

CHAPTER III

HEADQUARTERS

THE staff of the Director of Ordnance Services, consisting in August 1914 of one Assistant Director, one officer as chief clerk and five other ranks, rose before the end of the war to 29 officers and 170 others, of whom 45 were women. The first substantial increase occurred when General Parsons relieved Perry as Director and divided the office into four branches: one to deal with stores and ammunition, another with clothing and Indian affairs, a third with personnel, and the fourth with workshops and the technique of artillery materiel.

Our war organization provided that either the Director should be at G.H.Q. with a Deputy under the I.G.C. or vice versa, and General Robertson, who was at first Q.M.G., elected to have Deputies with him for his supply services, leaving the Directors on the line of communications; his reason presumably being that it was there that the bulk of their work lay. It was to the I.G.C. that they had to turn for assistance in the installation of their depots and rail or shipping matters. But there was this grave disadvantage; the D.O.S. was not directly in touch with the Q.M.G. to whom he was responsible for provision and supply, nor with the heads of other branches at G.H.Q. with whom his office should have been closely linked.

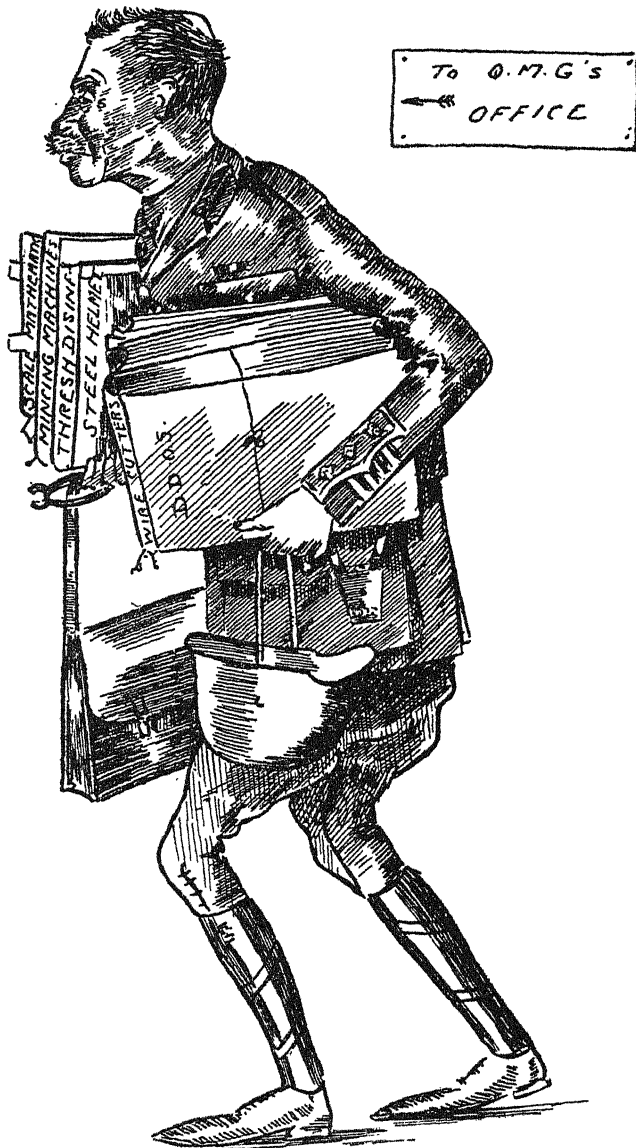
When, at the close of 1914, it was decided to create a second line of communications and form the troops at the front into Armies so as to decentralize administration, the Q.M.G. had an idea of calling the D.O.S. to his side with the title of Director General, and of giving each line a Director to co-ordinate the work in his sphere. This would have rectified matters, but Robertson shortly afterwards became Chief of the General Staff, being relieved by General Maxwell (at that time I.G.C.), who decided to leave matters as they were, except that he agreed to the appointment of a Deputy for each of the two lines of communication soon after formed.

The arrangement worked on the whole well, as indeed anything can be made to work given good will and the right men ; but there is no doubt that it led to much inconvenience and duplication of work.

By degrees G.H.Q. France developed into a second War Office, through which filtered an enormous mass of paper, a great deal of which concerned Ordnance subjects. There was correspondence with the Army Council to be dealt with, applications for new types of equipment had to be considered and the priority of their issue to formations to be settled with the General Staff according to the tactical situation, there were suggestions and complaints from Armies to be investigated, reports to be called for, instructions to be issued and routine orders framed.

All these matters necessarily passed through the Q.M.G.'s office where they were often dealt with by conference and discussion. It was impossible to refer them to a D.O.S. a Sabbath day's journey distant, and the majority had to be thrashed out by the Deputy Director at G.H.Q. who was in reality a staff officer to the Q.M.G. Guns and machine guns were dealt with by one A.Q.M.G., ammunition partly by another and partly by D.D.O.S., and all other Ordnance subjects by D.D.O.S. whose office was divided into two branches—one for ammunition, the other for equipment and clothing. There was at G.H.Q. an experimental equipments committee which, in three and a half months of 1915, dealt with 495 proposals of which 235 were actually tried ; and in May of that year no less than 850 letters and telegrams issued from the office of D.D.O.S. on the subject of gas-masks alone. In fact a very large proportion of the work of the Q.M.G.'s office fell to its Ordnance branch ; and the author, who relieved Colonel Mathew in the post at the end of 1916, would be closeted daily with General Maxwell, who disliked delegating authority, for hours at a stretch getting his signature and decisions to papers. The length of these interviews, indeed, was a byword.¹

¹ What a large portion and variety of the work of the Q.M.G.'s office fell to its Ordnance branch can be gauged from Appendix II.



The Author

Then, the policy being settled, its substance was communicated by D.D.O.S. to his Director who had actually to find what the army wanted, and on whom the real brunt of the work must fall. The D.O.S. had to set the wheels in motion, arrange for supply, and settle all details in conjunction with his departmental subordinates at the front and on the lines of communication. But if, as not infrequently happened, there was some further point to be cleared up, the D.O.S. could not go straight to the fountain head. He must address his enquiry to D.D.O.S. to get the difficulty straightened out in consultation with whatever branches of G.H.Q. were concerned.

Moreover it was in practice impossible to draw any precise line between policy, a matter for G.H.Q., and its method of execution, a matter for the D.O.S. and his chief, the I.G.C. ; and the attempt to do so led to misunderstanding and even sometimes to delay. The Q.M.G. and I.G.C. were to be found addressing the Army Council on the same subjects ; the War Office was in the same quandary, writing almost indifferently to one or other on Ordnance subjects, and it was only a very close and whole-hearted cooperation between the offices of D.O.S. and D.D.O.S. that enabled work to be carried on¹. But for the telephone indeed the situation would have been well nigh impossible ; messages such as the following constantly passing—" I see the stock of such and such a nature of ammunition is getting low, are you taking steps to hasten supply or am I to do so ? "

¹ Three consecutive extracts from the diary of Colonel Mathew when D.D.O.S. G.H.Q. will suffice as examples.

20.9.15. Spoke Q.M.G. about a protest from A.G. about a memorandum issued by D.O.S. to his representatives with Armies giving the present policy in regard to issues of smoke-helmets. Pointed out that D.O.S. had submitted his proposed memo. to A.G. through me and that A.G. had agreed.

21.9.15. D.O.S. wrote me pointing out that G.O.C. 1st Army had ordered withdrawal of rifles from all stretcher bearers. I am asking G.S. if this has their approval and if the principle should apply to other formations.

Drafted letter to W.O. asking that letters on provision and maintenance be addressed to H.Q. L. of C.

Far better would it have been to have adopted the War Office type of organization where the Director, besides being the chief of his Department and Corps, was also a staff officer to the Q.M.G., in direct touch with other branches of the staff, the head of the artillery, engineers, medical service, etc. Separation of the two functions, the one conducted at St. Omer and the other at Abbeville, could not fail to result in occasional tangles and a general waste of time and labour.

This continued till the beginning of 1917, when the Directorate of Transportation was formed and installed in the neighbourhood of G.H.Q., by then at Montreuil. Relieved of all matters concerning ports and docks, railways and shipping, there was little left for an I.G.C. to do. The post was superseded by that of G.O.C. L. of C. area with no duties but those of command, and the D.O.S. was left stranded high and dry. It was then at last decided to move his office to G.H.Q., and this entailed a reorganization. Naturally the Q.M.G. would not wish to consult a Deputy with the Director close at hand, but for him to wipe out of existence the Ordnance establishment housed with him under the same roof, an important integral part of his office, was unthinkable. The machinery was running smoothly and suddenly to throw it out of gear during the crises of a world conflict was out of the question. Moreover the D.O.S. was by this time accompanied by a large train of officers and clerks whom it was impossible to lodge within the precincts of the small township of Montreuil.

The problem was solved by a compromise. The D.D.O.S. with a small portion of his staff joined his Director who occupied the Chateau L'Épinoy and hutments at Wailly five miles to the south, relieving the Q.M.G.'s office of some part of the work. Two Deputy Q.M.G.s were at this time appointed in place of one, for there were now problems to be dealt with previously referred to the I.G.C., and each of these supervised the work of one of the two branches of the late D.D.O.S.'s office; Lieutenant Colonel Fernyhough and Major

Cunningham at the head of these branches being converted into A.Q.M.G. and D.A.Q.M.G., the first occasion on which officers of the Corps were given the title of staff officer.

The office of the D.O.S. was now reconstituted into four fresh branches, each under a Deputy. One dealt with guns and ammunition, the second with other stores and clothing, the third with personnel and establishments, and the fourth with technical artillery matters and workshops. The distribution of duties is made abundantly clear in Appendix III, and only calls for elaboration as regards the more scientific side of the work.

In peace, the duty of the mechanical engineering branch, as regards the care and maintenance of artillery equipment, was confined to inspection and repairs or modifications approved by the War Office. During the war this limitation was found to be impossible, local initiative became imperative. On the one hand pre-existing types of equipment displayed faults that had never been detected in peace, when a six-gun battery would fire in a year less rounds than a single piece would now fire in a day ; while on the other new types of heavy gun and howitzer, which there was no time to test thoroughly, developed many defects.

As these weaknesses came to light they were reported home, but in the meantime remedies were applied ; designs, working drawings and materials being provided locally. One new siege equipment underwent some 150 modifications, all tending to improve its efficiency, the majority of which originated in France. Here was an instance where Parsons' foresight and experience in South Africa proved particularly valuable, one of his first steps having been to attach Colonel Paul, a talented designer, to his office as mechanical engineering adviser. Paul framed periodical reports which covered the whole technique of artillery materiel, and Mr. Lloyd George, then Minister of Munitions, who hated and impatiently brushed aside all formalism, happening to see one of these reports, invited Paul early in 1916 to pay him a visit.

From this there resulted a very close contact with the Ministry which was of great service ; we explained our difficulties through the mouth of an engineering officer, one of Paul's assistants who paid periodical visits to England, and at the same time found out what was happening there. This branch of the D.O.S. office had a large drawing and designing staff, and eventually a small experimental shop was formed for making and testing new devices, where also two specialist officers attended to the highly intricate height-finding instruments used against aircraft.

Another branch of engineering work, which became of increasing consequence as the war progressed, consisted in the preparation of vital gun statistics. During 1917 some 34,000 measurements of bores were taken, as a rule periodically though sometimes specially to co-relate peculiarities of wear with the occurrence of premature explosions. These measurements were analysed and charted, a card index being kept showing the statistical history of every gun from the day it was landed in France. By this means alone could accurate forecasts be prepared to show what number of each nature would require replacement in any particular period owing to wear and erosion. The diagrams also furnished information of high value to designers, exhibiting remarkable variation in the lives of some guns compared with others ; and showing how the life differed according to the nature of propellant, that with the highest percentage of nitroglycerine (giving the highest temperature) resulting in the speediest wear. Many curious facts came to light from these graphs, such as the tendency of our guns to wear oval. Some natures recovered but in others the ovality increased, when it was erosion rather than wear that ended their lives.

A similar development occurred in the case of ammunition, the technical side of which, in the D.O.S.'s office, was in charge of Lieutenant Colonel Stokes, another highly scientific officer. There were innumerable new types, many of which developed defects ; but of course in this case the fault could seldom be rectified in France.

The question was usually one of improving the design for future manufacture. Here also a very close liaison was established with designers, by means of which we brought to notice what was wrong and gained knowledge as to new types shortly to arrive.

All this business, however, opened up an unexpected issue to explain which involves a short digression. A peculiar feature of our organization was that of the four military members of the Army Council—Chief of the Imperial General Staff, Adjutant General, Quartermaster General and Master General of Ordnance—the last named alone was not represented outside the War Office and its manufacturing branches either in peace or war. For this seeming anomaly there had been quite logical grounds. The M.G.O. was only the designer and procurer of war-like stores; what he provided passed straight into the custody of the Q.M.G.'s branch, under which it was stored, issued and repaired by the Army Ordnance Department and Corps.

During the war, the War Office more than once suggested that the M.G.O. should be represented officially on the headquarter staff of the army in France, but there the idea was viewed askance and opposed. In principle the division of duties seemed ideal. The General Staff framed plans of operation, while the Adjutant General found the men and the Quartermaster General the materials to carry them into execution. It was impossible to conceive a clearer cut division of responsibility. To have introduced a fourth M.G.O. branch seemed like adding a fifth wheel to a coach running so smoothly on four, that it has generally been conceded that no troops were so well administered during the Great War as those of the British Empire.¹

It was only on the subject of patterns of artillery materiel that the weakness of our organization in the

¹ It is true that, largely under pressure from the War Cabinet I fancy, a fourth branch of the staff was formed in very special circumstances to deal with transportation services in the rearward zone. But the experiment was not copied in any other theatres nor was it an unqualified success. See p. 50.

field in comparison with that at the War Office betrayed itself ; a subject which arose out of the special conditions of the war and one it had never been contemplated would require close study in the field during active service.

Included in our war establishments were an Artillery Adviser and Chief Engineer, senior officers of the R.A. and R.E., to advise the Commander-in-Chief on their respective subjects, but with no executive duties. When however trench warfare developed, in which guns and engineering played such important rôles, the functions of these officers expanded immensely and the one clerk with which each started life developed into a substantial body of gunners and sappers.

The Artillery Adviser was rechristened Major General Royal Artillery and his office became part of the General Staff. It was his business to advise as to what types of guns and ammunition we should have, how they should be distributed, to study the tactical use of artillery, the training of gunners and so forth. Being responsible to the C.G.S. for the efficiency of artillery work, he was of necessity deeply concerned if guns shot badly, carriages racked to pieces or fuzes were unreliable.

The D.O.S. on the other hand was equally responsible to the Q.M.G. for the efficiency of what he supplied and had to keep in working order ; whether guns, machine guns or what not.

Herein lay the difficulty. The M.G.R.A. and D.O.S., serving different masters, were both dealing with the same subject independently, the one from the point of view of the user and the other from that of the designer. There was no one in France occupying a position analogous to that of M.G.O. with authority to bring the two aspects into harmony. The difficulty was aggravated owing to the Ministry of Munitions absorbing so many of the functions of the M.G.O. at home and because, in common with much other business of detail, these matters were largely settled through departmental channels and personal contacts with the officials primarily concerned at the Ministry and War Office, to save circumlocution and delay. Full dress letters between the Commander-

in-Chief and the Army Council were usually reserved for matters of high policy needing mature deliberation.

There were several conferences and discussions to discover some formula to solve this problem. Questions of behaviour were to be for the M.G.R.A., those of design for the D.O.S., and each was to send the other copies of his reports. But it was impossible to make any such hard and fast classification. Almost every question of behaviour involved design and vice versa.

Prematures can be cited as a case in point. They might destroy the gun and its crew; it was necessary that the soldier should have full confidence in his weapon, and they were classed under behaviour. But their cause was very obscure; it might be due to the ammunition, the piece or a combination of both. The gunner had quite enough to do in studying new methods of gunnery and fire tactics and looking after his men, and horses too it might be, without attempting to learn about the inside of a new recoil mechanism or fuze. The reports on prematures which the M.G.R.A. received from his officers at the front and transmitted home on a stereotyped form were couched in such bald terms, merely recording the type of piece and nature of ammunition, that they were of no use to the designer.

It was the Ordnance which skimmed the engineering brains of the new army and had its ammunition experts whose particular duty it was to study such questions and whose reports were of value. To take one example. Early in 1917 there occurred an epidemic of prematures from 6-inch guns for which the M.G.R.A. was unable to assign any reason. But an Ordnance officer, an ammunition specialist, came to the conclusion that the fault lay in the weakness of the creep spring of the fuze which enabled it to arm before the shell left the bore. His opinion was confirmed at home, a stronger creep spring was provided and the trouble ceased.

In this connection the following extract from General Parsons' diary of 9th August, 1917, is worth quoting.

“ I had some very interesting unofficial conversation

with Lieut.-Colonel Milman [of the Ministry of Munitions]. He is most anxious to get the earliest information regarding defective ammunition, defective fuzes which cause prematures and so forth. He says that at present all he gets after a considerable lapse of time are the stereotyped reports of prematures forwarded to D.G.M.D. [Director General Munitions Design] by M.G.R.A., and these reports give no useful information as to the nature of the defects of fuzes. What he would like to get are useful reports from the Ordnance ammunition officers as a result of their investigation on the spot.

“I told him that it had been laid down by Q.M.G. and General Staff that it is the M.G.R.A.’s business to deal with all prematures but I would see if I could manage to get detailed reports whenever possible from my own ammunition officers, supplemented by the remarks and opinion of the C.I.O.O. [Lt. Col. Stokes].”

Sir Ronald Maxwell, who was wearing his life away as Q.M.G. with long hours of toil at his desk, did his utmost in conjunction with C.G.S. to find some way out of this impasse without sacrifice of principle. But he could not divest himself of a duty entrusted to him by our organization, turn a Director for whose work he was responsible into a servant of the artillery, and leave it to the M.G.R.A. to decide what action should be taken on the D.O.S.’s recommendations. Though it is obvious that the two hinged together, the M.G.R.A. was no more competent to say whether a carriage needed strengthening and how, than the D.O.S. whether its piece had sufficient power. Nevertheless it is easy to realize that it must have been galling for the M.G.R.A., as head of a most important scientific arm, to have all this work carried on as it were behind his back.

General Travers Clarke however, who relieved Maxwell early in 1918, held very pronounced views as to the duties of a Q.M.G., and quickly swept away all these attempts at compromise. The D.O.S. was thenceforth ordered to deal with any technical defect that came to his notice ; only referring, as in the past, to the Q.M.G. if the matters

were one of major importance. At the same time the Q.M.G. took into his office a senior officer from the staff of the M.G.R.A. to see that the point of view of the user was not overlooked.

But although this action gave the D.O.S. all the liberty he could wish, this drastic way of cutting the knot was not really sound as a permanent principle. Instead of linking more closely together the problems of user and designer it severed such strands as previously bound them together.

It would be easy to exaggerate the importance of this small peck of trouble ; for in every other direction the relations between the R.A. and Ordnance were very harmonious. Indeed, at the front, the gunners were most generous in acknowledging how it helped them to have a body of experts to attend to mechanical defects. The D.O.S.'s office had to grapple with a constant succession of problems affecting the R.E. (the Chief Engineer was affiliated to the Q.M.G. being more concerned with materiel than tactics), the Medical Service (under the A.G.), the Transportation Directorate, and indeed every service. Its relations with all branches were very intimate ; but though opinions might differ, when subjects were regarded from different angles, there was never any difficulty in reconciling divergent views except in this one case.

The incident has been mentioned at this length owing to its bearing on our latest army reorganization of 1928. By including a Deputy Master General of Ordnance among the principal staff officers of a Commander-in-Chief in time of war, this does at least ensure that problems of design are treated from the widest possible aspect—the views of user, repairer and manufacturer being all co-ordinated under one chief—a point the more important now that our army is being so rapidly mechanized.

This weakness in our system would very likely not have been so apparent had the office of the D.O.S. been an integral part of G.H.Q. This remained the great flaw.

Although the move to Montreuil early in 1917 brought him into much closer relationship with the heads of other branches, the D.O.S. was even then not fully absorbed into G.H.Q. The plan, by then firmly established, of dividing the work between the offices of the Q.M.G. and D.O.S. could not have been overthrown so late in the day without great upheaval, and Wailly was five miles distant from G.H.Q. The central office files were not at the disposal of the D.O.S., and his dealings with others were still conducted mainly by means of letters addressed to the Q.M.G.

Policy and its means of execution were still divorced and there was nearly as much duplication as when the D.O.S. served under the I.G.C. on the lines of communication. On almost every Ordnance question that cropped up the Q.M.G. had either to refer to the D.O.S. or else consult some return submitted by him. Every side of the D.O.S.'s office had its counterpart in that of the Q.M.G. which embraced an ever-growing array of brigadier generals, A.Q.M.G.'s, D.A.Q.M.G.'s, staff captains and staff lieutenants with their attendant clerks, all employed on headquarter Ordnance work. The same records had to be kept up in both offices and the number of returns which the D.O.S. had to render to the Q.M.G. became a positive burden.

All this might have been avoided had Sir William Robertson's suggestion in the winter of 1914/15 been adopted. At that time headquarters staffs were still small, no elaborate organization had been built up and there would have been no difficulty in incorporating the office of D.O.S. within that of Q.M.G.