question our means to communicate in a hostile electronic environment. The use of voice in this type of warfare will be very inefficient, and may prove impossible. There are, however, means of improving our communications, especially the critical parts, so that our chance of success in "burning through" a message under difficult conditions is possible.

By using a data link and coded message, we can greatly increase the probability of success in our communications. For example, this type of system tends to defeat noise, requires about 1/10 of the bandwidth required for voice and automatic encoding is possible, if required, for security. In addition, the time required to transmit such a message is greatly reduced, and can be designed to be self-checking so that no check-back of information is required.

The first development stage consists of the introduction of a BCP to gun data link. Normal mode of operation sees azimuth, quadrant elevation and fuze settings passed from the BCP to each gun by line, although radio would be possible for initial deployment or in situations where line is not practical.

Times for the different areas of interest for the first development stage are shown in Table B.

TABLE B

RESPONSE TIMES – FIRST DEVELOPMENT STAGE

SERIAL	AREAS OF INTEREST	TIME FOR INITIAL ORDERS (SECS)	TIME FOR EACH ADJUSTMENT ROUND (SECS)	TIME FOR FFE (SECS)	TOTAL TIMES (SECS)	PERCENTAGE OF TOTAL %
1.	OP Drills	30	5	5	55	13
2.	Communica- tions OP to BCP	50	5	5	75	17
3.	Computation	10	6	6	40	9
4.	Communica- tions BCP to Guns	12	1	6	22	5
5.	Activity at Guns	10	10	10	60	14
6.	Time of Flight	30	30	30	180	42
	TOTAL	142	57	62	432	100

To the astute reader, there may appear to be anomalies for the times shown from development to development. For example, the time of 15 secs shown for computation in the first column of Table A changes to 10 secs in the first column of Table B. The explanation for this is that the critical path has changed from the simple controlled shoot to the First Stage, and as a result the weighted score (see Note 1) has changed. This happens frequently throughout the Stages of Development and is not to be thought of as a fudge factor to make later development times more attractive.

DISCUSSION – FIRST STAGE

By introducing a data link between the BCP and the guns, a saving of 94 secs in time is predicted. This represents an 18% improvement over the simple controlled shoot.

SECOND DEVELOPMENT STAGE

The second development stage consists of the introduction of an OP to BCP data link. (OPDL), as well as the BCP to gun data link, introduced at stage one. Compatible with present ABCA Fire Discipline procedures, information would be passed from the OP direct to the BCP, where the fire orders would be printed out on a teleprinter type device. Information so received could be fed into the computer either manually or direct by punched tape. It would be advantageous to have the BCP end of the data link "on line" with the computer. In this manner, information could be fed directly into the computer from the OP, following radio transmission.

The functional ability of such a system is unlimited. The FOO could flick to regimental or higher net, as required, and have the capability of engaging a target using the OPDL. Essential orders could be encoded and supplemented, where necessary, by voice. The encoded message would carry sufficient information to be an executive order to fire the guns. Then in times of difficult communications or electronic jamming, the data link, by its inherent nature, would have a better chance than voice of a successful engagement by the guns. Additionally, the OPDL would be capable of passing fire plans.

Within each battery, it is necessary that the BC know target information being passed from the OPs. This is the "management by exception" concept, where the BC must be given the target information but would only take action when appropriate. By using data links, the information would not readily be available to the BC, unless he was equipped with a teleprinter type device, similar to that used in the BCP. This is not a practical solution. However, for first generation equipment it should suffice to have the BCP signaller read the information back from the BCP, when received. It can be shown that this activity does not enter the critical path of the PERT diagram yet offers the BC the capability of command override, when necessary, and includes the concept of the independent double check.

Table C shows a breakdown of the times for the different areas of interest.

DISCUSSION - SECOND STAGE

The response time for the second development stage, which includes a BCP to gun data link, and the OPDL, is 385 seconds. This represents a saving of 141 seconds (or 27%) over the original simple controlled shoot.

THIRD DEVELOPMENT STAGE

In the first two stages of development, data links were introduced to optimize the system response. This was done, but the response time still remained too long for our purposes. The next area to develop, therefore, is the means of target acquisition at the OP. As previously discussed, and appreciated by gunners, the weakness lies in the present way of adjusting fire. The present method is proven and tried but too slow for a fast response of effective fire. A better means of target acquisition is required and to this end, the following changes are introduced:

- the observer has the means to accurately locate and orient himself (e.g., NavAid)
- the observer has the means to accurately measure the distance from his own location to the target (e.g., by the use of a laser rangefinder).

For this part of the development there is no time allotted for adjustment fire; the first rounds fired at "in effect". However, two cases are developed:

- First Case.-Information in range and azimuth is converted to a grid reference by the observer.
- Second Case.-Information in range, bearing and angle of sight is sent directly from the OP to the BCP, as received from the laser range finder.

The response times for the third stage are as shown in Table D.

TABLE C

RESPONSE TIMES – SECOND DEVELOPMENT STAGE

SERIAL	AREAS OF INTEREST	TIME FOR INITIAL ORDERS (SECS)	TIME FOR EACH ADJUSTMENT ROUND (SECS)	TIME FOR FFE (SECS)	TOTAL TIMES (SECS)	PERCENTAGES OF TOTAL %
1.	OP Drills	45	8	9	86	22
2.	Communi- cations OP to BCP	2	1	1	7	2
3.	Computation	15	4	4	35	9
4.	Communi- cations BCP to Guns	12	1	1	17	4
5.	Activity at Guns	10	10	10	60	16
6.	Time of Flight	30	30	30	180	47
	TOTAL	114	54	55	335	100

TABLE D

RESPONSE TIMES – THIRD DEVELOPMENT STAGE

SERIAL	AREAS OF INTEREST	TIME FOR FIRST CASE (SECS)	PERCENTAGE OF TOTAL %	TIME FOR SECOND CASE (SECS)	PERCENTAGE OF TOTAL %
1.	OP Duties	35	33	25	26
2.	Communications OP to BCP	2	2	2	2
3.	Computation	16	15	16	17
4.	Communications BCP to Guns	12	11	12	13
5.	Activity at Guns	10	10	10	10
6.	Time of Flight	30	29	30	32
	TOTALS	105	100	94	100

DISCUSSION - THIRD STAGE

Response times for the third stage, are:

-first case - 105 secs

-second case - 94 secs

It is seen that the times predicted for the third development stage meet the required response time. ⁴It therefore appears that in order to meet the required response time of two minutes, the observer must be equipped with NavAid and laser range finding type devices.

REAL LIFE - THIRD DEVELOPMENT STAGE

The third development response time depends on "the first round hit". However, in many cases this may not be the case. Inaccuracies in meteorological conditions, NavAid and other reasons, such as movement of the target, combine to give opening rounds that must be adjusted prior to effective fire.

It is, therefore, very important to equip the observer with a range finding device that can accurately locate azimuth, angle of sight, and the distance from observer location to the mean point of impact (mpi) of the opening rounds. From this information, the firing data could be corrected so that effective fire could be brought to bear immediately against the target.

Table E shows times for the Real Life/Third Stage, where one adjusting round is required.

DISCUSSION - REAL LIFE THIRD STAGE

The response time for this stage is 149 secs. Hopefully, the adjusting round would not be required but where necessary the observer has the ability to correct the mpi for effective fire.

By equipping the observer with a NavAid and a laser range finder he can call for fire, say with one check round. If the round (or rounds) are on the target, he can go directly into fire for effect; if a correction is required, he can issue it, and go into fire for effect. This means that four rounds on the average can be saved for each target. Savings are made then in response time and in ammunition requirements. This latter saving may have important training and financial considerations.

FOURTH DEVELOPMENT STAGE

In the first three stages, introduction of equipment was piecemeal. Although compatible with present equipment, response times would not necessarily be optimum.



Note 3: The two cases are developed to show that there is a significant difference in response time for each case. It is perhaps as important to note that the second case is inherently more accurate and lends itself readily to automation.

Note 4: Both cases of the third development include the first and second developments.

TABLE E
REAL LIFE – THIRD DEVELOPMENT STAGE

SERIAL	AREAS OF INTEREST	TIME FOR FIRST ROUNDS (SECS)	TIME FOR ADJUSTMENT FIRE (ONE ROUND) (SECS)	TOTAL TIMES (SECS)	PERCENTAGE OF TOTAL %
1.	OP Duties	25	8	33	21
2.	Communications OP to BCP	2	1	3	2
3.	Computation	16	4	20	14
4.	Communications BCP to Guns	12	1	13	9
5.	Activity at Guns	10	10	20	14
6.	Time of Flight	30	30	60	40
	TOTALS	94	54	149	100

Looking into the distant future, it is possible to predict that a full new generation of equipment could be introduced to optimize response times and enhance all interfaces. To this end a PERT/TIME diagram was developed to integrate all the above stages. The system works as follows:

The transfer of all information is completed automatically, and the use of voice is minimized. The observer, using laser equipment would focus on the target, check the information for rough accuracy, and push a transmit button. The information would be routed directly to an available fire unit, where the information is received, calculations made automatically and firing data transferred to the guns. Wherever possible, the man is taken out of the system, however he still controls the firing and must give the executive order to "FIRE".

Table F shows the predicted times for a fully integrated system.

DISCUSSION-FOURTH STAGE

A Response time of 65 seconds is predicted for the fully integrated second generation equipment. If time for adjustment of 54 seconds (the same as for second development stage) is predicted, it is seen that the response time becomes 119 secs. It is, therefore, theoretically possible to fire a battery of guns, correct the mpi on to the target and fire for effect in under the required time of under two minutes.

SUMMARY OF RESULTS

Results of the development stages are summarized in Table G.

TABLE F

FULLY INTEGRATED SECOND GENERATION EQUIPMENT

SERIAL	AREAS OF INTEREST	TIME FOR ROUNDS OF FFE (SECS)	PERCENTAGE OF TOTAL %
1.	OP Duties	20	31
2.	Communications OP to BCP	2	3
3.	Computation	1	2
4.	Communications BCP to Guns	2	3
5.	Activity at Guns	10	15
6.	Time of Flight	30	46
	TOTALS	65	100

ACKNOWLEDGEMENTS

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- b. LCol B.C. Baynham, RA.
- c. Mr. W.A. Sutherland, RARDE.
- d. Maj J.K. Robertson, RCA.
- e. Officers, First Regiment, Royal Canadian Horse Artillery, Soest, West Germany.

GLOSSARY OF ABBREVIATIONS

AFV	Armoured Fighting Vehicle
BCP	Battery Command Post
FEBA	Forward Edge of Battle Area
FFE	Fire for Effect
FOO	Forward Observation Officer
mpi	mean point of impact

AFV	Armoured Fighting Vehicle
NavAid	Navigation Aid
OP	Observation Post
OPDL	OP to BCP Data Link
PERT	Performance Evaluation Review Technique
SCS	Simple Controlled Shoot

REFERENCES

- A. CFP(2) Network Analysis for the Canadian Forces Volume 2 Handbook
December, 1967.

TABLE G

SUMMARY OF RESULTS

SERIAL	DEVELOPMENT STAGE	RESPONSE TIME (SECS)	MEETS REQUIRED RESPONSE TIME OF 120 SECS	REMARKS
1.	Present system	526	No	<ul style="list-style-type: none"> a. Simple controlled shoot. b. Battery level response. c. Times greater when each gun requires different azimuth, elevations and fuze settings. d. To reduce this response time, always fire the highest possible charge.
2.	First development	432	No	<ul style="list-style-type: none"> a. Consists of BCP to data link. b. Represents 18% improvement over serial 1.

TABLE G
(cont)

3.	Second development	385	No	<ul style="list-style-type: none"> a. Includes serial 2. b. Consists of OP to BCP link. c. Represents 27% improvement over serial 1.
4.	Third development			<ul style="list-style-type: none"> a. Observer equipped with Nav-Aid and laser range-finding type devices. b. First rounds "in effect". c. Case one. Observer sends grid of target. d. Case two. Observer sends AZ, range and A/S "as is" to CP. e. Yes * only if adjustment not required.
	a. case one	105	Yes *	
	b. case two	94	Yes *	
5.	Real life third development stage	148	Marginal	<ul style="list-style-type: none"> a. Same system as serial 4 except that observer has ability to adjust fire with rangefinder. b. Time shown includes one adjustment round.
6.	Fourth development stage	65	Yes	<ul style="list-style-type: none"> a. New or second generation equipment. b. If adjustment required add 54 secs to response time. c. Meets requirement in all cases.



BELL TELEPHONE, BILINGUALISM
AND THE CAF (TOGETHER?)

Every now and then, and we admit it is usually "then", someone, somewhere, dares to stand up and be counted. After that the individual usually resembles "a rocket" he either goes shooting straight up or, more commonly, flames out and is never heard from again. We leave this one up to you. The subject is obvious, the two main characters being a naval vessel (HMCS OTTAWA) and our "hero" in Halifax:

WIRE FM OTTAWA

TO RCWC/CANFORCEHED

INFO RCEPH/CANFLTSCOL HALIFAX

UNCLAS

SUBJECT: HIGHER TRADES TRAINING PL 4 BOSN 181

REF: A. CFAO 49-4

B. YOUR DPCSE SOM 2154 962047Z

1. THE FOLLOWING MEN ARE RECOMMENDED FOR PL 4 TRAINING

(-)

(-)

(-)

ETC.

2. SINCE THE ABOVE NAMED CANDIDATES ARE FRANCOPHONE REQUEST THEY
BE TRAINED IN CANFLTSCOL HALIFAX.

REPLY: FM CANFLTSCOL HALIFAX

TO RCEDEE/OTTAWA

INFO RCCWC/CANFORCEHED

UNCLAS CMT 363 CFHQ FOR DPCSE/SOM

SUBJECT: HIGHER TRADES TRAINING

1. AT PL 4 WE USE ENGLISH FOR FRANCOPHONES, ANGLOPHONES, MICROPHONES,
TELEPHONES, SAXOPHONES, GRAMOPHONES, XYLOPHONES, DIAL-O-PHONES,
PRINCESS PHONES AND HYDROPHONES.



NORTH-WEST EUROPE

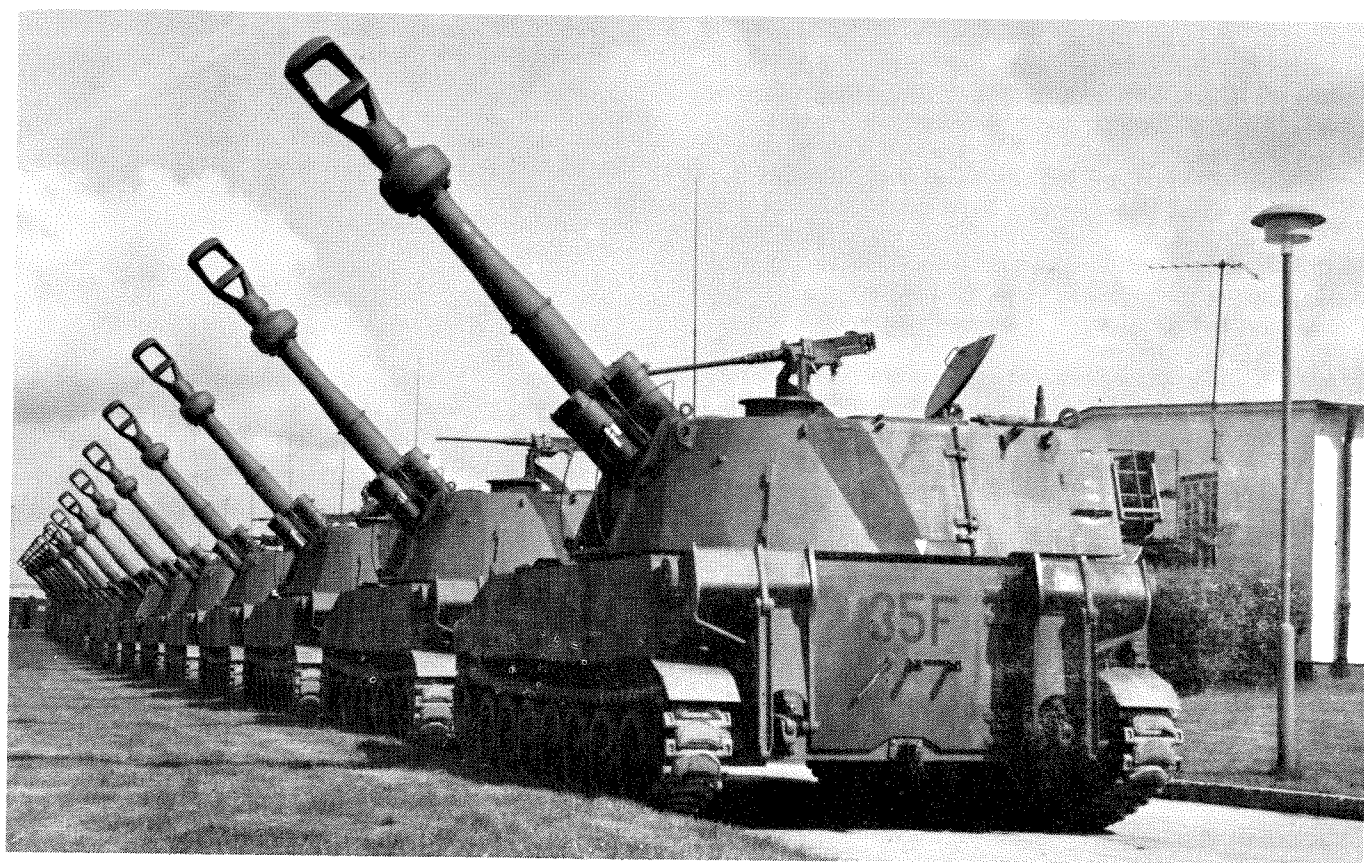
1 RCHA

**Firing Exercises
Higher Formation CPX's
MGen Stovel Visits 1 RCHA
A Reorganized Regiment
A Royal Regimental Farewell
Move To Lahr
A Gunner Farewell
Vimy Ridge
-Guard Of Honour**

1 SSM

**Training Exercises
Closing Up Shop
Parades And Presentations
In Summation**

1 RCHA



FIRING EXERCISES

A series of battery live firing exercises named BRASS HAT were conducted at Munsterlager South from 31 January to 21 February to allow each battery to experiment with and test their new organization and resulting changes in drills and procedures. The organization proved sound although each battery decided on a different method of employing or deploying the second command post vehicle.

At the regimental Gun Camp conducted on Hohne and Munster South Ranges from 3-22 May, the regiment successfully accomplished several aims:

- a. To test the new SP Regiment establishment of three six-gun, single CP batteries and a greatly reduced RHQ (see accompanying article);
- b. To train and practice supported arms personnel of 4 CMBG in the formations' Indirect Fire Support System (article in 1969 edition of The Gunner); and
- c. To complete the annual competition for the Elkins Trophy.

The first week of the camp was devoted to firing practices (by B Bty, with 105mm Hows C1) for MFCs, helicopter pilots and observers, and recce squadron personnel, who were ably tutored by all of the BCs and TCs. Although many delays in firing due to range fires slowed events, seventy-four ground types and five pilots demonstrated adequate fire control knowledge and skill to effectively call for and direct the fire of the guns.

During the second week, following one day spent completing the Quick Action and Direct Fire portions of the Elkins Trophy competition, each battery conducted independent dry and live practices in exercise “*Rolling Stone*”. They thoroughly tested the new SOPs, movement, deployment and technical drills whilst rolling over the Gasthaus – ringed, sign – posted Outside gun areas and villages and the track – torn, tank – strewn, sometimes reforested Inner gun and impact areas. Two evenings were also spent providing 105mm illumination for the LdSH(RC) tank firing exercises. Although the gun – end officer slate in the new organization appeared fat, the demands of safety for SP guns in Germany soon pared it down to produce the normal “almost nobody sleeps” exercise situation.

After having trained and practiced separately, the batteries and their affiliated mortar platoons were combined for the fast paced demanding four day regimental exercise "*Steel Ball*", under the soothing whip of the CO. Two commodities were notably bountiful - IG assistance (one IG and two AIGs from CFSA and one of each (Br) from Hohn) and heavy ammunition.

A long tactical night move began the fun and was followed by a rapid series of FMs Regiment and lower, fire plans and deployments. All were made more interesting by the continual aggressive behaviour of a live enemy force which had an uncanny knowledge of routes, gun position locations and

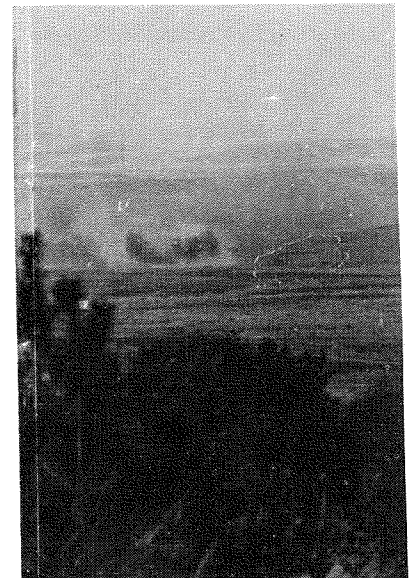
which OP party was currently initiating a call for fire. Throughout the exercise, the fire of the mortar platoons and gun batteries was coordinated at the FSCCs and controlled by both MFCs and OPs. They were fully integrated in both battery and regimental fire plans to provide an impressive weight and flexibility of close support fire. The success of this integration was equally apparent in both the fire and movement phase and the final day of static technical shooting.

This period of intense and demanding activity afforded the CO and the Gunnery Staff an excellent opportunity to fully assess each battery for the final portion of the Trophy competition -- overall operational performance.

All shared the satisfying feeling that by the end of this gun camp the unit had withstood a very rough and thorough test which conclusively proved it capable of continuing, in its new form to provide 4 CMBG with timely and accurate fire support of considerable weight and effectiveness.

Exercise "May Fly" is an annual Corps Artillery fire planning exercise conducted by the CCRA 1 (BR) Comps. It was conducted this year on 27 and 28 Jul at Munster South ranges with the following grouping (Air Def not included):

HQRA 1 (BR) Corps with Under Comd
1 Arty Bde with Under Comd
20 Hvy Regt
32 Hvy Regt
94 Loc Regt — notional less one
met tp deployed
100 Med Regt — notional



- 1 DIV with
 Under Comd
 4 Fd Regt
 26 Fd Regt
 45 Med Regt
 39 Msl Regt — notional

 In Sp
 1 Arty Bde
- 2 DIV with
 Under Comd
 1 RCHA — (replacing 2 Fd Regt in
 normal orbit)
 40 Fd Regt
 50 Msl Regt — notional
 101 Med Regt — notional

 In Sp
 1 Arty Bde
- 4 DIV with
 Under Comd
 1 RHA
 19 Fd Regt
 27 Med Regt
 24 Msl Regt — notional

 In Sp
 1 Arty Bde

All firing units deployed two guns, one Bty CP, and a Regt CP, and each field and medium regiment deployed one BC and one FOO. One unit per division supplied a CO and Tac HQ — 1 RCHA did the honours for 2 DIV last year so 40 Fd Regt RA provided this time. In order to preserve 155mm ammunition for the CRA 2 DIV exercise in Sep (unfortunately, subsequent developments in the move to Lahr precluded the regiment's participation),

we took four 105mm hows C1. C Battery was tasked for the gun group, BC and FOO. Although not required for the exercise, LCol Calnan attended as an observer on this last opportunity, in the foreseeable future, for a Canadian regiment to participate in this type of exercise—and to reassure itself first-hand that the “system” really works.

We carried out unit CPXs and communications checks on 26 Jul. A short briefing that day by the BMRA was followed by a divisional CPX, which was an invaluable opportunity to sort out inevitable funnies and to get used to each other's voices and procedures on the secure CRA's net.

For the next thirty-six hours everyone did it: the BC and FOO were shouting “FM Div” and “FM Corps” — and meaning it!!!; we kept track of who was who and where as units came and went from the CRA's net in support of various formations and operations; circulated target records to up to nine other units; adjusted for, and fired on, division and corps fire plans; and, concluded the exercise with a classical ploy — continuous fire on a FM battery.

The value of the exercise as a teaching vehicle for formation staffs and firing units, and as a test of the coordination and direction of fire procedures within the corps artillery, is inestimable. The sense of well-being and confidence in the unit's and formation's operational capability to provide effective and heavy fire support, resulting from such an intense period of learning and practicing procedures above the unit level, is seldom achieved. It is no small thing that we might not have such an opportunity again.

HIGHER FORMATION CPX's

Between January and June of this year, the First Regiment participated in seven higher formation CPXs. As noted in the previous issue, 4 CMBG had participated in its final FTX in October 1969 — the Corps inspired Exercise “*Marshmallow*”. But the winter and spring period produced the inevitable series of Brigade, Division and Corps CPXs that were inserted around and during the two Regimental Gun Camps in Feb and May.

Over the years, the pattern of the exercises has been fairly constant — the Brigade employed in a defensive posture, prepared to hold or to form all or part of a coordinated counterpenetration or counter-attack force. The interim phase (between 1 July and 1 October), a change in role in CENTAG, and the implications of the “new look” 4 Canadian Mechanized Battle Group that came into effect 1 Jul, provided room for fresh thought. Exercise

“*Merry Fiddler*”, a three day exercise in May, placed 4 CMBG in a rear area security role with a variety of tasks. These included counter airborne, the defense of river crossings and counter attack and counter penetration roles. The area between Ludenscheid and Koln was employed and proved a relief to those familiar with the otherwise delightful Hameln-Hannover landscape. The Commanding Officer and his Tactical Headquarters attended all exercises as part of HQ 4 CMBG. Normally, officer controllers were provided by the Regiment to simulate the Regimental or a CRA/CCRA Net on 4 CMBG CPXs.

After 1 Dec, when 4 CMBG is operational in the Lahr/Baden Solingen area, a new series of CPXs will be initiated. In the new year our first such exercise will begin with CENTAG.

MGEN STOVEL VISITS 1 RCHA

Major General R.C. Stovel, accompanied by Brigadier General J.C. Gardner, then Commander of 4 CMBG, visited 1 RCHA on 2 April for a briefing on the new unit establishment.

Following an introduction to the background of our re-organization, LCol M.D. Calnan, CO 1 RCHA, escorted MGen Stovel and his party to the parade square where "A" and "C" Batteries were formed up: the former in our new establishment and the latter in the old.

From this demonstration MGen Stovel was able to see first hand the changes in establishment and the requirements in garrison accommodation for a mechanized artillery regiment's men and equipment.



A REORGANIZED REGIMENT

On 1 July 1970, 4 Canadian Mechanized Brigade Group (4 CMBG) was redesignated 4 Canadian Mechanized Battle Group (4 CMBG). This event culminated a planning and reorganization period begun in September 1969, when the Commander returned from CFHQ with instructions which resulted in the loss of one battalion and substantial reductions in personnel and equipment for other Land Force units in North West Europe.

Included within this instruction was a proposed establishment for 1 RCHA, (Diagram 2) prepared by CFHQ. In general terms, the major changes from the old establishment (Diagram 1) were as follows:

- a. A reduction from three 8 gun batteries to two 6 gun batteries; and,
- b. A personnel reduction from 48 officers and 679 other ranks to 37 officers and 428 other ranks.¹

Needless to say, there were serious reservations regarding what appeared to be severe limitations in the CFHQ proposal. First, the manpower reductions were largely accomplished (in addition to the loss of a battery) by further restricting certain establishment positions. Due to the operational readiness requirements in NWE, such restrictions seemed unacceptable. Second, the reorganization of 4 CMBG and resultant loss of one battalion still left the proposed regiment with a requirement to support up to three battalion groups (there is a significant difference in formation terminology used in 4 CMBG and in Canada i.e., Battle Group (4 CMBG) = Combat Group (Cda), and Battalion Group (4 CMBG) = Battle Group (Cda)), including the armoured regiment. It was not at all certain that another fire unit would be available in

CENTAG as it had often been in NORTHAG.² Third, the new role in CENTAG involved rear area security, flank protection and gap blocking. It was thus believed that certain capabilities of a line artillery regiment might no longer be necessary, most specifically, radars and line laying resources.

It must be admitted, and without apology, that there was a strong emotional reaction to the suggestion that "C" Battery, under even the most favourable circumstances, might cease to be part of the 1st Regiment, and indeed, might be disbanded once again.

It was felt, generally, that CFHQ's proposal might be improved upon and that within the overriding factor of personnel strength, certain desirable modifications might be made. The Commanding Officer, LCol M.D. Calnan, therefore, established a study group to design and evaluate a new self-propelled regiment within the following parameters:

- a. Manpower restrictions as fixed by CFHQ;
- b. The requirement for DS of the third battalion group;
- c. The new role in CENTAG; and
- d. Maximum firepower possible within the manpower restrictions.

Diagrams 2-6 illustrate the various establishments (including CFHQ's proposal) considered. The major changes in proposals A to D are in relation to the CFHQ proposal.

Diagram 1
SELF-PROPELLED REGIMENT 1969

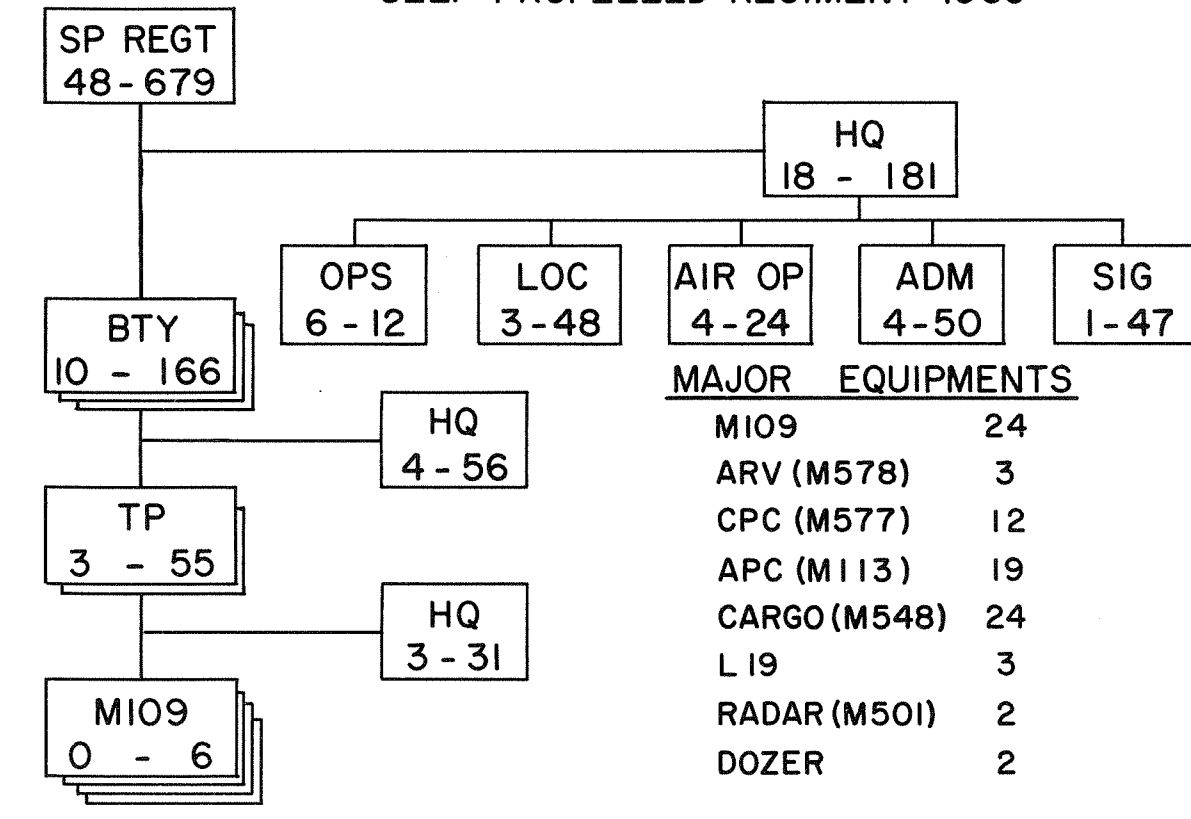


Diagram 2
SP REGT - CFHQ PROPOSAL SEP 1969

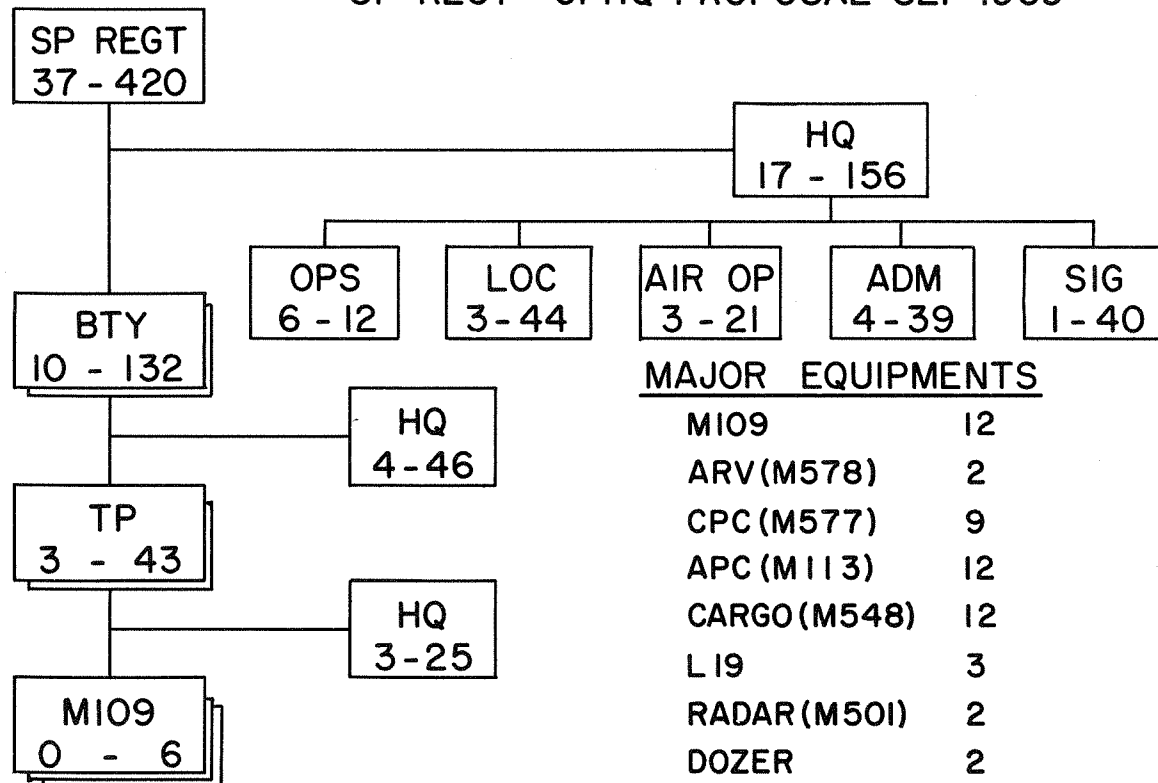


Diagram 3
SELF-PROPELLED REGIMENT
PROPOSAL A

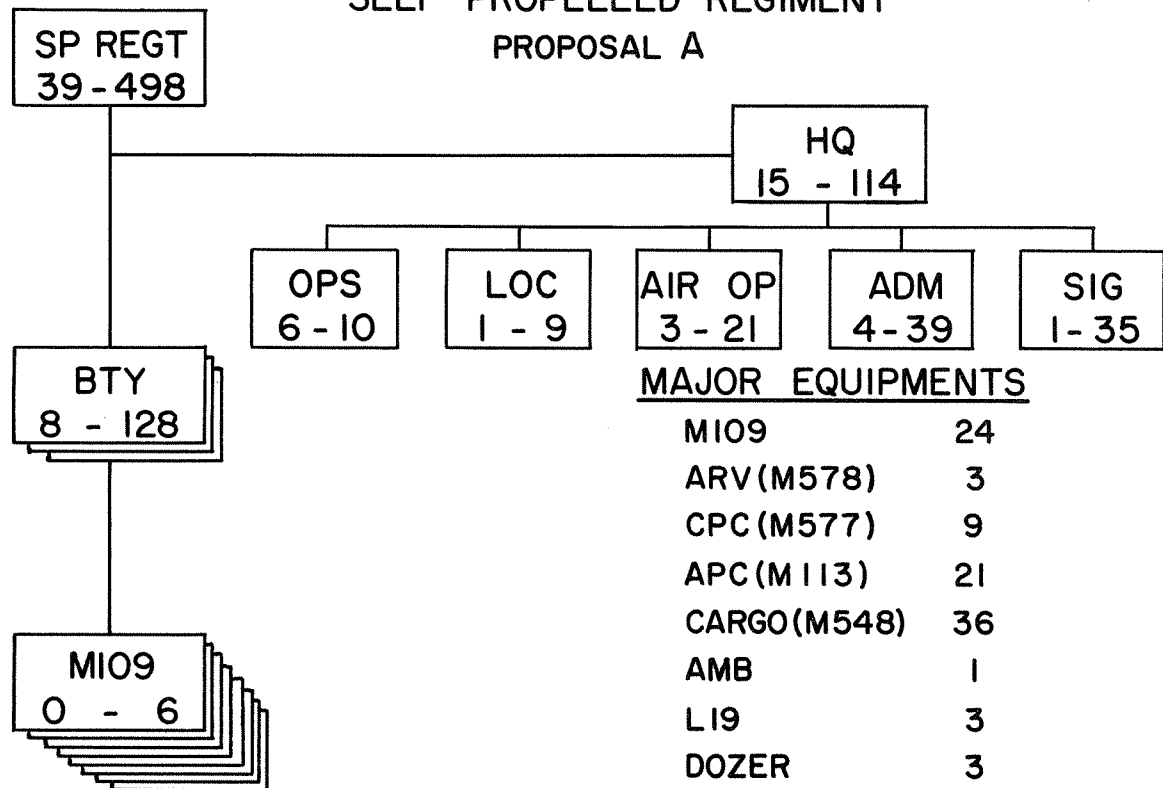
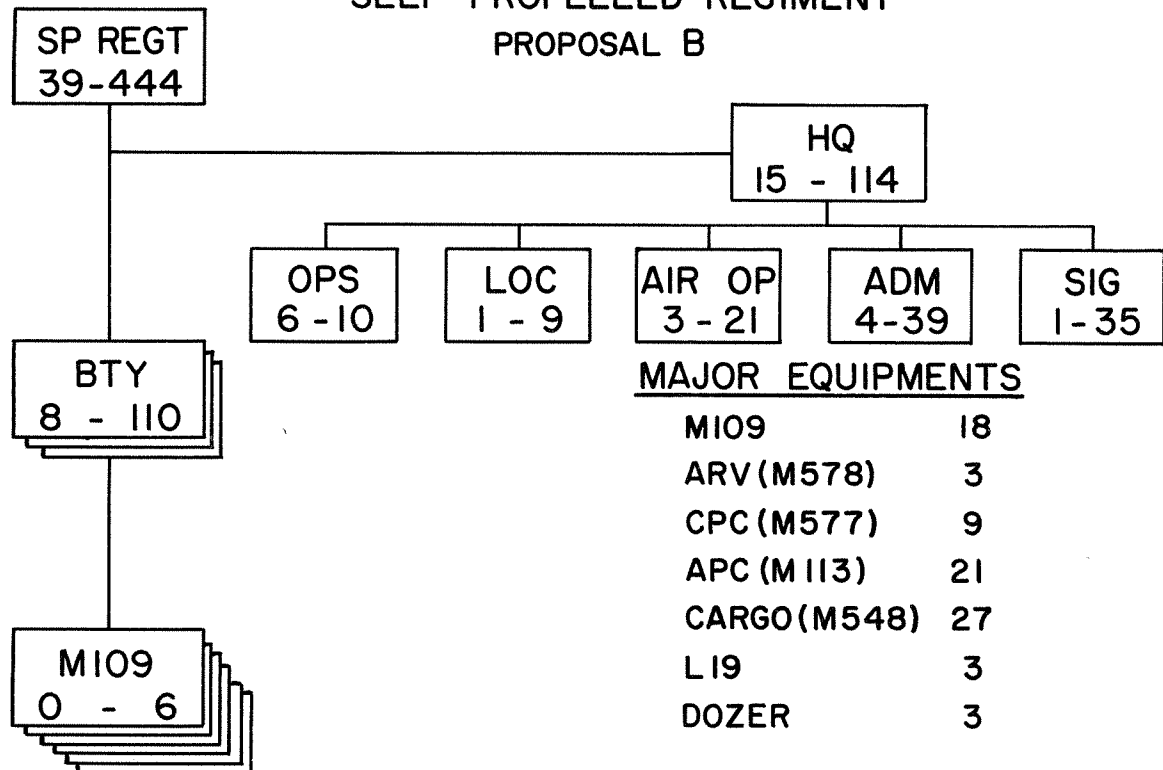


Diagram 4
SELF-PROPELLED REGIMENT
PROPOSAL B



CFHQ PROPOSAL (Diagram 2).

Major changes(Related to the then current establishment).

- a. Reduction in the number of guns from 24 to 12.
- b. Loss of one battery complete.

Advantages

- a. No major reorganization required.

Disadvantages

- a. No DS Battery for the third battalion group.
- b. Establishment — serious shortage of ammunition numbers.
- c. Firepower — reduced by 50%.

PROPOSAL A (Diagram 3)

Major Changes

- a. Three 8 gun batteries.
- b. Radar section removed.
- c. Batteries reorganized with reduction of officers to eight and inclusion of ammunition numbers.

Advantages

- a. No major reorganization necessary.
- b. DS battery for third battalion group.

- c. Establishment — ammunition numbers included.
- d. Firepower — 100% more than CFHQ proposal.

Disadvantages

- a. Proposal A exceeds the personnel limitation by two officers and 78 other ranks.³

PROPOSAL B (Diagram 4)

Major changes

- a. Three 6 gun batteries.
- b. Radar section removed.
- c. Reorganization within gun batteries.

Advantages

- a. Major reorganization within batteries affects only command posts and recce.

- b. DS battery for third battalion group.
- c. Establishment — ammunition numbers included.
- d. Firepower — 50% increase over CFHQ proposal.

Disadvantages

- a. Establishment — exceeds personnel limitation by two officers and 42 other ranks.

PROPOSAL C (Diagram 5)

Major changes

- a. Two eight gun batteries.
- b. Radar and survey sections retained.

Advantages

- a. No reorganization — loss one battery.

- b. Firepower — 33% increase over CFHQ proposal.

Disadvantages

- a. No DS battery for third battalion group.
- b. Establishment — exceeds personnel limitations by 21 other ranks.

Diagram 5
SELF-PROPELLED REGIMENT
PROPOSAL C

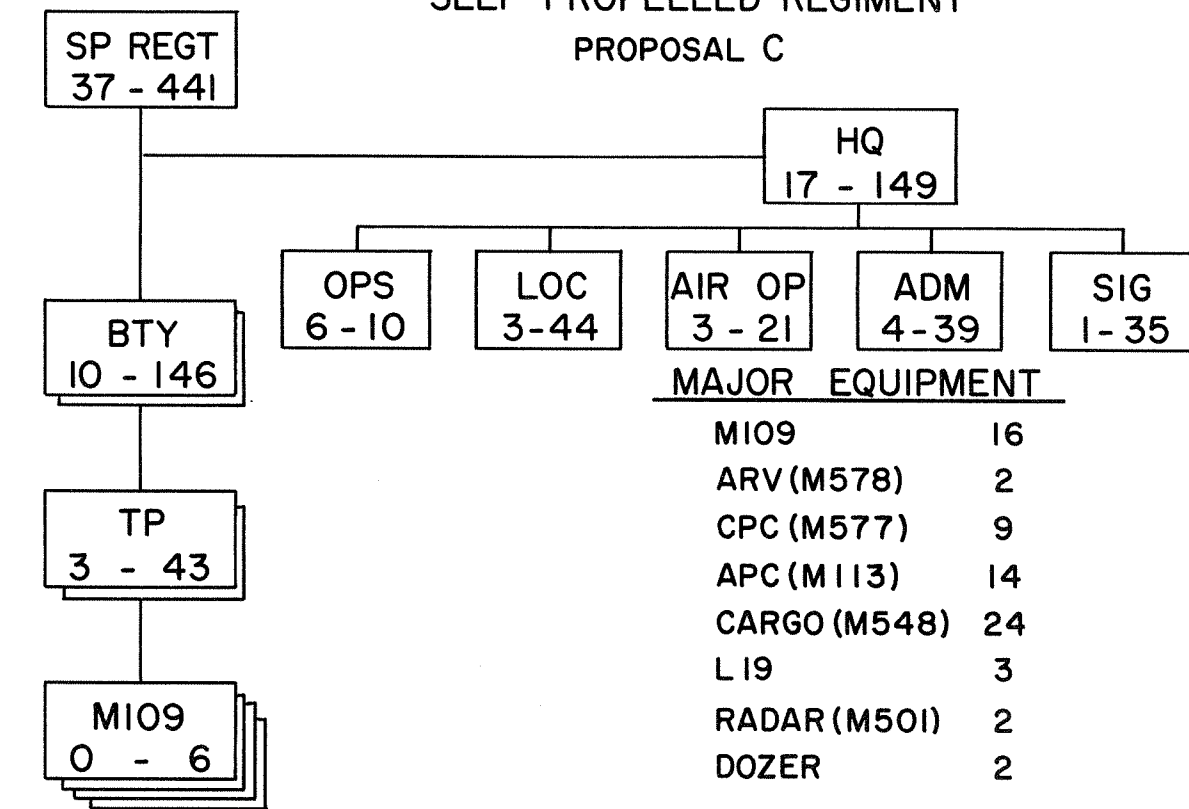
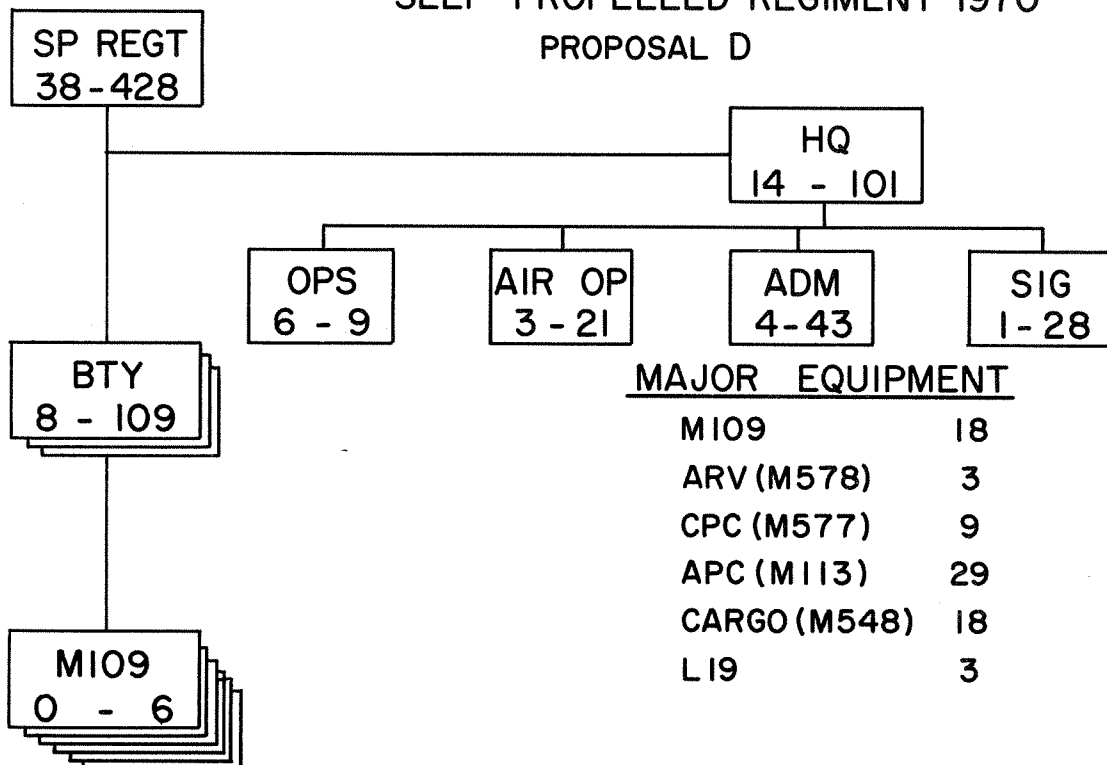


Diagram 6
SELF-PROPELLED REGIMENT 1970
PROPOSAL D



PROPOSAL D (Diagram 6)

Major Changes

- a. Three 6 gun batteries.
- b. Radar, regimental survey and line capabilities deleted.

Advantages

- a. DS fire unit for third battalion group.
- b. Firepower — 50% increase over CFHQ proposal.

Disadvantages

- a. Major reorganization required
- b. Establishment — exceeds personnel limitation by one officer and eight other ranks.

After some fairly heated discussions, it was agreed that Proposal D gave the best combination of desirable characteristics. This establishment was clinched by the Commanding Officer in his presentation to the Vice Chief of the Defence Staff during his visit to 4 CMBG. One very basic assumption should be admitted — it was believed that the new CENTAG role removed the need for radar, survey, and line capabilities in NWE. This deletion will be discussed later. Proposal D, largely due to major organizational changes, gives three fire units and the most firepower possible with an acceptably small increase in manpower over the limitation imposed by CFHQ.

In detail, the major changes are:

RHQ

- a. Ops Tp was cut to 6-9 (less Sig Tp pers) which is a minimum for Arty Tac and Regt CP parties.
- b. Air OP Tp has lost one Captain pilot and the troop commander flies his own aircraft. OR reduction is three.
- c. Adm Tp has been reduced by seven ORs.
- d. Sig Tp — deletion of line crews and the message center have reduced Sig Tp by 19 ORs.

GUN BATTERIES

The gun batteries have been pared close to the bone. A detailed organization including vehicles and radios is shown in Diagram 7. The organization is obviously similar to the UK six gun battery in that there is one command post (which may consist of one or both command post vehicles) and a battery recce party, normally consisting of the Battery Recce Officer, Battery Signal NCO and one of the TSM's (the other remaining with the gun group). Troop command posts have disappeared, but the capacity to field two identical and independent sub-units remains.

The following table compares old and new vehicle and radio holdings (less spares) in the regiment:

	Old	New
M109	24	18
M548	24	18
M578	3	3
M113	21	28
M577	12	9
1/4t	42	23
3/4t	40	22
2 1/2t	27	23
5t	13	10
A Sets	40	48
AA Sets	28	41
RCU		61
B (manpack)	20	33
B (vehicular)	48	18
B (vehic/dismt)	22	30
CRATTZ		1

Obviously, the proportion of tracks to wheels has increased substantially. For example, the gun group is now completely tracked. All wheels are rovers or Q and echelon ammunition vehicles. At long last, the ubiquitous jeep ambulance has been replaced by an M113 with ambulance kit. The LMT is now completely tracked, the 2 1/2t vehicle having been replaced by an M113. The attached MRT is also mounted.

The most important question, of course, is will it work? All three gun batteries and essential elements of RHQ have used the new organization during two firing camps. The results have exceeded even the most optimistic expectations. Employment of the gyro-orienter at battery level and battery survey with excellent NATO maps have produced sympathy which, although not as accurate as that produced by regimental survey, is certainly acceptable.

Sound advice from members of the Royal Artillery Gunnery Training Establishment (RAGTE), Hohne, who have learned to live with a similar battery, has been of great assistance in developing drills and SOPs not covered in Canadian pamphlets.

The speed of movement during the firing camps since the unit became an SP regiment has made deployment of fire order lines impossible. We do not consider it unrealistic to expect the same in CENTAG in view of our assigned role. The new US family of sets makes operation of a ring net a dependable and successful alternative to line.

The 1970 1st Regiment is not what we would necessarily like it to be, nor should it necessarily be considered a model for other Canadian regiments under all circumstances. It was designed with specific limitations and tasks in mind.

We have already found some weaknesses in our trade and rank structure and organization which we hope to rectify in the near future. We do, however, have complete confidence in our ability to provide continuous support to 4 CMBG for its new role in CENTAG.

A ROYAL REGIMENTAL FAREWELL

On 3 June 1970 the Royal Regiment of Canadian Artillery bade farewell to the citizens of Deilinghofen, Germany with an impressive ceremony which marked the termination of seventeen years of association between the Royal Regiment and the villagers.

The Regiment was represented by its Colonel Commandant Major General JA Sparling CBE, DSO, CD, LCol MD Calnan, CD, CO 1 RCHA and Maj GNR Olson CD, CO 1 SSM Bty RCA. General Sparling presented a cairn and plaque to the citizens of Deilinghofen to commemorate the friendship which has grown between the villagers and the Regiment since 1953. In his speech of presentation the Colonel Commandant stated that it was his unpleasant task on behalf of the Regiment to bid the citizens farewell. He also thanked them for their friendship and cooperation over the past years. General Sparling made part of his remarks in the German language — a gesture which brought an enthusiastic response from the spectators.

In accepting the cairn on behalf of the citizens of Deilinghofen, the Bürgermeister, Herr E. Loewen stressed the importance of the solidarity of NATO as well as his regret at the departure of the Regiment. He urged those leaving to "not forget Europe". Herr Loewen then presented two Sterling silver plates bearing Deilinghofen's coat of arms to LCol Calnan and Maj Olson. The two CO's responded by presenting artillery plaques to several local dignitaries.

A fifty man guard of honour, formed from 1 RCHA and 1 SSM Bty personnel, was commanded by Capt DA Elrick of 1 RCHA. Music was provided by the Royal Artillery Mounted Band from Dortmund.

FOOTNOTES

1. The actual change in personnel for the loss of 50% of the Regiment's guns was one battery's worth of officers, one battery's worth of men. The Gun Detachments of four other guns and assorted soldiers from Adm Tp, Sig Tp and most seriously, ammunition numbers from the proposed two batteries.
2. In the past, a medium battery (most recently 176 Battery, 45 Medium Regiment, RA) was affiliated with 1 RCHA to provide support to the fourth battle group.
3. In considering the various proposals some flexibility in manpower restrictions was possible within the overall manpower ceiling for 4 CMBG.



The Cairn presented to the citizens of Deilinghofen on behalf of the Royal Regiment of Canadian Artillery.



Herr Loewen, Burgermeister of Delinghofen, addresses his citizens and the Guard of Honour. Participating in the ceremony were two Gunner guests – the Colonel Commandant and the Chief of Artillery – and local commanders – BGen Gardner, Comd 4 CMBG, LCol MD Calnan CO 1 RCHA and Maj Gnr Olsen CO 1 SSM Bty RCA.

The Royal Regiment was honoured by the presence of many distinguished visitors at the ceremonies. In addition to General and Mrs Sparling, among those attending were LCol (ret) and Mrs GK Brown (Canadian Consul General to the Federal Republic of Germany and former BC of C Battery 1 RCHA), BGen and Mrs JC Gardner and Col and Mrs DW Francis.

In spite of 1 RCHA being redeployed to Lahr in October 1970 and 1 SSM Bty being removed from the order of battle in July 1970 Deilinghofen will continue to maintain an association with "the Gunners". In March 1971 the 2nd Field Regiment Royal Artillery will deploy in Fort Prince of Wales as part of 6 (BR) Infantry Brigade.



Major General Sparling takes the salute as A Battery rolls past.

MOVE TO LAHR

The unit advance party under Capt ABC Bowles moved to Lahr on 4 June to begin coordination of the movement plan. By 4 August the advance party had grown to 76 members of the unit with many families already in the new area. At this point Capt Bowles, assisted by German speaking soldiers from the regiment, concentrated all their time on finding houses for the remainder of our families and Maj WD Wellsman, BC "C" Bty took command of the advance party. Liaison to all elements of Canadian Forces Base Lahr, especially on the engineering side where \$424,000.00 was tied up in construction and renovation projects for 1 RCHA alone, was a major part of the task. By mid-September stores and equipment began to arrive and by the end of the month 56 semi-trailer vans had been received, unloaded and the cargoes positioned throughout the unit lines.

On 1 October 1 RCHA, taking its proper precedence, led off the move of 4 CMBG. Two

special trains with the 77 tracked vehicles of the regiment departed Hemer at 0230 hours and exactly 24 hours later the last tracked vehicle moved into its assigned parking space in the new gun park on the Lahr airfield.

The wheeled vehicles left Fort Prince of Wales on 5 October and after an overnight stop near Weisbaden arrived in Lahr on 6 October. The Commanding Officer, LCol MD Calnan, led the convoy into Lahr and was met by MGen DC Laubman, Commander Canadian Forces Europe. After extending an official welcome the Commander walked the length of the convoy speaking to many drivers and men.

Although 1 RCHA was now operational in Lahr the DCO Maj RL Strawbridge remained in Fort Prince of Wales with the rear party until the camp was handed over to 2nd Field Regiment RA on 12 November. Officially the move was over however it will be some months before all of the families from 1 RCHA who are still in the Soest area can be relocated in Lahr.



MGen D.C. Laubman DFC, CD greeting the CO on arrival of the unit wheel party on 6 Oct.

A GUNNER FAREWELL

The afternoon of 8 September marked the end of a nineteen year association of Canadian and British Artillery when 1 RCHA paraded for the last time as a member of BAOR. Inspecting and reviewing officer was Brig J.M. Bellman MC, Commander Corps Royal Artillery of First British Corps. He was accompanied by Brig W.D. Mangham, Commander Royal Artillery of the Second Division. In recent years the First Regiments' artillery training has been coordinated with that of 2 Div and annually culminated in an exercise conducted by the CRA of 2 Div.



Brig J.M. Bellman, CCRA 1 (BR) Corps is seen presenting a silver tray to LCol M.D. Calnan, Commanding Officer 1 RCHA, during farewell ceremonies at Fort Prince of Wales. Brig W.D. Mangham, CRA 2 Div (centre) witnessed the presentation made on behalf of BAOR.

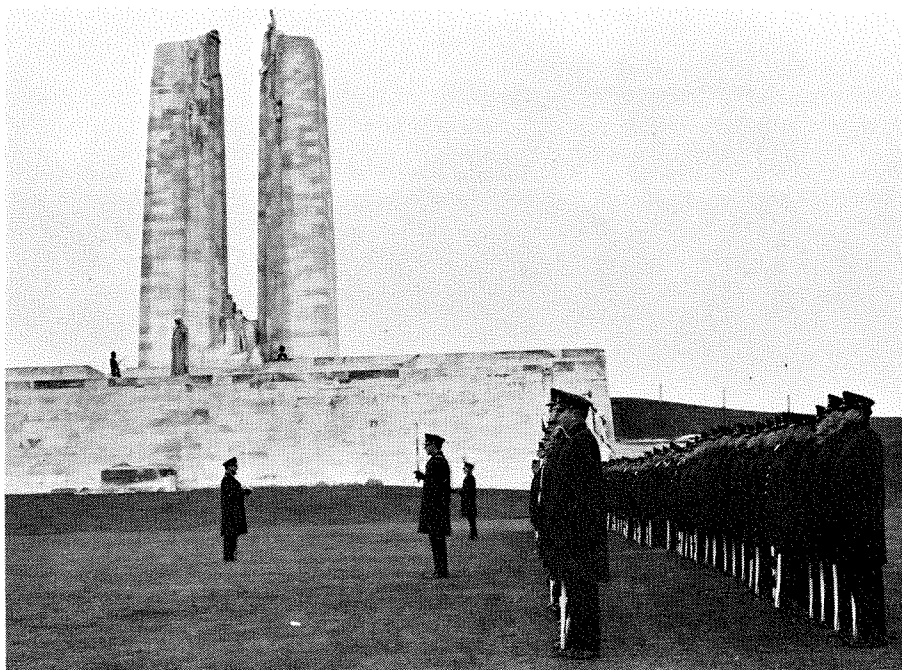
The inspecting officer was greeted by an eleven gun salute fired by a saluting troop commanded by Lt M.B. Morrison. After inspecting the Regiment, the CCRA congratulated the Commanding Officer, LCol M.D. Calnan and his officers and men on their fine turnout. Speaking not as the current CCRA but as a representative of all who had held that appointment during the last nineteen years, Brig Bellman expressed the regret that the Gunners of BAOR felt at the end of their close and productive association with the various Canadian regiments. In token of this service he presented

the Regiment with an extremely impressive silver tray which in years to come will recall to Canadian Gunners this association.

With the Regiment's guns providing a fitting backdrop for the occasion, LCol Calnan led 1 RCHA past the reviewing stand and from the parade square as the Regiment symbolically marched out of BAOR. The distinguished visitors joined the officers that evening at the Officers' Mess for the final 1 RCHA Mess Dinner to be held in Fort Prince of Wales. Thus ended another chapter in the Regiment's long history.

VIMY RIDGE-1 RCHA GUARD OF HONOUR

Grey brooding rainclouds scudded overhead. A raw wind from the Douai Plain below swept up over Vimy Ridge, numbing sombre faces until they felt like masks chilled by the cold and melancholy memories of past bravery and death. The mournful notes of the Last Post emerged from the trumpet, strong at first; then, gripped by the wind, were flung far away into the distance. A guard of honour from 1 RCHA stood rigidly at attention facing a French guard across an open field. The lofty Vimy monument towering over both formations dwarfed them. It was 1100 hours. The 1970 Vimy Ridge Remembrance Ceremony had begun.

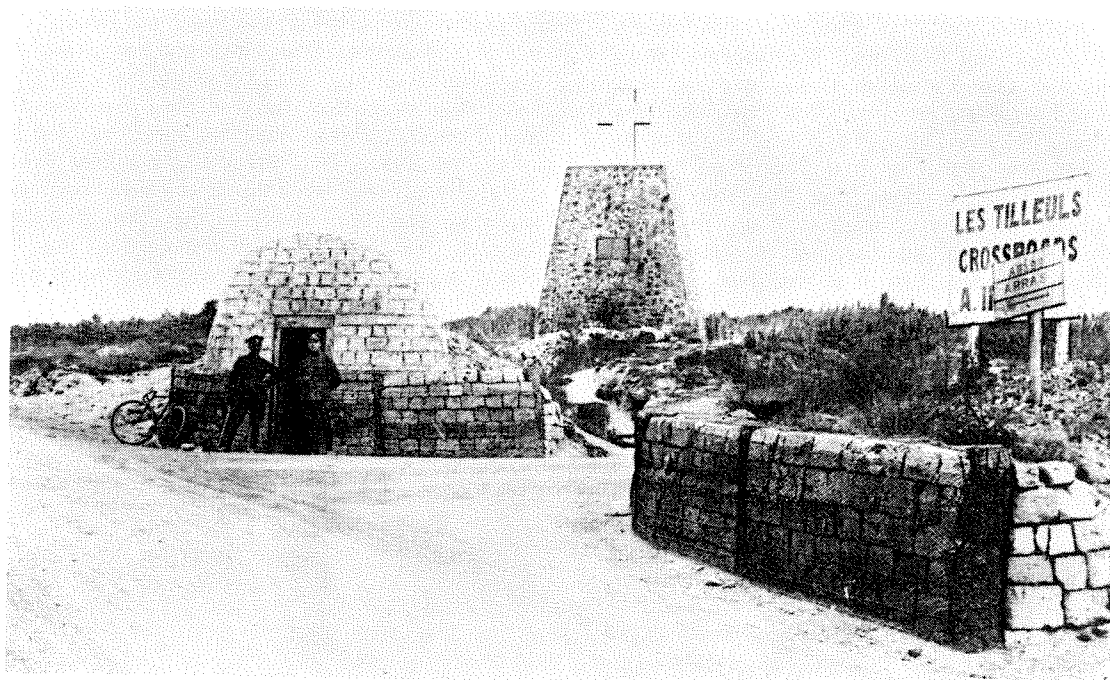


The Canadian Contingent for this ceremony consisted of:

1. 100-man Guard of Honour from 1 RCHA under the command of Maj R.K. James (OIC Cdn Contingent)
2. Flag Party from 1 RCHA:
 - Capt B.E. Stephenson
 - Capt M.K. Jeffery
 - Sgt H.M. Burte
 - Sgt D.R. Lucas
3. Chaplain(P): Maj A. Reid
4. Chaplain(RC): LCol H.S. Wight
5. Trumpeter: Sgt J.B.L. Levasseur
5. Trumpeter: Sgt J.B.L. Levasseur from 1R22eR
6. Piper: Cpl T.P. Telford from 3 Mech Cdo.

The Vimy commitment began for 1 RCHA at 0600 hours Friday, 6 November when the Contingent boarded buses in regimental lines and departed Lahr, Germany for Arras, France. An advance party comprising of the Guard Sergeant-Major, MWO J. Turner, regimental cooks and one of the unit's "flying" kitchens preceded the main body by five hours. It was only a thirty minute drive from Lahr to the French border at Strasbourg, but from there across France to Arras the twelve-hour journey was grueling over bumpy, narrow, twisted roads. However spirits perked up on arrival when the men discovered a sumptuous steak dinner waiting for them. The advance party cooks under Sgt R.F. Muse did an outstanding job settling into a strange kitchen, unloading stores and rations, organizing the equipment, and preparing the evening meal with only a small lead on the main body.

Col D.H. Power, the Canadian Forces Attache in Paris had arranged quarters for the Guard in the barracks of a French unit in Arras, the 7e



*The Scale (Road from Lens to Arras)
Monument erected to the Memory of the Canadiens soldiers dead for France
1918*

Regiment de Chasseur. This walled garrison in the heart of the city is three hundred years old, and fortunately the French unit put the Canadians into the one and only modern barrack block which has been added to these lines. The Commanding Officer of 7^e Regiment de Chasseur made us most welcome and his staff were excellent hosts to the Canadians throughout their stay.

On the north-east corner of a main cross-roads in the little French town of Thelus south of

Vimy Ridge, there lies a Canadian Artillery Memorial unknown to many and forgotten by others. It is a very impressive monument in its own right, but unfortunately it is overshadowed by the magnitude and magnificence of the nearby Vimy Memorial. On Saturday, 7 November the Regiment held a short remembrance service at this monument prior to the full dress rehearsals for the main Vimy ceremonies. Except for one individual privately placing a wreath in 1966, this was the first official ceremony to be held at the Artillery Memorial in many years.



During the short service, the Commanding Officer of 1 RCHA, LCol M.D. Calnan laid a wreath on behalf of all serving Gunners. He pointed out in his address that the monument is unique: it was built by Canadian Artillerymen while the war was still going on. Unveiled by General Sir Arthur Currie in February 1918, it was dedicated to all Gunners who fell while supporting the successful Canadian attack on Vimy Ridge. This included Royal and South African Artillery which were under command of the Canadian Corps at the time. During the attack 1,100 guns were concentrated on the ridge. The preparatory bombardment totalled 550,000 shells and the assault itself involved another 211,000. This artillery support contributed significantly to the successful capture of that infamous ridge on April 9, 1917.

The traditional commemorative ceremonies at the Vimy monument took place on Sunday, 8 November. The event is customarily held on the first Sunday preceeding 11 November. The Honourable J.E. Dube, Minister of Veterans Affairs represented the Canadian Government. The Canadian Ambassador, Monsieur Leo Cadieux and the Commander Canadian Forces Europe, Major-General D.C. Laubman attended as well. The Honourable M. Kaspereit, Minister of Small Industries and Crafts officially represented the Government of the Republic of France.

The dignitaries strode to the base of the monument and the ceremonies commenced when the Minister of Veterans Affairs received a General Salute from both the Canadian and French Guards of Honour. Then he inspected each formation, pausing frequently to speak to the soldiers. He was very impressed with the new Canadian Forces uniform, the 1 RCHA detachment being the first guard of honour to wear it at the Vimy ceremonies.

Mister Dube addressed the military contingents and the large crowd of French civilians which had gathered for the service. Next, Monsieur Kaspereit spoke. The two Canadian Chaplains, LCol Wight and Maj Reid offered prayers in English and French, which were followed by the laying of many wreaths. The latter began when Mister Dube officially placed a wreath on the memorial, and ended when an elderly veteran of the French Army limped forward, wearing a frayed trench coat and beret, to place a small bouquet of wilted flowers beside the wreaths.



This latter simple act of dedication suddenly made the Canadians aware of the real significance of this annual remembrance service. For, this lame old gentleman, distinguished by his medals—including the Croix de Guerre—has walked ten kilometres to and from his village every year to attend the remembrance ceremonies at Vimy. Through an interpreter he tearfully pointed out that many of his friends are buried in the nearby military cemeteries.

The Canadian Government traditionally provides a tot of rum after the ceremonies for the members of the national contingents. In spite of the raw cold several Canadian soldiers offered their tots to the French veteran. As the Canadian buses departed Vimy this year, one of them was carrying an extra passenger; it would make a twenty kilometer detour to ensure that he did not walk home in 1970.

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INFO RBFAC/HQ RA 2 BR DIV

RCFPA/1 RCHA LAHR

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REGIMENTAL PENNANT LOWERED FOR THE LAST TIME IN FORT ~~PRINCE~~

OF WALES AT 051003P OCT

BT

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*(4) DLOPSR
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(DARTY)*

*(5)
D6OPSL*

DSO/Adm O-cos

*for info
AB CHAPLIN
MAJ SEC DCOPSR*

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OCT 15 1970

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PRINCE

*Eyo.
J. G. BAILEY
LIEUTENANT COLONEL
SEC 2 & 3*

OCT 08 1970

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J.L. DREWRY BGEN
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DARTY may wish to
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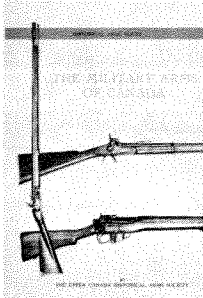
*DR BEVERIDGE
LCOL
DSD/CDS
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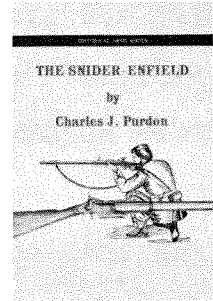
Final lowering on 5 October 1970 of the Regimental Pennant at Fort Prince of Wales: Herr Loewen (Burgermeister of Deilinghofen), LCol M.D. Calnan and Gnr Rose RL.

Arms Books of National Importance

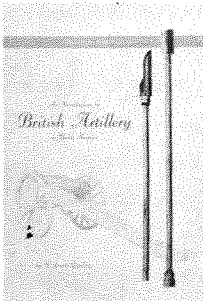


No. 1. THE MILITARY ARMS OF CANADA
by The Upper Canada Historical Arms Society;
56 pages, 74 illustrations \$1.50

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8 pages, 13 illustrations \$.50

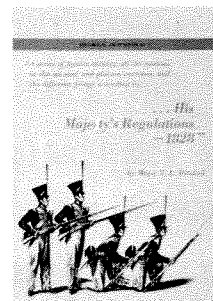


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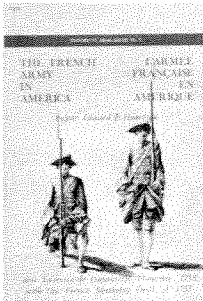


No. 4. AN INTRODUCTION TO BRITISH
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Gooding; 56 pages, 100 illustrations \$1.50

No. 5. HIS MAJESTY'S REGULATIONS, 1828
by Maj. T. L. Mitchell; 32 pages, 88 figures on 26
plates \$1.50

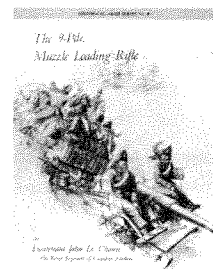


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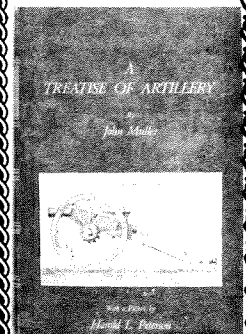
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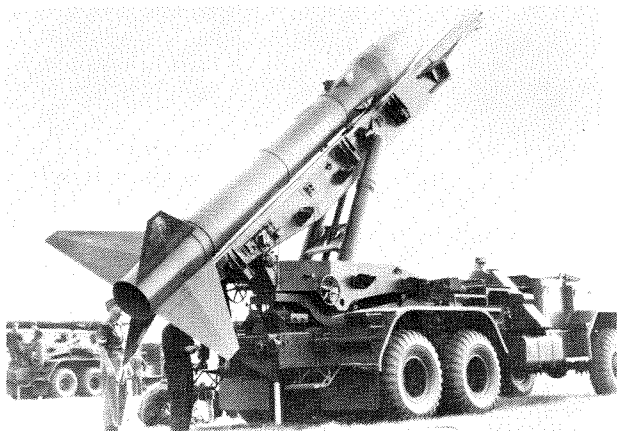
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1 SSM

BTY

RCA

Although the Forces' reorganization announced in late 1969 made it clear that 1 SSM Bty RCA's life expectancy was short, all ranks put forth a concerted effort to make the last year one of the best years; a year, that all the many gunners who ever served in the unit, during its ten years of existence, could be proud. Intensive training and professional application were the watchwords, so that until the day of disbandment, 1 Jul 1970, the Battery remained ready and capable of carrying out its role in support of 4 CMBG and 1 (Br) Corps. The units programme up to January was mentioned in detail in the unit report at the last Artillery Conference.

In January each of the launcher sections conducted independent five day exercises during which personnel who had joined the Battery, in the fall rotation period, were integrated into their new jobs. Between February 16th and 27th the unit conducted its last major training exercise in the Munster Hohne area. Deep snow and bitterly cold weather made exercise conditions less than ideal but such problems were overcome and two rockets were successfully fired.

In April the Battery was subjected to its last MTI (Mechanical Transport Inspection). The units high standard of maintenance was proven by the results. 1 SSM Bty RCA and 4 Service Battalion Supply and Transport Company tied for top position in 4 CMBG with an overall score of 85%.

With the arrival of May the tempo of activity increased to a point where it was hard to believe that the unit was in its last sixty days of life. Under the command of Capt RW Chaulk, a fifty man guard of honour from the unit travelled to the Nether-

lands to participate in ceremonies marking that country's twenty-fifth and final anniversary of liberation at the end of the Second World War. Mid-May saw the Battery's last Nuclear Surety Inspection which was passed with a flawless demonstration of knowledge and professionalism resulting in the presentation of an Outstanding Achievement Award from the 514th US Missile Group, which provides all United States Nuclear Support in NORTHAG.

In early May the survey section went for its last camp to Hohne where they participated in a two week survey exercise with British units and produced excellent results.

On 19 May, 1 SSM Bty travelled to the Hohne ranges for the last time. The night of the twentieth saw the last Canadian night Firing of an Honest John Rocket, and on the afternoon of the twenty-first BGen J.C. Gardiner Commander Canadian Land Forces Europe, pushed the button to Fire Canada's last Honest John Rocket. Gen Gardiner was presented with a Certificate of OJT proficiency in HJ Gunnery, because of the extreme accuracy of HIS shot.

The Battery's last month saw a frantic round of close-out functions as well as turning in all the unit's stores and equipment. For several weeks Fort Qu'Appelle rang with the sound of hammer and saw as dozens of vehicles which had been carefully built up over the years were returned to their original state, for turn-in to Base Supply. It was at this time that the excellence of those seldom publicized members of the unit, the QM staff, shone as they quickly and efficiently went about their task of making a complete unit's equipment



The Colonel Commandant inspects.

ranging from launchers to pencil sharpeners disappear in an incredibly short time. The final result of the CFB Soest audit of the unit account, was nil deficiencies and nil surpluses. Amazing but true.

On 1 June, with MGen H.A. Sparling CBE, DSO, CD, the Colonel Commandant, as inspecting and reviewing officer and with Colonel D.W. Francis, Chief of Artillery, and General Gardner in attendance, 1 SSM Bty paraded as a unit for the last time. MGen Sparling paid tribute to the Battery's fine contribution to the Royal Regiment of Canadian Artillery, during its brief history. Major G.N.R. Olson, the Battery's Commanding Officer thanked all members of the unit for their excellent showing and support during the period in which he had been privileged to command the unit. Presentations were made to the unit by the 514th - US Missile Group and the 69th US Missile Detachment, both having a long and close association with the Battery. Lieutenant Colonel Fridy, Commanding Officer of the 570th US Artillery Group presented on behalf of the 514th the award in recognition of 1 SSM Bty's outstanding performance, as a nuclear unit and Capt Glossmeyer, Commanding Officer of the 69th Missile Detachment, whose unit was on the final parade, made a presentation commemorating the seven years of close association between the two units.



1 SSM is signed out of the Canadian Order of Battle.

On 3 June 1 SSM Bty joined 1 RCHA in ceremonies commemorating the long association of Canadian Artillery units with the Town of Deilinghofen. This was the last of many ceremonial events in which the Battery participated during its eight years in Germany.

June found most members of the Battery thinking ahead to new tasks and new units and 1 SSM Bty's last task, rotating its personnel to their new units, commenced. About one third of the members found themselves posted to units in the new Fourth Canadian Mechanized Battle Group, the majority to 1 RCHA. The rest returned to almost every part of Canada.



Throughout the long history of the Royal Regiment of Canadian Artillery many units and weapons systems have come and gone. 1 SSM Bty RCA's brief decade of existence is a small but very important part of the Regiment's history. Rarely has any Canadian unit been subject to so many exacting tests and inspections administered by members of other nations, and even more rarely has any unit, Canadian or other, achieved and maintained such a continuous high standard of performance, which is of great and lasting credit to every Gunner who served. The 1st Surface to Surface Missile Battery, in this our last contribution to the "Gunner" bids a fond farewell and "Good Shooting".

THE ARTILLERY USE OF LASER RANGE FINDERS

by
Captain B.T.N. McGrath

All OP officers who have had problems guessing grid references take heart, science is coming to your aid! The latest product fresh from the halls of learning is the laser range finder.

This article will consider in general terms the capabilities of this equipment as a typical range finder, and the implication of range finders for our gunnery procedures.

A TYPICAL LASER RANGEFINDER

A typical laser range finder consists of the range finder, a tripod, a nickel cadmium battery, carrying case, and auxilliary battery charging and test equipment designed to be mounted in a vehicle. The man pack portion of the equipment weighs under fifty pounds and can give 100 rangings on 1 battery before recharging.

This Laser Range Finder will provide direct readout bearing, range, and angle of sight to any target visible from the OP. Instrumental accuracy is ± 2 mils for bearing and angle of sight and ± 5 meters for range. Under field conditions these accuracies are affected by the care with which ranging drills are carried out. However, after two days training and practice an OP officer should be able to obtain a range with a very high assurance of ± 20 meters accuracy taking not more than thirty seconds to complete the procedure. The range finder provides data to all targets which interrupt the laser beam, indicates how many targets there were, and indicates to which target the data displayed applies. There is also a minimum range setting capability which causes the equipment to disregard all targets closer than a selected range.

GUNNERY APPLICATIONS

The range finder can provide two useful types of data to the gunner:

- a. It provides accurate target locations in the form of polar coordinates.
- b. Because it can range onto the smoke from a HE shell burst, it provides accurate locations of adjusting rounds.

INITIAL TARGET LOCATIONS

The accuracy of the target location provided by the laser is dependent upon the accuracy of the OP survey, for optimum effectiveness the OP should be on the same grid as the guns. In practice, however, the laser has a very good self-survey capability and the OP location and orientation in reasonably mapped country should be good.

The drill for solving polar coordinates on the Plotter FFBA No. 1 may be slow if the OT distance is over 2000 meters. The CP plots the OP position and treats the polar coordinates as the first target grid correction. If the distance is more than 2000 meters the technician must take more than one "step". This disadvantage is outweighed by the accuracy of the target location provided. All field artillery computers solve the polar coordinate problem easily so eventually this difficulty will disappear.

ADJUSTMENT OF FIRE

The Laser Range Finder will provide accurate locations of HE or WP bursts provided the laser beam strikes them before the smoke is dispersed. In reasonable weather this is not difficult. During the trial the procedure used was to range onto three consecutive rounds fired from one gun at an interval of 15 or 20 seconds, mean the data produced and thus locate the MPI of the adjusting gun.

It is obvious, if the location of the target is known and the MPI of the adjusting round(s) is known, that a correction directly to the target is easily calculated. Unfortunately FADAC is not programmed to solve this problem and graphical solutions are rather cumbersome. The following is an example of the procedure used in the CP:

	BEARING	RANGE	ANGLE OF SIGHT
1. MAP DATA to HIT TARGET	1640 mil	5000 M	± 2 mil
2. MAP DATA TO HIT POINT			
THE ADJUSTING ROUND LANDED	1660 mil	5170 M	± 3 mil
3. DIFFERENCE (2 - 1)	R20 mil	± 170 M	± 1 mil
4. ADJUSTED MAP DATA TO HIT			
TARGET (1 - 3)	1620 mil	4830 M	± 1 mil

The data calculated is accurate and the observer is justified to order fire for effect at the adjusted data. When range finders become standard OP equipment, our gunnery computers will have to be programmed to solve the adjustment problem directly, in the interim the correction is more easily converted to a target grid correction at the OP using the following procedure:

	DIRECTION	DISTANCE	ANGLE OF SIGHT
DATA TO TARGET	1820 mil	3740 M	± 7 mil
DATA TO ADJUSTING ROUND(S)	1837 mil	3970 M	± 9 mil
THE ADJUSTING ROUND WAS	R17 mil	± 230 M	± 2 mil
LINE CORRECTION IS $17 \times 3.7 =$	63		
RANGE CORRECTION IS	D230		
VERTICAL CORRECTION IS $2 \times 3.7 =$	DOWN 7		

. . OP ORDERS DIRECTION 1840 LEFT 60 DROP 230, DOWN 7

The above looks formidable but really is only what the OP has always done with the addition of an exact range correction. The reason for the vertical correction (presumably the CPOs initial angle of sight was correct as was your target location) is similar to the reason for use of up/down corrections when firing in hilly country and is outside the scope of this paper.

The real advantage of the Laser Range Finder is found in its use for registration. If the laser is surveyed on the same grid as the guns it can be used to determine a registration correction in the normal way. Even when the laser is unsurveyed, however, it can still be used to determine a registration correction which includes the OP survey error. That correction is valid, within registration limits, for all data produced for that laser. Thus it is possible for an OP to send down a fire plan with a number of target locations from the laser, fire a series of rounds at one target in the area, and have the CP apply the calculated registration correction to all other targets which will be effectively engaged with the opening rounds regardless of the state of survey and correction of the moment.

The foregoing procedures were used successfully during the evaluation. An additional procedure which was not tried consists of the calculation of a correction to be applied to data from unsurveyed lasers to correct it to the grid the guns are on. This can be done by comparing registration data produced by the unsurveyed laser with valid registration data for the same point.

CONCLUSION

There are many range finders on the market or being developed and as development continues they are becoming smaller, lighter, and more reliable, and they are being engineered as part of a gunnery system including computers programmed for their data, and data links to connect them.

The Laser Range Finder, particularly when part of a computer system gives second round hit capability and greatly increases the possibility of first round hit.



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OFFICER STRENGTH AND
LOCATION SUMMARY

	1966	1967	1968	1969	1970
LGen	1	1	1	0	1
MGen	2	2	2	2	0
BGen	5	6	4	3	3
Col	12	11	9	8	9
LCol	45	46	46	46	36
Maj	160	160	143	133	121
Capt	209	253	268	244	237
Lt	168	116	86	63	56
Total	602	595	559	499	463

post graduate, CLFCSC and so forth training while the same number of officers hold positions at the Combat Arms School, CFB Gagetown. This leaves 27 officers (6%) performing RSS duties with the larger figure of 160 officers or 35% filling the "others" category.

Certainly our strength is being reduced and more certainly our graphical representation would resemble more closely a pear as opposed to the historically ideal mushroom. However, we have come a long way since the turn of the Century when General Order 200 of September 1905 authorized the establishment of the "Royal Canadian Horse Artillery" as:

	RSA and Regtl Staff				A Bty	B Bty	Total
Lt Col	1						1
Majors			1		1		2
Capt s			1		1		2
Lts			3		3		6
Gny Instr	2						2
Adj t	1						1
QM	1						1
Vet Offr	1						1
Total Officers	6	5			5		16

Certainly the effects of a forces reduction are being felt, but at the same time Gunner influence in the upper echelons of the master organization is also being reduced. Not that we Gunners feel we have an insight into all that is good and correct--we know we do!

But looking inward, what are our 463 officers doing with themselves? Filling Regimental vacancies and doing what we do best are 150 officers, or approx 32% of our strength, while 84 officers (18%) are adding Gunner influence to all departments at CFHQ. We still possess a number of academicians within the Corps as 21 officers (4.5%) take undergraduate,

(But we did have 268 horses, 6 shoeing smiths, 4 saddlers and 3 wheelers.)

An idea of the effort which can be brought by the artillery in an operation can be obtained by a study of the final battle to smash the Gothic Line in Italy. In one night, the RCA of the First Canadian Corps fired 16,130 tons of high explosive. On another front, six Field Regiments and seven Medium Regiments hurled 22,831 tons of ammunition at the Germans holding the Scheldt Estuary.

GAGGETOWN

COMBAT ARMS SCHOOL

**ADVANCED GUNNERY COURSE
AOP SECTION COMMANDERS COURSE**

2 RGHA

E BTY 2 RGHA

**Formation
Training
Fire Support**



COMBAT ARMS SCHOOL

by
Captain M.D. Maher

INTRODUCTION

In September 1969 it was announced that after twenty three years of operations in Shilo the Canadian Forces School of Artillery was to amalgamate with the Combat Arms School which was to be set up in CFB Gagetown.

After many years of splendid isolation, gunners were now going to become members of a school which was not run by gunners for other gunners alone.

Despite the gnashing of teeth and recriminations muttered through clenched jaws at the loss of "The School", it was not long before the inevitable was accepted and an attitude of "let's get on with it" prevailed throughout CFSA.

The problems associated with the move were monumental but, under the firm guidance of LCol D.R. Baker, then Commandant of CFSA, task forces were organized to make the move as smooth

as possible.

Many conferences were held with CAS Borden and briefs flowed like water. It should be pointed out at this point that despite the heavy workload associated with the move, the school continued to perform its prime function of conducting artillery courses.

It would be impossible to single out any particular person for special credit because everyone involved gave to their utmost, and it was due to everyone's efforts that the move was conducted with a minimum of disruption to personnel.

Many were the rumours and ideas which were spread concerning the CAS (Gagetown). Perhaps it would be wise to describe the roles and organization of the CAS so that when gunners are posted there they will have some idea of what to expect.

ROLE

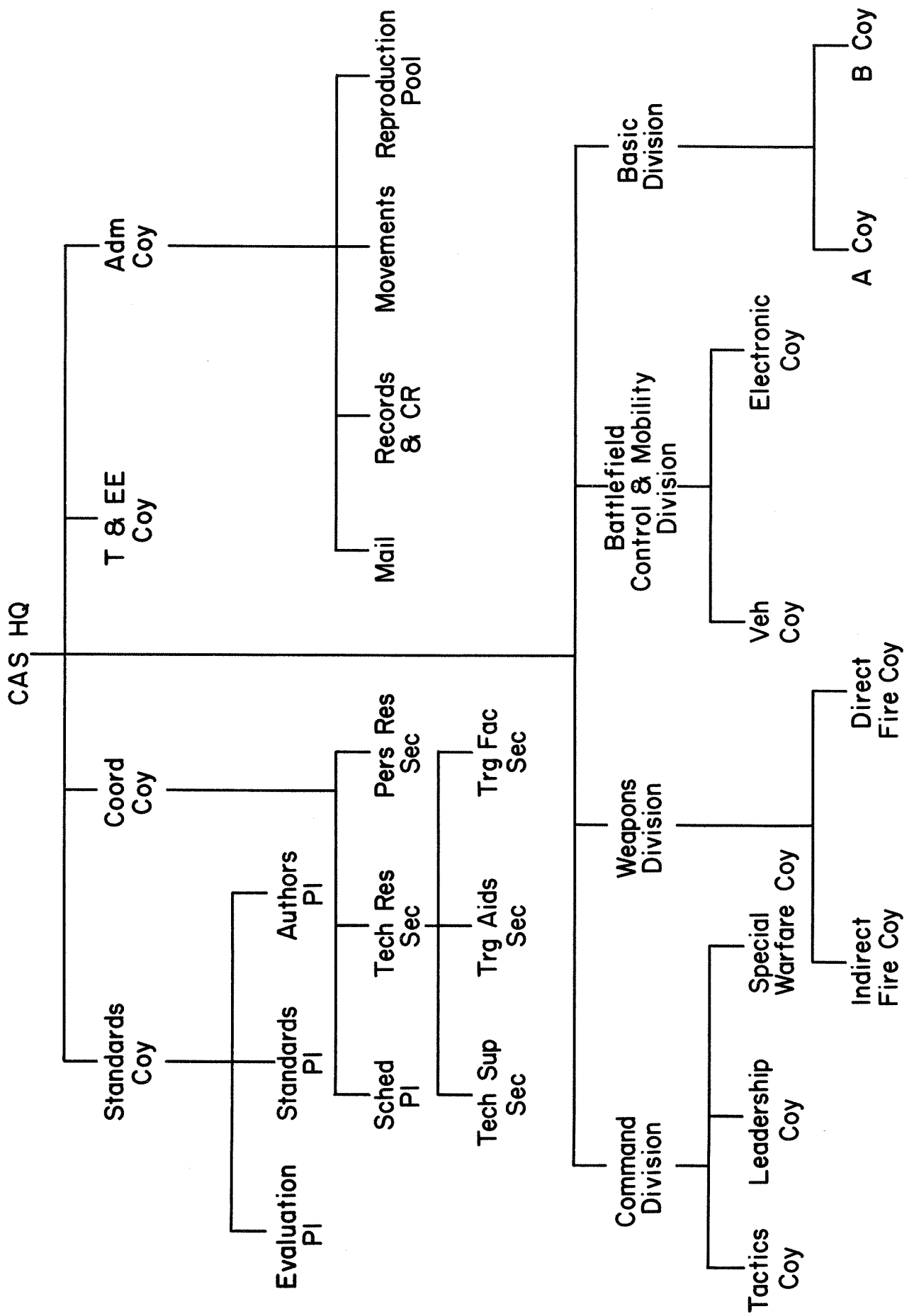
The Combat Arms School in CFB Gagetown is an amalgamation of the Combat Arms School in Borden and the Canadian Forces School of Artillery in Shilo. The role of the new Combat Arms School is defined as follows:

- a. Conduct Armoured, Artillery and Infantry training in accordance with training standards.
- b. Conduct trials and evaluate equipment for the Armour, Artillery and Infantry.

ORGANIZATION

The Combat Arms School (Gagetown) has a strength of 96 Officers, 204 Warrant Officers and Sgts, 158 Rank and File and 38 Civilians for a total of 457 military and 38 Civilians. It is divided into 4 Divisions and a command/HQ element. Each Division is sub-divided into functional companies. (See Line diagram)

Although Instructors are allocated to specific divisions they may be employed within the school depending on their qualifications and the current course load. For example artillery instructors within Weapons Division may be required to instruct on the technical portions of the Basic Officers Course conducted by Command Division.



COMMAND/HQ ELEMENT

Command The School is commanded by Col J.P.R. LaRose and the Deputy Commandant is LCol J.J. Barrett. The Headquarters is sub-divided into companies as follows:

Standards Coy The Standards Coy consists of 13 Officers, 3 Warrant Officers and 2 Civilians of which 3 Cpts and 1 CWO are artillery. It is responsible for:

- a. Maintaining and upgrading of all training standards at the school,
- b. The evaluation of all training and training systems at the school, and
- c. The production of pamphlets and precis as directed by HQ Mobile Command.

Co-ord Coy The Co-ord Coy consists of 7 Officers, 12 Warrant Officers and Sgts, 12 other Ranks and 6 Civilians of which the Arty representation is 1 Maj and 2 Cpls. It is responsible for:

- a. The scheduling and programming of all courses which will be conducted at the school.
- b. The control of all training resources held by the school.
- c. The control and co-ordination of training areas, ranges and accommodation

required by or owned by the school.

- d. The co-ordination of all requests for training aid production or purchase.
- e. The allocation and employment and in conjunction with Standards Coy the training of all school instructors.

Administration Coy The Adm Coy consists of 2 Officers, 3 Warrant Officers and Sgts, 6 other Ranks and 5 Civilians of which 1 Cpl is Artillery. It is responsible for:

- a. The everyday administrative support required by the school including the operation of the School Orderly Room, Records Section, Central Registry, Mail Room, Reception and Dispatch Section, and the Reproduction Pool.
- b. The administration of personnel and control of the Central Stores and the Maintenance Platoon.

Trials and Evaluation Coy The T & E Coy is responsible for conducting trials and evaluating equipment pertaining to the Armoured, Artillery and Infantry as directed by HQ Mobile Command. It consists of 4 Officers, 1 Chief Warrant Officer and 3 Civilians with 1 Captain and 1 Chief Warrant Officer being Artillery.

COMMAND DIVISION

The Command Division has a strength of 30 Officers, 29 Warrant Officers and Sgts, 2 Rank and File and 2 Civilians. The Artillery is represented by 2 Majors, 2 Captains, 1 Master Warrant Officer and 5 Warrant Officers. The division is sub-divided into the following Coys:

- a. Tactics Coy
- b. Leadership Coy

- c. Special Warfare Coy
- d. Tactical Air Operations Coy (TAOC)

This division has been tasked with conducting those courses primarily concerned with developing the leadership and tactical knowledge of candidates. e.g. Combat Team Commanders Course, Basic Officers Courses Phases 2 - 3 and 4, the tactics portion of Senior NCO Courses, Winter Warfare Instructors, and Forward Air Controller Courses.

BASIC DIVISION

Basic Division has a strength of 8 Officers, 41 Warrant Officers and Sgts, 3 Rank and File and 1 Civilian of which 1 Master Warrant Officer and 3 Sgts are Artillery. Basic Division has a French speaking detachment in CFB Valcartier. The Fran-

cophone Det is not included in the above totals.

"A" Company is responsible for conducting Infmn PL 3 courses and "B" Company is responsible for conducting Crewman and Artillery PL 3 courses.

BATTLEFIELD CONTROL and MOBILITY DIVISION

The Battlefield Control and Mobility Division is commanded by a LCol who also serves as Deputy Commandant. The Division consists of two companies.

- a. Vehicle Coy
- b. Telecommunication Coy

Vehicle Company The Vehicle Coy has a total strength of 4 Officers, 31 Warrant Officers and Sgts, 48 Rank and File and 3 Civilians which includes 1 Master Warrant Officer, 8 Sgts and 3 Corporals from the Artillery. The company is responsible for:

- a. Conducting the driver instruction on all courses; and

- b. The control and maintenance of all CAS Trg Sp Vehs.

Telecommunication Company The Tel Coy has a total strength of 6 Officers, 23 Warrant Officers and Sgts, 13 Rank and File and 1 Civilian. The Artillery is represented by 2 Captains, 1 Master Warrant Officer and 3 Sergeants. The Company is responsible for:

- a. All signal instruction required by all courses conducted at the school.
- b. Maintenance of radios and artillery signal equipment held by CAS.
- c. Conducting the Surveillance Equipment Operators Course.

WEAPONS DIVISION

The Weapons Division is commanded by LCol D.R. Baker and has a total of 19 Officers, 52 Warrant Officers and Sgts, 5 Rank and File and 3 Civilians. The Artillery representation is 1 Lieutenant Colonel, 2 Majors, 10 Captains, 1 Chief Warrant Officer, 11 Warrant Officers and 12 Sergeants. The Division is sub-divided into 2 functional companies:

- a. Indirect Fire Coy
- b. Direct Fire Coy

Indirect Fire Coy With some minor changes this coy represents the CFSA Courses Bty. It is commanded by Maj F.W. Bayne and is responsible for conducting the following courses:

- a. Arty Instr Offr
- b. Arty Adv Gnry
- c. Arty Instr WO
- d. Arty Offr Survey
- e. Basic Arty Tech
- f. Adv Arty Tech

- g. Arty Computer Operator
- h. Advance Inf Mortar
- j. Arty Air Observer
- k. Officer Cadet Technical Portion of Arty Phase 2, 3 & 4
- m. Basic Svy Tech
- n. Adv Svy Tech
- p. PL 6A & 6B (Arty)
- q. PL 7 (Arty)

Direct Fire Coy The Direct Fire Coy will be responsible for conducting the following courses:

- a. Crewman PL 3 Gunnery
- b. Combat Small Arms
- c. Advance Anti Tank
- d. Crewman 6A and 6B Gunnery
- e. ATGM Controller

MAJOR EQUIPMENT

The Combat Arms School does not hold sufficient equipment to support training during a normal course schedule. It is necessary to request equipment and personnel support from the Combat Training Centre. Some of the major items held by the Indirect Fire Company includes a mix of 105mm C1 & L5, Radar AN/PSS 501 and etc.

Additional support in both personnel and

equipment is provided by E Bty 2 RCHA through the Combat Training Centre to broaden the scope of training.

All stores and equipment are held by Distribution Account Holders. The SO 3 Log (Sup) controls and accounts for all stores and storemen. The SO 3 Trg (Res) allots all resources.

METHOD of OPERATION

With the aim of maintaining a high standard of efficiency, and to ensure a high degree of flexibility the Combat Arms School operates on a centralized control system.

Staff Officers in the Combat Arms School Headquarters maintain control of all resources within the school. All requests or inquiries are forwarded to the appropriate staff officer through normal Company channels. The following staff appointments have specific responsibilities:

SO3 Trg (Res) is responsible for the vetting of resource cards and the requisitions for the stores necessary to support the training.

SO3 Trg (Fac) is responsible for the allocation of training areas and facilities, including training aids, and also coordinating the requests for support from resources outside the school.

SO3 Trg (Pers) is responsible for all matters pertaining to instructors which includes the allo-

cation, upgrading and refresher training.

SO3 Log (Sup) is responsible for all matters pertaining to stores accounting and the control and allocation of supply technicians.

SO3 Adm is responsible for the personnel administration for staff and students. He is also responsible for the routine unit administration which includes routine orders, duty officers rosters, etc.

SO3 Sched is responsible for the scheduling of both current and future courses.

SO3 Prog is responsible for the programming of courses to ensure that conflicts in sequencing are resolved prior to the course. He is responsible for the production of timetables and their amendments.

SO3 Stds (Amnd, Arty Inf) are responsible in conjunction with the SUBJECT MATTER EXPERT (SME) for the production of the Course Training Standards and Course Training Programme.

COURSE SCHEDULE

The Combat Arms School started conducting courses in Gagetown on 3 Sep 70 and will achieve a full course load in January 71. The student load will be as follows:

4 Aug 70	36
21 Sep 70	112
20 Oct 70	238

24 Nov 70	220
18 Dec 70	233
19 Jan 71	469

From January 71 the student load will fluctuate between 400 and 550 depending on course scheduling.

COURSE PROGRAMMING

The Combat Arms School operates a centralized course programming system. Each course is conducted on the Performance Oriented Training System and the Course Training Plan is based on Enabling Objectives (EOs) and Performance Objectives (POs) as per CFP 9000.

The Programming Platoon following the PO & EO listed in the CFP lays out the course on a programming board. The applicable staff officers with the SME or course officer check the sequences

for conflicts with other courses. Changes are made if any conflicts occur. A timetable is then produced and the Resources cell produce all the idents for the resources required by the courses.

The course instructional staff receive their timetable and prepare lessons and conduct recces. The stores are assembled for the course and the Div QM picks them up and issues them to students and staff as they are required.

RANGES / TRAINING AREAS

The present subdivision of the range/training areas do not meet the requirements of the Combat Arms School. The school has submitted a brief to the CTC HQ requesting changes to range boundaries, range modification and improvements, the construction of new gun areas and the introduction of a new

range control safety section.

This brief came about mainly because of the problems associated with providing suitable areas for the more advanced artillery courses.

SUMMARY

The problems associated with the move and amalgamation of the CFSA Shilo and CAS Borden into CAS Gagetown have been many and varied. It is to the credit of all personnel regardless of corp affiliation that the problems are being met and solved by teams representing all ams.

Despite the recriminations which may spring to mind over the loss of our "HOME" in Shilo, all

gunners will have to admit that it is far outweighed by the benefits which have already and will continue to accrue from a closer association with our friends in the other Ams.

During the past year of turmoil and change, "Gunners" have been asked to live up to our motto, "UBIQUE", and have not been found lacking.

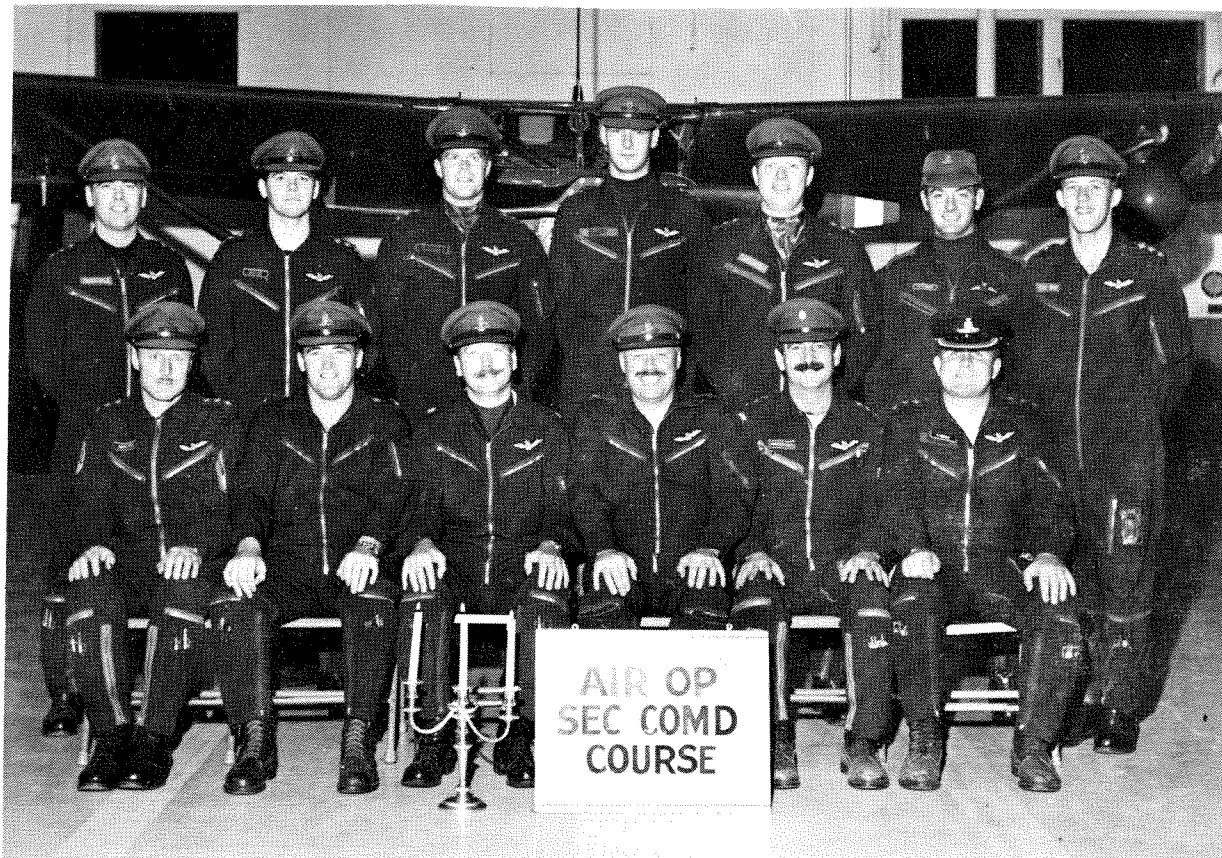
AIR OP SECTION COMMANDER'S COURSE

The first course to be run by the new Combat Arms School in GAGETOWN has been completed at CFB SHILO, Manitoba. It seems fitting that the first course will probably be the last of its kind to be run in Canada. Eight pilots, representing all of the artillery regiments in Canada, were assembled for the course in SHILO on 24 Aug 70. They were as follows: Capt LWF Cuppens (2 RCHA GAGETOWN), Capt W McMullen (2 RCHA PETAWAWA), Capt MD Elkins, HC Ellery, DG Miller (3 RCHA SHILO), and Capts RP Hitchman, GF Ireland, M MacDonald (5eRALC VALCARTIER). Capts Cuppens, Ellery, Elkins, Ireland, MacDonald, and McMullen recently completed L 19 training in CFB RIVERS, Manitoba, and were posted to the various air observation post troops in Canada. Capts Hitchman and Miller graduated eighteen months previously and have been serving in the troops for the interim period. The first three weeks were spent reviewing tactical flying techniques. Giving the instruction were Maj FW Bayne (CAS GAGETOWN), Capt W Marshall (Training Command) and Capt J MacFie (CFB GAGETOWN). Upon completion of the first phase, all students underwent a proficiency test in the skills of tactical flying.

Phase 11 commenced with two weeks of ground school instruction provided by Maj FC Ayres (Tp Comd 3 RCHA Air OP Tp SHILO), Capt RL O'Banion (CAS GAGETOWN), and Sgt K MacLeod (3 RCHA). After the completion of the refresher in

gunnery, the personnel again took to the air to put into practice their profession. Two other instructors, Maj D Foster and Capt V Coroy (2 RCHA PETAWAWA) arrived to replace Capts MacFie and Marshall who unfortunately had to depart for other duties. The flying encompassed all phases of direction and control of artillery fire by both day night as well as wire laying, bundle dropping, message pick-up, aerial photography, and message dropping. The course came to a sudden close on 20 Oct because most of its personnel were recalled to their units to provide aid to the civil power. The unfortunate ending finished the course seven training days early.

The personnel on this course will be the end of a long history of army artillery pilots. The new force structure phases out the air observation posts as they are known now. Along with the end of the air OP we will see the end of the light fixed wing observation aircraft. With mixed emotions, the combat groups are now preparing to obtain their local air observation tasks from the new composite helicopter squadrons. The L 19 organization will be absorbed by these squadrons and the pilots will be re-equipped with the new LOH now on order. It seems fitting that the newly located and organized Combat Arms School, in its preparations for the future, should conduct the last course from the old era and in so doing prepare itself for the new and difficult task ahead.



!!! !!!

THE CHOSEN

The following is part of a Letter to the Editor from The Daily Telegraph (London, England) Friday, October 10, 1969:

SIR – May I please take issue with Peterborough regarding his note (Oct 3) concerning the late Lt-Gen H.G. Martin?

Peterborough writes: “His single weakness was a fixed belief Gunners were among God’s elect.” Sir, this was no weakness. The Gunners are God’s elect.

*CHARLES HUGHES
Southend-on-Sea*



ADVANCED ARTILLERY OFFICERS' COURSE

The aim of AAOC 7001 was to produce fire-planners at the company/battalion level, and to acquaint the candidates with fire-support co-ordination in the battalion and brigade FSCC's. E Bty and CAS Mor Pln provided fire support for the initial stages, Troop Commander's fire-planning; then the course moved to Shilo for two weeks, where 3 RCHA and 1 PPCLI Mor Pln provided support for fire-plans at the Battery Commander's level. Shooting was good, and the support provided by E Bty, 3 RCHA, and the mortars was appreciated.

Training in FSCC operations involved the integration of battalion mortars in fire-planning, the allotment of divisional artillery in response to fire requests, briefings on close air support and weapons effects, an introduction to naval gunfire support, and a brief burst (excuse the pun) on nuclear fire-planning. In practicing the control and allotment of resources, a one-day FSCC exercise was most instructive and beneficial.

While the course was in progress in Gagetown, laser range-finder trials were being conducted by Capt BTN McGrath, and the candidates were given the opportunity to benefit from his findings in a presentation on this impressively-accurate and time-saving piece of kit.

Another highlight of the course was a week of tactics at CAS Tactics Company. In a series of cloth-model exercises, stressing tactics at the combat team/battle group level under the North-West Europe concept of operations, the instant Napoleons hotly defended their solutions to the various tactical problems posed.

Naturally, no course would be complete without its "incidents", and this one had its share, which, in retrospect, make the course a memorable one. There was the Friday evening that one of the IG's decided, on completion of a day's shooting, to take the direct route back to camp, and succeeded in miring the vehicles in the infamous Gagetown mud, where they remained for several hours into the night while the students made bonfires, had a box-lunch picnic, and made bets on when recovery would arrive. And of course, during Grey Cup weekend, there was the "fabulous voyage" to Shilo, by bus and air, which was little more than a misadventure in movement and military technology.

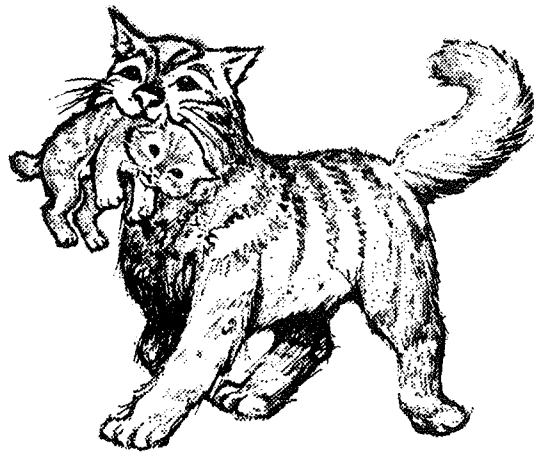
In spite of and because of these and other amusing disturbances, AAOC 7001 was highly successful, thanks also to the high calibre of instruction, an excellent student-instructor relationship, and the hospitality of the living-in members of the CAS Officers' Mess.

Instructors

Maj JET Hoare	U.K. Liaison Officer
Capt LTB Mintz	CAS
Capt HA Walinsky	CAS
WO HR Walker	CAS
Sgt DE Wall	CAS

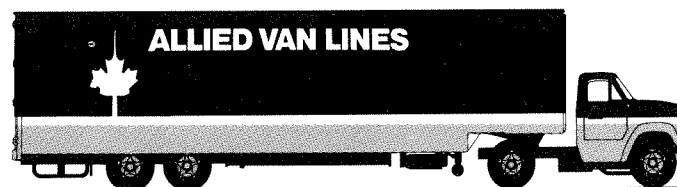
Candidates

Maj HW Boyles	U.S. Liaison Officer
Capt RJ Beardmore	3 RCHA
Capt JW Beese	5 RALC
Capt JD Briscoe	5 RALC
Capt WF Gee	3 RCHA
Capt JE Miller	E Bty 2 RCHA
Capt WJ Parton	E Bty 2 RCHA
Capt JGVN Rouleau	5 RALC
Capt JM Vanstone	3 RCHA
Capt KW Wenek	3 RCHA
Capt RS Wilson	3 RCHA
Lt DJ Phillips	CAS
Lt BS Saunders	E Bty 2 RCHA



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2 RCHA

1970 was another busy year for 2 RCHA, as part of 3 Combat Group in CFB Gagetown. The year started off extremely well when a 2 RCHA team consisting of 30 men under Lt FB Brake won the Combat Group Patrolling Competition, much to the surprise and chagrin of our local infantrymen. As a reward for their excellent showing in Gagetown, Lt Brake and his hardy gunners were sent off to the icy wastes of Canada's northland to participate in Exercise "New Viking", where once again they earned top marks.

The unit continued with its Winter Warfare School/Mount Douglas ski hill project well into spring when the finishing touches were finally completed. This fine training and recreational facility is no doubt a lasting example of Gunner skill and ingenuity and will be enjoyed by soldiers and their dependents in future years.

The spring Combat Team Commanders Course was supported by the regiment, which, with its usual impartiality provided aid to both friend and foe alike. FOO parties, a fire support coordination centre under Lt Crooks and considerable logistic support were the regiment's contribution to the friendlies. Lt Saunders became known as the "Mad Bomber" as he and his small demolition force managed to provide ample fire simulation including sound effects for both sides.

In spite of all their subsidiary activities, 2 RCHA did not forget that they were gunners firing whenever possible throughout the winter and spring climaxing in a gun camp in June when 1900 rounds were fired by the M109s. In addition weekends with the militia (when it always seemed to rain) gave some personnel valuable experience in instruction. The latter part of June was taken up in practice for the handover parade on 26 June 1970.

LCol JA Cotter, CD handed over command of E Bty, which was to remain in CFB Gagetown, to Maj DJ Walters, CD. The remainder of the Regiment, that being RHQ and D Bty by designation, officially moved to CFB Petawawa on 16 July 1970.



A last round fired in anger.



2 RCHA Final Parade 26 June 1970, Colonel D.W. Francis inspects D Battery with, from left to right: RSM T.H. Campbell, Major D.J. Walters and LCol J.A. Cotter.



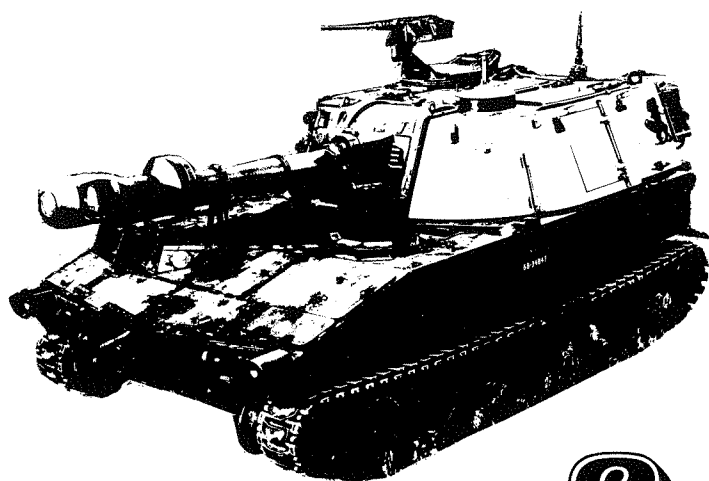
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E BTY 2 RCHA

FORMATION

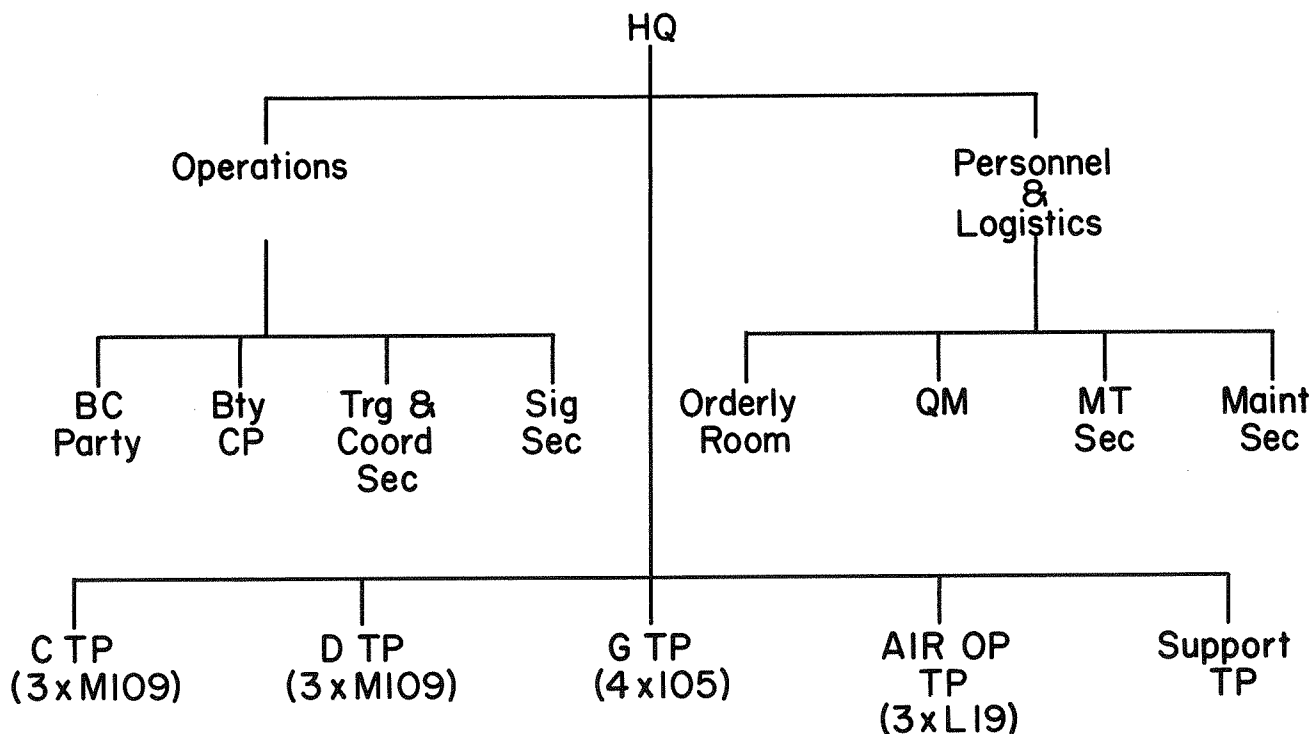
On 26 June 1970 2 RCHA held its Farewell parade in Gagetown. On 16 July the Regiment was restructured, with RHQ and D Battery in Petawawa and E Battery in Gagetown. Y Battery was formed to hold 2 RCHA personnel remaining in Gagetown in excess of E Battery establishment. Both Batteries are commanded by BC E Battery.

E Battery is an independent six-gun M109 Battery with 10 officers and 114 ORs. The role of the Battery is to support the Combat Training Centre (CTC) and reinforce 1 RCHA. The Gagetown based Air OP Troop of 4 officers and 23 ORs is authorized

as an increment to E Battery until the deployment of a tactical helicopter squadron in Gagetown.

Y Battery is one of four surplus Batteries formed as a result of force restructuring. The surplus Batteries were formed to provide meaningful employment for personnel who were to continue individual, sub-unit and unit training until surpluses no longer existed.

The two Batteries, totalling approximately 300 all ranks, have been organized as shown below:



The unit is called, within Gagetown, E Battery 2 RCHA. Personnel from E Battery and Y Battery are employed throughout the unit and are cross trained on M109 and 105mm C1, and will also be trained on L5, when they are available.

The Support Troop holds personnel employed on a full time basis on base, out of base or on CTC duties.

This organization is, of course, interim and will have to be adjusted as personnel are posted from Y Battery. Until then, however, it is fully committed to many tasks in support of CTC.

After restructuring the Battery had hoped to have time to reorganize, take leave and train for a months practice camp before being called upon to fulfil any tasks. The move of the regiment had naturally resulted in quite an uproar and a complete turnaround and reshuffling of personnel. However, instead of the expected summer leave period the Battery found itself fully involved in the summer student employment program in addition to training the Militia at Gagetown and providing officers and senior NCO's for instructing the Militia throughout the Maritimes.

TRAINING

As August drew to a close and personnel began returning from summer commitments, the CO completed plans for a two week training period culminating in a two week gun camp to bring the Battery back to the level of professional skill necessary to competently support CTC. The 130 man Ready Force commitment at the same time was considered to be but another minor inconvenience. Late one Monday night, however, just as the Battery was embarking upon its training schedule, the call-out came. The RCMP in the Campbellton NB area had requested aid in searching for an elderly mental patient, who had wandered away from a picnic at a provincial park. After an all night drive and several days of struggling through the back-country of the North Shore, climbing gullies and ravines that would have taxed the abilities of a mountain goat, the men were eager to pounce upon any local character who vaguely resembled the lost man in any way. Several leads were followed but resulted in nothing more than a few more sore feet. During the course of the search several people became convinced that our quarry could be more easily and profitably



*The Happy Gang – E Battery (with mascot)
during the search in the Campbellton area.*

pursued by a close scrutiny of all the local establishments where our friend might have made his way. A thorough search was carried out but, although many interesting people were turned up, there was no sign of the missing man. After four days of thoroughly combing the area for several miles around the park, the RCMP reluctantly called off the search and the battery wearily climbed on the buses for the long ride back home. The search in the Campbellton area had unfortunately put the original training plan for the battery completely out of phase and much lost ground had to be made up before the September gun camp.

Gun camp, with the able assistance of an IG and three CGA's from the Combat Arms School (CAS) started out at the detachment/crew level and moved up to troop and battery level as proficiency progressed. For the newer officers and men it was an opportunity to fully appreciate the gunnery problem. For all, it was an ideal opportunity



Sharp End — Capt JE Miller and the D Tp OP party, about to pass engagement orders to the guns.

for the individuals of the reorganized Battery to get to know each other and develop a team spirit as well as bring the level of gunnery up to a suitable level to provide competent support for CTC and to train personnel for Germany.



"No matter what you say sir, it's in the book"

Gun camp ended with a big bang as the Battery chased the Fantasians out of Oromocto (once again) in Exercise "Nomad Tribe", a four day exercise which practised the Battery in the defence, withdrawal and attack phases. Over 1100 rounds were fired during the camp, 598 by G Troop. Many valuable and important points were brought out during the exercise and the brief training period that had preceded it.

No sooner had exercise "Nomad Tribe" finished than the Battery was out again practising for the annual FMC demonstration. E Battery responsibilities in the three day demonstration period were:— to provide a demonstration of a mechanized battery deployment and the conduct of basic fire missions using an AOP, participation in a fire power demonstration, plan and conduct a night illumination demonstration, provide a static display of equipment, and the provision of OP parties for a combat team attack and company in the defence demonstration.

FIRE SUPPORT

The fall season was an extremely busy one for E Bty. Although the practical portion of the fall Combat Team Commander's Course was called off after one week due to the situation in Quebec, E Bty still had a heavy commitment to the Combat Arms School. In addition the Battery was continually at three hours notice to move until the 16 December.

As part of its Ready Force role the Battery was called out twice more to help look for lost hunters. The first was found by a search and rescue helicopter shortly after the search started. The



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Further information is given in the pamphlet G1 1404 e, which may be obtained from

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second hunter was fortunately found after the battery had been called out but before they had left the area.

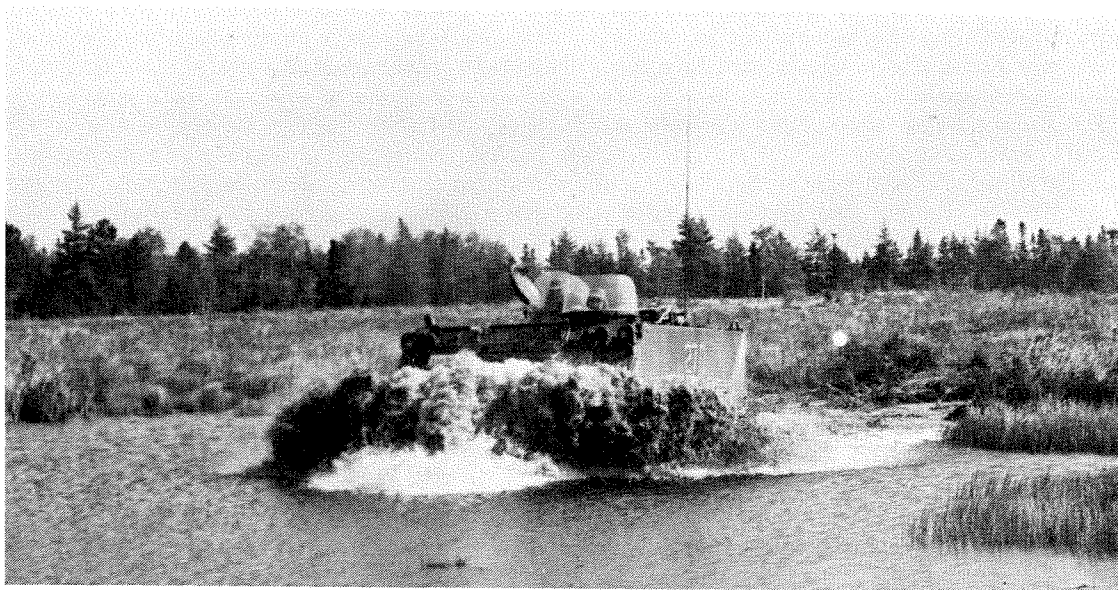
During October, E Bty and CAS cooperated to provide the support for 3 Field Regiment RCA (M) in the Artillery Association Competition.

In its role to provide shooting support for CAS Courses and trials the battery shot for the Warrant Officers Course, Laser Range Finder Trials and the Advanced Officers Course.

Approximately 4500 rounds were expended in support of the Advanced Officers Course firing

every kind of shoot and seemingly endless fire plans. The Quebec situation led to intensified unit training in Internal Security. As well as IS, First Aid Refresher Training, Small Arms Classification and L5 conversion training took place. In the midst of all this activity we were subjected to the rigours of a commander's inspection during which MWO Blackwell became the camp's most notorious paint scrounger.

6000 rounds were fired by the Battery from September to December, indicative of a busy first year and portending an even busier 1971.



"You really don't want to put them here, do you, Sir?" Part of the reconnaissance party in action during the Fall gun camp.



TID-BITS

The 18-pounder was discarded at the beginning of the war in favour of the 25-pounder gun/howitzer. Medium units were equipped with 5.5" guns and some 4.5" guns. The third divisional artillery was given a special role during the initial landing operations in Normandy and were specially equipped with self-propelled 105-mm Howitzers for the operation, before returning to their normal 25-pounders. Anti-Tank units, an innovation of the war, were equipped with 6-pounders at the beginning, and later both towed and self-propelled 17-pounders. During the later stages of the war, when air supremacy was established, a HAA Regiment (the 2nd) equipped with 3.7" guns joined the 2 AGRA in a ground role. Divisional and Corps LAA units brought down many enemy aircraft with their 40-mm Bofors.

During October–November 1944, a Land Mattress Battery was formed by 112 LAA Bty and was equipped with rocket launchers. Later on 23 Dec 44, the 1st Rocket Bty was formed. Artillery officers took to the air with the formation of three Air Observation Post Squadrons, one of which was in action. These Gunner Officers brought down the fire of artillery weapons on enemy positions from their Auster aircraft which they flew over the forward defended localities.

GUNNERY STAFF COURSE/LOCATING

by
Captain R.G. Elrick

Not too very long ago the RCA trade structure had three separate parts, each offering a variety of training and employment for all ranks and complete career progression for other ranks. They were Field, Anti-Aircraft and Locating. The most recent reorganization of the Branch has effectively reduced the total from two to one – the only portions of locating still an active part of field units being survey and artillery intelligence, and they are no longer separate trades. We will continue to train in artillery intelligence, but the extent of the training and our functional capability will be very limited by the lack of information gathering devices. In fact, the American, British, French and German Forces continue to develop new equipment and procedures at a furious rate, with notably different approaches in most fields. Regardless of all the reasons and rationale behind our reduction in participation (in other than visual observation from the ground and air), we are now one of the very few modern armed forces without a viable artillery-run target acquisition capability.

The state of our forces now in no way alters the fact that the functions normally considered under "Locating" Artillery – Survey, Airborne Surveillance (Drone), Sound Ranging, Meteorology, Mortar Locating Radar, and Artillery Intelligence – are still desirable and necessary elements of a modern artillery organization.

One of the very few paths open to us now, to maintain even a barely minimal knowledge of current locating technological improvements and tactical deployment procedures, is the Gunnery Staff Course/Locating conducted at the School of Artillery, Larkhill. This fifteen-month course is conducted every second year (Officers' Course No 13 begins 3 Jan 71) and includes separate modules or "legs" on each of the subjects mentioned above, plus a brief period on field gunnery, tactics, and signals. It also includes many visits to research and military establishments and industries. These give a glimpse of the full depth of each subject plus the technological research, experimentation, production and marketing of a vast range of equipments. To round out the instruction and to ensure proper orientation of the course, the gunnery portion covers the basic equipment and procedures of field gunnery (made more palatable by exposure to equipment like FACE and various types of CP vehicle) as well as current equipment research and development.

Two separate courses are run concurrently, one for officers, the other for Senior NCOs and WOs. Their aim is to train Instructors in Gunnery and Assistant Instructors in Gunnery-Locating for the Royal Artillery. It is some indication of both the importance attached to and the size of the RA locating branch that most of these IG's and AIG's generally remain in this field, alternating between unit and school employment, throughout their careers. Canadians have attended almost all of the officers' courses to date and most of the NCO courses until 1963.

There are three reasons to believe that we would re-acquire locating equipment in appropriate political/military and financial situations conducive to a general force expansion: the cost of many new electronic equipments of a given capability is decreasing; radical improvements in capability and form are making some previously unreliable and unwieldy equipments tactically feasible; and, advanced electronic and mechanical technology are producing equipments requiring less manpower to operate and maintain them. For example, the new lightweight counter-mortar radar (Cymbeline) is cheap by radar standards, robust, and tactically feasible in forward

areas. The new Artillery Meteorological System will require no more men to deploy and operate it than the current GMD equipment in use in Canada, but will produce up to eight different forms of meteorological message from one balloon/radiosonde flight per hour. This trend is apparent throughout the field — in sound ranging radio-link equipment, elevated-aerial distance-measuring equipment and computers for survey, and the Canadian-produced AN/MPQ 501 Surveillance Drone for airborne battlefield surveillance. In our present circumstances, it seems only sensible that we continue to participate in both these courses, especially since progress resulting in major equipment and procedural changes is so rapid that graduates could not be considered current after more than two years away from related employment.

The two main benefits to the individual Canadian candidate are:

- a. The opportunity to step beyond the currently restricted sphere of the RCA, to become aware of how and why larger forces utilize an impressive and extensive array of modern target acquisition equipment and new procedures to complement their equally impressive fire support resources; and,
- b. The nearly unique opportunity for those with little or no technological training to learn the construction, employment and capability of sophisticated equipments, as well as the theoretical basis of their design and employment, without leaving the practical soldiers' world of deploying and operating artillery equipment.

They are long and demanding courses. As prospective Canadian candidates become progressively less familiar with artillery locating and its role in modern armed forces, adaption to the course will be more difficult. However, the great personal satisfaction to be gained from achieving a difficult goal and our dire need to maintain some element of expertise in this field are adequate reasons for both young officers and senior NCOs seeking a challenge, and access to another interesting artillery field, to attend future courses.



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**Change of Command
And The Beat Goes On
81mm Mortar — Artillery Weapon?**



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BATTERY

The past year has again been a busy and exciting one for we airborne gunners, although the Regiment has restricted itself to fewer major exercises per year. This enabled us to assess and assimilate the lessons learned and amend SOPs where necessary.

In contrast to the first two years of training, a large portion of this year's time was gunner oriented, allowing us to really get to work with our new equipment, the L5, while maintaining our efficiency with the 81s. This was interspersed with Internal Security, ski school, fire fighting, and of course the normal number of parades and demonstrations.

The Airborne Battery exists as such for one reason: to provide fire support for the Canadian Airborne Regiment. To this end live firing is carried out whenever possible in conjunction with both Commandos. In December 69, the Battery deployed to Wainwright Alberta and provided live fire support for the 2 Commando Winter Battle School. As part of our support fire was brought in close to their positions in the defence and to their front as they advanced. It included HE, WP and CVT. Most of the infantry ORs had never seen artillery fire and were duly impressed with what they saw, felt and heard. It was agreed that this type of training is extremely worthwhile and would be arranged as often as possible in the future.

In February, we spent a week in Wainwright practicing winter operations with the 81 mm mortars, and two weeks in garrison on gun, technical and signals refresher training. Then in March, we again deployed to Wainwright for another week's mortar training.

Immediately thereafter, we found ourselves in the Kananaskis area of the Rockies for two weeks of ski training. This included cross country and downhill, with each phase highlighted by a 20 mile cross country run with complete winter equipment

and a day of fun in the form of downhill competitions. Cross country equipment used for downhill skiing provided for an abundance of humorous incidents with Sgt Christensen being the major source.

After a week back in garrison, we went back to (you guessed it) Wainwright for another week with the mortars. We didn't mind! It was in preparation for our return to the home of all Canadian Gunners.

On 11 April we landed at Rivers and wasted no time deploying the remaining short distance to Shilo.

We had been tasked to provide assistance to CFSA in the form of firing for the Arty Instr (Oftrs) Course. The support, adjusted because of weather, nevertheless went well. Immediately thereafter, we managed to hold a short 5 day battery practice camp, allowing us to utilize the excellent IG and AIG assistance which the School is always willing to supply. We returned on 30 Apr just in time for a northern regimental exercise.

Exercise "Nemesis North" (13-20 May 70) was to be the most distant and largest Canadian personnel para drop since WW 11. Just over 300 personnel jumped into Coral Harbour on Southampton Island, north of Hudson Bay. Because 2 CDO was the infantry element selected to take part, their affiliated troop "B" Tp accompanied them with their 81s as support. "A" Tp acted as the enemy force and left a few days before the main body. MGen Waters and Col Francis were on hand as part of the FMC representatives to watch the drop and initial stage of the exercise. At approximately 1600 hrs 15 May the main body departed in full winter dress. Our rucksacks were stacked in the center of the AC and our chutes under our seats. It was a six hour flight and we started dressing for jump (donning parachutes and equipment) after we were 4 hours out. When we arrived the winds were too strong to allow us to jump.



*A non-tactical deployment
of a troop of 81 MM Mortars.*

We then circled for two hours, hoping the winds would drop. When they didn't, we returned to Edmonton and the exercise was postponed for 24 hours. This time conditions were good and the jump was successful. The commandos had their support when they needed it and the attack was successful. After the end of the tactical portion of the exercise, the following few days were spent on arctic navigation and movement with skidoos and toboggans.

Our next three activities took place in quick succession in Edmonton. They were the Regimental Birthday celebrations on 6 Jun, Armed Forces Day on 12 Jun and a Battery Change of Command Parade on 19 Jun.

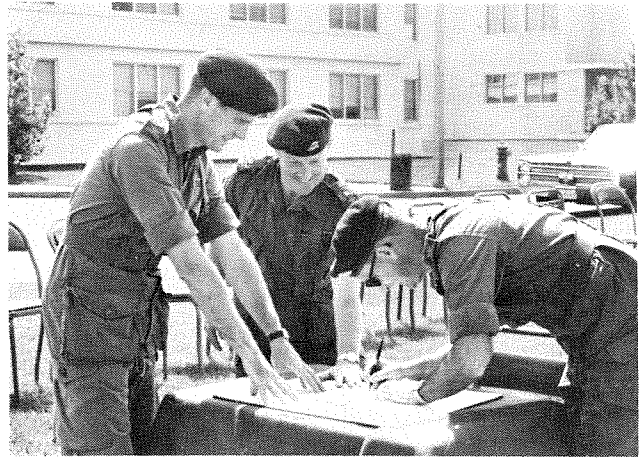
Our Birthday celebrations consisted of a mass drop, various demonstrations, a day of inter unit sports, and an all ranks dance. One interesting sidelight was Sgt (Trapper) Walton adjusting fire onto a toy house using explosive charges in place of actual rounds; as the Battery's part of the demonstrations.

The demonstration for Armed Forces Day included a gymnastics display led by Bdr (Benny) Russel of the Bty, static displays of all kinds, and a mock attack including a personnel para drop with L5 support brought in slung under a Voyager helicopter.

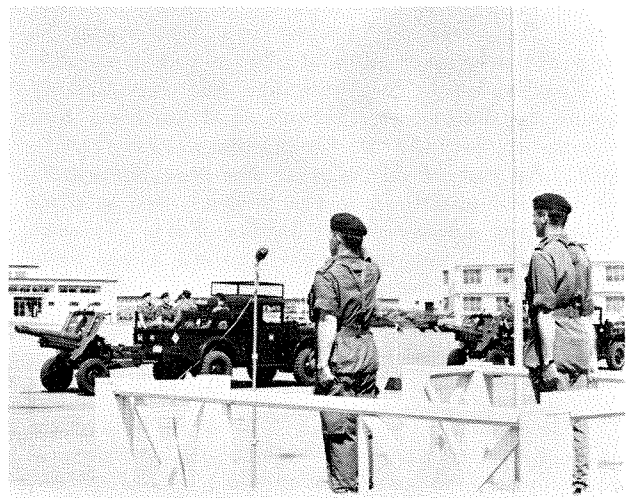
CHANGE OF COMMAND

June 19 was a memorable day as the Bty said it's official goodbye to Maj E.B. Mac Latchy CD, who had been our CO since we were formed and who had worked and fought for us so hard during those

always difficult and trying first two years of existence. He was very close to us all and we were truly sorry to see him go. We welcomed Maj R.R. Doyon CD, previously of the staff at Chief Arty, as the new CO.



*Major RR Doyon signs the Handover Document
witnessed by LCol H.G. Taylor and
Major EB MacLatchy.*



*Major MacLatchy takes the Drive Past
as the Deputy Commander of the Regiment,
LCol Taylor, looks on.*

AND THE BEAT GOES ON....

As we were about to go on annual leave, we were suddenly put on standby for IS operations. A recce party left and the troops trained on the parade square, sharpening their IS skills and techniques. As it turned out, the operation was cancelled "due to rain", and we were able to get away.

After annual leave in July, the Bty was deployed to Ft Smith for two weeks, fighting fires. They were put to work digging a 20 mile fire trench which went down to the perma frost because of the danger of underground fires. The two troops were separated and completely isolated except for resupply by helicopter. Later, their tasks were changed to patrol and recce activities.

September saw us in Wainwright again for a practice camp and direct live firing support for 2 Commando Summer Battle School. The theme of the battle school was relief of the line, a platoon at a time, into a fully developed defensive position, with our FOOs advising the Infantry Commander on the defensive fire plan and then firing it with the Bty. The Infantry Officers and Senior NCOs also got a chance to practice observation of fire and engage some of the targets live. The targets were often very close and as a result, were impressive. A great deal of time and effort went into this support but we think the results of a more knowledgeable and better working relationship with our supported arm more than made up for it. Part of our practice



While inspecting B Troop, LGen Turcot chats with Tpr Sandul.

camp was a trial in the use of a single CP to control the fire of the Bty whenever the troops were co located in an effort to extend our limited staying power due to our lack of CP personnel. We also held a troop competition, consisting of 2 quick actions, GPO's open action, Troop Commander's Shoots and No's 1 anti tank shoots. B Troop won the competition by a narrow margin.

LGen Turcot, Comd FMC, conducted his annual inspection of the Regiment on 2 Oct. He arrived at the parade square only to find it empty. He was to view a truly unique parade. Each unit in succession proceeded to form up on the parade square with the Bty coming on first and the other units as they would be deployed in battle. In order to demonstrate that both troops of the Bty have both guns and mortars, "A" Tp pulled L5s out and "B" Tp manpacked their mortars. After the General had inspected, we quickly formed columns of three and did our normal doublepast, etc. Later the General was shown an L5 lowered in pieces from a height and then assembled at the bottom as

well as a demonstration para drop and attack.

Finally to round off 1971 we jumped into Alaska on a two part exercise. It was an Alcanus operation designed to test our fighting effectiveness in northern winter conditions. The first part consisted of a shake out Regimental exercise including a para assault. At this time, a number of "firsts" for the Bty were recorded. It was the first time more than one L5 has been para dropped together; and the first time without their prime movers. We also moved the guns by the means of "special" skis and pulling attachments for the skidoos, designed by Sgt (Joe) Girard.

The second part is "*Acid Test III*", a combined Canadian/US exercise was our first opportunity to work with artillery units from the USA.

As you can see, our existence here is anything but idle, but thats the way we want it and we expect nothing but more of the same.



81mm MORTAR-ARTILLERY WEAPON?

by Captain J.C. Stewart

In order to protect myself from insults and damnation, this article must be qualified.

Official policy will not be reflected in this article nor will staff duties concerning the format of military papers. It should, however, further confuse the "Great IG's in the sky" as to why the Airborne Battery, RCA is equipped with the 81mm Mortar. Hopefully, future GPO and TLs completing their "Cherry Jump", finding themselves alone with six mortars on a troop frontage of six hundred meters, will benefit from this brief report.

To ensure all Gunners that we are still Gunners and firmly believe so, I will mention that the 1 AB Bty, RCA is equipped with six L5, 105mm Pack Howitzers and twelve L1A6 81mm Mortars and will only deploy with one or the other.

The original concept of the CAR was one of simplicity and speed; sophisticated equipment would be too bulky. The CAR is an initial reaction force to secure an airhead and be relieved in Seventy-two hours by a Combat Group. Hence when Airborne Gunners were approved, the 81mm Mortar was adopted because of its ease in mobility and the knowledge that when a light gun became available the CAR would receive it. The 81mm Mortar has been retained to provide an indirect fire capability for long range foot-borne operations.

This paper will discuss briefly in Artillery terms the organization, deployment, plotter techniques and orientation of the battery when deployed in mortar configuration. Master Gunners will shiver in their gun pits at this next revelation. The Battery cannot afford to carry excess weight as it is expected to man pack its weapons, ammunition and equipment. Consequently, Artillery drills in some cases are moderated slightly. Bulky and heavy artillery plotters and directors and stands must be sacrificed for economy of weight.

The technical description is for the readers interest only and not intended for technical instruction.

The weapon, ordnance ML, 81mm, Mortar L16A1 (British) mounted on 81mm Mortar L5A3 and Plate, base, 81mm Mortar CDN Mark 1 with site unit C2, CDN weighs approximately eighty pounds and has a maximum range of 3000 metres for practical considerations.

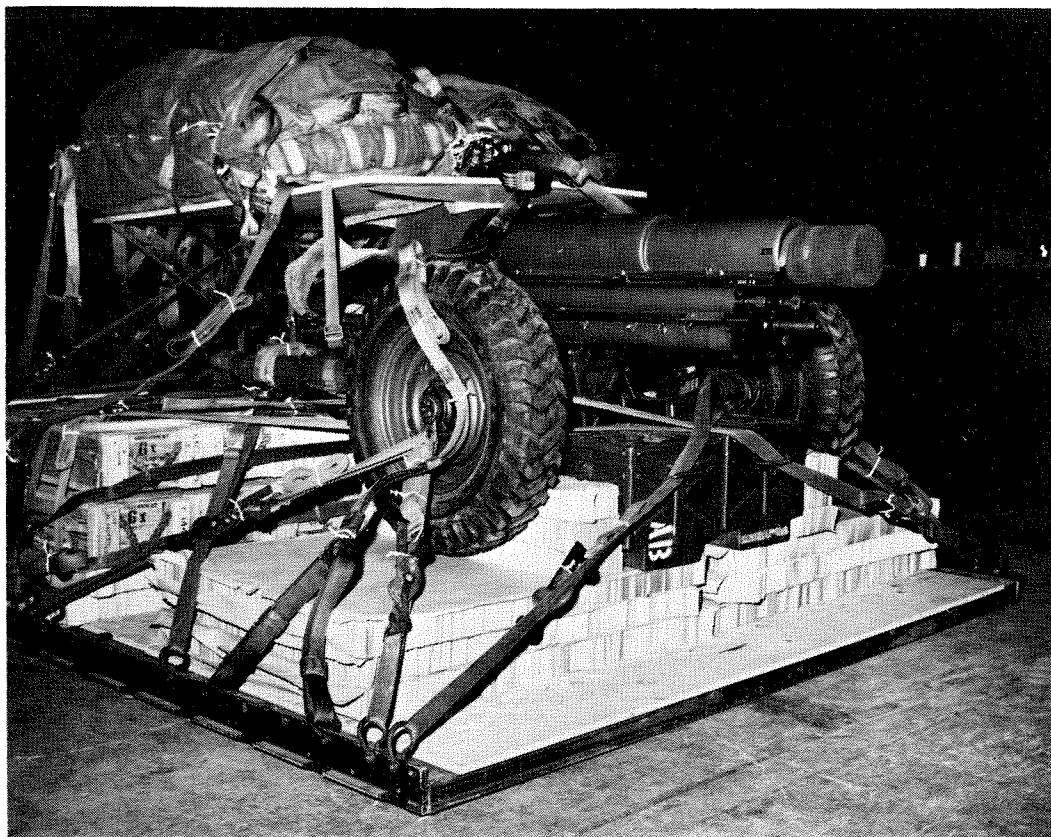


The 81mm Mortar and detachment

The 1 AB Bty in its mortar configuration is organized into two, six mortar troops with three men per mortar. Two mortars form a section under command of a sergeant. Each section has the capability of firing independently. Fired as a troop or battery the TP Command Post is located with a PRC 25 set and a warm tent.

For deployment one gun marker is placed for every section. The section commander selects his two gun platforms ten metres to the right and left of the marker.

The aiming circle is used whenever possible



An L5 Pack Howitzer rigged on an 8-foot platform for air delivery from a C130 Hercules Aircraft.

for orientation. However, as mentioned this equipment is heavy. The director drill is suggested by the GPOT Director Proforma, When the battery is foot-borne, line is normally passed using the Distant Aiming Point Method or by compass.

Gunners who have served the 4.2" Mortar will not be aided by this experience when they arrive behind a plotter in the Command Post controlling fire of the 81mm Mortar. The issued mortar plotter is almost as big as an Artillery Board. It is a well constructed, precision instrument but unsuitable for para operations because of its bulk and weight.

The Pivot Point method, a simple, expedient procedure, utilizing the Plotter AB Bty, Pattern 81mm Mark 1 (CP & FC Graph) is used to produce data. Non-standard condition corrections are omitted. Bearings are given to the 81mm mortars, not deflections as with the 4.2" mortar. So dig out your CP & FC Graphs and fire your 105mm or 155mm Howitzers next time you are on the ranges. Beware of BC's and IG's and such!

In October 1970, B Troop deployed by air assault in support of 2 Commando CAR during the visit of the Commander FMC LGen Turcot. Approximately two hundred and fifty jumpers from B Troop and 2 Commando participated. Two A22 containers each containing three 81mm mortars were dropped from the lead C130 Hercules Aircraft. The following aircraft (three) were manifested (loaded) ensuring that the first five jumpers starboard and port were gunners, much to the chagrin of the commandos who still wonder why we always go first.

As the aircraft were flying line astern and released over the same release point, all the gunners managed to land within two hundred metres of the mortars. Many were within twenty metres, the mortars themselves were only twenty-five metres apart. The troop reported "ready", exactly five minutes after "P" hours (ie: exact time of jump).

In conclusion, one must mention a few more of the 81mm mortar benefits other than its lightness and ability to be man packed. The 81mm EIS contains aiming post night lights which are British Radio Active fluorescent lights requiring no power. These

are excellent for the L5. These lights are small, compact and very efficient. This should halt the traditional visits to the CP by the guns requesting more batteries from the field telephones or the technical sergeants private stock.

In order to ensure the reader that we are thinking of bigger and better things, a parachute assault with a troop of L5's will now be explained. Three C130 Hercules aircraft are required, each with two platforms. The first platform carries the L5, as shown in the photograph; along with necessary CP stores (director, stand, plotters, and so forth); the second is loaded with tertiary stores including two skidoos, skis and toboggans. During the drop, the platforms leave first, quickly followed by Command Post crews and the gun detachments. And that's how simple it is. The only other necessary equipment required to fire, besides a map, are radio sets carried by the GPO's and TL's communicators, expedient antennas being utilized in times of transmission difficulties.

Once the guns are on the Drop Zone, each gun is put into action immediately in the position where the gun is located. The guns, at the discretion of the GPO are then moved together, one gun at a time in order to form a proper troop frontage.

It sounds very fancy and easy, but much is based on the assumption that one lands on the correct DZ and can find the guns. One must never assume a DZ, especially at night. Troops must be rallied, guns and toboggans found.

• • •

We were lucky in Alaska — numbers one and four guns were separated by exactly one hundred metres, five yards from a tree line and in a slight depression. Number one was even pointing down the centre of Arc!



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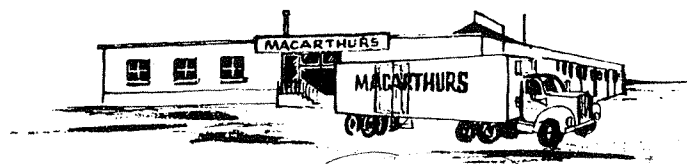
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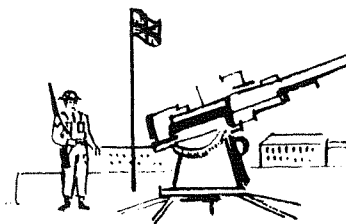
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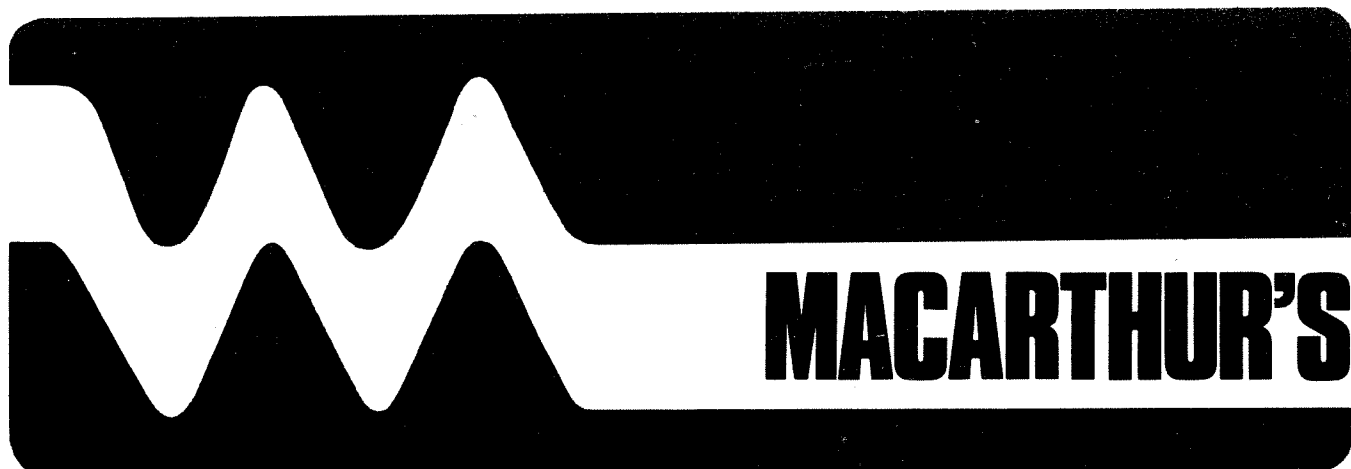


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ADP SYSTEMS

by
Captain WR Johnston

BACKGROUND

The automation of artillery fire control procedures has long been recognized as a potential application of automated systems. It is the one area in the land force tactical battle where large gains in effectiveness are readily apparent. In particular automated systems provide increased:

- a. Accuracy. Automated systems provide a more accurate ballistic solution and allow more accurate adjustments for non-standard conditions. With an automated computational system and modern target location techniques first round fire for effect is possible. It is estimated that engagement without adjustment increases casualties by a factor of fifteen for targets composed of personnel in the open. Similar increases in effectiveness are possible against other types of targets.
- b. Response. Faster computation of firing data improves response to calls for fire. Mobile targets are more effectively engaged. Faster computation of survey data allows more frequent and rapid concentration of fire. The time to register and circulate data for a fire plan is reduced.
- c. Economy. Increased accuracy allows the engagement of more targets without any increase in ammunition scales. Increased response minimizes weapon employment times and the fatigue of gun detachments and command posts. Automated systems may also decrease training time of operators and allow the more effective use of manpower within a battery.

HISTORY

Many countries choose the artillery field for the initial application of computer technology. In the US a project aimed at automating the production of delivery system data and survey calculations was initiated in the early 1950s. The project eventually produced the Field Artillery Digital Automatic Computer (FADAC) in the early 1960s. Although FADAC (or the Gun Direction Computer M18) suffered from initial teething problems these were largely overcome during the period 1961-64 and by 1965 all US cannon equipped artillery was armed with FADAC.

In the meantime the UK had recognized the need for an artillery computer and spurred by the US development of FADAC started development of a similar computer called the Field Artillery Computer Equipment (FACE) in 1963. The deployment of FACE with all RA units started in January 1969 and will be complete by 1971.

Other countries, notably Norway, FRG, France, Italy, Belgium, Holland and the USSR have since initiated projects in the artillery ADP field. Some of these projects were abandoned as it became apparent how expensive such systems were to develop and how great a lead the US and the UK enjoyed. Only Norway had produced a fieldable system (ODIN) by mid-1970. ODIN is still in the Service Test Stage with no production expected before mid-1971.

Canada early recognized the potential of artillery ADP systems. In the early 1960s the proposal was made to equip the RCA with FADACs. This was rejected in 1964 due to concern with FADAC teething problems and to the bulk and weight of the FADAC power source. Nevertheless three FADACs were purchased to equip the Honest John batteries. The ballistic program

for the Honest John rocket was not available until 1968 when the Honest John was being phased out and the FADACs had been returned for updating. Hence the FADACs were never used tactically except on trials. Much training and experience with FADAC was obtained during the four years they remained at CFSA. They are now being deployed with various regiments and CAS to practice computer directed fire.

Another attempt to equip the RCA with a battery level computer foresaw the adaptation of the computer developed by Computing Devices of Canada for use with the ABCA Sound Ranging System. This was found to be impractical and other solutions were sought.

By mid-1968 technology had advanced to the stage where it was possible to equip land force formations with a general purpose automated data handling system. To adequately evaluate this possibility a study of combat data handling was conducted by Directorate of Land Operational Research (DLOR). This study was contracted out to P.S. Ross and Partners, a Montreal management consultant firm. The US in the meantime had initiated a project to produce a general purpose fire distribution network employing automated procedures. This system, called TACFIRE, presents another attractive option to the RCA. The major options are outlined in subsequent paragraphs.

DISCUSSION

In the design of artillery ADP systems two major issues remain unresolved. These are:

- a. The degree to which computation of delivery system data should be centralized.
- b. The degree to which an artillery fire control systems should be integrated into an overall tactical operational control system.

CENTRALIZATION

The degree to which centralization of computational facilities is desirable is the most contentious issue. The issue itself cannot be divorced from the tactical doctrine of employment of artillery. There are two major philosophies of employment of artillery. The US, the USSR and certain other countries stress the fact that firepower is an arm in its own right. Hence artillery command control should be centralized at the highest level. This idea is the basis for all US organizations, ammunition supply and fire control doctrine. Countries who have inherited the British philosophy of fire control feel that artillery is a vital adjunct to other tactical operations. They have evolved a method of fire control which stresses the decentralization of command (the authority to move and deploy the guns) and centralization of control (the authority to fire the guns). This concept makes the artillery responsive to the supported arm commander while US concepts emphasize independent but, supporting missions. Most subsequent arguments stem from this difference in philosophies.

The techniques of automation allow the centralization of the functions of fire control and computation of delivery system data to a degree never before possible. It was forecast that increased centralization would allow vast manpower savings and increased flexibility. In fact attempts at centralization through automation have not been as successful as forecast. The FADAC computer was originally designed to provide computation facilities for a battalion of artillery but in practice it has been found necessary to deploy it at battery level. The UK practice is to deploy FACE at battery level. Most other automated artillery systems centralize the computation of delivery system data at battery level. The exception is TACFIRE which again attempts to centralize computational functions at battalion level. Many US users have reservations about this facility and feel that TACFIRE should be modified to allow battery level computation. The level at which computation should be centralized is fundamental to the selection of any artillery ADPS for the RCA.

INTEGRATION OF FUNCTIONS

The other major decision to be made concerns the degree to which the artillery fire control system should interoperate with the overall command and control system. Through the use of large general purpose computers linked by digital transmission links it is possible to automate a wide variety of intelligence, display and data handling functions. The only such

system currently under development is the American Tactical Operations System (TOS). TOS is designed to provide an automated general purpose command control information system for a field army. Major processors are available at army and corps with access down to divisional level. This system will be integrated with TACFIRE for the purpose of fire support co-ordination and with the automated logistic system called the Combat Service Support System (CS3). The entire system will not be deployed before the late 1970s.

No country is at present developing an automated general purpose Tactical Operational System for deployment below divisional level. Many countries do foresee the use of small special purpose computers throughout the battle area. The exact degree of integration necessary for any artillery ADP system must be decided.

COMPLEMENTARY ISSUES

Implicit in the discussion of any artillery ADP system is the question of interoperability with Allied formations. This factor will affect any procurement in the ADP field.

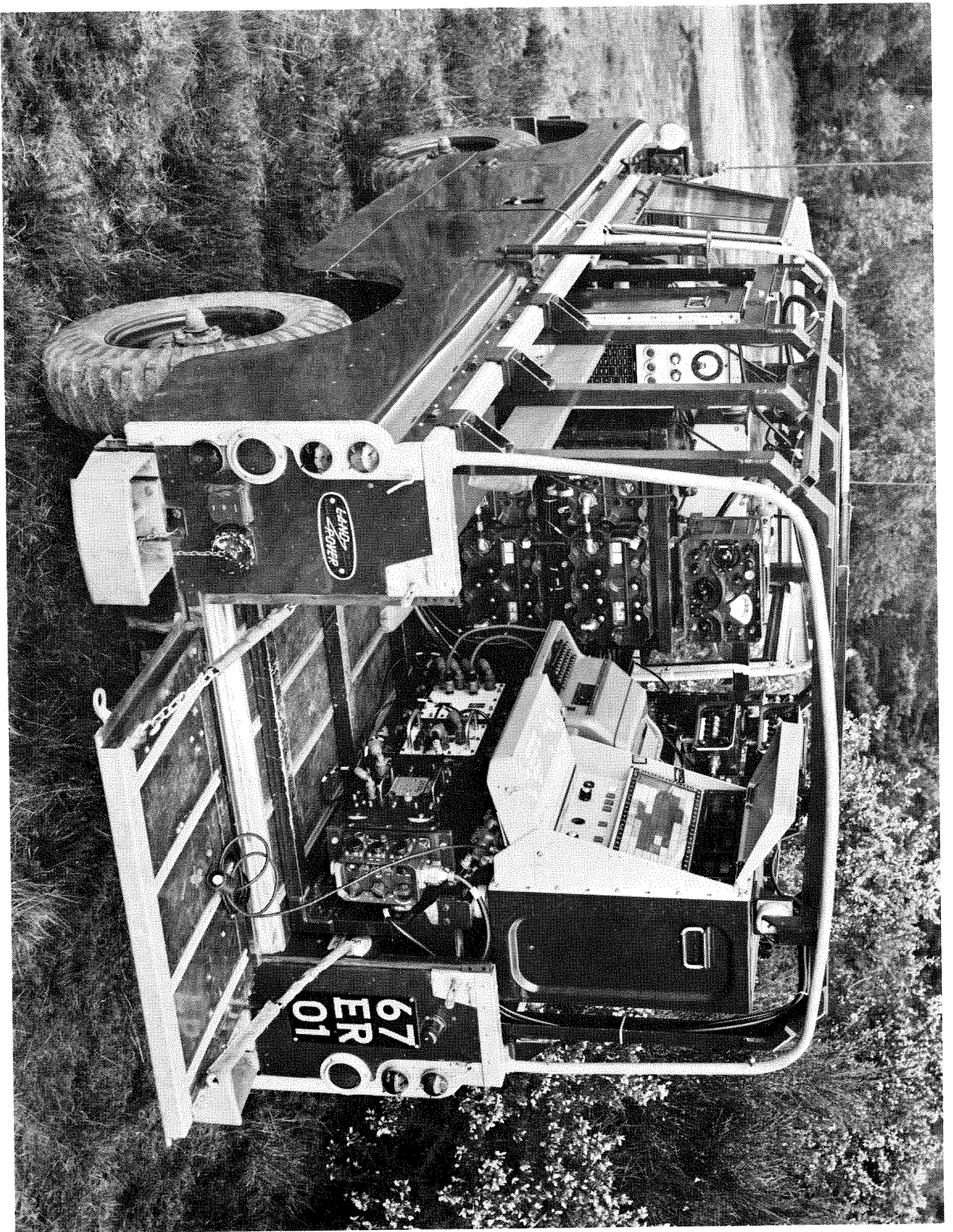
The possibility of Canadian manufacture of any chosen ADP system should be considered.

OPTIONS AVAILABLE

Centralization. There are really three centralization options available to the RCA in the ADP field. These involve computing firing data within the troop, at the battery level and at regimental level. If we assume that no change in fire control doctrine is contemplated and we still have the requirement to operate independent batteries then the latter option is almost eliminated. It can be argued that some form of regimental computer could be used with a battery level manual back up system. Such a combination would make training difficult, overload communications and provide minimum tactical advantage. At the other end of the scale provision of a computer to each troop would provide maximum flexibility with little change in existing organizations and procedures. It is doubtful if such a lavish scale of equipment can be justified. The decrease in size of the troop to three guns makes it extremely difficult to justify. Hence we are left with the option of centralizing computational facilities at battery level with some back up facility retained at regimental level for fire planning, target records and survey computation. This solution is similar to that used by most of our allies at present. Some provision for decentralization to troops for limited periods or special missions would be available. This would appear to be the best solution for the RCA.

Interoperability with Allied Nations. If the RCA is equipped with a battery level computer interoperability with most allied nations is relatively simple. The only potential problem is that of meteorological messages but differences are easily standardized. Both ballistic and computer meteorological messages are subject to NATO standardization agreements. Interoperability is more difficult when RCA units are operating as part of a US division equipped with TACFIRE. The only way to be totally compatible with TACFIRE is to be TACFIRE equipped. The necessary change in tactical and fire control doctrine to allow the adoption of TACFIRE is not contemplated. Steps to minimize operational differences among ABCA countries have been initiated. The target date for their completion is post-1980. Some degree of interoperability will always be achieved as the US plans to use FADAC as a back up to TACFIRE. The additional logistic load of operating a battery level computer of US logistic channels is not a serious drawback. A unique Canadian logistic link will be necessary to support the FN C1, FN C2, Carl Gustav, 105mm How L5, and many other non-US equipments.

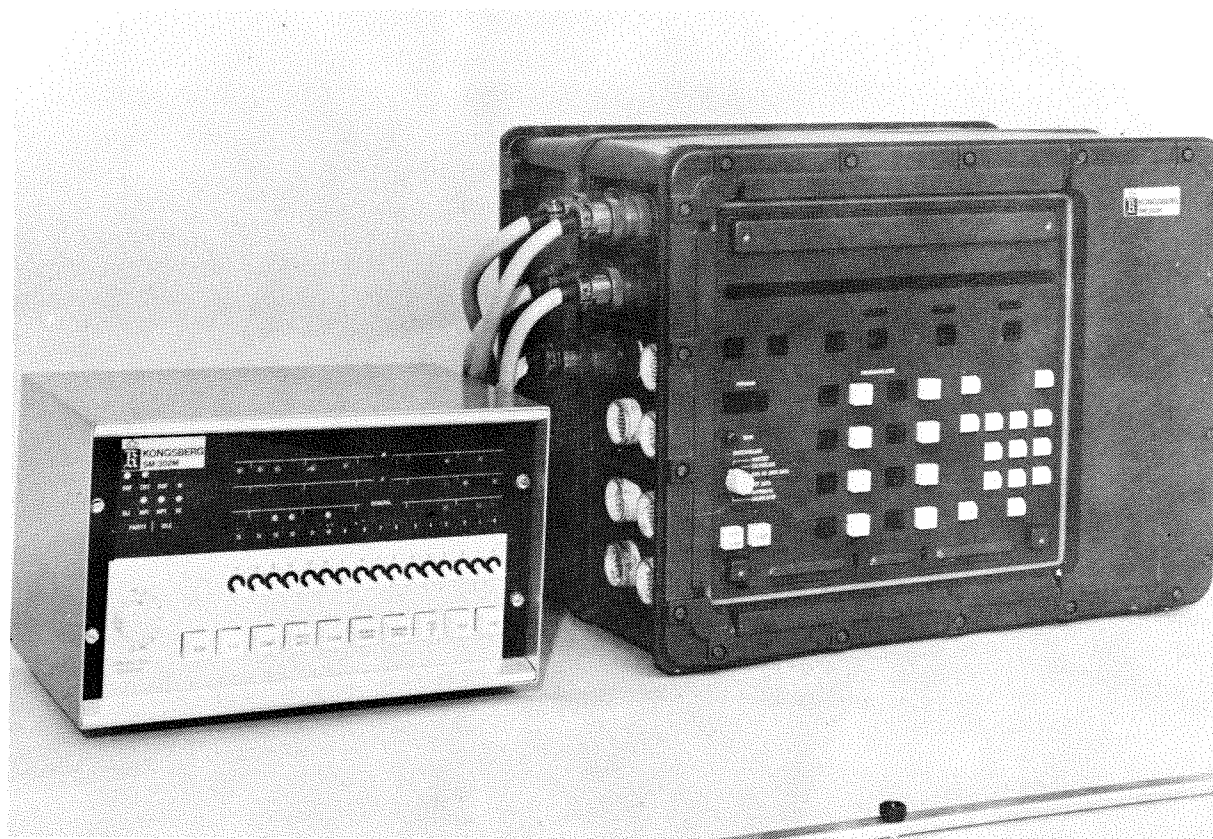
Canadian Manufacture. It is desirable to manufacture in Canada as much Canadian military equipment as possible. In the ADP field, Canada does not have the capability to design major computer systems or major hardware components. It is quite possible to cannibalize other nations hardware and software to meet a unique Canadian requirement. Most computers can be reprogrammed to perform any function within their memory limitations. Such adjustment is time-consuming and costly. (As an example the FACE software represents about 50 man years of labour. One programmer can be costed at \$25,000 per year.) Adjustments in installations or input/output devices requires additional money and effort. Hence the desire to manufacture a Canadian system must be balanced against the cost and delay of doing so. For the number of computers involved to equip the RCA (about 20) it is probably not cost effective to initiate a unique Canadian project.



Time Scale. The time delay involved in procurement should be considered. To initiate a Canadian project would require up to two years and at least three years of development would be required. TACFIRE will not be available before 1975 even if no changes are made in the system. Subsequent Canadian modification would require additional time. FACE is available now and will be in production until mid-1971. ODIN will be available starting in mid-1971 if the program remains on schedule. FADAC is now available but antiquated.

CONCLUSION

Canada requires a battery level computer to compute delivery system and survey data. Such a system will allow an acceptable level of interoperability with all allies until 1980. Canada should not initiate a project to produce such a computer but should make use of foreign developments. FACE or ODIN are the most attractive options.



The ODIN computer and associated test equipment.

Picture facing: FACE mounted in a 3/4 ton Land Rover.



An interesting aside on the North West Mounted Police (today the RCMP) concerns the RCA. Lt Col (later Maj-Gen) Sir GA French, commanded one of the Schools of Gunnery. He was subsequently transferred to organize the North West Mounted Police. For the new police force, fifteen NCOs and men from "B" Battery volunteered. Later a considerable number of "A" Battery were also taken on strength. Thus, a Gunner was the first commissioner of the RCMP and the RCA may be regarded as its parent.

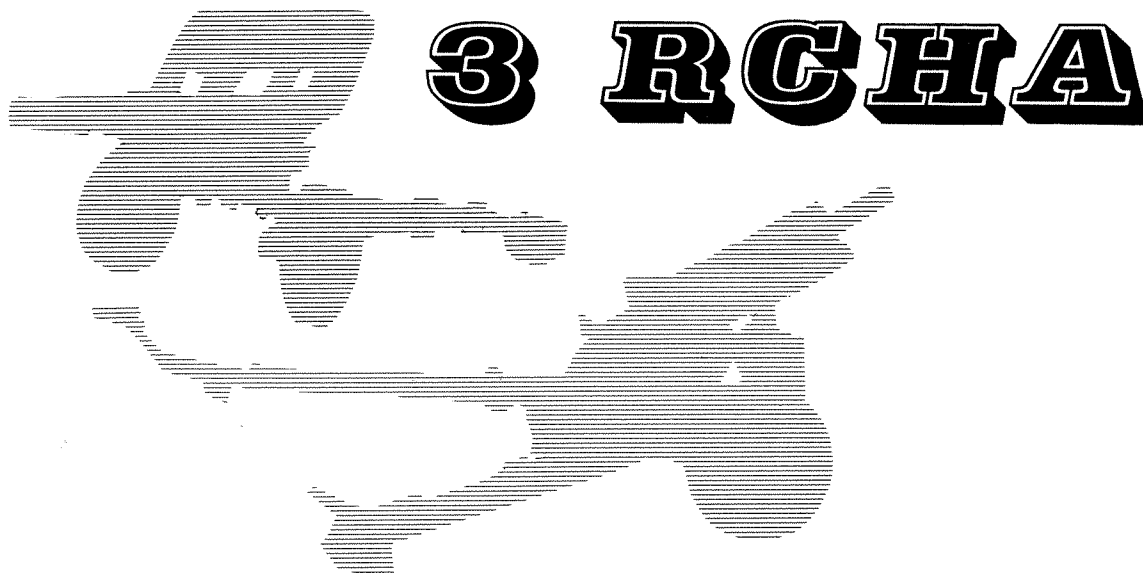
MANITOBA

3 RCHA

**Major Exercises
Flood Control
Move To Shilo
Formation Of "H" Bty
Operation ESSAY
Light Battery?
Official Visits
Royal Tour
Sports Day
Air OP Troop
Sundries**

1 DRONE TROOP

RCA MUSEUM



The year 1970 was the 100th Anniversary of the "Keystone Province" (Manitoba for the un-knowledgeable) joining the Confederation and the celebrations lasted a full 365 days. And yet midst, in spite of, or somewhat due to these circumstances, the year proved to be a very productive and novel experience for the officers and men of 3 RCHA. Apart from the normal tasks and exercises conducted by the Regiment, the first year in the Decade of the Seventies also witnessed a change in establishment from a 4-gun to a 3-gun troop, the implementation of the old "two-plotter-in-the-Battery-Command-Post" system, the long-anticipated regimental move from the Selkirk Lines CFB Winnipeg to the Home of Canadian Gunners CFB Shilo, and the formation of a third battery designated HOTEL.

MAJOR EXERCISES

Exercise "*Old Hat*" was a Battalion Group Exercise conducted on the Alaska Highway north of Fort St John, B.C. It was designed to test the capabilities of the AMF(L) Battalion Group before their deployment to Norway for Exercise "*Arctic Express*". J Bty, under command of Maj S.D. Green supported the 2nd Bn QOR of C with other units of 1 Combat Group supplying administrative support and the enemy force.

Although the exercise was to be conducted under winter conditions, the weatherman refused to play the game. Temperatures hovered around the freezing mark and snowmobiles were grounded due to the lack of snow. In fact, if personnel stayed in one location for any length of time, they soon

found that their tents were situated in a frothing sea of mud.

The resultant exercise however did prove worthwhile. The Battalion Group was able to practice all phases of war and thusly were ready for Norway. Many interesting points were uncovered but all were dealt with rapidly. On the final two days of the exercise, the infantry were advancing rapidly to catch a frightened enemy force which was running for its border. In order to keep the guns within range, they were divided into 3-2 gun sections with 1 section always on the move. Although this is not an ideal situation, the guns were controlled well in their movement and were always able to provide fire support.

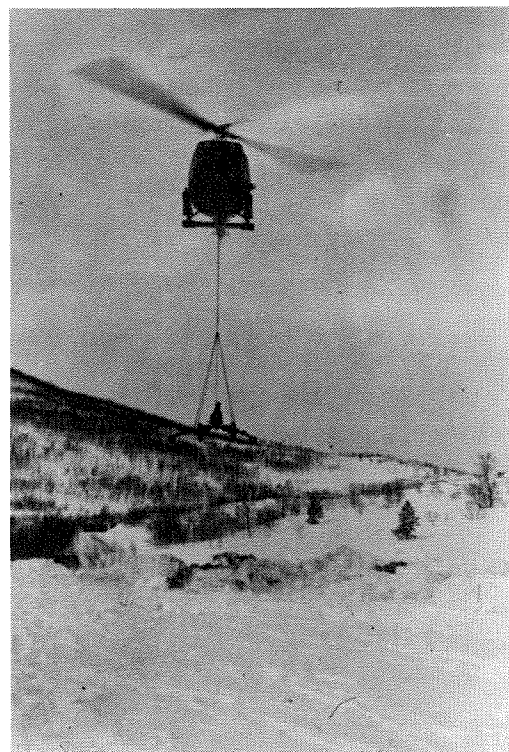
Exercise "*Arctic Express 70*" took place in Norway, and saw J Battery again take to the air in February to join British, Norwegian, Italian and American troops in an AMF (L) North exercise. After an 18-hour flight, which featured a one-hour stop-over at Thule AFB, Greenland, the first elements of the battery touched down at Bardufoss, Norway at noon 24 February.

Unlike most exercises which allow several days for settling-in and sub-unit training, Exercise "*Arctic Express*" was underway even before the battery arrived. No sooner did one command post and two guns appear than they were assigned to the Forward Area of the southern sector of the battle zone, the remainder of the battery being deployed in groups of 2-guns as they arrived. The battery's task, in conjunction with the 2nd Bn, QOR of C, was to defend a fjord and prevent any sea-borne enemy force from landing and securing a coastal base of operations. After a 48-hour stay, during which time an enemy force was successfully pinned and destroyed, the battery along with the remainder of the Canadian Contingent was re-deployed to the northern sector. After a very arduous night move of 165 Kilometers along twisting, winding mountain trails the battery finally arrived in their new area, exhausted, and ready for a one day rest (greatly aided by the supplementary rum ration).

The next day the contingent started an advance to contact operation which lasted for two days and necessitated several "Exercise Stand Fasts" to allow enemy forces to complete their defensive fortifications before being forced to retreat (again!). During the second day, the Huey's from 403 Squadron, Petawawa, arrived and lifted the battery forward 10 kilometers, placing one troop on a frozen swamp and another troop on top of a mountain thus emphasizing the truly versatile role of helicopters in modern Arctic warfare. The exercise finally concluded with the enemy force being pushed back into the sea.

Next on the agenda, after a 2-day rest, was Exercise "*Arctic Barbara*", this year's replacement for the venerable Exercise "*Annual Barbara*". Featured on this exercise was two and one half days of static firing designed, not to test mobility of the guns, but to verify the use and understanding of AMF(L) artillery procedures. The exercise culminated with a Force Fire Plan, fired by the Battery Commander of the British battery, which saw over 1000 rounds fired by all the artillery units present. Results? Moguls destroyed - End of mission.

The battery returned on C-130E Hercules' on March 14, with the majority of the wheeled equipments being returned by HMCS Bonaventure several weeks later. Everyone was quite content to return home, but also very pleased with the invaluable experience gained first hand of true Arctic conditions.



The first week of April saw the Regiment undertake a very novel type of training as Exercise "*Night Train*" began. Conceived by the Commanding Officer, LCol C.R. Simonds, the exercise featured six days of night training in Winter-Spring conditions including long night-time road movement exercises to and from Shilo and Winnipeg. Although "the guns" were not taken, the exercise was a great success, involving such activities as patrolling exercises, an eventful night road-rally over the ranges, night classification on most weapons using the ALBIS, first-aid refreshers and a signals/CP exercise. Finally, with headlights blazing, the Regiment returned to garrison and for the next two days promptly fell asleep whenever the sun came up!

Next on the exercise agenda was "*Spring Practice Camp*", 4 May-5 Jun, which in itself was a major event for centennial as it saw the rise (but the subsequent later fall) of "Tent City - Gibson House", the major bivouac area for the Regiment during a month of intense training. Training started at the troop level and worked up to battery and regimental levels, everyone gaining momentum and enthusiasm as events progressed. The un-qualified highlight of the month was the

CO's Controlled Battery Exercise which, on different days, sent both G and J Batteries' on an advance to contact down a little-known but challenging trail called "Sawyer", supporting that difficult-to-please "gravel-cruncher" Glad Garry, none other than the Regimental Second-in-Command, Major G.F. Hammond. (Un-marked on almost all maps, the trail gave excellent practice to all officers in the use of maps and ground-to-map interpretation, not to mention expertise in calling for a mark round.) Also adding realism to the exercise was the presence of the Mortar Platoon, 1 PPCLI, Calgary, under command of Captain Don Hill, who spent the entire exercise trying madly to exchange his Mortar Fire Control van for an undisclosed length of map covering and "several" deuce and a half's.

The usual competitions were also held during Spring camp with G Battery taking top honours by winning the Quick Action and Open Action portions. Elsewhere "C" Troop command post personnel hurriedly formed a gun detachment for the Anti-Tank Competition, only to discover that they won it hands down over the regular detachments. Somebody was talking to Barbara that day!

Toward the end of the exercise, Major N.W. Johnstone, Battery Commander G Bty, was faced with a happy-sad situation as he exchanged his 105mm C1 howitzers for the new L-5 Pack Howitzer but everyone quickly recovered and entered the Commanding Officers' Final Exercise with high spirits. Designed to prepare the Regiment for the Combat Group Concentration a few weeks later in Wainwright, the exercise was three days in length featuring all aspects of combined infantry-artillery operations. However, the exercise was called-off 24 hours early due to an extremely high fire index that had persisted over the Shilo ranges for several days.

No sooner had the lessons of Spring camp been absorbed than the Regiment was off to Wainwright and Exercise "Waincon", the summer concentration for 1 Combat Group. Only a few members of The Third did not venture to the Land of dust

and sand, and those who stayed behind were more than busy processing travel arrangements and liaising with CFB Shilo personnel to ensure a smooth transition when the eventual move from Winnipeg took place. For the three-week period that the Regiment spent at General Hamilton's yearly camp, a bivouac area was established on the western edge of Border Lake within easy view of the serene heights of Hills Patricia and Gunner. There were the usual work-ups for the final exercise including a one-day session with officers from 3 PPCLI Calgary, instructing them on Target Grid Procedure and method of adjustment. The final practice was Exercise "Random Shot" itself which was a three-day exercise based on an advance to contact from Catallo Bridge up Khaki to the river.

Upon conclusion of the Combat Group concentration, half of the Regiment returned to Winnipeg to prepare for the on-coming trek to Shilo, while the others stayed behind at Border Lake preparing review lessons for the Militia Reserve Concentration. Finally on the First of July the militia units started arriving, for exercise purposes forming three batteries made up of militia-men from 5th Victoria, 15th Vancouver, etc, etc. The week passed very quickly and finished on a highly successful note as the 23-gun militia Regiment, commanded by LCol A.R. Strickland under the careful guidance of Major N.W. Johnstone, fired a last-light Regimental Fire Plan. Then it was into the vehicles and home to Winnipeg in 23 hours stopping briefly at Wynyard, Sask, for a bite to eat and a short nap.

Besides being a very successful camp from both the Regiment's and the Militia's points of view, it was undoubtedly the wettest militia reserve concentration on record as four days of almost continuous rainfall turned all roads and tracks into latter-day washboards and soaked every conceivable piece of clothing in the bivouac area—appropriately renamed "Swamp City" by some ungrateful. Although most returned home on 7 July, a handful of officers and men stayed behind until mid-August, assisting in militia training and helping out with the newly conceived "Hippie Battalion".



3 RCHA COMMANDING OFFICERS

LCol M.L. Lahai e
LCol J.B. Roe
LCol J.W.D. Symons
LCol J.S. Orton
LCol W.W. Turner
LCol J.E.G. deDomenco
LCol R.G. Heitshu
LCol C.R. Simonds

— 4 May 51 — Jul 1952
— Jul 1952 — Oct 1953
— Oct 1953 — Aug 1957
— Aug 1957 — Jul 1961
— Jul 1961 — Jul 1965
— Jul 1965 — Aug 1967
— Aug 1967 — Mar 1969
— Mar 69 — present

FLOOD CONTROL

Once again the spring run-off reached near catastrophic proportions in several Manitoba communities in 1970 and consequently the professional Flood Controllers from 3 RCHA were tasked. On 28 April, upon receipt of orders from TCHQ, G Battery was dispatched to Carman while the following day saw J Battery sent to St. Norbert. On very short notice both sub-units dispatched forces

to combat the rapidly rising waters, first diking public/governmental buildings and then proceeding to help evacuate residents from private dwellings, move furniture to the upper floors and dike basement windows in the more severe cases. Two days later, replacements arrived from Base Winnipeg and Base Shilo and 267 members of the Regiment went home for a well-deserved rest.



*April 29, 1970, at Carman, Manitoba.
Notice how well Fourth Avenue is camouflaged and concealed.*

MOVE TO SHILO

It was with mixed feelings that the Third Regiment packed its bags and said a fond farewell to the City of Winnipeg: a sad occasion since the accommodation at Selkirk Lines was excellent and

the city a very pleasant and hospitable endroit a vivre; a happy occasion making our future permanent home at the "mecca" for all members of the Royal Regiment. Officially the move is recorded as taking place on the twenty-second of July although equipment and families started moving in the early days of June.

It was a very difficult time, but all obstacles were breached and the move successfully completed, no mean feat considering the Regiment had been totally committed from early May until the first week of July. Before leaving CFB Winnipeg, the Base Commander, Colonel H. Peters, saw fit to throw a farewell party for the Regimental officers at the Westwin Officers Mess featuring not only free refreshments for the duration but also the enticing writhings of a genuine exotic dancer. LCol C.R. Simonds presented the base with a farewell plaque and Col Peters reciprocated by giving the Regiment a scale model of the original Red River Cart in recognition of the years of understanding and friendship between Base Winnipeg and the Third Regiment.

Upon arrival at CFB Shilo, the Regiment took up quarters in the L-lines, locating its howitzers and wheeled vehicles in the Gun Park, N-118.

FORMATION OF "H" BTY

On 1 September the Regiment was given permission to form a third battery, and it was with a feeling of pride that LCol Simonds congratulated Captain V.A. Troop on his new appointment as Battery Commander, H Battery. The battery is equipped with 105mm CI howitzers and although X-3 is not officially on the equipment state the little Willy's does fill a necessary gap while equipment is being re-distributed.

OPERATION ESSAY

We knew it would be our turn sooner or later, but when the Regiment was put on 8 hours notice on Friday 17 October it still caught a few off-guard. Confined to base, the members of the Regiment then spent the weekend preparing kit, checking and re-checking that nothing had been forgotten, waiting for departure information. Word that the Regiment was being committed was received Sunday evening; twelve hours later over 400 men, their equipment, and sundry vehicles were airborne out of CFB Rivers en route for St. Hubert, CFB Montreal.

After receiving a situation report, listening to several briefings and resting up after a hectic weekend, the Regiment started to review and

practice its riot-control procedures. The following day, however, we were re-located at Longue Pointe on the island itself, one sub-unit being tasked to guard vital points and several VIP's while the other sub-unit remained behind to perfect their riot-control procedures as part of 5 Combat Group's strategic reserve. G Battery returned to CFB Shilo on 30 October for 48-hours of R&R, returning to relieve a combined J&H Batteries on 3 November for their return flight and rest period. However, a re-appraisal of the overall situation was then made and it was decided to replace the Third and give the 2nd Battalion, PPCLI Winnipeg, some experience in IS operations. By 9 November the entire Regiment had returned home to prepare for the arrival of the Officers Advanced Gunnery Course in early December.

The entire operation in Montreal, even though history may judge it negatively, was a good experience for the Regiment. Fuller body and meaning was given to otherwise mundane IS Refresher training, and the simple fact of being a soldier was given added emphasis and importance. The support received from the civilian population during the weeks spent guarding installations was unanimously in favour of the operation, which greatly eased the effort required to perform long tours of duty with only short respites in-between. The experience was definitely good, even invaluable, although perhaps better circumstances exist for absorbing a second language.

LIGHT BATTERY?

In November, the Commanding Officer designated G Battery as the "tracked battery" within the Third, thereby adding to the experience already gained by the battery when they were partially tracked in 1969. As the M113 and Command Post carriers rolled in, they were eagerly signed for by waiting drivers and crew commanders, as forgotten were the aged built-up wheeled vehicles, destined to continue their existence, nevertheless, with the newly-formed H Battery. However, G Battery was not to become entirely tracked, as wheeled vehicles still remained in the form of three jeeps at the sharp end, a BSM vehicle, ammo, Q and kitchen vehicles, not to mention six 2½-ton prime movers modified with the L-5 Portee kit. Now the battery's experience will be complete; in 1969 they had tracked prime movers but few other tracked vehicles. But still that nagging wonder if the fully-tracked day will ever really arrive.

OFFICIAL VISITS

On 7 May, soon after the erection of "Tent City-Gibson House", BGen W.C. Leonard, Commander 1 Combat Group, visited the Regiment on his Annual Inspection. A familiar figure with the Third, General Leonard paid many visits, during his tour of duty to the Regiment both in garrison and in the field, and it was thus with a certain feeling of sadness that he spoke to the officers and informed them that this was his last official visit since he would be departing within the month for CFB Europe and a new appointment. However, before he left the General was mugged out in the finest tradition of the Royal Regiment and wished every success in the future.

BGen Leonard was replaced as 1 Cbt Grp Commander by BGen CJA Hamilton who made his first official visit to the Regiment on 24 September. Greeted by a 24-man Guard of Honour, The General's visit was basically one of familiarization with the Regiment and their new quarters in Shilo, featuring a luncheon with the officers, an inspection of the Regiment at work in garrison, and an air recce of the Shilo ranges with the Air OP Troop. Perhaps 1 Combat Group will hold an exercise at Shilo in one or two years---



BGen Leonard inspecting the Regimental Quarter Guard during a visit to Shilo.

ROYAL TOUR

Included in the celebration of Manitoba's Centennial was a Royal Tour of the province by Queen Elizabeth II and the Royal Family.

3 RCHA took an active part in a portion of the festivities providing assistance to and gun salutes for the Royal Party.

On 13 Jul G Bty fired a 21-Gun Salute in honour of the Queen's visit to CFB Shilo. After the salute the Queen inspected a display of Arctic military equipment and observed a para-drop put on by members of the Airborne Regiment.

Participating in the salute were Capt KWJ Wenek as Troop Commander and Lt BW Olynick as Gun Position Officer.

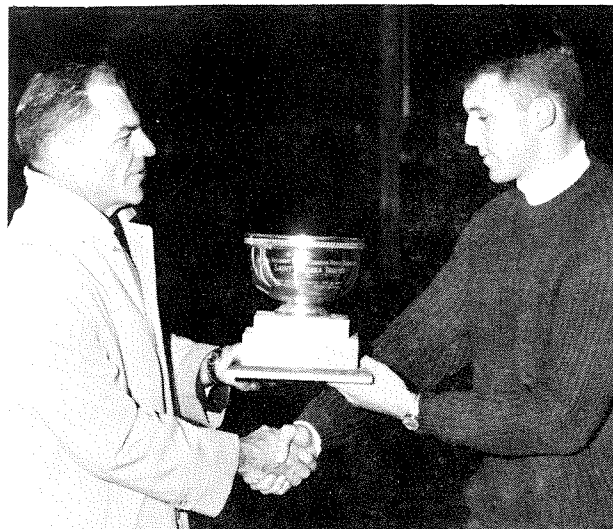
J Bty fired a 21-Gun Salute on 15 July as the Royal Party departed CFB Winnipeg on the first leg of their tour of Northern Canada. On this occasion Capt WF Gee acted as TC, while the GPO was Lt W Soucie.



The Regt also provided baggage details and stewards to serve the entourage on their tour of Northwestern Manitoba and the North West Territories.

SPORTS DAY

Friday, 4 December, was indeed a finely celebrated birthday for Barbara (omit or insert "Saint" as per your beliefs) as the Regiment held its annual Sports Day competition for the Barbara Cup. Fighting for the coveted cup were teams from each of the major sub-units and RHQ competing in basketball, volleyball, bowling, broomball, floor hockey, snow-shoeing, small bore, hockey. As the final points were being tallied, a Regimental Happy Hour was held during which time the Base Commander CFB Shilo, Colonel Baumgart presented the 3 RCHA Signals Officer, Capt D. McCaw, with the Barbara Cup, on behalf of the victorious RHQ team. The Commanding Officer, LCol C.R. Simonds, also presented trophies to the teams that won the individual events.



Col Baumgart presenting Capt McCaw, Sigs Offr 3 RCHA, with the Saint Barbara Trophy

AIR OP TROOP

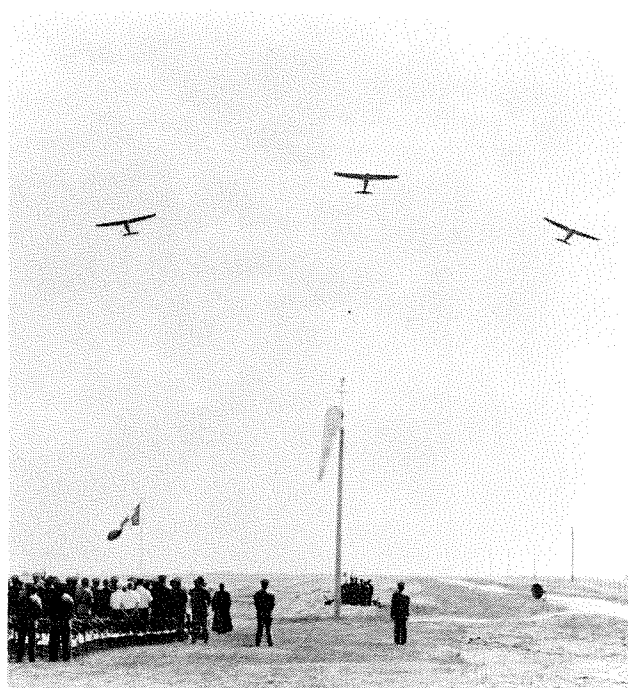
The training year commenced with Exercise "Prairie Runway" from 30 September to 3 October 1969. This was a communication and movement exercise including all facets of Artillery flying. In addition it was designed to acquaint the pilots with airports in southern Manitoba and Saskatchewan. The main body of the Tp moved by road to locations indicated by telephone or radio message where bundle, message drop and message pick-up operations were carried out.

From 23 October to 12 November 1969 the first Artillery Air Observer course was held in Shilo, run by CFSA and supported by 3 RCHA AOP Tp. On the course were nine candidates who converged on Shilo from all the Artillery Regts in Canada and from CFSA. The course was held to qualify Artillery technical assistants as Air Observers, which includes firing the guns from the air and flying the plane in the case that the pilot becomes a casualty. To this end they received instruction in fields related to aviation and Artillery flying including approximately six hours flying instruction in order to ensure their ability to land the aircraft.

Exercise "Rapier Thrust" was an exercise in support of 1st Bn PPCLI in Suffield Alberta, from 9 January to 23 January 1970. Throughout the exercise the AOP Tp flew a total of 54 missions in support of the Bn operations. These included photographic and visual recce, resupply by para-drop, airborne radio relay, and liaison. On many occasions during the exercise high winds and low temperatures plunged the effective temperature to 80° below 0°, providing Arctic realism. The Air

OP Tp emerged hale and hearty despite the adverse conditions.

From 9 to 12 March 1970 the Tp supported FAC training conducted by ASOTU in Rivers.



A three-plane break at Flewin Field commemoration ceremonies.

"Spring Practice Camp" for 3 RCHA was held from 9-30 May 1970. During that period the Tp carried out normal AOP operations with the Reg including night shooting. In addition a demonstration was put on for the Arty Staff course to acquaint them with the Tp deployment procedure, field strip capabilities, photo capabilities, para and message drops and message pickups. On 20 May an air recce was carried out for the Regt road move to Wainwright on 17 June.

The former Proctor Field was recommemorated on 5 June as Flewin Field in memory of Capt G.J. Ross Flewin CD, RCA. Capt Flewin crashed while on a routine training flight on 17 Jan 64.

Armed Forces Day on 13 June was participated in by the AOP Tp and again the Tp displayed all their capabilities with respect to Artillery flying operations. Maj F Bayne, after returning from his tour of the orphanage, did a splendid job of commenting on the virtues of the "Brown Sparrow".

17 June saw the Tp leaving for summer concentration in Wainwright. The main aim of the concentration was Regimental participation in the Combat Group Exercise, "Waincon 70", from 15 to 25 June.

From 4 to 7 August the Tp provided assistance to the CAF Mapping and Charting Establish-

ment. The Tp was involved in taking photos to aid in the preparation of a new composite map of the Shilo area.

The last "ever" L-19 AOP Sect Commanders Course was held from 24 August to 19 October 70. Although it was cut short due to the Regiments involvement in the Montreal crisis, the results were "Very G".

On 24 September the Tp was visited by the Comd 1 Cbt Gp, BGen CJA Hamilton, M.B.E., C.D. He inspected the Tp area, and went flying with the OC, Maj F.C. Ayers.

In the wee hours of the morning of 20 Oct the Regt left for Montreal and "Operation Essay". The AOP Tp formed a Tp of the "ad-hoc", RHQ Bty with the OC of the Tp commanding the Bty. Although we didn't solve all of Montreal's problems we did our best. The Regt was replaced by PPCLI and the Tp arrived home in Shilo on 7 November.

Throughout the year, whenever there was a period of relative inactivity, pers from the Tp have attended whatever courses were available. We even have evidence of a Cpl(A) being involved with a guns course.

In conclusion it can be said that it was a busy but eventful year for the AOP Tp of 3 RCHA.



Guns Course Note the airman leaning on the Regimental colours (Note the L-19 about to strafe the airman!)

SUNDRIES

- Although the Canadian Forces School of Artillery has ceased to exist at Shilo and re-appeared as the Weapons Division, Combat Arms School, Gagetown, the Regiment still provided support for courses being run at the "old school". In December, fourteen officers on the Officers Advanced Gunnery Course invaded the ranges to complete their course by firing Regimental Fire Missions and perfecting their hand at Battery Commander's Fire Plans. Although visibility was limited on a few days due to snow and ice-fog, firing was not seriously impaired as "sound ranging" once again burst to life (again).

- Again this year, as per the last eleven, detachments are being sent to Rogers Pass, Glacier National Park, for Avalanche Control Duties; thus providing many young officers in the Third with very good leadership and command experience.

- On 10 Sep 70 Capt WF Gee, Lt TD Gerow and C Tp travelled to Winnipeg to participate in Manitoba's Centennial Band Concert.

One may well ask, "What are gunners doing in a concert such as this?" Well, it definitely was not a fire power demonstration.

The troop employed four L5's firing blanks to provide a very realistic effect in William Tell's "1812 Overture".

Fortunately there were no "wingers" and the audience was much impressed.

- Once again 3 RCHA provided a 15-gun salute with L5's for the official opening of the Legislature in Winnipeg on 2 September 1970.

B Tp received the honour this time with Capt KWJ Wenek as TC and Lt BW Olynick GPO.

- A small party from G Bty under Captain GWA Trimble participated in another solemn occasion in December as Major DR Foster of 2 RCHA laid a wreath at the cairn in memory of the members of that Reg't who died in the Canoe River Train Disaster.



- An incident of interest to gunners occurred in the spring of 1970 (or perhaps the spring of 1870).

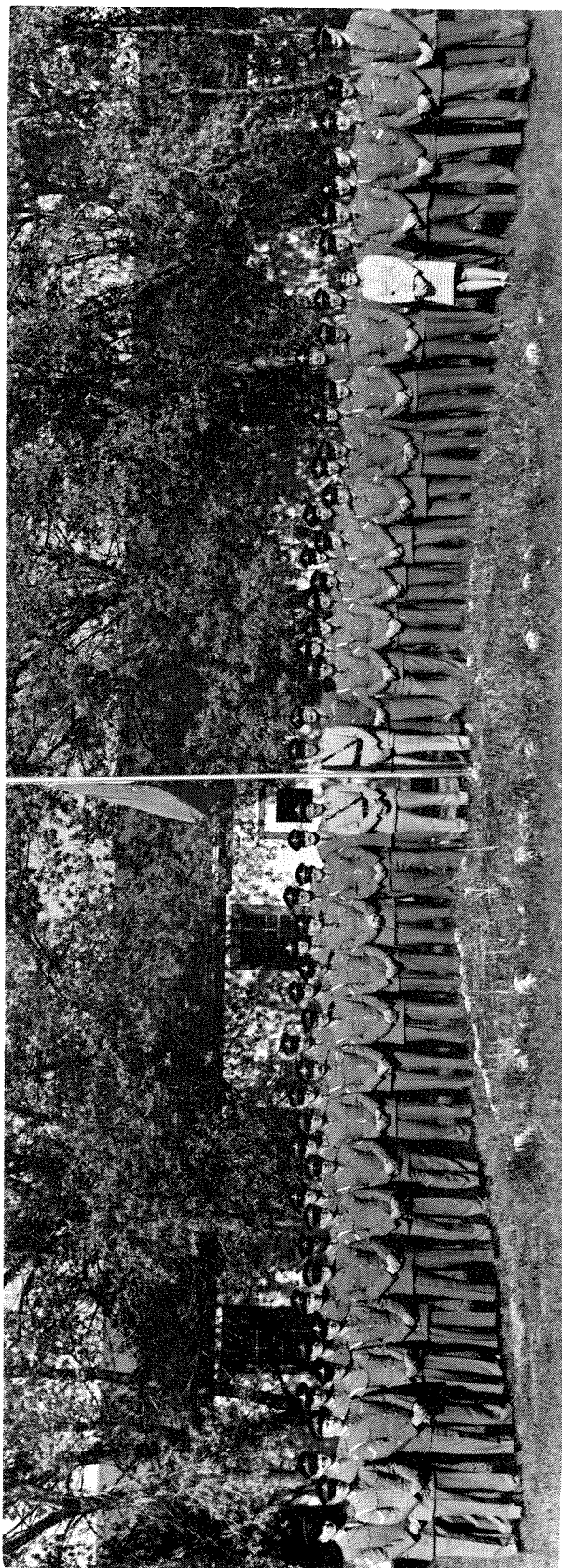
Mr Jim Cullen, owner of property about 4 miles from CFB Shilo, discovered an old piece of brass in the area of Fiddlers Ford on the Assiniboine River.

The brass piece was apparently the touch hole of a cannon or some other such implement, circa 1850. Unfortunately the item was lost in transit to Winnipeg for identification. A search of the area with a mine detector has so far not revealed anything new.

It seems that during the middle 1800's both American and Canadian steamers plied the Assiniboine, trading furs with the local populace. It has since been reliably reported that an American steamer was holed by ice in this area. It is surmised that the boat was grounded and the valuables it was carrying were unloaded and buried. This is quite likely as a HBC post was nearby and there was no love-loss between the rival fur traders.

This is as far as we have gotten in our theorizing; however the search for more concrete evidence continues and it is hoped that the true story of the gun and how it got there will soon be known.





DRONE TROOP

1 DRONE TROOP

RCA

THE BEGINNING

1 Drone Troop officially came into being on 1 July, 1968. Personnel were posted to Shilo and the troop from all parts of Canada with the majority coming from 1 Loc Bty in Winnipeg. No sooner were people on the ground, and equipment made available, than numerous different types of refresher training programmes were carried out: survey, sound ranging, counter-bombardment, air photo interpretation, first aid, and internal security to mention but a few. Then no sooner were the course reports completed than 1969 arrived — and a Gun Numbers Course for Drone Troop conducted by CFSA. Celebrating the end of the course, the troop was called to Saint Francois-Xavier and several days of fighting floods.

1969

However, the 1969 Drone Trials were about to begin, and so the troop was called on to perform its primary task. Preparations involved survey exercises to fix the numerous targets in the area of Camp Shilo; with the targets surveyed it was then necessary to move the many radar sets and

maintenance vans to the south of the Q-lines at the Test Control Center. Pursuant with this activity a large number of the troop went to Montreal for advanced Drone training, returning in June with the Trials Unit to set up for the trials. On the sixth of November the trials came to a successful conclusion, with the Trials Unit disbanding, and the majority of the troop personnel proceeding on a well-deserved annual leave.

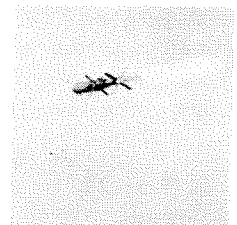
1970

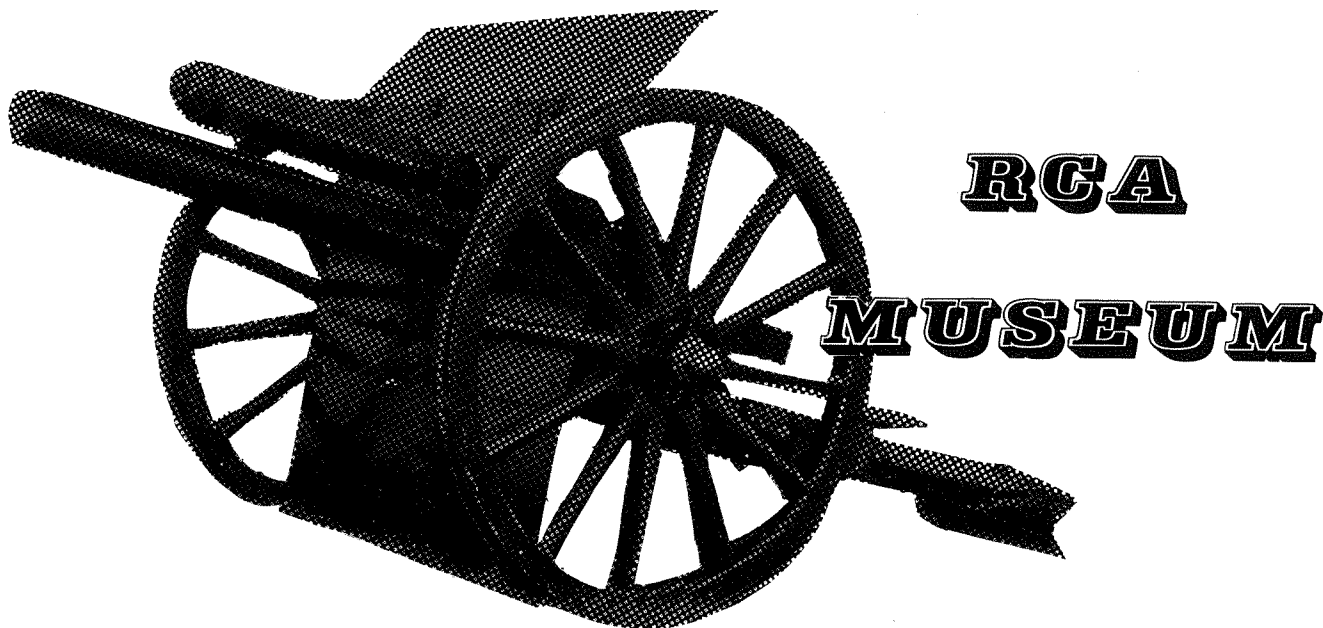
1970 was ushered in by a host of interesting (and some depressing) rumours about the future, namely that (A) the troop would disband, (B) the troop would not disband but proceed to Fort Hood and demonstrate the Drone, and (C) the troop would be used as a CFSA Firing Troop. In January, a Guns Refresher Training Course and concurrent command post exercises were conducted fore-shadowing a designation as Firing Troop for CFSA, a commitment which was to last until the end of July. Then, in April, our fate was sealed, as Captain A.V. Harris announced that on the first day of June, the Drone Troop would cease to exist.

THE END

The Drone has completed its mission, and accordingly so has the troop. With the coming of June, most personnel joined 3 RCHA as they re-located from Winnipeg to Shilo. It was short, but very worthwhile---

□□□□□□





by
MWO RH Speare

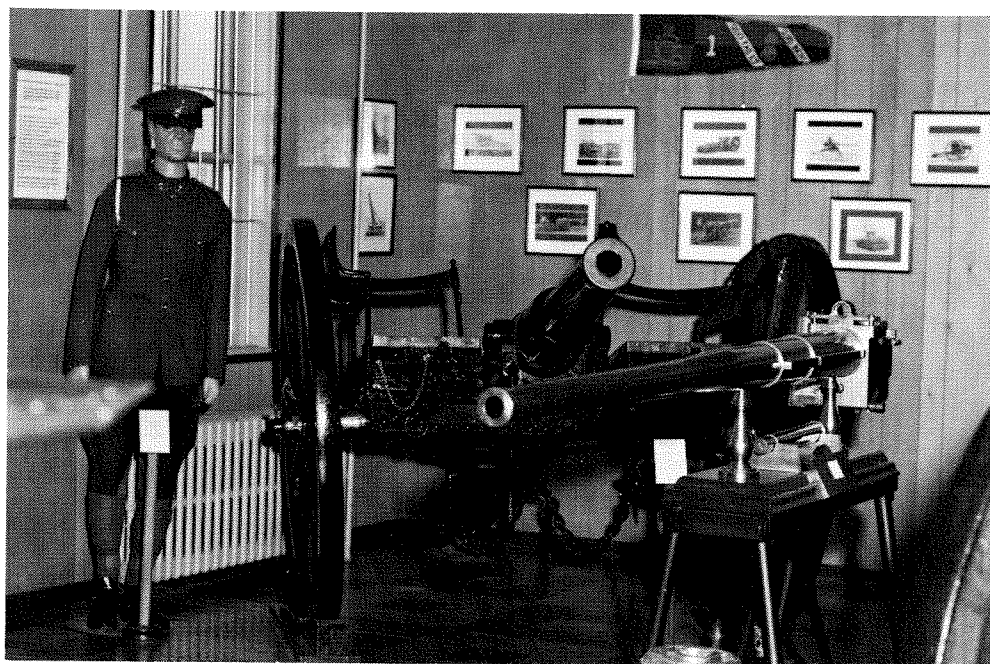
The first discussions on the establishment of an RCA Museum began shortly after World War 2, when Shilo was a peace time home for the Regiment. Stores and display material began to be collected around 1950. However, although certain material was acquired and stored with the RQM accommodation was not available and nothing was done.

In 1955, there was a revival of interest, sparked by Col A.J.B. Bailey DSO OBE ED CD, Col H.E. Brown OBE ED CD, Col G.P. Marriott ED CD, Col E.G. Brooks DSO OBE CD and a host of other senior officers. In March 1955 a conference was held in Shilo concerning the location for the proposed buildings for the camp. A suitable location for the Museum was discussed at this time. It was suggested that Building L64 (a gun shed) be moved to a location west of Bolougne Road and north of London Road, with the area allotted to extend 400 feet west of the centre line of Bolougne Road and 355 feet north of the centre line of London Road. These plans were consequently abandoned because it was considered that cost would prohibit, or greatly restrict, the inevitable reconstruction in order to provide a suitable building for the actual Museum.

In June 1956, Col H.E. Brown, then Commandant RCSA, requested through Col J.M. Houghton, Commander Shilo Garrison, that Building L1 (Officers Mess at that time) be utilized as a Museum Building. Col Houghton's reply stated that on completion of the new RCA Officers Mess and Quarters, L1 would be allocated for use as an RCA Museum. He went on to say that it was also the intention to declare surplus, Buildings L2, L3, L4 and L5, and turn the area on which these buildings were located into a park which could be used for gun displays in conjunction with the Museum.

Again this plan was shelved, but Maj M.S.M. Ferguson CD kept interest alive and finally in June 1960, Building HP 18 (now the Civilian Time Office) was allocated as a building for the Museum, and the actual work of setting up the Museum began. Maj Ferguson was the Museum's first Curator. Personnel employed in the ground work and setting up were:

Maj M.S.M. Ferguson CD	—	Planning
Capt C.M.J. Pachal CD	—	Recording
WO2 Hedley T CD	—	Printing Display & Cataloging
Sgt Drysdale GS	—	Displays
Sgt Hannah HG	—	Carpentry



A model wearing a World War 1 Gunner RCA uniform, a 9-pounder RML circa 1880 and 1940 2-pounder A/TK gun (instructional model).

It took but a year to realize that HP 18 was too small and didn't allow sufficient space to display all the holdings. Once again an effort was made to procure a larger building and this time C2 was allocated and the big move began. During that first year Sgt CW Fannon CD replaced Sgt Hannah as carpenter. The move and setting up in the new building took about three months and the RCA Museum was officially opened on 26 January 1962 by Brigadier P.A.S. Todd CBE DSO ED CD, Colonel Commandant, Royal Regiment of Canadian Artillery.

Authorization for the establishment of an RCA Museum had been a controversial subject since 1955 and it was not until 9 Jan 62 that authority was received from AHQ. The text of the message was as follows

1. The organization of a military museum by the Commandant, Royal Canadian School of Artillery, Camp Shilo, Manitoba, is authorized under the provisions of CAO 143-8.
2. The title of this military museum will be "The Central Museum of The Royal Regiment of Canadian Artillery". The abbreviated title will be "RCA Museum".

*Signed
(WAB Anderson)
Major General
Adjutant General*

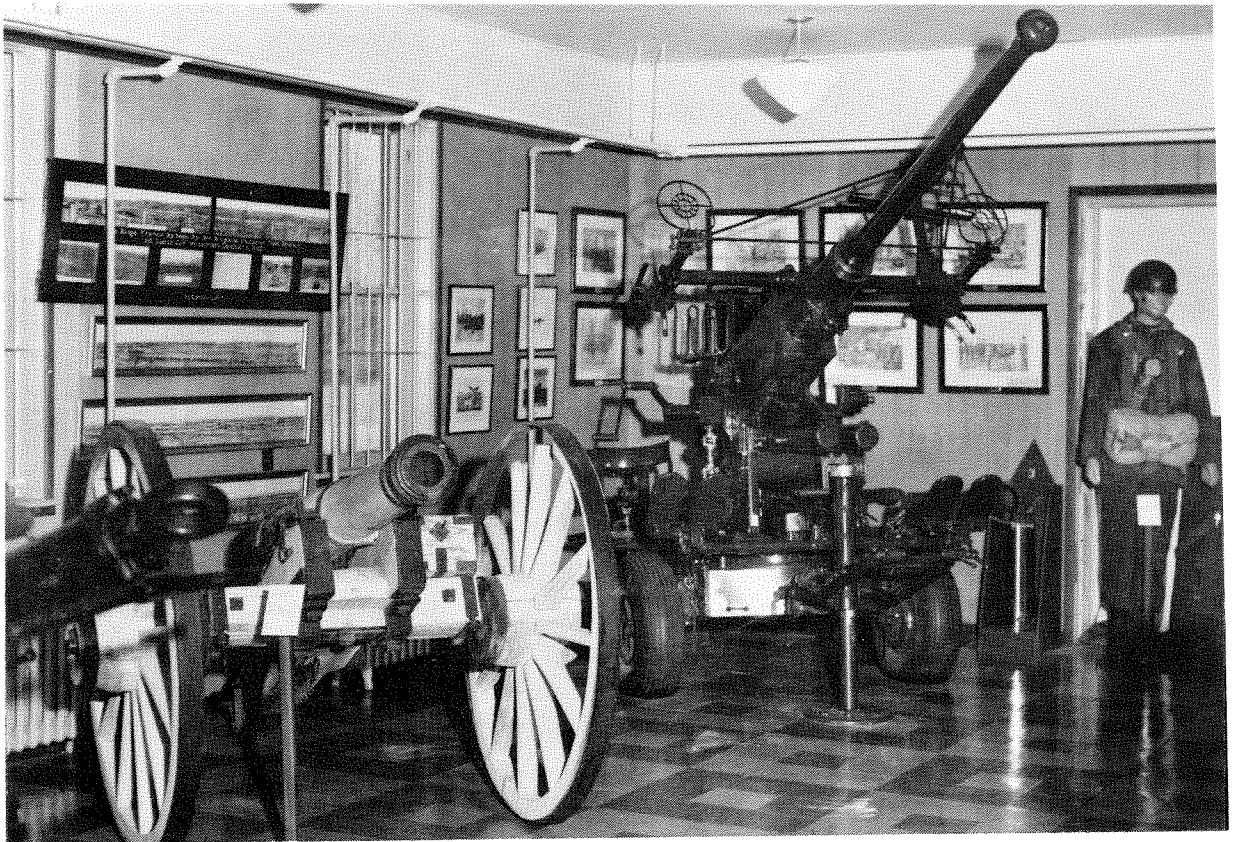
Mention should be made here about the changes in personnel. In 1963 Capt F.R. McCall succeeded Maj Ferguson, and he remained as Curator until late 1966 when he in turn was succeeded by Capt W.M.J. Wolfe.

In 1964 Capt J.D. Chown was appointed Assistant Curator and Treasurer RCA NPP Central Funds. He remained in this capacity until July 1968 and was replaced by Capt R. Malcolm in August of the same year.

WO2 Hedley was replaced by WO2 H.R. Steward in 1965 and in 1967 MWO Speare replaced WO2 Steward. Sgt C.W. Fannon retired in June 1969 and was replaced by a civilian carpenter, Mr. Alex Malenko.

Since the opening in 1962 the Museum has been collecting, reconditioning and cataloging guns, uniforms, books and all matter of items which have been used by Canadian Gunners over the years. It is the aim of the Museum to gather as many items as possible pertaining to Canadian Gunners to be put on display for the purpose of preserving our history and traditions.

The Museum is organized basically into three divisions: Ordnance, Display and Library.



A WW II 40MM Bantam AA Gun, flanked by a 6-pounder Brass Smooth Bore circa 1816 and a model wearing the dress for Z Battery Para circa 1952.

ORDNANCE

The armament section of RCSA has completely rebuilt a number of guns and put them in condition for suitable display. Some of these are: 1 Pdr (1900), 2 Pdr A/Tk, 6 Pdr Brass Smooth-bore (1796), 6 Pdr A/Tk, 9 Pdr ML, 12 Pdr ML, 12 Pdr BL, 15 Pdr BL, 17 Pdr A/Tk, 18 Pdr, 25 Pdr, 60 Pdr BL, 3" American Field Gun with Caisson (1903), 4.5" Howitzer, 4.7" Gun, 5.5" Gun, 6" Howitzer, 7.2" Howitzer, 8" Howitzer, 3.7" AA Gun, 40 mm AA Bantam, 40 mm AA Towed, 75 mm (French), 75 mm (Brit), 90 mm AA Towed, 95 mm Howitzer, 105 mm Howitzer, 155 mm Howitzer, 155 mm Gun, 3" 20 cwt AA Gun. In addition to these weapons there are 20 foreign pieces including Japanese, Italian and German weapons. Other equipments include Height and Range Finders, Predictor AA No. 5, Fortress Plotter, Radio Controlled Aircraft Target (RCAT), 20 mm Oerlikon, 4.2" and 120 mm Mortars, Radar AA No. 4 Mk. I and Radar AA No. 3 Mk. I.

DISPLAY

The displays now in the Museum include a wide range of dress uniforms and accoutrements, an excellent collection of fuzes and ammunition, sights and optical instruments, medals, coast equipment, guided missile models, cap badges and shoulder insignia, mines and grenades, pistols, rifles, machine guns, PIAT, bayonets and swords. In storage is a wide assortment of gun stores, uniforms and other paraphernalia which cannot be displayed because of the space problem. Also throughout the Museum there are 596 framed pictures on display.

LIBRARY

The Museum library is presently being catalogued and cross-referenced. The publications now on the shelves include training pamphlets and manuals, some of which date back to the seventeenth hundreds. There are history books, equipment manuals, nominal rolls from World War I, records of officers' services from 1870 to 1939, biographies and photos of most of the RCA Officers, mess record books, drill manuals, dress regulations and many documents of historical interest. In addition the War Diaries for most of the Artillery Units that served during World War 2 are on display. Also all copies of the Shilo Observer, The Canadian Gunner and the Shilo Stag may be viewed in the photo room. The library is available for research as well as for general interest and consequently the work of collecting books and documents is continuous.

There have been over 35,000 visitors to the Museum in the past 8 years and that in itself is quite an achievement, considering the location of the Museum.

It is hoped that the RCA Museum may help preserve the traditions built up by Canadian Gunners over the past years. In doing so it may instil a sense of pride in future Gunners in the Royal Regiment of Canadian Artillery.

■ ■ ■ ■ ■ ■ ■ ■

In the old days, regiments of cavalry and infantry were wont to rally on their colours in battle. The artillery on ceasing to carry colours, rallied on its guns. After the Crimean War, Queen Victoria permitted the Royal Artillery the unique distinction of using its guns as its colours. In this connection, quotation of an early regulation is of interest: Regulation and Orders for the Active Militia of the Dominion of Canada 1870: "A Battery of Artillery with its guns is equivalent to a Battalion with its colours, and is to be saluted accordingly."

S.R.A.W.S. AND THE GUN DETACHMENT

by
Captain G.W.A. Trimble

The temperature has been rising all day, but the snowstorm still persists. Suddenly the yellow light on the warning panel changes to red and stand-by alert status becomes null and void as an actual shooting situation is confirmed. The anxiously awaiting gun detachment races to their vehicles as nervous energy is transmuted into a physical act. As the Wardens make their final sweep of the highway, the officer and his Number One verify preparations for firing Double Bench Two from Crossover Gun Position. Despite the driving snow, the aiming point is just barely visible — "On", "Ready" — and the round wings its way toward the mountain peaks. Midst anticipation is found a silence, a real silence, a silence anticipating that low rumbling characteristic of an avalanche barreling its way through the blackness, down onto the highway and the wary, waiting, gun detachment

* * *

Since 1959, Gunners have been making an annual pilgrimage to the Selkirk Mountains during the snow season to aid in keeping the Trans-Canada Highway (TCH) open to all motorists, especially the vital heavy trucks carrying fresh produce and perishables from the Vancouver dockyards to the metropoli of Calgary and Edmonton. The Headquarters for the Avalanche Control Detachment is located in Glacier National Park, British Columbia, at Rogers Pass, a small community/way-station of about 150 people located on the summit of the TCH. Nestled under the imposing height of Mount MacDonald, Rogers Pass features a gas station, a rather well-equipped hotel, a large Department of Transport road maintenance crew, the Avalanche Control Detachment, and the Snow Research and Avalanche Warning Section (SRAWS) of the Department of Indian Affairs and Northern Development.



The Selkirk Mountains and Rogers Pass as seen from Abbott Hut, one of a series of static control features used to monitor upper-level snow conditions.

The Avalanche Control Detachment, supplied by the Second and Third Regiments since the inception of the idea in 1959, consists of one officer (Capt/Lt), one sergeant, and seven bombardier/gunners, along with four vehicles, two 105mm howitzers and one 75mm Pack Howitzer. The tour of duty is approximately five to seven weeks with four or five complete crews going to Rogers Pass each year, depending on the duration and amount of snowfall. The task of the detachment is very simple and straight-forward, to assist the SRAWS in controlling the avalanche hazard on the twenty-seven miles of TCH within their jurisdiction, and to provide this assistance at any time. But before we examine the operation of the Avalanche Control Detachment, we should first look at the overall picture, study the avalanche problem, and look into the machinations of the Snow Research and Avalanche Warning Section.

* * *

The SRAWS at Rogers Pass is faced with a very large task indeed — to predict possible avalanche conditions that may affect the TCH and then, on the basis of their predictions, determine whether or not a threat is posed to traffic on the highway. If a threat is posed, they must remove it before a natural avalanche occurs; a difficult task considering that the length of highway running through the Glacier National Park is situated in one of the heaviest snowfall areas in Canada, even though it's considered a summer Skier's Paradise. In charge of this, the largest direct avalanche control area in the world, is Mr. Y.G. (Fred) Schleiss who was present at the birth of the project in 1959. Born in Carinthia, Austria, Mister Schleiss spent his adolescent years as a Ski Mountaineer Guide and Alpine Guide in Austria before coming to Canada as an avalanche control engineer at Jasper in the middle 1950's. He assumed his present position as Senior Analyst, SRAWS, in 1964, and has a staff of seven men working for him, in varying capacities as Analysts, Observers or Assistant Observers.

One has only to spend a few hours in Rogers Pass to feel the anticipation that an avalanche threat poses, and this feeling is driven home when you see the "locals" driving down the highway watching, not so much the road in front, as the towering mountains on either side of the highway with their potentially deadly expanses of snow.

But what is an avalanche? In simple terms, it is a snow overload condition on the side of a mountain which results in the structural breakdown of the snow field as the force of gravity on the mass of snow overtakes the cohesion of the snow crystals. Although there are no hard and fast rules, a rising temperature with an accompanying snowfall is usually a dangerous condition as the rising temperature causes the snow crystals, which usually lock together to form a fairly strong bond, to sublimate to the gaseous state producing the "greasing factor" (a layer of dead air) which cannot support the added weight of the snowfall and thus precipitates an avalanche. And the average avalanche in the Rogers Pass area contains about 500,000 cubic yards of snow!



June and January on the TCH east of Rogers Pass as seen from Mount MacDonald. Now, experts, where is Crossover?

For SRAWS there are two methods of avalanche control: static and mobile. The static control measures are almost entirely terrain modifications and include such features as:

1. mounds of earth or debris in the slide path to break-up the mass of snow and absorb some of its force (this method is more effective on wet slides than it is on dry snow slides);
2. diversion dykes located in the slide path or in close proximity to it, to ensure that the slide is deflected in a certain direction;
3. retention walls, trenches, and ditches, mainly used in the trigger zones to prevent slab avalanches;
4. snow-sheds and like structures;
5. highway signs warning motorists of danger areas.

The mobile control measures consist of two main elements: an evaluation and notification team which uses instruments and visual observations; and the Avalanche Control Detachment which controls a threatened avalanche by shooting.

Over the years, SRAWS has accumulated much data concerning avalanches and probable conditions that will trigger them, and has also become aware of the areas in Glacier National Park that present the greatest avalanche hazard to the TCH. Accordingly, throughout the park, there are 19 gun positions that the Avalanche Control Detachment can use to fire their weapons, each gun position affording up to thirty trigger zones as targets. Names such as Crossover, Lens, Portal, Cougar, Hotel, Generals, Baird, and Mortar will undoubtedly bring back fond memories to many.



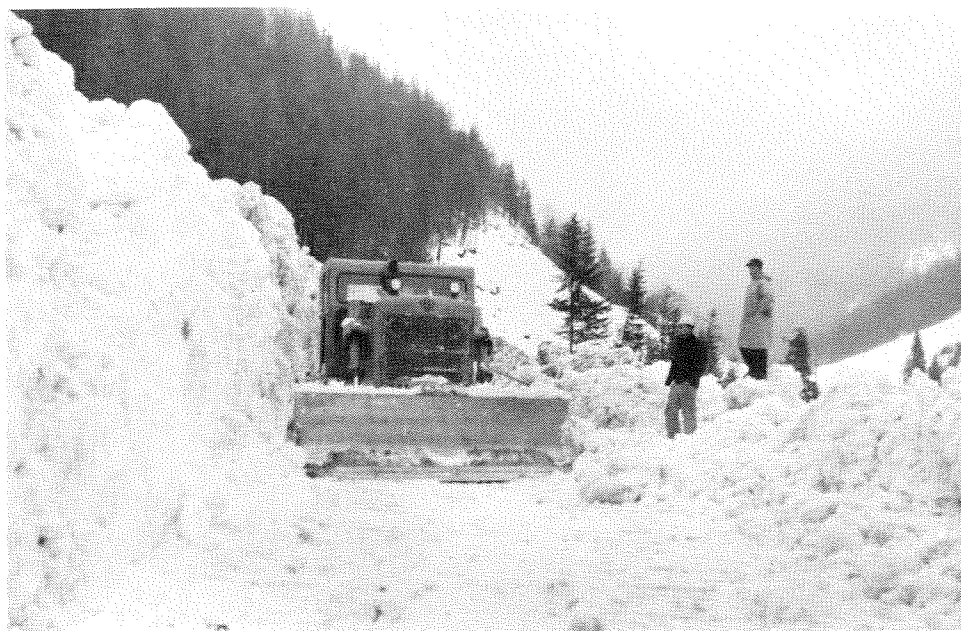
A modified gun position, showing the concrete ring, the modified spade blocks and the jack on the howitzer in the "lowered" position for quickly changing targets. Note the hydraulic mechanism on the right trail used for raising or lowering the jack.

Nevertheless, memories are all they can be, for the face of the gun positions has drastically changed. All positions were made "permanent" in the summer of 1970 — the infamous spade holes were removed and replaced by a steel-reinforced concrete ring (either full-circle or half-circle). At the center of the ring, a recessed concrete/steel "hub" was constructed to receive the jack now mounted on the 105mm howitzer in conjunction with the axle-over-hub sighting system. Thus, when the gun detachment is given a new target at any gun position, the jack is simply lowered into the hub and pumped up so that the wheels of the howitzer are off the ground. Thereafter it is simply a question of lifting the trails and rotating the gun on the jack until it is pointing at the new target, whereupon the jack is released so that the wheels are touching the ground and the weapon is ready to fire. But fret not, ye gunners of past avalanche control duty: it is still necessary to fire the 75mm with "sight-over-hub" (enter the plumb-line) and one must still shore up the tires and trails with sandbags in that hopeless attempt to keep the sight over the hub!

Each year the Avalanche Control Detachment fires an average of 780 shells, 75mm and 105mm, and participates in a yearly average of 42 shoots, be they Registration Shoots or Snow Shoots. Generally speaking, every fifth round brings down a slide or avalanche of some type, although very few indeed reach the highway or cause the road to be closed. (It is interesting to note that not all targets are directly related to the TCH. One set of targets on one of the eastern gun positions has been established solely for the Canadian Pacific Railway and targets engaged from this gun position are fired only on request of the CPR to remove the avalanche hazard to their main line which carries such trains as the cross-Canada Canadian.)

One major misconception that many people have concerning the Avalanche Control Detachment is that avalanches are caused by vibration — that in fact blanks are used — the truth of the matter is that the probability of such a condition existing is almost impossible and that accordingly “real” ammunition is fired at the highest possible charge in the hope that sufficient trigger mass will be released to precipitate a slide or that the snowfield will sink and stabilize upon explosion of the round.

These, then, are some of the major aspects of SRAWS and the Avalanche Control Detachment and their yearly fight to control avalanches. However, all is not without its lighter moments, such as the incident when an officer fractured his ankle going up the local ski-tow (yes, UP, not down), or the incident that saw one round kill a mountain goat who promptly fell onto the trigger zone and started an avalanche. But the majority of these moments are sacred and must be kept that way for the benefit of all those who have served with The detachment. The task is demanding, the hours sometimes long and strenuous; but the spirit is high and enthusiasm ever present, a tribute to the fine understanding and mutual desire for perfection between SRAWS and the Gun Detachment.



It's not all fun, especially when one triggers a really large avalanche.



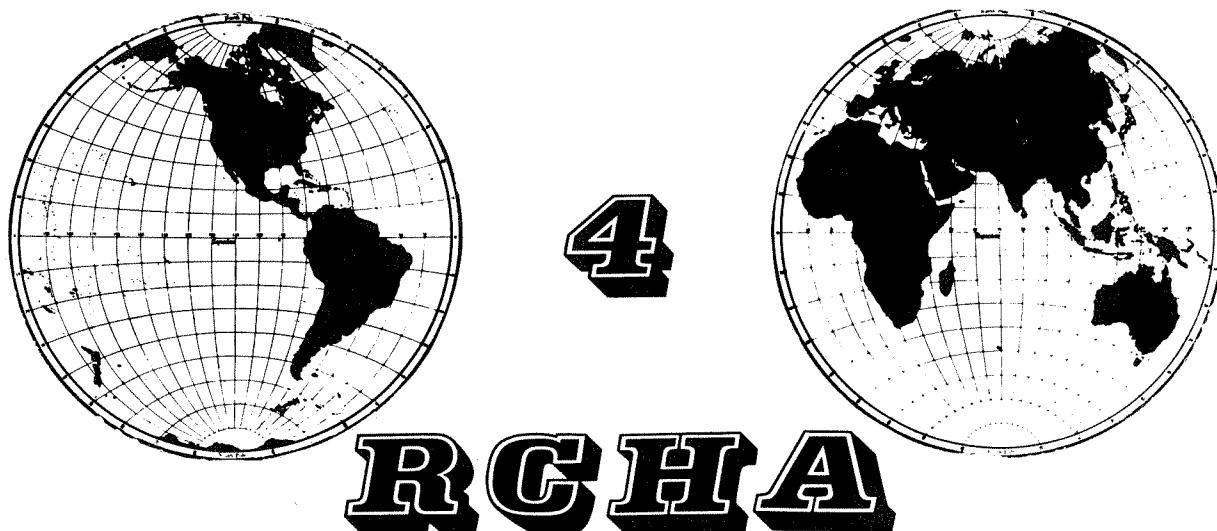
PETAWAWA

4 RCHA

**Training Progressed...
Social Events
Redesignation
Air OP Troop
The Airborne FAC**

2 RCHA

**Defence of Gun Positions
Two Years With The British**



1970 was a change of pace year for 4 RCHA and although the "Petawawa Globetrotters" did not participate in any overseas exercises, the activity on the home front was just as great.

TRAINING PROGRESSED....

January saw the unit camping in the snow as it conducted winter indoctrination training. Many attempted to supplement RP4's by ice fishing but catches were few, colds were many and profanity was frequent. A Regimental Fire & Movement exercise highlighted the month and again the Regiment proved it can operate in cold weather, utilizing toboggans and ski-doo's and man-packing and winching the L 5 howitzers into gun positions inaccessible to vehicles.

During February and March Annual Refresher Training, First Aid, Annual Small Arms Classification, etc, was conducted for all ranks.



CH 113 Voyageurs and CUH-1H Iroquois from 450 Squadron and 403 Hel (OTS), respectively, were observed over Petawawa in April as the unit, conducting a Regimental fire & movement exercise, practiced airpotability skills. Many valuable lessons were learned particularly those associated with planning aircraft loads, rigging guns and ammunition and marshalling aircraft. Moreover, this exercise helped foster the warm relationship between the Regiment and air element giving pilots and gunners an opportunity to discuss mutual problems and to determine common solutions.

4 RCHA was tasked again to conduct FAC Continuation training for 2 Combat Group. This training, 27 April to 1 May, involving one battery and the Air OP Troop, consisted of both live and dry aircraft strikes. The CF 5 aircraft provided by 433 Squadron from Bagotville, Que, provided live close support for the first time.

Annual Practice Camp was conducted in the range area and surrounding countryside 4 to 15 May. Not only were deployment drills and technical gunnery practised but also night firing and long road moves. One road move totalled 105 miles! Upon completion, various trophies were presented: E Troop was awarded the LCol DW Francis Trophy for Best Troop; F Troop OP was presented with the LCol LC Baumgart Trophy; The Major Crossman Memorial Trophy for the Best Gun Detachment was won by Bdr Landry RD and his detachment and MBdr Rabichuk JD and his detachment were awarded the RCAA Trophy for Direct Shooting.

Annual Militia Camp was soon upon the Regiment and early June featured the rise of "Tented City" on the Mattawa Plain. From 21 June to 3 July the Fourth, augmented by the staff of 2 Arty RTHQ supported five FMC Reserve batteries. Renewing old friendships and meeting new comrades naturally led to the bar but all concerned also worked long and hard to obtain maximum benefit from the training.

SOCIAL EVENTS

Officers, Senior NCO's and men who had previously served the guns of the Fourth were invited to a Regimental Reunion 10 & 11 Apr to socialize with old comrades before the unit went out of existence. About 200 former members attended this grand event and social highlights consisted of Special Guest Nights in the various messes and an all ranks get together in the Gun Shed which had been decorated as a beer garden. Those "good times" were fondly recalled by all and perhaps many war stories were garnished with more fiction than fact. However, the Regimental Reunion was a huge success and more than one guest departed Petawawa bleary-eyed and bushy-tongued.

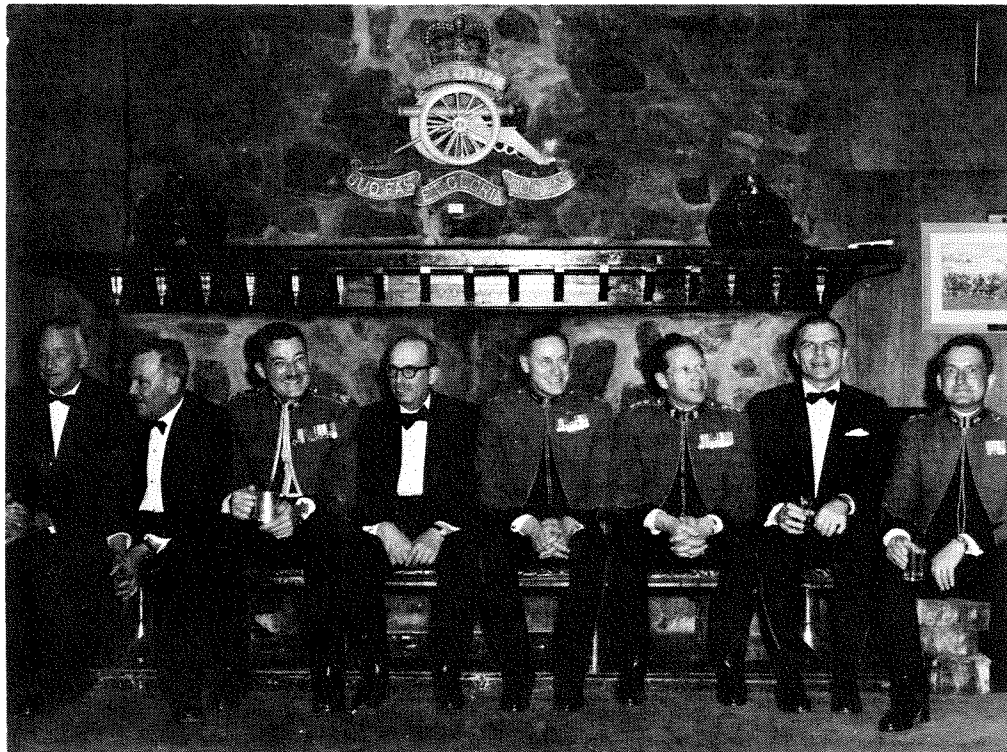


The smell of cordite hasn't changed in 55 years.



CWO Richmond and CWO Vallee discussing Regimental history.

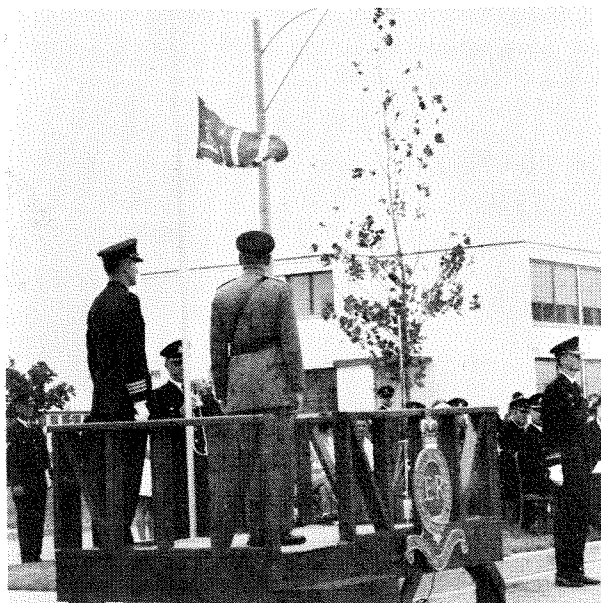
The Annual Artillery Birthday 26 May was celebrated in a different manner. The Regiment invited a number of Boer War and World War 1 Gunner Veterans, the majority of whom were from Ottawa and Kingston; to spend a day with the Fourth. A simple field demonstration was arranged and the veterans descended upon an OP and watched the fall of shot. Each one had an opportunity to fire the L 5 Pack Howitzer; alas, our propaganda was in vain, as most remarked that the 18 pounder was better. An informal dinner and luncheon in the Sergeants and Officers' Messes rounded out the occasion. And when the old boys left, we had the distinct impression that our gesture had gone over well.



Distinguished rogues

CHANGE OF COMMAND AND REDESIGNATION

15 Jul 70 marked the end of 4 RCHA and the beginning of 2 RCHA in Petawawa. The Inspecting Officer at the Change of Command and Redesignation Ceremonies was MGen HA Sparling CBE, DSO, CD, Colonel Commandant of the Royal Regiment of Canadian Artillery.



Under the observant eyes of LCol Sosnkowski and Maj Gen Sparling the pennant of the Fourth Regiment is lowered for the last time.



After marching his Regiment past, LCol A Sosnkowski CD, CO 4 RCHA, passed command of the Fourth to the Colonel Commandant. At 1430 hrs the Regimental pennant was lowered for the last time, the Regiment was redesignated 2 RCHA by the Colonel Commandant, and the pennant of the Second Regiment was raised. LCol WR Dawes, CD was then asked to assume command and a mounted roll past completed the Ceremony.

AOP TROOP

There were few if any exercises or operations by 2 Combat Group units conducted without some Air OP assistance again this year. Although most of the tasking consisted of reconnaissance, photography and liaison missions, a few of the exercises demanded much more.

The first Air OP tasking of 1970 was from 2 Field Squadron RCE for Exercise "Panda Paw". The exercise was conducted in arctic conditions with temperatures hovering in the -30° to -55° F range. The engineers were engaged in a cross-country trek between Kapuskasing and Timmins, Ontario. The exercise proved to be a real test of light aircraft ski operations in winter conditions. The Field Squadron was completely dependant on the Air OP for resupply of food, fuel, parts and equipment for extended periods. Several real casualty evacuations were made from remote lakes in much less than VFR weather conditions.

In April 1970 the Air OP Troop coordinated and conducted the Annual Forward Air Control

Continuation Training for 2 Combat Group. CF 5 aircraft from 433e Escadrille CFB Bagotville supported the training with live amaments. A number of live cannon and bomb attacks were carried out by airborne FACs from the troop during the training.

Exercise "Open League VI", a summer float flying operation and northern bush exercise, was conducted by the troop in June. The exercise was staged near Hornepayne Ontario. A pleasurable off-shoot of the exercise was the excellent trout fishing. Capt WF Wright won first prize honors with a seventeen pound lake trout. The value of the exercise was truly realized when survival techniques had to be conducted by some members of the troop when they were inadvertently caught out in deteriorating weather.

The final involvement of the Air OP Troop, 4 RCHA was a demonstration with L Battery for the RCHA Association in Kingston on June 15, 1970.

THE AIRBORNE FAC—4 RCHA STYLE

"It is not enough to set tasks, we must also solve the problem of the methods for carrying them out. If our task is to cross a river, we cannot cross it without a bridge or a boat. Unless the bridge or boat problem is solved, it is idle to speak of crossing the river. Unless the problem of method is solved, talk about the task is useless".

— Mao Tse-Tung

Selected Works, Vol 1, P 150.

In 1967 the Air OP Troop 4 RCHA started to build a bridge across what proved to be a very wide river of indifference. The Airborne Forward Air Controller will have become an accepted fact in Canadian Forces by the time this edition of the Gunner is in print. Almost everyone knows that the FAC is not new to warfare. One can find the rudiments of this method of directing aircraft in support of land forces in World War 1, World War 2 and Korea; not to mention the finesse developed by the United States in Vietnam. In the old days they may have been referred to as "Path finders"; but the principle was and still is the same.

The first airborne FAC report submitted by 4 RCHA in April 1967 now reads like a chronicle of history:

....."The manpack A43R UHF radio made it possible for Capt VAA Coroy to control attack from the air.....it was necessary to seat him in the rear seat of the L19 facing backwards. From that position he was able to control artillery fire for target indication and direct the attacking aircraft during its run-in. In this case it was necessary to wear two headsets and operate two microphones. While airborne the FAC map read, sent and answered artillery fire orders, briefed the attack pilot on his mission, coordinated the artillery firing with the attack and talked in the T-33".

The report fails to mention how ill the FAC became from the turbulence and violent aircraft manoeuvres while flying backwards tactically. However the attack on a pin-point target was deemed successful.

Undaunted, the communications problems with the A43 was pursued. A method was devised and finally approved of circuiting the A43 radio into the aircraft communication system. The limitations of the radio still required the pilot to select one of six channels and turn the set on before becoming airborne. After considerable experimentation with VHF rod antennas a sawed off version was arrived at that provided an acceptable noise level and range. Now the Air OP/FAC pilot could

operate in a more normal fashion as long as the radio battery held out.

The real test of the airborne FAC occurred in 1969. During the 2 Combat Group FAC Refresher Training, a L19 and later a CUH-1H were used to control a T-33 from 408 Squadron in live bombing and machine gun attacks. This was done using artillery white phosphorus smoke for target making. The attacks were unquestionably successful. But there were still very real cockpit problems as revealed in the FAC report that year:

"The Airborne FAC found that during the coordination of artillery fire and strike aircraft attacks considerable switching of radios, map reading, plotting, computing and writing was necessary to carry out all the artillery Air OP/Airborne FAC functions. The necessary cockpit work detracted from the pilot's ability to maintain proper tactically concealed flight and observation. It became apparent that without trained assistance in the aircraft the Airborne FAC requires superior knowledge of tactics, strike aircraft, artillery procedures and FAC duties. There is no doubt that he must be a well trained, experienced light fixed wing or helicopter pilot to cope with all the manifestations of the tasks".

It was not until Exercise "Pass Blocker" in the mountains of the Gaspé during the spring of 1969 that the Airborne FAC from 4 RCHA got a realistic work-out. Although no live firing took place the exercise presented the opportunity to operate through an artillery Fire Support Coordination Centre, Tactical Air Control Centre and with ground FACs. The airborne FAC lived up to all expectations. He controlled prearranged and impromptu attacks as well as coordinating attacks with the ground FAC where terrain precluded the ground FAC from conducting the mission. Exercise "Pass Blocker" also reaffirmed the need for the Airborne FAC to have some integral device for marking targets. The exercise report summarized the requirement in this fashion:

"The requirement for smoke rockets for marking targets by L19 aircraft is essential. During Exercise *"Pass Blocker"* the terrain, artillery range limitations and/or the number of guns available to bear on many targets indicated a requirement for the airborne FAC to be able to mark targets and conduct attacks within his own resources".

The airborne FAC has become an accepted part of 4 and now 2 RCHA. All Unit Air OP pilots are qualified ground FACs and have conducted attacks while airborne. The most recent training was with the CF5s from 433e Escadrille Tactique de Combat in May 1970. The endorsement of this operational unit has added impetus to making the airborne FAC an accepted reality in Mobile Com-

mand. The bridge across the river is almost complete, but the final realization will be with the supported arms. The foresight of the following comment from a 4 RCHA exercise report bears witness:

"The results of the live strikes controlled by an airborne FAC clearly demonstrated the tactical potential of this system. In spite of the present communications and equipment limitations the direct contact between the airborne FAC with the strike aircraft and artillery can provide a valuable effective fire support coordinating and observation agency for the supported arms."

.....It is now history.



Thoughts and Quotations From Chairman Ron

1 Jan 57: I can fly any airplane.

Apr 68 Ex *"Pass Blocker"*: I'm the best sig in the regiment.

Fall 68: Gentlemen, this is the Ron Adams master plan for the reorganization of RHQ, approved by the 2IC, and there shall be no changes.

3 days later: But, sir, I had nothing to do with this - it was the Regimental Sigs Offr.

Feb 69: You have to be a lieutenant in the Artillery at least five years before you know enough fire discipline to be a captain.

Barbara 69: I'll lead the guns.

Barbara 69 (3 hrs later): Due to conducting the recce all by myself in the dark, I have pranged up in the ditch.

(Ed comment: It must be noted that he had passed the RV anyway).

July 69: Go ahead, Bdr Lilly. Buy the wood for the 3/4 ton and I'll chip in later!

Barbara 69: King, this is King Bravo 2. If you are going to control this net you will not use obscenities. Out.

Feb 69: There will be no food served to personnel without plates, BSM.

Apr 70: The CO isn't interested in personnel administration. For the next two weeks he is only interested in gunnery.

Barbara 70: The gentleman officers of Michael battery will attend.

Barbara 69 just before the airlift: I can fly this battery anywhere.

Nov 69: The Adjt sets the example in this regiment.

30 Apr 70: Unusual as it may seem the adjt requires his tent stores at this late date (the day before gun camp).

When we had the red patch - - -

Oct 69: I will get a grip on the Captains

Oct 69: "I will get a grip on the Captains in this regiment including Bill Wright."

13 Oct 70: Not too many people around here are happy that I became Adjutant. I have certain strong ideas on how to be Adjt.

11 Nov 68 - 30 Sep 69 (Daily): I'm the best BK that M Bty ever had.

(Harky Smith was the best BK in the Royal Regiment of Canadian Artillery)
(signed HARKY)

Sep 69: Damn them. We'll paint the guns. When the CO finds out it will be too late.

Fall gun camp 69: Major Finney may be here but **I** am in charge of A ech.

Germany 63 - 66: From an L-19, being used as a STUKA dive bomber, pistol pointing out the window

"Gott cha! ya! bastard."

Nov 69: Every officer in the Regiment will do duties except the Adjutant and the CO.

Regt Ex Jan 69: From now on the CPO's first priority will be to run line to the BK's tent.

Gun Camp 69: The ambulance is not a "hoochie". Its a Command Post vehicle.

1 May 70: You're still in - we just nullified the roll!

1 May 70: He started it! He started it!

Summer 69: Running a houseboat is a lot like flying a plane.

1 May 70: A very popular win. That better not be an eighty cents bottle of wine.

1 May 70: That's the basic draw we have around here. Hack it or (censored).

(I'll get you at Gun Camp next week, Ron Adams).

2 May 70: Peace brother!

1 May 70: Jim, you will put your jacket on. This may be LCol Dorin's mess, but **I** am your Adjutant.

27 Apr 70: (FAC Trg)

Reference (ah! ah!) road (uh!)
running (umm) east to west (ah!)
on your map (oh!). Reference (ah!)
road your (um) tgt (ahah) is - - - -

(ZOOM)

2 Apr 70: Piece!

11 Sep 70: For these of you who are - - -

11 Sep 70: I'll top the Arty Staff Course. No sweat **I**

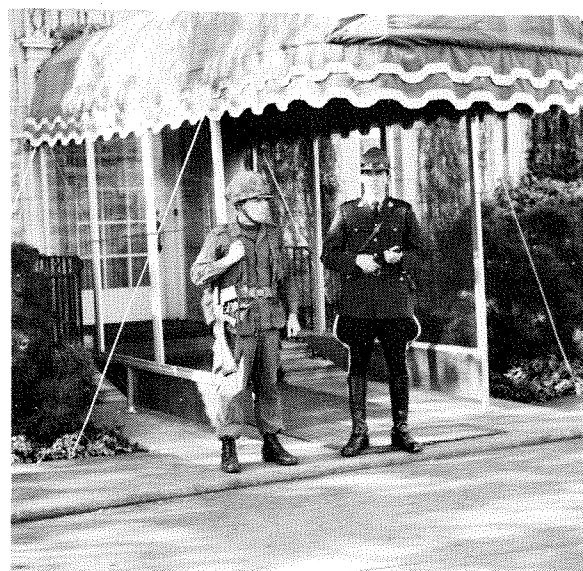
2 RCHA

After the Final Parade of 4 RCHA and the Farewell Parade for 2 RCHA in Gagetown, the Regiment consolidated itself in Petawawa and looked forward to ambitious Autumn.

August saw the Regiment scatter to all cardinal points as annual leave commenced. September and early October consisted of annual Refresher Training, Internal Security Training, equipment redistribution and testing a six gun battery single fire unit concept.



Personnel guarding Mr Louis Rasminski's residence during "Operation Ginger".



RCMP Constable Marc Alain and Bdr Kokonnen stand guard at Prime Minister's residence, 24 Sussex Drive.

On 12 Oct, Thanksgiving Day, the Regiment was invited to Ottawa to participate in "Operation Ginger", in support of the RCMP, where we found ourselves rubbing elbows with VIPs from the Governor General down. Thankfully our duty was only temporary.

Defence of Gun Positions

Condensed from a paper

by

Captain Applin, US Army

(with an introduction by LCol W.R. Dawes)

A subject which we Canadians have not had to face since 1953 is the defence of our gun areas. In training exercises the subject can be distorted and confused and too often becomes a matter of drawing diagrams and deploying mythical soldiers with mythical weapons to contend with a mythical enemy.

During the 1969-70 Artillery Instructors (Officers) Course, a number of heated arguments took place regarding the technique of local defence and the manner in which local defence should be taught. The US Army student contributed on the practical level by pointing out the US approach including some unorthodox methods for defending the battery area including the preparation and firing of DFs by a battery for its own defence. Three problems are unique:

- a. The firing of time HE at extremely short ranges, ie from 200 - 600 meters.
- b. Combining charge increments to decrease the minimum range.
- c. Illuminating the battery defence perimeter with illuminating shell.

The following is a digest of a paper submitted to me by Capt Applin, US Army, based on his experience in Vietnam and should be read as an example of practical (but not authorized) solutions to a practical problem.

♦♦♦♦

With the 105mm howitzer, the use of low charges will reduce the muzzle velocity so that fuze MTSQ, M520 can activate much closer to the muzzle than if higher charges are used. Letters from Vietnam have stated that test firings have shown that the time fuze has a minimum functioning time of 0.7 seconds and that fuze settings less than 0.7 seconds will cause the fuze to be point detonating. This minimum functioning time is contrary to information available at Fort Sill; however, it is proven with test firings. An airburst can be obtained by the use of a standard elevation of 80 mils above the terrain at the perimeter and a fuze setting determined by dividing the range to the target (in hundreds) by 3. For example, if the range to the target is 300 meters, the fuze setting would be 1.0. A mechanical fuze setter must be used to obtain accuracy and uniformity of the of the setting. Also, the minimum fuze setting is 3.0; consequently, a mechanical fuze setter must be used for fuze settings less than E.0. The following data was obtained with the 105mm howitzer, towed: (Ed note - the 105mm CI is the CDN equivalent)

PROJ	CHARGE	ELEV	FUZE SETTING	BURST RANGE
HE	1	140	2.7	550M
HE	1	120	2.5	500M
HE	1	100	2.0	425M
HE	1	100	1.9	400M
HE	1	100	1.5	350M
HE	1	80	1.5	275M
HE	1	85	1.3	250M
HE	1	85	1.0	225M

All bursts indicated were air, with a mean height of burst 20-25 meters.

Following is a list of minimum ranges obtained with various combinations of charge increments fired at maximum quadrant elevation with the 105mm howitzer, towed:

(Ed note — again the CDN—CI)

Charge Increment	MV (ft/sec)	Min Range (meters)
1	640	2,630
2,3,5	621	2,350
4,5	580	2,070
6	580	2,070
3,5	540	1,820
2,3,4	532	1,760
2,5	523	1,700
3,4	450	1,320
5	440	1,265
2,4	433	1,220
2,3	393	1,010

These charge increment combinations provide so little force that the projectile may not leave the tube.

Illumination of a perimeter using howitzers in position can be achieved by using charge 1 fired at maximum quadrant elevation. The use of charges greater than charge 1 may cause malfunctions of the parachute. The use of charge 1 fired at maximum quadrant will insure that a 7.0 fuze setting will yield a 1,000 meter HOB at a range of from 400 to 500 meters in front of the piece. In order to lower the HOB 100 meters, the fuze setting is decreased by 0.5. In order to increase the range from the piece by 800 meters, the quadrant is decreased 500 mils, and for ranges over 600 meters, the fuze setting is increased 0.5. The following chart shows examples of various fuze setting—quadrant combinations:

PROJ	CHARGE	ELEV	FUZE SETTING	RANGE
I11	1	1000	5.0	1200M
I11	1	1050	5.0	1000M
I11	1	1100	4.5	800M
I11	1	1150	2.0	250M
I11	1	800	2.5	450M

Two Years With The British

by
Capt DM Robb

One of the postings available to Gunner Captains is the position of Canadian Exchange Officer with the British R.H.A. regiment in Germany. The following treatise is a conglomeration of impressions and experiences gleaned from this posting, for the benefit of those who may be selected for the job in the future, or who are just interested.

Travel is a benefit traditionally offered by military service, and despite the current withdrawal of our forces from abroad, this job is one which still offers the chance to see a bit of the world. During my two years with 3 R.H.A. in Detmold, Germany, I was able to see much of Germany, Holland, Belgium, and the U.K. Others travelled even more extensively. In addition to the normal travel during leave and exercises, two occasions worthy of note opened other horizons for those in the regiment.

During the summer of 1968, the three batteries of 3 R.H.A. were dispatched far afield to carry out sub-unit training before the annual CRA's camp. One went to Larzac, France, another spent a couple of weeks in Denmark, and I considered myself fortunate by being in the battery which went to Libya for a month's exercises with the 3 Queen's battlegroup. Because Libya has since been closed to such enterprises by a military coup, and the subject was well covered by Capt D.G. Tudin in last year's Gunner, I will not dwell on the trip further. Let it suffice to say that it was a rare opportunity to see a bit of North Africa, and I enjoyed the experience immensely.

A continuing task of the British Forces in Germany is the surveillance and policing of the East German border, with the purpose of preserving the boundaries as established by the Potsdam Pact,

which divided Germany at the close of World War II. As a Canadian, my presence on the border in an official capacity was restricted, but it was arranged that I could accompany one of the British patrols as an observer.

This duty was a most memorable one, since it was the only task in which I have participated which could be truly called operational. During the course of each patrol, we met the people who did the bull work of guarding the border on a 24 hour basis. The British Frontier Service was our liaison with the Federal Republic of Germany officials and each BFS officer has an intimate knowledge of the physical border and the personalities on both sides of the wire in his sector. The Border Customs Service was a remnant from the days when the border was imperfectly sealed, and they, in concert with the Federal Border Police, had the task of stopping contraband and criminals from crossing into East Germany. The British task was to "show the Flag" and make the East German authorities aware that the Crown was still very much interested in preserving the status quo along the border.

Each patrol received a quick but thorough briefing on the history of the border from the BFS, and the rest was left to one's own experience. After a week of seeing the East German border area cleared of inhabitants, the People's Army (Border) guards and dogs, the wire, minefields and ploughed death strips, there was a stronger sense of purpose in each member of the patrol.

Together with travel, most young officers like sports. An exchange posting with the British is an ideal chance for someone with such predilections. They are not called "the Sporting British" for nothing! To compete with the normal training load are a whole gamut of sports such as rugby, soccer, cricket, field hockey and squash. When you are asked on arrival, "What do you do?", they are referring to sports. An answer such as "I like to play cards" will cause a raised eyebrow.

Sports in B.A.O.R. is highly competitive and the standing of a regiment is raised considerably if it manages to take the majority of championships. With this background, any individual who manifests an exceptional talent in a given sport is given all possible support.

In one extreme case, one officer who was an Army standard skier traditionally left the regiment each Fall for training and competitions in Austria and Switzerland and would return in the late spring to take his leave. It was considered a great bonus if he managed to make it to the regiment for the annual CRA's practice camp during the summer.

On the social side, the pace is fast and furious. Sports and social gatherings are closely interlinked, and most of the numerous games with visiting teams were followed up by a party. Formal mess functions occur about once a month, but the



A GENERAL INTEREST QUESTION

Certainly we have all seen it, but have we ever really taken a look at it?

THE FIELD ARTILLERYMAN (NAAPTBS)

Interesting to be sure, but what does the NAAPTBS mean? "Probably another long American abbreviation," you think, but not so! It means---

*(Partial cover of THE FIELD ARTILLERYMAN
reprinted with permission.)*

Well, maybe we will let you puzzle it out until our next issue comes out (which is not so far away after all). The Editorial Staff threw the question out to the officers and senior NCO's of the Third Regiment, and some of the replies were quite humorous -- and likewise quite unprintable. So mull it over and if some interesting interpretations come to light, let us know.

dinner party set are much more active. The poor wife who relies on her memory as to who owes who an invitation would quickly go out of her mind.

All is not play in an RHA regiment however. For the majority of my time with 3 RHA, we worked a five and a half day week, and sometimes longer. If an officer is new to his particular appointment, the British are free with their courses, and offer same both in England and at R.A.G.T.E. Hohna to train him up to standard.

Being in an armoured brigade, the FOO's in our regiment were equipped with Mark V Centurion tanks and Ferret Scout Cars. To one unaccustomed to commanding such a huge machine as a tank, it is at first a somewhat frightening experience. After a while, however, this is replaced with confidence and even true affection for the gigantic battle wagon.

The guns in 3 RHA were Abbott 105mm SPs. At the risk of repeating what has been said of them in previous articles, I found the Abbott gunnery system excellent. Although the interior was quite cramped, the detachments seemed to have no trouble operating efficiently. As seen from the OP end, the gun was extremely accurate and consistent, despite its calibre. A command of "Right 75" produced just that! On the mechanical side, however, all was not so well. The engine or "power pack" was designed to be lifted out of the vehicle for repairs, and one of my Nos 1, after having his gun for a year and a half, confided to me that he had completed his 175th pack lift! In view of these mechanical faults, the REME sections attached to us certainly earned their pay.

The British operate on a six gun battery fire unit, and although this worked well enough for short periods, it became my conviction that the organization would break down over a protracted time because of the lack of reliefs. One of the reasons the British can include a measure of flexibility into their organization, and leap frog sections, is the fact that they entrust traditionally commissioned responsibility to their MWOs. The BSM and TSMs in a British battery are frequently called upon to do Safety Officer, shoot the guns and lay out gun positions. I believe it is a practice to which we would well give serious thought.

B.A.O.R. is a showplace in the British Army, and the R.H.A. are traditionally the best of the Royal Artillery. Because of its proximity to England, 3 R.H.A. received more than its share of

visiting dignitaries each year. Since the British are very keen on the showmanship in any inspection, much time was taken up in preparing for these inspections. By some perverse quirk of fate, this task was always preceded by an exercise of some kind, which left the vehicle's covered in mud. The Nos 1 and their detachments would then set doggedly to the job of washing down their equipment, removing the paint, spraying with the standard green gloss paint, and burnishing all unpainted parts of their guns. I will give them credit that in two weeks after an exercise, a No 1, with his detachment of two, reduced because of leave and regimental courses, could produce his gun looking as though it had just left the arsenal. I used to deplore this abuse of man-hours, and advocated the adoption of camouflage paint, but this plea fell on deaf ears. I have since heard that 3 RHA has at last adopted this scheme, but I claim no credit for it.

As one would believe, there is a language problem for a Canadian attached to the British. The first time I manned a radio set on exercise, it was on an armoured regimental net. The tanks were operating over a front of almost ten miles, and poor reception made the task of interpreting the messages all that more difficult. To add to the confusion, each out station seemed to have a different accent on it. A Welshman would give a report, and be followed up by a Scot, a Lancashireman and an East Anglian. Such an experience must be heard to be appreciated!

Not only do accents cause confusion and require the rapid tuning of one's ears, but the "English" language is definitely different from Canadian in many respects. Over the course of my two years with the British, I discovered that a "loo" was a toilet, a "Bandook" was rifle, and that to "knock up one's sister in the morning" was socially acceptable. In the course of time, I found myself adopting these expressions in order to ensure that my OP crew understood my intentions.

In summary, the position of Canadian Exchange Officer with the R.H.A. regiment in Germany offers travel, sports, and intense social activity. This is counterbalanced by a lot of hard work required to maintain the standard set by the R.H.A. I would recommend it to any Gunner officer to whom it was offered.



TO: EDMUND BUTLER
 SECRETARY TO THE GOVERNOR GENERAL
 GOVERNMENT HOUSE
 OTTAWA

FROM: MAJOR GENERAL H. ALLEN SPARLING
 COLONEL COMMANDANT
 THE ROYAL REGIMENT OF CANADIAN ARTILLERY

I RESPECTFULLY REQUEST THAT HIS EXCELLENCY
 THE GOVERNOR GENERAL TO CONVEY TO HER MAJESTY
 THE QUEEN, OUR CAPTAIN GENERAL, LOYAL AND
 HUMBLE GREETINGS AND BEST WISHES FOR
 CHRISTMAS AND THE NEW YEAR FROM ALL RANKS OF
 HER ROYAL REGIMENT OF CANADIAN ARTILLERY



Annual Greetings



OHF844(221628)

CN GGC431 CNT TLX OTTAWA ONT 22 410P EST

COLONEL COMMANDANT, ROYAL REGIMENT OF CANADIAN ARTILLERY

ORTONA BARRACKS OAKVILLE ONT

FOLLOWING FROM BUCKINGHAM PALACE FOR GENERAL

SPARLING BEGINS I SINCERELY THANK ALL RANKS

FOR THEIR MESSAGE OF GOOD WISHES FOR CHRISTMAS AND THE NEW

YEAR AND I HEARTILY RECIPROCATE THEM. ELIZABETH R.

CAPTAIN GENERAL ENDS

SECRETARY TO GOVERNOR GENERAL

(21).

Artillery Employment In Mountain Warfare

*MAJ Jean G. Digier
Swiss Army Artillery*

Reprinted, with permission, from THE FIELD ARTILLERYMAN (NAAPT), April 1970, pp. 50 - 54, published by the U.S. Army Field Artillery School, Fort Sill, Oklahoma

Whatever the nature of a future conflict may be, tactical problems to be solved by the ground forces, in the attack and in the defense, depend to a very high degree on the mobility of these forces. However, in mountain operations the search for this mobility is limited by the impenetrability of the mountain mass. Roads are scarce; most trails are usable only by pack-animals; and the terrain is broken into numerous isolated compartments by rivers, streams, ridges and valleys. The meteorological conditions are subject to many changes, with and without snow, so that the mountain cannot be analyzed from one point of view but from many, according to the practicability of the communications means and the evolution of the seasons.

This restraining influence of the terrain and the difficulty in mastering it limit the speed and efficiency of the operations. The coordination of actions is often difficult and the execution of command is seriously hindered by the difficulty of displacing command posts. Since it is impossible for the commander to guide his subordinates at each moment, he is obliged to leave to them a high degree of initiative. Logistical problems must also be solved in the mountains. To carry to the front the necessary supplies and to evacuate casualties and materials along poor and vulnerable routes is not easy. Any lack of agreement between tactical needs and logistical possibilities makes the situation particularly difficult. Nevertheless, the introduction of airmobile facilities has modified certain factors, considered permanent until now, and the old tactical principle "He who controls the passes, controls the mountains" is no longer true. However, the final decisive combat will still be fought above the limits of vegetation, around the main terrain features.

BACKGROUND

The general considerations enumerated have great influence on the employment of artillery in the mountains. In the year 1800, from the 15th to the 20th of May, Napoleon Bonaparte accomplished a tremendous feat in crossing the Great Saint Bernard Pass (7,535 feet in altitude) with his dismounted artillery pieces fixed on dug out tree trunks. It was the only practical means of carrying the tubes on the snow with some chance of success. At the end of the last century and in the first half of this century, almost every army in the world had mountain artillery, the guns of which could be disassembled and carried into position on the backs of mules. These special guns and mules have disappeared, but similar difficulties remain.

It is virtually impossible to analyze all the problems of the employment of artillery in mountainous areas in so short an article. "Drill Regulations for Mountain Artillery, US Army, 1908," determines the frame of the elements we will consider. "The special qualifications required of field artillery in war are the ability, first, to reach the position for action at the proper time and in effective condition; and, second, to deliver an effective and overpowering fire upon any designated part of the enemy's position." Using this concept, we will analyse the following main points:

- ♦ The selection and occupation of position areas.
- ♦ The requirements for target acquisition and the selection of the objectives. (In French the word "objective" is a synonym for target.)

- ♦The judicious use of the trajectories, (in this case the capabilities of bringing the projectiles anywhere).

POSITION SELECTION

The selection of firing positions involves special difficulties due to the extreme variations in the altitudes of the targets against which the guns must be fired. The lack of large flat surfaces limit considerably the number of available battalion-size positions, even positions for a single battery. The nature of the terrain, numerous valleys and ridges, necessitate excessive minimum quadrant elevations and must be seriously considered before making a decision to occupy a position. Therefore, it is essential to establish detailed plans at division level, even at corps level, to determine in which areas it is possible to position the artillery—first by map reading, and second, as soon as possible, by reconnaissance. This planning must take into consideration all types of current operations—attack, defense, withdrawal, and delay—because the needs will vary with each type of operation. The plans must include not only the selection of main positions but also the alternate positions. In most cases, the confining nature of the area will require different locations for the various elements of the unit, for example, command posts and FDC's may be located away from the battery in a sector that offers the best possibilities for camouflage against aerial observation. Regardless of the type of operation, the echeloning of the positions in the depth must provide for continuous fire, even when batteries have to be moved. When tank approaches exist, the artillery batteries must also provide for antitank defense. Finally, the enemy's capabilities to isolate or destroy any artillery formation with nuclear weapons must be considered.

Very often, it will be necessary to use helicopters to bring the pieces into position and thus to eliminate the major part of the difficulties. However, certain limitations of the helicopter—decreased lifting capability in high altitude and vulnerability to ground fire—and rapidly changing meteorological conditions in the mountains must be considered.

For all these reasons, it will be necessary in most cases to position only one battery in a definite sector. Sometimes a platoon may be adequate if the action is limited in time or space. In fact, the possibility of emplacing a complete battalion in one position area will be the exception. Therefore, the organization and equipment of these battalions must provide for sufficient decentralization of firing means so that subordinate elements can operate independently.

TERRAIN CONSIDERATIONS

The mountain gives to the expert the opportunity to use the terrain and the natural shelters in order to move himself without being observed and, thus, to take advantage of surprise. On the other hand, the barriers of the crests and the streams do not permit the deployment of large forces. Generally, we will have to contend with alpine detachments of platoon or company size. The infantry battalion will occupy so large a portion of terrain that it can be considered an unusual target for an artillery fire unit. Targets to be fired by artillery weapons will be difficult to spot and locate. This difficulty can be eliminated by using two principles in the conduct of combat: security and observation. Security is essential for the preservation of combat power. It is achieved by measures taken to prevent surprise and gives time to switch from an administrative activity to a combat activity. For the field artilleryman, this security gives him the necessary time to spot and locate the target by an accurate grid and to deliver fire. The observation has to be well organized and constant. The first impression of good visibility is frequently misleading. Summits and ridges following one after another appear to merge and create the impression of a continuous field of observation. A visibility diagram of this field will produce unexpected surprise. From a certain observation post one may be able to see no more than 30 to 40 percent of the actual terrain before him. Therefore, observation must be taken from several different points in order to cover the largest portion of terrain. In the mountain snow, each movement in the open is visible; a radio antenna standing out above the crest can be observed at a great distance; and effective camouflage is hard to achieve above the limits of vegetation. The good forward observer must know all these elements in order to accomplish his mission in a satisfactory manner.

The geography also influences the method of firing on targets. Seldom will targets be fired on standard large dimensioned surfaces. More often it will be necessary to adapt the sheaf of the firing unit to the peculiarities of the relief; for example, gorges, valleys, defiles, and rivers. In the present case, it will be judicious to describe the target by two different sets of grids: one for the right side and one for the left side of the target. Determining firing data for both sides makes it possible, by computing the difference and dividing by 5, to give individual corrections for each gun in deflection, fuze setting, and quadrant elevation. This will adapt the sheaf, the height of burst, and the range of the firing unit to the linear geographical form of the target. This method does not offer many technical difficulties to a well-trained fire direction center; furthermore, for obvious reasons, it saves many rounds of ammunition. The very special nature of the artillery target in mountainous areas, as explained above, combined with the size of the enemy formations requires once more the employment of smaller firing units; e.g., one battery or, if need be, one 2-gun platoon.

DEAD SPACE

However, it is useless to bring artillery pieces into position under difficult conditions and to train the forward observers in the secrets of mountain gunnery if portions of key terrain features cannot be attacked. Dead space results from the following three basic factors:

- ♦The great difference in altitude between the fire unit and the target, which decreases the ranges.
- ♦The great angle of incline of the slope compared to the angle of fall of the trajectory, as a result of which certain sections of the slope may prove to be beyond the reach of fire.
- ♦The presence of separate gorges extending perpendicularly or obliquely to the forward edge of the battle area and at times emerging far in the rear of the defense position.

Elimination of the dead space in most cases will be possible only by employing flanking fires, by changing the propelling charge, and by using high-angle fire. Concurrently with the planning of the possible position areas, the corresponding dead space maps must be drawn. After being reproduced, these maps must be distributed to the forward observer so that he will be able to inform the supported unit commander of the capabilities and limitations of the supporting artillery. If many dead spaces still exist in spite of the measures taken, the best solution would consist of decentralizing the firing means, either in depth or laterally. A concentration of fire by a battalion or a battery on one or more critical targets would certainly not be possible but, at least, the main portions of the essential terrain features would be covered by artillery projectiles. Here a tactical decision must be made: whether to establish a main effort by artillery in the most significant or probable avenues of approach of the enemy and deliberately leave some portions of terrain without any artillery support or to operate with a large dispersion of the means, setting aside the possibility of concentrating firepower, but having confidence that in each point of the battle area the artillery is able to deliver fire.

CONCLUSION

In conclusion the mission of the field artillery remains unchanged, even if the artillery is employed in the mountains. It is possible to solve the problems of terrain difficulties by carefully planning the occupation of successive or alternate position areas. This depends on the practicability of these zones and the capability to reach the largest part of the battle area with the trajectories (or projectiles as American terminology says). Adequate decentralization of the firing elements as well as specialized training of the forward observers will permit the delivery of the appropriate ammunition at the right time and with the correct volume and accuracy on all available targets. Finally, the employment of airborne transportation and the adoption of modified firing techniques will give the field artillery committed in the mountain warfare environment the needed flexibility so that, even on the high summit, it will remain "the last argument of kings".



VALCARTIER

5^e RALC

Exercise NOUVEAU CARIBOU

Exercise NIMROD CAPER II

Exercise MAPLE SPRING

Spring Practice Camp

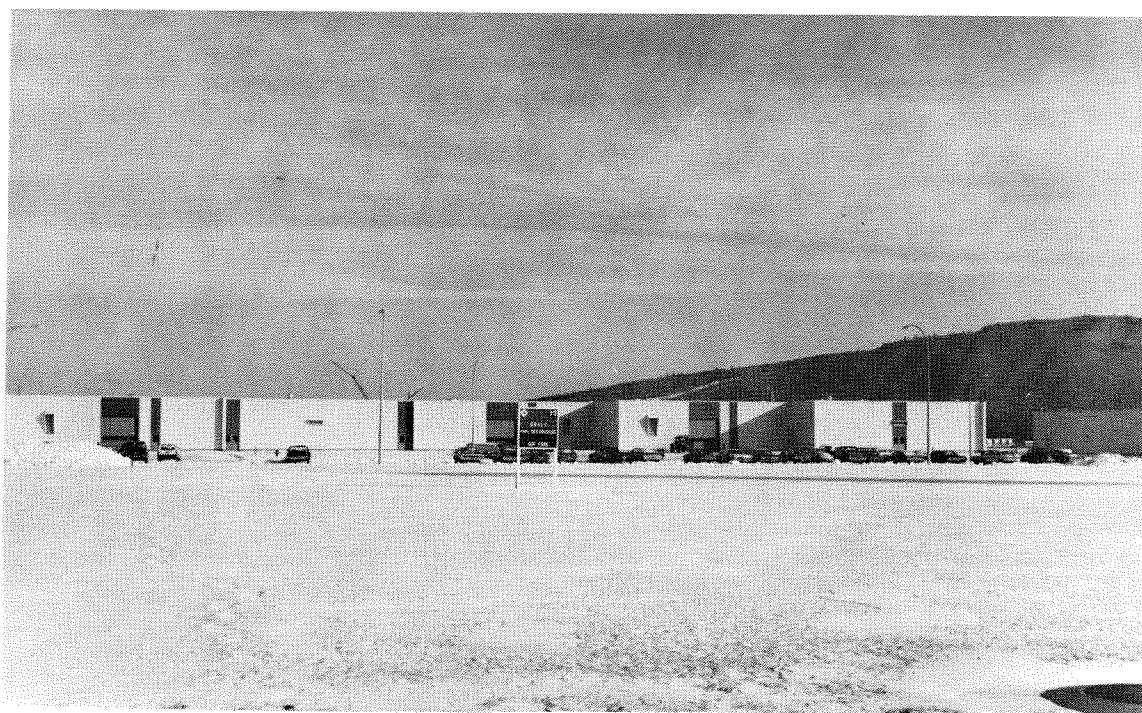
Change Of Command

Militia Concentration

Operation LAC GOUIN

Operation ESSAY

Miscellaneous Activities



Gun and Vehicle Maintenance Building

Le 5e Regiment d'artillerie legere du Canada has come along way since it's formation on 1 August 1968 with a total strength of 3 all ranks. The majority of X Bty from 3 RCHA was transferred to Valcartier to become the first and therefore the senior battery of the regiment. By August 1969 enough people were posted in to form Q Bty and the regiment was approaching full strength.

During these two formative years much experimentation has been carried out in operations within the francophone combat group. English soldiers have been sent on French courses and conversely some French soldiers have been sent on English courses. Because most career courses beyond pay level 3 are conducted in English, there is still a need for some of our unilingual French



EXERCISE NIMROD CAPER II

Beautiful, warm, tropical Jamaica. To be sent somewhere like Jamaica in the month of February is commonly referred to as a "SIERRA WHISKEY ALPHA NOVEMBER". But actually it was a valuable experience for the BC's party and three OP parties attached to the 2R22eR for Exercise "Nimrod Caper II" in Jamaica.

The exercise was designed to practise 2R22eR in tropical environment and tactical jungle warfare training up to company level, and in a long range air and sea move with personnel travelling by air and equipment and vehicles travelling by sea.

On arrival in Jamaica, the OP parties were integrated with their respective companies and participated in the individual training portion of the programme. This included many previously untouched subjects such as booby traps, mountaineering, watermanship, ambush techniques and tracking. As a result of this introduction to jungle tactics, the command and control during the final exercise proved to be very good.

During the final company advance to contact exercise, the artillery assumed its normal role. It was again proven here that the intelligence acquired by the artillery is of great value to the infantry commander.

One of the OP officers was appointed mortar platoon commander for a three day company exercise. The BC followed this particular phase very closely in order to relate problems with the mortars to those that could be associated with the deployment of the L5.

Although "Nimrod Caper II" was primarily an infantry exercise, it enabled the gunners to visualize the many problems associated with both the control and deployment of indirect fire support weapons in jungle terrain. They encountered an extreme shortage of suitable gun platforms, which is understandable when you compare the requirements for a good gun platform with the typical conditions of jungle terrain. There is an even more acute lack of gun positions. The arcs of fire, even for the high angle shooting mortars, were at times limited to 100 mils due to the near crests and the existence of a canopy in certain areas. Re-supply was also a problem. The best solution to these first two problems seems to be to deploy the guns on roads or on the larger trails. The deployment of single guns by helicopter would be feasible in some areas; however, re-supply by air might not always be guaranteed.

The third big problem which was re-confirmed was that ground OPs are most difficult to find and almost impossible to occupy. The use of Air OP would be almost a necessity in Jungle Warfare.

On the whole, the exercise proved valuable, but it was felt that at least one L5 should have been taken so that portee drills could have been tried. Mules can be rented in Jamaica for \$0.50 a day, and their employment should have proven quite interesting. They say it can be done!

Since the artillery is expected to support the infantry in all types of warfare, the gunners train with the infantry under all environments.

Of course Jamaica wasn't all work and no-play...but that's another story!



EXERCISE MAPLE SPRING

OP parties were sent to Puerto Rico in February to work with the sea element in their attempt to bombard shore targets on the Island of Calibre. This proved to be a good practical experience for the gunners, but in reality it is training designed to test the naval weapons teams more than the spotters who sit in their tower dialing targets.

It is felt, from past experience and from the results of naval bombardments in Vietnam, that naval gunfire support in land operations is very valuable. The American 16" guns on the USS New Jersey, with their 2000 lb projectiles, are a devastating force. At present, our own ships have only the 3"50 and 3"70 guns, but their rate of fire of 90 rds per min renders them an effective harassing force. With the launching of the new 280s with their 5"54 guns, perhaps there will be a more concentrated emphasis put on shore bombardment and on liaison between naval weapons officers and our own artillery officers. On the last NGFS course, it was suggested that we go back to the system of having an artillery officer attached to the fleet weapons school in Halifax to keep them up to date on our methods of such procedures as fire planning, and perhaps suggest improvements to their fire support procedures.

Capt Norm Rouleau and his OP party enjoyed the unique experience of controlling naval gunfire of Canadian and other NATO ships that were exercising off Calibre Island. They came to realize, by the end of their stay, the problems involved in spotting ships sailing on the rolling seas. Many "war stories" are brought back from the one or two week stint in Puerto Rico.

Canadian gunners to learn English in order to advance. Within the 5e G de C, most conversations are carried on in French; the exception being Artillery Fire Orders. To-day, 5eRALC has become an exclusive, operational, bilingual regiment.

In September of this year the regiment moved into newly constructed buildings which undoubtedly constitute the most modern combination gun and vehicle maintenance facilities in Canada. The building is divided into three approximately

equal sections. In the photograph above, the section on the left is large enough to house all the artillery pieces and furnish ample space to hold parades and carry out training. The middle section encompasses lecture rooms, signals and transport offices, and stores and locker room facilities with showers. Maintenance for all regimental vehicles is accomplished in section 3. This type of complex is what regiments have been asking for since day one—everything under one roof.



EXERCISE NOUVEAU CARIBOU

On a cold day in January the enemy was loaded in C130s and on their way to the frozen north. In reality they weren't going that far north, just to CFB Bagotville and the surrounding area which was the stage for the war games to follow.

Two platoons of foot rifle artillerymen from X Bty and one platoon of APC mounted troopers from 12e RBC represented a company of Fantasian Marines which had been landed in this area by submarine. They were quite adept at winter warfare and their mission was to cause disruption to CFB Bagotville. Violently opposed to this aim was the friendly force, composed mainly of 3R22eR, who were to start the following day their efforts to stop these fantasian intruders and drive them out or destroy them.

The aim of Exercise "Nouveau Caribou" was to practise and evaluate the 3R22eR battalion group, 1CDO, and elements of 10 TAG in the performance of their assigned Defence of Canada roles. 5e RALC contributed the enemy force, the umpires (chief umpire responsibility fell on the CO of 5e RALC, LCol J.A.R. Vandal), an FSCC, FOO parties and an Air OP section. Much valuable experience

was gained in winter warfare operations.

At -10°F, in 25 inches of snow, and with the rivers only partially frozen, the OP parties from Q Bty and the enemy force from X Bty soon learned the limitations of a force mounted on snowshoes. To add to their hardships, the recce for the exercise had been done a few weeks before when conditions were better, and the distances to be covered each day were far too optimistic. In spite of this, the artillery elements "a pied" accomplished their tasks in admirable fashion, much to the surprise of their comrades in the supported element. Stalwart chaps like Bdr Young and Bdr Baird had no problem looking after their troop commanders in their respective OP parties.

Major Beaudry, BC Q Bty, set up his FSCC in an APC. He kept his finger on the whole operation and learned many valuable lessons.

The OP parties also doubled as FACs for the T33s of 408 squadron and the CF5s of 433 squadron thus adding more to the valuable experience gained by the regiment on Exercise "Nouveau Caribou".



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SPRING PRACTICE CAMP

Talk about timing! During the first week of the practise camp six more L5s arrived in Valcartier, and Q Bty was now equipped with our new pack howitzer. They quickly got into the training and by competition time, there were two batteries with L5s in the running.

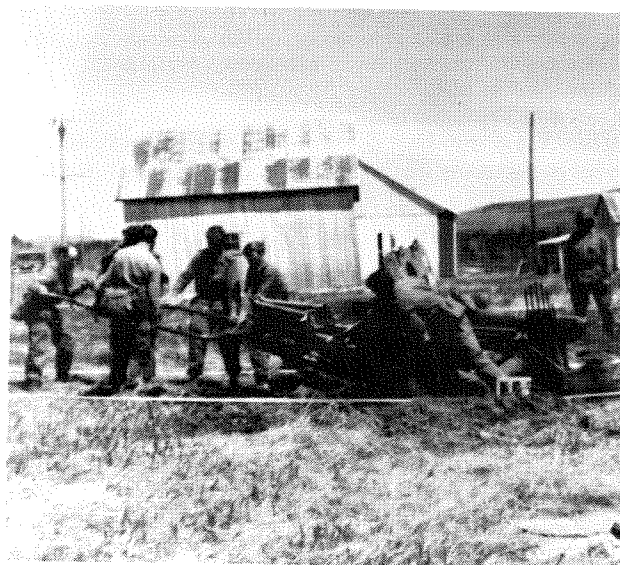
Everyone worked hard and the competition between batteries, troops and even guns was very keen. To a casual observer like Capt JF Bryce, the IG attached to the regiment for the exercise, there was a mysterious air about the entire operation. People would be jabbering away in a language he didn't understand, then all of a sudden the radio net would switch to English as a target was sent down. Being a bilingual unit is an interesting experience but it requires a higher standard of training. Personnel at all levels must be able to carry out their function in either French or English. It is working very well, as proved by the success of the spring practise camp.

One very worthwhile aspect was the attachment of mortar sections from 2R22eR and 3R22eR to the batteries for deployment by the BC or TCs. Inclusion of mortars in all the fire plans, and the liaison with the MFCs, added a bright touch of reality for the OP parties.

Of course, the highlight of the practise camp is always the competition, and this year was no exception. They were well organized and the results were close. The following emerged victorious:



Col. D.W. Francis, Chief of Artillery, presents trophies to the winners of competitions held during the 5e RALC 1970 spring practise camp.



Sgt Pineault and his detachment from X Bty at the start of the obstacle course for the manhandling competition.

Quick Action – B Tp – TC Capt Blaire Wheaton,
GPO Lt Jean Trepnier,
TL WO McGraw JDR.

Open Action – C Tp – TC Capt Ted Hague,
GPO Lt Randy Lindbloom,

Open Action – C Tp – TC Capt Ted Hague,
GPO Lt Randy Lindbloom,
TL Lt Romeo Dallaire,
TSM Sgt Fournier.

Anti-Tank – D Tp – No. 1 Bdr Beaulieu, Bdr
Turriff, Gnr Landry, Paquin
Piper, Bolduc, Martin.

Manhandling – D Tp – No. 1 MBdr Durelle, Bdrs
Pelletier, Vaillancourt,
Gnr Dumont, Mouton,
Tremblay, Turgeon and
Gnr Martin (driver).

This practise camp was the last one for LCol Vandal who formed 5e RALC in August 1968 and has brought it such a long way in two years. The new commanding officer, LCol J.J.A. Doucet, was a very interested observer for part of the exercise and got a good glimpse of the regiment in action.

It appears that 5e RALC will spend a lot of time on Internal Security in the coming year but hopefully, the regiment will be in shape for another great spring camp in 1971.



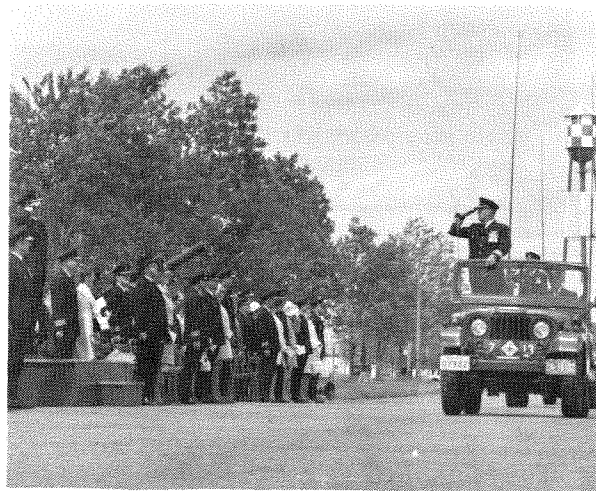
CHANGE OF COMMAND

"Why don't we have parades like that?". This was overheard in the spectator section being said by an infantry officer's wife to her husband just as the 5e RALC parade was leaving the square.



LCol J.A.R. Vandal presenting to BGen R.A. Reid the cartridge case of the first round fired by 5e RALC.

The first round fired by 5e RALC was presented to BGen Reid as first commander of 5e G de C, by LCol Vandal, the first commanding officer of 5e RALC. Col D.W. Francis, Chief of Artillery, presented trophies to the winners of the regimental competitions conducted during the spring practise camp.



The incoming CO leads the regiment in paying a last salute to the outgoing CO.

The ceremony was presided over by BGen R.A. Reid, General Commandant du 5e G de C, who witnessed the signing of the regiment from LCol J.A.R. Vandal to LCol J.J.A. Doucet.



BGen R.A. Reid, MC, CD, witnesses the change of command from LCol J.A.R. Vandal to LCol J.J.A. Doucet.

MILITIA CONCENTRATION

5e RALC was responsible for the training of the artillery militia during their one week concentration from 17 - 23 August 1970. Militia units involved were the 2nd Field Regiment (Montreal), 6th Field Regiment (Levis) and the 62nd Field Regiment (Shawinigan).

The entire regiment was out the first day to conduct refresher training for artillerymen, technicians and senior NCOs. The militiamen were placed in their respective positions in the batteries and the 5e RALC personnel thus relieved were sent back to camp. The remaining personnel supervised while the militia unit personnel carried out

all the duties in each battery. In general, they possessed the knowledge required for them to take their place in a gun detachment or in a CP and they benefitted greatly from the professional advice and instruction furnished by the members of 5e RALC.

The militia gunners were well motivated, worked hard and enjoyed working with the regular gunners. They even enjoyed living under ponchos with their respective detachment, instead of living in tents set up in a common area as is sometimes the practice.

During the last day of the concentration, each unit participated in the annual RCAA gun battery competition.



OPERATION LAC GOUIN

On Friday, 21 August 1970, two CF5s from 433 Sqn collided over rough bush country about 85 miles NNE of Bagotville near Lac Gouin. One of the pilots parachuted down very close to his aircraft and was picked up shortly after. The other, whose plane burst into many fragments, landed a good distance away in bush so dense that even his chute could not be spotted from the air. After a vast air search proved futile, 5e G de C was asked to provide men to search for the lost pilot. Since 5e RALC was the stand-by unit at that time, we were tasked for the operation on Sunday 23 August. The regiment was then returning from a week's exercise with the militia regiments, and it was therefore necessary to release the attached militia personnel and alert all unit personnel who had been left out of the militia concentration, before we could proceed to the search area.

A group of 20 men under command of Lt R. Dallaire, was moved directly to the search area by helicopter on Sunday morning to assist the search party from CFB Bagotville. The remainder of the regiment moved by road during the night 23/24 August in three groups. The main body travelled by bus, followed by a communications group of five vehicles, and finally the logistics and transport group of 35 vehicles. It took an average of 14 hours to cover the 400 miles between Valcartier and Lac Gouin via Tadoussac and Forestville.

As soon as LCol Doucet had been briefed and had completed his recce, he assigned search areas to X Bty under Maj P. Marceau and Q Bty

under Maj R. Beaudry. At 1400 hrs on 24 August, they began the grueling work of searching the dense bush for traces of the lost pilot. Several pieces of the plane and the pilot helmet were found in the area. Since these were relatively heavy articles, it was presumed that the lighter parachute had been carried even farther downwind and the search was continued in this direction. On 25 August, one company from 5 Svc Bn was flown to the area via Bagotville and was attached to the regiment to assist in the search.

At 1330 hrs on 25 August, the pilot was found by a Huey helicopter that was participating in the search. The pilot was unfortunately dead and still wearing his parachute.

Preparations were made for the return trip and the regiment left the area at 0600 hrs on 26 August. The main body was back in Valcartier that evening and the logistics group arrived on 27 August after an over-night stop in Tadoussac.

Operation Lac Gouin was a real no-notice operation and is typical of the kind of assistance that the Canadian Forces can be expected to provide to civilian authorities or to other departments of the Government. It provided invaluable training to all members of the unit and demonstrated that the gunners can operate "on their feet".

In spite of fatigue resulting from the militia concentration and a very tiring drive to the search area, all members of the regiment worked dauntlessly and maintained a high spirit throughout the operation.



OPERATION ESSAY

While most of 5 RALC personnel were enjoying a "rare" long weekend — Thanksgiving — the circumstances which would eventually cause our deployment were building rapidly. On Oct 10th, Mr. Laporte, Quebec Labor Minister and high-ranking official of the Provincial Government, had been abducted at gunpoint from his home in St. Lambert. Earlier in that same week, Mr. Cross, senior British Trade Commissioner in Montreal, had also been kidnapped.

On Oct 12th, the warning order was received indicating a possible internal security operation in aid of the civil powers of Quebec. Normal bug-out procedures were implemented and early on 13 Oct we were ready to move.

During the next day and a half, the Regt strived to ensure that all possible preparations were completed. The commanding officer, LCol J.J.A. Doucet, attended conferences and "O-Groups" at HQ 5e G de C and later with Chief Inspector Vanhoutte, head of QPP in the Quebec city area,



LCol J.J.A. Doucet and RSM G.N. Malcolm talk with Chief Inspector J.C. Vanhoutte, Chief of the Quebec Division, Surete du Quebec.



A CH112 helicopter, made available to 5e RALC, operates from the parade square at La Citadelle.

as it became apparent that our zone of operation would be the city. The DCO, Maj. Frank Bussieres, was also kept occupied ensuring all equipments and supplies were available and ready to move. Special requirements were anticipated and equipment procured. These included polaroid cameras, megaphones, tape recorders, grenade launchers and extra portable radios. The RSM, CWO G.N. Malcolm, assisted the DCO while juggling personnel and continually producing "parade states" as stragglers appeared. The Regt remained on 30 minutes' notice to move for this period with all personnel confined to the camp. When the Quebec area was confirmed as our zone of responsibility, map recces and discussions of possible tasks became very active, but physical reconnaissance was not permitted.

On 15 Oct, with all ranks carrying live ammunition, the Regt deployed quickly and smoothly. By that evening, all critical guard positions were occupied and further plans were being drafted. The Regt Command Post was installed in the QPP-HQ building in Quebec City and placed next door to their operations room. Normal Regt communications were set-up, supplemented by telephone, with an HF link to Montreal and an AN/GRC 26 to provide secure teletype facilities into the CFCC system at Valcartier. Liaison and efficient working procedures were quickly established between our CP and the QPP centre. It was an interesting

relationship that allowed each group to become better informed and more confident in the other as time passed and as things got more hectic. LCol Doucet commanded all the CF in the area, receiving orders from the Comd 5e G de C in Montreal, while his direct link with the QPP was Chief-Insp. Vanhoutte, who in turn received orders from the director of QPP, Mr. M. St-Pierre.

The regimental echelon was deployed at La Citadelle, while the remainder of RHQ was used to guard such vulnerable points (VPs) as the Quebec Government Data Center, the DOT Hangar, and the QPP-HQ building. La Citadelle became the firm base of the Regt and proved to be a very convenient establishment.

The main portion of "X" Battery was initially deployed at the Orsainville Prison, where Maj. Pierre Marceau quickly built-up road blocks and defensive alarms to keep people "out". Working in a prison was a new experience for most, but all adapted well.

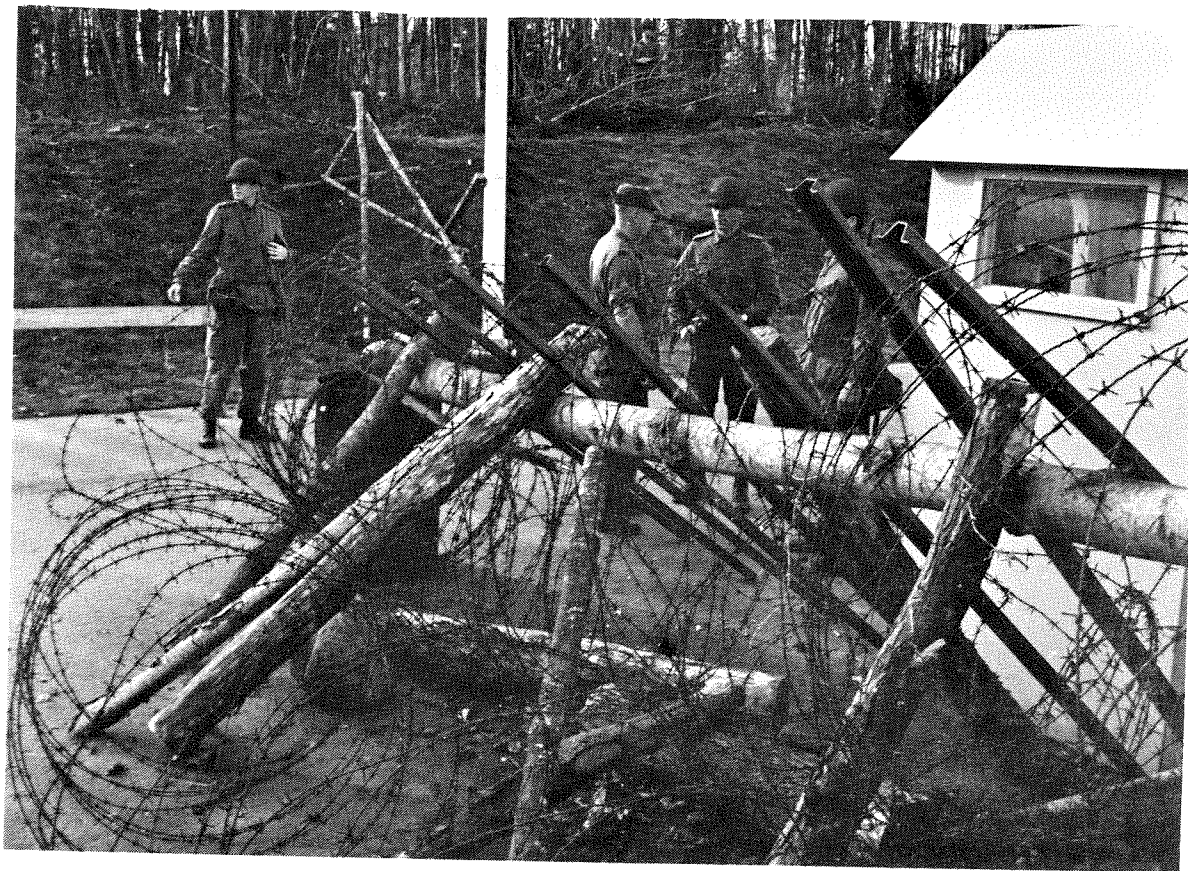
"Q" Battery, commanded by Maj. Bob Beaudry, was responsible for guarding the Parliament Buildings and the city Courthouse while the battery itself was housed at La Citadelle.

Many problems were encountered during the first few days following deployment, as many unfamiliar situations presented themselves. Questions of loaded or unloaded weapons, housing of guards at outlying posts, actions of soldiers in guard positions, the exact terms of reference for guarding, and other ambiguous internal security problems arose. However, these were "ironed out" as soon as possible and people slipped into the routine. The most difficult adjustment was the shift system of 6 hrs "on" and 6 hrs "off" duty, which had to be implemented to allow the maximum effective force available at all times and to facilitate feeding. The main factors were weather, fatigue and boredom — just how long can a soldier be expected to stand properly at ease while facing the bare backside of a glistening statuette at Parliament Buildings.

Our role as "protectors" was easily accepted and the soldiers were kept alert by reports of suspicious people, actions, cars, or objects. Lists and photos of wanted persons along with stolen or wanted cars were disseminated and used to the utmost. The seriousness of the operation was made evident by the declaration of the War Measures Act.



A detachment of ten men, under Sgt Rochon guarded the transmitter site of radio station CBV near Quebec City.



*Road block established by X Bty at the entrance
to the Orsainville Prison.*

Then came the "Flexibility" phase which began about 20 Oct and settled around the end of Nov. By this time the Regt had 225 additional troops under command, maintained a Reserve Force ready to move anywhere in the Province, had established an Air Despatch Service with our Air OP Troop, and had a helicopter attached. The emphasis passed to protecting VIPs (very important persons) and "X" Battery took on the majority of these tasks. This was the height of the operation when personnel and equipment were at a premium — our total tasks included 34 VIPs and 7 VPs. There were changes required practically every day and several reorganizations resulted from these changes. The Regt passed the test but it was not a pleasant period — much sleep and many meals were missed by all concerned.

During this period of end-Oct and all Nov, there were many incidents and occurrences but fortunately, none were serious. There were bomb threats (our Bomb Squad quickly cleared the articles), suspicious people and cars stopped and searched, arrests of intoxicated people, insults hurled at soldiers, and of course the hippies and gay spectators. A prison break occurred at Orsainville within minutes after our guards were withdrawn but this matter was cleared up as soon as possible. The one single factor which caused the most concern, other than FLQ, was the ever present newspaperman and the public eye. The image had to be

kept very straight while working among civilians; this was done but with much effort and many instructions of "what" or "what not" to say.

In the final month of the operation, Dec, the activities and motion of the operation subsided. Continued guarding was done at 17 VIPs and 4 VPs but the soldiers were accustomed to the conditions. R & R was granted more frequently and "Rum Rations" helped during the cold nights. By 27 Dec, the Regt was back in Valcartier with only the Parliament Buildings under surveillance until 2 Jan 71. On 4 Jan 71, at 1200 R, Operation Essay ended.

The lack of activity in such an operation makes it very difficult for the soldier to maintain his sense of urgency of purpose. However, our soldiers can be complimented on their upstanding efforts and behavior. The psychological factors of guerilla warfare are very real, especially when operating in one's own province or city, but separated from the family.

Like other troops who participated in Operation Essay, all ranks of 5e RALC acquired an invaluable experience in internal security operation. No form of exercise could have produced the realism that was encountered in this situation, and the many lessons we have learned will ensure that we are better prepared for the future.

MISCELLANEOUS ACTIVITIES

- Being situated near a seaport and the first major city on the St Lawrence seaway, and being close to Montreal and Ottawa, 5e RALC receives some interesting assignments throughout the course of the year.
- On 2 November 1969, Capt S.J. Reid commanded a 50 man guard of honour in Ottawa on the occasion of a visit by LGen Erensu of the Turkish Army, who is the Commandant of the NATO Defense College.
- Lt A.J. Gallant commanded the firing troop from Q Bty for a royal salute on 11 November 1969. In attendance was the Honorable Hugues Lapointe, Lieutenant Governor of Quebec.
- In October 1969, 5e RALC provided one troop from X Bty to support the first Advanced Gunnery Officers' Course in Shilo. Most of Q Bty went to Shilo in Apr 70 to provide fire for the Arty Instr (Officers) Course, the Basic and Advanced Technician Courses, and the Basic Arty Officers' Course.
- In Dec 69, Lt R. Gillenwater went to France on a 2 year posting to the French Artillery School and the French Staff College.
- A troop of Q Bty under command of Lt M. Siple, fired a Royal Salute in honour of His Excellency Governor General Roland Mitchener during his visit to Shilo in Apr 70. Q Bty was then providing support to the School of Artillery.
- Major P. Bouvette commanded a 100 man guard of honor in the Victory in Europe Day Ceremonies at Parliament Hill in Ottawa on Friday 8 May 1970. His Excellency the Governor General and the Prime Minister of Canada were in attendance.
- On 10 May 1970, Capt E.C. Hague commanded C troop as they fired a salute during the VE Day remembrance services held in front of La Croix du Sacrifice, on Grande Allee in Quebec City.
- Le 12 mai 1970, le navire francais "Jeanne d'Arc" est arrive a Quebec pour y rendre une visite de trois jours. Le capitaine E.C. Hague a deploye la troupe C sur le Cap Diamant, pres de la Citadelle, pour repondre au salut du "Jeanne d'Arc".

La troupe C repeta cette courtoisie pour le navire italien Vittorio Veneto le 16 juillet 1970.
- On Armed Forces Day, 12 - 13 June 1970, 5e RALC provided an L5 and a detachment for the Armed Forces displays at La Citadelle in Quebec City and at Man and His World in Montreal. A CH 113A helicopter landed at Man and His World with an L5, the detachment and a jeep. The detachment then deployed the gun and fired a blank.
- A 50 man guard of honour, commanded by Capt E.C. Hague, symbolized Canada's acknowledgement of the 25th Anniversary of the UN at Man and His World in Montreal. The Minister of External Affairs, Mr. Mitchel Sharp inspected the guard.
- On 9 July 1970, change of command ceremonies marked the handover of 5e Groupement de Combat from BGen Roland A. Reid, MC, CD to BGen Jacques Chouinard, CD. All units of 5e G de C participated in a march past followed by a drive past. The 5e RALC Air OP troop provided the finale to the parade with a fly past just as the last vehicle was passing the reviewing stand.
- Lt V Bentley went to the interior of Newfoundland from 20 July to 30 Aug 70 to a place called Emerald Vale where he ran the driver maintenance course for the regular and student militia. About half way through this stint, he was sent to St. Johns where he acted as assistant administrative officer for the Student Militia Programme and contributed to the preparation of the final report for the programme in Newfoundland.
- Capt N. Rouleau was the officer in charge of the Armed Forces Display at EXPO Quebec from 29 Aug to 15 Sep 70. He gave briefings at certain times during the day and the rest of the time was available to answer questions on the Armed Forces.
- On 18 Sep 1970, 5e RALC hosted cadets from Le College Militaire Royal de St-Jean and presented a brief demonstration of the equipment and capabilities of a light field artillery unit. B Tp demonstrated the tactical composition of a troop, deployment, portee drills and the operation of the L5. Survey instruments were also demonstrated.
- BGen Jacques Chouinard conducted a detailed inspection of 5e RALC on 25 Sep 1970. All personnel, equipment and vehicles were assembled for the occasion. Following the inspection, the General joined the officers in the mess for lunch.

■ 5e RALC conducted land environmental training for members of the Forces who had never been exposed to field operations. It consisted of weapons training, map using, fieldcraft and general military knowledge. Four sessions were scheduled. Two were organized by Capt Tim Sparling in Mar 70 and two by Capt Doug Briscoe in Sep/Oct 70, with a total of over 100 candidates attending.

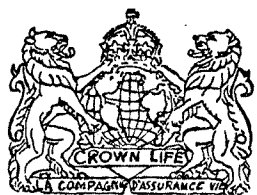
■ 5e RALC provides officers and men for many varied tasks throughout our sphere of influence. To mention only a few... Armed Forces Rifle Competitions at Connaught Ranges, DREV for trials and evaluations of new equipment, instructors for CAS Valcartier detachment, instructors for the Franco-phone ROTP course in Chilliwack and Militia courses in Camp Bouchard.



His Excellency, Governor General Roland Mitchener inspects the saluting troop at Shilo, April 1970.



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L Gen G. Simonds takes the salute during the march past at the 1970 General Meeting of the RCA Association.

RCHA

Brigade Association

While quaffing a few ale in the dark recesses of the Prince George Hotel, Kingston, on a bleak January eve, the concept of an RCHA Association was conceived by the following members of the Royal Regiment – Barney Haylock, Syd Taylor, Jimmy Burns, Don Harper, Len Tritsch and Douglas Tyrrell. Their aim was to provide a place where all ex-members of the Royal Regiment could get together and enjoy mutual friendship over a few glasses of cheer.

As a start, an advertisement was placed in the local newspaper requesting all members of the RCHA Brigade to gather at the PWOR Armouries on Saturday 19 January, 1947 to discuss the possibilities of reorganizing the RCHA Brigade Association which had closed down when World War II broke out. This first meeting saw forty members turn out. Barney Haylock, acting Chairman, explained to the members the aims and hopes of renewing the old Charter which Gnr Clarakut had kept as former Secretary.

A temporary executive was set up consisting of Gnr B Haylock – President, N.S. Taylor – 1st Vice President, Don Harper – 2nd Vice President, B.A. Mellon – Secretary, L. Tritsch – Treasurer, J. Burns and D. Tyrrell – members. Their task was to look into all aspects of the Association, to check to see if the old Charter could be renewed, to look for a suitable place to hold our meetings and in general, to lay the foundation for a future Club. As the Association had no money, 25¢ was collected from the members present and the modest sum of \$10.00 started the Association on the road.

Several executive meetings were held in either the Frontenac or the Prince George Hotel during the next few weeks. D. Tyrrell was appointed, during this time, to form a one man committee to look for suitable accomodation for the association.

The next general meeting was held in the Armouries on Saturday, 12 February, 1947. This meeting was not as big a success as was hoped. This was due to a general misunderstanding over what comprised the RCHA Brigade. As a result, members of the 3rd Med. RCA and 4th LAA were included. At this time, the Brigade had written permission to use the Armouries.

A general outline of the executive's accomplishments and hopes for continued support in the future was given to the members present. After a general discussion and another collection of 25¢ was made from the members present to help defray the cost of stamps and advertising the meeting closed.

The weekly meetings of the Executive were held in either one of the hotels, the Fort Frontenac Officers' Mess or Len Tritsch's house on Princess Street. During these meetings, the old Constitution was revised. Wm Nickle, lawyer for the Brigade, after checking over the old Charter advised us to get a new one as it would be cheaper. Col deL Panet, J. Burns and D. Tyrrell would propose a permanent slate of officers at the next general meeting.

Throughout this period of time, Tyrrell was busy investigating several buildings which might be suitable for the Association. Among these buildings was the one which is the present building. Haylock, Taylor, Burns and Tyrrell inspected the one building in detail, an old First World War I Army Medical centre. Although the building was in a deplorable state, they decided to take it due to the excellent view over the harbour afforded by the top floor window. With the cooperation of MGen Constantine and Col Panet, Mr. Lingham consented to rent the two top floors for \$50.00 a month. After the Association's financial position was explained to him, he consented to cancel the rent for three months on condition that the Association would be responsible for the cost of all renovations.

At the next General Meeting held in the Armouries on 12 March, 1947, with fifty members present, Gnr Haylock outlined the progress made in finding accommodation, getting membership cards printed and sending out application forms to all known members. The fee was five dollars a year — one dollar on joining and one dollar quarterly if the member did not have the five dollars. It was decided to apply for a new Charter as this was cheaper than the renewal of the old one: Col deL. Panet proposed that the present executive be nominated as permanent officers for the year. This was accepted by those present. Gnr Haylock then called for volunteer workers to assist in getting the proposed Club rooms cleaned up and ready for use. But it is sad to say that one look at the task ahead discouraged all but a very few from giving much of their time and energy to get the place in shape. As usual the burden was placed on J. Burns, S. Taylor, F. Dunseith, Don Harper, Trunkey Hunter and D. Tyrrell and a few others who gave an hour or so of their time occasionally. After a dusty few hours of work, they usually retired to the Prince George for a few beers.

The next three months were a night and day struggle for the executive. They were having meetings every few days, working at the Club and at our own jobs. Many were not home more than one night a week before midnight. However they did have their lighter moments. Trunkey Hunter was given the job of keeping the fire going in the fireplace so that the water could be kept hot. One day Jimmy Burns and Trunkey Hunter tried to wash the floor with a pail of wall sizing and wondered why it was so slippery. Trunkey had heated up the two pails of water and forgot which one had the wall sizing in it.

This was a difficult time financially for the Association. In order to help their finances, they rented what is now the Dart Room to a firm of Dutch Weavers for about four months until they acquired a more suitable place further up town. There were also many ex-members whose services were invaluable during this period of renovation. Such persons as "Dad" Wilson, Jim Harris, Jimmy Burns, Don Harper and D. Tyrrell supplied many essential services including paper hanging and painting, electric wiring, and the acquisition of cleaning supplies, tables, chairs, and surplus rolls of battleship for the floors.

One afternoon, Maj J. Risk came down to see how the renovations were progressing. Upon seeing the furniture we had, much of it from old demolished army huts, he decided that the Club should have something better. He told them to go to one of the furniture stores and buy what was needed up to three thousand dollars worth and he would pay for it when it was in the Club. Although an offer was made to pay Maj Risk for the furniture over the years, he refused to accept any money.

In the midst of these busy days members of the Association took time out to entertain MGen Murchie and a few other Senior Officers who came down from Ottawa to attend the RMC Graduation. A couple of cases of beer were obtained so the guests were able to have a few drinks. Although they had to stand up or find something to sit on, it was an enjoyable hour's break from the work of cleaning up and, incidentally, quite profitable. The president was a very good talker and managed to get a donation of one hundred dollars from MGen Murchie before he left the Club. It was found out afterwards that he had had to borrow enough money from Col deL. Panet to return to Ottawa.

The next meeting was held on 9 July 1947 in the Club Rooms at which time committees were set up to handle membership, entertainment and property. This was an important day for the Association. Haylock, Harper and a couple of others with their lawyer, Ben Cunningham, had been down to the Liquor Control Board hearing in Brockville and secured the new Charter and Lounge License which arrived from Toronto a few days later.

During the proceeding months a Constitution and By-Laws were drawn up. Under the Constitution, three associate members were allowed for each active member. Also, a few honorary members were admitted for their service to the Club. Amongst the members there were a few quartermasters and others who worked in stores and it was amazing where the bits and pieces came from to help the Club get started.

The Official Opening Night was 18 July, 1947. It was one to be remembered as most of the Club was cleaned up, all of the new furniture was in place and all of the members could begin to enjoy the benefits of their three months' labour.

During July, August and September the profits from bar sales enabled the Club to pay off some of their creditors. During the October meeting the members were presented with a fairly good financial statement although they were still in the red. Gnr G. Spry was appointed Chairman of the Welfare Committee and for the next nineteen years he gave his time and service willingly to help those members who were in hospital.

By the time the November meeting came around, the Club was beginning to see the results of their work and their financial statement was almost out of the red. At the December meeting, it was moved that an outside Auditor be appointed to look after our accounts and Mr Fortier's appointment was approved, a position in which he remained until 1957.

During the previous months, a Benevolent Fund had been set up which enabled the Club to purchase Christmas presents for all the small children of our members and give donations to the Orphanages and Welfare Homes in the city. Also at the December meeting, an Easter dance was mentioned and a committee set up to arrange it. As well, a new slate of officers was nominated and they were to be elected and installed in the new year.

In the January 1948 meeting, with Gnr B. Haylock presiding, the financial statement was read by Gnr L. Tritzsch, and, after a general discussion, was passed. The election of the members nominated for office was conducted and the new executive was installed.

1948 was a good year for the Club. New members were coming in, the financial situation was in good condition, and the bar was showing a good profit. During the latter part of the year, wild life pictures were shown one night a week to stimulate interest. Also, billiard and dart tournaments were organized. These activities were, in fact, to be carried on for many years.

In January 1949, a new slate of officers was elected with Gnr J. Belwa as President. The ex-President, Gnr J. Irwin, was to remain as advisor to the incoming officers. During this year, many new things were started, under the able direction of the President, which improved our financial question. Sufficient funds were raised by J. Irwin and D. Tyrrell to bring the Memorial up to date. This included two bronze plaques inscribed with all the names of those who had paid the supreme price in the Second World War.

Hundreds of letters requesting donations were sent out to ex-members all over Canada. After months of work, approximately twelve hundred dollars was collected and this was enough to pay for the two Plaques and have them installed. The Plaques were dedicated in October 1950 with Lord Byng, then Governor General, and most of the Senior Artillery Officers from Headquarters in Ottawa present.

During the early part of February 1951, the Club sustained a serious loss by fire which was caused by an over-heated oil stove. This rendered the Club Rooms useless so the next general meeting was held in the P.W.O.R. Sgts' Mess. During this meeting, D. Tyrrell placed a motion before the members. It was that the Club should purchase the building which the owner was willing to sell for \$30,000 as he was seriously thinking of going out of business. The Club could then start off as they had in the first place. After a discussion, the motion was turned down and it was decided to rebuild. Mr. Lingham, the owner, held the fire insurance on the building and he gave the insurance money over to the Club to help in the rebuilding. The contract for rebuilding was given out to a local firm and for the next several months, meetings were held in the Armouries.

By October 1951, the Club was rebuilt and back in business. Much of the thanks for a rapid, efficient rebuilding must go to the Committee who remained in office until January 1953.

In January 1953, Gnr F. Wright was voted in as President along with a new slate of officers. The financial position was rather critical so it was decided to raise some money by selling Life Memberships in the Club for ten dollars and this brought in several hundred dollars. The Club, however, managed to hold their usual Children's Christmas Party and to aid various other welfare organizations.



The RCA Association holds a memorial service during the 1970 General Meeting to honour their colleagues who died in the two World Wars.

In January 1954, Gnr J. Belwa was again appointed President along with a new slate of Officers. During the next few years, the general meetings were held quarterly instead of monthly. Also during 1954 a movie projector and TV were installed in the Club. Various tournaments were held and once again the fund was set up to assist needy families at Christmas.

In 1955, Gnr J. Irwin was again voted in as President, a position he was to hold until December 1962. In 1957, the Association finally purchased the building that they occupied from Mrs Lingham for \$54,000. She held the 15-year mortgage on the building. When the building

was purchased, the Club guaranteed that the wholesale business on the ground floor, taken over by Mr. T. Graham, would be allowed to remain at a nominal sum of ten hundred and twenty dollars a year for the next 15 years with the option of renewal.

At this time, Gnr G. Giles was appointed Treasurer and has served faithfully ever since. During the next ten years the financial statement was often in the red due to the fact that it was necessary to keep the Club up to par and to pay off the mortgage. In 1959, a donation of one hundred dollars was taken from the general fund to assist the Salvation Army in building their new citadel. At the March 1959 meeting, a plaque which showed the names of the Charter members was presented to the President, Gnr J. Irwin.

General meetings which had been held quarterly were again held monthly. This continued until 1962 when a Permanent Board of Directors, under the Chairmanship of Gnr K. Atkins, was set up to handle the affairs of the Club. The Board of Directors was established because it was impossible to get a quorum of permanent members to attend the monthly General Meetings which had to be cancelled. The Board was to report to the Club members at a General Meeting held twice yearly.

Members are appointed to the Board for life or until such time as they wish to retire at which time they will be replaced by other permanent members in good standing. Several new members have been appointed through the years, in fact, to replace those who have resigned for various reasons. The Board consists of a President, two Vice Presidents and nine members. The Treasurer and Secretary attend all meetings but they have no vote. The Board of Directors has worked satisfactorily for the Club.

In 1965 Gnr L. Bastien was voted in as President of the Board, a position which he held until he resigned in 1967 to become Chief Steward of the Club. He has done an excellent job of looking after the bar and creating a happy relationship amongst the members.

Early in 1966, Gnr J. Irwin offered to loan the Association fifteen hundred dollars to clear off the mortgage to Mrs. Lingham. The offer was accepted by the Board. Gnr L. Richardson who had served the Club as Secretary for a number of years resigned in 1966 and Gnr M. O'Neil finished out the year. He was replaced by Gnr Don Roblin in 1967.

That same year, the Club had the opportunity to borrow ten thousand dollars on a first mortgage to cover the cost of extensive renovations. A new and larger Bar was built, the wash-rooms were completely overhauled, the outside walls were sand-blasted and repaired, and new furniture was purchased. All of this enabled the Club to be brought up to its present standard.

On the night of May 24, 1968, the Association had quite a party to celebrate the burning of the mortgage. The ashes were put in a steel box, suitably inscribed, and placed in the Board Room Show Case.

One other member who gave valuable service to the Club was Gnr M. Fisher who was Janitor and Handiman from 1951 to his death in 1968. His skill as a repairman saved the Club a lot of money over the years. Another person to remember is Ben Cunningham who gave the Club valuable legal advice over the years and who still remains as the Club's solicitor.



War Casualties

Total battle casualties in the RCA in the Second World War numbered 5592 of which 1223 were fatal.

Board of Directors 1968.

Gnrs Gord Valteau – President
 Don Haylock – Vice President
 Doug Tyrrell
 Gordon Burns
 Fred Wright
 Elmer Kelso
 Henry Vermette
 William Wood
 Don Gordon
 Syd Taylor
 Gerry Good
 Gerry O'Shea

Presidents of the RCHA Brigade Association

Gnr H.B. Haylock	1947
J. Irwin	1948
J. Belwa	1949–52
F. Wright	1953
J. Belwa	1954
J. Irwin	1955–61
K. Atkins	1962–64
L. Bastien	1965–66
G. Valteau	1967–68
D. Haylock	1968

Editors Note: The foregoing is an edited version of "Old Friends and Gunners" written by D. Tyrrell. Mr Tyrrell has written his short history of the Association to enable present members of the Club to learn how it was started, and how it has taken time to build the Club up to its present standard.



**6ième Régiment d'Artillerie
 de Campagne (M)**

LCol J. C. SAMSON, COMMANDANT

• ★

★

Quartier Général

10 de L'Arsenal, Lévis, Qué.

57e Batterie: Maj. M. Héту

3 St-Antoine, Lévis, Qué.

58e Batterie: Maj. R. Bourdages

Manège de la Grande Allée,
 Québec, Qué.

59e Batterie: Maj. O. Mimeault

194 de la Gare, Montmagny, Qué.

**THE 20th INDEPENDENT FIELD
 BATTERY RCA (M)**

LETHBRIDGE, ALBERTA

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 of the Battery**

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**The Royal Regiment of
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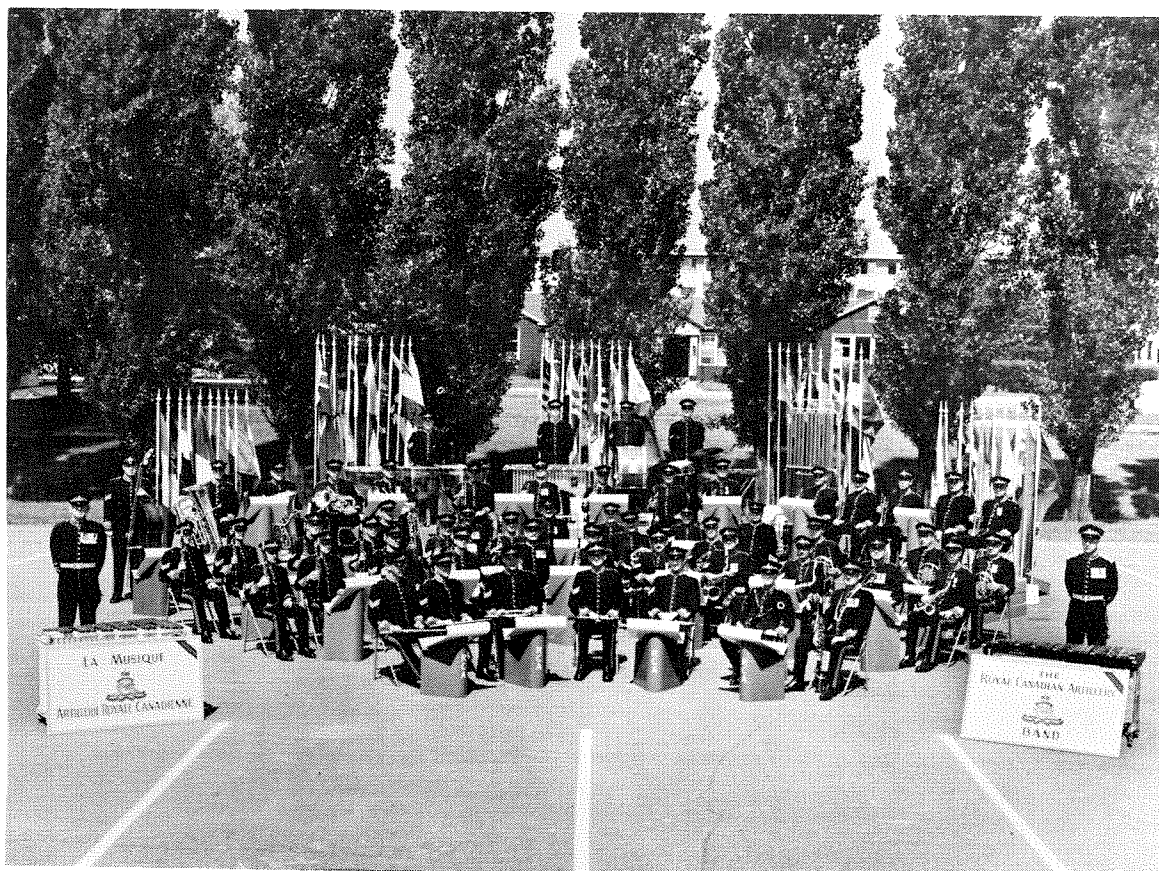
Lethbridge Armouries
 Kenyon Field Airport
 Lethbridge, Alberta
 Telephone: 327-2650



From the CP Log

* * *

Amid the gloom surrounding the loss of artillery units due to restructuring of the forces, a bright spot is the recent decision of the Minister of National Defence that the RCA Band is to retain its title. The official name of the band will be "The Royal Canadian Artillery Band/La Musique Artillerie Royale Canadienne" and it will be located at CFB Montreal, St Hubert Detachment.



Gunners everywhere will applaud this excellent news and will accord the RCA Band a warm welcome as it takes its place as a permanent unit of the Royal Regiment of Canadian Artillery.

Monday 19 October 1970 marks the occasion of the first artillery round being fired at the newly formed Combat Arms School in CFB Gagetown. To Sgt LeBlanc JE, 2 RCHA, goes the designation of engaging the first fire mission. On this day Sgt LeBlanc and fifteen other candidates of the Artillery Instructor WO Course were tested on their ability to successfully conduct a fire mission as part of a Performance Check on OP Duties. Fire support was provided by E Bty stationed in Gagetown. The course, which began 7 Oct 70 and ends 12 Dec 70, qualifies the candidate as an instructor at CAS.

♦ ♦

What! Another Artillery re-organization? Are GPO's and FOO parties being replaced? Definitely NOT, however, each year during the Regimental Direct Fire Competition, Detachment Commanders are scored on their ability to deploy their own guns, successfully engage a target, and then withdraw.

The competition was conducted as part of the Regimental Gun Camp with each battery being represented by two detachments. After the final scores had been tallied, the detachment commanded by Sgt Tideman HL, of E Battery, was declared "Top Gun" of 1 RCHA. To distinguish this achievement, Sgt Tideman will fly the Regimental pennant on his gun until the next competition.



The Commanding Officer, Lieutenant Colonel MD Calnan presenting the Direct Fire Competition trophy to Sgt Tideman HL and his crew (from left to right) Front Row: Gnr Cassin DT, Gnr Price EC, Bdr Dearman PM, Second Row: Gnr Brundin SP, Gnr Wells TE, Gnr Harvey EH.

With the re-organization of the two-troop battery to the six-gun battery, the Elkins' trophy was presented to the best battery in the Regiment. The Regimental Gun Camp again provided the basis for the competition, however the batteries were also judged on their performance in general throughout the year. This year B Battery, commanded by Major AK Beare, edged out its rivals to become "Trophy Battery - 1970".



Lieutenant-Colonel MD Calnan presenting the Elkins' Trophy to Major AK Beare, BC B Battery, and MWO (BSM) Armstrong GS.

♦ ♦

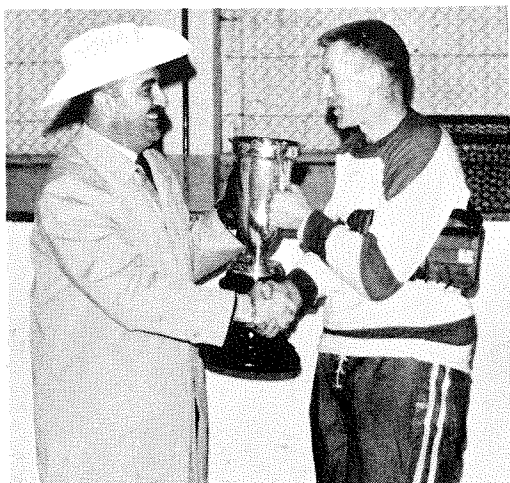


Colonel D.H. Gunter, CD, presenting the Earl of Minto trophy to Lt W.W. Riedel, the outstanding student on OCTP 6901 - Basic Artillery Officers Course conducted at CFSA Shilo from 4 Dec 69 (St Barbara's Day) to 14 Jul 70.

During its short history, 1 SSM Bty was well known for its sporting prowess. In a small unit such as 1 SSM, sports played a large role in maintaining the unit identity. Some of our most notable achievements in 1969-70 were:

- a. Cpl John Mosher was selected as the Most Valuable Player to his team in CLFE Senior Hockey League. It was an honour richly deserved.
- b. Cpl Les Smallenbeug with Cpl Vic Levesque as his mechanic represented Canada in the World Go-Kart Championships in Paris in Oct 70.
- c. The unit hockey team won the LdSH(RC) Inter-Squadron Hockey League.

In addition our unit basketball team won honours for both the unit and 4 CMBG as a whole. After a slow start the team managed to place second in the CLFE Minor Unit Basketball League. The team then won the semi-final and final series in straight games to win the CLFE Minor Unit Championship. In mid February the team moved on to play in the 2 (BR) Div Minor Units Championships. After three straight wins, the 1 SSM Bty team was crowned 2 (BR) Div Minor Unit Champions. From there the team moved into the BAOR Minor Units Championships. However, their luck finally ran out and the team came in third.



1 SSM Bty receives the LdSH(RC) Trophy from the Commanding Officer LCol JAR Butknecht, CD.



1 SSM Bty Guard at Groesbech

1 SSM Bty provided a major portion of the Canadian Contingent to the 25th and Final Anniversary Ceremonies of the Liberation of Holland held at the Canadian War Cemetery Groesbech on 3 May 70.



Canadian contingent led by Lieutenant General G. Simonds, at Zutphen Holland.

Capt RW Chaulk commanded the contingent, which also participated in similar ceremonies throughout Holland.



Dutch school children laying wreaths at Groesbech.



■ ■ ■

Rivalry between officers and sergeants in various sporting competitions is well known in Gunner Units. 1 SSM Bty was no different. Each year an annual trophy was the object of an annual Officers/Sergeants Hockey Match. As 1970 was the last time of competition play was extremely spirited. The officers' team won out in the end, winning the trophy for the second straight year. Mention also must be made of the imports from 69th US Missile. This typified the close relations between the two units. After the presentation, the Hockey Trophy was turned over to 1 RCHA for future competition.

Capt John Davidson and Capt Peter Forsberg (Team Manager) proudly display the annual Officers/Sergeants Hockey Trophy after winning it for the second year in a row. Looking on is Sgt (now WO) Dennis Jobe and MWO Don Hawkes.





Sgt Girard JA shows how easy it is to tow the L-5 in Jamaica.

■ ■ ■


On Mon 29 Jun 70, the officers of 1 SSM Bty were hosted by the CRA 2 (BR) Div, Brigadier Mangham, at a Farewell Mess Dinner held at 50 Missile Regiment RA. The CCRA 1 (3R) Corps Brigadier JM Bellman was also in attendance. Representatives of all three British Missile Regiments and the 69th US Missile Detachment came to say goodbye to the officers and the unit. The CO, Major Olson, received several mementos on behalf of the unit. Each officer was presented with a 2 (BR) Div tie as a personal memento of the service 1 SSM Bty had with 2 Div. The climax of the evening was a NATO bug-out from which 1 SSM Bty had thankfully been exempted.


■ ■ ■

Major DR Foster, OC Air OP Tp, 4 RCHA is shown debriefing Capt VAA Coroy after Capt Coroy completed a series of live strikes with CF-5s during 2 Combat Group FAC Continuation Training. Note the cut off UHF rod antenna (upper left) which was modified for the UHF A43R radio mounted in the rear baggage compartment.






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In Memoriam

4 RCHA

**10 APR 52
to
16 JUL 70**

1 SSM

**15 SEP 60
to
1 JUN 70**

1 DRONE TROOP

**1 JUL 68
to
1 JUN 70**

MILITIA UNITS

7th TORONTO REGIMENT

Always a bridesmaid but never a bride. This was the situation in which the 7 Toronto Regiment found itself for two years in a row. Sure, the unit had captured the RCAA Archangel Trophy in 1967-68 and 1968-69 for being the most efficient militia artillery regiment in Canada. But first place in the gun battery competition eluded the 7th; all the unit could manage each year was a second place finish. (Not bad but!)

However, 1969-70 turned out to be a different ball game. The 7th Toronto finally nailed down the coveted Commandant's Challenge Cup as first place finishers in the gun battery competition and retained the Archangel for efficiency as well. A fitting reward for a group of hard-working and dedicated gunners.

The 7th Toronto registered other 1970 "firsts" at the Summer Schools held at Petawawa. In the Captain qualifying course, unit officers ran one-two: Lt G.P. King and Lt R.A. Hall respectively. Meanwhile Bombadier D.A. Jacobs earned first spot honours in the Senior NCO's course.

The Regiment conducted a successful Summer Student Training Program filling its 75-man quota. Over 50 of the boys are currently parading with the unit.

Training emphasis in the 7th Toronto is presently aimed at improving the combat readiness of its Regimental Headquarters. A series of exercises designed to test RHQ personnel in effective command and technical control of a two battery formation are being conducted regularly.

Regimental command post exercises take on added importance. A Regimental deployment with dry fire and movement was held at CFB Borden in late November, events in another part of the country had prevented the execution of a long-awaited live firing concentration at Petawawa.

The Borden exercise was rated a success with many valuable lessons learned ("Zero" kept the batteries under a very tight rein — a relatively new experience for the troops).

Recent promotions in the Regiment: J.R.M. Hubel to Major, B.Z. Noy to Captain.

Lt James Mitchelson of the Royal New Zealand Artillery is presently attached to the unit as a liaison officer.

One sad note during the past year was the death of Keiller Mackay, former Lt-Governor of the province of Ontario, who was one of the Regiment's most distinguished members of the mess.

20th INDEPENDENT FIELD BATTERY

With more than half a century of artillery history to look back upon, the 20th Independent Field Battery, or formerly known as the 18th Field Artillery Regiment, can look forward to many more years of progress.

Historically speaking, the organization itself has enjoyed a stupendous past; as the first artillery battery to be formed West of Winnipeg, to its role during World War II, or more recently as a store of trained militia soldiers in Southern Alberta; but events of the past year have greatly changed its structure.

With current cutbacks in Regular Force and militia personnel, the 18th Field Artillery Regiment was not left untouched. By 1 April, 1970 our strength was cut from a Regiment of some 200 men to a Battery of 80 men. As a result the 93rd Battery in Fort MacLeod was disbanded as was the 39th Field Battery in Lethbridge and by the ceremonious occasion of 11 April, 1970 the 18th Field Regiment was disbanded and the new organization became the 20th Independent Field Battery RCA (M).

The death of Brigadier General J.S. Stewart, CMG., DSO., ED., on 14 August 1970, was a sad occasion for all past and present members of the Artillery organization, for it was this man who organized the Artillery in Lethbridge in 1908; with 72 years of active military and civilian service to our city, we are proud to have had such a man here, and grieve his loss.

The events of the past year have not diminished the spirit of the 20 Independent Field Battery for with such an honored and distinguished past, this Battery cannot help but look forward to a bright and progressive future.



26th FIELD REGIMENT

The first regimental event of note in the Fall 1969 season was the Field Live Firing Exercise held on 24-26 October 1969. It was a successful shoot, with all elements of the Regiment participating. At the time we were unaware that this would be our last shoot with all four Batteries contributing. As of 31 March 1970 the 13th Field Battery at Virden and the 70th Field Battery at Dauphin were relegated to the Supplementary Order of Battle. Needless to say, the reduction in strength was a deeply felt loss to the Regiment. Since then, the Battery at Portage la Prairie has been redesignated as the 13th Field Battery.

On 11 November 1969 the 26th Fd Regt fired a Remembrance Day Salute at the Legislative Bldg in Winnipeg.

New Year's Eve was the occasion for the Regiment to host a gala Ball to usher in Centennial

Year in Manitoba. This was followed by the New Year's Day Levee in which Brandon formed a part of the Shilo-Brandon-Rivers circuit.

Members of the Regiment attended the Easter Week Jr. NCO Course at CFB Shilo and performed suitably.

During the first weekend in May the Regiment again moved to Shilo for the Spring Live Firing Exercise, which was a successful dress rehearsal for the Summer Concentration. It was also the last shoot for our CPO, Capt A.R. Carruthers, who left to become a regular force Engineer.

The Annual CO's Inspection and Unit Competition was held under bright sunny skies at Kinsmen Stadium on 21 June 1970. The special point about the sun is made because scarcely a week later, at the Mob Com Concentration in CFB Wainwright, we endured (along with all the other stalwarts) what must have been the rainiest militia week on record! Our OC was Major R.G. McDonald, and we were supported by 3 RCHA.

During July and August the 26th Fd Regt supported a highly successful S.S.E.P. course at Brandon and Rivers, from which we drew recruits for this year.

This fall the Annual Live Firing Exercise was held on the Thanksgiving Long Weekend, in conjunction with Units from Sask. & Alta - all supported by 3 RCHA. A note of recognition and thanks should be made here to all personnel of 3 RCHA for their most able and highly co-operative assistance.

On 31 October 1970 the 71st Battery held a Change of Command Parade. Major D.C. Brown has been appointed 2 i/c of the Regiment, and Major R.G. McDonald has succeeded him as OC of 71 Battery.

Again on 11 November 1970 the 26th Fd Regt fired a Salute from the grounds of the Legislative Bldg in Winnipeg, after which the firing troop did a Drive Past of the Saluting Base as a part of the Remembrance Day Parade.

The last major event for Centennial Year was the firing of a 17 gun Salute for the Minister of National defence as he toured CFB Winnipeg on 14 December 1970.

The 26th FIELD REGIMENT

RCA — RHQ BRANDON, MAN.

LCol D. M. DOIG, Commanding Officer

Maj. D. C. BROWN, Second in Command

WITH BATTERIES LOCATED AT . . .

13th Field, Portage la Prairie

Maj. J. Jefferies, O.C.

71st Field, Brandon

Maj. R. G. MacDonald, O.C.

**BRING GREETINGS TO
GUNNERS EVERYWHERE.**



COMMANDING OFFICERS RCA(M)

1st (Halifax-Dartmouth) Field Artillery Regiment
LCol J.W. Alward, CD

15th Field Artillery Regiment
LCol B.A. Clemons, CD

2nd Field Artillery Regiment
LCol W.L.M. Cloutier, CD

20th Field Artillery Regiment
LCol W.G. Ames, CD

3rd Field Artillery Regiment
(The Loyal Company)
LCol M.N. Parker, CD

26th Field Artillery Regiment
LCol D.M. Doig, CD

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

30th Field Artillery Regiment
LCol G.E. Ward, CD

7th Toronto Regiment
LCol J.C. McKenna, CD

49th (Sault Ste Marie) Field Artillery Regiment
LCol E.H. Rowe

10th Field Artillery Regiment
LCol A.R. Strickland, CD

56th Field Artillery Regiment
(Dufferin and Haldimand Rittles)
LCol L.M. Salmon, CD

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

62nd (Shawinigan) Field Artillery Regiment
LCol J.R. Boucher, CD

5th (British Columbia) Field Battery
Maj F.E. Richardson, CD

20th Independent Field Battery
Maj M.D. Hamilton

84th Independent Field Battery
Maj D.W. Burns

116th Field Battery, 40 Field Regiment
Maj W.N. Sinclair, CD

OFFICERS' AND WARRANT OFFICERS'

LOCATION LIST

LGen	DAG	Waldock, CD	Chief of Technical Services, CFHQ
BGen	GRA	Coffin, CD	COS Support Services, Air Transport Command HQ
BGen	JL	Drewry, DSO, CD	Director General Equipment Requirements, CFHQ
BGen	EMD	Leslie, DSO, CD	Chief of Staff, UNFICYP and Commander Canadian Contingent Cyprus
Col	LC	Baumgart, CD	Commander CFB Shilo
Col	JP	Beer, MBE, CD	Directing Staff, NATO Defence College
Col	DW	Francis, CD	Director of Artillery, CFHQ
Col	DH	Gunter, CD	DCOS Training, Mobile Command HQ
Col	RG	Kingstone, MBE, CD	Directing Staff, Canadian Forces Staff College
Col	JOVF	Menard, CD	Commander CFB St Jean
Col	JS	Orton, MBE, MC, CD	Canadian Forces Attache, Turkey
Col	NW	Reilander, CD	DCOS Combat Arms Training, Training Command HQ
Col	WW	Turner, CD	Directing Staff, National Defence College

LCol	DC	Badenoch, CD	CLO, USA Materiel Command
LCol	DR	Baker, CD	Combat Arms School, CFB Gagetown
LCol	CR	Baker, MC, CD	NATO Amament Committee, Brussels
LCol	CE	Beattie, CD	Directorate of Artillery, CFHQ
LCol	RP	Bourne, CD	SO to the Privy Council, Ottawa
LCol	RGG	Buell, CD	UNMOG(IP)
LCol	MD	Calnan, CD	CO, 1 RCHA
LCol	JEJ	Caryi, CD	Atlantic Area
LCol	MLA	Chabot, CD	Mobile Command HQ
LCol	JA	Cotter, CD	Directorate of Land Operational Research, CFHQ
LCol	DB	Crowe, CD	Directing Staff, Canadian Land Forces Command and Staff College
LCol	JD	Crowe, MC, CD	Canadian Defence Liaison Staff (London)
LCol	WR	Dawes, CD	CO, 2 RCHA
LCol	JE	deHart, MC, CD	Directorate of Equipment Requirements Land, CFHQ
LCol	JJA	Doucet, CD	CO, 5e RALC
LCol	RH	Duke, CD	Directorate of Amament Engineering, CFHQ
LCol	DF	Elkins, CD	Directorate of International Plans, CFHQ
LCol	JK	Ewing, CD	Directorate of Land Forces Operational Requirements and Training, CFHQ
LCol	DE	Gayton, CD	Directorate of Manpower Programming and Control, CFHQ
LCol	RG	Heitshu, CD	Student, National Defence College
LCol	JG	Henderson, CD	Mobile Command HQ
LCol	W	Johnston, CD	Seconded to Department of Supply and Services, Ottawa
LCol	MD	Keamey, CD	Secteur de L'Est
LCol	SV	Lloyd, CD	B Adm O, CFB Comox
LCol	RN	McKay, CD	Canadian Defence Education Establishment, Ottawa
LCol	AC	Moffat, CD	Directing Staff, Canadian Forces Staff College
LCol	JF	Pendergast, CD	HQ AFCENT, NW Europe

LCol	GH	Reid, CD	B Adm O, CFB Winnipeg
LCol	NA	Robertson, CD	Air Defence Command HQ
LCol	WE	Sills, CD	Directorate of Long Range Planning, CFHQ
LCol	CR	Simonds, CD	CO, 3 RCHA
LCol	A	So snko wski, CD	Seconded to Treasury Board, Ottawa
LCol	RAD	Stok es, CD	Mobile Command HQ
LCol	DG	Struthers, CD	SSO Civil Emergency Operations and Plans, CFB Toronto
LCol	JAR	Vandal, CD	Northern Region HQ
LCol	HR	Wheatley, CD	Directing Staff, Canadian Land Forces Command and Staff College
Maj	EY	Adkin, CD	CFB Esquimalt
Maj	FC	Ayers	OC, 3 RCHA Air OP Troop
Maj	NH	Barrett, CD	Directorate of Staff Duties, CFHQ
Maj	FW	Bayne, CD	Combat Arms School, CFB Gagetown
Maj	AK	Beare, CD	3 Svc Bn, CFB Gagetown
Maj	RP	Beaudry, CD	BC, 5e RALC
Maj	SB	Benton, CD	Provincial Warning Centre, Fredericton
Maj	JC	Berezowski, CD	Mobile Command HQ
Maj	EJ	Berri s, CD	Directorate of Personnel Career Policy, CFHQ
Maj	RW	Boadway	Staff, Royal Military College
Maj	JP	Bouvette, CD	Student, Canadian Land Forces Command and Staff College
Maj	MC	Brown	Directorate of Land Operational Research, CFHQ
Maj	CF	Burant, CD	Directorate of Combat Development, CFHQ
Maj	FA	Bussieres, CD	2IC, 5e RALC
Maj	FS	Card, CD	Provincial Warning Centre, Nanaimo
Maj	RV	Carrier, CD	Directorate of Intelligence Production, CFHQ
Maj	LL	Charest, CD	Directorate of Operations Readiness Land, CFHQ

Maj	JP	Cheevers, CD	Directorate of Equipment Requirements Land, CFHQ
Maj	DH	Clark, CD	Canadian Defence Education Establishment, Ottawa
Maj	WB	Cheadle, CD	UNMOG (IP)
Maj	WS	Conrod, CD	Directorate General of Operations Land, CFHQ
Maj	WD	Creighton, CD	Central Area
Maj	JE	Crosman, CD	Mobile Command HQ
Maj	JD	Currie, CD	Directorate of Management Services, CFHQ
Maj	FA	Davies, CD	Staff, Canadian Land Forces Command and Staff College
Maj	GA	Decker	Student, Canadian Land Forces Command and Staff College
Maj	JK	Devlin, CD	Mobile Command HQ
Maj	JJ	Donahue, CD	Directorate of Operations Readiness Land, CFHQ
Maj	RR	Doyon, CD	CO, 1 Airborne Battery, CAR
Maj	WA	Emery	CFB Gagetown
Maj	FJR	Ervin, CD	Saint John District
Maj	RA	Finney, CD	CFB Petawawa
Maj	DC	Fitzgerald, CD	2IC, 2 RCHA (Promoted 21 Apr 71 to UNMOG (IP))
Maj	JL	Fleming	BRIXMIS, Berlin
Maj	DR	Foster, CD	OC, 2 RCHA Air OP Troop
Maj	RN	Gleason-Beard, CD	Mobile Command HQ
Maj	THC	Goodfellow, CD	Financial Management Development Project, CFHQ
Maj	JE	Goodine, CD	Directorate of Nuclear Weapons, CFHQ
Maj	RE	Gorham, CD	Directorate of Intelligence Services, CFHQ
Maj	SD	Green	BC, 3 RCHA
Maj	OL	Greenizan	Student, Staff College, Camberly UK
Maj	GM	Guy, CD	Combat Arms School, CFB Gagetown
Maj	GF	Hammond, CD	CFB Shilo
Maj	PF	Heenan, CD	Directorate of Personnel Requirements Control, CFHQ

Maj	WB	Helman, CD	Directorate of Posting and Careers (Officers), CFHQ
Maj	DA	Henderson, CD	Directorate of Personnel Career Policy, CFHQ
Maj	GR	Hirter, CD	Mobile Command HQ
Maj	JE	Howes	Post Graduate Studies, Royal Military College
Maj	RR	Howsam, CD	Directorate of Scientific and Technical Intelligence, CFHQ
Maj	NF	Hull	Student, Canadian Land Forces Command and Staff College
Maj	JMA	Hulsemann, CD	UNTSO
Maj	SP	Hunter, CD	Directorate of Policy Control and Coordination, CFHQ
Maj	RG	Hurley, CD	BC, 2 RCHA
Maj	TT	Itani	HQ Combat Training Centre, CFB Gagetown
Maj	RK	James	BC, 1 RCHA
Maj	NW	Johnstone, CD	BC, 3 RCHA
Maj	JC	Kennedy, CD	Mobile Command HQ
Maj	TJT	Kennedy, CD	Directorate of Operations, CFHQ
Maj	E	Lasch, CD	Directorate of Armament Engineering, CFHQ
Maj	KD	Lavender, CD	Directorate of Equipment Requirements Air, CFHQ
Maj	HF	Leggett, CD	Mobile Command HQ
Maj	OJ	Lester, CD	Directorate General of Operations Land, CFHQ
Maj	WDW	Lewis, CD	OC, 1 RCHA Air OP Troop
Maj	G	Logan	CFB Soest
Maj	AGM	MacIsaac, CD	Canadian Defence Liaison Staff (Washington)
Maj	EB	MacLatchy, CD	Directorate of Staff Duties, CFHQ
Maj	NM	MacLean, CD	Directorate of Integrated Defence Programmes, CFHQ
Maj	JL	Mantin, CD	Air Transport Command HQ
Maj	JAGP	Marceau	BC, 5e RALC
Maj	H	Marston, CD	Canadian Defence Liaison Staff (London)
Maj	EH	Martin, CD	Directorate of Armament Engineering, CFHQ
Maj	GN	Mastine, CD	OC, 5e RALC Air OP Troop

Maj	FR	McCall, CD	Directorate of Equipment Requirements Land, CFHQ
Maj	JB	McCanse, CD	Mobile Command HQ
Maj	DB	McGibbon, CD	Directorate of Armament Engineering, CFHQ
Maj	J	McGregor, CD	Administrative Unit, CFHQ
Maj	HA	McLellan, CD	Personnel Management Information Agency, CFHQ
Maj	RL	McLellan, CD	CFB Soest
Maj	AD	McMillan, CD	408 Tactical Helicopter Squadron
Maj	GJ	Mialkowski	Directorate General of Operations Land, CFHQ
Maj	CA	Moogk	Combat Arms School, CFB Gagetown
Maj	CR	Mummery	CFLO, Fort Sill
Maj	TW	Musgrave, CD	Directorate of Artillery, CFHQ
Maj	CA	Namiesniowski, CD	Directorate of Operations, CFHQ
Maj	MT	O'Brennan, MC, CD	Pacific Area
Maj	GNR	Olson	CFB Europe
Maj	CEDEL	Panet, CD	430 Tactical Helicopter Squadron
Maj	GBC	Parenteau, CD	CFB Valcartier
Maj	MN	Pettis, CD	Directorate of Operations Readiness Land, CFHQ
Maj	KS	Pickard, CD	Combat Arms School, CFB Gagetown
Maj	DG	Porter, CD	Directorate of Guided Weapons, Ministry of Technology, UK
Maj	NE	Ramsey, CD	422 Tactical Helicopter Squadron
Maj	WJ	Ready, CD	CFLO, FT Bliss
Maj	DJ	Redknapp, CD	Directorate of Intelligence Production, CFHQ
Maj	ME	Rich, CD	2C, 3 RCHA
Maj	JK	Robertson, CD	Directorate of Armament Engineering, CFHQ
Maj	MJ	Sadler, CD	Seconded to Department of Industry, Trade and Commerce, Ottawa
Maj	JK	Sangster, CD	Student, Canadian Forces Staff College
Maj	HD	Saxon, CD	Directorate of Equipment Requirements Land, CFHQ
Maj	EL	Schrader, CD	BC, 2 RCHA
Maj	WM	Scott, CD	Prairie Area

Maj	RD	Smyth, CD	Directorate of Armed Forces Programs, CFHQ
Maj	DD	Snow, CD	Student, Canadian Forces Staff College
Maj	HJ	Stein, CD	Office of Deputy Chief Personnel Military, CFHQ
Maj	HP	Stickley, CD	Vancouver District
Maj	WB	Stoddart, CD	Directorate of Land Operational Research, CFHQ
Maj	DE	Stothers, CD	MCCD, Vietnam
Maj	RL	Strawbridge, CD	2C, 1 RCHA
Maj	HD	Thompson, CD	Mobile Command HQ
Maj	RV	Thompson, CD	BC, 1 RCHA
Maj	WJ	Tippett, CD	Seconded to Department of Supply and Services, Ottawa
Maj	RK	Wallace, CD	Directorate of Continental Plans, CFHQ
Maj	DJ	Walters, CD	OC, E Bty, 2 RCHA
Maj	JO	Ward, CD	Mobile Command HQ
Maj	DW	Wellsmann, CD	BC, 1 RCHA
Maj	CME	West, CD	Office of the Deputy Chief Plans, CFHQ
Maj	LE	West, CD	Training Command HQ
Maj	GL	Wetherup, CD	CFB Calgary
Maj	T	Wheeler	Mobile Command HQ
Maj	PA	White, CD	CDLS(L), Exchange Officer, DRA Office
Maj	WMJ	Wolfe, CD	Exchange Officer, Larkhill, UK

Capt	EJ	Adams	Student, Canadian Land Forces Command and Staff College
Capt	RI	Adams, CD	Artillery Instructor Course
Capt	LC	Adkins	1 RCHA
Capt	EH	Anderson, CD	2 RCHA
Capt	JLHC	Archambault	CFB Valcartier
Capt	RB	Armstrong	Long Gunnery Staff Course, Larkhill
Capt	RL	Armstrong	Atlantic Area
Capt	JJ	Baker, CD	Directorate of Armament Engineering, CFHQ

Capt	P	Baldaro, CD	1 RCHA Air OP Troop
Capt	RJ	Beardmore	3 RCHA
Capt	DJ	Beatty	HQ 1 Combat Group
Capt	JW	Beese	5e RALC
Capt	EB	Beno	Student, Canadian Land Forces Command and Staff College
Capt	MV	Bezeau	3 RCHA
Capt	DB	Bianco	1 RCHA
Capt	JGR	Bigras	CFB Calgary
Capt	JNGG	Boudreau	HQ 5 Combat Group
Capt	SJ	Bowers, CD	Directorate General Information Handling Agency, CFHQ
Capt	ABC	Bowles	1 RCHA
Capt	GWR	Bowman, CD	Training Command HQ
Capt	LA	Branum	2 RCHA
Capt	TE	Brewster	1 RCHA
Capt	JD	Briscoe	5e RALC
Capt	JJ	Brotherton, CD	CFB Kingston
Capt	DH	Brown	3 RCHA
Capt	JEF	Bryce	Undergraduate studies, Queen's University
Capt	JE	Bulger, CD	Prairie Area
Capt	AF	Cameron, CD	Directorate of Armament Engineering, CFHQ
Capt	AW	Carnell	Mobile Command HQ
Capt	AP	Carroll	Training Command HQ
Capt	RJ	Chamberlain	Exchange Officer, 3 RHA
Capt	FH	Champion-Demers, CD	Assistant Chief of Defence Staff Information Handling Agency, CFHQ
Capt	JP	Chartres	1 RCHA
Capt	RW	Chaulk	Foreign Liaison Office, CFHQ
Capt	JD	Chown, CD	Directorate of History, CFHQ
Capt	MF	Clark, CD	1 RCHA
Capt	RC	Coleman	5e RALC
Capt	NH	Connolly	5e RALC
Capt	GR	Conway, CD	Northern Ontario District

Capt	AVA	Coroy	2 RCHA Air OP Troop
Capt	AK	Court	Mobile Command HQ
Capt	LWF	Cuppens	E Bty, 2 RCHA Air OP Troop
Capt	JA	Davidson	CFB Europe
Capt	RA	Diespecker, CD	Training Command HQ
Capt	JT	Dolan, CD	Canadian Forces Recruiting Centre, Ottawa
Capt	JA	Dorman	1 Airborne Battery, CAR
Capt	HR	Eamor	2 RCHA
Capt	BG	Earl	Directorate General Operations Land, CFHQ
Capt	MD	Elkins	3 RCHA Air OP Troop
Capt	HC	Ellery	3 RCHA Air OP Troop
Capt	DA	Elrick	Artillery Instructor Course
Capt	RG	Elrick	1 RCHA
Capt	TA	Favier	Assistant Chief of Defence Staff Information Handling Agency, CFHQ
Capt	DR	Ferguson	3 RCHA
Capt	TAD	Fetterly, CD	Combat Arms School, CFB Gagetown
Capt	H	Finestone	1 RCHA
Capt	W	Filonik	Secteur de L'est
Capt	PW	Forsberg	CFB So est
Capt	JJ	Fraser	Undergraduate studies, Brandon University
Capt	FJ	Forsyth, CD	Canadian Armament Design and Experimental Establishment, CFB Valcartier
Capt	FL	Furness, CD	CFB Halifax
Capt	AG	Gallant	5e RALC
Capt	GA	Gallop	1 RCHA
Capt	WF	Gee	Quebec Area
Capt	IWC	Gibbons	Combat Arms School, CFB Gagetown
Capt	JV	Glaus	Canadian Armament Design and Experimental Establishment, CFB Valcartier
Capt	RG	Glover	Combat Arms School, CFB Gagetown
Capt	WE	Gordon	Canadian Forces Officer Candidate School, CFB Chilliwack
Capt	WD	Gowanlock	HQ 1 Combat Group
Capt	GF	Gower, CD	E Bty, 2 RCHA Air OP Troop

Capt	BM	Grace	Staff, Royal Roads Military College
Capt	PJ	Graves, CD	Training Command HQ
Capt	DA	Gronbeck-Jones	Artillery Instructor Course
Capt	WH	Groom, CD	Staff, Canadian Land Forces Command and Staff College
Capt	TJ	Guiler	Combat Arms School, CFB Gagetown
Capt	CO	Gustafson	3 RCHA
Capt	EC	Hague	5e RALC
Capt	RG	Hall	3 Canadian Forces Flying Training School
Capt	MJ	Hamston, CD	Directorate of Operations Readiness Land, CFHQ
Capt	FH	Hansford	Artillery Instructor Course
Capt	AV	Harris	Management Study Unit, CFB Esquimalt
Capt	DB	Harrison	Mobile Command HQ
Capt	RN	Haslett	Canadian Forces Recruiting Centre, Vancouver
Capt	DW	Hawthorne	Directorate of Personnel Administration Ceremonial and Welfare, CFHQ
Capt	JE	Hawthorne	Artillery Instructor Course
Capt	FC	Haynes, CD	Directorate of Manpower Distribution Control Centre, CFHQ
Capt	JD	Hetherington, CD	Pacific Area
Capt	MW	Hewes	Combat Arms School, CFB Gagetown
Capt	RP	Hitchman	5e RALC Air OP Troop
Capt	JM	Hoffman	Training Command HQ
Capt	DR	Hopper	Provincial Warning Centre, Valcartier
Capt	R	Hoyland	2 RCHA
Capt	JR	Hutchinson, CD	Ottawa District
Capt	RY	Hutton, CD	Combat Arms School, CFB Gagetown
Capt	DGH	Hyman	5e RALC
Capt	RM	Hyslop	Combat Arms School, CFB Gagetown
Capt	GF	Ireland	Canadian Forces Air Navigation School, Winnipeg
Capt	MK	Jeffrey	1 RCHA
Capt	WR	Johnston	Directorate of Equipment Requirements Land, CFHQ

Capt	GH	Jussup, CD	Directorate of Project Formulation, CFHQ
Capt	JM	Kavanagh	Mobile Command HQ
Capt	LC	Kempffer, CD	Edmonton District
Capt	DJ	KerHomel, CD	Training Command HQ
Capt	GD	Kerr	Staff, Royal Military College
Capt	JB	Knapp	2 RCHA
Capt	DC	Knight	Directorate of Scientific and Technical Intelligence, CFHQ
Capt	RG	Kyle	2 RCHA
Capt	FK	LaForge	CFB Petawawa
Capt	JB	LaPointe, CD	1 RCHA
Capt	PR	Learmonth	1 RCHA
Capt	BM	Lees	1 RCHA
Capt	SW	Lobban, CD	Directorate of Operations, CFHQ
Capt	DA	Lockridge	3 RCHA
Capt	RJ	Lovell	1 RCHA Air OP Troop
Capt	JA	Lowe, CD	424 Transport Squadron
Capt	RJ	Lucas	Air Support Operational Training Unit, CFB Edmonton
Capt	MJ	MacDonald	5e RALC Air OP Troop
Capt	JM	MacFie, CD	427 Tactical Helicopter Squadron
Capt	JG	MacGregor	403 Helicopter Operational Training Squadron
Capt	JA	MacInnis	Staff, Canadian Land Forces Command and Staff College
Capt	JM	MacInnes	Directorate of Personnel Requirements Control, CFHQ
Capt	AA	MacLeod, CD	Pacific Area
Capt	WR	MacNeil	E Bty, 2 RCHA
Capt	JOA	Maher	CFB Edmonton
Capt	MD	Maher	Combat Arms School, CFB Gagetown
Capt	R	Malcolm, CD	3 RCHA
Capt	GR	Manson	3 RCHA
Capt	RB	May, CD	1 RCHA

Capt	RN	McAlpine	3 RCHA
Capt	TJ	McBurney	Canadian Forces Language School, CFB St Jean
Capt	JP	McConville, CD	CFB Borden
Capt	TS	McCoy	2 RCHA
Capt	BTN	McGrath	Combat Arms School, CFB Gagetown
Capt	JA	McKay	5e RALC
Capt	RW	McKinlay	CFB Gagetown
Capt	L	McKinnon, CD	Directorate of Central Ordnance Systems, CFHQ
Capt	WE	McLeod, CD	Directorate of Electronics Systems Engineering, CFHQ
Capt	WL	McMullen	2 RCHA Air OP Troop
Capt	DG	Miller, EM, MM, CD	CFB Kingston
Capt	DG	Miller	3 RCHA Air OP Troop
Capt	JE	Miller	E Bty, 2 RCHA
Capt	AG	Mills	1 Airborne Battery, CAR
Capt	LTB	Mintz	Combat Arms School, CFB Gagetown
Capt	KR	Mitchell	3 RCHA
Capt	SR	Moore, CD	Directorate of Postings and Careers Men, CF Directorate of Postings and Careers Men, CFHQ
Capt	JW	Mortlock	1 RCHA
Capt	N	Mulikow, CD	403 Helicopter Operational Training Squadron
Capt	HP	Mundell	2 RCHA
Capt	AW	Nethercott, CD	Training Command HQ
Capt	JDE	Niles	Sydney District
Capt	JW	Nixon	Canadian Forces Recruiting Centre, Halifax
Capt	RL	O'Banion	Combat Arms School, CFB Gagetown
Capt	GJ	Oehring	2 RCHA
Capt	AF	Ouellette, CD	CFS Whitehorse
Capt	JW	Owen, CD	CFB Kingston
Capt	AZ	Palmer	Combat Arms School, CFB Gagetown
Capt	JAR	Paquette	Canadian Forces Recruiting Centre, Chicoutimi
Capt	JA	Parnham, CD	UNMOG (IP)
Capt	WJ	Parton	E Bty, 2 RCHA

Capt	RE	Peterson, CD	Directorate of Cadets, CFHQ
Capt	MAS	Pittman, CD	Directorate of Manpower Distribution Control, CFHQ
Capt	KW	Pizer	Office of Deputy Chief Operations and Reserves, CFHQ
Capt	JR	Pleasant	Artillery Instructor Course
Capt	JA	Poh, CD	Management Study Unit, CFB Gagetown
Capt	NF	Pollock, CD	450 Transport Squadron
Capt	TG	Power	Winnipeg District (Shilo)
Capt	GDL	Protz	Air Defence Command HQ
Capt	WJ	Quinn, CD	Victoria District
Capt	LG	Ramsey, CD	Directorate of Armament Engineering, CFHQ
Capt	EW	Rance, CD	Seconded to National Research Council, Ottawa
Capt	BA	Reid	Student, Canadian Land Forces Command and Staff College
Capt	CHG	Reid, CD	Central Area
Capt	SJ	Reid	5e RALC
Capt	WB	Rendell, CD	Newfoundland District
Capt	JH	Rennie, CD	Directorate of Manpower Requirements and Establishments, CFHQ
Capt	DM	Robb	2 RCHA
Capt	TE	Roberts, CD	CFB Europe
Capt	LH	Robitaille, CD	Canadian Armament Design and Experimental Establishment, CFB Valcartier
Capt	TAW	Robson, CD	Assistant Chief of Defence Staff Information Handling Agency, CFHQ
Capt	RB	Rogers	Student, Canadian Land Forces Command and Staff College
Capt	DJ	Rooke	1 RCHA
Capt	JA	Roszell	1 RCHA
Capt	JGVN	Rouleau	5e RALC
Capt	DE	Rousseau, CD	CFB Kingston
Capt	RDC	Rowdon	Directorate of Personnel Career Administration, CFHQ
Capt	JH	Ryan	UNTSO

Capt	RA	Salisbury, CD	Hamilton District
Capt	GH	Sawatzki, CD	CFB Shilo
Capt	DG	Schott, CD	HQ 4 Canadian Mechanized Brigade Group
Capt	GDC	Scott	Student, Canadian Land Forces Command and Staff College
Capt	RJM	Selman	1 RCHA
Capt	GM	Shellard, CD	CFB Chilliwack
Capt	WM	Shellnut	1 RCHA
Capt	P	Sherrick, CD	CFB Shilo
Capt	JFLP	Simard, CD	Canadian Forces Recruiting Centre, Montreal
Capt	JMA	Siple	5e RALC
Capt	AHC	Smith, CD	HQ 2 Combat Group
Capt	GR	Smith	Student, Canadian Land Forces Command and Staff College
Capt	MW	Smith, CD	Post graduate studies, University of Alberta
Capt	SM	Smith, CD	CFB Petawawa
Capt	TAH	Sparling	5e RALC
Capt	JB	Stephens	Hamilton District
Capt	BE	Stephenson	1 RCHA
Capt	JC	Stewart	1 Airborne Battery, CAR
Capt	AG	Stoddard, CD	Directorate of Personnel Requirements Control, CFHQ
Capt	DB	Struthers	1 RCHA
Capt	SS	Takahashi	1 Airborne Battery, CAR
Capt	JJG	Tanguay, CD	District No 3 Du Quebec
Capt	JER	Tattersall	Test and Evaluation Establishment, CFB Gagetown
Capt	LV	Thibedeau	424 Transport Squadron
Capt	RG	Thomason, CD	CFB Borden
Capt	GE	Trainor, CD	Air Defence Command HQ
Capt	GWA	Trimble	3 RCHA
Capt	VA	Troop, CD	3 RCHA
Capt	DG	Tudin	2 RCHA
Capt	RS	Usher	Directorate of Land Operations Readiness, CFHQ

Capt	OE	Vanrooyen	1 RCHA
Capt	JM	Vanstone	Atlantic Area
Capt	KD	Varey	HQ Combat Training Centre, CFB Gagetown
Capt	HA	Walinsky	Combat Arms School, CFB Gagetown
Capt	D	Walker, CD	Directorate General of Ordnance Systems, CFHQ
Capt	GM	Walker	Artillery Instructor Course
Capt	TJ	Walsh	Deputy Chief Personnel Assistant/Careers, CFHQ
Capt	DB	Walton	Student, Canadian Land Forces Command and Staff College
Capt	RB	Wark	Canadian Forces Officer Candidate School, CFB Chilliwack
Capt	WR	Watling	Mobile Command HQ
Capt	JAS	Watts	CFB Shilo
Capt	KWJ	Wenek	3 RCHA
Capt	DI	Whalen, CD	Central Area
Capt	ET	Whalen, CD	424 Transport Squadron Detachment UNMOG (IP)
Capt	AJ	Wilson	Combat Arms School, CFB Gagetown
Capt	MR	Wilson	5e RALC
Capt	RS	Wilson	3 RCHA
Capt	NA	Wright, CD	Directorate General of Ordnance Systems, CFHQ
Capt	WF	Wright	2 RCHA Air OP Troop
Capt	AM	Zamoyski, CD	CFB Montreal
Capt	WL	Zawyrucha, CD	Combat Arms School, CFB Gagetown

Lt	CR	Anderson	2 RCHA
Lt	JA	Ball	E Bty, 2 RCHA
Lt	DV	Bentley	5e RALC
Lt	JM	Bernier	5e RALC
Lt	FB	Brake	E Bty, 2 RCHA
Lt	CZJ	Chamberland	5e RALC

Lt	KL	Clarke	2 RCHA
Lt	AB	Cooney	2 RCHA
Lt	RN	Crooks	Undergraduate studies, University of Alberta
Lt	RL	Dallaire	5e RALC
Lt	PB	Fowler	2 RCHA
Lt	JP	Garneau	Combat Arms School, CFB Valcartier
Lt	TD	Gero w.	3 RCHA
Lt	JW	Gill en wat er	Exchange Officer, French Army
Lt	BA	Hamilton	E Bty, 2 RCHA
Lt	FG	Hickey	E Bty, 2 RCHA
Lt	RP	Hodgson	1 RCHA
Lt	JV	Howard	Directorate General Information Handling Agency, CFHQ
Lt	DW	Iler	2 RCHA
Lt	ME	Kennedy	2 RCHA
Lt	RT	King	2 RCHA
Lt	JDL	Krauter	1 Airborne Battery, CAR
Lt	JR	Laberge	5e RALC
Lt	DJ	Lacey	1 Airborne Battery, CAR
Lt	DJ	LeClair	2 RCHA
Lt	RW	Lindbloom	5e RALC
Lt	JM	Lemi eux	5e RALC
Lt	NB	Linton	2 RCHA
Lt	JE	MacBride	E Bty, 2 RCHA
Lt	DN	McLaughlin	3 RCHA
Lt	CO	McAllister	5e RALC
Lt	WD	McRobbie	E Bty, 2 RCHA
Lt	TW	Melnyk	3 RCHA
Lt	DC	Milne	Y Bty, 2 RCHA
Lt	RB	Mitchell	Post graduate studies, King's College, UK
Lt	DS	Moreside	E Bty, 2 RCHA
Lt	MB	Morri son	1 RCHA

Lt	BW	Olynick	3 RCHA
Lt	JD	Ongman	1 Canadian Forces Flying Training School
Lt	JK	Orton	3 RCHA
Lt	DE	Peterson	2 RCHA
Lt	DJ	Phillips	Combat Arms School, CFB Gagetown
Lt	TR	Pond	3 RCHA
Lt	WW	Riedel	3 RCHA
Lt	AE	Roach	1 RCHA
Lt	TP	Ross	5e RALC
Lt	NK	Rutter	3 RCHA
Lt	PS	Sanderson	3 RCHA
Lt	BS	Saunders	E Bty, 2 RCHA
Lt	HN	Simister	E Bty, 2 RCHA
Lt	WJ	Soucie	1 Airborne Battery, CAR
Lt	KG	Spencer	5e RALC
Lt	SM	Tolson	2 RCHA
Lt	JG	Trepanier	5e RALC
Lt	MJ	Winter	1 RCHA
Lt	VW	Zaharychuk, CD	Canadian Army Design and Experimental Establishment, CFB Valcartier

O/C	RH	Burnford	Royal Military College
O/C	RE	Cockram	Royal Military College
O/C	MG	Burfit	University of British Columbia
O/C	JP	Culligan	McMaster University
O/C	JB	Dick	Carleton University
O/C	WJ	Douglas	Royal Military College
O/C	JD	Gibson	Royal Military College
O/C	MR	Grinius	Royal Military College

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O/C	WJ	Holtz	Royal Military College
O/C	FW	Kendall	Royal Military College
O/C	GJ	McIlwain	Royal Military College
O/C	TA	Stewart	Carleton University
O/C	RC	Stowell	Royal Military College

CWO	Barham	JFW	Pacific Area
CWO	Binkley	LF	CFB Shilo
CWO	Brim	AJ	Assistant Directorate General Ordnance Systems CFHQ
CWO	Campbell	TH	Combat Arms School, CFB Gagetown
CWO	Clarke	HA	CFB Shilo
CWO	Crawford	DJ	Canadian Armament Design Engineering Establishment, CFB Valcartier
CWO	Fraser	MJ	Directorate of Artillery, CFHQ
CWO	Holtom	SR	Atlantic Area
CWO	Holodivsky	T	Canadian Armament Design Engineering Establishment, CFB Valcartier
CWO	Hughes	DL	Central Area
CWO	Jackson	R	Canadian Forces Warrant Officer School, CFB Esquimalt
CWO	Malcolm	GN	5e RALC
CWO	Miller	GW	Canadian Armament Design Engineering Establishment, CFB Valcartier
CWO	Nickerson	RD	Directorate of Armament Engineering, CFHQ
CWO	Richmond	JS	2 RCHA
CWO	Sonnenberg	W	Combat Arms School, CFB Gagetown
CWO	Stinson	KJ	Directorate of Armament Engineering, CFHQ

CWO	Sutherland	RG	Directorate of Manpower Programming and Control, CFHQ
CWO	Syrette	R	Directorate of Armament Engineering, CFHQ
CWO	Vallee	LJ	1 RCHA
CWO	Walker	LE	Directorate of Armament Engineering, CFHQ
CWO	Williams	DE	Canadian Armament Design Engineering Establishment, CFB Valcartier
CWO	Wilt	SG	3 RCHA
CWO	Winter	PA	Combat Arms School, CFB Gagetown
CWO	Witt	SG	Prairie Area
CWO	Wood	FC	Pacific Area
MWO	Armstrong	GS	1 RCHA
MWO	Arnold	CH	Combat Arms School, CFB Gagetown
MWO	Begin	JP	5e RALC
MWO	Bittle	DD	Canadian Armament Design Engineering Establishment, CFB Valcartier
MWO	Blackwell	EJ	E Bty 2 RCHA
MWO	Brown	AF	Combat Arms School, CFB Gagetown
MWO	Brown	EA	Directorate of Land Operational Research, CFHQ
MWO	Byer	RB	3 RCHA
MWO	Clarke	LH	Directorate Postings and Careers (Men) CFHQ
MWO	Cloutier	PD	1 Airborne Battery, CAR
MWO	Conway	W	Directorate of Operational Readiness Land, CFHQ
MWO	Cove	VJ	Combat Arms School, CFB Gagetown
MWO	Darling	WD	Assistant Directorate General of Ordnance Systems, CFHQ
MWO	Fenske	RJ	Canadian Armament Design Engineering Establishment, CFB Valcartier

MWO	Fleet	WM	Combat Arms School, CFB Gagetown
MWO	Goodwin	RC	1 RCHA
MWO	Harrup	C	Prairie Area
MWO	Hawkes	DW	1 RCHA
MWO	Heitshu	RA	5e RALC
MWO	Hibbett	RT	2 RCHA
MWO	^R Johnson	BE	2 RCHA
MWO	Larkin	TL	3 RCHA
MWO	Lentle	SW	3 RCHA
^{CWO} MWO	Lunan	WM	Canadian Forces Warrant Officer School, CFB Esquimalt
MWO	MacDonald	DB	3 RCHA
MWO	MacDonald	FJ	1 RCHA
MWO	MacDonald	JA	E Bty 2 RCHA
^{CWO} MWO	MacDonald	MN	1 RCHA
MWO	McBay	CB	Directorate of Land Operational Research, CFHQ
MWO	McCabe	JE	3 RCHA
MWO	McTaggart	AE	1 RCHA
MWO	Morris	EJ	1 RCHA
MWO	Moss	FE	Directorate Postings and Careers (Men) CFHQ
MWO	Mulherin	AJ	Air Transport Command Headquarters, CFB Toronto
MWO	Nesdoly	LJ	3 RCHA
MWO	Niles	TW	Prairie Area
^{CWO} MWO	Patrick	EE	2 RCHA
MWO	Pyke	RG	3 RCHA
MWO	Rhyno	RM	Directorate of Armament Engineering, CFHQ
^L MWO	Rice	HJ	2 RCHA
MWO	Sauve	MR	5e RALC
MWO	Sawatzky	R	Combat Arms School, CFB Gagetown
MWO	Schoen	E	3 RCHA

MWO	Speare	RH	3 RCHA
MWO	Stephenson	W	Directorate Engineering Plans and Coordination, CFHQ
<i>cwo</i> MWO	Thomas	DC	1 RCHA
MWO	Thomson	RL	3 RCHA
MWO	Tripp	WE	Assistant Directorate General Ordnance Systems, CFHQ
MWO	Turner	J	1 RCHA
MWO	Wade	GH	Directorate of Manpower Distribution Control, CFHQ
MWO	Walker	BB	Directorate of Personnel Career Administration, CFHQ
MWO	Walsh	FH	Central Area
MWO	Wells	EE	2 RCHA
MWO	Williams	SG	Central Area
MWO	Yavis	CC	E Bty 2 RCHA
WO	Aucoin	JB	Maritime Pacific HQ
WO	Bader	WR	3 RCHA
WO	Baird	JR	Combat Arms School, CFB Gagetown
WO	Balma	RA	Combat Arms School, CFB Gagetown
<i>M</i> WO	Barrett	EG	3 RCHA
WO	Boudreau	A	Combat Arms School, CFB Gagetown
WO	Brown	DW	CFB Soest
WO	Carter	AG	1 Airborne Battery, CAR
WO	Clifton	JN	1 RCHA
WO	Clifton	HC	2 RCHA
WO	Currie	A	1 Airborne Battery, CAR
WO	Dent	WW	Combat Arms School, CFB Gagetown

Skinner ✓
 Levesque
 Harrison WO ✓
 Stickland
 Tiddeman
 Targson
 Hovey
 Bowden

WO	Donnelly	BE	1 RCHA
WO	Douglas	RA	Combat Arms School, CFB Gagetown
WO	Fournier	PE	5e RALC
WO	Gardner	EJ	Combat Arms School, CFB Gagetown
WO	Garron	AR	2 RCHA
WO	Hatton	WD	1 RCHA
WO	Hebner	WE	Prairie Area
WO	Higgins	WF	Canadian Forces Officer Candidate School CFB Chilliwack
WO	Hogan	GA	3 RCHA
WO	Jobe	DN	1 RCHA
WO	Kehler	A	1 RCHA
WO	Landry	MJ	Secteur de l'Est
WO	LeBlanc	LP	5e RALC
WO	Lebreton	JH	5e RALC
WO	Lepage	MA	2 RCHA
WO	MacLean	AM	5e RALC
WO	MacLeod	RO	Maritime Pacific HQ
WO	McCulloch	DA	Combat Arms School, CFB Gagetown
WO	McGraw	JD	5e RALC
WO	McLean	JA	Combat Arms School, CFB Gagetown
WO	McCormick	JE	Combat Arms School, CFB Gagetown
M WO	McPherson	AA	Y Bty 2 RCHA
WO	Morley	JM	Combat Arms School, CFB Gagetown
WO	Mossey	JA	Combat Arms School, CFB Gagetown
WO	Oderkirk	CG	1 RCHA
M WO	Parkinson	GL	1 Airborne Battery, CAR
WO	Parsons	IB	Atlantic Area
WO	Perry	WK	Y Bty 2 RCHA
WO	Pilch	RA	CFB Winnipeg
WO	Pittman	WS	Canadian Forces Recruiting Station, CFB Cornwallis

WO	Resch	GD	3 RCHA
WO	Ryan	EP	Directorate of Operational Readiness Land, CFHQ
WO	Sabean	MR	2 RCHA
WO	Schofield	GW	1 Airborne Battery, CAR
WO	Shouldice	EJ	Y Bty 2 RCHA
M WO	Snell	D	1 RCHA
M WO	Surette	KJ	Combat Arms School, CFB Gagetown
WO	Thiverge	MD	Canadian Forces Recruiting Station, CFB Cornwallis
WO	Ukrainetz	P	1 RCHA
M WO	Wagg	FG	1 RCHA
WO	Walker	HS	Combat Arms School, CFB Gagetown
WO	Willet	DJ	1 Airborne Battery, CAR



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