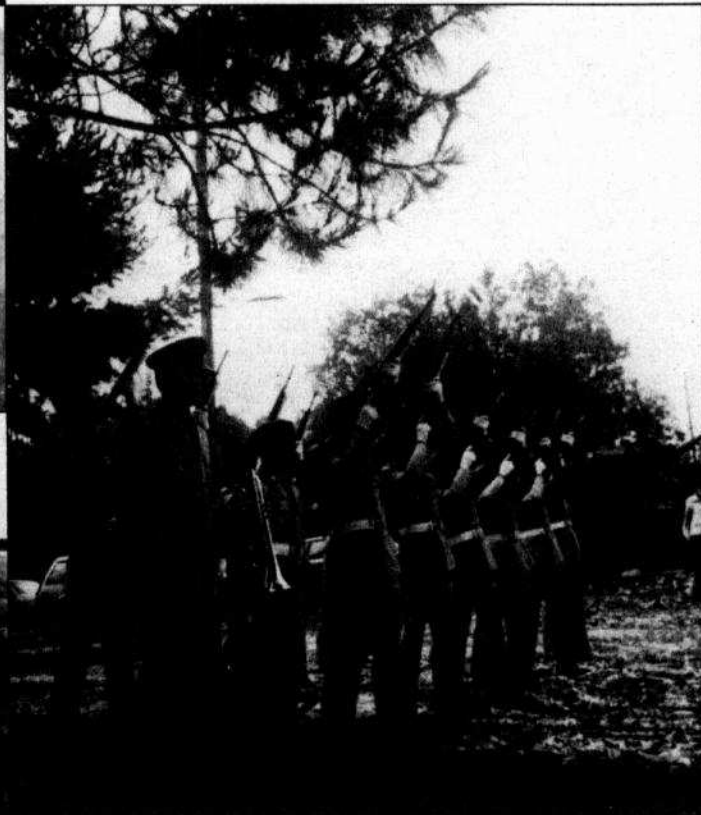




A U T U M N - 1 9 9 2



# Armour *Bulletin*



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# Armour Bulletin

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### The Armour Bulletin

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### Armour Bulletin Writer's Guide

#### Subjects

We are interested in all subjects relating to Armour affairs that would be of interest to Armour personnel. This would include articles on R&D, personnel, equipment, training, tactics, and history.

#### Style

In that a readable article is preferred, fit the style to the subject matter. Articles should be double spaced, typed on one side of the paper. Articles should normally not exceed 2,000 words. Only material of an unclassified nature should be submitted. Articles will be published in both official languages.

#### Illustrations

Art work-sketches, black and white or colour photographs, maps, line drawings, diagrams, etc. enhance the attractiveness and understanding of an article. They must be sharp and of high contrast. Washed out, grey, fuzzy and greatly enlarged photos reproduce poorly. Do not submit photocopies.

#### Next issue submission deadline

#### Prochain numéro date limite de soumission

Winter 31 Oct. 92	Hiver 31 oct. 92
Summer 30 Apr. 93	Été 30 avril 93



# Colonel Commandant's Message

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The rapid changes in defence policy over the past few years which results from the dual impact of the changes in the geo-strategic situation and budgetary constraints have had and are having major effects on the posture of the Canadian Armed Forces. The reduced posture resulting from the defence policy statement of April 1992, including the acceleration of the withdrawal of stationed forces from NATO from Europe and severe impact of such reductions on the Canadian Army presents the Armour Branch with a number of new problems, challenges and opportunities. Meeting and overcoming the problems and challenges will demand outstanding efforts on the part of all "black hats" and the co-operation of all members of the combined arms team to ensure that the general purpose combat capabilities of the Canadian Army are maintained at the highest level and remain effective in a wide range of potential regional conflict situations from low to high intensity in the various areas of the world where the armed combatants are equipped or are becoming equipped with increasingly lethal and sophisticated modern weapons systems. To this end we should ensure that our repatriated Leopard C1 main battle tanks are upgraded progressively with thermal imaging devices, improved penetration capabilities and protection so they will remain battle worthy beyond the year 2000. Similarly, the new armoured reconnaissance vehicles must be equipped with "state of the art" weapons and surveillance systems so they, in combination with the Leopard C1 tanks, will give the army a modern armoured reconnaissance capability.

Repatriation and distribution of Leopard C1 main battle tanks among the manoeuvre armoured regiments and training establishments will also have positive benefits. It will provide the Army with a renewed opportunity to enhance the knowledge and combat capabilities of all arms in the conduct of mechanized warfare and to practice the operational art more realistically in training and field exercises in Canada than has been possible for some years.

Implementation of the Total Force concept also demands our serious attention. Over the years since the end of World War II, the Armoured Corps has developed a strong co-operative, effective and supportive relationship among the Regular and Militia armoured regiments which, today, provides us with an excellent basis upon which to begin to build the armour component of the Total Force Army. We should not underestimate, however, the scope and nature of the challenges that we must now meet. First, we must develop new methods of recruitment, training and retention which will ensure the Reserve complement of the integrated armoured manoeuvre regiments within operational formations and the training infrastructure can be made effectively ready and callable for training and emergencies. Second, we must ensure that those units designated as deployment forces are assigned meaningful operational and training roles and that they are provided with an adequate complement of Regular Force personnel and a scale of equipment within their establishment to allow them to build and develop the core of an armoured regiment or armoured reconnaissance regiment. Such units must be made capable of expansion for sustainment, reinforcement and replacement of manoeuvre units in contingency operations in addition to providing guards for vital points and a basis for broader mobilization.

We must always be concerned about the longer term. In periods of financial constraint there will always be a tendency when seeking replacement equipments to modify or reduce the operational requirements for battlefield equipment and to select less capable surrogate weapons systems. This should be avoided to the greatest possible degree. In these circumstances, therefore, it is vital that, in the interest of all members of the combined arms team, we in armour continue to maintain our professional integrity and "keep the faith" by continuously refining and reaffirming our doctrine and stating what should be the most appropriate armoured equipment and organizations based on the analysis of real battlefield experience on a worldwide basis and the development of operational requirements for improved weapons systems for the future air/land battle environment.

George G. Bell  
Brigadier General (rtd)  
Colonel Commandant

A handwritten signature in cursive script that reads "George Bell".

# Director of Armour's Message

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Since my last foreword in the Winter 91 edition of the Armour Bulletin, there has been a great deal of activity concerning the restructuring of the Army and the Branch, although this will not have been readily apparent to many of you. With this in mind, I will use this medium to try and briefly clarify some of the issues from the Armour Branch perspective.

As you know, it had been planned that a Stationed Task Force (STF) of battle group size would remain in Europe as Canada's contribution to NATO following the withdrawal of CFE. The Armour Branch's contribution to the STF was to have been two armour squadrons equipped with Leopard tanks. However, the STF was eliminated from the force structure as a consequence of the February 1992 federal budget. For the Armour Branch, this means that our already reduced PML will be decreased by another 250 establishment positions, approximately. As a consequence, the question of the Branch's Regular Force ORBAT becomes more problematic. Can the Branch afford to retain four regiments when its PML is being reduced by at least the size of a regiment?

On a brighter side, it is certain that we will bring all of the Leopards home from Europe and almost equally certain that we will operate sufficient of them to permit a three-squadron armour regiment to be generated responsively for contingency operations. However, there are still a number of issues which have not yet been decided:

- how many tanks will be in service overall;
- where the tanks will be operated;
- how many squadrons will be equipped with tanks and how many with Cougar;
- how the tactical training requirement in Gagetown will be met; and
- how Total Force will be implemented within the Branch, with respect to equipment, training, manning and operational tasking.

The answers to these questions will be resolved in army headquarters, in full consideration of all the facts, as quickly as is practicable.

Turning from structuring in general to equipment in particular, you will be aware by now that the multi-role combat vehicle (MRCV) project was a victim of Budget 92. From the Armour Branch perspective, the outcome is a good one, in my view. We have seized the opportunity, as offered, to satisfy our reconnaissance requirement through a fast-tracked, sole-source Lynx replacement project; and the need to review our armour capability, as a subsequent step, has been formally recognized by senior members of the Department.

As presently proposed, the Lynx replacement project has the potential to meet virtually all of our qualitative and quantitative needs. The LAV 25 has acquired a solid reputation with the US Marine Corps, and it is our intention to enhance its capabilities with a state-of-the-art surveillance package. As for the firepower, the 25mm chain gun and associated turret and thermal sight are a proven and effective system which, with modern munitions, will meet most of our stated capability requirements.

For the short term, because it has been judged to be too costly to maintain any longer, the Lynx will be replaced with the M 113. The changeover will begin this fall starting with the Strathcona's, working East, until the Lynx in all of the regiments and the School have been replaced. Completion is anticipated sometime in the fall of 93.

The armour picture is less clear, mainly because of the restructuring decisions which are still pending. As the timeframe for introducing a future ACV has been delayed beyond that which was initially planned, it makes sense to upgrade the Leopard tank to maintain an effective capability in the interim. However, the saleability of such a proposal – without a clear view of the longer term plan for the Leopard fleet – is doubtful. For the time being, conversion to the 105mm Improved Weapon System, complete with muzzle reference system and new ammunition, has been proposed for inclusion in the army's capital plan. Thermal imaging, a more expensive upgrade, will have to wait until either the current climate changes or the way ahead is more certain.



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Because Cougar was totally unacceptable for use on the mid to high intensity battlefields, which were our most likely and demanding tasks in the Cold War era, we have long been reluctant to embrace it as an operational vehicle. But the situation has changed, and we need to update our views accordingly. The most likely tasks we face today are in the area of low-intensity conflict. For this type of activity, a relatively light direct-fire support vehicle will be a desirable and, I believe, essential component of the army's requirement for armour. Such a vehicle will permit the Armour Branch to fulfil its role in a combined arms force deployed for peacekeeping, stability operations or aid of the civil power. In contrast, the tank, though clearly essential for the mid-intensity scenario – our most demanding task – might be politically unacceptable or a deployment limitation in low-intensity missions. Cougar is far from being the ideal vehicle for low-intensity conflict, and investing in improvements to it has little immediate appeal. Nevertheless, it will remain valuable for training and acceptable for operations until it can be replaced. Therefore, some funds will have to be committed to maintaining the Cougar's present level of capability in the interim.

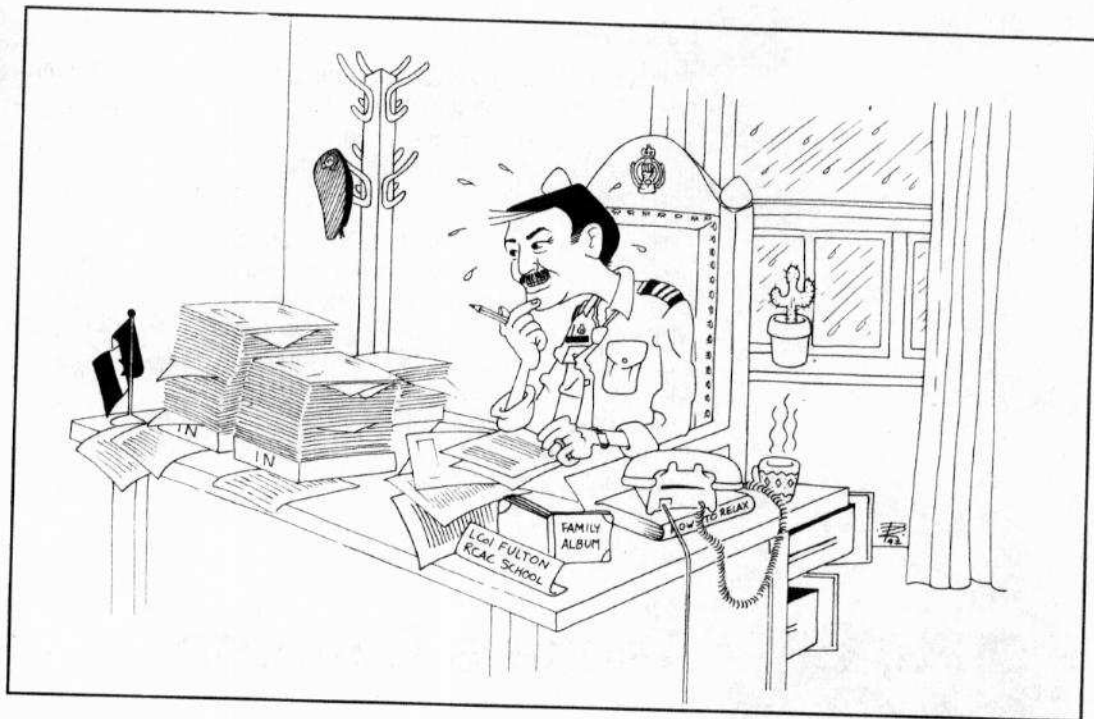
Let me leave you with a final assessment. Although I am concerned about how the Branch will eventually be structured, I am not worried about the future of the Armour Branch overall. Even with a reduced PML and a number of structuring and equipping issues still to be addressed, I am confident that the Branch will continue to be capable of fulfilling its role in the combat team and that those who seek a fulfilling career as Armour soldiers will be able to continue to do so – now and well into the future.

By the time this edition of the Armour Bulletin is published, I will have handed over my duties, as Director of Armour, to my successor, Colonel P. Leentjes. In closing, I wish to take this opportunity to say that it has been a great honour and privilege for me to have served as the Director of Armour. To all in the Armour family, my very best wishes and my sincere thanks for all the support you have given me during my tenure.

N. B. Jeffries  
Colonel  
Director of Armour



## LETTERS TO THE EDITOR



Dear Editor,

I am writing with respect to your article on Sergeant Hugh Cairns, VC, in the Spring 1991 issue of *Armour Bulletin*.

My interest in Sergeant Cairns as a VC recipient was doubled when I read that he won his VC after the armistice, 11 November 1918, which made him unique amongst Commonwealth forces. I then read the French translation to find out that he had been wounded 01 December 1916 and died of his wounds 02 December 1918. Tough guy, poor doctors or a type 'O'?

A quick call to the Directorate of History confirmed the fact that Sergeant Cairns won his Victoria Cross for action on 01 November 1918 and died of wounds received during that action on 02 November 1918.

It is unfortunate that you have failed to report one of your Corps most highly decorated personnel correctly. I trust that the attached FAX copy from the book *Valliant Men* on Sergeant H. Cairns is helpful in correcting the mistake.

Yours sincerely,

Captain N.J.S. McCulloch, CD

*Reply*

Notwithstanding the fact that the first two options are entirely possible... (God knows the CF have a number of tough guys) in the case of Sgt Cairns, it was definitely a regrettable type "O".

Thank you for correcting it.

Dear Editor,

I was particularly interested in the article "The Canadian Forces New Bison" written by Master Corporal George Wallace. I served with Bill Claggett in W. Ger. in the Garrys. He is a skilled sales rep for GM but the Corps has suffered criminally for lack of a real "panzer" (which is pretty typical for Canada). Obviously this is not Bill's fault but can more accurately be traced back to PE Trudeau et al.

It was especially gratifying to read the high quality of MCpl Wallace's content and knowledge. His command of the English language is an art many officers found difficult to master.

Keep up the good work under circumstances detrimental to morale.

Yours sincerely,

Capt Brian J.M. Caldwell, CD  
(Retired)

Dear Editor,

Thank God for Corporals. The article "The Canadian Forces New Bison" in the Spring 1991 issue of Armour Bulletin is very timely, and Master Corporal Wallace is to be commended for it.

Military equipment is, or at least should be, an extension of the Government's military policy. If the roles assigned to the Canadian Military call for wheeled LAV's, so be it. BUT ALL SHOULD REMEMBER, from the Prime Minister down, a LAV doesn't look like a tank, doesn't sound like a tank, doesn't traverse ground like a tank, and doesn't fight like a tank – it isn't a tank.

J.A. Cameron, LCol (rtd)

1943-45 Troop Leader Ontario Regt (11 CAR) | Cdn Armd Bde

1945-70 Strathcona's and 8CH

### Reply

Once again, congratulations to MCpl George Wallace.

## CORPS UPDATE

# Tankers Reunion

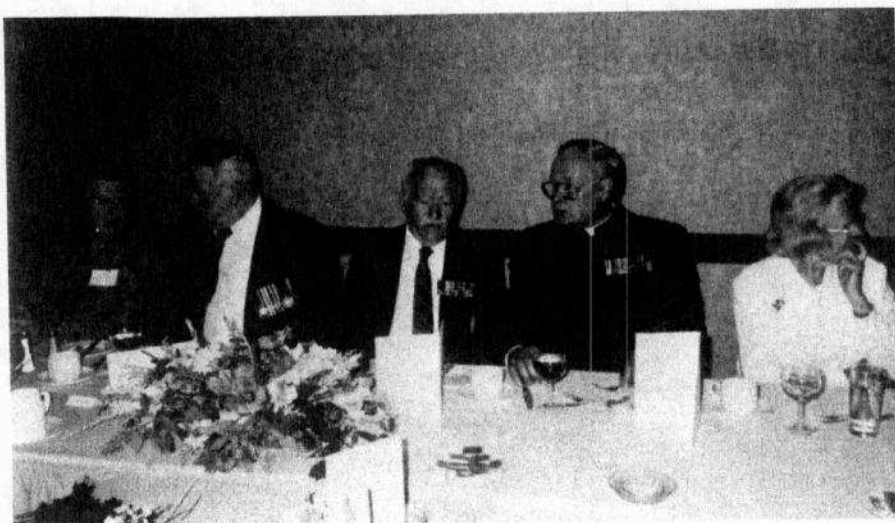
By Major D.J. MacNeil



Eighty-five of Canada's original "Tankers", all veterans of the Three Rivers Regiment (Tank), held their bi-annual reunion this year in Saint-Sauveur, Quebec. On hand to greet them were troopers from le 12e Régiment blindé du Canada stationed in Valcartier, as well as a contingent from le 12e Régiment blindé du Canada (Milice) from Trois-Rivières, Quebec.

The young troopers were glad to have had this opportunity to show off some of their equipment to their fellow "Black Hatters" and to have had the chance to chat with them informally about life as an armour trooper both now and in their day. A half squadron of Cougar AVGP's, each demonstrating a particular theme on life as a present day trooper, was on display at the sports field in Saint-Sauveur. The veterans quickly made comparisons between the Cougars and their Shermans of old. Not only did they impress the young troopers with a firm knowledge of their equipment and tactics, but on occasion convinced their young counterparts of some advantages they felt the Sherman had over the Cougar. A display of personal equipment carried during operations, as well as the Recce Squadron's surveillance equipment were also shown to the veterans to illustrate the improvements in equipment available to the troopers of today.

A particular highlight for the veterans appeared undoubtedly to be a display consisting of IMP or "hard rations" presently used during field exercises. In true armour fashion, the sight of steam rising from the "Coleman" stoves clearly meant to the veterans that an impromptu "brew up" was in progress and they quickly lined up for a taste. The veterans' "overall" opinion of field rations had not changed over the years however, they allowed that the young troopers of today clearly ate better than they had during the war.



Formal Dinner from left to right: Mrs Doris O'Dell, Associate Member, Veteran Len Murphy National President, BGen (Ret'd) Fernand Caron, CO Three Rivers Regiment (Tank), The most Reverend J.L. Wilhelm, DD, MC, CD, Archbishop (Emeritus) of Kingston, Regimental Padre and Mrs Caron.

*Veterans form up at the War Memorial in Morin Heights.*



The same evening a formal dinner was held for the veterans and their wives with the young troopers serving Regimental wine. As the veterans arrived wearing the many medals they had earned during the war, it became very evident to the young troopers that a significant part of their Regimental history was present that evening.



*Three Rivers Regiment Veterans sample hard rations served up by Sgt Etienne Maltais B Sqn 12e RBC.*

Originally an infantry unit, the Regiment was redesignated a tank unit on 15 December, 1936. The Regiment was mobilized on 1 September 1939. In addition to drawing volunteers from the Montreal and Trois-Rivières regions, many volunteers arrived from various infantry units across the country. The bilingual flavour of the Regiment was clearly evident throughout the evening as the veterans conversed comfortably in both English and French and on occasion, in a little Italian. The Three Rivers Regiment saw most of its action in Italy during the Second World War, participating in the invasion of Sicily, the battles of Termoli, Ortona and Cassino as well as the penetrations of the Gustav, Hitler and Trasimene lines. Brigadier-Général (Ret) Fernand Caron, the Commanding Officer during the war, having just returned from a Veteran's Affairs sponsored visit to Italy, assured the veterans during his speech at dinner, that their sacrifice was indeed fruitful as he described the progress and prosperity enjoyed by the Italians presently living in those battlefields of long ago. Transferred to Northwest Europe on 6 March 1945, The Regiment fought mainly in the Netherlands, distinguishing itself at Appledoorn on 1 April. On 27 April 1945, the Regiment ended a two year period of almost continuous operations at which time it was noted as having been the only Commonwealth unit to have fought alongside all Allied Armies and to have fought without relief for an amazing duration of five months and 19 days consecutively. The Regiment was demobilized on 30 November 1945 and reverted to a militia unit based in Trois-Rivières.

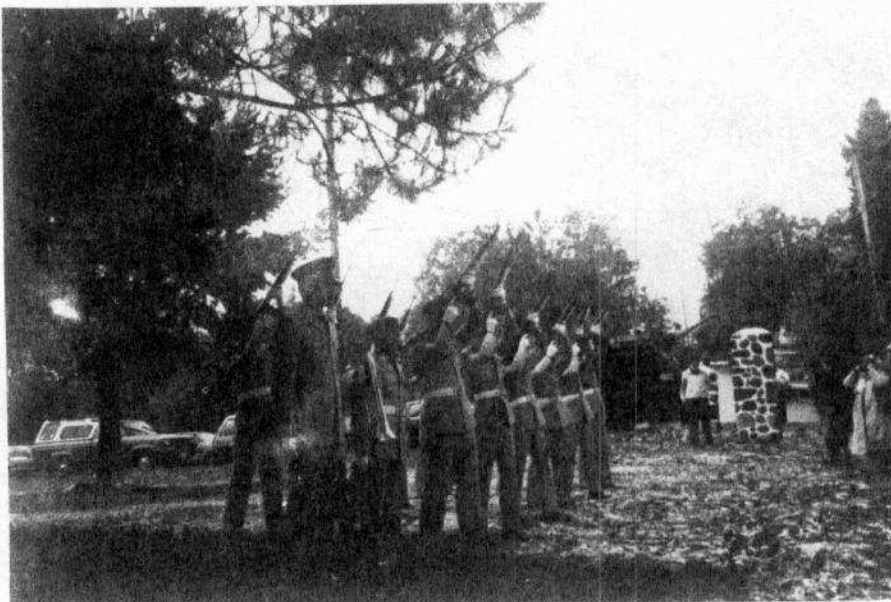




*Mcpl Pierre Lefort and Tpr Jean-Luc Senecal display Alert Kit.*

On 6 May 1968, with the unification of the Armed Forces, the formation of a new regular force armoured regiment was authorized to support the newly formed French Canadian Brigade in Valcartier. Le 12e Régiment blindé du Canada, as with the Three Rivers Regiment, drew troopers from the other armoured regiments in Canada as well as volunteers from the Royal Vingt-Deuxième Regiment. The customs and traditions of the Three Rivers Regiment (Tank) later the 12th Canadian Armoured Regiment were adopted by the newly formed Regiment and continue to be carried on to this day.

Although the veterans and their ladies danced long into the evening, Sunday morning saw them up bright and early to attend their executive meeting and to make preparations for Sunday's activities.



*Honour Guard fires three volleys to salute fallen comrades of Three Rivers Regiment (Tank).*

The highlight of the final day of the reunion involved a very moving Remembrance Ceremony held at the War Memorial in Morin Heights, Quebec. Upon arrival, the veterans were quickly formed into ranks by Veteran Eddy Desjardins from Morin Heights. The Regimental Padre, Archbishop J.L. Wilhelm, DD, MC, CD, from Kingston then presided over the Ceremony of Remembrance. Veteran Hector Barcelo read the list of fallen comrades and Brigadier General (Ret) Fernand Caron accompanied by Veteran Frank Johnson laid a wreath on behalf of the Veterans and the Regimental members presently serving. An honour guard from B Squadron 12e RBC, under the command of Sgt Robert Desabrais, then fired three volleys to honour the fallen comrades while a lone bugler from the R22eR played the Last Post. This completed, the veterans paid their individual respects to their fallen comrades and dispersed quietly to reunite at the Legion Branch in Morin Heights where the ladies had prepared a wonderful brunch for all participants.

The weekend was clearly an event which served to more closely bind both the veterans and the young troopers serving today. All the young troopers were proud of the manner in which their veterans had organized such a first class affair, and in turn the veterans clearly saw a bit of themselves in the young troopers as they watched them effectively operate and confidently brief on their equipment. With all festivities completed an exchange of gifts was conducted between the veterans and the young troopers. Later, the Three Rivers Regiment (Tank) veterans dispersed to various locations across Canada and the United States to await the next call from their comrades to reunite and talk once again of tankies, bogey wheels, fire orders and some small towns in Italy and the Netherlands that they had visited some time ago. Adsum...

**Major D.J. MacNeil** is the Officer Commanding Headquarters Squadron with the 12e Régiment Blindé du Canada.

# Royal Springbok 91

by Capt J.A. Bradley and Lt M. Novati



*"3 this is 31 contact, wait out".*

The simple transmission over a Combat Team radio net starts a flurry of activity, culminating in the destruction of an enemy platoon position.



*2 Troop is bombed up at a battle replenishment.*

During the period 2-7 April 1991, C Squadron, The Royal Canadian Dragoons conducted Exercise Royal Springbok in the CFB Gagetown training area. Royal Springbok is an annual live fire Combat Team Exercise. It is the most realistic and important training conducted each year by the Squadron.

Other members of the Combat Team were: Hotel Company, The Second Battalion, The Royal Canadian Regiment; a mortar group, a recce section and a TOW section also from 2 RCR; four 105mm howitzers from W Battery, The Field Artillery School; and an Armoured Engineer Troop from 22 Field Squadron.

On 2 April the key elements of the Combat Team arrived in Worthington Tank Park (WTP) to start an intensive dry training program. The vital importance of Tank/Infantry cooperation was again stressed to

leaders at all levels. Once Troop/Platoon drills were perfected, a two-day practice exercise at the Combat Team level ensued. Soldiers of 2 RCR were quick to adapt to working with the Leopard Main Battle Tank and could be seen hugging the back of the advancing armour. When the CO of C Squadron, Major C.J. Glauninger, and OC Hotel Company, Major Brad Boswell, were satisfied with the level of training, everyone moved back to WTP to commence Battle Procedure for the real thing.

While the Troop Leaders, Platoon Commanders and Support Element Commanders were receiving orders, WTP was a beehive of activity. Sergeant Donny Savoie, the C Squadron Adm Sergeant, was kept busy supervising the bombing up of all the tanks. After all the tanks were bombed up, a quite relieved Sgt Savoie said, "I was really impressed by the way everyone who was free came over to help. Some mechanics, the Administrative Officer, and even the two Medical Assistants pitched in".

While the crews loaded the tanks, the mechanics were kept busy as well. Cpl Paul Cogswell, a Fire Control Systems Technician, could be seen bouncing from turret to turret trouble shooting all the last minute faults. The "Royals" also kept themselves busy preparing their Armoured Personnel Carriers and checking their weapons to ensure all would run smoothly when the order to dismount came.



*Gunners get realistic training firing on the move over difficult terrain as tanks and APCs close in on the objective.*



*Combat Team Commander, Maj C.J. Glauninger conducts a quick turret top O-Group.*

Early Saturday morning the combat team departed WTP. On route to the Line of Departure the lead tank, crew commanded by Sergeant Mike Brabant, encountered a formidable obstacle in the form of an enemy road block. Two thunderous explosions immediately echoed down the column of fighting vehicles. Sergeant Brabant's two HESH rounds shattered the obstacle and it was now the infantry's turn to go to work. Once the Infantry had swept and secured the area the Engineers displayed the awesome power of their newly acquired Armoured Engineer Vehicle. MCpl Bill Layden of 22 Field Squadron moved the AEV forward and cleared the road with seemingly little effort. After seeing the AEV in action, Sgt Mike Bezeau joked that, "It should be renamed the AVLB for Armoured Vehicle Large Bucket". Alas, that acronym is already taken by the Armoured Vehicle Launched Bridge.

Shortly after crossing the Line of Departure the lead tanks made contact with the enemy and commenced a deadly accurate suppression of the position. Orders for a quick attack were soon to follow and the manoeuvre force swiftly moved in on the assault. Two troops of tanks came charging over the ridge, their main guns blazing, and behind the armour came the infantry, eager to get involved in the more personal business of clearing the objective. As with all successful combat team attacks, when the smoke cleared the infantry were holding the ground and the tankers were exploiting forward eagerly preparing to crush any counterattack.

After three more quick attacks, the team moved through a running resupply. Trooper Ashley Millham and Trooper Sean McLaughlin were busy "humping" 105mm tank rounds and jerry cans of diesel to the equally hard-working tank crews. The combat team then moved into a harbour for a well earned rest and to prepare for the next morning's deliberate attack.



*The assault goes in.*

Sunday dawned wet and dreary. From the firebase, Two and Four Troops covered the assault forces approach to the objective. A formidable anti-tank ditch was blocking the route and two breaches were attempted to cross it. Behind a thick smoke screen the AEV dropped a fascine into the obstacle and the AVLB laid its bridge over it. The tanks and APCs poured through both breaches and onto the objective. As they broke through the smoke, 3 Troop, led by Lt Jim Malejczuk, could be seen pumping SABOT rounds into BMPs 200m to their front.

Once the mission was achieved and the final objective secure, the combat team moved into a hasty defensive position. Artillery and

Photo by Pie Parent



*A 2RCR soldier fires a C9 machine gum.*



mortars provided the realism; adding smoke, noise, firepower and confusion that a modern mechanized battlefield is likely to have.

The defensive battle began with Two and Four Troops forward in sniping positions. As they were engaging targets, Capt Gary Cheek, an exchange officer from the US Army, began calling in artillery on the enemy. Four Troop experienced a danger close fire mission, bringing the artillery fire to within 250m.

Photo by MCpl O'Doherty



*Trooper Coby Wilson passes a HESH round to WO Matt Robichaud during a running replenishment.*

As the sniping troops moved back and the main defensive battle began, numerous enemy tanks were destroyed by the Leopards. As mortar rounds came down in front of the dug-in Infantry, .50 calibre machine gun fire and Carl Gustav anti-tank rounds ripped through the various targets in front of their trenches.

Photo by MCpl O'Doherty



*MCpl Bill Kayden of 22 Fd Sqn uses the AEV to drop a fascine into an anti-tank ditch.*

When Hotel Company had finished, the tanks moved up in a counter-attack to finish off the withdrawing enemy. Once assured of his victory, Major Glauning called the end-ex.

Now came the time for maintenance, cleanup, storytelling, and talk of lessons learned. At the end of the exercise, Maj Boswell said, "This is the most realistic combat team level training my Company has done. All the dry training and blanks in the world could never replace the value of a realistic live fire exercise".

Other Armies seem to agree. The US Army conducts live fire FTXs at their National Training Centre in California. The British and German Armies think this type of training is important enough to establish permanent training units in Canada so that live fire exercises can be conducted. Canadian Army units conduct such training from time to time but rarely with a full MBT squadron and mechanized infantry company and support elements. Unfortunately, not all units have the resources. The importance of realistic live fire training cannot be over-emphasised. To a man, everyone in C Squadron and Hotel Company insist it's the best training they've ever done.

Exercise Royal Springbok allows all elements of the combat arms and combat support arms to come together and conduct the most realistic training possible. It helps prove that the close cooperation between the various elements is vital and is one of the best ways to get valuable training. Royal Springbok provides a good example of what is necessary to maintain general purpose "combat capability" in today's Army and places emphasis on the importance of practicing close cooperation between all Combat arms.

**Capt Bradley** and **Lt Novati** are Troop Leaders with C Squadron, The Royal Canadian Dragoons.



# The Effectiveness of Training Simulators

by Major P.S. Furnell



## Introduction

Recent global events are forcing many western governments to cut the size of their defence budgets. Although these cuts have mainly affected personnel and equipment, we can probably assume that they will have an impact on training funds. Changes in western society are also affecting the way in which armies can train. As the perceived threat disappears, people are less willing to have their lives disrupted by the military. Even dedicated training areas are coming under pressure from environmentalists and other special interest groups. These pressures present a dilemma, as armies cannot stop training.

One of the ways the U.S. Army is attempting to solve this problem is by using more and more training simulators. They have already fielded and use such systems as the Unit Conduct of Fire Trainer (U-COFT) and the Simulation Network (SIMNET). They are also continuing to develop new systems, such as the Close Combat Tactical Trainer (CCTT), the GUARDFIST trainers for the National Guard and the Tank Weapon Gunnery Simulation System. Currently the U.S. Army spends around \$150 million a year on training and simulation programs.<sup>1</sup> Between the years 1994 to 2001 they plan to double this figure to about \$300 million.<sup>2</sup> In short, the U.S. Army has, and is, making a determined effort to include simulators as part of their training system.

However, the increased use of training simulators has raised several issues. Probably the most critical is the question of effectiveness. Although simulators have been used for years, how effective are they when used by soldiers? This critical issue raises many other questions. Basic questions, such as whether simulators can replace some live training. What skills can or cannot be taught on simulators? Can the savings realized by using simulators help to balance the loss of

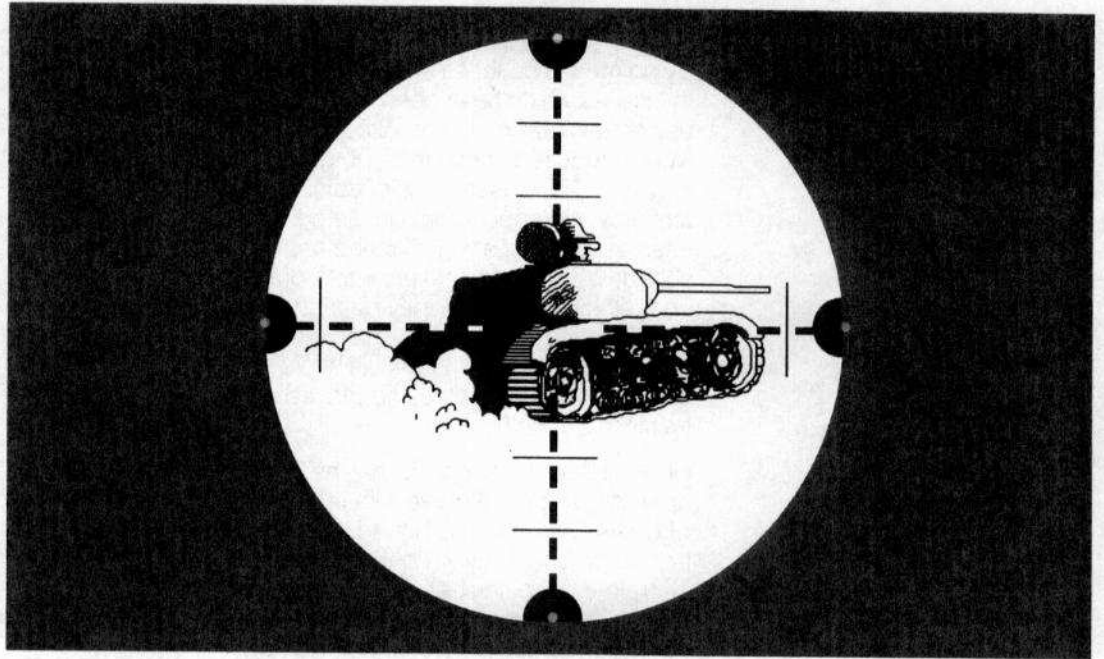
training funds? The U.S. Army has only just started to investigate these issues, and it is some of the results from two of their recent studies which this article will address.

## Unit Conduct of Fire Trainers

The U-COFTs are simulated turrets which allow the crew to engage targets portrayed through computer generated imagery. The U-COFT can portray different light conditions, moving targets and even simulate firing while on the move. U-COFT was designed so crews progress from simple stationary engagements, to firing on the move against multiple moving targets.<sup>3</sup> The U.S. Army has U-COFTs for the M1 tank (including the M1A2) and M2/M3 Bradley vehicles.

In the late 80s the U.S. Army conducted several U-COFT assessments in an attempt to discover the benefits of U-COFT training.<sup>4</sup> The assessments were based on the results achieved during live fire training. The results from Firing Table VIII were used as the test of effectiveness. Table VIII is the U.S. Army's crew level qualification exercise.<sup>5</sup> It normally consists of ten single or multiple target engagements. Crews are scored on how many targets they hit and how quickly they engage them. Table VIII is normally fired twice a year, and is usually preceded by two preparatory live fire exercises.

The comparison of the results for those crews which received U-COFT training and those that did not, show that the U-COFT crews had significantly better results. The U-COFT trained crews averaged 792 points out of a possible 1000, while non U-COFT crews average score was 763.<sup>6</sup> Even more significant was the improvement in opening times. The average opening time for the



U-COFT crews was 4.7 seconds compared to 5.7 seconds for non U-COFT.<sup>7</sup> Even with these faster opening times, the U-COFT crews obtained the same number of first round hits.<sup>8</sup> The studies found the U-COFT to be an effective trainer.

The ability of the U-COFT to sustain training was also studied. Approximately 90 days after firing their first Table VIII, crews were asked to fire a second. The studies found that those crews that had continued to use the U-COFT, and had completed at least half of the U-COFT exercises, did improve their scores.<sup>9</sup> The results for the non U-COFT crews did not show any significant differences.<sup>10</sup> It is interesting to note that those U-COFT crews that did not use the simulator on a regular basis, did not improve their scores. In fact 41 percent of this group dropped more than 100 points.<sup>11</sup> This indicates that to sustain gunnery skills, simulators must be part of a well planned and properly executed training program.

To help pay for the simulators, the U.S. Army reduced the amount of training ammunition for those units equipped with the simulators. As an example, a tank crew's yearly allocation was reduced by 34 rounds.<sup>12</sup> There was no indication that this reduction has hurt gunnery skills. Three of the U-COFT battalions that participated in one of the tests, were not able to fire one of the preparatory live fire

exercises. They actually fired 15 less rounds than all the other crews. Despite this, their scores were better than the non U-COFT crews and only slightly worse than the other U-COFT crews.<sup>13</sup> This seems to indicate that simulators can be used to decrease training budgets.

### **Close Combat Tactical Trainer**

The CCTT is a developmental training device which will be used to train and sustain collective tasks and skills from crew through brigade and higher.<sup>14</sup> The development of the CCTT is based on the technology being developed in the U.S. Army's SIMNET facilities.

However, the situation is not completely bleak. One of the world's largest simulation companies is based in Toronto. CAE Industries Limited became number one after its recent purchase of Link.<sup>15</sup> CAE-Link Corporation was the largest company in 1989 simulator sales to the U.S. Department of Defence.<sup>16</sup> Although CAE-Link has mainly developed and fielded aviation systems, their success does show that Canadian technology is available.

## Conclusion

By no means do these studies address all the issues which have been raised about the use of training simulators. Although more work is required, these tests do give some indication as to usefulness of training simulators. It would appear that simulators, when used as a part of a well planned training schedule, can help soldiers learn, practice and reinforce the skills they need for combat. By using simulators, armies may be able to save money, as well as avoiding some of the pressures being placed on live training.

Finally, it is safe to conclude that the Canadian army is going to have to live with reduced budgets. This in turn is bound to have an impact on our ability to conduct live training. Therefore, it would seem logical that we must place a high priority on acquiring training simulators. If we do not, we may have difficulty in training our future soldiers.

**Major P.S. Furnell** is the Canadian Forces Liaison Officer at Fort Hood, Texas.

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# The Combined Arms Tactical Training Center (CATTTC) and Simulation Training for the Canadian Army

by Major J.H.J. Russell LdSH(RC)

## Introduction

1. During the weekend of 21-24 June 1991, 21 all ranks from the Governor General's Horse Guards visited the U.S. Army Armor Center at Fort Knox. During their stay, they received a number of briefings, observed field training and experienced hands-on training on a number of simulators found at Fort Knox.
2. The highlight of their visit was the time spent at the Combined Arms Tactical Training Centre (CATTTC). In the short time available, these militia soldiers were able to participate in a most rewarding and satisfying experience on the most advanced combined arms tactical trainers in the world.

## Aim

3. The aim of this paper is to describe how the CATTTC can be used by Canadian units in training the TOTAL FORCE.

## Scope

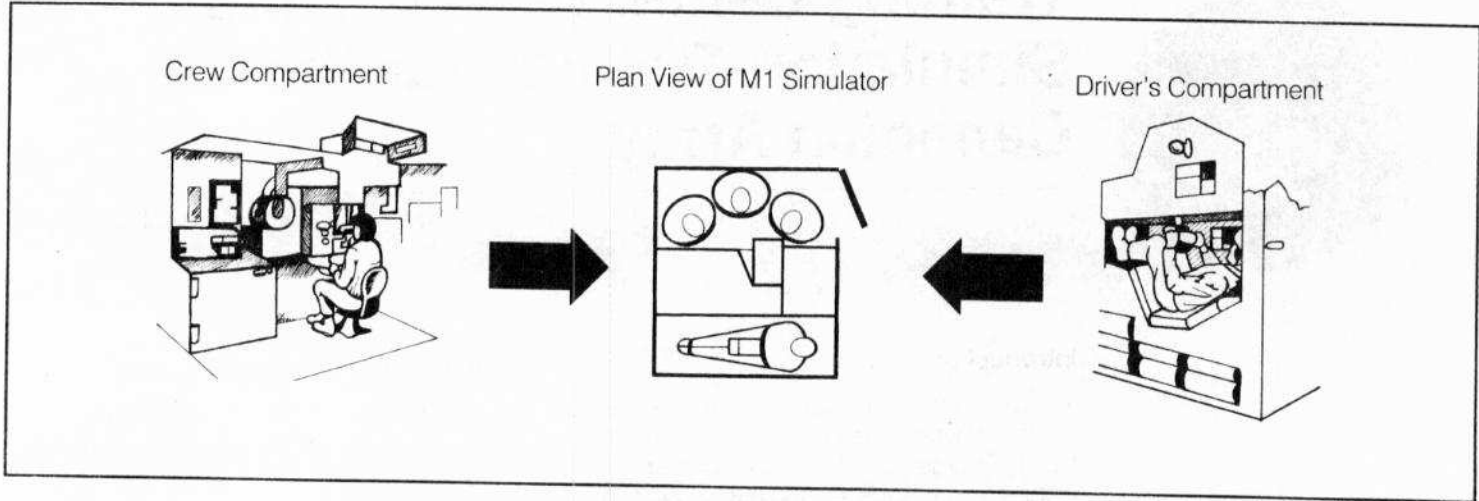
4. To successfully present this topic, the following will be addressed:
  - a. A brief description of the simulation strategy for the Canadian army;
  - b. Description and mission of the CATTTC;
  - c. Usage of the CATTTC during FY 90/91;
  - d. Typical regular and reserve unit training on CATTTC;
  - e. Cost data of CATTTC and associated support; and
  - f. Recommendations for Canadian use of the CATTTC.

## Simulation Procurement Strategy

5. Before discussing the value of the CATTTC, one must first know the simulation strategy of our own army to the year 2000.
6. **Army Priorities for Acquisition.** The initial priorities given to commanders on simulator acquisition is as follows:
  - a. **Category A – Individual and Crew Training.** The widest possible selection of devices to enhance training, especially in the Militia, Weapons Effects Simulators (WES) including precision gunnery trainers (PGS) and targetry.
  - b. **Category B – Tactical Engagement Simulators (TES).** TES, PGS and area weapons effects simulators (AWES) in quantities sufficient for the schools and a battle group in each brigade, each with an opposition force (OPFOR).
  - c. **Category C – Command and Staff Training (CST).** A group of trainers to support procedural training, from sub-unit to division level, in military and civilian assistance operations.
7. It is in all the above categories that the CATTTC can be useful as a combined arms tactical trainer. At Ft Knox, many Regular, National Guard and Reserve units, including the USMC, regardless of the type of equipment, use the CATTTC. The U.S. approach is that equipment type is not as critical as perfecting Techniques, Tactics and Procedures (TTPs) at the platoon to battalion task force level. The Canadian approach should be the same. Why? Because the simulation equipment being used is available *now*, and is the most modern equipment available.



**Figure 1**  
Close Combat Tactical  
Trainer<sup>3</sup>

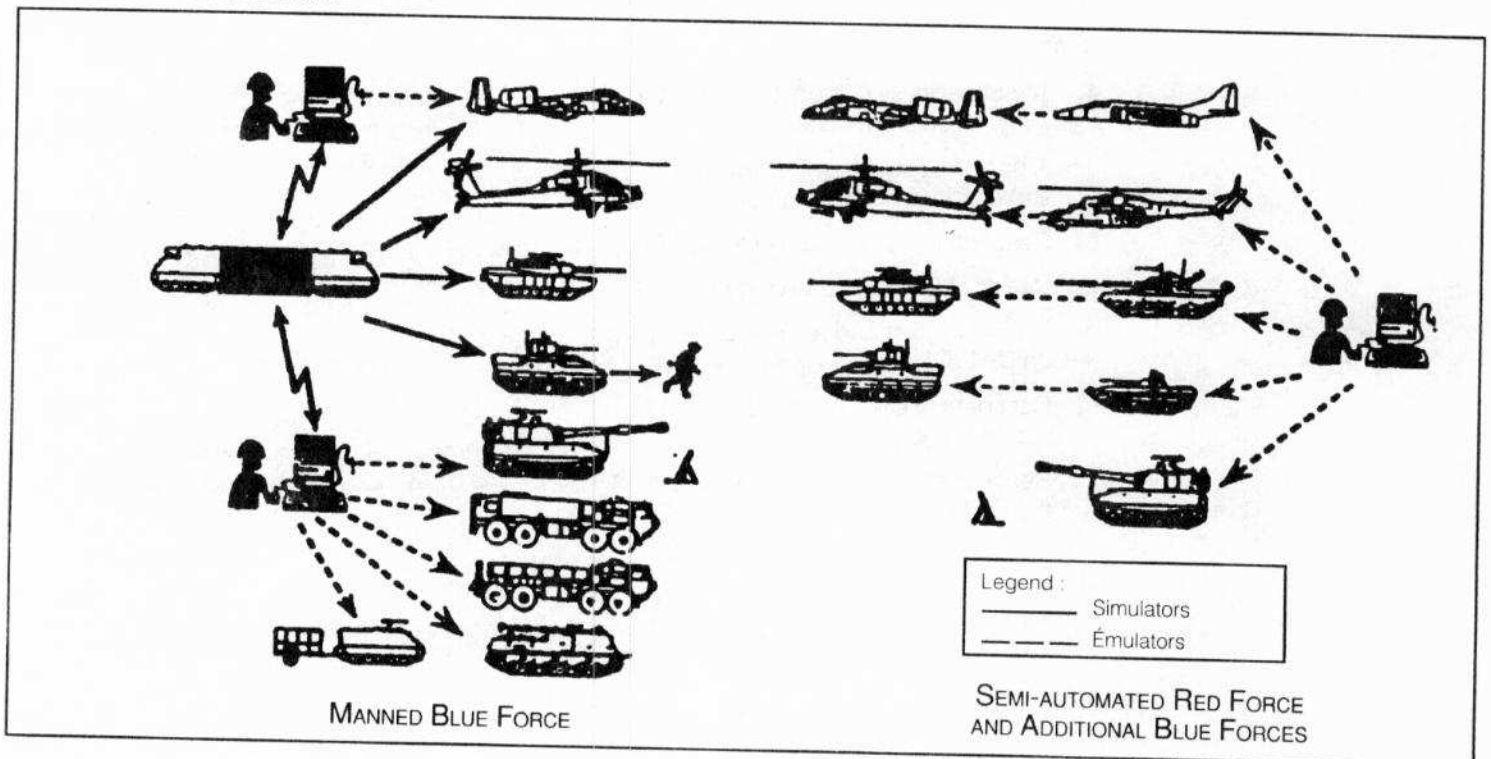


**Combined Arms Tactical Training Center (CATT)**

**8. Description:<sup>2</sup>** CATT is a combined arms, multi-echelon collective tactical training simulation system. It is a system of computer-driven combat vehicle simulators that combine the full hands-on operation of the vehicles with emulators that allow the applications of a particular equipment or battlefield function. These simulators and emulators are connected via a local area network. Incorporating the latest fully interactive simulation technology, CATT simulates the vehicles and weapons of the close combat force. The system's computers create a simulated battlefield which give the user the

illusion of operating over actual terrain. The CATT focus is on command and control, tactical movement, synchronization of direct/indirect fires, and close air support (CAS). The CATT can provide training in crew and small unit battle drills. (Troop Platoon/Squadron, Company/Combat Team SOPs and Battle Task Standards). CATT allows force on force training in addition to the forces available using the semi-automated forces. It supports training from platoon through battalion task force, (Troop to Battle Group in our terms). The CATT allows for training on tank tactical tables along with combined arms exercises. The combat support capability in CATT allows for

**Figure 2**  
Assets Available with CATT



integration of fire support by emulating field artillery, mortars, and CAS. Combat Service Support (CSS) capabilities are also integrated into the exercises. All simulators and emulations operate in real time/distance.

**9. CATT Primary Mission:** CATT provides for practicing collective combat skills in a stressful environment. CATT is a trainer that supports leader/commander staff training in command, control, and tactical movement at the platoon, company team, and battalion task force levels.

### CATT Assets

**10.** The CATT has the following assets available to the user:

- a. 42 - M1 tank simulators;
- b. 16 - Bradley M2/M3 fighting vehicle simulators;
- c. 1 - Dismounted infantry workstation;
- d. 10 - PC workstations to act as emulators for combat support and combat service support operations;
- e. 2 - Battalion tactical command posts and  
2 - Administrative/logistics command posts;
- f. 1 - Brigade tactical command post;
- g. 4 - Semi-automated Force (SAFOR) stations; and
- h. 1 - Observer/controller "Stealth" station.

**11.** The CATT battlefield is a 75 x 50 km area on which all phases of war can be exercised. Recently, due to the increased importance of training at the National Training Center (NTC), a training area of that particular region is being programmed into the simulator. In addition, the most recent advanced simulation technologies will be used to recreate the battle of 73 Easting in the form of terrain, weather effects as well as the action of fighting vehicles engaged on both sides in dynamic real-time action.

### CATT Capabilities

**12.** The CATT capabilities for training is as follows:

- a. Exercise from single vehicle up to an Armour-Heavy Battle Group (3 x Tank Squadron and 1 x Infantry Company);

- b. Exercise 2 battalions in a command post exercise mode with a brigade tactical operations cell; and
- c. Squadron/Company force-on-force exercises.

**13.** Of particular interest is the ability of CATT to exercise different command levels. For example, if the user can only afford to bring his troop/platoon commanders, the system may be adjusted to have the troop/platoon leaders vehicle manned, with the other three vehicles in the semi-automated mode.

### CATT Limitations

**14.** As in all relatively new simulation systems, there are inherent limitations. From our perspective, the limitations should not be training stoppers, since training should start in the most ideal conditions and then work to the more difficult. An example of this process is the training of new crews, sub-units, units in ideal terrain, weather and tactical conditions, and then progress to the more difficult situations, such as bad weather, at night, and in TOPP High.

**15.** The limitations of CATT are as follows:

- a. Although there are enough simulated vehicles for an infantry company, there is a limited dismounted capability for infantry. At present, the system can only place one infantryman "Sergeant Rock" on the ground, but he normally moves about with the killing capability of a fully armed infantry section;
- b. Although there is a dynamic 360 degree view of the battlefield, no obstacles or dug-in fighting positions are possible;
- c. There is no night/thermal viewing capability present;
- d. All operations are conducted "hatches down";
- e. No smoke/fog/or haze is displayed as battlefield obscurants;
- f. No tactical bridging is available in the simulator;
- g. The M1 and M2/M3 vehicles have incomplete fire control systems;
- h. There is no FOO vehicle provided in the system. All fire missions are sent from crew commanders;
- i. The weather is perfect;
- j. There is limited observance/controller workstations;

- k. There is no ability to fight in built-up areas (FIBUA); and
- l. Limited radio frequencies.

**16.** Despite these limitations (all of which will be corrected in future simulator models), CATTTC still provides and meets the needs to practice at the crew to unit level.

### **CATTTC Costs and Associated Support**

**17. Costs.** CATTTC costs principally deal with the U.S. Army construction and use of the facility. The costs are provided only to show how expensive these type of training simulators are, and to support CATTTC use instead of developing our own.

**18.** The cost in U.S. dollars are as follows:

- a. Cost of one simulator is \$250,000;
- b. Cost for building CATTTC as of Oct 91 is \$21 million;
- c. Contractor Logistics Support costs is sub-divided as follows:
  - (1) FY 90 Monthly Cost \$97,482/Annual \$682,374;
  - (2) FY 91 Monthly Cost \$76,516/Annual \$918,191;
  - (3) FY 92 and 94 costs are predicted to be the same as FY 91;
  - (4) Annual utilities are \$54,000; and
- d. The contracting service for the facility can provide 210 hours of operations a month from 0800 to 1600 hours, Monday to Friday. For the two allowable weekends a month, the facility provides training from 0800 to 1800 hours.

**19. Training Support.** The Armor Center is capable of supporting CATTTC training very effectively. First, there is an operational airfield, which can accommodate up to C-130 type aircraft. If military aircraft are unavailable, charter aircraft can land at Louisville Airport, 30 miles away.

**20.** Transportation is available for the visiting unit and quarters are also supplied. Rations and mess support can be arranged. In all of the above, messing seems to be the only item that a visiting unit has to pay for.

**21.** To train on the CATTTC facility and program the required support, a visiting unit must schedule and identify their needs to G-3 Scheduling, a minimum of 15 weeks in advance.

### **Conclusion**

**22.** Despite some of the limitations of the CATTTC, this facility remains the biggest and most modern and operational simulator training center in the world. Its capabilities and ability to provide the user with what is needed in the form of tactics, training and procedures, falls well within our needs.

**23.** In light of the time and space available despite the day to day use in support of the Armor School, AC and RC training, it would be foolish for us not to use the CATTTC. Costs would be minimal, since the facility is already available for the U.S. military. Even if we should have to pay user fees, they would still be minimal when compared to the cost of developing and maintaining our own combined arms tactical training simulators.

**24.** It is recommended that Canada seriously consider the use of the CATTTC at Fort Knox, and that we validate the use of CATTTC of FY 93/94.

**Major John Russell** is the Canadian Liaison Officer at Fort Knox, Kentucky.

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# AFV Crewmen Vests

by Lieutenant J.J. Malejczuk



## Introduction

Through the evolution of warfare, especially armoured warfare, the main battle tank has evolved into one of the most dominant weapons on the mid and high intensity battlefield. The modern main battle tank is a complex system consisting of metal, composites, electronics and hydraulics which achieves protection, firepower, speed and mobility. Yet individual protection has been sometimes forgotten in search for maximum AFV capabilities. In peacetime individual crew protection within the vehicle and the ability of crews to survive outside the vehicle after abandoning the vehicle, appears to be the areas where little progress has been made. Even wartime experience has been forgotten. The fact remains that in order for crews to be able to function either within their AFV after it has been hit or survive after abandoning it, they must be afforded both a measure of wearable protection as well as a means to carry a personal weapon and survival equipment.

## Factors

On the modern battlefield there are many threats which AFV crewmen encounter. Although they may be surrounded by a 40 plus or minus ton flak jacket, the crew within the fighting compartment is subjected to:

- 1) physical punishment of the human body within the fighting compartment during movement;
- 2) restricted space; and
- 3) spalling (**Fig. 1**).

During World War II, AFV crewmen received 29 percent of their injuries in the upper extremity and 31 percent in the lower body extremities. Fragmentation wounds rose from 65.1 percent from World War II to 85.7 percent during the Yom Kippur War. Although these figures portray overall injury statistics for combat forces, it illustrates the evolution of lethality in modern weaponry and in particular the types of dangers that

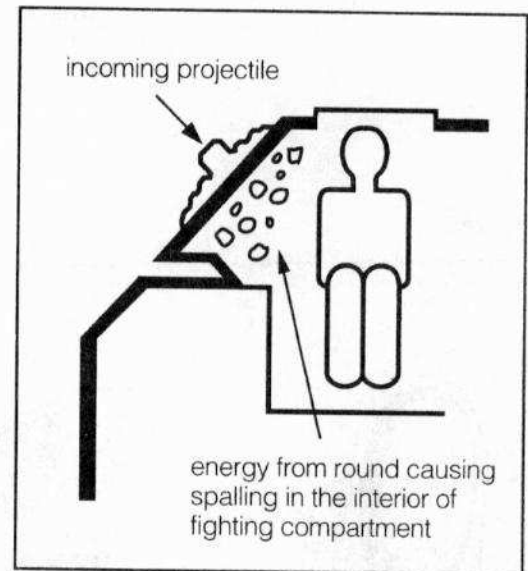


Figure 1

AFV crews are susceptible to. Recent experience during Operation Desert Storm indicates that traditional load bearing equipment (webbing) for AFV crews is impractical; and actually unsafe; providing little or no benefit to the individual. Consequently, the equipment is not worn inside the vehicle and in the event of an emergency evacuation would be left behind.

## Equipment

Crews are presently issued standard web gear which must be removed and stowed prior to entering the fighting compartment. As a result, the webbing occupies valuable space inside the fighting compartment and in the event of an emergency evacuation, would probably be left behind leaving the crewman without the aide of his equipment. This would include both his respirator and personal weapon at a time when both would be required.



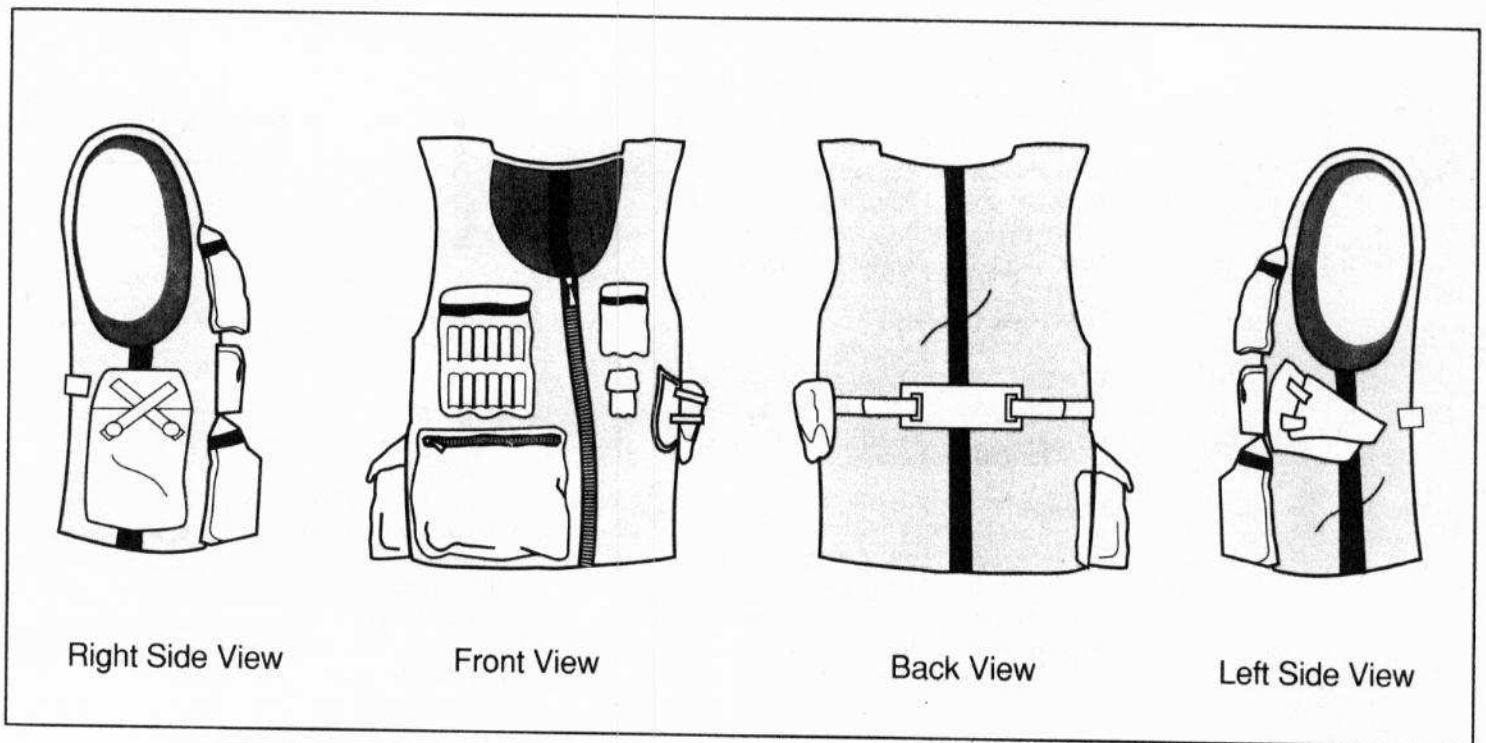
In order for crews to operate within the fighting compartment without restriction, a ballistic, load bearing and fire retardant vest should be created. The following necessary features would have to be incorporated **(Fig. 2):**

- 1) built in pistol or automatic pistol holster;
- 2) built in pockets for spare magazines;
- 3) exterior cargo pockets with pen loops, maps pocket, compass pocket, emergency rations, survival kit, etc;

- 4) provisions to carry a body contour water bottle; and
- 5) ballistic protection for some of the upper extremities of the body (ie. spinal column, shoulders, chest, ribs and neck).

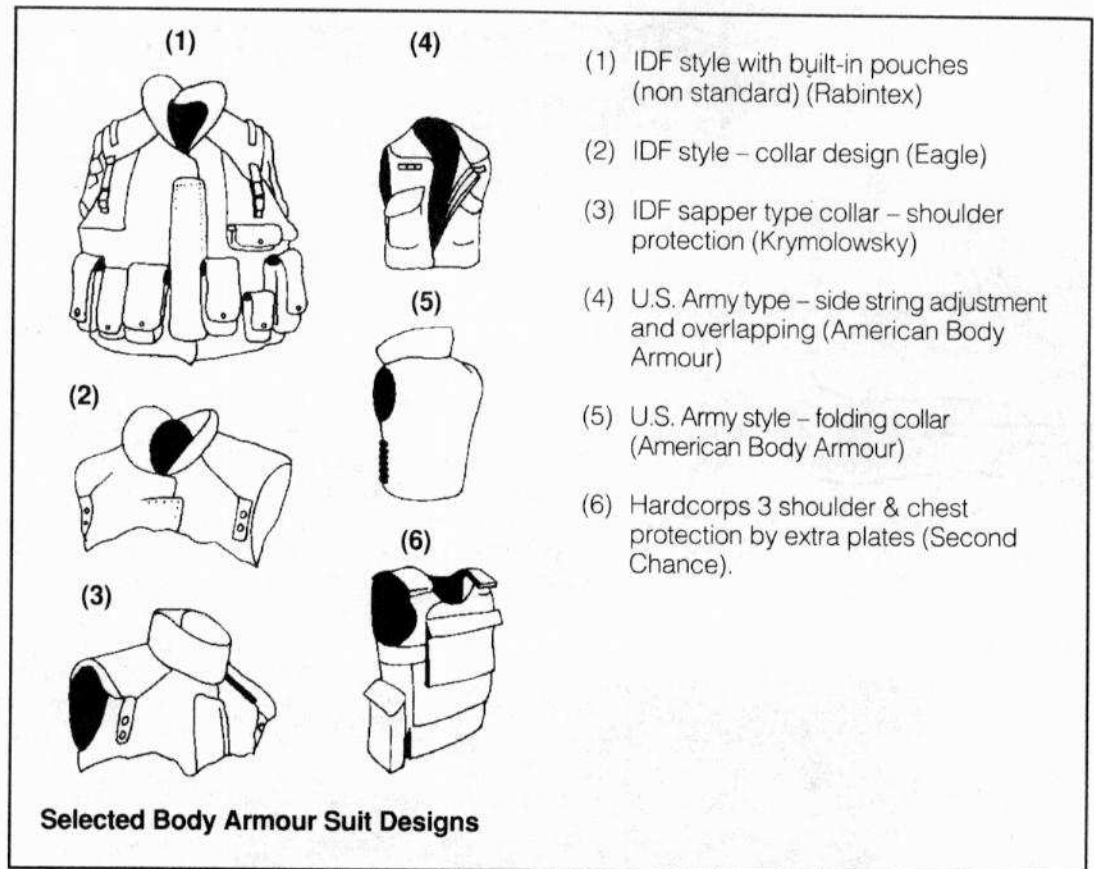
This design would allow for all essential materials to be carried when the respirator is worn on its sling. The Israeli Defence Force have incorporated a flak jacket **(Fig. 3)** for armoured crewmen which reduced crewmen casualties by 30 percent in the 1982 war in Lebanon.

Figure 2



Serial	Description	Dimensions
1.	Exterior Cargo Pocket	7 inches wide x 8 inches high x 3 inches deep
2.	Exterior Breast Cargo Pocket w/pen loops	4 inches wide x 6 inches high x 2 inches deep
3.	Compass Pocket	2 1/2 inches wide x 3 1/2 inches high x 1 inches deep
4.	Spare magazine pocket for wprn (9mm pistol or machine pistol)	<b>Characteristics</b> 1. Fireproof. 2. Fast Drying. 3. Breathable mesh.
5.	Body Contour Canteen Holder	
6.	Pistol/Machine Pistol Holder	
7.	Torso Adjusting Strap	

Figure 3



### Conclusion

The procurement of a load bearing crewman vest providing some ballistic protection along with survival equipment would appear to be a necessary item of equipment for AFV crews. It would allow crewmen to always carry the necessary equipment to survive in the case of emergency evacuation without restricting their movement in the already cramped fighting compartment of an AFV. While a small item, an appropriate AFV crew vest will significantly enhance the survivability of AFV crews while providing them with an operationally viable means of carrying all items currently found on issued webbing. While suitable for the Infantry, the current issued webbing is impracticable and unsafe for the armour soldier.

**Lieutenant JJ Malejczuk** is the Administrative Officer in C Squadron, The Royal Canadian Dragoons at CFB Gagetown.

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# Tank Crew Personal Weapons

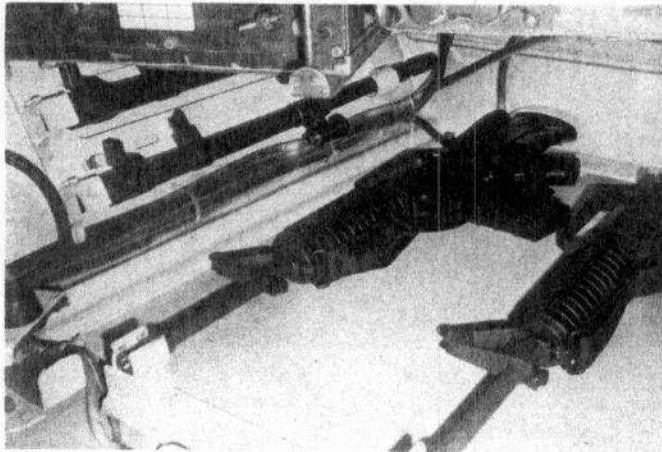
by Lt M. Novati



## Introduction

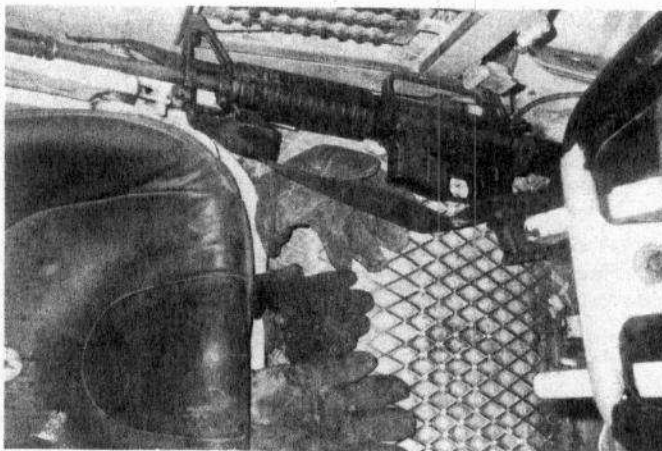
The Small Arms Replacement Program is now several years in implementation and as part of that program, tank and Cougar crews have had their submachine guns and pistols replaced by the C8 carbine. Although a good weapon by any standard it is felt by many that arming *every* crew member with this weapon has not been the ideal solution.

T&E Trial Photo



*A good stowage location on the turret roof above the radios. A pair of C8s issued as part of the tank's checklist and used by any of its crew members could be stowed here.*

T&E Trial Photo



*Alternate stowage location in a Leopard driver's compartment. Although apparently conveniently located, it is too difficult to get out of the tank; especially in an emergency.*

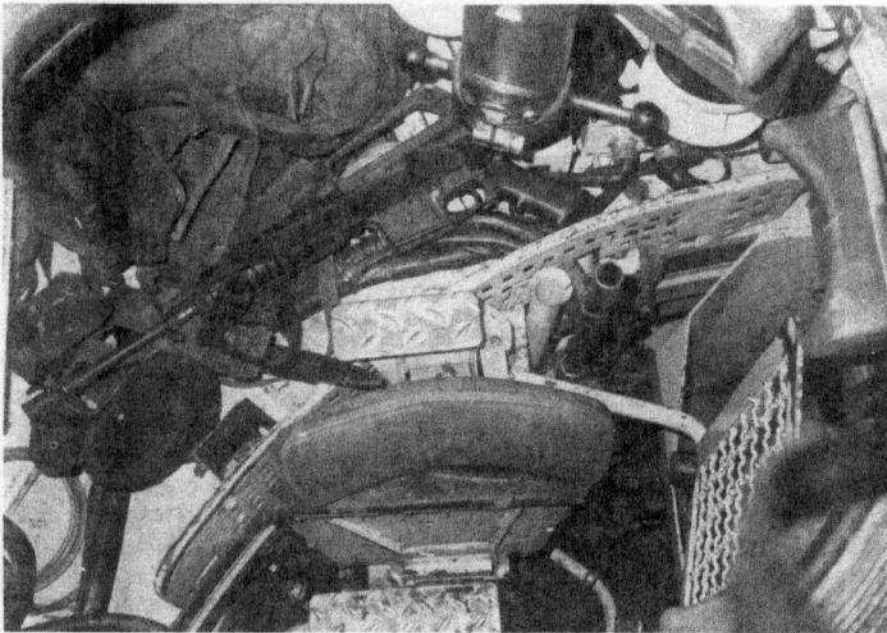
## What are Personal Weapons for?

The primary role of tank crews is to man their machines and destroy the enemy with those machines. So why carry a personal weapon when you have a tank to fight with? Quite simply, the answer is tank crews do get out of their vehicles from time to time (although some infantrymen might challenge that statement), to conduct recces, conduct resupply and maintenance and of course to rest. Therefore they require something to protect themselves in case they should be attacked while dismounted. Another scenario would be when a tank is hit, and the crew survives. In this emergency situation where fire is the gravest danger, crews must evacuate immediately and would again require personal protection once outside their AFV.

## The C8's Shortcomings

Although a very accurate and lethal firearm when compared to the weapons it replaced, the C8's awkward size is its biggest drawback. A tank is a cramped vehicle at the best of times and the storage problem the C8 poses has led to the unlikely solution (approved but not yet installed) of providing an exterior rack located between the crew commander's and loader's hatches for two of the crew's four carbines. This leaves the weapons exposed to the elements and makes them something else for the cam net to snag on while attempting to erect it.

The C8's size also makes it very awkward to carry while crews are working around the tank doing maintenance or other routine harbour tasks. However, the most critical time when this weapon should be at hand, after evacuating a tank that has been struck by hostile fire, it would likely be left behind by at least part of the crew because it wasn't at hand during the evacuation. The driver especially has no place to stow a C8 in his compartment and would be without personal protection.



T&E Trial Photo

*A C8 carbine stowed to the right rear of the crew commander's seat in a Leopard tank.*

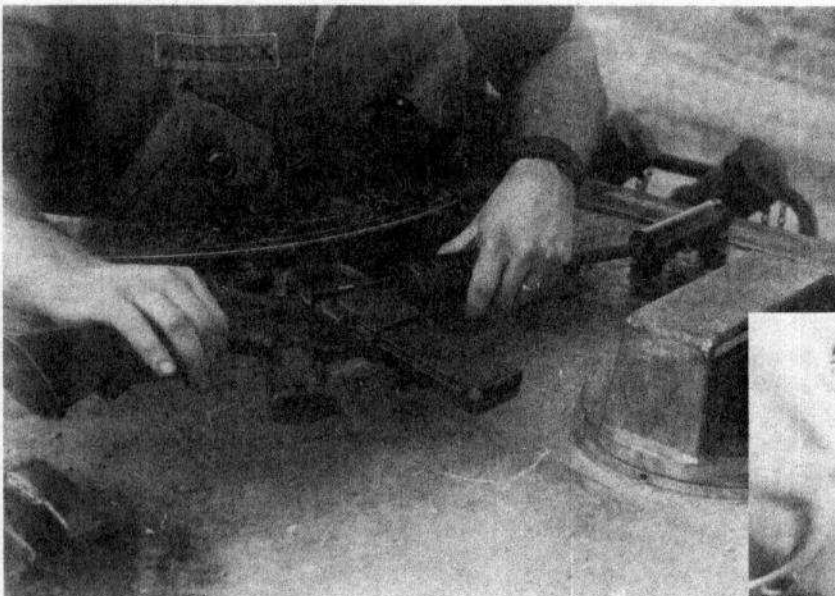
### So What's Needed Instead?

One C8 per crew would be a good idea either as the loader's personal weapon or better still as part of the tank's equipment which could be used by any of its crew members. It would definitely be a useful weapon for sentry duty. But what about the crew's needs while conducting their other routine tasks? A pistol or automatic pistol is probably the best solution.

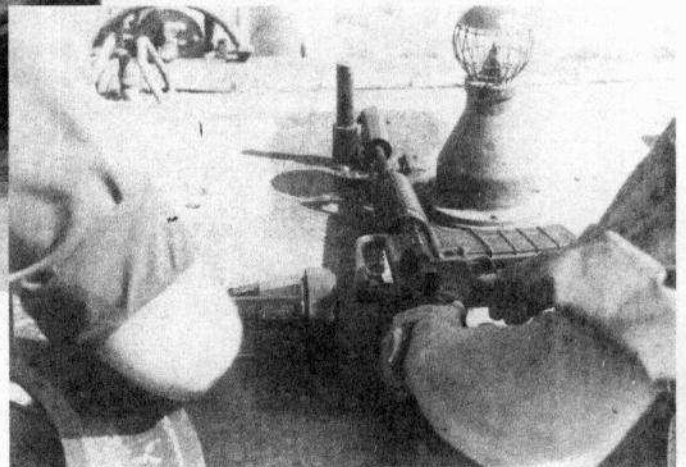
Most other armies provide at least part of each of their tank crews with a pistol as their personal weapon. The Americans issue their recently adopted M9 pistol based on the Beretta 92F. The British still issue the 9mm Browning, and the Germans the P1 which is basically a reworked Second World War vintage P38. The former Soviet Army issued the Makarov in 9 x 18mm and provided a sewn interior holster on their tank crew coveralls.

A quick solution for the Canadian Forces would be to reintroduce the 9mm Browning. It's still on inventory so it would not incur any new costs during this time of fiscal cut-backs. However, the pistol's design dates back to the mid 1930s and technology has moved by leaps and bounds since then.

T&E Trial Photo

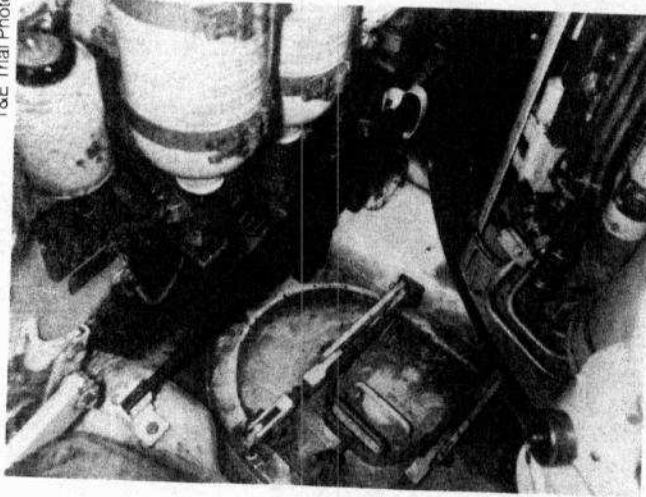


*The final approved configuration for stowage of two of the crew's C8 carbines.*

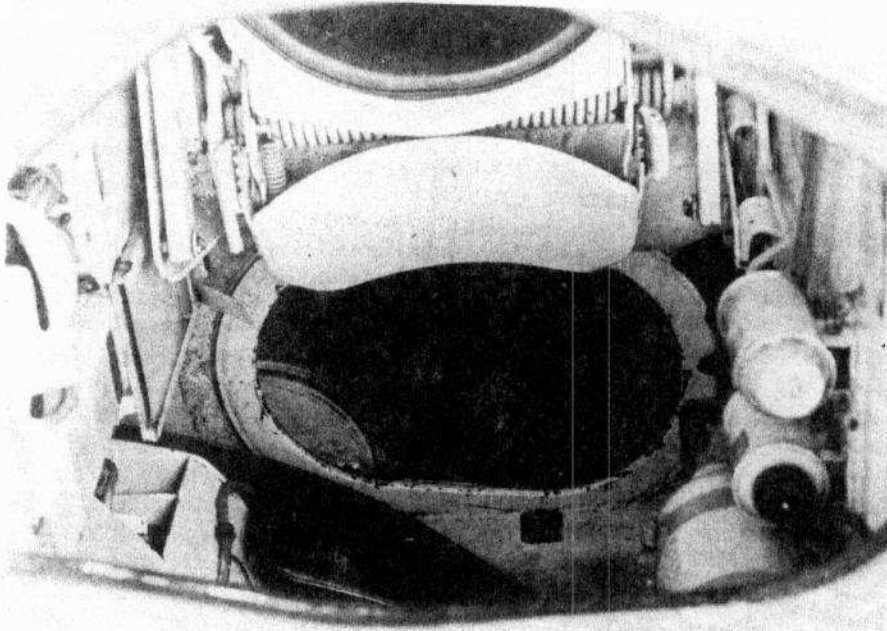




T&E Trial Photo



*A C8 being manipulated through the escape hatch of a Leopard tank. It can be done but then again no one was shooting at the persons conducting the trial.*



*C8 carbine stowed behind the driver's seat in a Leopard tank. Although conveniently located by the escape hatch, its size would make it difficult to get it out of that hatch in an emergency.*

Some contenders for a possible tank crew personal weapon could include automatic pistols to increase potential firepower. Some of the fine examples already on the market are:

- a. Czech Model 61 SMG (Skorpion);
- b. Israeli Military Industries Mini Uzi;
- c. Beretta Model 93R (selective fire version of Model 92F);
- d. Polish Model 63 machine pistol;
- e. Ingram Model 10 SMG; or
- f. Eagle Arms SM 90.

All these firearms are not much larger than a pistol but possess a great deal of firepower. They could be carried in a shoulder holster of some sort and worn inside the tank. The weapon would always be at hand whether mounted or dismounted and provide the protection needed without getting in the way.

### **Conclusion**

As has been seen in the preceding paragraphs the C8 is a good weapon but not ideally suited to equip every tank crew member in the Corps. Something is needed so that crews will have a personal weapon on their body, within reach, when they are most vulnerable: dismounted.

**Lt M. Novati** is a troop Leader with C Squadron, The Royal Canadian Dragoons.

T&E Trial Photo

# The Canadian Cavalry Brigade

by Major MR McNorgan



## Part 2 of 4 - Cambrai

The Battle of Cambrai was fought in November 1917. The aim of its British planners was to create a breach in the formidable Hindenburg Line through which large cavalry formations could be unleashed. The tool selected to make this breach was the tank. Tanks had been used before in battle, but in small numbers. Few tanks combined with a high rate of mechanical failure had meant disappointing results. Cambrai would be different. This time the tankers were given a free hand in selecting the ground they would fight on, and the time to build up their numbers. This time there would be enough tanks to decisively influence the battle.

The cavalry was also planning. The entire British Cavalry Corps of five divisions would be committed. Four divisions would be used for the breakthrough and the remaining one would be in support. Fifth Cavalry Division, commanded by Major-General HJM (Henry) MacAndrew, consisted of three brigades. The Secunderabad and the Ambala Brigades were from the Indian Army. Each contained one British and two Indian regiments. The third brigade was Canadian and was made up of two regular cavalry regiments and a Militia regiment, two batteries of the regular Royal Canadian Horse Artillery, a machine-gun squadron, and the 7th (Cavalry) Field Ambulance.

Commanding the Canadian Cavalry Brigade (CCB), was a slim, energetic British reservist, Brigadier-General Jack Seely. In civil life Seely was a politician and until the spring of 1914 had been Minister of State for War. He was a popular and respected commander.

The junior CCB regiment was the Fort Garry Horse (FGH). Raised in Winnipeg in 1912 it was under the command of its first CO, Lieutenant-Colonel Walter Paterson. Paterson, a reservist, would end the war commanding the brigade which included Canada's regular cavalry units.

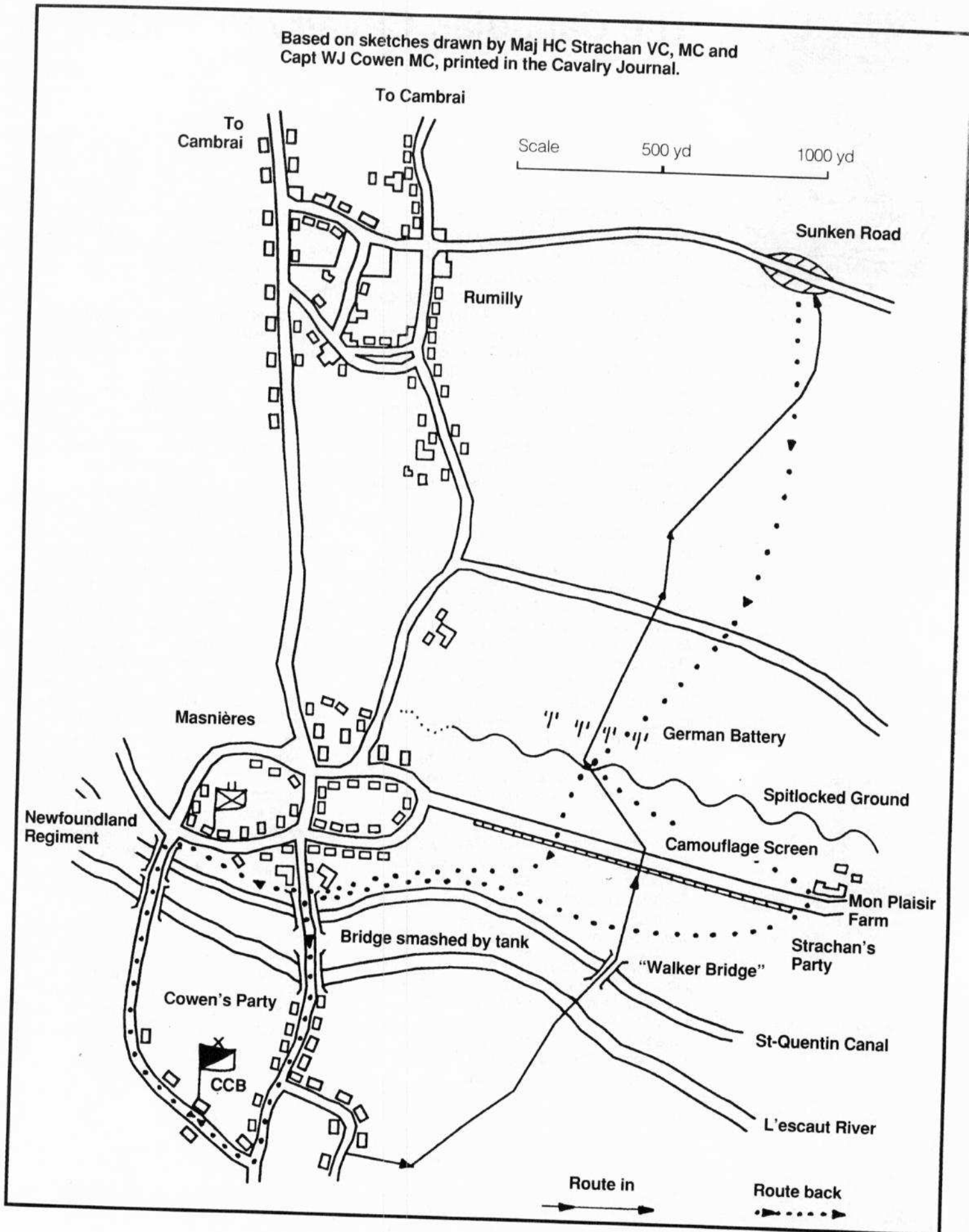
Fifth Cavalry Division would spearhead the breakout to Cambrai. The lead brigade would be the CCB. Leading the CCB would be the FGH, and leading the FGH would be C Squadron.

The attack began at 6:10 am, 20 November 1917. The infantry, accompanied by 350 tanks, advanced on a front six miles wide. Early returns from front line units showed that good progress was being made. The Cavalry Corps, already deployed in forward assembly areas, was ordered to move up ready to exploit the anticipated breaches in the enemy line. (*See sketch map*).

The FGH was scheduled to breakthrough at the town of Masnières. Before reaching the German line however there were two major obstacles to cross, the Escaut River and, parallel to it, the St. Quentin Canal. The river was shallow and easily forded. The canal was more formidable. The enemy had already attempted to blow one of the canal bridges but had only succeeded in cutting one girder. The tank commander on the scene was reluctant to try a crossing, but the arrival of enemy machine-guns on the far bank made it imperative that the infantry attack have armour support. The infantry and Seely watched as a British tank crept slowly onto the canal bridge. As it started across, the bridge collapsed sending vehicle and crew 12 feet straight down.<sup>1</sup> During the wait for orders, the tank's engine had been running hot, consequently when it hit the cold water a great cloud of steam rose up which covered the crew's escape out of the top hatch.

Enemy fire was still light as patrols spread left and right to find an alternate crossing site. Unknown to the cavalry at the time, there was a solid bridge a short distance away to the west, being held by The Newfoundland Regiment. What the patrols did

Based on sketches drawn by Maj HC Strachan VC, MC and  
Capt WJ Cowen MC, printed in the Cavalry Journal.



quickly locate was a canal lock about 1,000 yards east of the collapsed bridge. Major Tiny Walker, MC, OC of the CCB Machine-Gun Squadron gathered his men and went to work to build a crossing site suitable for horses.<sup>2</sup> By placing stop log timbers (10 x 10) across the double lock they managed to build a bridge 40' wide and 10' thick. The time was now 3 p.m. and sunset was due in one hour and three minutes. However, it was not C Squadron that was first to cross over, but B Squadron.

B Squadron FGH, commanded by Captain D. (Dunc) Campbell, MC, was on a special mission. They were tasked with capturing the German 13th Corps Headquarters and returning with the Corps Commander as a prisoner. A German speaking officer, Lieutenant Bill Cowen, had the task of interrogating the enemy commander. For doing this he was promised possession of the enemy general's horses.

Not wanting to waste any time Paterson ordered B Squadron across. Campbell led the troops over in single file, losing several men and horses to enemy fire. The majority crossed safely, the last being the squadron 2IC Lieutenant Jock Strachan, MC.<sup>3</sup> On the far side of the canal the squadron found itself shielded from enemy fire by a rise in the ground. Here they stopped to regroup.

Paterson sent Lieutenant Shrimp Cochran, RCD, the Brigade Galloper, back to Seely with a message to say that B Squadron was through and the rest of the Regiment would be following. He then crossed over at a gallop and ordered Campbell to carry on.

Paterson's message met General Seely in the village of Masnières where he was conferring with commander 2nd Cavalry Division, Major-General WH (Walter) Greenly, who had the CCB temporarily under his command. Greenly observed that it would take 20 to 30 minutes to put each squadron over the bridge, and that he therefore would not have enough daylight left to reach his objectives.<sup>4</sup> He ordered Seely to turn back his troops and to recall B Squadron. In the Headquarters at the same time were Major Donald MacDonald and Lieutenant Luke Williams of Lord Strachona's Horse (LSH). MacDonald had come to report to Seely the existence of the bridge to the west which the Newfoundlanders were holding. Seely told MacDonald to investigate

and, if he thought it wise, to cross over. On arrival at the bridge, which was littered with the bodies of the Newfoundlanders who had captured it, they were informed that the enemy were digging-in five hundred yards beyond. MacDonald wisely decided not to cross in the fading daylight with only his unsupported squadron.<sup>5</sup>

Lieutenant Cochran delivered Seely's order to Paterson at the crossing site. Cochran also told Paterson that on his way there he had encountered A and C Squadrons FGH and had ordered them to turn back. Paterson was in a quandary. He had put one squadron behind the enemy lines and knew that if he could get the rest of the Regiment over he could do a great deal of damage. That option was now closed. All that remained was to try to get B Squadron back. Following the path he had seen Campbell take he galloped after them, but, as he jumped the embankment of a sunken road his horse went lame. Now there was no way left to retrieve his men.

As B Squadron reached the foremost friendly infantry position they were forced to stop to clear a path through some barbed wire. Enemy fire caused several casualties. Strachan riding up to report to his OC noticed that Campbell was riding slowly to the rear, slumped forward in the saddle. Seeing that Campbell was wounded, Strachan shouted "Okay!" and rode to the head of the column to take command.

B Squadron now galloped north-north-east, stopping to cut their way through a 1,000 metre long camouflage screen running along the side of the Crèvecoeur – Masnières road. The screen was designed to prevent the Allies from seeing movement on the road. Upon gaining the top of the ridge which overlooked Masnières from the east, the Squadron saw to its front a battery of four 100mm guns. Swords drawn, the horsemen charged down the hill straight at the battery. One gun managed to fire and then the charging troopers were among the guns, slashing at the enemy soldiers, some of whom had tried to run. Thinking that they had an entire division behind them to mop



up, the Squadron rode on. It was later determined that this battery had been shelling CCB Headquarters when B Squadron's charge silenced it.

German infantry were encountered withdrawing toward the town of Rumilly. As the Squadron charged forward groups of from fifty to one hundred enemy soldiers threw down their weapons and put up their hands. Lieutenant Cowen moved to take them prisoner but was stopped by Strachan. The Squadron rode on leaving them for the follow on troops. Once the enemy soldiers had been bypassed however, they took up arms again and opened fire inflicting more casualties on the Squadron. Shelter and rest were found in a sunken road where Strachan posted pickets, and did a count of his men and animals. Of the four officers, 129 men and 140 horses (some horses were pack animals) that had started, there were now three officers, 43 men and 46 horses left. Several men were wounded as were all of the horses but seven. The animals were so exhausted several dropped dead while Strachan was inspecting them. Dusk was approaching and there was no sign of any friendly troops to be found.

Troopers WA Morrall and JEC Van Wilderode were given the two best horses and despatched to Regimental Headquarters with a report from Strachan. Both got through on foot after their horses were killed. Van Wilderode attempted to take a message back to Strachan, but returned when his second horse was killed and he was unable to locate the squadron. Both men were later decorated. Meanwhile, Strachan sent patrols out to the north, east and west. The only activity reported was a company of German infantry seen advancing from the east down the same road the Squadron was resting on. The enemy company attacked but was driven off. Cowen interrogated a prisoner who revealed that B Squadron was in the midst of an East Prussian Division newly arrived from "easy duty in Russia". After ordering all wires and power lines in the area to be cut, during which one man was electrocuted, Strachan paused to consider his options.

It was now dark and columns of enemy trucks could be observed and heard, driving out of Rumilly coming in their direction. An

all ranks meeting was called to explain the situation to the men. Several voiced the opinion that the only course open was to surrender, but Strachan already had a plan.

The first part of the plan involved stampeding the horses in the direction of the enemy. That was a failure. The horses were so tired they just wandered off into the darkness and were quickly shot down. The Squadron moved out on foot, retracing their route in. After going a short distance a burst of machine-gun fire swept the ranks, wounding or killing five of the party, including Cowen who was shot through the neck. All went to ground. A quick count of those present revealed that one of the pickets was missing, but the enemy fire on the road cutting where they had sheltered was now too intense for them to go back. The picket was left behind. During the night enemy work parties were encountered three times and each time were beaten off. Six more prisoners were taken. Upon reaching the camouflaged screen that they had passed through earlier, the survivors became separated in the dark.

Lieutenant Cowen with a group of 18 continued going west. They captured yet another enemy outpost before meeting soldiers of the Newfoundland Regiment who were still holding the bridgehead MacDonald had investigated earlier in the day. Cowen reached Brigade Headquarters at 8:15 pm and reported to Seely who was in the midst of holding a Brigade Orders Group.

Strachan's group spent some time resting before moving off to the east. At Mon Plaisir Farm they met another enemy work party which was beaten off. They were headed in the direction of Walker's bridge, when they found the body of Captain Campbell. They buried him beside a brick wall after removing some identification papers. Seeing lights at the crossing, they were not sure if the enemy was in possession of the site or not. Therefore they decided to imitate a German work party and marched down the road to the bridge that the tank had broken through. After climbing through the girders, Strachan jumped onto the top of the tank but slipped off falling into 10 feet of water. Most of the others likewise fell in the canal and so it was a wet group of survivors who finally met their astonished Commanding Officer at 3 a.m. Lieutenant-Colonel Paterson burst into tears on seeing them saying, "Dammit, we were told by this party that came in that you were all scuppered to death and that they were the only survivors."



This photograph of the B Squadron FGHS survivors was taken a few weeks after the action of Cambrai.

Strachan's Squadron had destroyed an enemy battery, inflicted well over a hundred casualties, tangled enemy communications over a wide area and captured or caused the surrender of numbers of enemy soldiers far exceeding their strength. On 24 December 1917 the award of the Victoria Cross to Strachan was announced.

Some time after the battle, Lieutenant-Colonel Herbert Stevenson, Regimental 2IC of the FGHS was asked if the Canadians were aware that the Cavalry Manual expressly stated that horses cannot cross a canal by a lock gate. Stevenson replied: "Oh yes, we know, but our horses don't. They can't read."

**Major Mike McNorgan** is a staff officer at NDHQ Ottawa dealing with National level exercises. ➔

### Postscript

#### **The battle of Cambrai**

The day following B Squadron's adventure the LSH were tasked to lead a breakout. The opportunity had passed however, and after a frustrating period of waiting the cavalry were withdrawn. The battle continued on until 3 December, but most of the early British gains were lost to German counter-attacks before the fighting ended. Cambrai proved decisive in one sense however, the use of tanks en masse was justified and the future of this new weapon was secured.

The Royal Tank Regiment marks Cambrai as a major milestone in its history. The Newfoundland Regiment also had cause to remember Cambrai. In 1918, in recognition of their performance there, the King granted the title "Royal", making them the Royal Newfoundland Regiment. It was the only time a regiment was thus honoured during the Great War. The Fort Garry Horse celebrate Cambrai Day every year in memory of Strachan and the soldiers of B Squadron.

#### **Brigadier-General (Major-General) the Right Honourable JEB Seely, CB, CMG, DSO, MiD**

Seely commanded the CCB until May 1918. Suffering from the effects of gas encountered at Rifle Wood he was sent home only to be made the Cabinet Minister responsible for the Royal Air Force. Created a Baron, he died in 1947.

#### **Major (Major-General) DJ MacDonald, DSO and two Bars, MC MiD**

Starting the war as a Lieutenant commanding 3rd Troop C Squadron LSH, he commanded his regiment at the end of the war and again from 1919 to 1924. Remaining in the Army he rose to the rank of Major-General.

#### **Lieutenant-Colonel (Brigadier-General) RW Paterson, CMG, DSO, MiD, Croix de Guerre**

He succeeded Seely as Commander of the CCB in May 1918 and led it until the end of the war. He would always maintain that a great opportunity was lost in not supporting B Squadron's advance across the canal. He died in March 1937 aged 60.

#### **Major (Colonel) WK Walker, DSO and Bar, MC, Croix de Guerre**

Joining the RCD in England as a trooper, the following day he was posted to Brutinel's Automobile Machine-Gun Brigade No. 1. Commissioned on the spot he was then posted back to the RCD as a supernumerary officer. In February 1916 he was promoted captain and given command of the newly formed CCB Machine-Gun Squadron. He eventually became CO of the 1st Motor Machine-Gun Brigade, Canada's first armoured formation. He retired from the Army in 1930 as a Colonel.

**Lieutenant-Colonel (Colonel) HI  
Stevenson, DSO and Bar, MiD, Croix de  
Guerre**

In 1912 he founded The Manitoba Horse, a Militia regiment which amalgamated with the FGH in 1936. He succeeded Paterson as CO of the FGH in May 1918, commanding until June 1919. He was known as a crack shot with the revolver.



Lieutenant Strachan photographed in December 1917 when the announcement of his Victoria Cross was made.

**Lieutenant (Colonel) HC Strachan, VC,  
MC**

He continued commanding B Squadron for the remainder of the war. Following the war he served in the Militia with the 19th Alberta Dragoons. He died on 1 May 1982 aged 97 years 175 days, the greatest age yet reached by a holder of the Victoria Cross.

**Lieutenant (Captain) WJ Cowen, MC**

He received the Military Cross for his part in the battle of Cambrai and became Adjutant of the FGH. He survived the war, dying 10 January 1964.

**Lieutenant (Captain) SH Williams, MC**

He won an MC at Rifle Wood in 1918 and survived the war to publish his memoirs in 1961.

**Lieutenant (Captain) HEE Cochran, MC**

He would win an MC at Moreuil Wood in 1918 and survive the war.

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**NOTES**

- 1 The crew commander, Second Lieutenant WF (Walter) Farrar, lost his wig in the canal escaping from the tank. He started a long correspondence with the Army to obtain compensation, eventually getting his money and the Military Cross.
- 2 'Tiny' Walker, was 6'2" and weighed 210 pounds. He would receive the DSO for this work.
- 3 Strachan is a Scots name pronounced "Strawn".
- 4 Tiny Walker had timed the crossing of B Squadron and informed Paterson that it had taken 5 minutes in all.
- 5 In the first two days of action The Newfoundland Regiment sustained 248 casualties. Many more were incurred in the ensuing 11 days before they were withdrawn.



## Victoria Cross Winner



### CURRIE, David Vivian

V.C. – St. Lambert-sur-Dives, France, August 18th, 1944

Born – Sutherland, Saskatchewan, July 8th, 1912

Unit – 29th Armoured Reconnaissance Regiment (The South Alberta Regiment)

Residing at Ottawa

South Alberta Light Horse

Major Currie first attacked and seized the village [St. Lambert-sur-Dives] which was a key point of the Chambois-Trun escape route for the remnants of two German armies cut off in the Falaise pocket. He held it through three days and nights of continuous fighting hurling back repeated enemy attempts to force a break-through. His strategy was successful in blocking the German escape route... [He] took his tiny force of tanks, anti-tank guns and infantry and thrust them in the path of the vastly superior forces and firepower...



When two of his tanks were knocked out he went on foot through many enemy outposts successfully to extricate the crews of his disabled tanks...

Says the citation:

"Throughout the operations the casualties to Major Currie's force were heavy. However, he never considered the possibility of failure or allowed it to enter the minds of his men. In the words of one of his non-commissioned officers, 'We knew at one stage that it was going to be a fight to the finish, but he was so cool about it, it was impossible for us to get excited.'"

In a final assault, Major Currie's little band destroyed seven enemy tanks, twelve 88- millimeter guns and 40 vehicles, killed 300 Germans, wounded 500 and captured 1100 more. He then ordered an attack and completed the capture of the village.

The Legionary, January 1945

*"Germans surrendering to Major D.V. Currie's force. Major Currie himself, tired and grimy, appears at the left, pistol in hand. This is as close as we are ever likely to come to a photograph of a man winning the Victoria Cross." - C.P. Stacey, The Victory Campaign*