

ARMOUR NEWSLETTER



Volume 3

July 74

This Bulletin is published by authority of Lieutenant-Colonel P.H.C. Carew, Acting Commandant, The Combat Arms School. Views expressed are those of the writers and do not necessarily reflect official opinion or policy unless expressly stated as such.



ARMOUR Newsletter

Vol 3

JULY 74

FORMERLY - THE ARMoured DEPARTMENT
SEMI ANNUAL BULLETIN

Editor's Comments

The Armour Newsletter is produced by the Armoured Department, Combat Arms School. The Newsletter represents a step towards narrowing the communications gap between the School and those the School serve -- the units, both regular and militia. It is important that close contact be maintained by all units and departments in the Armoured Branch. It is hoped that the Newsletter will provide a forum in which the School, and in particular Armoured Department, of interest to members of the Armoured Branch.

Good communications, of course, involve a two way flow of information. Armoured Department can best serve the units if the units will provide feedback on what the Department is producing. Comments, articles, suggestions and questions are solicited from any interested individuals or units. These need not be confined to comments on this issue, but may be on any topic of interest to the Corps. Please make your comments and suggestions known to us so that we may better serve you in the future.

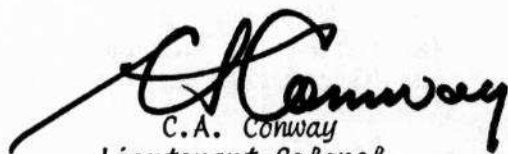
Introduction

By the time this third Newsletter reaches you, we in the Department will be well into writing and implementing both the Officers and Other Ranks Review Boards recommendations. Due to plant and personnel restrictions, some modifications have been imposed on what the boards considered the ideal. We at the School are very pleased and are looking forward to the steps backward/forward that we are taking in training officers and other ranks of the Branch. I think the most important features are:

- a. the flexibility in training Crewmen who will be employable on arrival at regiments;
- b. the addition of tank packages to Senior NCO courses; and
- c. the stress placed on tank training during the officer courses.

When we go the Standard Brigade Group organization we will have eight armoured squadrons and four reconnaissance squadrons, all organized the same. Although we may not be equipped the same for some time to come, this means to me that we can at least identify squadrons from regiment to regiment. More importantly, we as a Branch should be able to re-establish our proper role in the Combat Arms Team and the Department can teach armour and reconnaissance rather than the mixture called "Light Armour". If, in our Armoured Squadrons, it be deemed that we have a tank trainer instead of a tank, then we must use it as such, always keeping in mind the limitations which cannot be fully practised.

This newsletter follows the same form as the last and is meant to be informative. Feedback is encouraging. Articles from individuals or Regiments will gladly be accepted.


C.A. Conway

Lieutenant-Colonel
Officer Commanding Armoured Department

FOREWORD

July 1974



P.H.C. Carew
Lieutenant-Colonel
Chief Instructor Combat Arms School

The changes which have occurred in Armour since January of this year have been considerable, even remarkable! I am pleased to report that armoured courses have been increased in number, refined in content and shortened where possible.

The Armoured Officer and Crewman Training Standards are now in the process of being implemented and the CAS Coordination and Standards Staffs assisted by the Department, have much work to do to meet the 1975 implementation dates. I can see nothing but improvement in this area and we owe a great debt to the hard-working members of both men's and officers' boards who worked so hard in 1973 to produce the standards for the branch.

We have expanded our liaison with Fort Knox in the past few months and through this association, our relationship with our US comrades in arms should be enhanced in the future.

I leave the School in August with regret. However, I have absolutely no doubt that Lieutenant-Colonels Ron Brown and Chuck Conway together will ensure that the case for armour is well represented both in CAS and elsewhere during their tenure of duty with CAS.

The Armoured Training Squadron was formed this year and is part of the CAS Training Support Group. Ultimately it may be placed under Armoured Department but for the time being it will provide the armoured support to CAS/403 (H)OTS through the Coordination Staff. It is a most important part of CAS and with twenty-seven tanks and sixty-eight all ranks, will be a busy organization.

General Rad leaves us 27 September on retirement -- he, as always, has been a staunch supporter of armour, a great teacher of combined arms tactics -- and a great friend. He will be sorely missed by all of us.

Please accept my best wishes for the future.



P.H.C. Carew
Lieutenant-Colonel
Chief Instructor Combat Arms School

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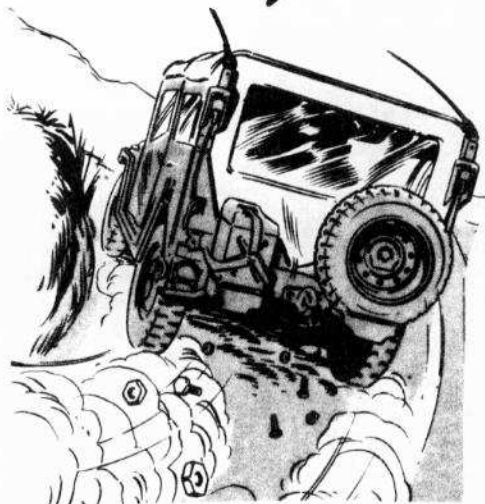
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Driving & Maintenance Wing



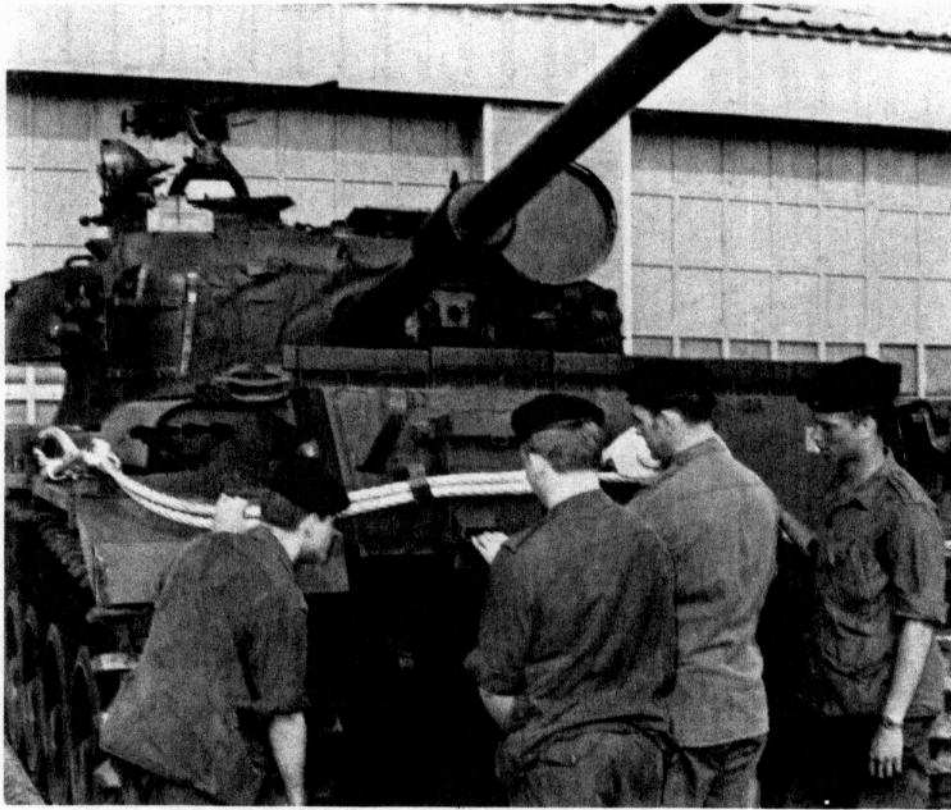
By Capt

PC MERCEREAU

Since January a number of changes have taken place within Driving and Maintenance Wing which have helped make our work more pleasant and efficient. The major change has been the move of the wing into proper accommodation. At long last we left the crowded, inadequate temporary hut and moved into a proper tank hanger beside gunnery wing. The move presented few problems as we conducted our classroom work in building H-20, although this was rather close to the "headshed". Both instructors and students appreciated the new accommodation and in particular they enjoyed the modern indoor plumbing. "Look Sir, it even flushes."

A great boost in the effectiveness of our training was the arrival of a vast quantity of training aids from Camp Borden. Anyone who had attended the old Royal Canadian Armoured Corps School in Borden will remember the excellent cut-away models of tanks and other vehicles that were held there. These included many cut away components of vehicles which we use today. It took a great deal of red tape, telephone calls and messages to get them here but the effort was worthwhile. These aids will allow the instructors to present their lessons in a more simple but thorough manner and the students should be able to grasp the lesson points quickly and easily.

D&M Wing has been quite busy since January. We have had two PL 3 (or is it TL 3) courses, one Combat Arms Advanced Drivers course, and one OCT Phase II Armd course. As well, we had input into the Crmn PL 6A, OCT Phase II Arty and OCT Phase IV Inf. Yes, we do instruct other arms besides armoured.



*Somewhere back here is the engine -- or is
this the front?*

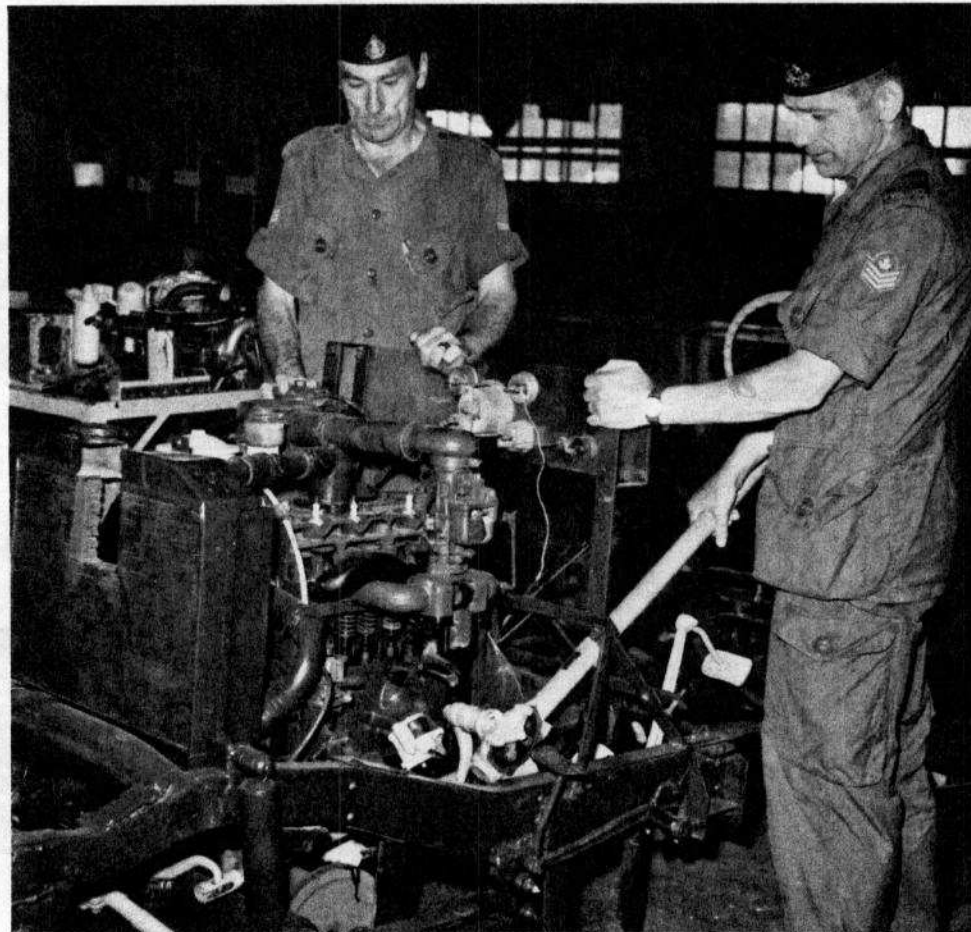


*Dear Sir: Now I've found the engine but
I've lost the rest of the tank.*

A number of changes in trades specifications, both for Officers and Crewmen, are taking place and these will obviously affect the courses conducted by the wing. The D&M PL 3 training has been extended from twenty-five days to forty-two days. The additional time will be spent bringing the crewmen up to a DND 404 level on all wheeled and light tracked vehicles. They will also receive some experience in convoy driving. The details of the officer classification training are still being worked out.

The summer brings about the usual changes in personnel and this annual event is hitting D&M Wing hard. The new personnel slate is listed elsewhere in the Bulletin but the loss of MWO Patterson, Sgt Sears, Sgt Georgeson, Sgt Duffney and others will be sadly felt.

Driving and Maintenance Wing carries on though, and we will continue to improve the training and the effectiveness of the students who come to us.



*WO JRR St Hilaire and WO JK Duffney
examining the 1/4 ton cut-away.*

COMMUNICATIONS WING

by **CAPT P. LEENTJES**

Six months passed already? - Impossible. Unfortunately true because the Newsletter editor has reappeared and wants to know what has happened.

First of all, summer is upon us in Comms Wing. Its easy to tell it is here because there are two traffic directors in the hall, and "1 this is 2 radio check, over", is bouncing from every room in the building. The Officer summer training is upon us, and you guessed it every course decided the best way to get prepared for the field training is to do comms first. As a result, every nook and cranny is filled with OCdts; some in classes of 50 at a time. If we survive the first two weeks you'll know because this will make it to the bulletin.

Its hard to look back over the last six months and say this is what we have accomplished, but I'll try.

Another Advanced Communicator's course has been run, three Pay Level 3 courses and one Phase II Officer Training Course. Each course has been improved and studied to improve it even more.

The 25 day Crewman comms package is now solid and has been run effectively three times. The product turned out is good and feedback on the crewman is now a must.

It was also a pleasure to see officers on the advanced course; we believe they benefitted from the training and we hope they also feel this way. Mr. Ross should now be able to give excellent briefing to comms crews who have to go out for days at a time -- especially on how to store and barbecue steaks in the field.

The OCT Phase II package has also been rewritten to make best use of the 10 training days available to us.

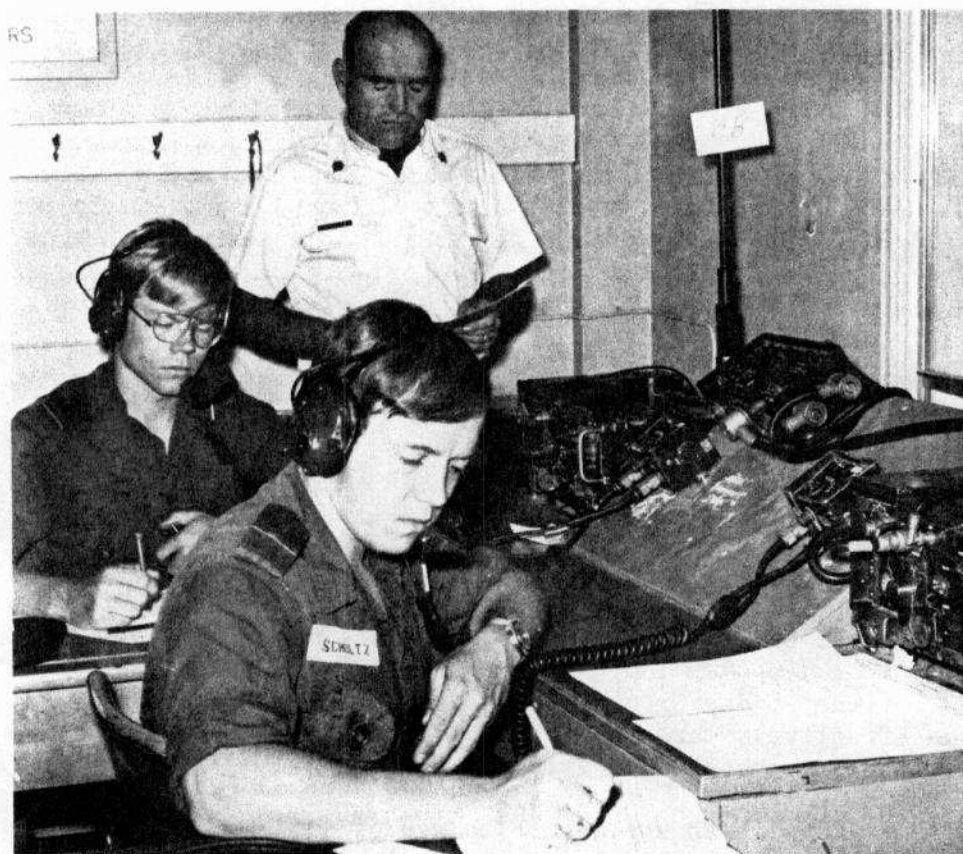
We think that we are achieving good results but what we need now more than anything is feedback. It can come from only one place -- you the units. Tell us if we are succeeding in turning out a good product with the crewman course. If not, we will try

to do something about it. Tell us if the advanced communicator has been of benefit to the unit, and what you would like to see incorporated.

I think I can close with a small motto that applies,

"We Aim To Please"

Remember you are our customers and should get the best service -- demand it!



Sgt McAllister supervising OCdt McKay and OCdt Shultz during a radio exercise.

GUNNERY WING

by **CAPT B.L. GRIFFIN**

Since the last newsletter a great number of crewmen of varying rank and experience have passed through the front door of Hangar K-19 and emerged weeks later as competent turret crew members.

The LdSH(RC), were the first of the Canadian units this year to participate in Regimental Tank Gunnery Refresher Training. Each unit approached the training with a slightly different outlook, all of which produced good results. As indicated in the last newsletter, it is hoped that each unit will take an ever increasing role in the conduct of this training. To date each of the units has made a fine start and has established a good base from which to progress. Collectively, a total of 45 Commanders, 45 gunners and nine unit gunnery instructors received either refresher or introductory training in Centurion 105mm ranging gun techniques.

Two more Pay Level 3 Troops have completed their tank gunnery training. Each of these troops contained some individuals who, in other phases of training, were described as "characters". However, once they began their gunnery training, they became very serious, showing once again that "the old girl can still enchant the young". Their enthusiasm and interest was only exceeded by their excellent results in the gunner's seat on the open range.

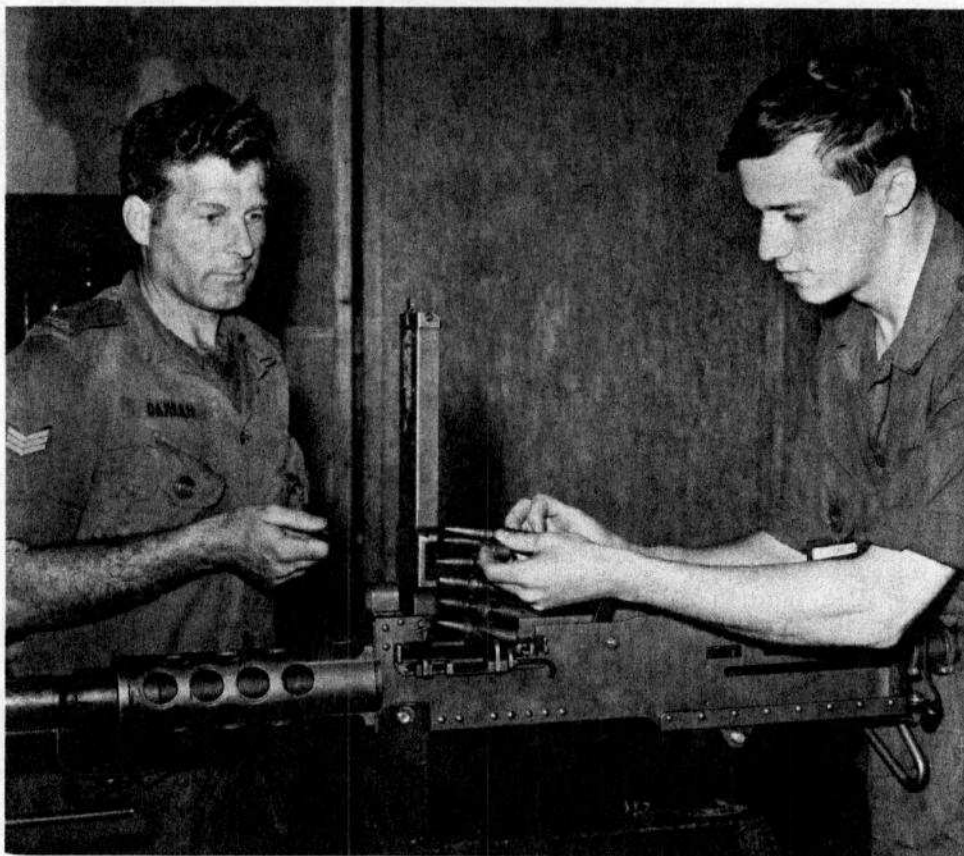
The trades review board last winter recommended that Pay Level 3 should only receive Lynx gunnery and not tank gunnery training. Tank gunnery was to be given as a complete Pay Level 5 Tank Gunnery Course. This recommendation was implemented with the first 12-day Pay Level 3 Lynx Gunnery Course which ended on 17 Jun. It is anticipated that the first of the Pay Level 5 Tank Gunner Courses will be conducted during January, 1975. The course will be approximately 30 days in length and will train the student from a level of no tank gunnery experience to the present Pay Level 5 standard.

The second major change in training philosophy is in the area of Basic Officer Training. It is proposed that all gunnery training, both Lynx and Centurion, be done during Phase III. This new package will be approximately 28 days in length. Hopefully this will turn out a student who has a better grasp of the theory and is more skilled in the performance of the practical aspects of gunnery than the present methods are producing. It is anticipated that this system will come into effect with the 1975 Spring/Summer courses.

During the past several months one of the more obvious weak areas has been in the performance of crews during battle runs. This weakness has been universal, whether the crews were from officer training courses or NCO training courses. The tendency has been for people to approach the battle run thinking of tactics, gunnery and the other trades in isolation. It cannot be too strongly emphasized that a battle run is simply a live fire exercise in which all skills, of which gunnery is only one, are put together in an attempt to add realism. It is for this reason that the article on battle run organization is included in this newsletter.

In between the numerous courses the Wing has also succeeded in sending teams out to the field to lend their expertise and charm to both professional and social events. We should like to take this opportunity to thank all concerned for the hospitable manner in which the members of the Wing have been received and cared for on these occasions.

With the summer will come a number of personnel changes that will see WO Marriott and Sgt Ritchie joining the RCD in Germany, WO Wadsworth supporting The BCD in Kelowna, British Columbia and Sgt Ward taking his release here in Oromocto. Their replacements, and those of us who are remaining, will continue to train, advise and support all units at every opportunity and in every way possible.



*WO BC Darrah instructing Pte TN Shelefontiuk
on the .50 cal MG*

ONCOT WING

by

CAPT A.R. ROBERTSON

The 1974 training cycle is well under way with course completions being "ticked" off the CAS course schedule. In our last report we indicated our anticipated courses load and therefore an up-date on completed courses seems in order.

Pay Level 6A	- 25 students - Top Candidate - MCpl J.C. Brissette, 12e RBC
Pay Level 6B	- 19 students - Top candidate - Sgt A.R. Turner, LdSH(RC)
Pay Level 7	- 11 students - Top candidate - WO H.C. Sampson, RCD
Phase Two	- 8 students - Lt M.R. McNorgan, winner of the Murphy Sword
Phase Three	- 12 students - Lt B.G. Jackson, winner of the Macdonald Sword
Sr NCO Militia	- 5 students - All of which were from the BCR and BCD in British Columbia
Crewman PL 3	- Serials 7303, 7401, 7402

The big news in ONCOT, and indeed the Corps, is the apparent intention of our lords and masters to purchase a vehicle suitable for use as a "tank trainer". This will cause a major re-write programme in the Wing. The revised training criteria was intended to be effective as of 1 Jan 75. Thus the Fall Pay Level 6A will still be based on the Light Armoured Regiment as the training vehicle. Approval has been received from FMC to move the Pay Level 7 course to Oct 74 rather than Jan 75 as originally slated. This will certainly aid in smoothing out the course load within the Wing for the forthcoming training period.

As in previous years, full credit must be given to those long suffering Officers, Warrant Officers and NCOs from the field whose services were "volunteered" to fill increment instructor positions in the Wing. Without them we could not have fulfilled our training commitments:

Capt D. Nolan	- 12e RBC
Lt R. Larter	- LdSH (RC)
WO G.E. Edwards	- 8 CH
Sgt C.J.V. Gutta	- 12e RBC
Sgt R.J. Lynk	- LdSH (RC)
Sgt A.A. Hayes	- LdSH (RC)
Sgt B. Wedlock	- 8 CH
Sgt G.C. Barr	- 8 CH
Sgt M.A. Morrison	- 8 CH
Sgt S.C.A. Mann	- 12e RBC
Sgt W.P. Wilmot	- 8 CF



ROUTP Phase II Officer Cadets receiving a briefing from their instructors during tactics training in the field.

ARMoured DEPARTMENT FALL-74

Just in case one of your old Armoured war comrades has been banished to the Combat Arms School and you have not heard from him since, you may find him in our headquarters or tucked away in one of our instructional wings. If not, then he is truly lost in Co-ord or even Standards.

Col DA Nicholson, Commandant, is the senior "black beret" at the Combat Arms School. LCol PHC Carew will be promoted to Colonel and posted to the National Defence College in August 1974.

HEADQUARTERS

OC	LCol Conway
2IC	Major Seely
AO	Capt Logan
D/CWO	CWO Geldart
Trg NCO	WO Engyel
Clk	MCpl Butler

OFFICER/NCO TRAINING (ONCOT) WING

OIC	Capt Dalton
Instr	Capt Leentjes
Instr	Capt Sproule
Instr	Capt Crosby
Att	Capt Doyon (Fr Exchange)

W/CWO	MWO Messer
WO Instr	WO Chesterman
WO Instr	WO Koebel
WO Instr	WO Branje

Sgt Instr	WO Duffney
Sgt Instr	Sgt Oakley
Sgt Instr	Sgt Halfkenny
Sgt Instr	Sgt Munro
Sgt Instr	Sgt Cuthill
Sgt Instr	WO St Hilaire

Adm NCO	Cpl Clarke
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GUNNERY WING

OIC	Capt Gowans
Instr	Capt Griffin
Instr	Capt Moyer
W/MWO	MWO Downey

WO Instr	WO Sampson
WO Instr	WO Cady
WO Instr	WO Martin
WO Instr	WO Baldwin
WO Instr	WO Haley

Sgt Instr	WO Darrah
Sgt Instr	Sgt Butler
Sgt Instr	Sgt Lynk
Sgt Instr	Sgt Purple
Sgt Instr	WO Murrin

Adm NCO	Cpl Lamb
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DRIVING AND MAINTENANCE WING

OIC	Capt Mercereau
W/MWO	
WO Instr	WO Hutchinson
Sgt Instr	WO Baril
Sgt Instr	Sgt Santer
Sgt Instr	Sgt Barnes
Sgt Instr	Sgt Boudreau
Sgt Instr	Sgt Ross
Sgt Instr	Sgt Delaney
Sgt Instr	Sgt Wallace
Sgt Instr(Inf)	Sgt Demers
Sgt Instr(Arty)	Sgt Sears
Adm NCO	Cpl Dow

COMMUNICATIONS WING

OIC	Major Thomas (UK Exchange)
Instr	Capt Kryzanowski
Instr	
W/WO	WO Macdougall
Sgt Instr	Sgt Warnock
Sgt Instr	Sgt Smith
Sgt Instr	Sgt Barsby
Sgt Instr(Arty)	Sgt Stobbart
Sgt Instr(Inf)	Sgt McAllister
Att (CELE)	Sgt Morris
Adm NCO	Cpl Hussey

HQ COMBAT ARMS SCHOOLCOORDINATION

SO2 Coord	Major O'Connor
SO3 Sched	Capt Eddy

TRIALS AND EVALUATION

TSO3 Armd	Capt McGuire
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TRAINING SUPPORT GROUP

OC Armd Det	Capt Pickering
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STANDARDS

SO2 Stds	Major Marteinson
S & E SO Armd	Capt Robertson
S & E SO Armd	Capt Tanguay
Pubs Offr	Capt Patterson

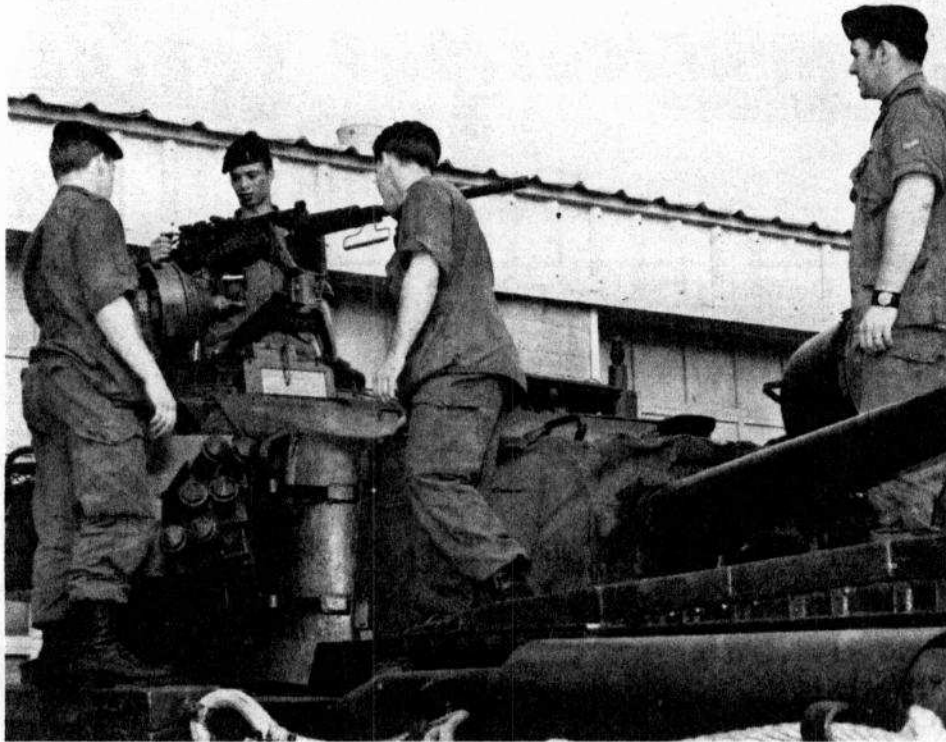
TACTICS DEPARTMENT

OC	LCol Brown
Cbt Ops Instr	Major Latham
Armd Instr	Capt Cathcart

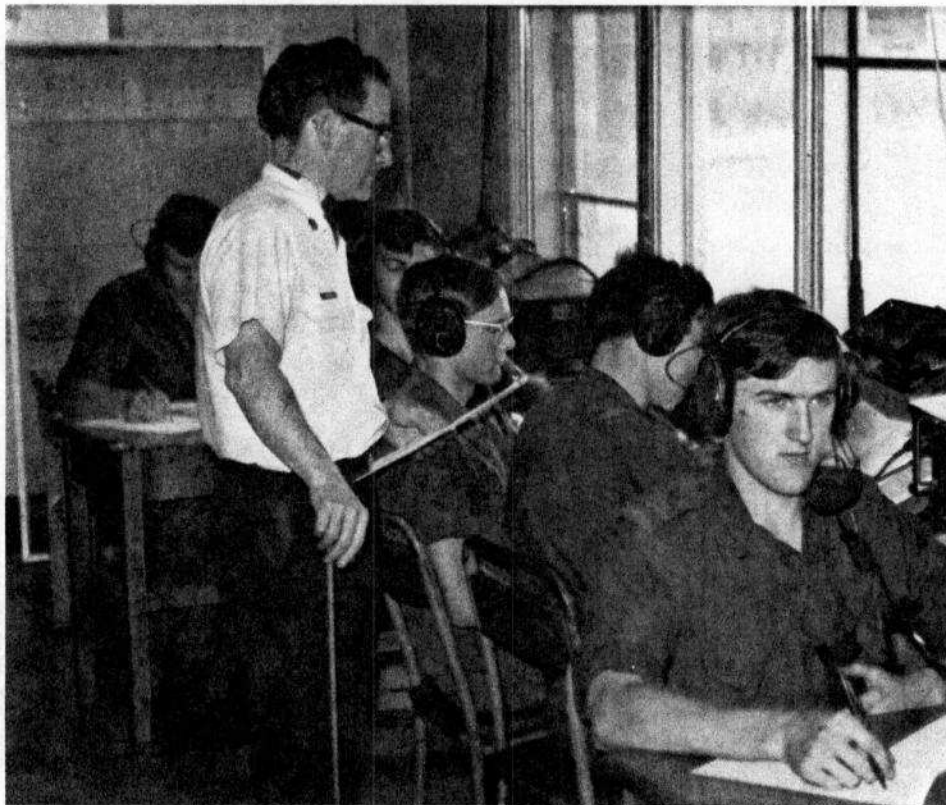
There are still a number of black berets, particularly NCOs, who are not listed above but who are employed elsewhere in CAS or CFB Galetown. At the time of writing (June) it has not been possible to track everyone down or confirm their employment in the fall. To those we have missed - our apologies; to those who don't wish to be discovered and are successfully hiding - our congratulations. Our next edition should be more complete.

No man is completely worthless -- he can always serve as a horrible example.

ARTICLES

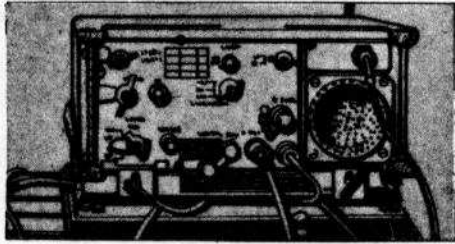


Pay Level 3 Privates Durad, Furloite and Harvey receiving instruction on the Centurion tank from Cpl HB (Rex) Morrison.



Sgt Warnock instructing OCT Phase II Officer Cadets on radio procedure.

The Communications Equipment Tangle



By Capt

P LEENTJES

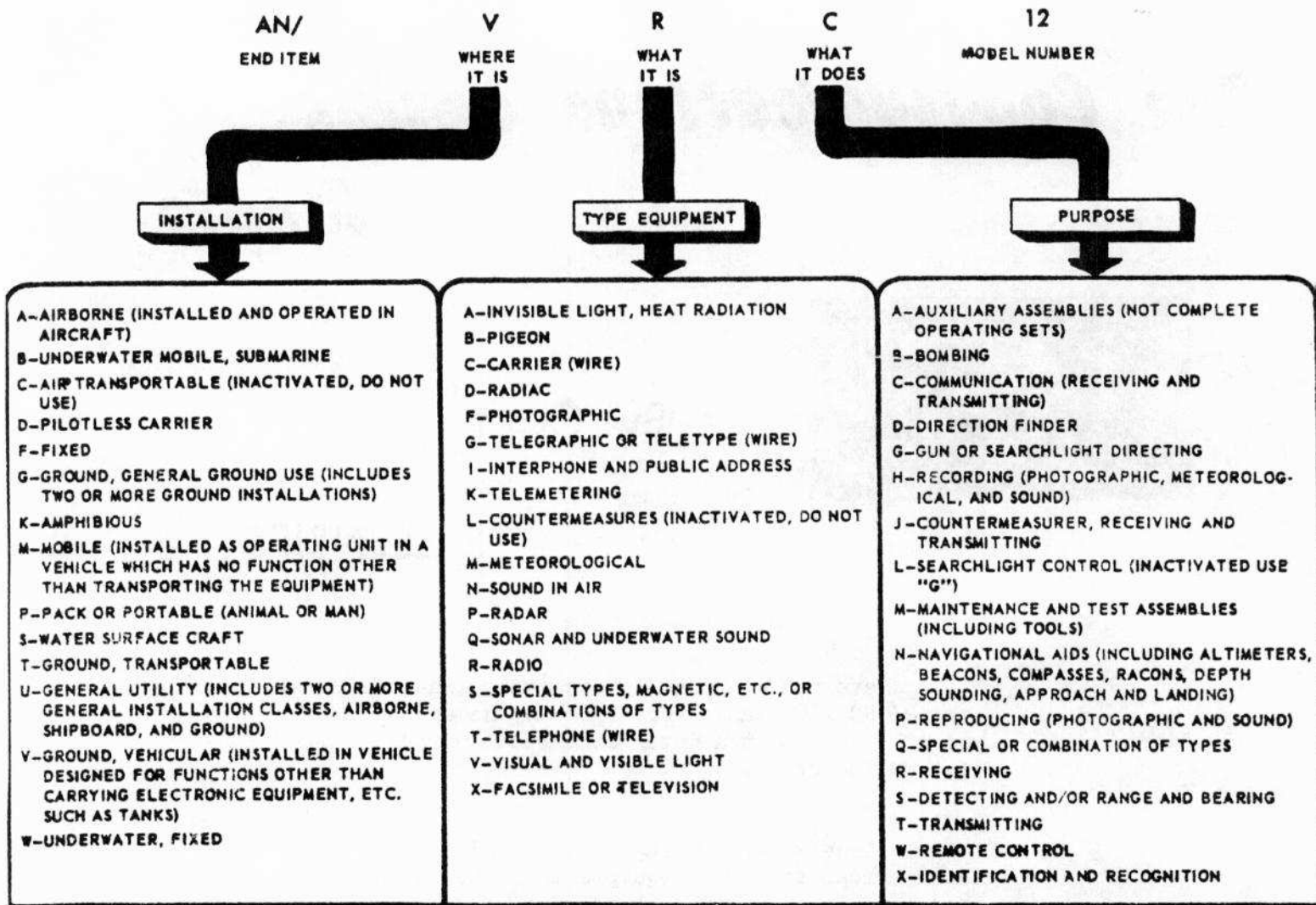
Have you ever really discovered what AN/PPS-4 or AN/GRC 125 stands for? Ask anyone around and you will get about a dozen different answers -- most of them incorrect.

Since we are moving further and further into the American family of equipments maybe we can shed some light on the subject for you.

The nomenclature that you see with the American equipment is a joint nomenclature for all Army, Navy and Marine Corps equipment.

Contrary to popular belief the AN does not stand for Army/Navy but indicates a complete end item, i.e., one that is ready to go if you apply power to it.

On the next page you will find a chart that is very helpful. It describes the installation, the type equipment, the purpose of the equipment and the model number.



For Example

AN/VRC - 12 indicates:

<u>AN</u>	<u>V</u>	<u>R</u>	<u>C</u>	<u>12</u>
Joint System	Ground vehicular.....	Radio.....	Communication (Sending & Receiving)	Model Number

or take the AN/PPS-4

<u>AN</u>	<u>P</u>	<u>P</u>	<u>S</u>	<u>4</u>
Joint System	Pack or.....	Radar.....	Detecting and/or range and bearing	Model
	Portable			

and the last one the AN/UBB-3

<u>AN</u>	<u>U</u>	<u>B</u>	<u>B</u>	<u>3</u>
Joint system	General Utility	Pigeon	Bombing	Model Number

I hope this clears the air a bit!

FLASHBACK No 1

Flashback No. 1 was published in Volume 2, January 1974. A number of readers wrote in and all the men pictured were eventually identified. Major A.H. Carington Smith MMM, CD, from Petawawa was the first to reply. His father, Lieutenant-Colonel Gordon Carington Smith, from Halifax, who is pictured sitting on General Worthington's left, also wrote in and identified all but a few of the men. Mr. Tom Begley from Borden supplied the remaining names.

Lieutenant-Colonel Carington Smith notes that "the original Canadian Tank School was formed in London, Ontario in December 1936 and was made up of Worthington and an Officer and two NCOs from each of the RCA, RCD, LdSH(RC), RCR, PPCLI and R22eR. This accounts for the various hat badges in the picture. In 1938 the Canadian Tank School was augmented to the strength shown in the picture, moved to Camp Borden and re-named, Canadian Armoured Fighting Vehicles School.

Missing from the picture was Frank White, LdSH(RC), one of the original officers who, at the time, was on a course in England."

Mr. Begley states that the vehicles shown on each side of the picture were called "Carden-Loyds" and mounted Vickers Machineguns. Further research by Armour Department indicates these were Mark VI models. They were British vehicles originally designed in the early 1920s for use in reconnaissance or as weapons carriers. A number of models were produced but their general characteristics were:

Weight	- 3 tons	Armour	- 10mm
Power Plant	- 20 hp	Speed	- 25 mph
Crew	- 1 or 2		

THE COMMANDANT AND STAFF - JULY 1938

Back Row (Left to Right)

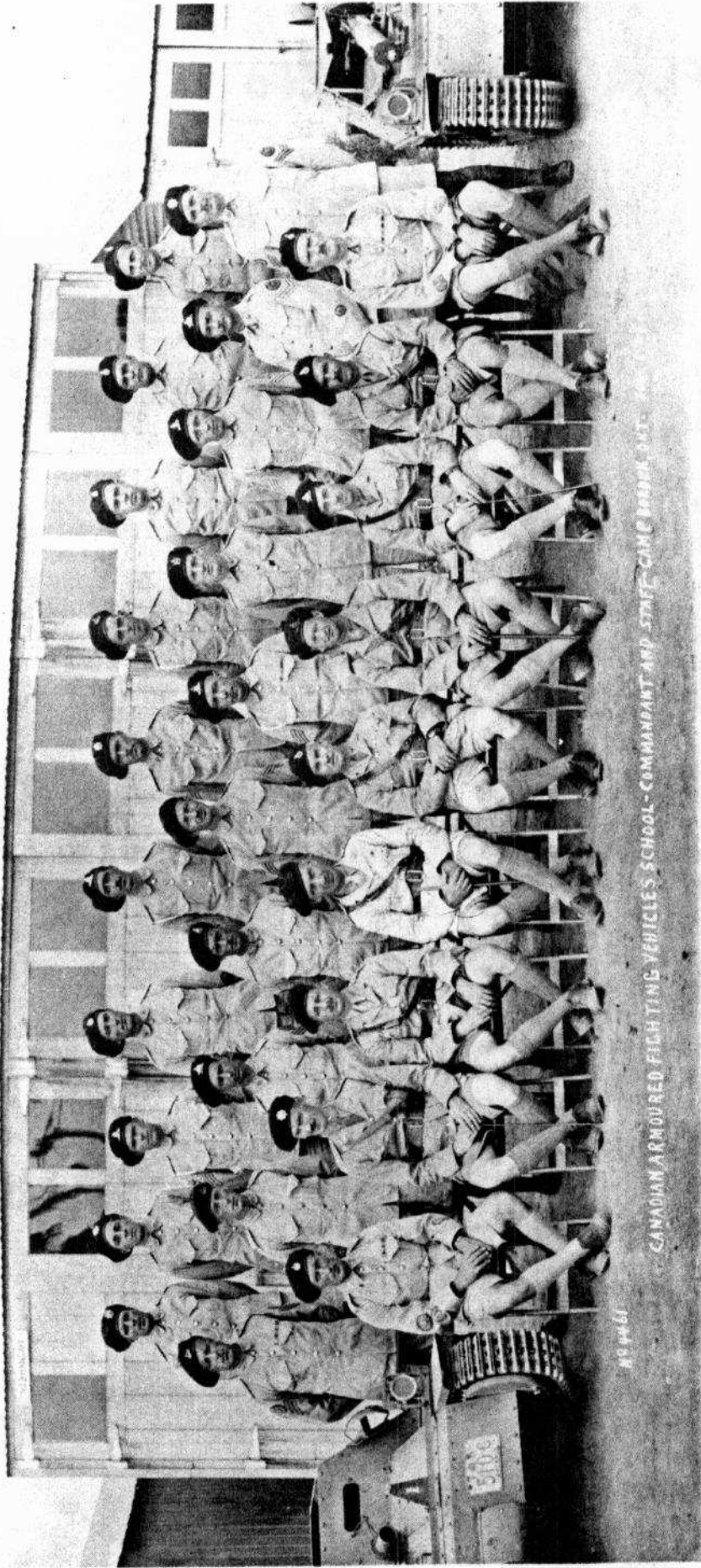
Pte G.H. James - RCR, Pte E.S.E. Chaplin - RCR, Sg E. Reid - RCA, WOII M.M. Philpotts - LdSH(RC), Pte R. Lowden - RCA, Sgt Pengelly - RCR, Pte W.H. Young - RCD, Pte Clouthier - , Pte J.J. McConnell - , Pte N. Lyster -

Center Row (Left to Right)

Sgt R. Hider - RCD, WOII R. Harris - RCD, Sgt A. Viel - R22eR, Sgt J.C. Cave - PPCLI, Sgt R.S. Edwards - PPCLI, Sgt G. Cox - RCA, Pte McGovern - , Sgt G.A. Farmer - RCA, Sgt W. Leblanc - R22eR and Sgt G.H. Pratt - RCR.

Front Row (Left to Right)

WOII F. Richmond - LdSH(RC), Lt T.G. Gibson - RCR, Lt J.H. Larocque - RCD, Capt Wood - RCD, Major F.F. Worthington, Capt G.C. Smith - RCA, Lt J.A.G. Roberge - R22eR, Lt J.G. Andrews - PPCLI, WOII W. Wallace - PPCLI.



CANADIAN ARMOURD FIGHTING VEHICLES SCHOOL - COMMANDANT AND STAFF
CAMP BORDEN, ONTARIO, JULY 1938

It is interesting to note the varied hat badges worn by the members of the School (particularly that of the founder of the Corps). The equipments shown were the sum total of the vehicles available at that time.

The Soldier's View Of:

Pay Level Three Training

By Pte

K RAYCHERT

Editor's Comments. One of the aims of the Bulletin is to encourage "feedback" from personnel and units on the courses being run and the training being conducted by Armoured Department. It was very encouraging to receive the following article written by a young soldier undergoing Crewman pay level 3 training. It would be unwise to lightly pass over the article as only the comments of an educated but inexperienced recruit. The underlying message is that the future of our Corps and the Canadian Forces lies with the recruit of today. We have an obligation, a trust, to instil in the younger soldier, at units as well as at training establishments, the heritage that we ourselves received when we first entered this profession.

I'm not at all averse to presenting my opinions on what Pay Level Three training should be. It is hoped that these comments will be taken objectively, and not as being hypercritical of present methods and procedures.

I have opted, in this writing, to project an insight into Pay Level Three training, and how this training should affect the personnel engaged. This could be beneficial as it would give to you, the instructor, the soldier's perspective as to the approach that could be taken.

It must be noted that the majority of the information taught in Basic Training is only that of a primer to the military. It primarily makes the recruit comfortable and familiar with the military organization. It is also important as a means of conveying to the recruit, the amount of effort expected of him.

It is at Pay Level Three that the beginning of specialization takes place. It is very important that the personnel 'who'll be involved with the new soldier, convey from the beginning, a high standard of professionalism and pride in their occupation. The recruit, still easily susceptible to influence, will quite naturally follow suit. The discipline enforced should be on a realistic level, not necessarily to the degree encountered in Recruit Training, otherwise the student will feel imprisoned. This would, in all probability, destroy his desire to be a member of the Armed Forces.

Pay Level Three is very important to soldiers of the Combat Arms. This is where they learn the rudimentary basics of combat skills. It is here where they must be inspired with a deep sense of pride in themselves and in what they are doing. They must be put in situations where they will be able to benefit and learn from group as well as individual accomplishments. They must be shown that discipline has a purpose and holds an important place in their future lives in the military. They must be shown that it is perhaps the very crux of either success or failure.

In short, this is where it starts. This is where he begins to be shaped and formed. Now is the time to initiate his interest, and to provide him with an incentive to stay in the Armed Forces.

A ship is safe when it is in harbour. But that is not what ships are for.

Any time the going seems easier, better check and see if you're not going downhill.

The fool wonders, the wise man asks.

Benjamin Disraeli

EXTENDING RADIO RANGE

BY WO T T MACDOUGAL

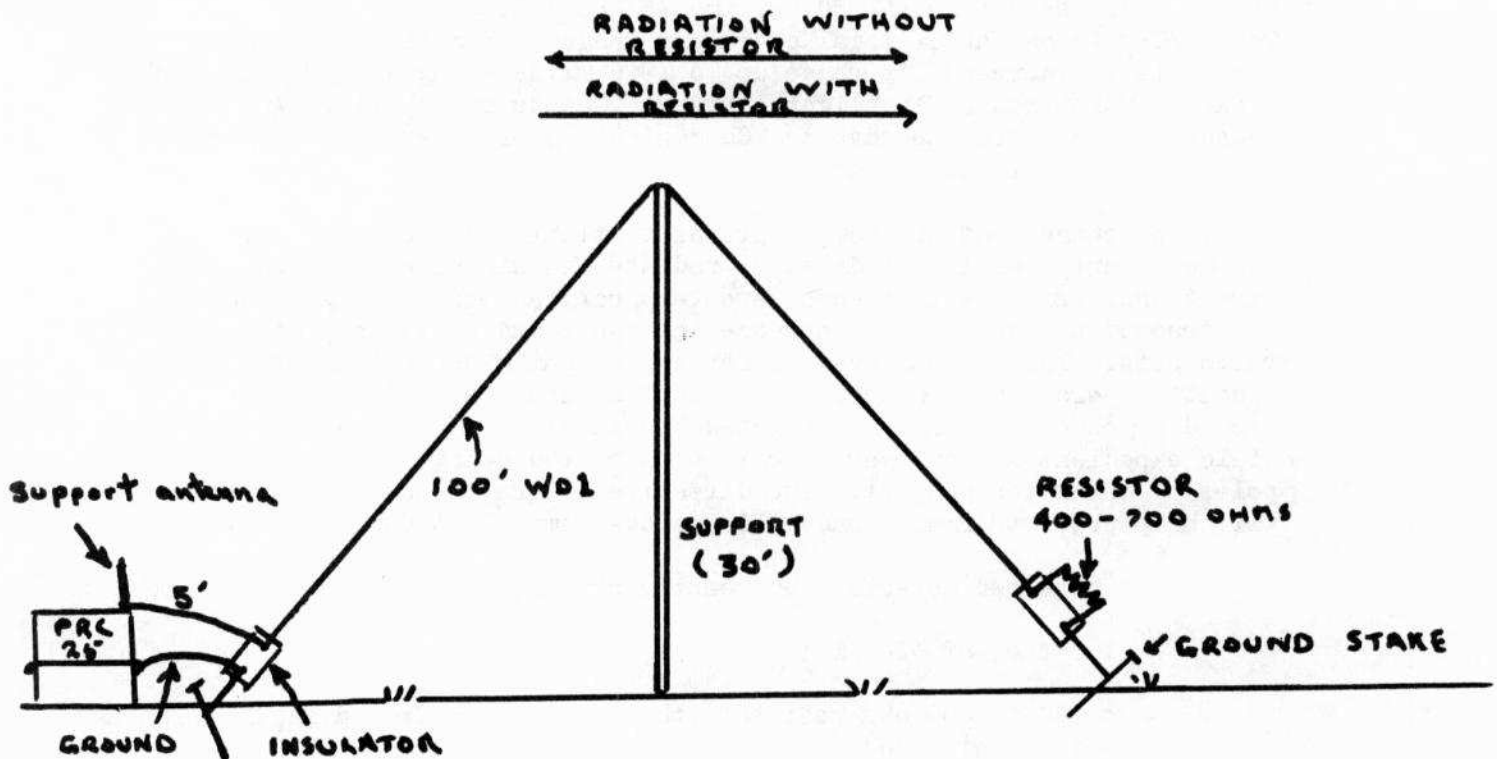
How many times in the past have you outrun the communication range of our radio sets, the AN/PRC 25, the AN/GRC 125, and the AN/VRC 46? The AN/GRC 25 has an official operating range of 5 miles but we have been able to increase its range up to 19.5 miles using WD-1/TT wire and a carbon core from a flashlight battery. Sounds impossible? Any recent graduate from an Advanced Communicators or Crewman PL 3 course can verify that it can be done.

Antennae that are components of tactical radio sets are, for the most part, verticle rods which radiate the signal equally in all directions. Expedient antennae are temporary antennae designed and constructed by the user to increase the range and efficiency of tactical radio sets. This is achieved either by designing the antenna for a specific operating frequency, elevating the antenna well above the ground or concentrating the radiated signal along a given direction. Field expedient antennae are easily constructed using field wire and poles or trees for support. The directive nature of such an antenna will help prevent jamming and will improve communications security.

The required materials are easily obtained:

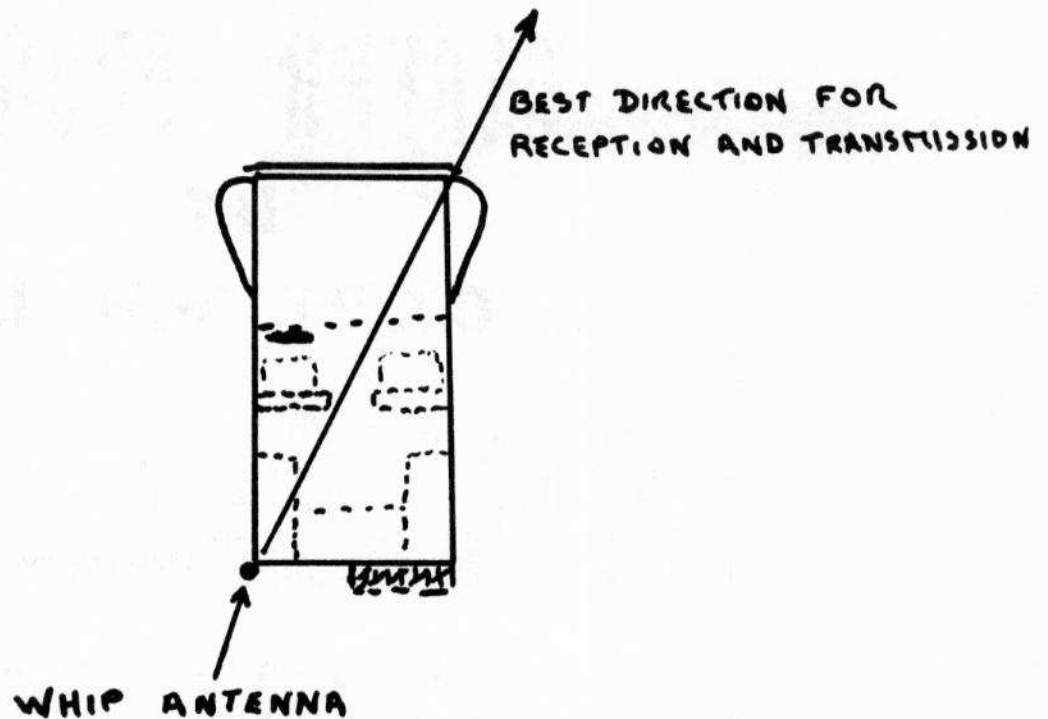
- 100 feet of WD-1/TT;
- a 400 to 600 ohm resistor (the carbon core from a flashlight battery will do),
- a five foot lead in wire (attached to the bottom of the antenna support),
- two ground spikes (12 inch spikes or metal rods),
- a tree or pole approximately 30 feet high, and
- two insulators (fashioned from any nonconductive material; wood, coke bottles, plastic or glass)

The antenna is erected as shown in the diagram, "VERTICAL HALF RHOMBIC". Note that the radio ground is attached to the battery case clamp.



RANGE ... UP to 2 to 3 times operating range

Vertical Half Rhombic



GROUND PLANE EFFECT

Another means of extending operating range is by using the Ground Plane effect of the vehicle. A vehicle with a whip antenna will transmit its strongest signal in a line running from the antenna through the right front side. (See diagram "GROUND PLANE EFFECT") Similarly, an antenna mounted on the right rear side of the vehicle radiates its strongest signal in a direction towards the left front. The range of the AN/PRC 25 can similarly be extended by placing it on an old vehicle hulk or metal body.

CREWMAN & OFFICER CAREER PROGRESSION BY CAPT W.H. LOGAN

The Combat Arms School is placing the highest priority on the work required to implement the new standards for Crewman and Armoured Officer Career Progression. The implementation deadline for these new standards is the spring of 1975 but the Crewman Pay Level 3 package has already been completed and is being implemented.

CREWMAN TRADES PROGRESSION

PAY LEVEL 3 (BASIC CREWMAN COURSE)

Where possible this training is to take place at CAS but the school is limited by a shortage of instructors and training resources. CAS will, therefore, normally conduct this training but it may have to use increment instructors or have certain course serials conducted by regiments.

CAS has developed the Basic Crewman Course (PL 3) package so that it can be conducted by either CAS or a regiment. It will include 35 training days on General Military Training and Basic Lynx Gunnery. The recruit will complete the course by receiving training in either Basic Armour Communications or Driving and Maintenance (Wheeled and Tracked) Recce, but not both. The D&M training will be up to DND 404 standards. The requirement for specific trades will be established through DPCOR (Armd) at NDHQ.

PAY LEVEL 4

For advancement to Pay Level 4, a crewman must take a second Primary Combat Function (PCF) from the following list:

- a. Basic Communicator;
- b. Driving and Maintenance (Recce) (includes two PCFs);
- c. Tank Gunner; and
- d. Tank Driver.

Of course he has taken one of these during Pay Level 3 training and if it was D&M, he is qualified to PL 4. The tank courses will be taught at CAS for personnel selected for posting to the RCD in Germany or for those who require it for progression to PL 6A.

PAY LEVEL 5

For advancement to Pay Level 5 the crewman must complete a third course from the same list.

PAY LEVEL 5B

Qualification will be by attendance on a Combat Leaders Course conducted by a Combat Group. This course will also give the crewman qualification equivalent to a SIT 1 Basic Instructors Course.

PAY LEVEL 6A (Crew Commanders Course)

There is a requirement for two serials of this course to be conducted annually. The PCF, Tank Gunner, is a prerequisite for this course and whenever possible CAS will schedule a serial immediately prior to the Crew Commanders Course. One Advanced Armoured Specialty (AAS) must be taken prior to promotion to 6A (i.e., before or after the 6A course).

The AAS courses are:

- a. Combat Arms Advanced Driver;
- b. Combat Arms Advanced Communicator; and
- c. Advanced Armoured Gunnery.

PAY LEVEL 6B (TROOP WARRANT OFFICERS COURSE)

There is a requirement for one serial of this course to be conducted at CAS annually. For the present, promotion to 6B will require, in addition to the 6B course, the Warrant Officers Qualifying Course and another Advanced Armour Specialty. The requirement that one be Advanced Armoured Gunnery has been dropped although it remains a "preferred course." The contents of the SIT 2 Supervisors Course will also be included in 6A and 6B training.

PAY LEVEL 7 (MASTER CREWMAN COURSE)

Qualification for PL 7 will be by attendance on this course which will be conducted once annually at CAS. It is desirable, but not essential, that the MWO also have a third Advanced Armour Specialty.

ARMOUR OFFICER PROGRESSION

PHASE I

The Basic Officer Training Course will continue to be conducted by the Canadian Forces Officer Candidate School.

PHASE II

This course will consist of 45 training days and cover Basic Skills as well as Basic Mechanics and Communications.

PHASE III

This course will cover 45 training days and will include A and B vehicle driving and maintenance and Lynx and Centurion gunnery.

PHASE IV

This course will also consist of 45 training days and will concentrate on tank training. This training will include crew commanding and troop leading. A tank/infantry portion will be taught.

PHASE V (RECCE TROOP LEADERS COURSE)

This will be reduced from 35 to 25 training days and will cover light armoured training at the troop level and below.

YOUNG OFFICERS TACTICS COURSE

This training will not be conducted as a separate course. Instead, at the completion of Phase 5, it is planned that the student will receive a study package which will introduce him to combined arms operations. The following autumn he will be required to return to CAS for one week and pass a practical/written test based on this study package. This test will be conducted in a similar manner to the old Lt to Capt exams.

SQUADRON COMMANDERS COURSE

This course, which will be a prerequisite for command of a squadron or equivalent position, will consist of 25 training days, 10 of which will be practical training with an armoured squadron. It will be run annually, preferably in the spring and will be scheduled in conjunction with the revised Combat Team Commanders Course.

COMBAT TEAM COMMANDERS COURSE

This course is being rewritten and will not be longer than 15 training days. It will be scheduled once annually as a joint Armour Infantry course immediately following the Company and Squadron Commanders Courses. It will be conducted on an OTU basis and only selected (6-8) candidates will attend.

CONCLUSION

These new standards are considered very important and are the result of much staff work and investigation. Every effort is being made to prepare the ground work properly so that there is an efficient progression of officer and NCO training.

FLASHBACK No 2



?

RADIO LOG

the radio log of an armoured regt in the gothic line -1944.

by **PROF GRAHAM**

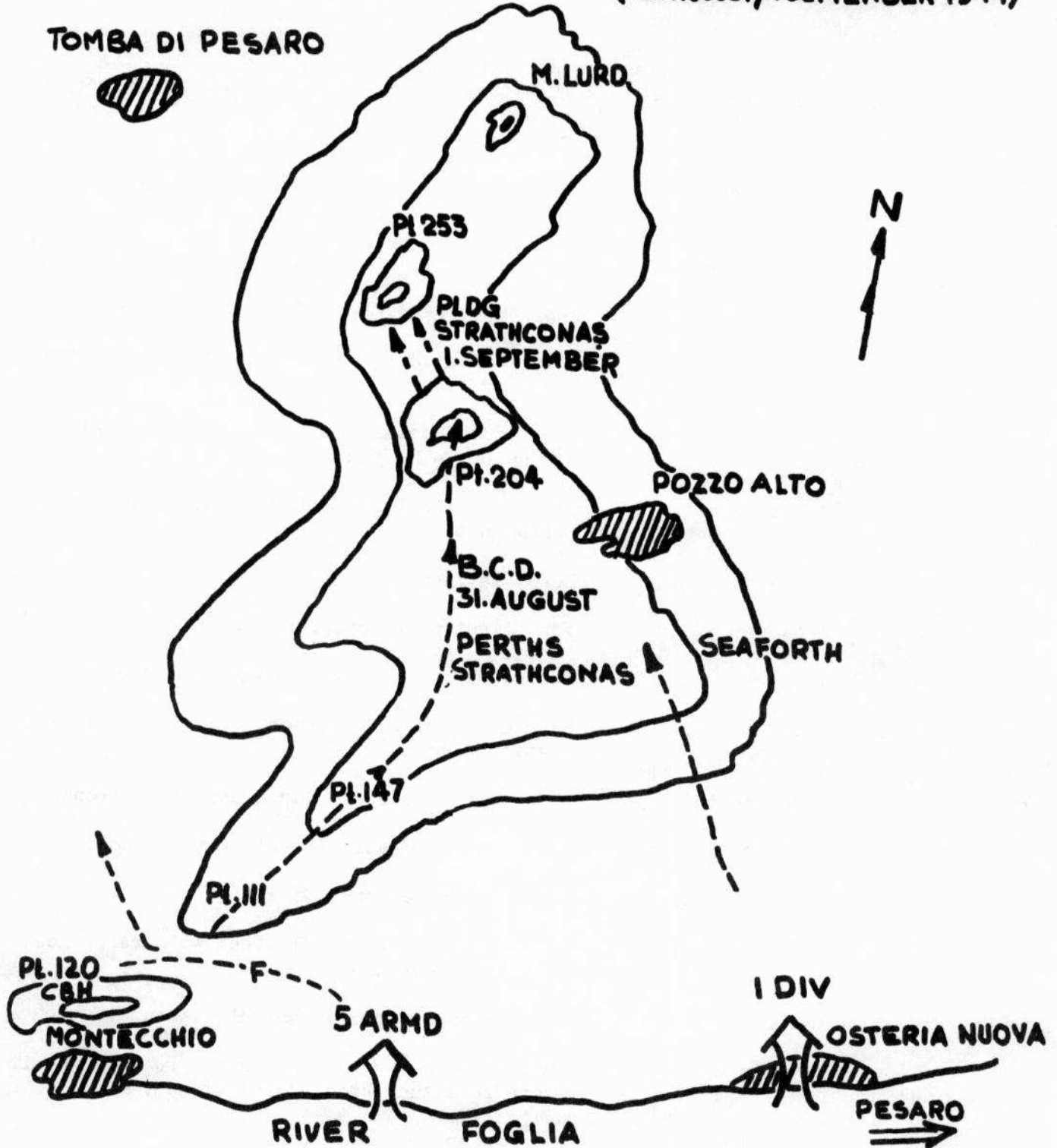
It is unusual for the radio net of a unit in action to be monitored and the log preserved with its war diary. However, the files of the 2nd Armoured Regiment, Lord Strathcona's Horse (Royal Canadians) contain such a log for the break-in to the Gothic Line on the Foglia River by 5th Armoured Division.

The decisive stroke on the front of 1 Canadian Corps was the penetration of the defences of the German 1st Parachute Division by The British Columbia Dragoons on 31 August. The BCDs penetrated two km beyond pt 147 and seized pt 204. The survivors of two squadrons, with no infantry support, held on to that commanding height above and behind the German defences until evening. They were then relieved by the Strathcona's who brought the Perth Regiment forward with them. The Perths had weakened by their successful struggle for pts 111 and 147 and had not been able to infiltrate with their support weapons.

Throughout the night of 31 August, the crews of the immobilized tanks of the BCD, the squadrons of the Straths and the rifle companies of the Perths fought off a series of attacks in the glare of burning vehicles and haystacks. At one stage, the German parachutists drove two farm tractors into the position to increase the confusion. But at dawn, 40 German dead and 12 prisoners were left in Canadian hands although, on pt 204 itself, B Squadron alone suffered five officer casualties. The Commanding Officer of the Perths, LCol Reid, twice wounded, was awarded a DSO for his gallantry and leadership.

In the morning, the Princess Louise's Dragoon Guards, converted to infantry in order to form part of a second infantry brigade for the division, came up to pt 204 to exploit up the ridge to pt 253. It was the highest point in that sector, except for Mount Luro, and its capture would have made the German defences on the Foglia untenable for it overlooked their gun positions and the routes back to the next river line.

I CORPS SECTOR
ON THE FOGLIA
IN THE GOTHIC LINE
 (31.AUGUST/1SEPTEMBER 1944)



C Squadron of the Straths supported the attack which was to go in at 1310 hrs on 01 September. H hr was then delayed thirty minutes because of heavy shelling in the FUP which cost the PIDGs two company commanders and three platoon commanders. But they were to get their own back when they overran infantry from 26 Panzer and 1 Para pinned by C Squadron's tanks in an FUP behind stocks and hedges and about to counter-attack pt 204.

The following extracts are only a small part of the radio log from this operation on 01 September.

RHQ to C Sqn Have you made contact with Flatfeet yet?

C Sqn Yes, they are moving into position now.

RHQ to A&B Sqn Your transmissions must be kept to a minimum to keep air clear for E. (C Sqn)

C Sqn to tp Move up to positions now slowly, keep well spread out - 50 yds.

C Sqn to tp Be conventional and allow our friends to go by spread out.

C Sqn to 4 tp Have Flatfeet gone by yet?

4 tp Yes, first wave have gone over.

4 tp Second wave of Flatfeet going over top now.

2 tp to C Sqn Have all fire raised, horses have pulled up to Flatfeet now.

C Sqn to tp Hold fire, those are our Flatfeet in front.

4 tp to C Sqn Last wave of Flatfeet went over top now.

2 tp to C Sqn Sending back a bunch of POWs.

C Sqn to 3 tp Give me direction of Flatfeet with reference to knocked out tank.

C Sqn Give me more fire to that high ground.

4 tp to C Sqn Enemy have opened up on right. Do not know if there is a tank knocked out or not.

C Sqn to RHQ Snipers on left flank.

RHQ to A Sqn Do what you can to help C Sqn with snipers.

C Sqn Give us more fire

A Sqn Several waiting to give themselves up by blazing house.

C Sqn to 1 tp Start moving now.

Anti tk rep Are you getting any targets from there?

1 tp to C Sqn I am all alone out here, units did not follow.

1 tp to C Sqn Enemy tanks on my right, cannot see him but he has taken two shots at me.

1 tp to C Sqn There is machine gun on far side of house.

Anti tk rep Yes, he has taken half my eyes out already.

2 tp to C Sqn SP directly in front 500 yds.

FOO Having a hell of a time here at this position.

FOO Flatfeet are almost to objective.

C Sqn Friends on right are 200 yds South of Sheldrake 409.

C Sqn Move across on next objective and support Flatfeet. Send stretcher bearers.

C Sqn to 4 tp Send assistance to Flatfeet on right, they are very tired and need support at once.

FOO Flatfeet are just entering objective (twin house)

RHQ to A Sqn Slip back to RAP and send forward ammo and stretcher bearers.

C Sqn to 1 tp Move forward quickly now.

C Sqn to 3 tp There are still civilians coming down hill, your bullets are coming pretty close.

2 tp to C Sqn Am engaging enemy Flatfeet.

C Sqn to ? Heavy enemy fire probably from 88, suspect road mined heavily, so move to the right parallel with road.

? Look up anti tk rep, you will see me, I'll tell you where to go. Gun just sighted on right flank.

Anti tk rep I can't see you. Move away from there at once.
I do not want you there, dead on the objective.

4 tp to C Sqn White flag flying from every house, Flatfeet
will pick up prisoners and send them back.

RHQ to B Sqn Be sure your horses are well dispersed, and
maintain wireless watch. Check your net you
have slipped off.

RHQ to A Sqn Follow same instructions as B Sqn.

RHQ to A Sqn Take up positions with sub-units and dig in
and disperse so as not to draw direct fire.

RHQ to OC C Sqn Do not bed down, we will be moving shortly.

When you say that you agree to a thing in principle, you mean that
you have not the slightest intention of carrying it out in practice.

Prince Otto von Bismark

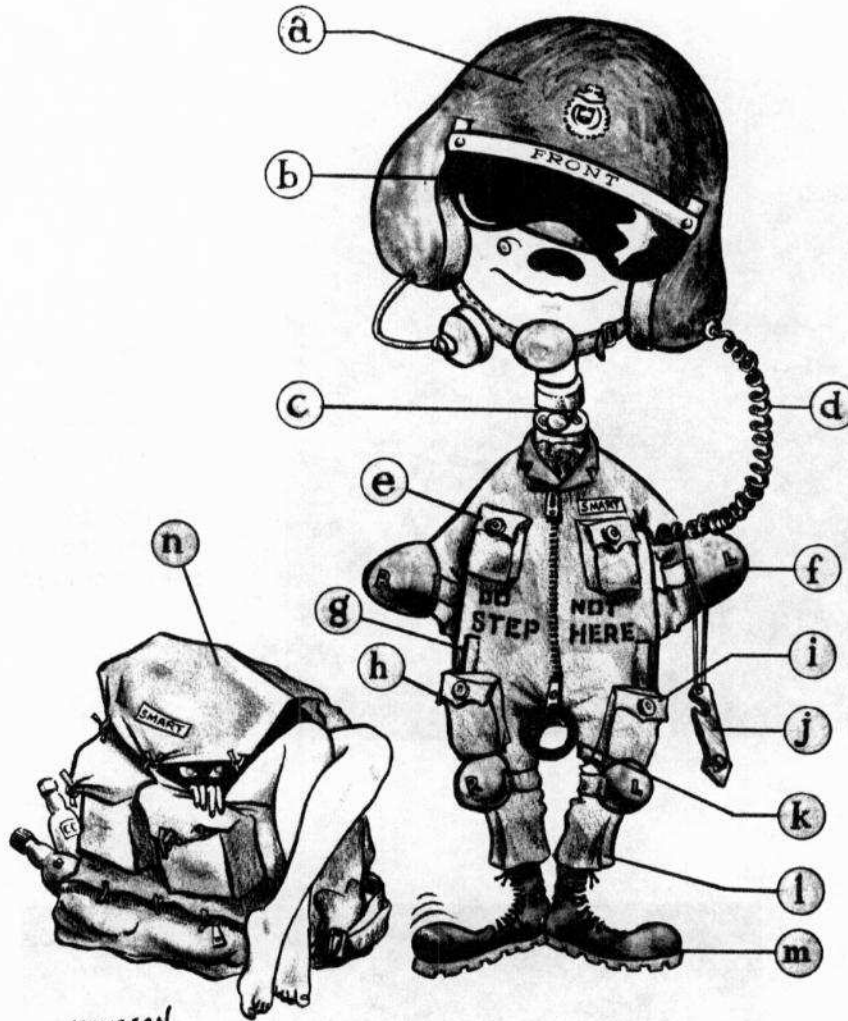
FLASHBACK No 3



"Worthy" is wearing the rank of a LCol and the car licence is Ontario 1939. Does any reader know the other men in the picture or the reason for their serious concentration?



The location is unknown but the base of a water tower can be seen just behind the "tanks". Does anyone know who, when or what?



The 'Compleat' Trooper

- (a) SOUND-PROOF HELMET WITH STEREO HEADPHONES AND ICE PACK BUILT-IN.
- (b) SLIDING LIGHT-SHIELD FOR DAYTIME NAPS.
- (c) UNIVERSAL JOINT IMPLANT TO PERMIT FULL TRAVERSE TO WATCH FOR ENEMY OR M.P.s.
- (d) WIRE TO POCKET CASSETTE STEREO PLAYER.
- (e) CIGARETTE POCKET.
- (f) ELBOW PADS FOR USE IN TANK AND CANTEEN.
- (g) GREASE-PROOF, HEATED (IN WINTER), AIR-CONDITIONED (IN SUMMER) TANK SUIT.
- (h) SKIN BOOK POCKET.
- (i) MORE SKIN BOOKS.
- (j) FOR BEER OR EMERGENCY EVACUATION FROM TANK.
- (k) ZIPPER PULL FOR QUICK OR EMERGENCY OPENING.
- (l) PERMANENT NO-PRESS CREASE.
- (m) SILENT SOLES FOR TRACKING AMENITIES.
- (n) AMENITIES SACK.

BATTLE RUNS— PLANNING & CONDUCT

by CAPT. J. C. S. GOWANS

INTRODUCTION

During the past two years observation of the many armoured courses undertaking open range or live firing exercise has shown that there is a distinct lack of experience in carrying out battle run practices at all levels. At the Combat Arms School, battle run live firing exercises are included in virtually all Officer/NCO training courses as the final evaluation of the students ability to put his trade and tactical training to practical use under realistic conditions. Battle runs for tank, reconnaissance and light armour have been established for use from patrol to troop team level. The aim of all such live firing exercises is to evaluate the students knowledge and practical ability in carrying out crew drills, weapon handling and command and control of crew, patrol and troop sized tactical elements in a tactical situation. In short, they are tactical live firing exercises with situations depicted by targets that are sited to force some form of reaction. Obviously, on reconnaissance and light armour battle runs, it is not intended that every target be engaged. Each situation must be handled in accordance with normal tactical procedures used in all dry tactical training.

The type of live firing exercise outlined is extremely beneficial to all concerned because it practices Crewmen and commanders at all levels in performing their functions under real conditions. Resource requirements in terms of personnel, material and ground can be either limited or large depending upon sub-unit or unit facilities and desires. Relatively few people need be involved in the planning and layout of the actual area to be used and very few men are required to conduct the exercise. In spite of the relative simplicity of these battle runs, units have reported that they do not have the expertise available to plan and set-up such live fire exercises. Moreover, the lack of Advanced Gunnery Courses over the past five years has deprived units of technically well qualified Senior NCO's and Officers. However, this situation has been recognized and a complete package on battle run planning, layout and conduct has been included in the new Advanced Armoured Gunner Course. In the interim, the following guide may be useful to regimental officers, Warrant Officers and NCO's when preparing for unit training periods and in particular, live fire exercises for crews firing .50 HMG and 7.62 mm MG. For simplicity, the DFSV has not been considered here, however, exactly the same principles must be applied.

PLANNING

The planning and layout of an exercise of this nature does not require any extraordinary technical expertise. What is required is one or two Officers and Warrant Officers who are thoroughly familiar with unit equipment, weapon characteristics, i.e., normal and maximum effective ranges, a knowledge of the basic tactical skills that it is desired to practise or test, and the ability to choose a piece of ground to achieve the aim. In other words, the same procedure is followed that must be done for planning any tactical exercise. One person with a knowledge of the use of a danger template can then determine the size of the usable space and firing arcs available for each likely area. Approximately 2000-3000 metres is quite a suitable run length since a longer distance takes too long to complete.

The firing practices should be planned with the emphasis on fire and movement. Static pad firing should only be used to teach and practise the basics, that is, direct fire by day, and night firing. Firing on the move should be a logical progression. There are four basic types of battle runs to choose from to achieve your sub-unit aim. These are crew, patrol, troop and squadron which differ as follows:

- a. Crew Battle Run. This is the first type that should be attempted. The aim is to allow crews to concentrate on their vehicle only. It should be short, uncomplicated and should be set-up to practise observation and correction, target acquisition, and surprise target engagements.
- b. Patrol Battle Run. Since the patrol is the basic unit of manoeuvre, each patrol should be given several runs at this level. The first should be simple, with relatively few targets and little pressure. Subsequent runs should be progressive with more situations and simple tactical problems requiring reaction.
- c. Troop Battle Run. A firing programme should work toward this type of run. A single run at this level is useless, two runs is the absolute minimum requirement. It has the most training value for the troop leader and should include all of the lessons learned in the crew/patrol runs. Initial runs may be over familiar ground; however, final runs should be a test, realistically long and over unfamiliar ground. Here, problem setting is the key to the success of the run and can only be accomplished by careful selection of the locations to inject the various test requirements. This is a time consuming process, but, extremely worthwhile. Too many requirements will cause the exercise to drag.

- d. Squadron Battle Run. Whenever possible, sub-unit firing programmes should be directed toward this type of battle run as the culmination. To be realistic, a large area is required; however, bear in mind that the whole exercise does not have to involve firing. Moreover, in training for a reconnaissance unit's normal roles and tasks, weapons are used for self protection or surprise target engagements. To be successful, squadron runs should not be attempted without a good work up at patrol and troop level.

Fire and movement should be a logical progression throughout firing practices. The soldiers advance from crew, patrol to troop and squadron runs. This presents a positive goal and challenge to all crews. The important factors in planning are control, fire and movement, use of ground and reporting.

Night battle runs are entirely possible provided that proficiency has been attained in the various daylight runs and that crew proficiency in weapon handling, gun drills, stoppage and immediate actions are of the highest order in night static practices. There is no reason why well trained troops cannot become proficient at night practices providing methods are employed to illuminate the target area, and crews are trained to identify targets at night. Unit night operational standing operating procedures must be written and practised during static firing to determine their validity. At present, few units have a practical night operations policy that has been worked out and practised in detail.

PREPARATION

The following factors are those that must be considered when preparing either for a unit gun camp or a live firing exercise of any type. Remember that the bulk of your firing programme should be fire and movement and these factors must be considered with that in mind:

- a. Ground;
- b. Targets;
- c. Tactics;
- d. Administration and Logistics;
- e. Safety;
- f. Progression; and
- g. Night firing.

GROUND

The ground available on Canadian bases and training areas varies greatly, both in size and scope. However, with the small safety templates applicable to the .50 Cal HMG and 7.62mm GPMG, sufficient usable space is usually available in most areas, and a much greater scope of action is possible. Existing battle runs could be lengthened, or existing roads and tracks through areas used providing that they satisfy the limits of the safety template. If a permanent battle run cannot be set-up, then try to use an existing piece of ground on an as required basis. Once planned, the actual set-up of an area for temporary battle run use takes little time and effort. In addition, barriers or sentries can be employed to keep the impact area clear of unauthorized personnel for your limited period of use. Other than normal safety precautions, the main consideration is fires caused from tracer rounds.

Rolling ground or an area with distinct features where patrols can employ fire and movement is the most suitable type. To maintain surprise, targets to be reacted to should only be visible from the bound that they are intended to be used with. Targets for subsequent bounds must be placed to prevent early observation. In advanced stages of patrol and troop runs, bounds and report lines can be introduced to practise crews in reporting and cooperating with other friendly patrols or troops.

TARGETS

Too often ranges are cluttered with targets new and used. Targets should be sited with the following in mind:

- a. Avoid overtargeting. Site your targets to accommodate the desired techniques or tactical situations.
- b. Site targets as the enemy would present themselves in battle.
- c. Employ puffs to indicate that friendly forces are being fired upon. These should not be placed on every target since your aim must also be to develop reconnaissance observation techniques. Your unit role and tasks seldom permit the engagement of every target of opportunity. A qualified demolition man can easily manufacture a suitable puff from one half a cartridge of C4 and a $\frac{1}{2}$ pound of flour in a plastic bag. Charges can be detonated best by using a proper demolitions dynamo exploder.
- d. If time permits, site targets from the commander's cupola of the AFV to be used on the run. Target personnel can be directed by radio and targets positioned so that they present themselves when the AFV clears a crest, or a corner of a wood, etc, as the fire and movement forward progresses.

Old car bodies do not make suitable targets. They disintegrate from the effects of fire and rust and become liberally distributed over large areas. They are very difficult to clear and not worthy of the manpower and effort required to install and remove them.

Target Types

- a. Hard targets (old AFV hulls and turrets).
- b. Infantry dug in supported by anti tank guns or anti tank teams.
- c. Movers -- head on, oblique and broadside.
- d. Transport and armoured personnel carriers.
- e. Infantry in the open.
- f. Dominant features or flagged areas to indicate area targets.
- g. All targets should be either hardboard or masonite to permit observation and counting of shot holes if desired.

TACTICS

- a. Lanes and Routes. Most of the existing battle runs have lanes and firing points from which firing must take place. This situation is adequate for basic crew and patrol training. However, it is desirable to have flexibility as to when and where to open fire as targets appear. Therefore, for advanced battle runs, a given area is necessary where crews may operate from a trace that is defined by boundaries, bounds and report lines. In addition, it is desirable that the firing points not be specifically marked out on the ground for this type of run. To establish where a firing point should be, choose the location where you want the engagement to take place and site the target to force a reaction at that specific location. You may then use the template to establish the arcs of fire for that firing point location or bound.
- b. Start Line and Objective. These are most important, even in basic crew battle runs. A clearly defined start line and objective give the crew a definite goal and define the limits to work within. These should be clearly pointed out to all concerned during the pre-fire briefing and linked with the tactical situation painted.
- c. Briefing and Debriefing. The following points should be observed for briefing and debriefing:
 - (1) Keep briefings short with a definite aim.

- (2) Do not attempt to teach. Alert troops to the main aims and keep the content short, covering main points or areas to improve in. At this stage, troops are anxious to get on with it.
- (3) Safety aspects should be a separate briefing.
- (4) A dry run is worth a thousand words.
- (5) Allow time for questions.
- (6) Always debrief.
- (7) Ensure the crews can hear what is being said. Get the crews in order, i.e., 11, 11A, 11B, etc., or crew commander, operator, driver.
- (8) When debriefing, ask the crews concerned what they thought of their performance. In most cases, they will be aware of their mistakes.
- (9) When debriefing, stress approximately three good points and up to three bad points if necessary. If too many points are brought out, crews will not remember them.
- (10) Back deck IG's should be employed and carry out a separate debriefing of their own with each crew. IG's must follow the same principles outlined above.

ADMINISTRATION AND LOGISTICS

- a. Replenishment of Ammunition and POL. This phase should be geared in with the unit's standing operating procedure for resupply. All concerned should be fully aware of what is available and in what quantities. The location of administrative areas is most important and must not cause traffic jams which will delay subsequent runs. Good organization of this aspect guarantees a minimum of delay and smooth operation.
- b. Repair and Recovery. A good system to rectify minor vehicle and equipment faults on the spot should be organized. Repair crews should follow firing vehicles as closely as is tactically sound so that repairs can be made on a vehicle that might normally have to be pulled out of the exercise. This factor promotes confidence in the equipment and the other elements of the unit team. A vehicle that requires lengthy repair should be withdrawn and put back into service as quickly as possible.

- c. Salvage. Sandbags are necessary for spent casing salvage and should be available in sufficient quantities. All too often this minor point is neglected and time is lost in disposing of salvage.

SAFETY

Too often safety is a millstone around the neck of the troops during live firing. It need not be. A separate safety briefing should cover all aspects of safety, i.e., flags, bounds, etc. If safety is understood by all troops and closely supervised, no difficulties should arise. The safety officer must ensure that he is current with up-to-date ammunition restrictions and range safety regulations.

PROGRESSION

The following is a recommended sequence for each crew to progress through during a gun camp:

- a. Crew daylight static firing;
- b. Crew battle runs in the advance and withdrawal;
- c. Patrol battle runs in the advance and withdrawal;
- d. Troop battle runs in the advance and withdrawal;
- e. Night firing;
- f. Night battle runs;
- g. Squadron battle runs; and
- h. Other innovations such as the following should be injected:
 - (1) Crews closed down;
 - (2) Crews with respirators fitted;
 - (3) Employment of flank observations; and
 - (4) Any other requirements that are desired.

NIGHT FIRING

Much has been written, tried, and tested for night firing, and much more needs to be done. Night battle runs are entirely possible with well trained crews and good control. The following points must be considered:

- a. Brief well before last light giving crews sufficient time to prepare equipment and eyes to the darkness;

- b. Ensure that your equipment is serviceable in daylight when repairs can be easily made;
- c. Maintain a high standard of control, however, do not over control to the point of taking the initiative away from the troop officers;
- d. Employ both ambient and artificial illumination;
- e. Pamphlet AC 70197, 1966 gives all of the basic rules for seeing and observing at night, and in most cases, the basics are those points that are forgotten. Remind the crews during the briefing; and
- f. Start with fresh targets so that they can be examined by daylight. This will give both the troops and the controllers a good indication of the effect of the firing.

SUMMARY

The aim of this outline was not to direct how individual unit gun camps must be conducted. Rather, it is intended to outline some possibly forgotten factors and principles that should be injected into unit programmes. The planning, layout and conduct of battle runs is not a difficult task provided that the basic principles are adhered to.

In looking for the facts to prove we are right, too often we overlook the facts that prove we could be wrong.

However long and hard the climb to the top may be, the bottom is only one misstep away.

Never resent problems on your job. Experience comes from learning what to do when something goes wrong.

Distribution

Col Comdt Armd Branch	- 1		
Col of Regt - RCD	- 1	<u>Militia</u>	
LDSH(RC)	- 1	BCD	- 1
8 CH	- 1	BCR	- 1
12e RBC	- 1	8 CH (M)	- 1
NDHQ - D Armd	- 5	Elgin R	- 1
PCO/Armd	- 2	FGH	- 1
PCOR/Armd	- 2	GGHG	- 1
Royal Roads	- 5	1st Hussars	- 1
RMC	- 5	KO Calg R	- 1
CMR	- 5	R de Hull	- 1
ULOs	- 15	Ont R	- 1
CFLO Fort Knox	- 2	12e RBC (M)	- 1
CFLO Quantico	- 1	PEI R	- 1
CDLS Washington	- 1	QY Rangers	- 1
CDLS London	- 1	RCH Montreal	- 1
CFSS	- 1	Sask D Moose Jaw	- 1
JCSCCL	- 1	Sher H	- 1
CFC	- 1	SALH	- 1
CFSC	- 1	Windsor Regiment	- 1
NDC	- 1		
CFOCS	- 2	<u>Internal</u>	
DR	- 26	Commandant	- 1
FMC - HQ	- 2	CI	- 1
SO Armd	- 2	Armd Dept	- 6
1 Cbt Gp	- 2	Arty Dept	- 1
2 Cbt Gp	- 2	Inf Dept	- 1
5 Cbt Gp	- 2	Tactics Dept	- 1
4 CMBG	- 2	Stds Staff	- 1
RCD	- 10	Coord Staff	- 1
LdSH (RC)	- 10	T&E Staff	- 1
8 CH	- 10	Tpt Coy	- 1
12e RBC	- 10	Spares	- 6
RSS HQ's	- 10		
403 (Hel) OTS	- 2		
444 Tac Hel Sqn	- 2		
CTC HQ	- 5		
Det EAC	- 3		