

possible. The set is then either repaired or returned, or if it is beyond their repair, handed in to REME for replacement, or possibly handed in to the brigade signal squadron for repair by the foreman of signals. The exact procedure to be followed must be clearly laid down by the brigade signal officer and understood by all concerned. Normally the troop sergeant comes up at night bringing with him sets that have been repaired during the day, and taking back with him sets requiring attention, which are repaired on the following day.

8. The troop operators man the rear link set (usually in the regimental second-in-command's tank) on the brigade operational net, and the rear link from A echelon (in a troop wireless vehicle) on the brigade administrative net. All the operators of the troop must be trained in AFV duties. Operators who work in AFVs must be efficient members of the crew, and are normally required to act as loaders, but may be employed as gunners. The distribution of regimental duties (eg, guards) should be made fairly between troop operators and regimental driver operators, and the fact that troop operators are usually operating for longer periods should be taken into account. Attention to this point is of considerable value in establishing a friendly spirit among the signal personnel of the regiment as a whole.

9. The driver mechanics and drivers of the troop drive the troop vehicles. The vehicles are on charge to the brigade signal squadron, but since they are almost permanently attached to the regiment it is usual for the regiment to undertake their maintenance. Drivers must be trained in battery charging and elementary RT. They should be allotted regimental duties in the same manner as other "B" vehicle drivers in the regiment.

Section 5.—REGIMENTAL SIGNALS

1. The regimental signalling officer is the CO's adviser on all signal matters, and has a position similar to that of technical adjutant. His duties require him to:—

- (a) Supervise the functioning of all communication in the regiment.
- (b) Issue the necessary instructions for communications for any particular operation.
- (c) Supervise all maintenance of signal equipment in the regiment, taking a particular interest in radio mechanics, records, and in the charging of batteries.
- (d) Supervise all signal training in the regiment.
- (e) Supervise the keeping of signal stores and spares.
- (f) Work in the very closest co-operation with the signal officer of his brigade or higher formation (see Sec. 4, para. 2).

2. When his regiment is a part of a regimental group with other arms under command, he must constitute himself the signalling officer of the force and issue all necessary signal instructions to the supporting arms. In addition, he will often have to be responsible for the repair and maintenance of their signal equipment and the charging of their batteries. This will not, of course, be necessary when the supporting arm concerned is a complete entity, such as a RHA regiment, with its own signal troop. Similarly, if the regiment is under another regiment or arm as part of an *ad hoc* force, he must get instructions from the signalling officer of that force.

3. If a squadron is detached from the regiment for a particular task he must ensure that the squadron signalling NCO has all necessary signal information, eg, code-signs and codes, for the period of the attachment, or at least knows where to get such information. He must see that he has enough spares—or knows how to get them—and has facilities for the charging of batteries. He will also see that the squadron knows the signal plans of any other arms with which it is co-operating.

4. The regimental signalling officer is normally a subaltern. He should have attended an instructor's course at an army school of instruction shortly before his appointment and should hold the appointment for not more than two years. This will ensure that he is up to date in his knowledge, and that signal training in the regiment benefits from the introduction of new ideas periodically. If it is not possible for the signalling officer to be changed after two years, he should attend a refresher course at an army school.

CHAPTER 3

Wireless Nets In Regiments

Section 6.—GENERAL

1. Although the layout of wireless communication in regiments varies considerably from one regiment to another, it is generally organized either as one regimental net or divided into separate squadron nets.
2. A simple regimental net is normally employed when an armoured regiment is fighting as a regiment in a concentrated formation.
3. It is usual for separate squadron nets to be employed when one or more squadrons in the regiment have an independent role, such as supporting an infantry battalion. A regiment may be taken into the attack on one regimental net, squadrons subsequently flicking to individual squadron frequencies as they are committed to action. Squadron nets are almost always employed in armoured car and recce regiments.

Section 7.—THE REGIMENTAL NET

1. A typical regimental net is illustrated in Fig. 2. All the "A" sets in the regiment and the rear links of supporting arms are netted on the same frequency. This arrangement allows everyone to be kept fully informed of what is happening in the regiment and eliminates the necessity for repetition of orders or information. The CO is able, for example, to hear all traffic passed from any troop to its squadron, and each squadron leader can hear all orders passed by other squadron leaders. The arrangement is particularly valuable for supporting arms, eg, RHA, who can keep themselves informed of the exact situation in the whole regiment by netting their rear link to the regimental net, thus enabling them to support the regiment with the minimum passage of orders or information.
2. The large number of sets in use on one frequency demands a very high standard of wireless training and discipline. Officers and operators must be trained to listen without transmitting unless they have something important to say. They must have confidence that other operators from whom they have not heard for some time are still on net and listening; a squadron operator who continually calls for reports of signals from his troops can effectively ruin the communications of a regimental net.

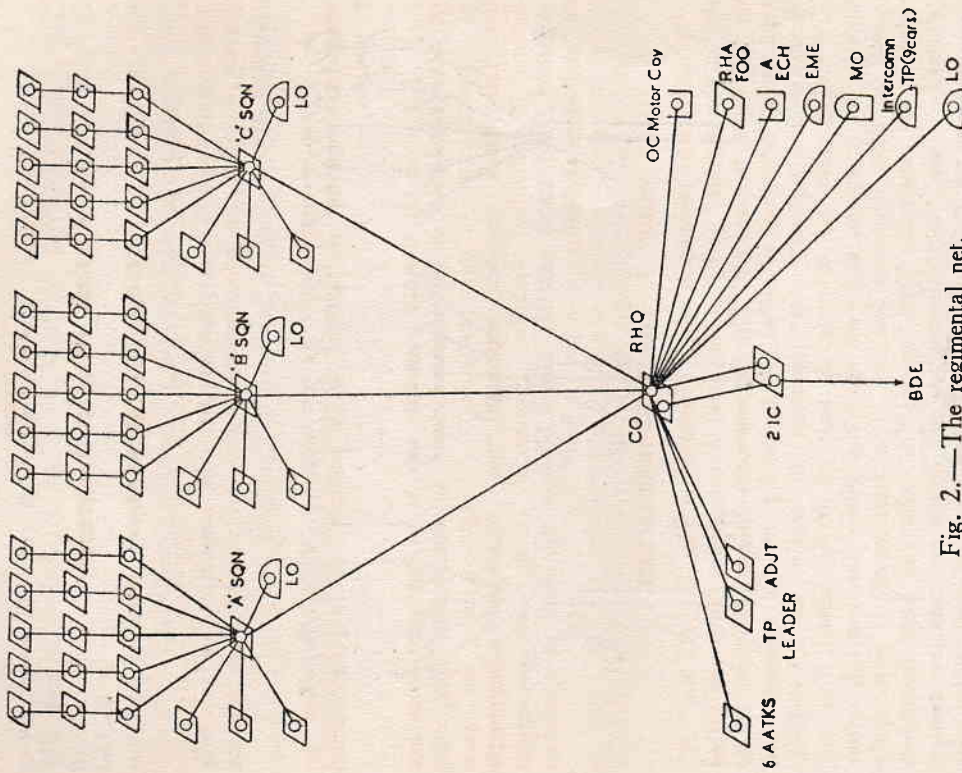


Fig. 2.—The regimental net.

Section 8.—SQUADRON NETS

1. A diagram of regimental wireless organized in squadron nets is shown in Fig. 3. Each squadron has its own net, controlled by the squadron leader, and has a rear link set, usually manned by the squadron captain, on the CO's net.
2. Squadron nets are much easier to work and require a lower standard of training than a regimental net, but give less good results generally. It is impossible for the members of the regiment and supporting arms to be as well informed as they are when a regimental net is used.

CHAPTER 4

Co-operation With the Infantry

Section 9.—GENERAL

1. Co-operation between tanks and Infantry has proved one of the most difficult problems in Royal Armoured Corps communications, and one to which no satisfactory answer has yet been found. Wireless is the only means which can satisfy all requirements, but the use of wireless is prejudiced by the following factors:—

(a) The efficiency of wireless communication depends largely upon the standard of training of the operators. The establishment of trained signallers in the infantry battalion is very small, and it is usually possible to use only semi-skilled operators below company headquarters, with consequent depreciation of communication efficiency. Casualties among signalling personnel are frequently high.

(b) The signaller or infantryman operating the wireless set may, on occasions, be some distance from his officer and delay may be occasioned before decisions can be made or information passed. This prejudicial factor does not apply to the Royal Armoured Corps where the officer is always working his own set in the AFV.

2. Other than wireless, the infantry hailer and the tank telephone provide means of communication, though neither satisfies all requirements, as wireless should. The infantry hailer is an amplifier connected to the tank wireless set, with two loud-speakers mounted outside the tank; the tank telephone is a rubber telephone in an armoured bin behind the tank, with a calling device, connected to the "IC" system of the tank. The infantry hailer will broadcast anything passing over the "A" set or "IC" system of the tank, including the tank telephone, and the tank commander can therefore speak to neighbouring infantrymen, although they cannot answer back. The tank telephone allows an infantryman, if he can approach a tank, to summon the tank commander, and hold a conversation with him. The uses and limitations of the hailer and telephone are self-evident and they will not be considered further.

Section 10.—Tactical

1. When tanks and Infantry are co-operating, either one or the other will be the "senior partner" in accordance with the nature of the operation. The means of providing communication will not differ in either case, but if the tanks are supporting the Infantry,

3. When headquarters tanks or armoured cars are stationary, a long jumper lead from the forward control set to the rear link may be used to give the rear link officer a headset on the forward control. This connection saves considerable time in that it enables the rear link to hear all that passes on the forward link and to pass back information at once without the need of repetition.

4. COs can communicate directly with squadron leaders, who will be manning their own forward controls, by means of the retransmission box, with which each tank is fitted.

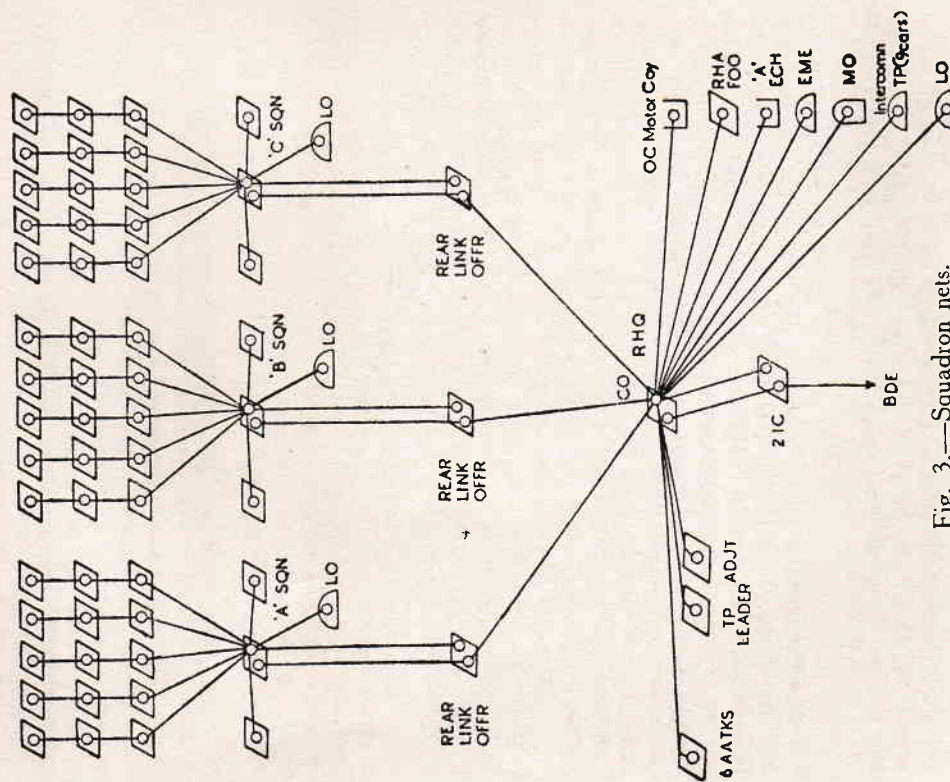


Fig. 3.—Squadron nets.

the battalion signalling officer will be responsible for making all signal arrangements; if the tanks are being supported, the regimental signalling officer will have that responsibility.

2. It has been stressed repeatedly that co-operation between tanks and Infantry who are unknown to one another is unlikely to be successful. Preliminary rehearsal and the personal touch are the keys to success. This is true of the signal side of co-operation as well as of every other. As soon as it is known that such co-operation is going to be required with a certain battalion of Infantry, the regimental signalling officer must make a point of meeting the battalion signalling officer, and of making squadron NCOs meet the members of the battalion signal platoon, particularly their "opposite numbers". If the two NCOs—or officers—at the opposite ends of a wireless link have actually met and talked the link has more chance of working than if they have not.

Section 11.—TYPICAL METHODS OF PROVIDING COMMUNICATION

1. The levels at which communication is required vary greatly. It is common to find a regiment supporting an Infantry brigade, with a squadron detached to each battalion in the brigade, in which case communication will be required between brigadier and CO, battalion commander and squadron leader, and possibly company commander and troop leader. A regiment may also be found supporting a battalion, in which case communication will be required between the two COs, between squadron leaders and company commanders, and possibly between troop leaders and platoon commanders.

2. The regimental commander, whether he is working to the infantry brigadier or to a battalion commander, will usually send a liaison officer to brigade or battalion headquarters. This liaison officer will have a wireless set (eg, WS No. 19) netted to the regimental commander's forward control and will transmit such information and instructions to his regiment as he thinks fit. Alternatively, the battalion commander may travel in a regimental headquarters tank, with its wireless set netted to the battalion—company net. If the tank is a control tank with two wireless sets, the other set will be on the armoured regimental net, ensuring that the battalion commander is in touch with the regiment and with his own battalion. On many occasions the regimental commander will be at the infantry brigade or battalion headquarters, maintaining verbal contact with the brigadier or battalion commander, and keeping in touch with his regiment by means of his own wireless set.

3. A squadron leader, who usually has to maintain contact with a battalion or company commander, will send a liaison officer (probably in a scout car) to the headquarters concerned, to maintain a link with a wireless set on the squadron net. This liaison officer will pass and receive orders and information on this link. The scout car should be fitted with a short-range AFV wireless set (eg, WS No. 38 AFV) connected to the set on the squadron net (eg, WS No. 19) via a retransmission box. The liaison officer should have a pack set (eg, WS No. 38) netted to the short-range AFV set in the scout car. He will remain in his scout car as long as possible close to the Infantry commander whom he is supporting, or who is supporting him. Should he be unable to accompany the Infantry with his vehicle, he will accompany them on foot with his pack set, with which he will maintain contact with his squadron. All transmissions on this set will be automatically relayed on his squadron net by the retransmission box in his scout car. Conversely, all transmissions on his squadron net will be picked up on his pack set via the same path. The driver of his scout car must be a driver operator capable of operating the retransmission box. If a short-range AFV set is not available for the scout car, the liaison officer, if he has to dismount, must carry a suitable infantry pack set (eg, WS No. 18) netted directly to his squadron net.

4. A troop leader has a much more difficult task to maintain communication with a platoon or company commander. His usual method is to have a short-range AFV set netted to the infantry company net and connected to his main set via a retransmission box. He can then speak to and receive messages from the Infantry on the short-range AFV set, using his main set harness. If the former set is unattended, signals are passed through to the "A" set circuit of the latter. This method has the disadvantage of adding still more equipment to the tank for the commander and operator to supervise, and it is possible only after rehearsal beforehand with the troops taking part in the operation. An alternative method is to have an infantry signaller with a pack set (eg, WS No. 18 or WS No. 38) sitting in the co-driver's seat of the troop leader's tank, working to the signaller of his own battalion. If the Infantry can spare a signaller for this duty it usually gives good results, particularly when extensive rehearsal is impossible.

5. The methods described above are not confined to the levels in connection with which they have been described, although they are usually employed there. The successful use of any of them depends on careful liaison and preparation beforehand, and rehearsal where possible. Netting should always be carefully checked at the forming up place.