

ARMOUR

*50th
Anniversary
Issue*

BULLETIN

DES BLINDES



VOLUME 19

1986

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This Bulletin is published under the authority of Col D.M. Dean, CD, Director of Armour. Views expressed are those of the authors and do not necessarily reflect official policy or opinion unless otherwise stated.

EDITOR-IN-CHIEF - LCol I.D. Barnes, CD

EDITOR - Capt M.J. Ward

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Le présent Bulletin est publié avec l'autorization du Col D.M. Dean, CD, Directeur des Blindés. Les opinions exprimées n'engagent que la responsabilité de leurs auteurs et ne doivent en aucune façon être considérées comme des prises de position officielles à moins d'avis contraire.

Rédacteur en chef - LCol I.D. Barnes, CD

Rédacteur - Capt M.J. Ward

Toute correspondance doit être adressée au rédacteur, aux soins de l'Ecole des Blindés, Centre d'Instruction de Combat, BFC Gagetown, Oromocto, N.B., EOG 2P0.

THE COVER

This year marks the 50th Anniversary of the founding of the Armour School. In commemoration of that event, this edition of the Bulletin has on its cover a reproduction of the badge designed in 1939 by the School's first Commandant, Lieutenant-Colonel F.F. Worthington.

The badge was based on the Royal Tank Regiment badge with the word CANADA replacing the RTR motto. The World War I tank in the design was quite appropriate because the First Canadian Tank Battalion had such tanks in 1918. Worthy, however, wanted Maple Leaves in place of laurel. Unfortunately, he was convinced by jewelers and others that Maple Leaves would be too difficult to reproduce, one suggesting they would look like grape leaves!

The School badge was issued 24 June 1940. When the Corps was raised in August 1940, it was taken into wear as a Corps badge until replaced by the familiar mailed fist badge in 1945.

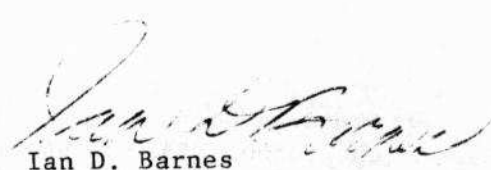
EDITOR-IN-CHIEF'S FOREWORD

1986 marks the 50th Anniversary of the founding of the Armour School at London, Ontario. Official celebrations are planned at Gagetown, Borden and London during the year. In recognition of this historical event, we have highlighted it on our cover and included articles on the history of the School and details of the celebrations.

Each year the Bulletin grows in quality and quantity. This year has been no exception. The Corps Update Section has attracted more input from the units and more "black hatters" have taken the opportunity to publish their views and ideas. This year we found ourselves in the enviable position of selecting articles for publication. Credit for success of the Bulletin, in large part, is due to the unit Commanding Officers and the individual contributors.

The future of the Bulletin continues to remain in doubt, but the Armour School remains committed to keep the presses rolling for as long as possible.

As my tenure at the Armour School and Editor-In-Chief draws to a close, I wish to acknowledge the support that I have received and in particular the excellent efforts of Capt Peter Haindl, last year's editor and Capt Mike Ward, editor of this edition.


Ian D. Barnes
Lieutenant-Colonel
Editor-In-Chief



COLONEL COMMANDANT'S FOREWORD

This year marks the 50th Anniversary of the Royal Canadian Armoured Corps School. We will begin our anniversary celebrations at the School, Base Gagetown on 13 September 1986, and these events will follow our Annual Royal Canadian Armoured Corps (Cavalry) conference. We hope this timing will allow past Colonel Commandants of the Corps, all Regimental Commanding Officers or their representatives, past School Commandants, and School Regimental Sergeants Major to join us and we hope that many members of the Corps and military and civilian dignitaries will also join us on this historic occasion.

The Governor General, Her Excellency, Madame Sauvé has been officially invited and we hope she can be with us. At this date, the planning is well underway by Lieutenant-Colonel Ian Barnes and his school staff, and we expect a good response from all Corps members as we celebrate this bench mark in our School's history.

As most Corps members are aware the School's history started when General Worthington formed the "Canadian Tank School", in London, Ontario in 1936 which consisted of 26 officers and men. This School moved from London to Camp Borden in 1938 and by the outbreak of WWII it was renamed the "Canadian Armoured Fighting Vehicle Training Centre". Throughout the war both the School and the Corps grew rapidly until by August 1945 when the prefix "Royal" was approved by his Majesty the King. The Corps became the "Royal Canadian Armoured

Corps" with a wartime strength of 20,000. By wars end, the school was called the Canadian Armoured Corps Training Establishment consisting of two wings responsible for tank and reconnaissance training and Meaford Range was an integral part of that establishment. Camp Borden and Meaford remained the School's home station until 1970 when it moved to Base Gagetown. Since both London, Camp Borden and Meaford Range have all played an important part in the School's history, the RCAC Association has also planned ceremonies in these areas, and will place plaques on buildings or in appropriate areas. Our President Lieutenant-Colonel Marshall along with Lieutenant-Colonel Little and Lieutenant-Colonel Wright are planning the details of these celebrations. On Saturday, 27 September 1986, the Elgins, 1st Hussars, and Windsors will conduct a ceremony in London. On Sunday, 28 September 1986, the Horse Guards, Queen's York Rangers and Ontars will conduct a ceremony in Borden.

In the past year, I have again been fortunate to visit the School and a number of the Regiments at their home stations. Our annual Association Conference which was held in Calgary in September 1985, which was jointly hosted by the Strath's and the Calgary's was an unqualified success and we all enjoyed their Western hospitality. I attended the Conference of Defence Associations in Ottawa 8-11 January 1986 and our resolutions which were approved in Calgary were presented to the Defence Association and approved for transmission to the Minister of National Defence.

My hope is that 1986 will be a year when the Corps looks proudly at its School and it's people. It's a time to reflect and a time to look confidently into the future. It's a time to think of it's birth and to pause for a moment and think of it's founder - The Father of our Corps "General Worthy". Our heritage, our leadership, our sacrifices have made us what we are today. Could there be a tear in our eyes and a lump in our throats as we come together at these celebrations and salute our Corps flag flying proudly to the music of "My Boy Willie".

Gen Rad

FOREWORD

THE DIRECTOR OF ARMOUR

As your new Director I am delighted to have the opportunity of addressing the Corps through the medium of the Armour Bulletin. Before I launch into a dialogue of deep philosophical subjects I would like to take the opportunity of passing on your thanks and congratulations to our past Director, Col Bob Billings. His perseverance and courage, demonstrated throughout his tenure is an example to us all. It is certainly my hope that I am as capable of serving all of you, (Militia and Regular) as Colonel Bob was. Not to be forgotten by any means was the change of our Corps RSM, Mr. Perron. He too served the Corps long and faithfully, and I might add, still does in Meaford. He, like the past Director, soldiered on during what you could consider some hard physical knocks. The long and short of it all is that with this obvious fortitude the Corps could not go any direction but up. We owe a debt of gratitude to both these fine gentlemen.

I certainly look forward to the many challenges ahead for the Corps and I am most fortunate to be so ably assisted by our new Corps RSM, Mr. Baldwin. RSM Baldwin has recently arrived from the 8CH but has his steed saddled and ready go. I look upon the Corps RSM as my reconnaissance force; moving quietly, listening, observing, providing advice (upwards and downwards) and leading me towards the objectives we have set for the Corps. In the future you will see him travelling alone, with me or the Colonel Commandant. We are in the process of working out a visit schedule for the militia and regular units. I ask that you give him the same support you afforded Mr Perron.

I will not get into deep philosophical discussions as I mentioned earlier; I will however advise you that the "Corps Philosophy 85 Forward" has been issued to all COs and they have been instructed to brief you all. The near future, for the Corps, I suspect will be very challenging and interesting for us all.

I look forward to meeting you, talking with you and working with you.



D.M. Dean
Colonel
Director of Armour



BIOGRAPHICAL SKETCH

COLONEL D.M. DEAN, CD

CANADIAN FORCES

Colonel Dean was born in Vancouver, British Columbia on 8 September 1941. He completed his elementary and secondary schooling in British Columbia.

Colonel D.M. Dean's military career commenced in 1960. In 1961, upon receiving his commission he joined his first regiment, Lord Strathcona's Horse (Royal Canadians) in Calgary, where he was employed as a Troop Leader. During this tour, he completed a one year posting with the United Nations Emergency Force in Egypt. In 1964 he was posted to the Royal Canadian Armoured Corps School in Borden, Ontario where he was employed as a tactics instructor. Returning to the Lord Strathcona's Horse (Royal Canadians) in Germany in 1965, he was employed as a Liaison Officer, Battle Captain, Operations Officer and the Adjutant.

In 1970-71 Colonel Dean attended the Canadian Land Forces Command and Staff College at Kingston. From the Staff College, he was posted to 2 Combat Group in Petawawa and subsequently to National Defence Headquarters. He went to Europe in 1974 and joined the staff at Headquarters, Canadian Forces Europe.

In 1975 he was posted to the Royal Canadian Dragoons as Officer Commanding Headquarters Squadron. During his tour with the Regiment he was also employed as Officer Commanding B Squadron and Officer Commanding Reconnaissance Squadron.

In July 1977 Colonel Dean was posted to Headquarters 4 Canadian Mechanized Brigade Group as the Senior Staff Officer Support.

Following his tour at 4 Canadian Mechanized Brigade Group Headquarters, he was appointed as a staff officer at National Defence Headquarters in the Personnel Branch.

Colonel Dean was appointed Commanding Officer of the Royal Canadian Dragoons in June 1982. In 1984 he was promoted to his present rank and posted to the National Defence College. In June 1985 Colonel Dean was posted to National Defence Headquarters as the Director of Armour/Director Land Combat Development.

Colonel Dean is married to the former Heather J. Goodwin of Vancouver, British Columbia.



THE ARMOUR SCHOOL'S
FIRST FIFTY YEARS

Capt M.R. McNorgan

At the start of the year 1936, Canada's Army was organized and equipped much along the same lines it had been during the First World War. By the close of the year 1936, a process was underway that would lead to the mechanized army we know today.

By order of the Chief of the General Staff, Major-General E.C. Ashton, effective 1 November 1936 a permanent school of instruction known as the Canadian Tank School was organized at London, Ontario. In December 1936, five infantry battalions were redesignated as Tank Battalions¹ and a new unit, The Essex Regiment (Tank), was raised. At the same time four units were designated as armoured car regiments. The one feature the six new Tank Battalions and the Canadian Tank School had in common was the absence of tanks.

The commander of the Tank School was Captain (Brevet and Temporary Major²) F.F. Worthington, MC, MM, PPCLI.

Although he wore an infantry badge Worthington (or Worthy as he was better known) had spent his commissioned war service in the armoured cars of the Machine-Gun Corps and had served in the Royal Canadian Permanent Machine Gun Brigade until its disbandment in 1922. His background and experience made him an ideal choice as the first commander of the School. His title in 1936 was Chief Instructor, another year was to pass before he became Commandant and Chief Instructor. The cavalry was to be the source of the new School's senior non-commissioned rank, in the form of Quarter-Master Sergeant Instructor (QMSI) WOII F.(Frank) Richmond of "B" Squadron, Lord Strathcona's Horse. Richmond in addition to his duties as School RSM doubled as an instructor. One of the young soldiers of the early war days P.V.B. Grieve (later BGen P.V.B. Grieve, CD) remembered him as follows: "Richmond was RSM of the CAFVTC when I joined. He was a big silent man who terrorized us by cruising around the lines whistling through his teeth pausing only long enough to "peg" you for some minor misdemeanor." He was known appropriately enough by his colleagues as "The Whistler".

1. This was part of a complete overhaul of the Militia in which dozens of regiments were disbanded, converted or amalgamated. The political rationale was that the small defence budget could better equip the remaining units. That did not happen however, it took the outbreak of World War II to get the Militia re-equipped.

2. This title allowed Worthington to wear the rank and carry the responsibilities of a Major while being paid as a Captain.

Each unit of the regular army was tasked to provide one officer and two Other Ranks to the Tank School. The new staff, all volunteers, gathered at the Royal School Building³ in Wolseley Barracks, London Ontario on 15 November and set up shop.

The first order of business was to train the instructors. That was accomplished by sending Maj Worthington and Lt J.H. Larocque, RCD on a year long course at the Royal Tank Corps School in Bovington, England. The remainder of the instructional staff attended an RCAF course on engine maintenance at Trenton.

During the year 1937, it was determined that London lacked the proper resources for mechanized training and on 1 May 1938, the entire School was moved to Camp Borden. Along with the move came a change in title to the Canadian Armoured Fighting Vehicles School (CAFVS). When Worthington arrived at the School fresh from his course in England, operations went into top gear. June 1938 saw the first of a series of two week long courses run to train the officers and men of the six Tank Battalions. The first class came from the Essex Regiment (Tank)⁴. By August the School was conducting trials in mechanized operations in co-operation with the RCD and the RCAF. The sum total of equipment at that time was twelve Carden-Loyd machine-gun carriers, a model T Ford engine for the instruction of motor mechanics, a locally built truck designated "Old Faithful", and an artillery discard, a light tracked, unarmoured gun tractor called a "Dragon". By September 1938, the School had received its first tanks two Vickers Mark VI Bs (with a ".50" for a main armament) and a Rypa training aid. Rypa was an acronym standing for roll, yaw, pitch and alteration of course. A gun turret mounted on a moveable platform that performed all of the above movements thus simulating a moving tank. The idea was that the gunner must acquire, track and hit his target while compensating for all of these factors. The stabilized gun was still many years in the future.

The outbreak of war coincided with another change of name and the CAFVS now became the Canadian Armoured Fighting Vehicles Training Centre (CAFVTC). The change of name was virtually all that happened. Only two of the Tank Battalions were mobilized in 1939 and

3. The Royal School Building, Wolseley Barracks is now the home of the 1st Hussars.

4. Now the Windsor Regiment (RCAC) this regiment was the first unit, still in existence, to be raised as an armoured regiment as opposed to being converted from some other arm. It was also probably the first unit of the Canadian Army to wear the black beret. Ironically because of it's organization date (15 Dec 1936) it is the junior regiment in the Corps.

both were used for vital point guards in Canada. There was no operational role for armour and no new equipment was forthcoming. In early 1940, Lt Col Worthington, as he was now, was directed by NDHQ to convert the Training Centre into a driving school for infantry carrier drivers using a new issue of trucks and all his tracked vehicles to carry out the task. Four hundred students reported for training. Worthy turning a blind eye to NDHQ included tank tactics, tank gunnery and communications training in the carrier driver course syllabus.

By the spring of 1940, the staff was dissatisfied and frustrated by the official indifference shown by Ottawa towards armour. Many of the officers despairing of ever getting into the war requested and received permission to return to their regiments. The only two originals to stay and stick it out with Worthy were Capt Gordon Carington Smith, RCA and Lt John Andrews, PPCLI.

The German blitz-krieg of May 1940 quickly changed a lot of minds about the value of armour in modern war and the role of the Training Centre reverted to armour training. In June Worthy was summoned to NDHQ and tasked with designing an armour component for the Canadian Army. The result of his labours was the order creating the Canadian Armoured Corps (CAC) effective 13 August 1940. Once again there was a change of names, the CAFVTC becoming the Canadian Armoured Corps Training Centre (CACTC)⁵. Worthy was to move on to be the commander of the newly raised 1st Canadian Army Tank Brigade. Command of the CACTC was passed to the newly promoted Lt Col G. Carington Smith.

The training apparatus of the Canadian Army was in full swing by now. Men were recruited at District Depots and posted to centres for basic to all arms training. Following that they passed to one of the advanced training centres run by the respective corps across the country. The influx was so great that in February 1941, the CACTC was split into two. The two new entities being named A8 CACTC and A9 CACTC.⁶ Lt Col Carington Smith handed over command of A8 CACTC to Lt Col A. McGoun, a British officer from the Royal Tank Regiment. A9 CACTC was commanded by Lt Col J.A. McCamus, MC.

5. The CACTC staff at this time was involved in designing a new tank to be built in Canada. Called the Ram, 1157 were made. It was used by CAC regiments in Britain until replaced by the Sherman. The Ram is believed to have had a strong influence on the designers of the American Sherman and in fact it has a strong physical resemblance to the Sherman.

6. The 'A' stood for Advanced. The advanced training centres were numbered sequentially as they were raised, the designations A1 through A7 had been previously allocated to the Artillery, Engineers and Signals.

In mid 1942, two more advanced training centres were raised and named A27 CACTC and A28 CACTC. In January 1943, A27 CACTC became A27 Canadian Reconnaissance Training Centre and moved to Dundurn, Saskatchewan where it functioned for the remainder of the war.

Having proliferated so rapidly over a two year period, the Corps' training apparatus began to coalesce once more. A8, A9 and A28 CACTCs were merged into the Canadian Armoured Corps Training Group later to gain the title A33 Canadian Armoured Corps Training Establishment (CACTE). By 1945, the CACTE, located in Borden, was commanded by a Colonel and consisted of:

- Headquarters CACTE
- No. 1 CAC Training Regiment (the old A8)
- No. 2 CAC Training Regiment (the old A9)
- No. 3 CAC Training Regiment (the old A28)
- Technical and Training Wing
- No. 1 Mechanical Transport Regiment (CAC); (formerly No. 1 Trained Soldier Regiment).7

Technical and Training Wing included Gunnery School and D&M School both commanded by Lt Cols. Wireless School was commanded by a Maj.

A27 Reconnaissance Training Centre was closed down in March 1945. A33 CACTE continued on until 1946 when it was disbanded, its last commandant being Col REA Morton, DSO. A short time later it was reborn under the title Royal Canadian Armoured Corps (School), RCAC(S).

The RCAC(S) was located in Camp Borden and equipped with only a few token worn out Shermans with 75mm guns. Even then tanks had to be shared between the School and the RCD who occupied the same camp. It was not until 1947 that the newer Sherman M4A2E8 with its 76mm gun arrived and training activity, and moral, picked up significantly.

The RCAC(S) was built into a large, well run organization in the post war years. From the mid 1950's to the mid 1960's it was organized as follows:

7. No. 1 TSR was a holding unit for soldiers too young for active service. Doing little training it was primarily used as a source of manpower for the CACTE and the Camp. In 1944, Maj Gen Worthington, the new Camp Borden commander, had the unit restructured as No. 1 MTR (CAC) so that these soldiers would continue to receive worthwhile training in D&M while waiting to come "of age" and go on to a Training Regiment. The Training Regiment was the last step in the training process before a soldier was posted overseas.

The Royal Canadian Armoured Corps (School)

School Headquarters

Commandant
(Colonel)

OIC T & TIS
(Major)

Adjutant
(Captain)

OC Meaford AFV Range
(Major)

Assistant Adjutant
(Lieutenant)

RSM
(WO I)

Headquarters Sqn
(Major)

Training Wing

Chief Instructor
(Lieutenant-Colonel)

Trg Coord
(Captain)

Admin Coord
(Captain)

Tactics Sqn
(Major)

Depot Sqn
(Major)

D&M Sqn
(Major)

Gary Sqn
(Major)

Comms Sqn
(Major)

The high point of each training year was the Corps weekend, held in August, and designed to mark the Corps' birthday and the conclusion of training. The guest of honour was always the Colonel Commandant Major-General F.F. Worthington, CB, MC, MM, CD. In 1952, Worthy decided to recognize the achievement of the top graduate of officer training and so the Worthington Sword was donated to become the School's most prized trophy and the first of a series of swords of honour.

By the mid 1950's, the School was equipped with the new Centurion tank and had expanded to take over control of the Meaford AFV Range.

Located 18 miles from Owen Sound, Meaford was first acquired by the Army in 1942 because the Camp Borden training area could not accommodate the heavy demands of wartime. As well as an AFV range, Meaford was used as an artillery range, and for armoured and infantry tactical training. With the end of the war the Meaford Camp staff was run down to a body of four men working under the authority of the Commander Camp Borden. In 1955, the RCAC(S) was given control and responsibility for Meaford. By 1963, the School had a staff of 88 military and 55 civilians permanently employed at the range. An RCAC(S) sub-unit known as the Field Training Section supplied the soldiers to crew the 26 Centurions, 12 Sherman gun tanks and 22 Sherman APCs permanently located there.

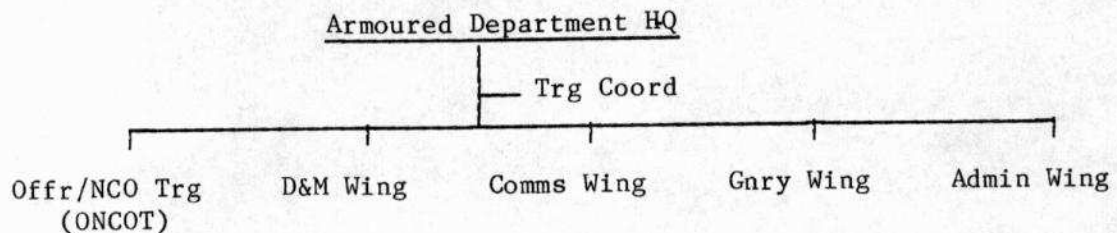
Meaford was in use throughout the year with a peak demand period in the summer when the two main accommodation sites would be filled to their maximum. Main Camp accommodating 34 officers, 31 WOs/Sgts and 144 junior ranks. 7th Line Camp located 3 miles away to the East would hold 30 officers, 64 WOs/Sgts and 128 junior ranks.⁸

In the mid 1960's more and more was being heard about the integration and unification of the armed forces. Innovation in organizational structures was the order of the day. The full force of these changes struck the School in November 1966 when it was merged with the Royal Canadian School of Infantry into a new entity called the Combat Arms School (CAS).

CAS had a turbulent existence being transferred from Mobile Command to the new Training Command and then back to Mobile Command again in 1970. In the autumn of 1970, it was amalgamated with the Royal Canadian School of Artillery and physically moved to CFB Gagetown, New Brunswick. As an earlier edition of the Armour Bulletin phrased it: "Upon arrival in Gagetown the School organized itself

8. During the war years, troops had been accommodated in tents or abandoned farm buildings, summer and winter.

into Divisions and Companies based upon the nature of their activities. For example, Command Division was responsible for all leadership, tactics, tactical air and special warfare training. Weapons Division was responsible for all direct and indirect fire training. Although this system worked, it led to various complications and vagaries, not the least of which was the difficulty of identifying the Arms as entities co-operating with one another." The problems of CAS were subjected to investigation by the CFB Gagetown Commander BGen S.V. Radley-Walters. As a result CAS was reorganized in September 1972. One of the products of that reorganization was a new sub-unit known as Armoured Department. Under command of its first OC, Major J.K. Dangerfield, CD the structure of Armoured Department had a familiar look to it.



By 1977 CAS had been absorbed into the Combat Training Centre (CTC) and the Armoured Department had become the Armour School under command of LCol G.J. O'Connor, CD.

Today the Armour School remains a part of CTC as it prepares to mark its 50th anniversary. The past fifty years have been tumultuous ones. Nevertheless, the School has continued to serve the Corps, the Army and the Nation with the same degree of determination, pride and resourcefulness that Worthy brought to it in 1936, when the foundation of Canada's Armoured Corps was first laid.

Author's Note: I wish to acknowledge the generous assistance of Mr. J.F. Wallace, MC, MA, in helping to research this article.

Mr. Wallace was the first man to enlist in the CAFVS when the war started in Sep 1939, his regimental number being B4400. He later served as an officer in the Three Rivers Regiment winning an MC and losing a leg in the action at Termoli in Italy. Now retired he lives in Ottawa.

He is not responsible for any errors which may appear in this article.



THE ORIGINAL STAFF OF THE CANADIAN TANK SCHOOL, 15 NOV 36

Rear Row L-R:

Centre Row L-R:

Front Row L-R:

Absent:

Photo Credit:

SGT R.S. EDWARDS, PPCLI, SGT G.H. PRATT, RCR, SGT G.A. FARMER, RCA, SGT A.VIEL, R22eR
 SGT J.C. CAVE, PPCLI, SGT R.J. HIDER, RCD, SGT A. PENGELEY, RCR, SGT W.V.O. LEBLANC, R22eR
 SGT E.D.H. REID, RCA

WOII R. HARRIS, RCD, WOII F. RICHMOND, LSH, LT T.G. GIBSON RCR, CAPT G. CARINGTON SMITH, RCA,
 LT. J.G. ANDREWS, PPCLI, WOII M.M. PHILPOTT, LSH

MAJ F.F. WORTHINGTON, LT J.H. LAROCQUE, RCD, LT J.A.G. ROBERGE, R22eR, LT F.E. WHITE, LSH
National Museums of Canada NMC 81-3682

THE ORIGINAL STAFF
THE CANADIAN TANK SCHOOL
NOVEMBER 1936

<u>Name</u>	<u>Notes</u>
Capt, Bvt & Temp Major F.F. Worthington, MC, MM, PPCLI	Maj-Gen F.F. Worthington, CB, MC, MM, CD; Col Comdt RCAC 1949-1967
Capt G. (Gordon) Carington Smith, RCA	Lt Col G.C. Smith, CD Comdt of CACTC, Regimental 2IC of BCD in Italy (wounded), retired 1958.
Lt J.G. (John) Andrews, PPCLI	Lt Col J.G. Andrews, CO Calgary Regiment (Tank) KIA at Dieppe, 1942
Lt T.G. (Graeme) Gibson, RCR	Brig T.G. Gibson, CBE, DSO, 1946
Lt J.H. (Howie) Larocque, RCD	Lt Col J.H. Larocque, CD A/CO RCD 1941; CO BCD 1941 - 42
Lt J.A.G. (Guy) Roberge, R22eR	Lt Col J.A.G. Roberge, OBE, CO 24th Armd Regt, 1942; CO R22eR 1946-47
Lt F.E. (Frank) White, LSH	Lt Col F.E. White, DSO CO 1H 1944 - 45; CO LdSH(RC) 1945 - 46
WOII F. (Frank) Richmond, LSH	Maj F. Richmond, LdSH (RC), 1946
WOII R. (Bob) Harris, RCD	Capt R. Harris, RCAC, 1946
WOII M.M. (Phil) Philpott, LSH	Maj M.M. Philpott, 2IC 8th Recce Regt (14th Cdn Hussars), 1942-43
Sgt J.C. (John) Cave, PPCLI	Lt Col J.C. Cave, 2IC Sherbrooke Fusiliers, 1943-44
Sgt R.S. (Dick) Edwards, PPCLI	Maj R.S. Edwards, CAC 1945
Sgt G.A. (George) Farmer, RCA	Lt Col G.A. Farmer, CAC, 1945
Sgt R.J. (Roy) Hider, RCD	WOI R.J. Hider, RCD, RSM of CAFVTC 1940-42
Sgt W.V.O. (Willy) Leblanc, R22eR	Lt W.V.O. Leblanc, RCAC, 1946
Sgt A. Pengelley, RCR	Capt A. Pengelley, 1945
Sgt G.H. (Gord) Pratt, RCR	Maj G.H. Pratt, CO C Sqn RCD 1951-52
Sgt E.D.H. (Ed) Reid, RCA	Capt E.D.H. Reid, RCD, 1941-43
Sgt A. (Tony) Viel, R22eR	WOI A. Viel, CAC, 1945

THE LINEAGE

CANADIAN TANK SCHOOL
1 Nov 1936

redesignated as

CANADIAN ARMOURED FIGHTING VEHICLES SCHOOL
1 May 1938

redesignated as

CANADIAN ARMOURED FIGHTING VEHICLES TRAINING CENTRE
1 Sep 1939

renamed

CANADIAN ARMOURED CORPS TRAINING CENTRE
13 Aug 1940

which was split into

A8 CACTC AND A9 CACTC
15 Feb 1941

Two additional training centres were created

A27 CACTC and A28 CACTC
May 1942

CANADIAN ARMOURED CORPS TRAINING GROUP
raised Mar 1942
later incorporated A8 CACTC, A9 CACTC and 28 CACTC

renamed

A33 CANADIAN ARMOURED CORPS TRAINING ESTABLISHMENT
1 Sep 1942

reorganized as

ROYAL CANADIAN ARMOURED CORPS (SCHOOL)
1 Oct 1946

amalgamated with the RCS of I to form

THE COMBAT ARMS SCHOOL
Nov 1966

reorganized as

ARMOURED DEPARTMENT, COMBAT ARMS SCHOOL
Sep 1972

renamed

ARMOUR SCHOOL
Dec 1977

COMMANDING OFFICERS, COMMANDANTS

CANADIAN TANK SCHOOL	Captain, Bvt and Temporary Major FF Worthington MC, MM	Nov 36-May 38
CANADIAN ARMOURED FIGHTING VEHICLES SCHOOL	Captain and Bvt Major, Temporary Lt Col FF Worthington, MC, MM	May 38-Sep 39
CANADIAN ARMOURED FIGHTING VEHICLES TRAINING CENTRE	Lt Col FF Worthington MC, MM	Sep 39-Aug 40
CANADIAN ARMOURED CORPS TRAINING CENTRE	Col FF Worthington, MC, MM Lt Col G Carington Smith	Aug 40-Nov 40 Nov 40-Feb 41
A8 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 1 Training Regiment)	Lt Col G Carington Smith Lt Col A McGoun, RTR Lt Col J Begg, DSO, ED Lt Col FH Collins, MM, ED Lt Col FD Adams, DSO	Feb 41-Jun 41 Jun 41-May 43 May 43-Jun 44 Jul 44-Jan 45 Apr 45-Oct 45
A9 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 2 Training Regiment)	Lt Col JA McCamus, MC Maj JW Graham Lt Col JA McCamus, MC Lt Col HE Harris Lt Col CE Parish Lt Col FD Adams, DSO	Jun 41-Sep 42 Oct 42-Feb 43 Feb 43-Aug 43 Apr 44-Apr 45 Apr 45-Oct 45 Oct 45-Dec 45
A27 CANADIAN RECONNAIS- SANCE TRAINING CENTRE	Lt Col JA Macdonald, MC Lt Col CF Smith, ED	May 42-Feb 44 Feb 44-Mar 45
A28 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 3 Training Regiment)	Lt Col NH Macaulay, DSO Maj RS Black Lt Col NH Macauley, DSO Lt Col RVE Conover, OBE	Jun 42-Oct 42 Oct 42-Jan 43 Jan 43-Jul 44 Jul 44-Nov 45
NO. 1 TRAINED SOLDIER REGIMENT (later No. 1 Mechanical Transport Regiment (CAC))	Lt Col CF Smith, ED Lt Col MC Finley Maj JD Oliver Lt Col JE Wilkins, OBE	Jun 43-Feb 44 Jun 44-Jan 45 Jan 45-Apr 45 Apr 45-Apr 46
GUNNERY SCHOOL	Maj A Kilgour Lt Col HJ Wickey Lt Col EG Reade Lt Col MC Finley	Jun 43-Aug 43 Aug 43-Mar 44 Apr 44-Jan 45 Jan 45-Sep 45

Appendix 3

D&M SCHOOL	Lt Col JE Wilkens, OBE	Jul 43-Jun 44
	Lt Col RF Butler	Jun 44-Mar 45
	Lt Col DV Currie, VC	Mar 45-Jun 45
	Lt Col PG Griffin, DSO	Jun 45-Oct 45
	Lt Col EG Reade	Oct 45-Nov 45
	Lt Col EAC Amy, DSO, MC	Nov 45-Jan 46

CANADIAN ARMOURED CORPS TRAINING GROUP	Col R Wood, TD	Jul 42-Sep 42
A33 CANADIAN ARMOURED CORPS TRAINING ESTABLISHMENT	Col R Wood, TD	Sep 42-Apr 43
	Col SA Lee, MC	Apr 43-Aug 43
	Col JA McCamus, MC	Aug 43-Jun 44
	Col CE Bailey, DSO, MC	Jul 44-Jul 45
(Temporary Commandant)	Brig JF Bingham, OBE, MID	Oct 45-Oct 45
(Temporary Commandant)	Lt Col RVE Conover, OBE, VD	Nov 45-Jan 46
(Temporary Commandant)	Col JF Bingham, OBE, MID	Jan 46-Mar 46
	Col REA Morton, DSO	Mar 46-Sep 46
RCAC (School)	Lt Col BF MacDonald, DSO	Oct 46-Oct 49
	Lt Col EAC Amy, DSO, MC	Oct 49-May 51
(Temporary Commandant)	Lt Col EWH Berwick, CD	May 51-Sep 51
	Col GJH Wattsford, CD	Sep 51-Jul 54
(Temporary Commandant)	Lt Col EWH Berwick, CD	Jul 54-Oct 54
	Col MR Dare, DSO, CD	Sep 54-Jan 58
(Temporary Commandant)	Lt Col MH Bateman, CD	Jan 58-Aug 58
	Col AJ Tedlie, DSO, CD	Aug 58-Aug 60
	Col WA Milroy, DSO, CD	Aug 60-Jul 62
	Col SV Radley-Walters, DSO, MC, CD	Jul 62-Aug 65
	Col CA Greenleaf, DSO, CD	Aug 65-Nov 66
The RCAC(S) absorbed by the Combat Arms School (CAS)	1966 - 1972	
Armoured Department, CAS	Maj JK Dangerfield, CD	Sep 72-Jun 73
	LCol CA Conway, CD	Jun 73-Jun 76
Armour School	LCol GJ O'Connor, CD	Jun 76-Jun 78
	Col HBE Lake, CD	Jun 78-Sep 79
	LCol WJ Coupland, CD	Sep 79-Jul 81
	LCol RN Lawrence, CD	Jul 81-Jul 84
	LCol ID Barnes, CD	Jul 84-

REGIMENTAL SERGEANTS MAJOR

CANADIAN TANK SCHOOL	QMSI (WOII) F. Richmond	1936-1938
CANADIAN ARMOURED FIGHT- ING VEHICLES SCHOOL	WOI (RSM) F. Richmond	1938-1939
CANADIAN ARMOURED FIGHTING VEHICLES TRAINING CENTRE	WOI (RSM) F. Richmond WOI (RSM) R.J. Hider	1939-1940 1940
CANADIAN ARMOURED CORPS TRAINING CENTRE	WOI (RSM) R.J. Hider	1940-1941
A8 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 1 Training Regiment)	WOI (RSM) R.J. Hider WOI (RSM) F. Flood WOI (RSM) F.A. Green	1941-1942 1942-1944 1945
A9 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 2 Training Regiment)	WOI (RSM) D. Watson WOI (RSM) W.H. Young WOI (RSM) E.E. Burke WOI (RSM) F.G.A. Blackman	1941-1942 1942-1943 1943-1945 1945
A27 CANADIAN ARMOURED CORPS TRAINING CENTRE (later A27 Canadian Reconnaissance Training Centre)	WOI (RSM) C.T. Carnie WOI (RSM) E.S. Coleman	1942-1943 1943-1945
A28 CANADIAN ARMOURED CORPS TRAINING CENTRE (later No. 3 Training Regiment)	WOI (RSM) E.C. Caswell WOI (RSM) N. Lystar WOI (RSM) P.A. Garvin	1942-1944 1944-1945 1945
NO. 1 TRAINED SOLDIER REGIMENT (later No. 1 Mechanical Transport Regiment (CAC))	WOI (RSM) J. Nicholls WOI (RSM) T.E. Gale WOI (RSM) W.E. Blogg	1943 1944 1944-1945

A33 CANADIAN ARMOURED CORPS TRAINING ESTABLISHMENT (and its predecessor The Group)	This was an administrative HQ. It is not clear from the record whether or not there was an RSM position.	
RCAC (School)	WOI (RSM) C.W. Smith WOI (RSM) S. Heindrich, MBE WOI (RSM) W. McCullough WOI (RSM) F.R.J. Prevost, MBE WOI (RSM) R.M. Davies WOI (RSM) A.E. Piper, CD	1946-1948 1948-1950 1950-1951 1951-1953 1953-1956 1956-1961

WOI (RSM) B.K. MacKay	1961-1963
WOI (RSM) J. Lank	1963-1964
WOI (RSM) E.J. Armer, MBE	1964-1965
WOI (RSM) H. Wright, CD	1965-1966
WOI (RSM) T.F. Begley, CD	1966-1967

The RCAC(S) was absorbed
by the Combat Arms School
(CAS)

1966-1972

Armoured Department, CAS

CWO (RSM) E.E. Eros, CD	1972-1974
CWO (RSM) V. Geldart, CD	1974-1975
CWO (RSM) C.W. Yeomans, CD	1975-1976
CWO (RSM) W.L. Prouse, CD	1976-1977
CWO (RSM) J.E. Grenon, MMM, CD	1977-1979
CWO (RSM) W.L. Prouse, CD	1979-1981
CWO (RSM) G.R. Bennett, CD	1981-1982
CWO (RSM) A.L. MacAdams, MMM, CD	1982-1984
CWO (RSM) P.E. Cady, CD	1984-

Armour School



ARMOUR SCHOOL COURSE RESULTS 1985

by Capt M.J. Ward

Training at the Armour School continued unabated throughout the 1985 cycle. The myriad of courses conducted, produced and sustained a level of activity which was only scarcely diminished by two, all too brief leave periods. The pace of life notwithstanding, pride is reflected in the quality of successful trainees who returned to their units equipped and ready to apply newly confirmed skills.

Several individuals distinguished themselves by their strong performance and by achieving superior standards. A cumulative list of those candidates who placed first on their respective courses is reflected below.

It was with particular pleasure that we were able to welcome back Mrs Larry Worthington to present the Worthington Sword during the graduation ceremonies for officer candidate training last summer.



Mrs Larry Worthington presents the Worthington Trophy to Second Lieutenant H.A. Ferguson, 8CH (PL), who placed first on Armour Officer Course Phase IV, 8 August 1985.

The top students on each of the courses run were:

Armour Squadron Commander	8501	Capt Glauninger, RCD
Advanced Armoured Reconnaissance	8501	Capt Kelly, 8CH
Advanced Armoured Gunner	8501	MCpl Girrard, 12 RBC
Combat Arms Advanced Driver	8501	Sgt Hendsbee, RCD
Combat Arms Advanced Driver	8502	Sgt Evraert, RCD
Combat Arms Advanced Communicator	8501	MCpl Whitehall, 8CH
Combat Arms Advanced Communicator	8502	MCpl Whelan, 3 PPCLI
AOCT Phase IV	8501	2Lt Ferguson, 8CH
AOCT Phase IV	8502	2Lt Grenier, 12 RBC
RESO Phase III	8501	2Lt Hitchcock, 8CH (M)
AOCT Phase III	8501	OCdt Batty
AOCT Phase III	8502	OCdt Sharpe
AOCT Phase II	8501	OCdt Busseau
AOCT Phase II	8502	OCdt Nickel
RESO Phase I/II	8501	OCdt Wilmshurst, Elgin Regt
TQ 6B	8501	Sgt Rousseau, RCD
TQ 6A	8501	MCpl Naylor, RCD
TQ 6A	8502	MCpl Langille, 12 RBC
Combat Leader Course	8501	Cpl Duguay, RCD
Leopard Gunner-Basic	8501	Tpr Kelly
Cougar Gunner-Basic	8501	Tpr Statz
TQ3	8501	Tpr Lingley
TQ3	8502	Tpr Day





CORPS UPDATE

THE ROYAL CANADIAN ARMoured CORPS ASSOCIATION

(CAVALRY)

by LCol L.P. Morin

Armour Officers, new to the Corps, and other interested parties, frequently express an interest in learning more about the Royal Canadian Armoured Corps Association (Cavalry). Hopefully the following brief paragraphs will give an insight into the purpose and function of the Association; in essence the Armoured Officers professional association.

Founded in 1912, as the Canadian Cavalry Association, the RCAC Association has, for over sixty years, been a dynamic nationwide organization deeply involved in a wide spectrum of military and national issues and concerns. Established with the principal aim of furthering, in all ways, the cause and progress of the Cavalry and later the Armoured Corps; the Association quickly expanded its horizons and has regularly been at the forefront in dealing with issues in all spheres of support to our Canadian military. Over the decades it has played a vital role in uniting and enhancing Canada's Armour community.

The Association serves as a vital link within the Corps between units, serving Officers both Regular and Reserve, and the large body of retired Armour Officers. Through its wide spread membership across the nation it provides effective contact and liaison with the public at large, as well as with other Corps and defence orientated organisations. These links are enhanced by newsletters, bulletins, meetings and conferences of varying scope.

The Association Council is composed of the "Colonel of the Regiment" of each of the four Regular Force Armoured Regiments, the Commanding Officer of each of the eighteen Militia Armoured Regiments, and six "Life Members on Council" as well as an Executive and Advisory Council. Meeting annually for several days the council plus the Colonel Commandant, Director of Armour, and selected invited Armour and other Senior Appointments, considers and acts upon numerous matters of concern to the Corps and the military in general. This serves not only to present a united Corps "front" but also forges close ties between units and individuals.

Specific activities of the Association include:

- Financial support and representation to the CFB Borden Museum which incorporates the RCAC Museum, the AFV Collection and Worthington Park.

- Maintenance of the "Armour Suite" of furniture and silver at CFB Gagetown at the Armour School.
- provision of trophies, and input to regulations, for Armour Competitions across Canada. Provision of awards at Service Colleges and the Armour School.
- operation of the Armoured Corps Educational Trust Fund for dissemination of information of an informative and educational nature on Armour matters to the public.
- representation and input for the Corps to the Conference of Defence Associations. (The resolutions of the RCACA Conference held during September 1985 are printed below in their entirety).
- regular input from all units and the Association to FMC, NDHQ, and higher levels on matters of concern.
- publication and dissemination of information and news within the Corps.
- regular and ongoing liaison with other Corps on items of common interest; or in furthering Armoured Corps interests.

In addition to unit memberships each Armour Officer, serving or retired, is eligible for Ordinary Membership in the Association and the vast majority are already members. Members may also be nominated for Life Membership.

Inquiries regarding more information on membership in the Royal Canadian Armoured Corps Association should be directed to the Secretary at the address below:

LCol H.W. Locke, CD
 30 Jeff Drive
 Etobicoke, Ontario M9C 1J6

ROYAL CANADIAN ARMoured CORPS ASSOCIATION

RESOLUTIONS 1985

INCREASED NUMBER OF MAIN BATTLE TANKS

RCACA RESOLUTION 1/85

FINAL

THE ROYAL CANADIAN ARMoured CORPS ASSOCIATION

Bearing in mind that the main battle tank (MBT) is the predominant conventional weapon system of the WARSAW PACT.

Noting that recent operational research and organizational studies reinforce the need for considerably increased inventories of MBT's to meet Canada's NATO commitments.

Regretting that the MND's reply to CDA 6/85 did not address this urgent requirement in its entirety.

Reaffirming its conviction that:

- a. the MBT remains the best anti-tank weapon; and
- b. current inventories are insufficient.

Call upon the Minister to:

- a. redress the remaining shortage required to meet Canada's commitment of MBT's in the NATO Central Army Group;
- b. address the shortage of Canadian MBT's in the NATO northern flank; and
- c. address the shortage of MBT's for training and personnel sustainment to meet all commitments.

NEW MAIN BATTLE TANK

RCACA RESOLUTION 2/85

FINAL

THE ROYAL CANADIAN ARMoured CORPS ASSOCIATION

Recognizing that Leopard 1 has been in service in NATO for over 20 years and is based upon developments of the 1960's.

Noting that the MND in his response to CDA 6/85 acknowledges the need to identify a new main battle tank (MBT) and is prepared to investigate the feasibility of domestic production under licensing arrangements.

Deeply concerned that the known characteristics of WARSAW PACT MBT's indicate the accelerating obsolescence of the Leopard C1 in terms of fire-power and armour protection and further that its replacement is not scheduled prior to the mid 1990's.

Bearing in mind that current assessments reveal that modifications to overcome these deficiencies are neither cost-effective nor practical.

Recommends to the Minister that:

- a. an MBT capable of defeating the existing WARSAW PACT threat be acquired now;
- b. a viable source of supply be established onshore to guarantee the support of our future MBT fleet; and
- c. Leopard C1 be retained in Canada for training purposes.

DEFENCE MANDATE

RCACA RESOLUTION 3/85

Noting that the Government of Canada accepts that the following salient points are coincidental with the issues being considered in the current examination of the defence mandate:

- a. our ultimate aim must remain the territorial sovereignty of Canada. In this regard, it will be necessary to update and broaden the scope of our national interests in the Atlantic, the Pacific, the Arctic, and space in order to accomplish this;
- b. Canada must share fully with its NATO partners in support of the Alliance;
- c. Canada should continue to participate in the NORAD Agreement and make an appropriate contribution to the evolving aerospace defence of North America;
- d. peacekeeping in support of the United Nations should continue to be a role involving the CAF but must not reduce our capability to carry out the above commitments;
- e. the ability to protect our national interests in other areas of the world beyond NATO boundaries must be considered;
- f. the defence mandate must include a firm statement of Government determination to ensure that the Forces are organized; equipped and maintained with the capability to meet the threats and commitments recognized and stated as National Policy. This must include such things as mobilization planning, adequate Total Force structure, including the Reserves and determination to provide adequate funding. The review of Defence Policy and subsequent production must not be allowed to interfere with current re-equipment programmes now under way and planned for the Canadian Armed Forces; and
- g. wars are waged with the total resources of nations, including for example, Industry, Energy and Manpower; and the defence mandate should therefore embrace a total of defence approach.

Urges the Government of Canada to define without delay the exact nature and extent of our defence mandate, to enable the required Force Structure to be implemented and the Mobilization Plan to be produced and disseminated.

MILITIA STRUCTURE

RCACA RESOLUTION 4/85

FINAL
PASSED BY VOTE
14 SEP 1985

THE ROYAL CANADIAN ARMoured CORPS ASSOCIATION

Bearing in mind the critical need for a mobilization plan and the requirement to increase the Army's capacity for conventional warfare.

Suggesting that a clearly defined army structure is essential for the rational development in peacetime of a framework for the expeditious mobilization of a field force in time of war.

Recognizing the Land Force Combat Development process and its associated proposals for a balanced field force structure necessary to be combat effective on the modern battlefield.

Requests that the Canadian Militia and Communications Reserves be restructured into operational formations that will allow units to be mobilized in an effective and timely manner in the event of hostilities.

RCAC RESOLUTION 5/85

FINAL

THE ROYAL CANADIAN ARMoured CORPS ASSOCIATION

Viewing with concern the lack of combined arms live fire manoeuvre training facilities available to Canadian troops in Canada.

Recognizing the urgent need for such facilities to meet current operational and training requirements.

Recommends to the CDS that:

- a. a Combat Team live fire manoeuvre training area be developed in each Militia Area;
- b. one or more National Battle Group live fire manoeuvre training areas be developed; and
- c. each live fire manoeuvre training area with the appropriate targetry be given development priority over its administrative infrastructure.

PUBLIC AWARENESS AND PUBLIC SUPPORT

RCAC RESOLUTION 6/85

Recognizing there is an urgent need to develop support for national defence and national security among the Canadian public.

Taking into account that there is a dearth of public information on defence matters available to the public and to our parliamentary and legislative representatives.

Bearing in mind there is a need to provide a full-time non-governmental information, resource and response centre.

Stressing there is a need to build a network of associations, organizations and individuals interested in the national defence and national security of Canada to ensure that the defence and security needs of the nation are properly presented to the government and the public.

Urges the Conference of Defence Associations to secure the necessary resources and take early action to establish a full-time National office under a Director of Operations with terms of reference which will allow it to develop a comprehensive, pro-active public information programme.

ADVICE TO SPECIAL JOINT COMMITTEE

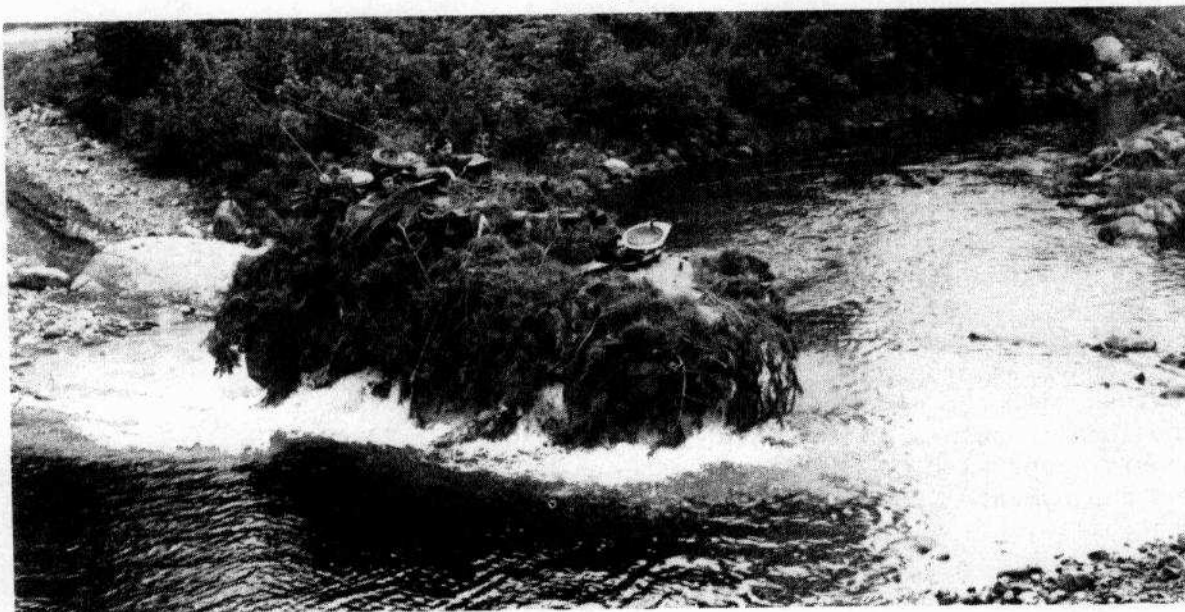
RCAC RESOLUTION 7/85

Bearing in mind that the Government of Canada has issued a green paper on foreign policy titled Competition and Security.

Noting that Parliament has established a Special Joint Committee of the Senate and the House of Commons to tour Canada to receive public testimony on Canada's international relations, including the aspects of collective and international security.

Recognizing that testimony before the Special Committee and the reports of that committee could have an affect upon the development of national defence and national security policy to be reflected in the anticipated White Paper on Defence.

Requests that the Conference of Defence Associations (CDA) take immediate action to ensure that capable representatives of each region of CDA arrange to appear before the Special Committee at each hearing location within each region across Canada and present a comprehensive statement of Canada's defence requirements. We suggest that the report of the BCN1 Task Force, Sept 84, on Defence Policy be used as a base framework for such presentations. The speaker where necessary, may give particular emphasis to areas of interest based on his special expertise.



A 1st Hussars, Cougar, commanded by Sgt Ron Nutt fords the Petawawa river during exercise Milcon "85".

THE SHERBROOKE HUSSARS

CONCENTRATION 85

by Capt P. St-Amant

Every summer in August, we as citizen soldiers have a chance to get away from the office and do something really different from the rest of the pack. Summer Concentration is our only chance to work with our unit for more than a weekend at a time and a chance to practice military skills outside of the controlled environment of a course. It's also a chance to meet old friends and make new ones within the Corps and the Area.

The Area's four Armoured units were broken down into three operational squadrons, one armoured and two recce, "A" squadron being Cougar and confined to base for the duration. "B" (best) squadron and "C" squadron, being recce and avowed enemies, would get out to see the scenery. Unit integrity was kept at the troop level, so if you were a Sherbrooke Hussar you would be in a troop made up of Sherbie Herbies. The recce squadrons would operate in the area between Québec City and Trois-Rivières for the exercises, an area not far from the stomping ground of the 12e Régiment Blindée du Canada(M) located in Trois-Rivières.

While our fearless squadron commander, Maj Léo "chopper" Marleau of the Régiment de Hull was busy with the planning and coordination for the exercises, we started getting our adm sorted out and as Battle Captain for "B" sqn, these were busy times. Fortunately, MWO Lancaster from the Royal Canadian Hussars was our Squadron Sergeant-Major and we were able to solve all the problems that arose.

During the shake-out exercise, we were pleased with the performance of our troops but dismayed with our tired old jeeps; vehicle breakdowns were legion. We were somewhat short of qualified personnel, but what they lacked in experienced, they make up for in talent and their tactics came along very well. The Concentration was off to a promising start.

After a day on base for problem solving, we were back in the saddle again and this time with the cunning enemy, "C" squadron on the other side of the hill. Our troops told me that the weather would be great as soon as we left cloud covered Valcartier, but I wouldn't know as I spent most of my time bouncing around in the back of the Squadron Command Post. Our good fortune with the weather was only equalled with the sunny disposition of the local populace; their hospitality and helpfulness will remain a happy memory along with Concentration"85". One farmer even offered his advice on our deployment, "two years ago when they were here, they put their OP up on that hill".

Concentration "85" was closed with a traditional party where war stories and beer were abundant. No matter how hard we tried we couldn't get the boys from "C" Squadron to admit defeat.

An idea being considered for next year would be to move the recce training from Valcartier to a local unit's area, such as the Estrie region one year and the Ottawa River Valley the next. This would offer a greater variety of training areas. Another idea would be to send the Cougars to Gagetown, where the training area is more conducive to armoured tactics.



Governor General's Horse Guards crewmen perform routine gunnery maintenance during Central Militia Area's Milcon 85.

THE BRITISH COLUMBIA DRAGOONS

COUGAR TRACKS

by Lt E.R. Jilg

"Nice driving Sgt. Schindel." I unwedged my arms from the episcope and caught my driver's amused rearward glance. The lack of colour in my face had obviously just chalked up another one for the troops.

Six minutes earlier we had engaged six wheel drive and roared off the road. Immediately we plunged into a rocky ford. Once across we dashed to the base of a severe incline. Dirt flying we "six wheel drifted" around the 180 degree turn at the summit and again plunged, Jacob brake roaring, down a steep slope. As soon as we hit bottom we darted to the left, with the proverbial pedal to the metal, through a narrow canyon.

We both spotted the road block at the same time. Instantly Sgt. Schindel hit the brake, threw the Cougar into reverse, edged backwards up one side slope and forward again into the canyon.

Once clear we swung left to the row of pylons. Spaced fifteen metres apart, two metres high and made of concrete this obstacle had to be negotiated at just the correct speed. Onward we rushed across a bridge barely a Cougar width wide, through one more rocky ford and back across the road.

As the steep up and down gradients of the incline challenged the Cougar's ability to climb, the first two obstacles on the north side of the road made every crew sweat.

These two consecutive side gradients were undoubtedly the most gut wrenching phase of the course. If approached incorrectly a Cougar would most certainly flip on either slope.

Three metres high and made of corrugated steel the walls of the ten metre long defile were an imposing sight. We slid violently sideways after accelerating out of the side slope but miraculously we shot through either unscathed, even though our clearance to either side was mere centimetres. A right turn took us across the washboard, a series of concrete pylons set in the ground at a jaw jarring interval. On to the 'ditch', a depression traversed lengthwise along two narrow tracks.

Finally the last obstacle appeared ahead. Another series of two metre high pylons with a sinister difference from those first encountered. These were a mere thirteen metres apart and a real shoulder and arm workout for a driver weaving through this slalom. Once back on the road the stop clock clicked to a halt.

The journey you have just been a party to is the British Columbia Dragoon Driver Training Course. Located in the hills over looking

Kalamalka Lake just south of Vernon in B.C.'s beautiful Okanagan Valley, the course is the only one, to our knowledge, in the country. We're proud of it and the fine drivers it has helped to train.

The course was designed by Maj Perkins of Trail B.C.'s 44th Field Engineers and built by them during the summer of 1981. The resiliency and effectiveness of the course is a tribute to the men and women who worked to build it. After much use it is still in good condition, which is more than can be said for one battered Cougar Troop Officer (My mistake for asking if the good Sgt. had ever timed himself over the course). I'm sure our adventure generated some laughs in our respective messes later that day; even though our stories quite likely differed in some minor respects...keep on trackin'.



c/s 9, LdSH during the Regimental deployment to Suffield during November 1985.

LORD STRATHCONA'S HORSE (ROYAL CANADIANS)

The 1985 calendar year was as usual, an extremely busy one for the Lord Strathcona's Horse (Royal Canadians).

A and B Squadrons started the cycle in January, by moving to Gagetown for Leopard conversion courses. These, of course, were in preparation for RV 86. February continued with a number of 1 Canadian Brigade Group activities. In particular, the 1 CBG Ski School, held on Mount Washington on Vancouver Island, Exercise STRONG CONTENDER, the 1 CBG sports competition and the 1 CBG Biathlon Competitions, kept us busy. On top of this, the officers disappeared to CFB Shilo for the 1 CBG Officers' Study Week. The units of 1 CBG may not all be in one location, but as can be seen, we do get together fairly frequently.

After celebrating Moreuil Wood Day, this year held 30 March 1985, the Regiment settled down to prepare for RV 85. As most, if not all Black Hats were in attendance, it is not really necessary to go into any further detail. Suffice to say, that as the Regiment started with a gun camp in early April, and did not finish Exercise ANTELOPE until late June, RV 85 for some, was rather long.

The summer period saw much of the Regiment back in Wainwright. In early July we helped support the Armour National Rank and Qualifying School, by providing instructors and support staff. In addition, B Squadron was tasked to support the Block 12, Combat Team Commanders Course. Our militia support continued, when we supplied personnel and equipment to Militia Area Pacific for their militia concentration. This concentration was rather special as Militia Area Pacific formed 11 Brigade to conduct a brigade level field exercise. All went extremely well and the Strathconas were proud to have been able to help with this rather historic exercise.

In between these two activities, the Regiment did find time for a short leave period and to conduct a Regimental Change of Command. On the 30th of July, LCol D.R.B. Rogers handed command of the Regiment to LCol J.B. Boileau.

The fall period has been no quieter. With two TQ3 courses and three PCF courses, all members of the Regiment were fully employed. This continued until November when the Regiment deployed to Suffield for troop and squadron level training. Not only was this training successful but the Regiment was also able to practice winter warfare refresher training. This last November, was one of the coldest Novembers on record. Hopefully Wainwright in January will be warmer.

Perseverance

THE SOUTH ALBERTA LIGHT HORSE
100 YEARS OF HISTORY AT FORT EDMONTON

by Capt J.B. Taylor

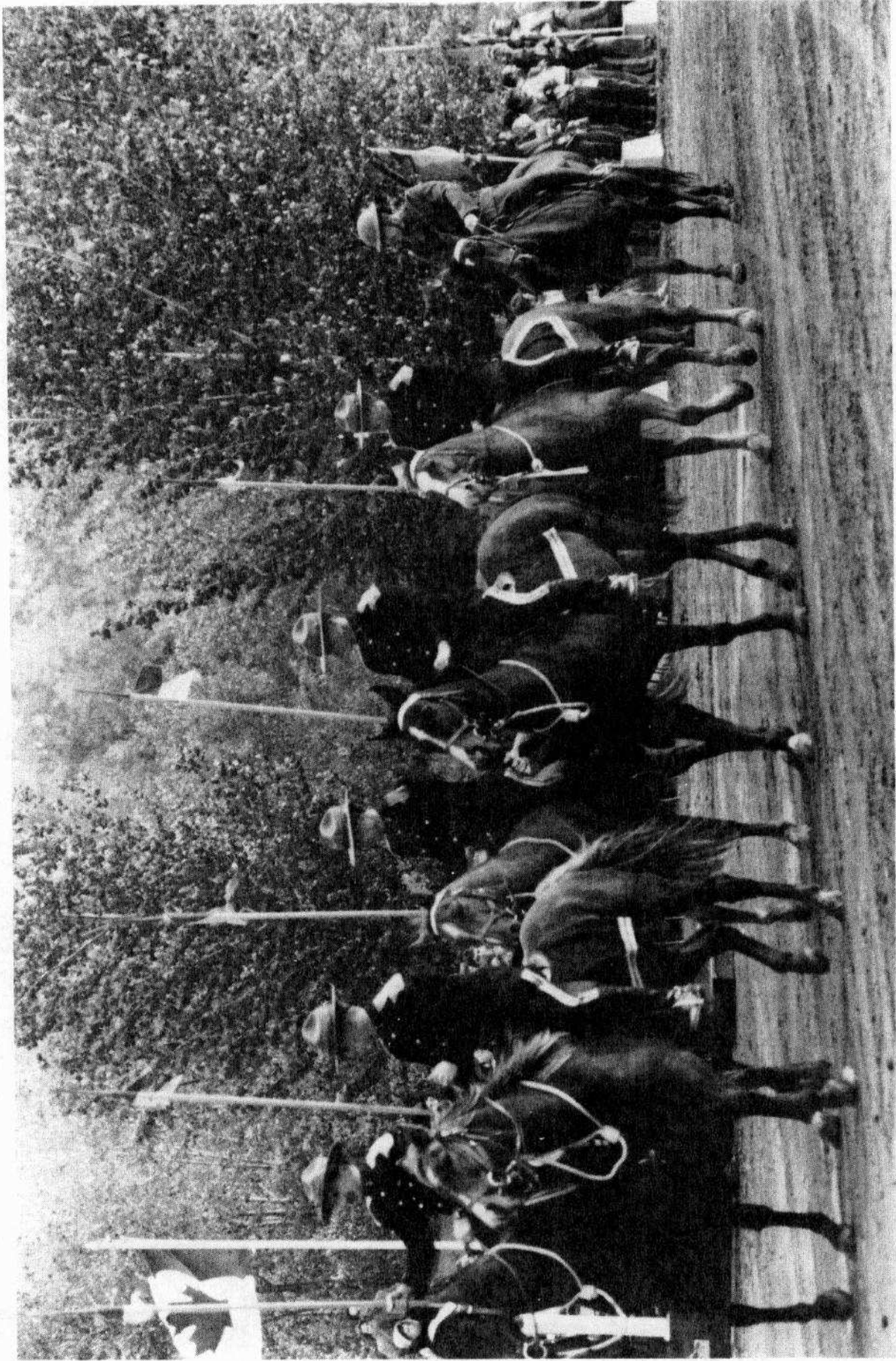
September 22nd, 1985 saw the South Alberta Light Horse celebrate 100 years of Regimental History and the 80th Birthday of the Regiment at Fort Edmonton. Those who attended watched a celebration closer to a tattoo in style than to a parade. With the historic Fort as a backdrop, the Regiment proudly displayed its history beginning with the battle honour "Northwest Canada 1985". This, the only western Cavalry Regiment to bear the 1985 battle honour perpetuates the Irregular Cavalry Unit of 1885 known as the Rocky Mountain Rangers who were formed from the cowboys and ranchers of southern Alberta.

The Regiment came on parade to the background of a commentary, based on western Canadian and Regimental history, given by Captain M. Mitchell. First to ride from the stockade onto the parade was a Rocky Mountain Ranger portrayed by Lt (Retd) W. Cameron, mounted on his thoroughbred "Homecoming Days" and dressed in the uniform of the Rangers. The Ranger held the right of the line and was then joined by the Mounted Troop of 'B' Squadron led by the Troop Warrant, WO J. Szram. The Troop, wearing patrol blues, breeches and Montana peak Stetsons, carried Lances on parade and took their position to the left of the Ranger portraying the 15th Alberta Light Horse of 1905. World War I was represented by MCpl Harrison complete with battle bowler and boondock riding "Jynx".

A half track equipped with .50 Cal Machine Gun and crewed by troopers in Battle Dress rolled onto parade and took position to the left of the World War II trooper. The half track was fully restored by, and driven on parade by its owner Maj (Retd) Hodgson. The vehicle appropriately highlighted the history of the South Alberta Regiment which used such a vehicle as their command post. The Commentator payed tribute in this section of the history to the only Canadian Armour officer to win a Victoria Cross in World War II, Maj David Vivian Currie VC of the South Alberta Regiment.

Capt Lindsay Fraser from Medicine Hat led on the next contingent of Jeeps and A echelon vehicles portraying the post war development of the Regiment and its move to Medicine Hat in the heartland of its forebears who were already on parade. Lastly Capt Brian Hodgson led 1 Troop of 'B' Squadron in four AVGP Cougars portraying the latest equipment held by the Regiment.

The line was now formed from Right to Left from Rocky Mountain Ranger to Armour Crewman and from Horse to Cougar. Capt John Taylor rode onto parade on "Cardinal's Sabre", an Anglo Arab donated by Douglas Cardinal, the architect of the Museum of Man in Ottawa. He dismounted the parade to await the arrival of the Commanding Officer Maj Brian Moore who took over the parade from his jeep.



The Mounted Troop of the South Alberta Light Horse
trots past Her Honour the Lieutenant Governor of Alberta, Helen Hunley.

Upon the arrival of Her Honour the Lieutenant Governor of Alberta, Helen Hunley, Maj Moore gave the Vice-Regal Salute and then accompanied Her Honour as she inspected the Regiment. The Lieutenant Governor firstly reacquainted herself with the Mounted Troop and its mounts who had provided her escort a month previously at the Canadian Derby, and then displayed a keen interest in the full history of the Regiment displayed before her. She noted the presence of so many members from Medicine Hat. Incidental music throughout was provided by the Band of the Loyal Edmonton Regiment under the direction of Lt Colin Bonneau and by kind permission of the Commanding Officer Lt Col C. Marshall.

After inspection, the Regiment was to perform a trot and roll past in historical order of precedent. The traditional orders once heard in all Cavalry Units were used to achieve this manoeuvre. Maj Moore had been heard to curse on more than one occasion during rehearsal about the intricacies of "Leading off from the right in half sections Walk March!" and other such old fashioned phraseology. On the parade he revenged himself on the Mounted Troop by giving the fastest "Prepare to Mount!...Mount!" in living memory. It resulted in the demise of two inseams, one pair of Stanfields and the birth of one new hernia.

The Regiment then performed a trot and roll past with horses leading and Cougars bringing up the rear to reform in parade line before receiving permission to leave the parade ground. The parade left the square in manoeuvre of outwards wheeling by the outer flank and once the ground was cleared, Capt Mitchell presented to the crowd the South Alberta Light Horse, Then and Now. Upon this cue a trumpeter of the Loyal Edmonton Regiment sounded the charge from the palisades of Fort Edmonton, whereupon the mounted contingent preceded by the Rocky Mountain Ranger charged from right to left across the parade square with lances, sabres and carbines lowered. As they left the square, the four Cougars appeared in CTAB and completed a charge across the square from left to right.

The parade served not only to illustrate the history of the Regiment but also portrayed the fact that the Regiment of today, as in the past, gathers its strength from all across Alberta. The unity of the Regiment was well displayed by the Officers and men of RHQ and "A" Squadron who made a 600 km journey to rehearse on the Saturday and then carry off a complicated drill before a critical crowd on the Sunday. The weekend and the parade well illustrated the Regimental Motto of "Semper Alacer" (Ever Lively).

As a footnote, we would add that the Mounted Troop which now numbers eleven trained riders and nine trained horses was begun by B Squadron as a centennial project. By portraying a mounted troop of the 15th Light Horse of 1905, the Squadron seeks to maintain its links with the past Cavalry traditions of the Regiment. The troop currently are mounted on loaned and donated horses and have acquired and restored original Universal pattern saddles, some of which are 1914 and 1916. Some saddles bear their original stamps and one is completely marked as having been originally issued to A Squadron of 2 CMR. The Troopers are attired in Patrol Blues with breeches, Strathcona Boots and Montana Peak Statsons. The troop will be continuing in 1986, when they will further their programme of Escorts and Displays.

8TH CANADIAN HUSSARS (PRINCESS LOUISE'S)(MILITIA)

The calendar year of 1985 has again been an active and successful one for the 8th Canadian Hussars (Militia). The winter period looked gloomy with a healthy compliment of soldiers in relation to budget and person day restrictions. However in traditional 8th Hussar spirit, senior personnel volunteered their time and carried on with the tasks at hand.

March saw the Armoured Troop training at CFB Gagetown for a nine day period including a gun camp and a Recce Sqn (-) training in Sussex area for a five day period.

The Regimental Birthday (4 April) was celebrated in Moncton by the Militia Regiment on March 30th with a parade, all ranks dance and presentation of Regimental awards. The highlight of the day was the cutting of a 2' x 4' birthday cake by the Honorary Lieutenant Colonel, Lieutenant Colonel Harold S. Gamblin, CD of Codys N.B.

The Regimental Small Arms Team competed in the Eastern New Brunswick Militia District small arms competition winning three of the five possible trophies.

The Cougar Troop participated in the Ram's Head Competition and emerged as highest score Militia Troop in the competition.

The Regimental Band was active as usual. Two firsts for the band this year included the playing at the Spring Convocation at the University of New Brunswick and the opening of the Sussex Town Hall ceremony which was officiated by His Royal Highness Prince Andrew. The Regiment also provided personnel for crowd control at this ceremony.

The summer saw the training of twenty-four recruits conducted at Moncton. TQ 2 Cougar Gunnery, TQ 2 Cougar Driver, TQ 2 Recce courses were conducted by the Militia Armoured Training Squadron at Gagetown. Ninety percent of Staff and Candidates of Training Squadron were 8th Hussars. The training was well supported by the Armour School and attached RSS personnel. The Graduation Parade for the Armoured Training Squadron was honoured with a visit from The Colonel of the Regiment, Lieutenant General J.W. Quinn, CD. LGen Quinn acted as Reviewing Officer and spent considerable time after the parade talking with personnel, both staff and candidates.

Armoured Milcon 85 was staged out of Cootes Hill Bivouac area in the Gagetown Training Area. The concentration of tasks were built around the scenario of a Brigade screen. Unfortunately, few Junior Officers and Senior NCO's were available to participate in this very valuable training.

In September, the Regiment was awarded the Buchanan Trophy at the Corps Conference held in Calgary. This is the fourth consecutive year the Regiment has won this trophy.

The fall period was active with Sqn FTX's and completion of TQ 1 course as well as normal LHQ training. The District won the Area Small Arms Competition with seventy five percent of the District Team being 8th Hussars including the team captain, Capt Tom McLaughlin.

The Regiment is presently planning to conduct Cougar Conversion courses during the Xmas break. Planning is being carried out for Cougar Troop which hopefully next year will be times two and operations can be geared to half squadron level training.

Tentative plans are now in the works for the Regular and Militia 8th Hussars to be together in Sussex for reunion weekend as well as the change of Honorary Appointments within the Regiments the 27 to 29 of June 1986. One of the main players in this ceremony will be LCol Harold S. Gamblin, CD who will step down as Honorary Lieutenant Colonel. LCol Gamblin, after serving as a First World War Artillery Officer joined the then 8th New Brunswick Princess Louise's Hussars in December of 1919 and has from that date been actively involved in the Regiment. He was Commanding Officer when the Regiment was mobilized and shipped to England for training prior to moving to the battle field in World War II. It has been a distinct honor to have LCol Gamblin as the Honorary Lieutenant Colonel and words cannot express the feeling this officer has for HIS REGIMENT The 8th Canadian Hussars (Princess Louise's).

(Regi Patriaeque Fidelis)



("Walt's Boys")

THE FEW, THE ELITE, PART OF THE ARMOUR FAMILY

ARMOUR OFFICER CADETS AT RMC

People think that life at the Royal Military College is all academics ... and they're right. However, a small segment of the Cadet Wing, the contingent of Dashing Young Cavalry Officers, who number less than twenty, strive to make their college life more exciting and enjoyable. Through the rigours of phase training the group has evolved into a fairly close-knit, dedicated team. Summer training seems to possess that magic ability to draw men together, as any of you tankers out there can attest.

Besides the normal academic routine at RMC, Armour Cadets are members of the Combat Arms Society and participate in many of the weekend training exercises at Meaford, Petawawa and wherever else soldiering takes place. As well, the annual 8CH mess dinner is anticipated with great fervour. TGIF's at the Land Forces Staff College across the water and Leliefontein Day add to the opportunities for Walt's Boys (Squadron Commander Capt Natynczyk) to develop their social finesse. As a result of these events, the traditional sabre method of opening champagne has become a fixture at RMC. Thanks to Captain Mike Ward last summer from all the candidates of Phase II; there is nothing like bubbly to cut the dust and sweat of NBCW day.

It's not true that we are all fun and games though. Armour Cadets become informed about what is happening in the CF and the Corps through lectures, self-study in their degree programs, (a majority are artsmen, but the odd engineer is tolerated), as well as briefings by Capt Natynczyk. Thus a consciousness of the Military is developed. Of course, a favourite topic of debate amongst Armoured Cadets is the current equipment situation and the small NATO contribution that the CF has undertaken. After finding out just how many, or more accurately, how few tanks we actually have, and after a summer of studying their limitations, the prospects seem bleak. Add to this the appearance of articles such as that by William W. Millan in Canadian Defence Quarterly (Autumn 1985) which advocates an abandonment of the heavy combat mission in Germany, and the subsequent loss of tanks, APC's, SPG's and ultimately, training capability, and we have a problem. I bet we really would miss Gagetown in the event of such a move. Although such debate is no doubt fruitful in spurring thought on the NATO commitment, no self-respecting tanker could agree with such a policy. However, carrying on with the present modest procurement is not the best path. After the F-18 and frigates, perhaps it is the Army's turn.

Enough said for the intellectual side of RMC. The bottom line is that Armour Cadets are alive and well, and make up for lack of numbers with energy. The same must be said for Royal Roads and CMR, where much of the present crop of prospective tankers started out. Whether it is sitting around re-fighting the battles of phase training, kicking ass on the sports field, or bagging the books, DYCO's are damned proud to be in the "Armour Family".

TANKER TALK...

THE TANK: OBSOLETE OR ESSENTIAL?

by Capt J.D. Daniels

INTRODUCTION

The tank made its first appearance during the First World War, although its origins clearly lie in the pre 1914 years, when many people had looked to an armoured vehicle capable of withstanding machine gun fire and overcoming trench obstacles. From these humble beginnings the tank of today has evolved as an extremely costly, sophisticated and vulnerable weapons system.

For the purposes of this paper it is assumed that the role of the main battle tank (MBT) will remain the same, as tactical requirements provide the perspective for developing any new weapon system. A future MBT will be required to fight a defensive but mobile battle against a numerically superior mechanized enemy. Its prime task will be the destruction of enemy armour, although the capability of supporting other arms and engaging different types of targets will be retained.

AIM

The aim of this paper is to show that the traditional design of the MBT must be discarded if it is to retain a place on today's modern battlefield.

APPROACH

It is only possible in one thousand words to scratch the surface of this subject. There are many other reasons why a radical change in design are necessary if the MBT is to survive. I have confined this paper to discussing four of these:

- a. size;
- b. cost;
- c. vulnerability; and
- d. availability and reliability of components.

FACTORS AFFECTING THE SELECTION OF A NEW MBT

SIZE

This has become a very real problem as the new armours are bulky, which has not helped to reduce the overall size of the tank. Any future concept should attempt to create a more favourable silhouette, reducing the size of target exposed to the enemy but at the same time maintaining the same degree of protection afforded to the crew and vehicle as a whole. This would help to greatly increase the survivability of any future design.

COST

Today's MBTs have become increasingly expensive. The introduction of sophisticated fire control systems, high output diesel engines and the high degree of protection achieved through the employment of new armour and the compartmentalization of fuel and ammunition as in the M-1, have resulted in a production price of approximately \$2 M per tank. Challenger, at today's price costs in excess of \$3 M a copy. The aim when producing the next MBT should be to minimize cost and yet maintain the same level of sophistication and therefore performance.

VULNERABILITY

An increasing range of anti-tank weapons with various modes of operation have combined to make the MBT a very vulnerable target on the battlefield. The introduction of "smart munitions" has further frustrated the designer in his attempt to protect the vehicle, in its current configuration, from top attack. This has brought forward another consideration, just as these weapon systems, the tank can be paralyzed or put out of action by relatively inexpensive means. For the tank to maintain its effectiveness an attempt must be made to eliminate these weaknesses.

AVAILABILITY AND RELIABILITY OF COMPONENTS

We do not know whether the availability or reliability of complex equipment can be maintained at the same level as less complex equipment. Any future design should assess the new technical problem areas and study them intensively, well in advance of production, therefore minimizing any difficulties once in service.

THE CURRENT DESIGN

General. In selecting a tank for use in the 1980's those armies within NATO have chosen a classic "turreted design". There is little doubt that the Leopard 2, the M-1 or the Challenger meet the performance criteria so firmly established by the alliance. In some respects they surpass it.

Size. Opting for a conventional design though has resulted in an MBT with a combat weight exceeding 60 tons in all cases, a chassis approximately 8 m long, approximately 3.80 m wide and 2.85 m high. There has been no reduction in silhouette. In fact in the case of Challenger, due to the bulk of the Chobham armour the turret has become bigger and therefore provides a larger target to the enemy, than say the Chieftan.

Cost. The cost of today's MBT continues to escalate with the introduction of sensitive hydroelectric, electronic and optical components. These amount to approximately 35% of the production price which now exceeds \$2 M per vehicle.

Vulnerability. The introduction of Chobham armour has greatly reduced the effectiveness of many of today's anti-tank weapons. However the turreted tank remains extremely vulnerable to top attack as protection levels in this area have only been slightly increased. Efforts have been made to enhance the survivability of today's MBT by the implementation of compartmentalization of ammunition and fuel as in the M-1.

Availability and reliability of components. With this increased sophistication comes the problem of reliability. How long are all these complex systems going to survive on the battlefield, and should a component fail how easy is the fault to detect and rectify? This increased complexity is resulting in the MBT becoming that much more vulnerable.

THE FUTURE TREND

General. It is universally accepted that the classic turreted tank has reached its limits of development, and the attempt to replace it is of long standing and international. New designs employing either external or fixed guns are now continually being introduced as would be successors.

Size. The introduction of a turretless tank would certainly create a more favourable silhouette and would also result in a reduction in combat weight while maintaining the same degree of armoured protection. From this a number of other beneficial spin-offs can be realized.

Cost. A reduction in size and weight would have an enormous effect on the cost. For example the same level of mobility could be achieved by using a much smaller power pack. Also a turretless design would greatly simplify the construction, therefore decreasing further the cost of the vehicle. However it is likely that such a solution would result in even more expensive optical equipment being employed, due to a complex optical path from crew station to sight head. There would also be the added expense of an autoloader to consider.

Vulnerability. This can be reduced dramatically by heavily armouring those parts of the vehicle that require a higher degree of protection. A turretless design makes protection from top attack that much easier.

Availability and reliability of components. It is unlikely that a turretless tank would be any less complex than those vehicles we have in service today. In fact there are many areas in which such a vehicle would be a lot more sophisticated and therefore the problems of reliability and availability of spare parts would be further amplified.

THE TWO CONCEPTS COMPARED

Size. It is unlikely that a reduction in size of a conventional turreted tank can be achieved without sacrificing one of its characteristics, protection, firepower or mobility. However this is not the case with the turretless concept. With the weight of the turret removed and by careful distribution of the armour, greater protection levels can be achieved for the crew while producing a tank of about 45 tons. The swept area originally used by the gun and turret platform can now be utilized for the housing of sensitive electronic equipment or the overall dimensions of the tank can be further reduced. The absence of a turret also creates a more favourable silhouette.

Cost. The turretless tank although requiring perhaps more sophisticated optics and even with the introduction of an autoloader should be able to be produced more cheaply due to its simplified construction and the resulting reduction in combat weight. In the United Kingdom Alvis Ltd have produced a design weighing 40 tons with a projected production cost on the order of \$2 M per tank, which is considerably less expensive than Challenger.

Vulnerability. The turretless tank is well suited to the idea of compartmentalization in an effort to increase its survivability. Although great steps have been made in this direction in the conventional design as in the M-1 and Leopard 2 MBT's, further improvements can be made using the turretless concept. For instance by housing the crew in a heavily armoured pod totally separated from fuel and ammunition a degree of protection not experienced in today's MBT's can be realized. This pod can be armoured to give the same degree of protection to the top, belly and back as is afforded to the front and sides. Today's crews receive a comparative amount of protection within the frontal 60° arc only, the top and rear of the turret being far less heavily armoured, and therefore, the current design is that much more vulnerable to the new array of anti-tank weapons.

Availability and reliability of components. Departure from the conventional design would result in the introduction of an autoloader and could mean an increase in complexity over existing MBT's. However this should not affect reliability, the Soviet Union have had few problems with their autoloaders in the T64/72 series of vehicles and a number of autoloaders have been developed in the UK for use in MBT's although these have not seen service yet. The problem of parts availability and the reliability of complex fire control systems still remains uncertain.

CONCLUSION

By removing the turret the size of the tank can be dramatically reduced, creating a more favourable silhouette. With this reduction in size comes a reduction in weight, which in turn will lower the cost. Coupled to this a higher degree of protection can be afforded to the crew by carefully distributing the armour so as to protect those parts of the vehicle that are considered to be the most important. The problem of availability and reliability of complex components could well become more severe with the turretless solution.

RECOMMENDATION

It is recommended that a turretless tank employing an external gun is the only feasible solution to any future design.

TANKS IN AIRFIELD DEFENCE

by Major F.R. Thomas with advice from 1 Lt Jacobsen

INTRODUCTION

Tanks have been assigned to the defence of Bodo Air Station in Norway for sixteen years. From 1959 until 1980 a tank platoon was attached to a rifle company for this task. Since that date a tank company has had this responsibility in conjunction with an RNOAF anti-aircraft battalion. As few Canadian armoured officers have had experience in such a task it is perhaps opportune to discuss how a Norwegian armoured element undertakes airfield defence as all tanks will be withdrawn from airfields in 1986 to form a tank battalion in Brigade North.

AIM

The aim is to brief fellow armoured officers on "Stridsvogn Eskadron", Bodo.

THE THREAT TO BODO

Bodo Air Station faces the following two threats requiring a ground force response:

- a. hostile sea-landed forces. As can be seen from Figure 1, Bodo offers Soviet naval infantry a number of landing points from which NATO air operations could be disrupted; and
- b. hostile airborne forces. Bodo airfield and its immediate environs offer Soviet airborne troops a more than suitable DZ for a sizeable parachute assault.

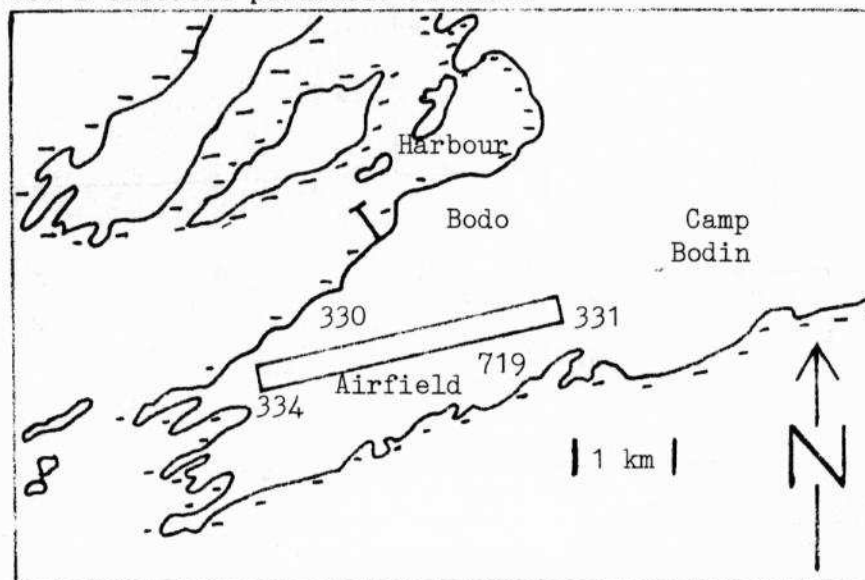


Figure 1.

Bodo Airfield and Environs

COMMAND AND CONTROL

The defence of Bodo Air Station is the responsibility of the Station Commander. He has delegated this responsibility to the commander of the anti-aircraft battalion, a RNOAF unit. The immediate chain of command for the commander of "Stridsvogn Eskadron" is shown in Figure 2. This tank company acts as the battalion commander's reserve

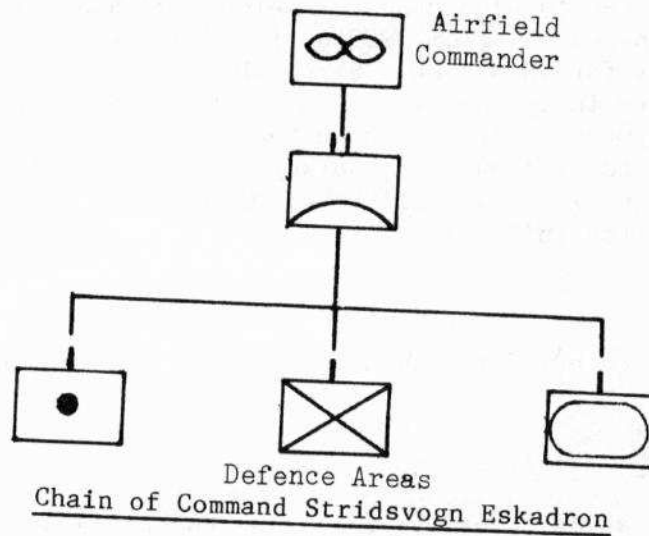


Figure 2.

ORGANIZATION

General Stridsvogn Eskadron is organized as shown in Figure 3. Those platoons depicted by dotted lines are mobilized elements that are not immediately available. The present strength of 7-6-63 would be increased to a total 230 when completely mobilized.

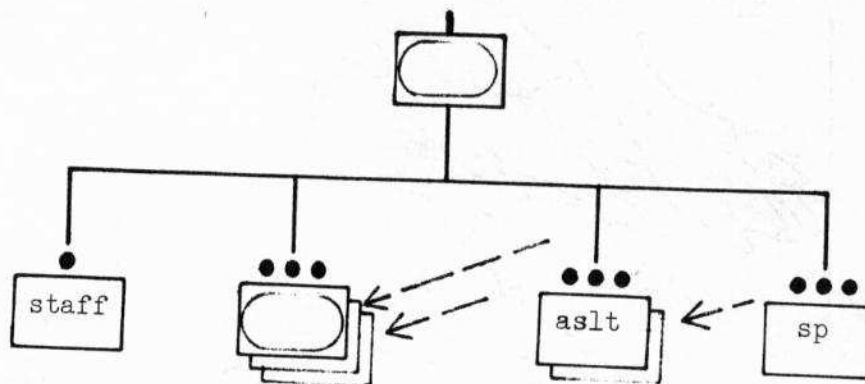


Figure 3.

Organization Stridsvogn Eskadron

Tank Platoons have four Leopard 1 MBTs equipped with optical range-finders and IR searchlights.

Assault Platoons have four M113 APCs each with a turret containing a 20 mm Rheinmetall cannon. The vehicle is crewed by three, and carries a team of eight armed with a 84 mm Carl Gustov and machine guns. The leader of this team is not the vehicle crew commander.

The Staff Platoon includes an organic NBC element.

TACTICAL EMPLOYMENT AND DEPLOYMENT PROCEDURE

The tank platoon(s) are employed as troops not as individual guns. The Stridsvogn Squadron deploys on alert to a war hide about ten minutes from the air station. The nature of the threat has resulted in a high proportion of HESH in the mix of each tank's ammunition load. Deployment is practised once a week and bombing-up has been included in such practices in the past.

PROBLEM AREAS

The following problem areas were identified:

- a. command and control. Air force personnel controlling defence of the airfield were ignorant of armoured operations and thus of correct employment of the tanks. There was a definite need for one or more armoured liaison officers in the operations cell controlling the airfield defence;
- b. reconnaissance. Accurate information normally available from ground reconnaissance elements was lacking again resulting in mis-employment of the tank company;
- c. coordination of fire. There was a need to coordinate fire so as to minimize disruption of airfield operations yet engage tank targets; and
- d. illumination. The use of 84 mm illumination rounds to permit night firing instead of using IR required coordination with flying operations.

CONCLUSION

Any officer trusted with the problem of airfield defence must ensure that the chain of command is clear to all concerned and must provide a minimum of at least one armoured liaison officer to the operations cell controlling airfield defence.



THE FEASIBILITY OF AN EXTERNAL GUN FOR A FUTURE MBT

by Capt D.W. Kitchen

PART 1 - GENERAL

INTRODUCTION

For the past fifty years the conventional MBT has incorporated a high velocity gun mounted in a three man turret capable of 360° traverse. This arrangement has proven flexible, allowing for changes in both tactical doctrine and technology. Recent advances in anti-tank weapons have prompted efforts to improve the tank's survivability. The revolutionary concept of externally mounted guns has generated considerable interest for that reason. The adoption of this configuration in the future will impose some problems which require investigation.

AIM

The aim of this paper is to examine the relative merits of a conventional turret mounted gun, versus an externally mounted gun for a future MBT.

This paper will restrict itself to an examination of conventional turrets and external guns. Specific external gun design options like elevating guns and rear trunnion cleft turrets will be treated briefly while the emphasis will be on the general principles of an external gun mounting.

PART 2 - SURVIVABILITY

SIZE AND SILHOUETTE

Survivability depends upon avoiding detection, avoiding being hit once detected and the ability to survive a hit. Low profile tanks are desirable because they are harder to detect and hit.

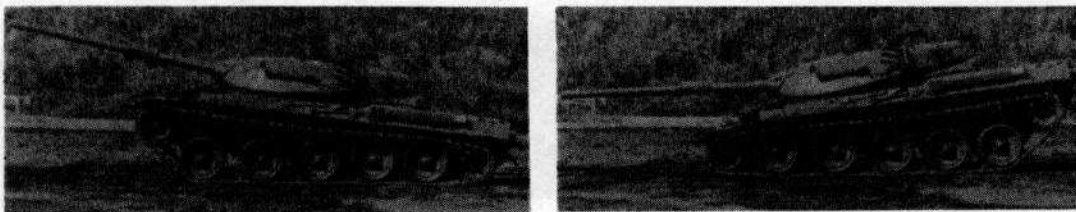
The height of a conventional turret is dictated by the depression allowed the main armament and its inboard length at maximum recoil. Western tanks have accepted higher profiles in order to realize depression angles in the region of 10° while Soviet philosophy is to reduce turret height by allowing only around 5° maximum depression. A variable suspension system like the one fitted to the Japanese Type 74 MBT compensates for a reduced depression angle and allows the fitting of a smaller turret.

By removing the main armament from the turret, overhead guns can significantly decrease the frontal aspect presented to the enemy especially in a hull down position as only the gun and sights need be exposed. The requirement for elevation and depression of the external gun implies however that the overall vehicle height will be similar to conventionally turreted MBTs.

The incorporation of an 'in turret' autoloader would allow the current commander/gunner two-tier arrangement to be abandoned by seating them on either side of the gun. The internal dimensions of the turret could then be decreased, permitting an overall reduction in silhouette as is achieved by the T-72.

Comparative figures for hull down, frontal target areas presented by M1, T72 and an external gun are 2.05, 1.5, and .35 square meters respectively. It is apparent therefore that an external gun mounting will decrease the frontal aspect of the MBT.

The adoption of an external gun can lead to great volumetric savings when one considers that 10% of a conventional tank is taken up by the gun swept volume. The use of an autoloader allows a reduction in crew size. This design coupled with the external stowage of ammunition could result in a volumetric saving of up to 30%. The crew can be afforded greater protection levels by concentrating the armour distribution over a smaller occupied volume.



Japanese Type 74 MBT

ARMOUR PROTECTION

The conventional turret provides protection for the bulk of the main armament, exposing only the barrel. Well sloped special armours offer ballistic protection while anti-spall linings and collective NBC over pressurization systems can be fitted inside the turret. An external gun will be more vulnerable to enemy fire and must be protected by its own armour envelope. As the autoloader must be able to access the breech, the main armament will be inherently more vulnerable than if it was contained in a turret.

Enhanced mobility offers the MBT a greater chance of avoiding a hit. Studies, such as those conducted during the British EX CHINESE EYE have indicated that typical engagement ranges for the European theatre will approximate 1000 meters. Modern fire control systems can easily achieve hits at this range despite the high speeds achieved by agile tanks. These studies demonstrated that to gain speed at the expense of armour can be disastrous.