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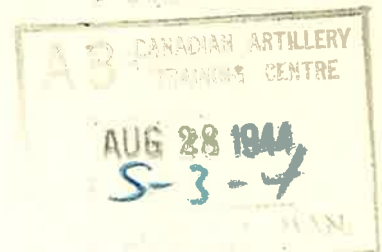
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Canadian Ops - Mediterranean Area
Extracts from Memoranda (Series 24)

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K.H. Tremain

(K.H. Tremain),
Lieut.-Colonel, G.S.,
for Chief of the General Staff.

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24/AAI/1/5 (Hist)

CANADIAN OPERATIONS IN THE MEDITERRANEAN AREAMAY - JUNE - 1944EXTRACTS FROM MEMORANDA(SERIES 24)1. EXTRACT FROM "1 CDN INF DIV IN THE LIRI VALLEY BATTLE.
15-28 MAY 1944."

33. In my opinion the success attained by 1 Cdn Div was due to four reasons:-

- (a) The infantry were physically hard and mentally fit.
- (b) The Artillery support was superlative at all times.
- (c) Inf-Tk co-operation between the units of 25 Tk Bde, 12 CTR and the inf bns reached a perfection which we had never hitherto enjoyed.
- (d) The success of the French Corps in gaining the high ground MT MORRONE and MT LEUCIO on our left flank. The speed with which they passed arty and air targets to us and their eagerness to engage targets on our front.

34. In the period of inf training after relief on the ADRIATIC sector, the policy which I laid down was to make the troops physically and mentally hard and to concentrate on company tactics. In addition there was sufficient time for all units to undergo three days training in inf-tank tactics, again concentrating on coy-sqn co-operation. All ranks worked with a will. The results in battle were obvious.

35. The main lessons of the battle on 23 May were as follows:-

- (a) The committing of L EDMN R, reserve bn of 2 Inf bde, was premature. Reserves must not be committed until the time is ripe.
- (b) The exploitation of success in a 'break in' battle is of paramount importance. A divisional reserve must be held for this purpose.
- (c) And thirdly, a lesson which is age old, that prearranged plans seldom work out exactly as planned. The plan must have a certain amount of flexibility and a Comd must be quick to seize and exploit opportunities.
- (d) Centralized control of artillery in an attack permits the switching of a mass of fire to any threatened quarter, which is devastating in its results. There should therefore be a fire controller, preferably the CRA of the division making the attack, who is completely in the pocket of his divisional Comd. Especially is this necessary when an attack is being carried out by a single division.

- (e) And finally, so long as the infantry are well trained and eager to close with the enemy, and provided they are properly launched with adequate supporting artillery and tanks, the battle is half won before it starts.

(C. Vokes)
Major-General
GOC 1 Cdn Div

2. EXTRACT FROM 5 CDN ARMD DIV REPORT ON OPERATIONS.
23-31 MAY - 1944.

Lessons from Ops 23 to 31 May 44.

1. DIV HQ

- (a) Ops over a three day period with Tac HQ separated from Main HQ showed that this was NOT a practical way of operating. Except for very short periods when the tactical situation demands that Tac HQ go out, "F" ech of Main HQ, incl all essential RCA, RCE and Sigs vehs and personnel, should operate from the same area.
- (b) It is NOT practicable to send SOs out on TC duty when the div is in a mob role expected to last several days. Every SO has a particular task and the efficient running of the HQ demands that they remain at HQ.
- (c) When the GOC leaves HQ the GSO II must always accompany him. This assists the GOC in maintaining contact with the HQ. On his return the GSO II is able to pass the latest picture to the staff and to infm the GSO I of all discussions and plans made by the GOC with Comds.
- (d) When restricted to one CL, another fmn must NEVER be permitted to use the same route even for a short distance, until the leading div is satisfied that it has all the necessary eqpt and vehs fwd.

2. ARMD BDE

- (a) Recce of an assembly area by night presents too many hazards when it is necessary to get tps across the SL at a definite time. It is important that assembly areas be sufficiently large and that time, in daylight, be allowed for recce.
- (b) TC: When it is necessary to make a change in plan on short notice pro should be allotted to the bde concerned in order that the bde may lay on special TC to bring their eqpt fwd.
- (c) Tks loading: In close country such as that between CEPRANO and FROSINONE the only method of getting tks fwd is for the individual tk comd to dismount and carry out recce on foot. This is very slow and results in holding up the gen adv. It is considered that in this type of country inf can make faster progress. The inf should clear mines and with engr assistance create diversions around obstacles. It is then possible to move the tks fwd quickly, permitting them to sp the inf when sp is needed.

- (d) Wireless: There still exists a difference of opinion as to the use of regt or sqn frequencies within an armd regt. The 2 Cdn Armd Regt (LdSH), who saw most of the tk vs tk action, used regt frequently throughout and are convinced that it is the better. The other two armd regts used sqn frequency and prefer it. It is suggested that the decision whether sqn or regt frequency be used be left to the regt comd.
- (e) Scissors br: The present WE of scissors brs in an armd bde is 3. Unless it is possible to put in firm bank seats (and it rarely is) the brs go out of alignment and become unserviceable after an armd regt had crossed. It is easily seen that the sup of available brs would be used very quickly. Had the armd bde been ordered fwd on 31 May there would have been no scissors brs available. It is recommended that an armd bde, operating in country similar to the LIRI valley, be given 6 scissors brs.
- (f) RCE: Recce and working parties -- It was found that carrying 3 engr in a modified Stuart tk and allotting 2 Stuart tks with 6 engr to each sqn in an armd regt was of great assistance in speeding up the adv. The engr carried out engineering recce, assisted in clearing mines, carried out demolitions and helped to create diversions where necessary.
- (g) Maintenance of Direction: In close country where land marks to the flanks and in front are screened by foliage, maintenance of direction is most difficult. Two methods of keeping direction were tried out by the bde and both proved valuable:
- (i) The use of air bursts over definite pts along the CL. Variations of this are the use of high and low angle shots and the firing of salvos of 2 to 5 rounds.
 - (ii) Call down of arty fire on previously selected targets. A series of likely arty targets are selected, marked on map or air ph and numbered. This permits the gnrs to bring down fire quickly and by calling for fire on a selected target it is possible for tp and other tk comds to determine their posn.
- (h) Close sp by inf at night: Unless armour is to be withdrawn by night the plan must incl inf protection for the tks at night.
- (i) Mot bn: It is necessary that the mot bn and preferably all inf in the armd div be carried in half-tracked vehs in order that the vehs may move fwd with the adv, and not be held up waiting for the completion of rds.
- (j) A tk portees: The present veh is unsatisfactory because of poor performance and its large size. It is recommended that it be replaced by carriers universal.
- (k) Notes on arty:
- (i) AOP: The AOP proved exceptionally valuable in all occasions, not only as an arty OP, but as a means of

immediate and medium recce for the armd bde. It is recommended that an AOP flight be available to the armd bde in addition to the flight working with the arty.

- (ii) Jeep-drawn 75 mm: In country where rds are few the jeep-drawn 75 mm is excellent. It is able to keep pace with fast moving armd action and get fwd despite bad rds and hy traf-fic conditions. It is recommended that when possible jeep-towed btys be included as part of the arty available to the armd div.
- (iii) SP arty: For similar reasons the value of SP arty was most evident during the period 24-31 May. At many times SP arty was the only available for the sp of the armd bde.
- (iv) Fire programme: In armd action where quick and flexible changes of plan are required, it was found that the most suitable form of arty sp was the use of a series of pre-selected and numbered targets. This consisted of selecting, by the use of maps and aerial phs, a number of likely arty targets. These targets were numbered and recorded by RCA HQ. The target numbers and their coordinates were then distributed on the basis of one list per tk tp leader. (Refer also para 2 (g)).
- (j) Air tcl: The air tcl proved of greatest value in dealing with targets that were of immediate importance. It is felt that when armour is being employed CABRANK should be as full as air force resources permit. In some cases targets were lost because CABRANK was not operating.
- (m) Liaison with flanking fmns: Although LOs were detailed to 78 Div on the RIGHT and FEC on the LEFT, the distance made transmission of infm by the l9 set most difficult. It is recommended, as a result, that a service similar to the PHANTOM consisting of trained offrns on HP sets be allotted to all leading bde HQs.
- (n) PW: An armd regt in a moving action cannot compile or obtain infm from PW. The armd bde IO can collect identifications and documents but interrogation does not take place until:
 - (i) The PW reaches the Div Cage.
 - (ii) The Div IO comes fwd to Bde HQ.

Because of this there is a delay in obtaining infm that might be of immediate importance. It is recommended that a pool of trained interrogators be made available within the Corps and that interrogators from the Pool be allotted to the leading bde.

- (o) Tac HQ: The value of having the comds of supporting arms at HQ of the fm they are supporting cannot be over-emphasized.
- (p) The use of 1/25000 Maps and 1/25000 air phs is essential for an armd adv. However, in a fast moving action an armd unit moves off these maps and phs very quickly. Maps and phs must be available long ahead of the time required to ensure that they are distributed in time to permit the close study necessary.

- (q) Med: The placing of one sec of lt fd amb under comd of each armd regt is a mistake. All med resources should be under comd of the ADMS and disposed as he deems necessary.
- (r) Rations: The value of compo packs cannot be over-emphasized. They should always be provided for the armd battle.

3. INF

- (a) Tac HQ: Tac HQ should be separated from Main HQ as seldom as possible and for as short a time as possible and never for more than 5 hours. This also applies to bns and coys. A comd must remain by his means of com with higher fmns.
- (b) TC: Good TC depends on good traffic discipline. This must be insisted upon. An offr should ride at the tail of each coln and prevent all but priority vehs passing.
- (c) Dust: Vehs must regulate their pace to prevent dust. On many occasions dust clouds raised by vehs drew down shell fire.
- (d) Passing of infm: Good drills for the passing of infm UP and DOWN must be established and must be maintained.
- (e) Changes of plan: In a fast moving battle changes of plan must be expected. Comds on all levels must be prepared to make rapid changes in plan.

4. RCA

- (a) CRA's Staff: It is essential that all the vehs and personnel necessary for the efficient running of arty HQ must remain with Div HQ at all times. It is almost impossible for HQ RCA to operate as a split HQ.
- (b) It is necessary for HQ RCA to be sited within the gun area. This should be borne in mind when areas are chosen for div HQ.
- (c) Continuous arty sp is essential to any op, therefore special provision must be made to move guns fwd quickly.
- (d) AQ returns: One of the outstanding lessons is that returns must come in on time under any and all circumstances.
- (e) Amn: Regts must avoid any tendency to demand more amn than is required for the task at hand.
- (f) Passage of Infm: The vital need for continuous up-to-date infm was driven home.
- (g) CRA: Experience showed that the CRA should be at Div HQ keeping in the picture and prepared to switch arty sp whenever necessary. On the other hand he must make visits fwd to Bde HQ, arty regts and gun areas.
- (h) Comns: The arty must make the fullest possible use of line comn. Line must be laid as soon as possible and by intelligent anticipation often laid in adv.
- (i) FOOs: Both positive and negative infm must be passed back immediately.
- (j) Allotment of arty: While the sp of every gun available should be expected, full consideration of rd conditions, enemy resistance, etc, must be given before accepting more guns than can be handled efficiently. In an armd adv

the allotment of an extra SP regt is extremely useful permitting continuous sp from a complete regt.

- (k) Comd and control: It has been established that in a fast moving battle one fd regt should be decentralized to the leading bde.
- (l) Reps and FOOs: It is clear that the employment of a large number of reps and FOOs only supply the enemy with more targets without increasing the efficiency of supporting fire. In future the standard practice will be to provide one rep at bde HQ, one rep at each inf bn and armd regt HQ, one FOO with each fwd coy or sqn. In addition the arty rep at bde HQ will have one medium regt CO's rep and one CRA's rep. No extra FOOs will be allotted. The arty rep at bde HQ must be given permission to go fwd to see his reps at armd regt and inf bn HQ at all times. This is necessary if he is to give the bde the best possible sp from the guns at his disposal.
- (m) A Tk arty: The lack of a suitable veh for tp comds of SP A Tk btys is a serious difficulty. On some occasions a M10 had to be used for recce purposes. The modified Stuart tk is the logical veh. Failing this, a 15 cwt half-track should be provided. Another requirement is the provision of a 15 cwt half-track for towing 17 prs.
- (n) A Tk comms: There would be many advantages if A tk tp comds were supplied with two wireless sets, one on the bty frequency and one on the frequency of the unit being supported.
- (o) CB and CM: Shellreps and Moreps must be submitted if effective CB and CM fire is to be brought down.
- (p) AOP: directing fire of tks. It was found that this was NOT practical.

5. RECCE REGT

- (a) The shoulder-controlled .5 Browning on modified Stuarts proved an excellent weapon. Belts should be loaded HE, Incend, Trac and AP.
- (b) 75 mm AP was very useful. The AP was used to blow a hole in buildings and other fortifications and then HE was fired into the hole.
- (c) Smoke: While smoke was used in a number of cases particularly to protect tks when the going was difficult, it is felt that more use can be made of smoke.
- (d) Comd: It was proven that comds must remain at their HQ and maintain control at all times. The temptation to go fwd to see what is going on must be overcome. This applies particularly with recce sqns because they operate on such a wide front.
- (e) Passing of infm: Reports must be made at least every 30 minutes when tps are engaged. It was found that the drill of having 2sIC keep a log and be responsible for passing back infm was very satisfactory. This must be done even when the comd concerned is passing infm personally to his superior. The reason for this is to ensure proper circulation of infm.
- (f) Binoculars: All tp leaders reported the necessity for

high-powered binoculars. These should be supplied.

- (g) Cam: The cam of tks and particularly of the gun barrels with hy natural cam was very successful. It is felt that this was a contributing factor to the low number of cas suffered by the regt.
- (h) Siting of HQ: The importance of siting sqn HQ in a defiladed posn was proven. Regt HQ and any tps that are not actively engaged should be sited outside of mortar range whenever possible. Practically all cas were caused by mortar fire when tps were in harbour. Regt HQ, sited just out of mortar range in all cases, suffered no cas.
- (i) Remote Control Sets: The use of Remote Control Sets to an OP was very useful. It is recommended that this be issued on a scale down to tps.
- (j) Disabled and bogged-down tks: When tks are bogged-down or disabled under enemy fire, it is necessary to leave at least two of the crew in a posn where they can observe the tk continuously. On two different occasions when tks that had been evacuated under fire were recovered, it was found that our own tps of another fmtn had stripped the tks.
- (k) Assault Tp: 4x4 White scout cars did not prove satisfactory. It is recommended that half-tracked White scout cars be provided or that 7 carriers per assault tp be provided in lieu of 4 White scout cars.
- (l) Fatigue: A recce regt must, and expects to operate for longer periods than most other armd units. In the 7 days of the op most sqns were employed for approx 4 days and nights. This is considered the maximum that can be expected if efficiency is to be retained.
- (m) Pet: It was found best to keep pet vehs under regt control beyond mortar range and to send them up to sqns when required. The shortage of funnels is acute. This should be provided on a scale of at least one per tk. The American "screw-in type" is perfect.
- (n) Rations: When tps are fighting with little sleep it was found that they ate a great deal more. A 50% overdraw of rations for personnel actually fighting was found essential. A daily issue of oat meal to provide bulk is necessary.
- (o) Water: One water truck or trailer per sqn is absolutely essential.
- (p) Returns: Where actual figures are not available, estimates must be sent in. It was found that these estimates were satisfactory in all cases.
- (q) Evac of cas: This worked out well. The Stuart was used in many cases. It is recommended that the Stuart would be a better med veh in recce sqns than the White scout car.

C. RCE

- (a) WE: It was found that a third fd sqn was absolutely necessary. It is considered essential that a third fd sqn be provided in armd divs.

- (b) TC: TC is required at all diversions. A sec of pro should be under comd of the CRE to provide immediate TC at diversions as soon as they are open.
- (c) Work by other arms: All arms must of their own initiative engage in rafting, mine clearance, repairing of craters and maint of the rds. This is essential. It is impossible for engrs to do all the work and if other arms commenced work immediately, much will be done to increase the speed of adv of the div.
- (d) Engrs under Comd: The danger of putting engrs under comd of bdes is that they are liable to be employed for work that the bdes would like done, but that is not priority work from the divisional point of view.
- (e) Mob dumps: In a rapid adv a mob dump must be provided. In this op 15 RCASC lorries, one pl of BB and the Div set of BB made up the mob dump. The original plan was that Corps would deliver stores to the mob dump; this involved changing loads from Corps to Div vehs. It was found more satisfactory to send back to Corps to pick up loads.
- (f) Comns: At least 3 Wireless sets per sqn are required, one for the OC, one for the stores tp and one for the main body. For this op, these were obtained on loan.
- (g) Priority: Engr stores and vehs must be given priority on "Up" routes if they are to do their work.
- (h) Infm: Every unit and sub unit should send back all engr infm possible. This permits intelligent anticipation by the CRE.
- (i) HQ: Armd Div RCE HQ must operate as an independent HQ as in an inf div. It is recommended that WE of an Armd Div RCE HQ identical to that of an inf div be authorized immediately.
- (j) Carriers: While the 6 carriers per sqn held in lieu of White scout cars were useful, they are NOT considered to be satisfactory. The alternative in order of usefulness are:
 - (i) Half-tracked White scout cars.
 - (ii) Modified Stuart tks.
 - (iii) 4x4 White scout cars.

7. SIGS

- (a) Cable dets: To overcome delays caused by traffic and to permit cross-country performance, it is recommended that the two 15-cwt GS (builders) in each cable det be replaced by three cars 5-cwt and one trailer 10-cwt.
- (b) Telephone exchange: The 40 line F & F exchange and associated eqpt, recently approved, is essential. It should be provided without delay.
- (c) Message carriers: The importance of LOs and other visiting offrs calling at Sig Offices for messages must be impressed on all offrs. It was found that a large number of offrs did not call at the Sig Office.
- (d) Sup of cable: The sup of cable is NOT satisfactory. The first lot requested came up through normal channels in 3 days.

The second lot was not obtained until the 2IC 5 Cdn Armd Div Sigs traced the chain back to RH; there he obtained vehs from an RASC GT Coy and brought the cable back himself. Had he not done so the Div would have been without the cable the next day.

(B M Hoffmeister) Maj-Gen
GOC 5 Cdn Armd Div.

3. EXTRACT FROM REPORT BY C.C.R.A. 1 CDN CORPS ON OPERATIONS OF CANADIAN ARTILLERY, MAY - JUNE 1944.

Lessons

PART I

TACTICS AND EMPLOYMENT

In the preparation for the attack on the GUSTAV LINE by 13 Corps it was necessary to control the allotment of gun areas at a corps level. This resulted in the most economical use of available gun areas and proved that where areas are restricted, and plenty of time is available, the allotment of gun areas should be controlled at the highest possible level.

During initial deployment strict camouflage discipline, including movement and digging by night, enabled a difficult deployment to be completed under enemy observation without his being aware of the fact.

As soon as movement forward was necessary the AGRA was split into two groups, one consisting of two 5.5" gun how regts and two 7.2" how btys, the other of two 4.5" gun regts and one 155 mm gun bty. These were leap frogged as the battle progressed. It is considered that a better method would have been for each group to contain guns of all available calibres.

Eighty-two hours were available for the preparations for the attack on the HITLER LINE. The first nineteen hours were made available by the corps cmd giving the CCRA early information as to his intentions previous to the issue of his orders. It was proven again that the earliest information, regardless of how limited that information may be, of an impending deliberate attack, is of great value to the artillery.

Where artillery resources available are in excess of those under command of the corps, it is considered that seventy-two hours are required for the artillery preparations.

During the period of preparation for the attack on the HITLER LINE the staff of RCA 1 Cdn Inf Div was involved in a fire plan for a minor attack. This added considerably to the difficulties in the preparation of the larger plan. A solution to this would be for the CRA to appoint an A/CRA and borrow a staff officer from RCA corps to handle the secondary fire plan.

After the issue of the fire plan a consolidated firing programme was prepared at RCA 1 Cdn Corps. This brought out certain errors and omissions in the fire plan which were corrected by phone prior to the attack. It was again shown that a consolidated firing programme, covering any fire plan regardless of whether it is completed in time for issue or not, provides a most valuable check and should always be prepared.

During the attack on the HITLER LINE the CRA of each attacking division in turn controlled the fire of his own divisional artillery, and had a direct call on the artillery of the supporting AGRA, the fire of all other artillery supporting the attack being controlled by the CCRA. This method of control is considered to be satisfactory for a corps battle.

To accomplish this method of control the CCRA must be within good R T range of formations supporting the attack. If more than one division is engaged in the operations, the CCRA should be at corps HQ in order to be in close touch with the corps commander. It is therefore necessary to have Corps HQ sited well forward as was done in this case.

The CsRA were located with their GOSC, each at a divisional tactical headquarters. The CsRA of the divisions engaged in the operations must be with their GOSC. It would be safer from a communications standpoint if this was at divisional headquarters and not tactical headquarters.

For the attack on the HITLER LINE, as a check on prediction, CRA 1 Cdn Inf Div had one gun per formation register their flank points on the opening line of the barrage. Observation was difficult and in certain cases deduced coordinates did NOT correspond with predicted coordinates. The range accepted was that giving greatest clearance to own troops. It is considered more satisfactory to accept the predicted figures, and only fire test rounds on the opening line.

During the attack on the HITLER LINE a representative from each participating divisional artillery and AGRA, with R T communications to his formation headquarters, was at the CCRAs' headquarters. Using this means of communication it was found possible to alter the fire plan during the operation. Major alterations of fire plans are, however, always risky and should be confirmed by liaison officer.

During these operations two SP anti tank batteries from the corps troops anti tank regiment were placed under command 1 Cdn Inf Div whenever it went into action. Once the battle became fluid these batteries were NOT employed. It is therefore considered that the anti tank resources of an inf div, under normal conditions, are satisfactory except during a planned attack when one or more batteries of the corps troops anti tank regiment should be placed under command. To this is a possible exception, the employment of SP anti tank guns by an infantry division in a sniper role.

Certain administrative difficulties, e.g. maintenance of SP anti tank equipments were experienced when these corps tps batteries were placed under command of a division. It is therefore considered that a portion of the RHQ of the corps troops anti tank regiment should move with the SP batteries when two are placed under command of the same formation. The main RHQ should, however, remain with the balance of the regiment.

1 Cdn AGRA with the equivalent of an air OP flight during the complete operation of the deliberate attack. This flight provided continuous coverage for CB activity. Thereafter continuous coverage for such a purpose was NOT considered necessary whereas divisional requirements for observed shooting required one flight per divisional RCA. It is therefore considered that during an attack the AGRA should be provided with one flight air OP. Thereafter RCA divisions have a prior claim to a flight and the AGRA can obtain coverage by having a call on two sections from one of the divisions, the senior pilot of the two sections being responsible for liaison.

In these operations information with respect to our own troops was NOT always clear, and during these periods artillery support could NOT be fully effective. If full advantage is to be taken of the available artillery support, artillery formation headquarters must at all times know the position of our forward troops.

Information with respect to our own troops of flanking formations presented a further problem. During the early stages of the operation a shell line was imposed within which predicted fire was precluded. This was found to be unsatisfactory, more particularly during the mobile phase as:-

- (a) Complicated descriptions make them slow to change.
- (b) As a result of (a) a very large safety factor was allowed which limited the support that could be provided by the artillery.

A better method of controlling fire was found to be that of keeping all gunner headquarters informed of the location of forward troops. With this information currently in hand it was NOT necessary to request authority to fire on the flanking formations' front. If, however, the location of flanking formation forward troops was in doubt a request to fire was made through the flanking formation liaison officer.

To facilitate the passage of current information with respect to the location of troops of flanking formation, it has been found necessary for RCA corps to send liaison officers to flanking corps and RCA divisions to send liaison officers to flanking divisions. These liaison officers should also keep their own headquarters informed of the possibility of flanking formations providing supporting fire.

The requirements of AGRA representatives and FOOs at divisions were NOT clear at the commencement of operations, as divisions were inclined to make excessive demands. A solution which would be satisfactory under most conditions would appear to be:-

- (a) One representative at headquarters RCA division to keep AGRA informed of the locations of forward troops, of the movement of divisional guns, possible AGRA gun areas and to pass fire orders.
- (b) One representative or FOO per brigade of the division being supported, to work under the commanding officer of the field regiment which is supporting that brigade.

Some difficulties were experienced in the coordination of AA protection, and a satisfactory method adopted was to make the officer commanding corps LAA regiment responsible for this coordination. He advised the CCRA of any necessary coordination between AA brigade, corps and divisional LAA regiments. The CCRA arranged for the issue of the necessary orders to implement such recommendations.

For the attack on the GUSTAV LINE, 13 Corps controlled CB. For the attack on the HITLER LINE 1 Cdn Corps controlled CB. Once the battle became fluid each corps was responsible for its own CB. During this operation the front was narrow, and this was considered the most satisfactory method.

Very few shelledrops were received during these operations. If enemy shelling is to be stopped they are essential.

Survey troops of the survey regiment were decentralized to divisions after completion of the planned attack. This was found to be an uneconomical use of resources. These resources are required to provide survey for divisional artillery regiments AGRA regiments as well as sound ranging bases. It is considered that survey can be completed more efficiently with the available survey resources centrally controlled except when a division is working independently.

Air OP flights were placed under command divisional artilleries and AGRA. It would be better to retain the flights under the squadron commander and place them in support of the divisions and AGRA as required.

Air OPs were found to be one of the best sources of information regarding the enemy and our own troops. The exchange of information between divisions during a fluid battle is facilitated by the communications between squadron headquarters and flight headquarters.

The liaison between the regiments of the divisional artillery and the pilots must be very close to enable shoots to be carried out in the minimum of time. It is felt that the liaison between the field regiment and the air OP is of greater importance than the liaison with the medium regiments, as shoots for the AGRA are more often against such targets as HB or HF, while the shoots for the divisional artillery are generally in close support of the infantry. Also as the AGRA supports the division, aircraft allotted to the division can be included to shoot the regiments of the AGRA. In view of this it is felt that flights should be affiliated to divisions, rather than to the AGRA.

The primary role of the air OP is the shooting of guns. Regiments being out of range or moving releases the air OP for secondary roles, some of these roles are:-

- (a) The recce of gun areas.
- (b) The flying of information sorties. The CCRA should keep a section in hand for this purpose. To facilitate air OPs locating own forward troops, companies should carry Lucas lamps to indicate their position.
- (c) Under circumstances such as in this operation, where traffic control became one of the major problems, the use of air OP to assist in this work more than justified that employment.

At the commencement of the operation restrictions of fire applicable to predicted shooting included fire observed by the air OP. This was later found to be an incorrect limitation to impose on air OPs, the pilots of which are in a position to observe and distinguish own troops from enemy in the same manner as FOOs.

The original agreed point system of arty R did NOT recommend impromptu shoots. These shoots were attempted during the operation and were found perfectly feasible.

During mobile periods when the 4.5" regiments were placed under command divisions, they were moved well forward in the vicinity of the foremost field guns. It is considered that the fact that these regiments were kept well forward was sound, but that in order to maintain continuous long range support they should be moved forward by leap frogging batteries.

With respect to divisional field artillery it is considered that the time for decentralization must NOT be delayed beyond the point when the CRA can control communications and moves of regiments. As soon as this stage is reached a regiment should be placed in support of each brigade with authority for the regimental commander to pick his own gun areas and leap frog his batteries. The CRA should control the movement of the remaining artillery. If this is NOT done continuous support of the attacking brigade will NOT be achieved.

PART II

ORGANIZATION

During the battle the work of the principal staff officers at corps RCA headquarters was continually interrupted by telephones and R T conversations. With the present establishment this is unavoidable. However the detaching of an officer from a regiment to act as headquarters duty officer was found to be a solution.

Staffs of artillery formation headquarters of all levels have been found inadequate for ordinary day-to-day work. Throughout the battle this inadequacy was doubly emphasized.

RCA 5 Cdn Armd Div split their headquarters to conform with the split headquarters of Main 5 Cdn Armd Div. As a result of this the efficiency of that artillery headquarters were seriously impaired. It must be realized that the functions of an armd div arty headquarters is similar to other artillery formation headquarters, and can NOT function efficiently if split.

It is now accepted within most corps that the AGRA signal centre is the signal centre for all artillery communications within the corps. For the attack on the HITLER LINE only one line was laid from HQ RCA Corps to the AGRA signal centre. This was satisfactory but is considered too risky. For a corps battle it is considered necessary that two direct lines between HQ RCA Corps and AGRA signal centre should be laid and maintained.

Some confusion has existed as to the responsibility for laying line from AGRA to divisions. It has been found that corps signals are unable to get the necessary line sections forward to lay these lines, and that line detachments cannot be permanently allotted for this purpose.

To complete the above task it was found that the present AGRA signals are insufficient even when supplemented by the CCRA's signal section.

Throughout the operation a gun workshop was made available from Corps Troops Workshops. As a result of this, apart from increased barrel wear, the condition of guns at the conclusion of the operation was most satisfactory. It is considered that a gun

workshop should be established and permanently attached to the AGRA. In operations this is to be kept well forward, i.e. NOT farther back than the B echelon area.

Battery requirements for the continuous operation of a No 19 set mark I or II were such as to make it unsuitable for F00s. These sets must be replaced by No 22 sets or better a No 19 mark III set. If this is still unsatisfactory the divisional field regiments rep at infantry brigade headquarters will have to hold replacement batteries for themselves and any AGRA representative supporting that brigade.

Once the operation turned mobile the counter mortar organization failed owing to the fact that they had no R T Communications. If the counter mortar organization is to function R T communications must be provided.

The operation proved again that certain vehicle replacements are necessary within field, medium and heavy regimental war establishments.

- (a) The truck HU Computer for the RHQ Office is NOT adequate and should be replaced by a lorry 3-ton.
- (b) A truck HUP is NOT satisfactory for either the commanding officer or the 2nd in command. Both of these vehicles should be replaced by jeeps.

Observation of ranging round of 155 mm guns was difficult. These guns should be supplied with smoke and M 57 fuzes.

Mine casualties occurred in recon parties and in gun groups occupying gun positions. These resulted from the fact that regiments were NOT equipped properly with mine detector up to their authorized scale of issue. This is a minimum requirement and it is recommended that this scale should be increased by 50%.

PART III

ADMINISTRATION

During the advances certain confusion existed as to which information headquarters AGRA should apply to for areas of moves. Headquarters RCA Corps must keep the AGRA informed of divisional and corps boundaries. It will be the responsibility of the AGRA to obtain deployment areas direct from divisions, and to apply to corps for moves.

In the mobile phase the necessity of keeping wagon lines well forward was again proven. A satisfactory method of obtaining B echelon areas is for the B echelon to occupy gun areas as they are vacated by the guns.

The submission of vitally important routine returns were allowed to slip during the stress of battle. Some of the ammunition returns as an example, were submitted late with doubtful accuracy. Attention must at all times be paid to the accuracy of returns and promptness of submission of both returns and states.

An AGRA may be located in the corps area or in any divisional area. It must be an RCA Corps responsibility to keep the AGRA informed of the closest water points and field dressing stations.

During the long pause in the fire plan for the attack on the HITLER LINE, the availability of ammunition caused some concern. For a long fire plan it is necessary to keep a running check on ammunition expenditure at the headquarters controlling the fire plan. This can be done most conveniently by formation representatives.

As the battle became fluid the tendency to maintain large dumps continued. Dumping of ammunition must be continually watched to ensure that unused ammunition is NOT left in dumps all over the countryside.

PART IV

INTERCOMMUNICATION

During the entire operation, officer commanding No 3 Company Signals acted as signals advisor to the CCRA. This was the first time that officer commanding 3 Company, corps signals, had been used in this manner by this corps, and it was found to be a most satisfactory arrangement.

For ease of communications to corps troops artillery, where possible, the RHQs should be located within good R T range of corps headquarters. In the case of the squadron headquarters air OP, it must be close enough to allow for line communication.

The passage of information with respect to the location of our troops was slowed down by the use of either codex or the map reference code. Both of these codes were found to be too complex for use, in particular by air OP pilots and FOOs. The use of code names for bounds and victor target numbers offers a possible solution.

Vitor target lists were distributed on a large scale at the commencement of the operation only. The demand for those lasted throughout the entire operation. It is considered that in any operation victor target lists should be issued to include one target per 100 yard square. These to be issued down to troops for armoured and artillery units and to companies for infantry, through artillery channels, to be passed to armoured and infantry formations and units by the affiliated artillery unit.

4. EXTRACT FROM REPORT OF Q.C. 1 CDN ARMD C REGT (R.C.D.) ON OPERATIONS 23 MAY - 2 JUN 1944.

LESSONS LEARNED

- (i) There appeared to be a complete lack of liaison between flanking fms. It is of vital importance to a recce unit that close liaison be maintained.
- (ii) Approach marches were hindered by lack of good traffic control.
- (iii) Aerial photographs and Going maps were very accurate and useful.

(iv) Tps in the recce bodies, i.e., engrs, etc., were not cognizant of the importance of enemy documents especially pay books.

(v) Recce Regts, Corps, Inf Div and Armd Div are not properly organized or equipped to do recce in close country.

RECOMMENDATIONS

(i) Increase of WE of Int Secs and/or dets in units of Inf and Armd Divs with increased emphasis on 'I trg throughout fms.

(ii) Org of recce regts:

3 Sqn Regt organized as follows:

1 Sqn with 1t recce vehs (Jeeps or sct Cs) preferably the latter with an equal number of Sherman tks to provide close sp.

2 Sqns with armd half-tracks for carriage of Inf.

1 Pl Engrs with bulldozer.

SP bty under comd.