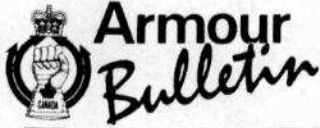




Armour *Bulletin*

SPRING 1991



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The Armour Bulletin

Managing Editor _____ LCol P. Leentjes, CD
 Editor _____ Capt. P. J. Wells
 Design & Layout _____ P. Richer, DPGS-7-2
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The Editor
 Armour Bulletin
 Armour School
 CFB Gagetown
 Oromocto, NB, E0G 2P0

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.

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Colonel Commandant's Foreword



I am pleased to have this opportunity as Colonel Commandant to convey a message to the Royal Canadian Armoured Corps family in this foreword to the Spring 1991 Edition of the Armour Bulletin. We have completed a year of celebrations across Canada of the 50th Anniversary of the Royal Canadian Armoured Corps with special events in each unit location and in each of the regions. Special recognition was given to the Corps in the Canadian Forces Exhibit and the Warrior's Day Parade at the Canadian National Exhibition in Toronto. The central event of the year was the RCAC Association Conference from 26-29 September in CFB Borden and the 50th Anniversary Parade and Plaque Dedication Ceremony in Worthington Park which was presided over by the Governor-General of Canada, the Right Honourable Ramon John Hnatyshyn CC, CMM, CD, PC. Commander-in-Chief and Honorary Colonel of the Governor-General's Horse Guards.

In celebrating the 50th Anniversary it is well to remember that our Corps has longer roots which has allowed us to draw strength, custom and traditions from the histories of the distinguished cavalry and infantry regiments which were converted to form the Corps. It is also well to remember in these uncertain times that the need for the Corps arose from the lessons of World War I which caused far-sighted men like Britain's J.F.C. Fuller and Canada's Frank Worthington to preach the necessity of mechanization, firepower and armour protection. Recognizing the requirement for mobility and destructive firepower and the dramatic battlefield effects of both, combined with armour lead to the proper use of tanks in World War II and every modern war since. The case for effective armour in the combat team of today has been proven. Today, in 1991, eighty-nine countries have major armoured (main battle tank) forces. Indeed many are in the third world, neutral or non-aligned countries which our forces may have to confront in hostile situations if Canada is to assist in the maintenance of the regional and world stability so essential to Canada's security.

We are now facing a world of rapid change involving much uncertainty and instability in the various regions of the world — the Middle East, Africa, Latin America, South Asia and Europe. In the latter, despite the erosion of the Warsaw Pact and force reductions that should result from a CFE Agreement, there is considerable instability as political unrest, economic difficulties and the forces of nationalism impact upon the countries of Eastern Europe and the Soviet Union. In the wake of the end of the Cold War new risks are evident and, therefore the maintenance of effective levels of national and international preparedness to meet a wide range of challenges throughout the world continues to be a necessity if Canada's security is to be assured.

To do this Canada needs to maintain general purpose combat capabilities including balanced formations of armour (MBT), mechanized infantry, self-propelled artillery and combat engineers which are capable of deployment as expeditionary forces by sea and air to any theatre in the world which our foreign policy and national interests demand. In this period of uncertainty and financial constraint we will be confronted with many "art of the possible options" and in facing them we must ensure that our professional integrity remains intact and that the advice we give and the solutions we adopt will stand up to the test of time.

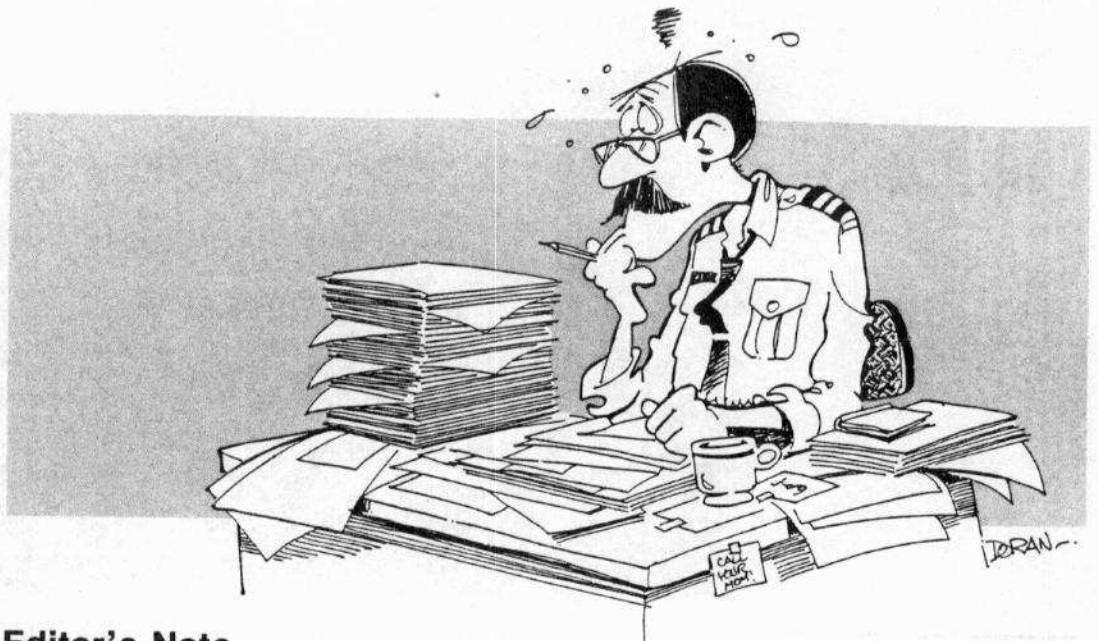
As a Corps we have weathered many stormy periods in the last four decades and we shall do so again in the future. The RCAC has a proud, modern history of achievement, with a reputation for overcoming difficulties. We possess an outstanding esprit de corps which is far greater than the sum of our collective regimental spirits and is unequalled in our forces.

There are and will be new challenges to be met in an unstable world and difficult national environment. But you are members of a modern, innovative Corps that will be equal to future challenges. In stressing the vital importance of retaining Canada's main battle tank capabilities, self-propelled artillery, mechanized infantry and special combat engineer equipments, we must also demonstrate that we are not oblivious to the possibility that technological developments might ultimately yield weapons systems that may deal better with the enemy armoured threat. But such weapons are not here yet and those that are being examined appear to be many years away and likely to be much more costly than other current options for improving our armoured capabilities. However, through continued study, research and forward thinking we must keep the Corps in the forefront of military thought and prepare our leaders to embrace the future as it evolves.

Again, it is my honour and privilege to be your Colonel Commandant in these very interesting times. I look forward to meeting you and working with and for you in the near future. Continued good shooting.

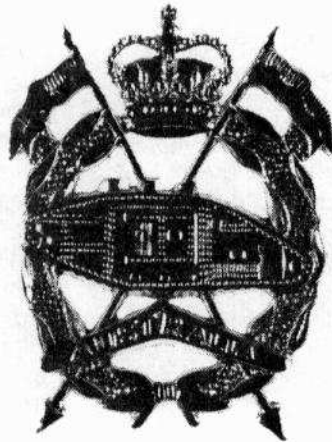
G.G. Bell, Brigadier-General (Retired),
Colonel Commandant

LETTERS TO THE EDITOR



Editor's Note

Your comments on any article appearing in the Bulletin (or on any armour subject) are most welcome. Letters should be addressed to the editor and, of course, be to the point.



Australian Armour

After receiving many copies of the Armour Bulletin I decided that it was about time I sent a short article on the current Australian Armour news.

The most important thing that is happening to Australian Armour is the current trial of the GMC-built LAV-25. 2nd Cavalry Regiment is conducting the trial with 15 LAVs in the Northern Territory. Some of the LAVs deployed to the exercise area by road. Quite an achievement for us as we are used to a

mainly tracked armour force and usually have to rely on other means of deployment. The deployment distances involved were approximately 2000 km (some pretty sore tail ends by the end of that trip I am sure). 2nd Cavalry Regiment is, of course, still planned to move to Darwin in 1992.

Now some follow up on the characters who have served at the Royal Canadian Armoured Corps School, CFB Gagetown.

- | | |
|---------------|---|
| Lee Shearwin | disappeared in Canberra |
| Phil Gibbons | instructor at the Armor School, Fort Knox, Kentucky |
| Mark Lippiatt | Squadron Commander, 1st Armoured Regiment |
| Mick Carmody | Brigade Major, 1st Brigade (Mech), Holsworthy, NSW |

Major David Fallon is a student at the Command and Staff College, Queenscliff, Victoria

T-80



AFV Recognition Standards

It was only about two years ago that a soldier could train for war and say with some certainty who the enemy would be. When learning aircraft and armoured fighting vehicle (AFV) recognition, a T-72 could be counted on to be enemy, and a Chieftain tank would definitely belong to a friendly force. This made the job of the Unit Intelligence Officer relatively easy, with clear cut knowledge of which vehicles belonged to what side.

To match a black and white world, a black and white solution was found for aircraft and AFV recognition. At the basic level of teaching the current standard is to identify only Canadian and Warsaw Pact vehicles and aircraft as friend or foe. For most combat trades in both the Regular

Force and Militia, this is the only standard required up to the rank of Master Corporal. Actual vehicle recognition by type and model is not required until the rank of Sergeant and above. This to some may seem good enough, until one considers who the enemy might actually be.

With the virtual dissolution of the Eastern Bloc and the multitude of changes in world events, a friend or foe standard is no longer acceptable. A more realistic level of proficiency for our basic standard must include actual vehicle (or aircraft) identification by NATO reporting names and country of origin. In this age of Glasnost and Perestroika there is no such thing as looking at a main battle tank and saying, "That is the enemy". Several of the world's nations have extensively exported their military hardware to many countries. This list includes the USSR, England, France and the United States. Any country purchasing this equipment could potentially become our enemy in battle.

To see a real life example of this, one had only to watch the evening news and the events in the Persian Gulf unfold. Iraq was a powerful country well equipped with MIG-29s, M-72s, T54/55s and Chieftain tanks. Well, that's fine you say, there is a definite enemy, except for your young gunner (who missed the 0 Group) is now laying the gun on a friendly T-72 instead of the hostile Iraqi Chieftain.

This is where the obsolete friend or foe standard falls apart. Soldiers at even the lowest level of training require an

ZSU 23-4



extensive knowledge of aircraft and AFV recognition. In most cases our course training plans can have this change implemented without an increase in teaching time. As was mentioned earlier, our present standard includes only Russian and Canadian aircraft and AFVs. This list should be expanded to encompass the more frequently seen vehicles from the USA, France, Germany and England.

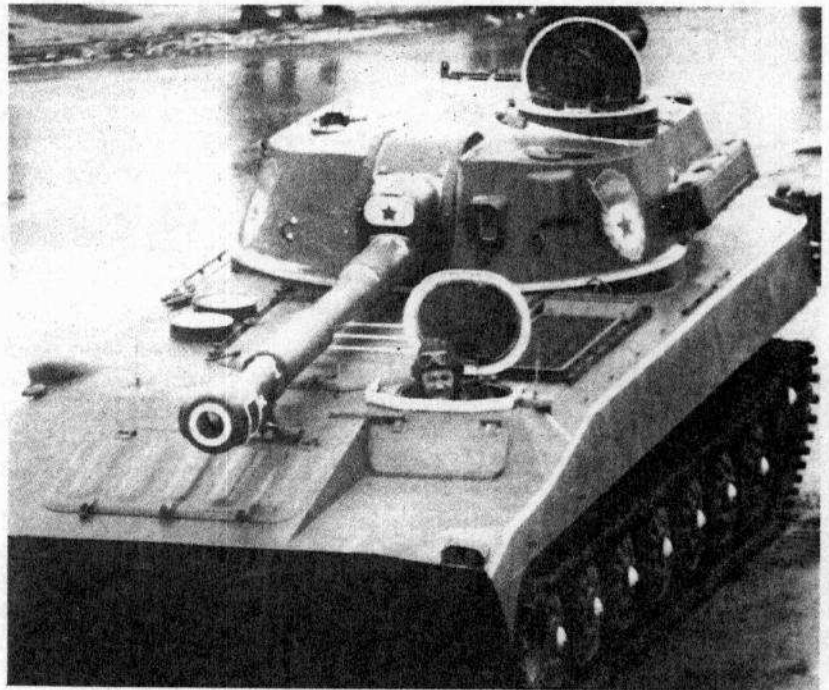
On the modern battlefield a soldier must be better trained and kept up-to-date to survive. By adapting to changing situations at this basic level of training, the Royal Canadian Armoured Corps will be better prepared to fight and survive on the modern day battlefield.

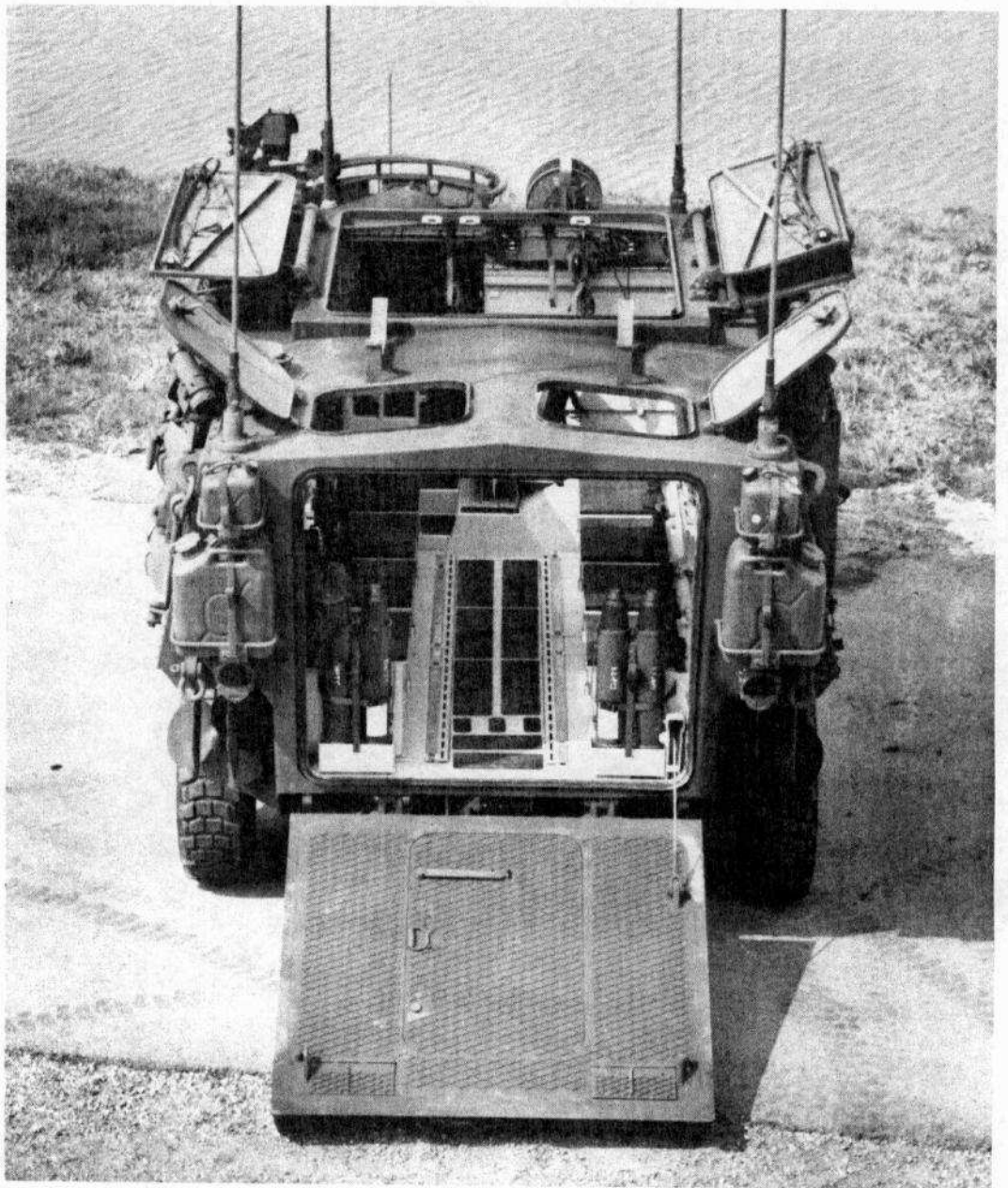
Lieutenant Rick Smuck, Liaison Officer,
C Squadron, The Royal Canadian Dragoons



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The Canadian Forces New Bison

I am writing in response to an article in the Autumn 1990 edition of the Armour Bulletin by Col. W.L. Claggett, the Sales Manager of Defence Products, GM of Canada Ltd, Diesel Division. On reading his article "The Canadian Forces New Bison", one soon realizes why he is a Sales Manager. He gives an excellent introduction to a vehicle for the Reserves and Regular forces. Unfortunately, we in the Armoured Corps must be cautious, when reflecting on our role, not to fall prey to his words.

The Corps is suffering for its current employment of the Cougar as a "Tank Trainer" or even as an "Armoured Car". It has proven to be a poor choice and

horrendous mistake for the Armoured Corps. Let's not compound our problems by using the LAV-25 or LAV-AG as a replacement for the Cougar and/or the Lynx.

One cannot argue much against the speed of the AVGP and LAV on roads or in the water; but off-road mobility and armour protection are more questionable. These are important factors to consider when applied to front line employment during a crisis. The largest negative factor is the design of the vehicle itself, which will not allow it to be an effective replacement/substitute for a tank or a reconnaissance vehicle.

In the case with all of GM's LAV's and AVGP's, the location of the main armament on the rear third of the vehicle is not conducive to good tactical employment. Consider a "Crest Drill" or a "Blind Corner Drill" where an AVGP has to expose itself completely in order to employ its main armament. "Tracks Up" on a crest is not a good tactic to teach young Armour soldiers. A tank or reconnaissance vehicle should expose itself as little as possible and thus have its turret and main armament located on the forward third of the vehicle, which is not the case with the AVGP, or the LAV.

Adoption of the Cougar has already damaged the Corps. Poor tactics are among the lessons being learned. In time of war, the Cougar could only be effectively employed in a role of Convoy Escort or relegated to Unit LO's. It would be suicide to consider employing AVGP's or LAV's as tanks at the FEBA by the RCAC. In the majority of cases these vehicles should be used as "Armoured Buses" in the rear, along the same lines as the British employ their Saxon, where they transport troops forward to transfer into more heavily armoured APC's such as the Warrior. This leaves the Armoured Corps, indeed the whole Combat Arms with a large void — no tanks.

Tongue-in-cheek proposals in previous Armour Bulletins for AVGP's, such as mounting a spare tire on the side of this vehicle, would involve the recruiting of the front lines from NFL teams and necessitate the enlarging of hatches, etc. These humorous proposals, further point out the faults of these vehicles in the roles that the Corps require of them.

If the Corps insists on keeping the Cougar — take the turrets off and replace them with a 120mm turreted mortar, to be employed by Assault/Support Troops. With illumination, HE, and new guided anti-armour munitions the Recce and Armour regiments would have a very mobile and effective integral resource.

The RCAC will become extinct unless real tanks are used to maintain skills. Cost effective measures are proving more expensive in the long term. If the Corps were to be called upon today what could

it provide immediately? Reconnaissance! A Combat Team, no. Tankers and Maintainers require time to train on the vehicles they are actually going to use. With today's sophisticated weaponry and machinery, a magic wand will not produce tankers and maintainers overnight. Considering today's technology, maintainers will require more training than crewmen. Remember the Israelis and their American Patriot Missiles.

With the demise of the tank, comes the death of the Armoured Corps, as such. Purchasing LAV's would mean a restructuring of the roles of the Corps to basically those of the Mechanized Infantry. There is a definite requirement for tanks, not only for the Armoured Corps, but for all the Combat Arms. Without tanks, the Combined Arms team is severely restricted to "Low Intensity Conflicts" and unable to respond effectively to any crisis above that level; as can be seen today. The Cougar has in effect neutered the Corps.

The purchase of tanks will solve many problems, where AVGP's or LAV's will only compound them. Tanks are, naturally, more expensive initially, but cheaper in the long run. Tankers and maintainers will be trained and experienced on a vehicle that they can actually take to war. There will be no need for a rushed purchase and rushed training on an unfamiliar vehicle, as is now the case. Crewmen would not train on one vehicle, and go into battle on another, with little or no training.

The point to be remembered in these fast-changing times is that in a crisis there will not be enough time to buy equipment "Off the Shelf" and train crews and maintainers in time to respond. The proposals expressed by Col. Claggett will prove more expensive in training time as well as financially. The old axiom, "KISS", comes into play here; let's not buy an interim vehicle and then a tank — just buy a tank.

Master Corporal George Wallace is a Royal Canadian Dragoon serving with 1 Canadian Division at Kingston

CORPS UPDATE



C Squadron Exercises Freedom of the City of Fredericton 11 August 1990

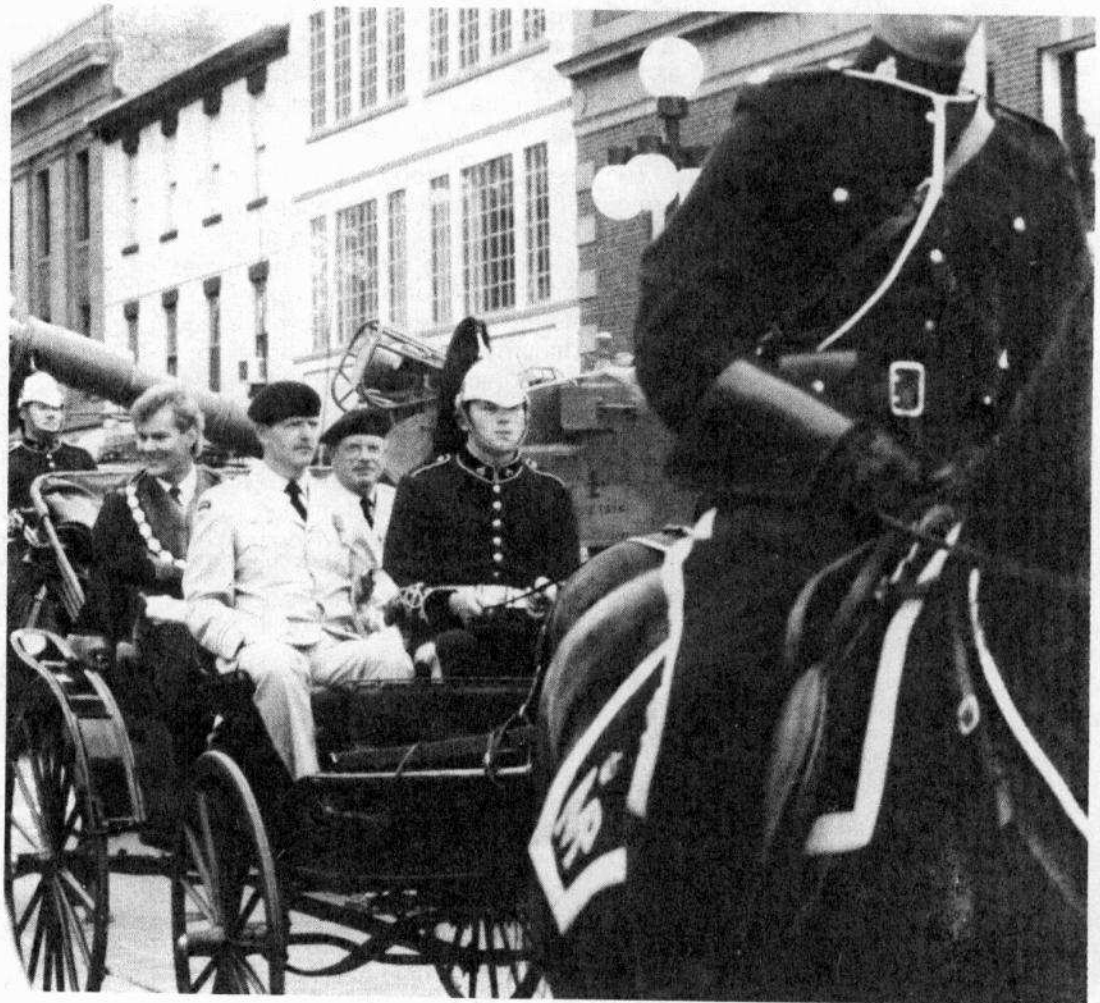
The citizens of Fredericton were greeted Saturday, 11 August 1990 with the rare sight of tanks driving through the downtown streets. The Royal Canadian Dragoons for the first time exercised their right to the Freedom of the City of Fredericton. This freedom was initially granted to the Dragoons in 1983 to commemorate their centennial.

This year the right was exercised as a part of the numerous celebrations to commemorate the 50th Anniversary of

The Royal Canadian Armoured Corps, of which The Royal Canadian Dragoons is the senior Regiment. The hard work of the parade organizers, Captain Kent Stewart and SSM Bruce Prendergast resulted in a smartly executed and well attended parade.

The tanks of C Squadron, representing the entire Regiment, were commanded by Lieutenant-Colonel Rick Hillier.

Accompanying the Commanding Officer from Petawawa was an honour guard in full Dragoon ceremonial dress and the Guidon Party. Guests included the Reviewing Officer, His Worship Brad Woodside, Mayor of Fredericton; His Honour, the Lieutenant-Governor of New Brunswick, Gilbert Finn, and the newly appointed Colonel of the Regiment, Brigadier-General P.H.C. Carew. Also on hand were Major-General Howard, Colonel Commandant of the Royal Canadian Armoured Corps; Major-General J. Dangerfield, Commander 1 Canadian Division; Brigadier-General M. Baril, Commander of the Combat Training





Centre; Brigadier-General G.G. Bell; and Brigadier-General O'Connor. Other distinguished guests included the Chief of Police and the City Councillors.

The parade was conducted in true historical fashion. After the arrival, in horse-drawn carriage of the Lieutenant-Governor and Brigadier-General Carew, the tanks of C Squadron proceeded towards the gates of the city which were represented by the Waterloo Row Train Bridge. Seeking refuge in the city, three tank rounds were fired in an alarm. The Mayor then dispatched the Chief of Police, on horseback, to escort the Commanding Officer to City Hall. The Commanding Officer, complete with a personal bodyguard of four mounted outriders, expressed his regiment's desire to enter the city, which the Mayor complied to. The tanks, with weapons mounted, then rolled down Queen Street to City Hall.

The crews dismounted and were inspected by Mayor Woodside who was escorted in the carriage by Brigadier-General Carew and Lieutenant-Colonel Hillier. Following the inspection, the Mayor and Colonel of the Regiment addressed

the public. Both expressed the necessity for close cooperation between the unit and city and the good relationship which exists between the two. Brigadier General Carew also read a message which was sent by His Royal Highness Prince Charles, Colonel-in-Chief of The Royal Canadian Dragoons. After an exchange of gifts between the City and The Regiment, the tanks moved around the block to return in a rollpast taken by Mayor Woodside. Following the parade there was a reception at the Old Government House.

Of course, not all parades go without incident. Corporal Trevor Thorn had his hands full with a skittish horse and the Battle Captain, Captain Ron Puddister, had to conduct some last minute track maintenance - 3B strikes again!

Of note among the many 50th Anniversary activities for C Squadron was the unveiling and dedication of a monument at Worthington Tank Park on August 12th. The ceremony was brief but meaningful and will be a reminder of C Squadron for years to come.



Royal Canadian Armoured Corps 50th Anniversary Celebrations CFB Gagetown

The Royal Canadian Armoured Corps School celebrated the RCAC's 50th Anniversary on the weekend of 10-12 August 1990.

The festivities began with an all ranks Meet and Greet on Friday night. Among the 250 who turned out for the event were Major-General Howard, Brigadier-Generals Bell, Lockyer, Carew and Amy and Colonel Gaulin, and an impressive delegation from the Halifax Rifles Association. This was a great opportunity

for the new to "rub elbows" with those who had a significant part in our history. Indeed the "old guard" stamina was tested until 0200 hrs (as should be).

After a few hours sleep and an open air breakfast, the RCAC School held an Open House for all visitors. Guests were then invited to Fredericton to observe C Squadron, The Royal Canadian Dragoons exercise its Freedom of the City to commemorate the Corps 50th Anniversary. Following this excellent parade, guests returned to CFB Gagetown to motivate and prepare themselves for the evening's all ranks gala. The gala was a big success with a turnout of over 350 people and again the "old guard" was a steady firebase until 0200 hours.

Sunday was parade day. Though guests and personnel were coming through a self inflicted smoke screen, the significance of the parade was felt by all. The troops on parade were inspected by Major-General Howard and Chief Warrant Officer Duffney in true armour fashion, from the back of a halftrack. After inspection, QL3 course, serial 9007 received their regimental hat

*Major-General Howard and
CWO Duffney prepare to
inspect*





Major-General Howard and Brigadier-Generals Amy, Carew and Bell lead troops off parade



Veterans on parade

Heavy Metal for Militia

The first of 100 light armoured vehicles for Canada's army reserves has rolled off the assembly line in London, Ontario. The Militia Light Armoured Vehicle was handed over by General Motors Diesel Division to Bill McKnight, Minister of National Defence who in turn presented it to Major-General Frederick Mariage, chief of reserves, on September 13.

"Despite recent cutbacks to our overall budget," said Mr. McKnight, "we are firmly committed to our reservists. We intend to provide them with the equipment they require."

After decades of making do with hand-me-downs from the Regular Force, the MILLAV provides the land reserve, traditionally known as the Militia, with its first specific-use vehicle. The *Bison*, as it is called, will be produced in several variants, including armoured personnel carriers, command post vehicles, mortar

badges after which the parade marched past the Colonel Commandant to proceed to the dedication of a plaque for "Amy Tank Park". The parade was led by Generals Howard, Amy, Bell and Carew aboard the halftrack.

Once the parade was over, all ranks gathered to bid each other farewell at the Post Parade reception. After a weekend with the veterans and dignitaries who are an integral part of our history, it is easy to see why the Corps is on the right track.

carriers and maintenance units. Each APC version can carry a full section of 11 soldiers with full gear.

All variants are equipped with a machine-gun for self-defence, and can reach 100 km/hr on roads. They are extremely quiet at high speeds, and are amphibious.

The \$100 million contract provides for the full order to be delivered by early 1992. The vehicles are similar to the light armoured vehicles manufactured by Diesel Division for the United States Marine Corps in recent years. They will complement the six-wheel light armoured vehicles already in use by the Militia and Regular Force units. These variants on the Swiss MOWAG design were also manufactured by Diesel Division at its plant in London, Ontario.

"The Canadian military was our first customer for light armoured vehicles in the



mid-70s, and they have helped Diesel Division establish a world-class technology in this field," said William Kienapple, the firm's director of defence operations.

As is usual with Canadian defence contracts, this one also provides economic spin-offs for other regions of the country. About \$410 million in sub-contracts for propellers, tires and instrument panels has gone to suppliers in Alberta, Nova Scotia, British Columbia and Quebec.

The vehicle is intended primarily as a trainer, although the six-wheeled types are being used by the Regular Force in some operational roles, notably internal security. The *Bison* is street-legal and costs about \$1.12 per kilometre to operate.





Appointment as Colonel of the Regiment

On October 30, 1990 Major-General Patrick James Mitchell became the new Colonel of the Regiment to the 8th Canadian Hussars (Princess Louise's) for a period of three years commencing September 1, 1990.

Major-General Mitchell will succeed Brigadier-General Owen W. Lockyer, who has served in the appointment since June 29, 1986.

Major-General Mitchell was born in Montreal, Quebec, on 23 January 1931. He was educated at Loyola College and received his Bachelor of Arts degree in 1952. He joined the Regular Army on 18 September 1951.

For the period 1952 to 1958 Major-General Mitchell served as a Troop leader in Canada and Korea, was employed as an instructor at various army schools, and promoted to Captain in late 1958. During his tenure as a Captain, he fulfilled many administrative and training duties and from 1963 to 1964 attended the Australian Army Staff College. In 1965 he was promoted to Major.

As a Major, Major-General Mitchell was employed as Squadron Commander in Canada and Cyprus. He also held the position of Brigade Major, 2 Canadian Brigade from 1968 to 1969. In 1969 Major-General Mitchell was promoted to Lieutenant-Colonel and given command of the 8th Canadian Hussars (Princess Louise's) until 1971. From 1971 to 1973 Major-General Mitchell instructed at the Canadian Army Staff College and at the British Army Staff College.

In 1973 he was promoted to Colonel and made the Chief of Staff of the Atlantic Militia Area until 1976. During the period of 1976 to 1977 he studied at the National Defence College.

Major-General Mitchell was promoted to Brigadier-General in 1977, and made Commander of 1 Canadian Infantry Brigade Group until 1980 when he assumed the duties as Chief Land Doctrine and Operations National Defence Headquarters. In 1981 Major-General Mitchell was promoted to his present rank and spent several years as the Chairman for the Military Agency for Standardization in North Atlantic Treaty Organization Headquarters.

On 17 May 1985 Major-General Mitchell retired to Calgary where he founded Hussar Consulting Ltd, which is a Defense Consulting firm. He resides in Calgary with his wife Joan. They have three children.

FEATURE ARTICLE



The Origin of the Beret

The following article was reprinted from the Royal Canadian Armoured Corps School — History, Organization and Scope booklet, dated May 1947.

Soldiers have wondered at one time or another how this peculiar but practical form of headgear came to be adopted. How did the beret come into existence? Most members of the Royal Canadian Armoured Corps know that it was the most distinctive cap of the Royal Tank Regiment, but in most cases their knowledge ends there and a good deal of mythical information is circulated about its origin.

The following account by the late General Sir Hugh Elles, of the British Army, is excerpted from the "Palestine Post," and the Canadian Army Training Memorandum of April 1946. It may be of interest.

"Some time at the end of 1917" he writes, "at dinner one night at Bermicourt we discussed two well-worn subjects."

One was: "What would happen to the Tank Corps in peacetime?"

"We agreed that it ought to go on and proceeded to talk about its uniform.

"Someone, I think it must have been Fuller (Major-General J.F.C. Fuller, an authority on armoured warfare), pointed out that after every war the British Army had made a habit of adopting some headdress belonging to its enemies; the bearskin of the Guards came from Napoleon's Imperial Guards; the Lancers' hat came from the Germans; the slouch hat came from the Boers, and so forth. It happened that there lay at Bermicourt, just then, resting, a regiment of Tirailleurs Alpains (mountain riflemen), and the bright idea occurred, I think to myself, that we might make an exception at the end of that war and adopt a headdress from our Allies.

"The choice lay between the beret breton, which the Tirailleurs Alpains wore, and the beret basque, which were worn by our comrades of the chars d'assault (tank). Neither of these really met with favour; the breton was considered sloppy and the basque skimpy. So we fell back upon the version which was then very popular amongst girls' schools in England. We circulated a large number of girls' schools and received a large number of berets of different colours. And eventually after a stern contest with the War Office, our black beret was, surprisingly, authorized."

Physical Fitness — A Constant Concern



Training for war is the 'raison d'être' of the Canadian Armed Forces. When armed forces train for extended periods without being involved in a conflict, it is very easy to lose sight of this 'raison d'être' and treat military duty as a nine-to-five job. There are numerous aspects I could point out that makes this behaviour incorrect but I will focus my argument on physical fitness.

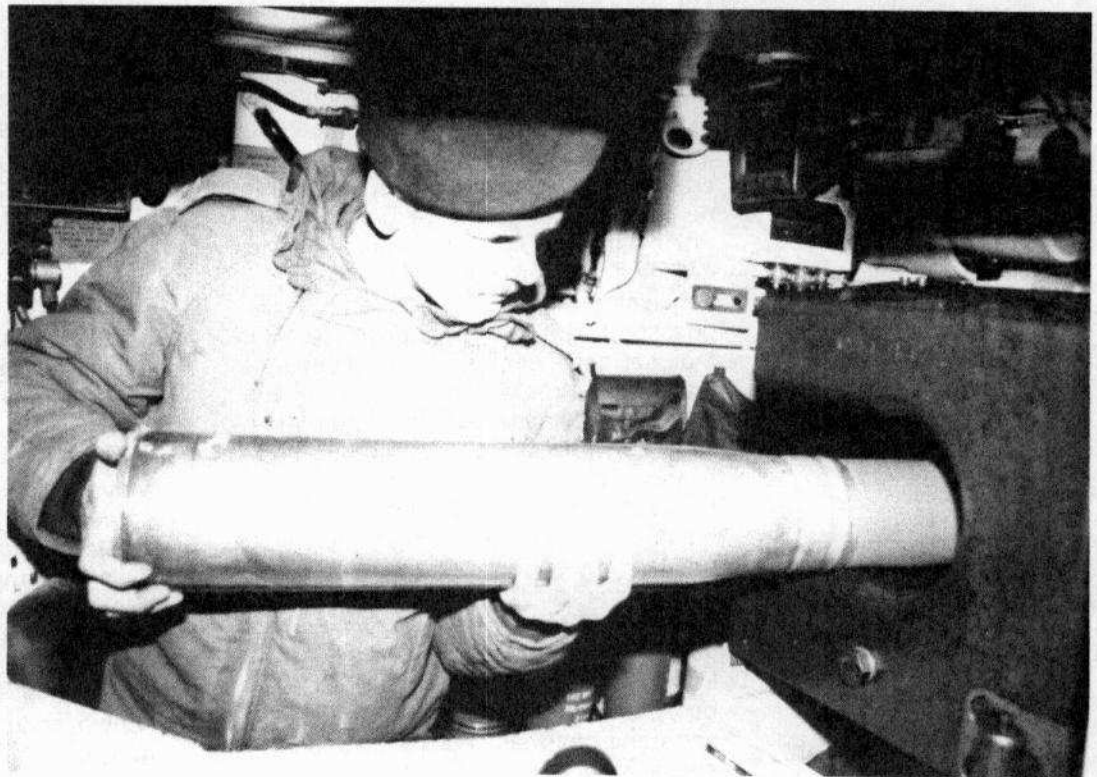
"Total fitness for combat includes technical skill, mental and emotional stability and physical endurance."⁽¹⁾

History has revealed that complacency

has led to the downfall of many strong armies. The constant requirement of sustaining a high level of physical fitness should be on every soldier, airman and sailor's mind. For example, during the Falklands War in 1982, field doctors commented on the remarkable ability of the Royal Marines to survive with wounds that would have normally been considered fatal. The doctors attributed the Marines sustainability to their high level of physical fitness and endurance.

Physical fitness is not merely a requirement for military personnel but it also has positive quality of life implications. Soldiers, sailors and airmen require physical fitness regardless of their role in the Canadian Forces. Leaders and subordinates share the responsibility for maintaining a high level of physical awareness. The Persian Gulf and Body Mass Index (BMI) are two present-day concerns with serious physical fitness ramifications. The advantages of fitness far out weigh the disadvantages regardless of how you look at it.

The benefits of physical fitness or the adverse effects due to lack of conditioning to an armed force have been clearly documented throughout history. "The remarkable military achievements of the ancient Persians, Greeks and Romans were due in part to the rugged, tough and well-conditioned fighting men in their





armies.”⁽²⁾ It has also been documented that when an army became complacent and accustomed to the luxurious way of life they fought so hard for, they were often defeated by a more robust army. One of the best examples of complacency leading to defeat was the fall of the Roman Empire. Carrying on through the 18th and 19th centuries, it was noted that the soldiers being recruited were not necessarily in good physical condition. It was through the rigours of training and the demand for individual physical resources that quickly toughened the soldier of that era. The officers were also compelled to be physically fit as was demonstrated in Prussia that “...officer candidates had to graduate from the gymnasia with a certificate of fitness...”⁽³⁾ There is little question that the extreme physical fatigue that war engenders is of great concern to leaders. The realization of the requirement for physical fitness became increasingly clear as we fought our way through history. This was never more true than in the First and Second World Wars. The harsh living conditions, long route marches, heavy equipment, rough seas and demanding flight schedules were some of the causes of physical fatigue that plagued the Army, Navy and Air Force during the World Wars. Fatigue became a major concern of fighting forces and good physical fitness was without question an asset. The fact that “...soldiers

in good physical condition...more easily fight off fatigue that breeds fear and defeatism.”⁽⁴⁾ became widely known and accepted. In the 1950's, the emphasis on physical fitness continued to be of some concern. The Royal Canadian Air Force published Pamphlet 75 which detailed why physical fitness was important. Some of the reasons listed in Pamphlet 75 were the physical strain of modern combat flying, war required long and extensive hours and through sedentary duties, airmen became soft. As one might conclude, throughout history there has been a concern for physical fitness but as the Romans discovered in early history, we seem to become complacent and lose sight of this need from time to time.

Canadian Forces Administrative Order (CFAO) 50-1 defines the requirement for physical fitness in the Canadian Forces. It states in part, that personnel “...must be conditioned to cope with the stresses imposed by sustained operations and be physically ready to respond at short notice.”⁽⁵⁾ This statement makes it quite clear that there is a necessity for physical fitness and we must be ready at all times. Modern technology has now enabled us to leap into battle with greater demands for physical endurance. For instance, the new CF 18 can withstand more G force for a longer period of time increasing the physical stress on pilots. Sailors must be alert for extended periods of time and



Infanteers must always be ready for hand to hand combat. Tanks go further and faster and can fight day and night. The Armoured Corps can expect long hours working in confined spaces and the constant lifting of 30 to 40 kg ammunition clearly indicates a requirement for physical fitness. Even with technology, we cannot afford to let our physical fitness diminish. This has become most evident in the past few months with the deployment of CF personnel to the Persian Gulf. There exists a very real threat of chemical warfare. This has physical fitness implications due to the wearing of protective clothing for sustained periods. More so, with the hot, arid conditions characteristic of the Gulf region, heat tolerance has become a major factor in determining the sustainability of operations. It is no secret that soldiers and aircrew are having problems coping with the heat while wearing chemical protective equipment. Most studies on heat and physical performance point out that there is "...improved physical performance in the heat and greater tolerance associated with increased levels of physical fitness."⁽⁶⁾ The bottom line is that a physically fit person is able to acclimatize and adjust to adverse heat better than the person who is not physically fit. The Persian Gulf should not be treated as an isolated case as a similar argument can be made for Arctic conditions. The Persian Gulf example strengthens the argument that we must be fit and ready at all times as "...no one can predict today when you may be thrown

into combat..." you will have to be in good shape. You must be in good shape all the time."⁽⁷⁾ Therefore, the importance of physical fitness is actually intensified by technology.

CFAO 50-1 also states that leadership "...is fundamental to programme success and therefore the primary responsibility rests with the chain of command to ensure all members actively participate."⁽⁸⁾ I would suggest that the best way to ensure that members were taking part in physical fitness would be through leadership by example, one of our principles of leadership. Men require maintenance and this is just as important as the requirement for machine maintenance. Field Marshall Wavell identified "...these essential elements of leadership: robustness, energy and courage, ..." ⁽⁹⁾ As one may deduce, there is a responsibility to oneself and to one's soldiers to maintain a high level of physical fitness. One philosophy on physical fitness training identifies four components: men, equipment, place, imagination and interest. The first three components are quite easy to satisfy but the fourth is usually the most difficult hurdle. This becomes the leader's responsibility. Through leadership by example and his own physical fitness capabilities, a leader may structure a program that is conducive to fitness and environmental training. For example, in designing a military skills competition, one event may be an obstacle course where the soldier must work his way through, over, and under a tank. Physical fitness fosters high morale which leaders must be aware of as "...weakness of body and spirit, lack of stamina and poor morale are usually found together"⁽¹⁰⁾ and should be avoided at all cost. Leaders must realize that regardless of technology advances, once "...war begins, the bottom line will be the soldier, sailor and airman."⁽¹¹⁾

Physical fitness has quite obviously been a concern of leaders throughout the ages. Evidence shows that as far back in history as the 17th century, armies had a tendency to become complacent which in turn led to their downfall. Throughout the World Wars fatigue and endurance were identified as keys to fighting off defeatism and poor morale, all of which I suggest are still true today. Even technology has not decreased our need for physical fitness. In fact it has increased the need for fitness due to the sustainability of equipment, the '24 and 7' nature of the modern battlefield and the increased

stress technically advanced equipment puts on the body. Leadership by example appears to be the most sound way to maintain our belief in physical fitness.

The potential for international conflict has become reality as we watch the events in the Persian Gulf unfold. The modern battlefield demands are obvious as we see soldiers struggle with heat stress due to sustained operations in chemical warfare equipment. Technology has brought us to a point where incidents, such as being sent to the Persian Gulf, can happen to anyone, anytime. Therefore, the responsibility to remain physically fit has become more important to both leaders and subordinates. We must be ready to fight anywhere in the world on short notice keeping in mind that..." the bottom line is the soldier, sailor and airman."(12)

Captain Michael Rostek is a Standards Officer at the Armour School.

Footnotes

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CH 136 Helicopter Emergency Handling Training for Observers

During the past several years, 10 Tactical Air Group (10 TAG) policy has been that dual controls will not be installed in the CH 136, Kiowa, unless the left front seat is occupied by a qualified pilot. This direction should be re-evaluated with a view to installing both sets of controls whether the left front seat is occupied by a qualified pilot or a qualified observer.

In the land environment, during all phases of training on a crew served weapon or vehicle, each crew member is trained to a minimum level on the duties of the other crew member(s). In this way, if one member of a mortar, gun or tank crew is put out of action, the weapon or vehicle remains operational or can at least be moved away from danger. It is accepted by all ranks in the land environment, that cross training ensures equipment and crew will be available to fight another day. This training is conducted either on a formal course at the appropriate school or during unit continuation training.

Since cross training has proven beneficial to the army and will continue to be so in the future, the natural question is, why are tactical aviation crews, specifically Kiowa crews, not cross trained to the same minimum standard?

The many benefits of an observer trained to handle the Kiowa in an emergency situation are obvious, the most important being the capability to save not only the aircraft but the lives of the crew.

During my tours with 10 TAG I have been aware of two occasions when pilots were incapacitated and unable to fly. One instance involved an allergic reaction to an insect bite and the other an attack of common hay fever. With good luck rather than good planning, both pilots were able to land the aircraft before being completely overcome. In each situation the observer could only sit and pray. How do we really know that a fatal accident has not already occurred which might have been prevented by observer cross training?

Some of our NATO Allies are currently training and have trained non-commissioned members to handle a dual equipped aircraft in an emergency. For example, British Forces are currently training Lance Corporals as pilots. Also, the Canadian Forces, during World War II, had many non-commissioned officers as pilots. With the training of observers to handle an aircraft in an emergency it would not necessarily follow that we would create an observer pilot. We would instead create a crew member capable of saving lives and equipment.

During the outbreak of an armed conflict, Kiowa crews would undoubtedly install dual controls before any mission that could prove fatal. If this is done the problem would become one of time; when would the pilot have the time to show his observer how to get them home in the event of his incapacity? This situation

need never arise if training is conducted now. Some Kiowa pilots feel that the installation of dual controls, with an observer, would create an interference problem in the low level environment because of maps, bins, etc. Prior to 1980, almost all Kiowas were flown with dual controls installed, and according to the Director Flight Safety Statistics Officer, there was never an accident attributed to an observer interfering with the controls. As well, only one such incident occurred when duals were not installed. Since this situation existed safely at one time, the excuse of control interference by the observer is not a valid one.

The training of the observer could take place at either the Operational Training Squadron (OTS) or the home unit.

OTS Training. The training could be incorporated into the current Observer Course. On the average, each observer



navigation trip lasts from one to two hours. The lesson plans could be shortened after the initial eight or nine navigation trips to allow approximately a half hour for the Instructor Pilot to train the observer student in emergency handling procedures, with the emphasis on run-on landings. Although this would detract somewhat from some of the navigation on various lesson plans, it must be remembered that the new observer is saturated with navigation trips prior to and after his unit acceptance check flight. Therefore, some of the emphasis on navigation during the Observer Course could be replaced with emergency handling. The US Army Aviation Centre's Observer Training Course at Fort Rucker, Alabama, identified the financial and tactical benefits of the Canadian system of crewing the Light Observation Helicopter (LOH) with a pilot and a Non Commissioned Officer (NCO) as an observer. However, the Americans took this concept one step further by recognizing the value of an extra set of trained hands in a dual controlled aircraft. When the observer graduates from Fort Rucker, he has been instructed in how to perform the normal observer duties plus extract his aircraft and crew from harm in the event of pilot incapacity.

Unit Continuation Training. If the emergency handling training is not done on a formal course, it can be done at the home unit by a designated officer as part of the normal training cycle. In this case the course in Gagetown would not have completed any emergency handling training with the exception of a familiarization. The responsibility for training would rest with the unit and would upgrade the observer from a familiar level to a minimum level of proficiency. This would then allow the emphasis at the OTS to remain on navigation.

Training Monitoring - Standard. Once a common training standard has been identified, it would be essential that a system be established through which the Headquarters could monitor the training. With this concept in mind, the unit standards officer would monitor each observer's training and progress in much the same way as annual proficiency flights. A minimum requirement would be established and the maintenance of proficiency would be checked as required by the Standards Officer.

Sometime in the future, it may be proven that an accident, whether fatal or



not, could have been prevented if the observer had training in emergency landings. Other NATO forces are currently training non-commissioned ranks to not only fly in an emergency but to become qualified pilots. The Canadian Forces have an excellent opportunity to conduct this emergency training now, but is allowing it to slip away. The American Forces were quick to see and take advantage of the benefits. Their observer candidates are not nearly as experienced as ours yet they have no qualms about training a young inexperienced soldier to handle the aircraft in an emergency situation.

Observers do not wish to become second pilots or compete with pilots. All that is suggested is the knowledge and training to save the crew and aircraft in the event of a critical pilot emergency be taught and practised by the observers. It behooves the tactical helicopter

environment to begin training observers now, when time is not a critical factor. To try such training during an operational sortie or in the middle of an emergency would prove too late. As valuable as the observer is to the success of a tactical mission, he would be even more valuable if trained to deal with inflight emergencies.

Captain Joe Fougere is currently a Standards Officer at the Armour School. He recently finished two years as the Squadron Sergeant Major of 408 Tactical Helicopter Squadron at CFB Edmonton, Alberta.



The Stresses of High Intensity Conflict are we prepared?

During any future high intensity conflict, the magnitude of psychiatric casualties will be such that it must not be ignored. A review of historical evidence will put this into perspective.

During World War II the American Forces suffered an estimated 1,393,000 casualties due to debilitating psychiatric disorders.¹ The United States Army alone, from 1942 to 1945, permanently lost between 390,000² and 504,000³ men who were too mentally shaken to fight, in terms of formations - that is between 30 and 50 divisions.

The Korean conflict also saw a large number of psychiatric casualties. Of the 1,587,000 soldiers deployed, 33,629 were killed and 103,284 were wounded. Of the

wounded, 48,002, or 33 percent, were diagnosed as being psychiatric casualties. In other words, the soldier had a 143 percent greater chance of becoming a psychiatric casualty than of being killed.⁴

The next conflict will also produce a large number of psychiatric casualties. In a high intensity conflict such as is predicted for the European theatre, the proportion of men lost to psychiatric disorder, even in a conventional war, may reach 50 percent.⁵ This drain on limited NATO resources indicates the need to establish a programme of mental preparation which will reduce the number of such losses.

Psychiatric casualties have been identified in the accounts of most battles since records were kept. Even the renowned soldiers of Sparta are documented as having displayed psychosomatic illnesses, thus enabling them to escape the horrors of the front.⁶ During the American Civil War, the Surgeon General of the Union Armies described a condition which he called "nostalgia" (battle stress), documented at a rate of 2.34 per 1,000 in the first year and 3.3 per 1,000 in the second. These rates were found to hold true throughout the Franco-Prussian, Spanish-American and Boer Wars.⁷

During World War I over 10,000 Canadians were diagnosed as having suffered "shell shock", a term which at



that time was applied to a variety of conditions ranging from cowardice to "maniacal insanity".⁸ Shell shock was then viewed by some to be no more than a "manifestation of childishness". In World War II the term "neuropsychiatric" was coined, and the rate of this type of casualty for Canadian soldiers in Italy, specifically between March 1943 and June 1944, was 23 percent of the total 24,421 battle casualties.⁹

Treatment of the stress syndrome during both world wars, and indeed today, is based on the three principles of immediacy, proximity and expectancy. This treatment theory is viable after the soldier has become a casualty, but does nothing to prevent the onset of the injury. To quote Major General F.M. Richardson, "the problem of psychiatric casualties is much too serious to be left to the doctors" and "the soldiers might be persuaded to concentrate on prevention, in which the doctors have had little success".¹⁰

The Soviets believe that fear and emotional injury are a direct result of weakness of moral fibre and a lack of control. Leaders, therefore, are held responsible for improving ideological indoctrination and also battlefield simulation training. The properly motivated soldier who knows what he is up against should not feel fear.

The British recognize fear as a natural and legitimate reaction to the horrors of battle. It should not be denied, but rather controlled. The methods used by the British to control fear parallel in some instances the Soviet training, with two notable exceptions. One, in the British model, fear is itself examined and addressed, and two, a certain percentage of battle stress casualties is accepted as inevitable.

Canadian preparation

What method, or methods should we, as Canadians, follow in formulating a programme that would, if not eliminate, at least reduce the incidence and severity of battle stress casualties? Both the Soviets and the British place emphasis on the development of the man through the development of the unit. This is not enough. The development of the individual man must be foremost and then he and his peers will become a cohesive unit.

A programme is needed which encompasses all the lessons which nations have learned about the prevention of psychiatric casualties, and which will

answer the needs of the soldier now and into the next century. I believe that such a programme is available which has already proven to be effective in highly stressful situations.

Mental Training

Since the early Seventies, olympic calibre athletes and trainers have been developing not only the physical strengths, but also the mental strengths required by an individual in order to consistently deliver optimum performances in a wide range of athletic endeavours. Until recently this type of mental training was regarded with considerable scepticism by many experienced coaches, in part because the mental trainers were placing emphasis on the requirements of the individual, and not on the requirements of the 'team'.

It is this shift in emphasis towards the individual which is central to a mental training programme such as those followed by world class athletes of today, and one with which many may disagree. I submit, however, that we need this type of mental training in the Canadian Forces, and that it will reduce battle stress casualties in the next conflict.

The military tends to use mental training solely for behavioural modification. The molding of a group of strangers into an effective fighting force is no simple feat, but through mental conditioning it can be achieved. What we must now do, leading into the 21st century, is expand our uses for mental training, and gear them more to the individual's psychological needs. This will in turn improve unit cohesion and lessen the incidences of psychological breakdown on the battlefield.

Other groups in our society have been extremely successful in achieving goals through the development of certain thought patterns and better powers of concentration. Today the level of competition in international sporting events has risen to the point where the competitor needs both intense physical and mental training in order to win. For the last two years civilian mental trainers have been involved in training Canadian military teams, employing the same type of programme used by many Olympic calibre Canadian athletes including the National Women's Basketball and Alpine Ski Teams, silver medalist Elizabeth Manley and gold medalist Larry Cain of the men's rowing team.¹¹

The full range of what these mental trainers can offer the soldier has yet to be

explored. It has been proven that they can modify their athletic mental training programme to a military orientation with ease and simplicity.

During the military mental training programme that took place in 1988 in Lahr, I had a first hand opportunity to work with and learn from some of the finest mental trainers available. The mental skills which they taught the soldiers who represented Canada in the International Armoured Reconnaissance Competition, the Boeselager Wettbewerb, are transferable to all facets of life. Also, it will allow them to withstand the rigours of battle better than soldiers who have not had any mental training. During several post competition debriefs the results of the mental training programme indicated an increase in actual individual physical performance varying between 25 and 30 percent. The soldiers are now better motivated, more aware of their own psychological strengths, and far more capable of dealing with high stress situations than they were before they underwent the psychological training.

Training Methods

The methods employed by the trainers were varied, from the use of audio taped interviews of world champions discussing their own mental training, to the study and analysis of the various experiences that the world champions underwent during the training, up to and including the actual competition. After the basics of the programme were understood, the training

was then tailored to each individual's needs.

The individual training was continually refined, so that optimum benefit would be gained. This training was not exclusively for the competitors, but was undertaken by the military training staff as well. The individual training approach, although seemingly unwieldy, was accomplished using a teacher/student ratio of 1:8, which compares favourably to a section size unit. The major headings of the programme are as follows:¹²

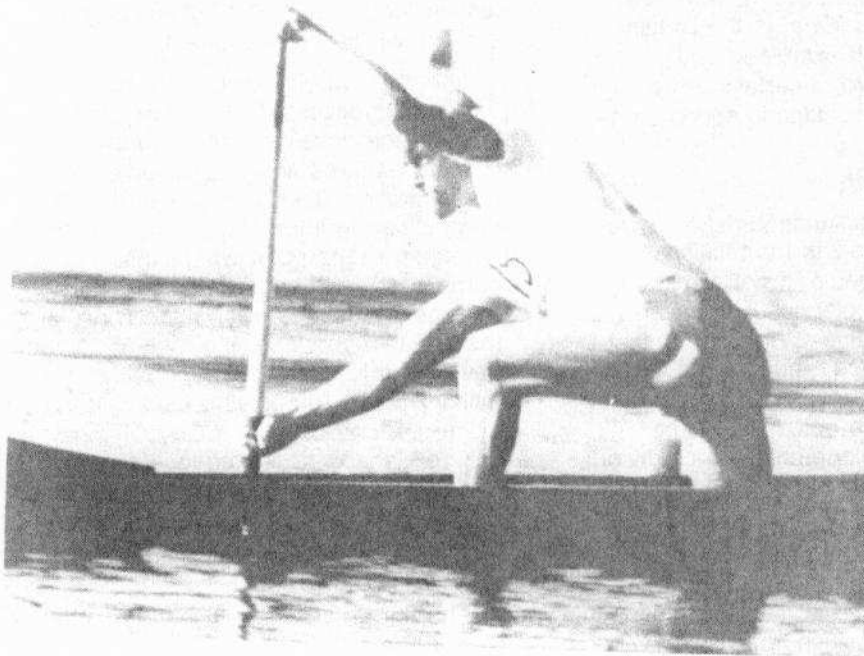
- a. identification of performance blocks (or inhibitors);
- b. pre-competition focusing;
- c. imagery;
- d. focusing;
- e. refocusing; and
- f. post-competition debriefing.

After the 1984 Olympics, the professional mental trainers with the Canadian Olympic team identified three major areas that interfered with the expected performance of athletes. These were the changing of patterns during the competition that had worked during training, the late selection of the team which had the effect of emotionally draining a number of the competitors, and the failure of the athletes to maintain their concentration in the face of distractions.¹³ Through careful analysis of these factors, coupled with a flexible training programme geared to the needs of the individual, these performance reducing factors can be overcome. Every attempt was made to ensure the 1988 Boeselager team was aware of these potential problems and given training to minimize, if not eliminate them.

Pre-competition focusing became one of the most important parts of the training. This training involved the step by step analysis of each action and reaction required to properly complete a task, be it the assault course, the small arms competition, the armoured reconnaissance patrol or any of the other events. Correct sequences were rehearsed many times, and a set pattern of personal actions leading up to the commencement of an event were refined to become automatic.

Imagery skills were developed so that each action or thought process required for all physical and mental tasks was fully committed to memory, and then run through in the soldier's mind many times prior to either a training run or the actual competition.

Olympic medalist Larry Cain





Sports psychologist Terry Orlick during a Boeselager training session

Due to the constant positive reinforcement of the individuals' own psychological needs and requirements, the development of an attitude by the team and the training staff that personal idiosyncrasies were normal, individual differences were acceptable and no one training method worked well for everyone, the soldiers worked harder to improve themselves. The gruelling 14-16 hour training day became an accepted practice, even though it continued from December to May. The men were trying harder not only for themselves, but because other team members were striving to improve and correct their own weaknesses and strengths.

Focusing is the ability to totally concentrate on the completion of a task in spite of any outside interferences. Throughout the entire training period, team members were subjected to high levels of stress as a result of several international "pre-competition" events. As the soldiers' abilities to close out other than the most important outside stimuli increased, so did their performances. Further development of this skill within a military context will have obvious benefits in conflict.

Re-focusing is the ability to return to a high level of concentration after a distraction has interrupted the thought pattern. As with focusing, the application of this skill has many military applications.

Post competition debriefings were very similar to the type of post exercise reports currently being used. Thoroughness and timeliness were the key. The driving desire of the team members to improve their skills through the constant analysis of the results of training was much more

pronounced after the mental training programme started.

Problem Areas

In order to introduce such a proposal the initial problems could be numerous. Many senior commanders must be convinced that current training methods do not sufficiently prepare a soldier to deal with the physical and mental demands of battle. Therefore, additional training and time must be set aside during the normal training cycle to conduct and monitor psychological training. In order to do this a dedicated group of professionals will have to refine and constantly improve the mental training programme. In the beginning there will be reluctance on the part of some soldiers to participate in such training, thinking it has no military application. This was the case with some of the Boeselager team, but once the team was introduced to the methodology and logic of the programme, coupled with the positive approach taken by the team leaders, they came to realize the long term benefits. It will also take a number of years to find and adapt appropriate military scenarios to use during training. Testimonials from olympic calibre athletes provided a good basis for a competition like Boeselager but for the military as a whole, the sports psychologists will have to reorient themselves towards a military application.

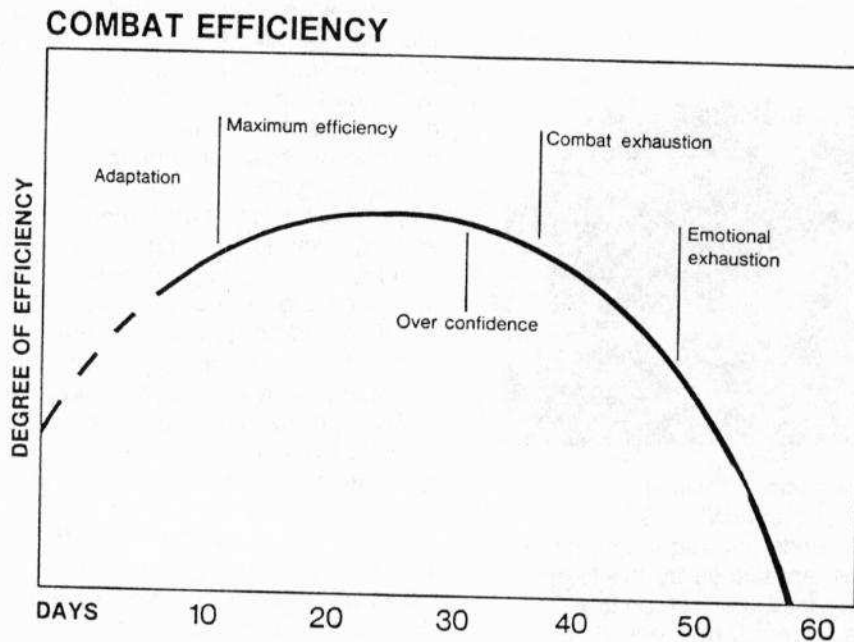
Robust and charismatic leadership has been viewed by some as the panacea of battle stress; however, leadership alone cannot be enough to alleviate the stresses that are placed on a soldier in battle. Leadership certainly gives the individual a role model to follow, but does not assist in the conquering of the inner fears that men have, both about themselves, and about how others see them.

Therefore, civilian or trained military mental trainers must be authorized to develop and implement a programme which would teach military leaders at all levels these mental skills. This approach would provide our soldiers with a much better chance of coping with the immense stresses that the next conflict will impose.

Combat Efficiency

Mental training should reduce the anxieties of combat. In 1946, a study was carried out which examined the combat efficiency of American troops during the Normandy Campaign in the face of psychological and physical pressures. The graph illustrated below is a

representational depiction of the combat efficiency of the individual soldier over a 60 day period.¹⁴



The beginning of the curve shows a period of adaptation, lasting up to approximately ten days, during which the soldier learns about the harshness and realities of battle and develops a close bond with his section/crew. Following this initial period, he enters into the period of maximum efficiency, which only lasts between 25 and 30 days. Towards the end of that period exhaustion (of which the soldier may or may not be aware) starts to set in, efficiency drops and abilities are over-estimated, which all leads to total emotional and physical collapse.

Although the timeframe of the graph is representational, I believe that a mental training programme will have a marked increase on the time period that a soldier is at his top combat efficiency level. We can reduce the period of adaptation previously required through a combination of conventional methods and the inculcation of mental training skills. This training will enable our soldiers to control rather than dwell on their own fears, and to concentrate on learning the battlefield skills required to survive. By using the focusing and re-focusing technique taught this will in turn extend the soldiers' period of maximum efficiency by controlling stress and anxiety. This will in turn lessen the debilitating effects of fatigue induced by stress.

Conclusion

History has confirmed that battle stress casualties place a large drain on a nation's manpower. If the equivalent of 30 to 50 American divisions of psychiatric casualty had not been suffered during World War II, then the saving in lives, time and money would have been substantial.

We must develop a far reaching programme which will prepare us for the immense stresses that the next conflict will place on every soldier and officer. I believe that the mental training programme which is currently being used by the Olympic athletes, and which has been adapted for use by military teams, should be adopted by the Forces and implemented service wide. By developing our soldiers' powers of concentration through the use of a mental training programme that caters to their individual mental and emotional needs, we will become a more effective force. In the short term this course of action will increase our overall efficiency in peace. In the long term, it will reduce the potential for large scale battle stress casualties and overall better prepare us for war.

Captain Ross Wickware is the Adjutant of the Armour School

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Victoria Cross Winner



Sergeant Hugh Cairns

Sergeant Cairns was born in Ashington, Northumberland, England on the 4th of December 1896. When he came to Canada in 1911 he was apprenticed as a plumber in Saskatoon. Prior to winning the Victoria Cross, Sergeant Cairns, a member of the Saskatchewan Dragoons, had already proven himself – winning a Distinguished Conduct Medal at Vimy Ridge and the Legion of Honour from France.

During the action at Valenciennes on the 1st of December 1918, Sergeant Cairns' platoon came under machine gun fire. Sergeant Cairns seized a Lewis gun and ignoring enemy fire, rushed the position alone killing the five man crew and capturing the gun. Later he repeated the act this time killing and capturing 30 of the enemy and two more machine guns. Later again, though now wounded, he led a party to flank another machine gun position, capturing all guns, killing many and forcing a surrender of about 50. Sergeant Cairns' day finally ended after leading a battle patrol and capturing another 60 of the enemy. While disarming them he was severely wounded but fought on until rushed by 20 or so enemy. Sergeant Cairns collapsed from weakness and loss of blood.

Sergeant Cairns died on the 2nd of December 1918, two days before his 22nd birthday. He was the last Canadian of World War I awarded the Victoria Cross and has a major street in Valenciennes named after him. He is buried at Auberchicourt Cemetery near Douai, France.