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SUM	MARY OF MEASU	RES	
AGAI	NST SURPRISE ATTA	ACKS.	

I.-COMMUNICATION BETWEEN INFANTRY AND ARTILLERY.

A.-TELEPHONE COMMUNICATIONS.

1. A properly constructed and co-ordinated infantry telephone system, including underground lines, at least from the company commanders to the commander of the front line troops.

2. A properly constructed artillery telephone system, including, invariably, two lines (one underground) from the batteries to their own observation posts and *direct* communication between the artillery commander on duty and each control battery (as far as possible with a laddered circuit).

3. Telephone lines between the exchanges of these two systems.

4. Direct underground lines from the commander of the front line troops to his control battery.

B.-VISUAL COMMUNICATIONS.

1. Communications by means of flare signals.—These must be provided between the front line and the control battery concerned, via the commander of the front line troops, and from this battery to the observation post which permits of the best observation in the infantry regiment's sector, and, if necessary, to the batteries dependent on the control battery. Intermediate alarm posts, several men strong, must be established and continually occupied. In case of fog, additional intermediate posts must be established at points fixed beforehand.

2. Communications by means of lamp signals.—These must be provided between the front line and the control battery concerned, *viá* the commander of the front line troops; from the artillery commander on duty to each control battery; from the control battery to the observation post which permits of the best observation in the sector; and between the batteries and their observation posts. The beams of light must be screened from observation from the side. Short code words must be arranged beforehand for ordering barrage fire.

C .-- COMMUNICATIONS BY MEANS OF SOUND.

1. Alarm instruments.—The posts should be established in the same way as communications by flare signals. The following are the best arrangements :—

(a) Loud syrens, driven by compressed air, should be employed to give the signal for barrage fire.

(b) Large bells should be employed for gas alarms. In order that the sound may spread properly, alarm instruments should not be sited in trenches and holes in the ground. If the artillery cannot recognise the alarm signal with certainty, it must be taken to mean both a call for barrage and a gas alarm. Every man must put on his gas mask if he hears barrage fire opened during fog and has not previously heard the syrens.

2. Machine gun signals should be arranged beforehand in case of fog (5 rounds—pause— 5 rounds) for ordering the opening of barrage fire. All machine guns sited in rear must take up the signal until barrage fire is opened.

D.-COMMUNICATIONS BY MEANS OF WIRELESS.

Communications by means of wireless, with the assistance of the apparatus of the trench wireless detachment, from the foremost line (infantry and artillery observers, company), via the commander of the front line troops, to the observation post which permits of the best observation in the divisional sector (divisional observation post), or direct to the artillery commander on duty (brigade battle headquarters) and thence to the division (artillery commander). Power buzzer stations will also be employed, especially for communication between the foremost line and the commander of the front line troops.

E.-COMMUNICATIONS BY MEANS OF SIGNALS BETWEEN ARTILLERY AND INFANTRY AEROPLANES AND THE GROUND.

These are carried out by wireless, signal lamps, flare signals, and by dropping messages —and from the ground to the aeroplane by means of cloth signals, signal lamps and flares. To enable wireless messages to be received from the aeroplane, a fighting wireless station

will be established at every artillery group, and a receiving station with every division.

F.—PERSONAL LIAISON.

An artillery liaison officer will be attached to each commander of the front line troops.

1. Increased readiness for action at dawn and during foggy weather is necessary, as well as holding the front line more strongly, the despatch of patrols over the ground in front of the position, while *all* machine guns should be kept ready to open fire. Rearward flanking works, strong points and holding-on points must be continually occupied by emergency garrisons. Artillery which is particularly exposed to danger (close range guns) must be protected by infantry.

2. Special arrangements must be worked out for fog. Where necessary, the reserves must be brought up closer to the front line in case of fog. Companies in rest should be pushed forward in case of fog, but never far from their quarters.

3. Arrangements must be made to bring up reserves quickly. There should be plenty of signposts. Guides should be trained and allotted.

4. Machine guns should be sited and distributed in such a way as to fulfil their object; the bulk should be sited between the lines and positions—not *in* the lines—properly screened from ground and aerial observation, and as far as possible in shell-proof shelters. They must completely command the whole foreground, intervening ground and ground in rear, by a cross and flanking fire. In combination with the above, the several belts of wire should be connected by cross belts, so that the obstacle is divided into compartments and the enemy is prevented from escaping the machine gun fire.

5. Great emphasis should be laid on organization in depth. Assault troops, etc., must have perfectly definite objectives assigned to them. Measures taken must be tested practically. Alarm practices should be frequently carried out, especially gas alarms.

III.—ARTILLERY.

1. At least one control battery should be detailed for each infantry regimental sector. It should have a central position relative to the batteries dependent on it, and have a plentiful supply of flares. Instructions should be given that the control battery will only open barrage fire by night or in fog. Barrage fire must be opened by a distinct succession of salvoes, while the fact must be immediately reported to the group and the artillery commander on duty, and flare signals must be sent up.

2. Instructions must be given as to increased readiness for action at dawn and during fog. In the control battery, the men must be at their guns; in the case of the other batteries, in the immediate neighbourhood. Sentries must be posted in every battery to keep a look out towards the front and towards the control battery; if necessary, these should be non-commissioned officers.

3. An alternative observation post must be provided for every battery beforehand.

4. Instructions must be given to batteries in case of thick fog to open barrage fire if any unusual sounds of fighting are heard in front of the position.

5. Provision must be made to engage tanks (short range guns and guns accompanying the infantry).

6. Provision must be made—particularly in the case of field guns and light field howitzers —to open fire at very close ranges in every direction, with the possibility of opening flanking fire on the ground between the positions. It must be possible to withdraw guns easily from their pits. Close observation must be possible from each battery.

7. Provision must be made to concentrate rapidly the fire of the batteries on threatened points, including those in adjoining sectors.

8. Targets should be allotted to batteries in case of a hostile attack. The results of registration must be preserved in both the battery position and the observation post; there must be *several copies*, and these will not all be kept together.

9. A battery plan must be provided for each observation post and battery.

10. Steps must be taken to regulate annihilating fire, the allotment of targets, registration, and the fixing of the quantities of ammunition to be expended in annihilating fire.

11. Control of barrage fire, and the bringing up of a number of light *Minenwerfer* must be arranged for; the latter should not be employed on other tasks.

12. All measures proposed should be tested practically.

GENERAL STAFF (INTELLIGENCE), GENERAL HEADQUARTERS, 28th August, 1917.