THE ROYAL ENGINEERS JOURNAL.

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CONTENTS.

DEEDS OF THE ROYAL ENGINEERS

Now ready, *Deeds of the Royal Engineers*, compiled in the R.E. Records Office. Extract from the Preface :—

"It is hoped that the following pages may assist lecturers on Royal Engineer history, and may help members of the Corps generally to become familiar with some of the more striking events and personalities in the long and illustrious history of the Royal Engineers."

Chapter 1.—A Short History of Military Engineers in England.
" 2.—The Soldier Artificer Company at the Siege of Gibraltar.
" 3.—The Royal Engineers and the Battle of Waterloo.
" 4.—The Royal Sappers and Miners in the Crimean War.
" 5.—The Blowing in of the Cashmere Gate at Delhi.
" 6.—The 23rd Company, Royal Engineers, in the Indian Mutiny and in China.
" 7.—The 23rd Company, Royal Engineers, at Ladysmith.
" 8.—Royal Engineer Company Histories.
" 9.—The Royal Engineers and the Victoria Cross.

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PROPAGANDA BY BALLOON.

By Capt. L. C. Pitman, R.E.

A certain amount of publicity has recently been given to the subject of Propaganda by Balloon, and as it is one of the many new methods of warfare in which the Corps has been called upon to assist, a few particulars may be of interest to R.E. officers in general.

Early in the war leaflets had been distributed to the enemy by dropping them from aeroplanes. At the beginning of 1918, however, it was decided to adopt other methods for the distribution of propaganda. This decision was taken partly on account of the desirability of vastly increasing the distribution of propaganda, as at that time the supply of machines and airmen was barely sufficient for the primary functions of the aerial forces, and partly on account of the reprisals taken by the Germans upon airmen captured with propaganda on their machines.

Accordingly many experiments were carried out by various departments, and eventually a small paper balloon with an automatic release was adopted as the best method for the future distribution of propaganda. In March, 1918, the Royal Engineers took up the supervision of the manufacture of these balloons and releases, and also carried out the loading of the releases with propaganda, the balloons and loaded releases being despatched to France two or three times a week (a staff of nearly 100 girls was specially employed on this work). During the period March, 1918, to the signing of the Armistice, over 35,000 balloons and 20 million leaflets attached to releases were despatched to France.

This method of educating the German troops soon began to bear fruit, as evidenced in the numerous caustic extracts published in the German papers from time to time, and culminating in the manifesto issued by Hindenburg early in September, in which he bitterly complained of our method of bombarding his front, not only with a drum-fire of artillery, but also with a drum-fire of printed paper.

The Germans did their utmost to prevent the circulation of the leaflets, and as much as five marks was offered for each leaflet brought to Headquarters, but many German prisoners were captured with leaflets in their possession, which they displayed to their captors, doubtless hoping for preferential treatment thereby.

Consequently there is thought to be little doubt as to the great success of the propaganda generally.

I. BALLOONS.—In their original design a capacity of 95—100 cubic ft. was aimed at. It was thought that a paper balloon of this size would be large enough for convenient handling and filling. Moreover, it was hoped that the weight of such a balloon could be kept down to approximately 1 lb., thereby leaving a surplus theoretical lift of 5½ lbs. for the balloon when filled with hydrogen. The balloon as originally designed was far from perfect, and in the course of manufacture many improvements were introduced. The balloon, as finally adopted, was pear-shaped, made up of "doped" paper cut in 10 longitudinal panels, joined at the top by a circular paper crown of double thickness and at the base by an oiled silk neck about 12 in. long by 3 in. diameter for filling purposes.

The dimensions of the balloon were as follows:—

Length uninflated	...	...	9 ft.
Length inflated ...	...	...	8 ft. 3 in.
Maximum circumference		...	18 ft.
Weight (approx.)	...	...	1 lb.
Cubic capacity ...	...	...	95-100 cubic ft.
Initial surplus lift	...	...	5-6 lbs.

In designing such a balloon the following points required very careful attention:—

(*a*). The quality of the paper used.
(*b*). The composition of the "dope" used for making the paper gas tight.
(*c*). The composition of the gum or paste used for jointing the panels of the balloon.

(*a*). *Paper.*—The paper had to be exceptionally strong and tough to withstand the amount of handling required both during manufacture into balloons and also during the process of inflation at the front. At the same time the paper had to be light in order to keep the weight of the balloon as low as possible. It was not easy to obtain a paper satisfactorily fulfilling both these conditions, after many trials the best results were obtained from paper made of the best white rags, as used for bank paper, and all such paper had to withstand a test of at least 26 lbs. bursting pressure per square inch before being "doped."

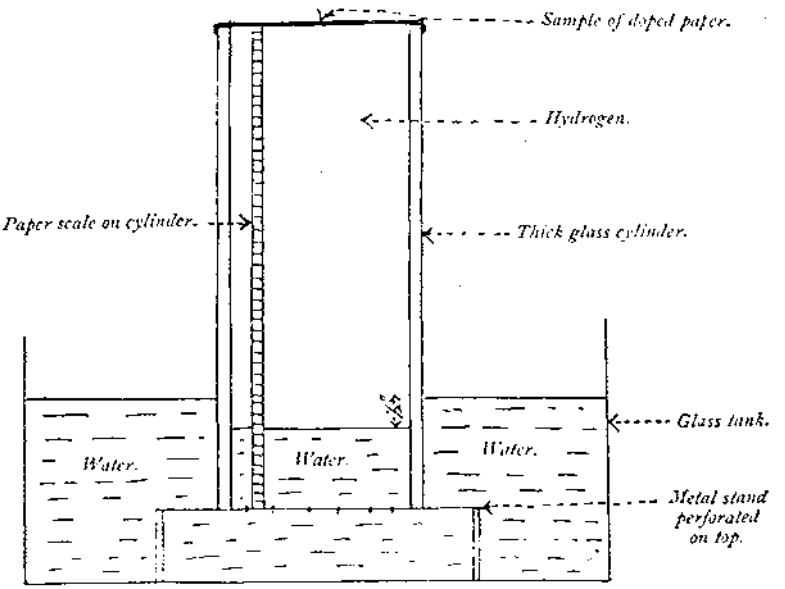
(*b*). "*Dope.*"—Paper, not being hydrogen or gas proof, had to be given two coats of "dope" before being made up into balloons. The composition of this "dope," which was and still is a trade secret, was only arrived at after many trials and failures. A number of "dopes" were found, on trial, to make the paper sufficiently gas proof, but at the same time, to so greatly increase the weight of the

paper that they had to be discarded, whilst others, which kept within the limits as regards weight, failed to make the paper gas proof. One excellent "dope," fulfilling both conditions, had to be discarded owing to the difficulty in obtaining one of its ingredients in sufficient quantity (the available quantity being required for aeroplane wings). However, a "dope" was finally adopted which, while keeping within the limits as regards weight, made the balloons sufficiently gas proof for the first few hours after inflation (see tests below).

(c). *Gum.*—The composition of the gum depended directly upon the nature of the "dope" used. Ordinary paste or gum was found to give no permanent adhesion with doped paper. The paste at first used appeared to be satisfactory when the balloon was completed, yet on unpacking in France the joints opened out at once. After many tests a suitable paste was evolved, the composition of which also remains a trade secret.

TESTS. (1). *Bursting Pressure of the "undoped" paper.*—Samples of the "undoped" paper were taken from every consignment as received from the paper mills, and were tested for bursting strength in a small Ashcroft Paper Tester. Any paper unable to stand 26 lbs. per square inch was rejected. It was found that the paper, after "doping," increased in strength by about 5 lbs. per square inch.

(2). *Laboratory Test of "doped" paper for gas tightness.*—Samples of the "doped" paper from each consignment were subjected to this test as follows :—



A thick glass cylinder about 7 in. long and 4 in. diameter, open at each end, was taken and thoroughly cleaned, special care being

taken to see that the top end of the cylinder was perfectly even and smooth. The sample to be tested was then well cemented down, with the paste used for the panels, over the top of the cylinder. After resting three or four hours to allow the cement to set, the cylinder was placed upon a perforated metal stand resting in the bottom of a glass tank of water. The air was then extracted from the cylinder by means of an exhaust pump and tube, the water rising in the cylinder until it reached the top. Hydrogen was then passed into the cylinder until the water fell to about $\frac{1}{2}$ in. below the water in the tank, thus subjecting the hydrogen to about $\frac{1}{2}$ in. of water pressure. The height of water in the cylinder was accurately read by means of a scale of inches fixed to the cylinder. After a period of about 20 hours, if the rise of water did not exceed $\frac{1}{4}$ in. the paper was considered sufficiently gas tight.

(3). TEST OF BALLOONS FOR SURPLUS LIFT.—The apparatus used for this test was very simple, and consisted of an accurate spring balance mounted vertically and connected by a wire to the balloon with two ordinary bicycle wheels (minus tryes) for changing the direction of the pull with a minimum of friction.

Balloons were taken out of supply from time to time, filled with hydrogen, and attached to the apparatus. The initial surplus lift was recorded and further readings were taken at known intervals, the results afterwards being plotted in the form of a graph. The accompanying graph shows the surplus lift for five balloons lettered A—E, during a period of 24 hours after filling. Out of this batch of five it will be seen that Balloon A was the most perfect, and gave the best results. As, however, the longest release used only had a maximum run of three hours, and a total initial weight of 4 lbs. 3 ozs., continually decreasing throughout the run as the pamphlets were dropped, all these five balloons would therefore have been considered satisfactory.

(4). MECHANICAL TESTS.—In addition to the above three general tests, every individual balloon was subjected to the most careful examination for mechanical defects such as small holes or flaws in the paper, seams or joints insufficiently pasted or gummed, etc.

II. RELEASES.—The release or automatic arrangement for carrying and dropping the leaflets was of very simple construction. It consisted of a short length of thick cotton tinder wick $\frac{5}{8}$ in. diameter, similar to that used for many pipe and cigarette lighters, and having a rate of burning of five minutes to the inch. The wick was threaded upon 20-gauge iron wire, looped through it at intervals, the top 6 ins. of the wick being left free of the wire. The wire extended another 6—9 ins. above the wick, by which extension the release was fastened to the oiled silk neck of the balloon. Tags, India 4-in. or 5-in., as used for fastening official correspondence, and issued by the Stationery Office, were passed through the wired portion of the

wick at ½ in. intervals as a rule, and either ¼ or ½ lb. packets of leaflets were threaded upon each tag—the result being that on lighting the wick at the top, it slowly burned downwards, and on reaching each tag in turn burnt through the string and released a packet of leaflets.

Four or five types of releases were standardized, differing only in respect of the length of the tinder wick and the spacing of the tags for holding the packets of leaflets. The type most frequently supplied was designed for use with balloons, liberated a few miles behind our front lines, for dropping leaflets over the enemy's front lines to a distance of a few miles behind them. The length of the tinder wick in this type was 12½ in.

The upper 6 in. of the wick, being free from the iron wire, could be cut, before lighting, to the necessary length in accordance with the strength of the wind and the distance of the despatching station from the enemy's front line, remembering that an inch of wick burns in five minutes. The lower 6 in. had bundles of leaflets attached to the tags at ½-in. intervals, whereby a bundle of leaflets was dropped every 2½ minutes after the balloon crossed the line. Similar but longer releases with tags at greater intervals were used for long distance work.

The total weight of leaflets put on any release was approximately 4 lbs., whilst the empty releases weighed from 1—3 ozs., consequently the total weight put on a balloon never exceeded 4 lbs. 3 ozs. The longest release made was 40 in., representing about three hours run.

III. LEAFLETS.—The leaflets were printed on single or double sheets of various sizes, and were all punched with a ¼-in. hole in one corner to enable them to be threaded upon the tags, and were left unfolded. Amongst the numerous subjects dealt with were the following:—

(*a*). *Le Courrier de l'Air.*—A weekly paper printed in French, containing the latest official communiques and war news from all fronts, together with various extracts from the Allied, Neutral and Enemy press. The paper was for the benefit of the inhabitants of the occupied area of France and Belguim.

(*b*). Extracts from suppressed editions of German pamphlets or newspapers.

(*c*). Speeches made by prominent Allied Ministers from time to time.

(*d*) Photographic facsimiles of suitable letters written by German prisoners of war to their relatives.

(*e*). Picture post-cards of Prisoners of War Camps, illustrating the conditions and comforts under which they lived.

(*f*). Statements giving the numbers of the American Army arriving in France from time to time.

(*g*). Lists of the German submarines sunk or captured, with the names of their commanders.

(*h*). Comic cartoons depicting the conditions under which the German people lived.

(*i*). Small maps with descriptions showing the advances made by the Allied Armies from time to time in the great offensive.

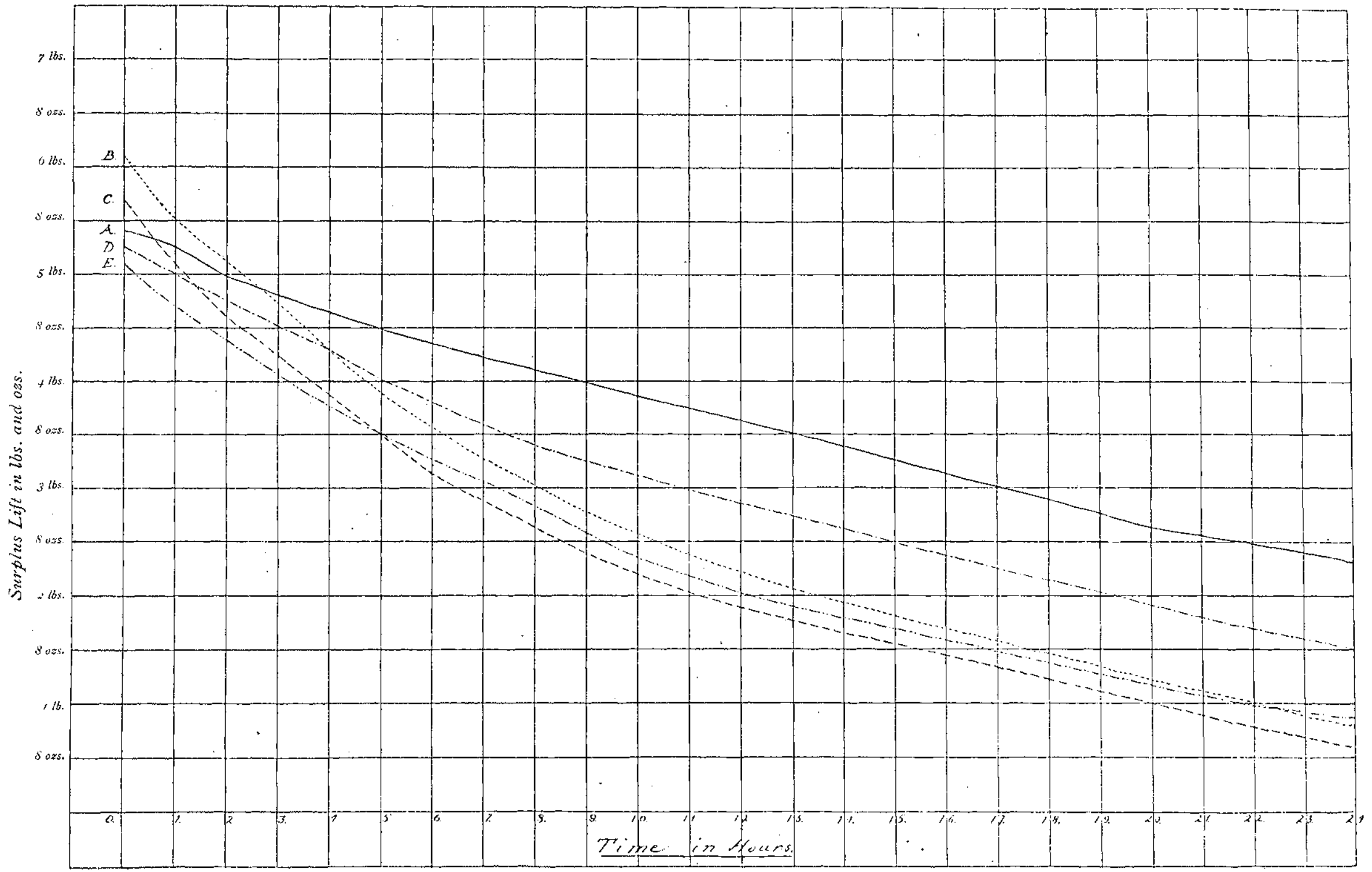
Despatch.—The paper balloons, folded flat and packed about 80 in a case, and the loaded releases packed 20 in a case, carefully labelled, showing contents, were despatched from London three times a week by passenger train. Lorries met these on arrival at the French port and conveyed them to G.H.Q., whence they were despatched to the various releasing stations behind the lines. The system was so organized that any propaganda could be composed, printed, loaded on releases in London and despatched over the German lines within three days.

The procedure at the releasing stations was simple. A balloon was laid out flat on the ground in a sheltered position and filled rapidly from hydrogen cylinders. A loaded release was taken, the free end of the wick being cut to desired length in accordance with instructions issued, which instructions were based on the strength of wind and distance from the German lines, and attached to the oiled silk neck of the balloon by means of the free end of wire. The top of the tinder wick was then lighted by a match or a lighted cigarette, and at the last moment before the balloon was liberated a small vertical cut was made in the oil silk neck above the fastening to enable the gas to escape on expansion. As many as 400 balloons, each carrying 500—1,500 leaflets, have been sent over the lines in one day.

CONCLUSION—It will be noticed from the graph that the initial surplus lift of the balloons was from 5 to 6 lbs., and the weight of the loaded releases being approximately 4 lbs., left a balance of 1 to 2 lbs. remaining, which carried the balloon to 4,000—5,000 ft. Owing to the expansion of the hydrogen, and consequent loss of gas through the slit in the neck of the balloon, the lift rapidly became a negative quantity, apart from the small gradual reduction of lift due to loss of gas through the paper. This effect was soon counteracted by the release which began to drop its $\frac{1}{4}$ or $\frac{1}{2}$ lb. packets of leaflets at $2\frac{1}{2}$ minutes intervals, and consequently the load on the balloon rapidly decreased and caused it to continue its flight long after the release was burnt out, and all its pamphlets dropped. It is known that balloons did come down in distant parts of Holland and far into the interior of Germany.

A sample balloon and release, together with a file containing a copy of each of the various leaflets distributed, have been presented to the R.E. Museum at Chatham.

PROPAGANDA BY BALLOON.



INSTRUCTION IN THE PRINCIPLES OF THE ORGANIZATION OF GROUND IN DEFENCE BY MEANS OF MODELS.

By MAJOR F. D. NAPIER-CLAVERING, M.C., R.E. (S.R.).

IT is intended in this paper to indicate a method of teaching R.E officers the principles of the organization of ground in defence by means of models.

It is contended that the model system would produce better results than the present method. The model system trains the mind by eye and ear simultaneously. The present method attempts to do so, also relying on lectures with maps for the inculcation of the principles. Now the art of reading a map is an extraordinarily difficult one, and experience of this war shows that there is hardly anyone who can readily visualize the ground from an ordinary contoured map. This has been realized and layered maps have been introduced, but when an operation is intended, and there is time to do it, the best troops supplement the map by having a large model constructed of the ground in question and make all dispositions from this model. Officers are also taught what the map means from this model.

To the vast majority of junior officers, who have not had extensive practice in reading maps, the map does not express the shape of the ground sufficiently vividly to be useful when discussing the organization of it for defence. They need the third dimension actually visible, not conventionally represented as it is on the map. It is useless therefore for an Instructor, when considering some problem, say, the siting of a trench, to draw contours on a blackboard to illustrate his point. The student perhaps sees dimly what he is driving at at the time but he will not recognize it on the ground. Officers taught in this way learn very little from the instruction; nearly all is learnt on the ground itself. During the war the theory of the organization of ground has gradually dawned on the regimental officer through constant practice of the application. Any instruction he received was found of little value because of the gap between the lectures with maps and the schemes on the ground. Models will bridge this gap.

Models are like pictures in that they can be committed to memory quite easily by everybody who looks at them carefully. It is extraordinary how they impress themselves on the mind. They create a vivid mind picture which can be called up whenever it is required.

The equipment of a lecture room with models for the principles

of the organization of ground in defence would be bulky and probably costly. The result, however, is that every honest student would be provided with a set of mind pictures of the principles with which he can compare his actual problem on the ground. This is far better than leaving knowledge to dawn on the officer through years of trial and error. The years will chiefly be filled with error. In addition to this the pace of this gradual dawning of knowledge depends on the mental equipment of the subject, and leads as a study of trench maps shows to a very great variety in the quality of work done. The fact is that, even after the last four years, the average R.E. officer has a very hazy idea indeed of what the principles of the organization of ground in defence really are.

These principles are bound up with the *shape* of the ground and it is only by considering various shapes of ground that the principles can be thought out and taught. This can be done slowly on the ground itself, but far better by models of battlefields which have actually been fought over for the following reasons :—

The great drawbacks to a tactical scheme on the ground, as carried out at present, are threefold.

In the first place the mind cannot get an exact impression of the ground owing to its size ; secondly, the situation is imaginary and therefore to a certain degree unconvincing ; and thirdly, it takes time to do any one scheme. To the student of war each scheme is a problem unconnected with any other ideas. It is interesting provided the weather is good and there is time to come to a considered solution. All the principles which may be stated in words are, however, clouded by the excess of detail on the ground itself and seem to be warring one against the other. The whole thing appears to be an unsatisfactory compromise and is often unconvincing.

This impression arises because the principles are not grasped initially. A tactical scheme should be an illustration of principles applied to ground. But it cannot be an example if the principles are not first of all firmly imprinted on the mind. I hope to indicate how this grasp of principles can be got by means of models in the lecture room before the student is allowed to do a scheme outside.

One criticism of the model system is that it undermines the idea that map reading is one of the first duties of an officer. Suppose this to be the case it is of little importance for it must be admitted that the standard of map reading among regimental officers (even for the purpose of the location of points, let alone the reading of the shape of the ground) is far from good, However, there is no fear of the importance of map reading being lost ; in fact if maps of the models are provided the art can be practised very efficiently from them.

It is not proposed in this paper to enunciate the principles which should be imprinted on the mind of the young officers. But by way of example the accepted principles laid down for the siting of

defensive systems in France in 1918 have been taken, and the following paragraphs show how these principles may be taught by models.

The principle of Artillery observation.—"Artillery observation of the ground for at least 400 yards in front of the line of resistance is essential." This can be maintained by O.Ps. behind or on the flanks. If this is not possible the M.L.R. must be pushed forward to cover an O.P. In the first case a reverse slope infantry position is possible and often desirable. In the second a forward slope position is probably obligatory. Now nearly every trench map of a part of the line in France contains a solution of some kind of this principle on the ground, and it should be possible to find an actual example which would combine a fair number of typical situations in one area of moderate size. If a model of this was produced to a suitable scale and the instruction carefully given, every student should be able to get in his head a mind picture of the principle which would be of vital use when organizing ground for defence.

The principle of Localities.—"Important tactical features should be decided on first and treated as localities, the lines connecting these are altogether subservient." This is another principle which is, to some extent, difficult for the inexperienced to grasp and which could be easily taught in the same way.

Woods and Villages.—The way to deal with these would be to have a movable wood or village placed on the model at various points and discuss what modification of the line is necessary in each situation.

The principle of the M.G. Framework.—"The R.A. officer marks on a $\frac{1}{40000}$ map the positions necessary for O.Ps.——; and the M.G. Officer marks M.G. positions for defence of the line in depth on a similar map."

"The necessary information for getting out the final siting of the trenches is now available. The final siting will be a compromise between the R.A., M.G., and Infantry points of view."

The models for teaching the principles of this final siting should be on the lines of the attached map. The idea that the trench plan must be subordinated to the M.G. plan could be shown by contrivances such as miniature searchlights at the M.G. positions throwing beams along the lines of fire; or wires along the lines of fire made incandescent by an electric current. In the same way when the M.G. plan has been demonstrated, the trench system formed in the model of some transparent material could be shown up at will by switching on a light under the model. The ocular effect so produced would be far more convincing than for instance, the study of the attached map.

The principle of mutual enfilade fire.—"Trenches should be sited in general conformation to the contours so as to give mutual enfilade fire. This ensures converging fire being brought to bear on valleys which are the mostly likely avenues of attack and penetration."

"The general alignment of trenches will therefore be very irregular following the lie of the ground——running forward on spurs and back in valleys."

This principle is elemental and is not apparently sufficiently widely known by officers siting trenches. Even excepting front lines, the more one studies trench maps of the British lines the more one is forced to this conclusion. Here again the fault can be minimised by instruction by model.

Standard examples such as the following if firmly held as a mind picture would go a long way towards helping the siting officer to avoid violating this elementary principle.

1. A forward slope position with a knoll in or near the line.
2. A forward slope position with a valley perpendicular to the line.
3. A similar position with a valley running into it diagonally. This raises the question of holding the ensuing spur.
4, 5, and 6. The same problems in a reverse slope position.
7. Rolling fields parallel to the position.
8. Rolling fields vertical to the position, etc., etc.

In all these situations it is of course necessary to consider the problem with reference to the positions occupied by the automatic arms.

Summary.—Sufficient examples have now been given, it is thought, to outline this method of modern instruction.

The number of models used should be large enough to embrace all types of situations likely to be met in the field but not too numerous, or they will be forgotten. If the right number is chosen the student tackling a problem on the ground will start thinking on these lines. "This ground is different to any of the models but it reminds me of this one rather than that. Now, how did the problem work out on 'this' model."

The original contention was that the present method of teaching can be improved. The art of education is developing at a high rate, and in order to bring this form of instruction up to present day standards it is necessary to consider the problem from the point of view of the individual being instructed. This study leads to the conclusion that, at present, the majority of students of the art of defences are unconvinced by their instruction. Models used by a skilled and imaginative instructor will provide a firm grasp of principles in even the sub-average mind. The standard of execution of work will improve in proportion to the extent to which the method indicated is more convincing than the old method of lectures and maps.

OUTPO

FROM THE CURRAGH TO THE AISNE, 1914.

A STORY OF THE 59TH FIELD COMPANY, R.E.

By BRIG.-GENERAL G. WALKER, D.S.O., R.E.

THE following was written as a Lecture to Cadets of the Corps :—

The order to mobilize came on the afternoon of the 4th August. We were all sitting at tea and it was a lovely evening, when two of the subalterns poked their heads in at the drawing room window and announced that "it" had come, "it" being the telegraphic order to mobilize. We had all been hourly expecting the order, yet it came in the end as rather a shock. Some of the older ones amongst us I think realized what it meant—but the young people were exuberant with joy. I remember going into the Mess a few days before and finding two of my subalterns reading the morning paper, and, on my asking what is the news, one of them replied rather disconsolately: "I believe the blighters will wriggle out of it after all." That was their only fear. Well, the blow had fallen at last, and the comparative peace of an annual course of musketry was turned into the turmoil of preparations for War.

Fortunately the whole thing had been worked out very carefully in detail during the previous winter. Everyone knew what he had to do and when he had to do it. The sections including reservists had been told off, time tables made, and the Company daily orders consisted of only one sentence: "Detail for to-morrow as such and such a day of Mobilization, see Mobilization Scheme." Everything worked like a clock. We got all our stores with a few unimportant exceptions, and there was no fuss or worry.

The only trouble that I remember was that the mobilization horses insisted on succumbing to strangles as they came in—the disease being prevalent in the country at the time. The first time the Company was assembled on parade it made a brave show, the only anxiety I had was that 75 per cent. of the men and horses were reservists or newly off farms—and consequently soft. I believe the whole of our Division was the same, so in no sense could it be said to have been completely trained. The reservists were put through a short course of musketry, and some of them told me they had not held a rifle in their hands for eight years. We had, however, our trained N.C.Os., and they pulled us through. I would like to say a word about some of the details of organization which we found later were important, especially in moving warfare.

First that each section of the Company was organized as a self-contained unit—it always carried its food in its own carts. Secondly each section had its own farrier, or a smith who could shoe a horse, wheeler, collar-maker, and cooks. These last had been a special fad of mine in peace time, and I had been able to get several men through the Aldershot School. By each section I mean all the five, viz., H.Q. and the four fighting sections. The result was that the subalterns were able to carry on alone, and the men were always well fed.

Journey to France.—We left the Curragh by train for Dublin on the 16th August, our horses and wagons marched up 33 miles the day before, and by 7 p.m. on the 16th, which was a Sunday, we were all embarked, and sailed that night, arriving at Havre on the 18th. Our only excitement was being held up and boarded by a French destroyer off the Channel Islands. It was rather an amusing scene. We were all asleep about midnight, I was in pyjamas in the Skipper's bunk when the alarm sounded, the O.C. troops was a Gunner and he and his Adjutant were trying to make up their minds which of the many secret papers should be burnt. The question was settled by myself and the Adjutant burning the lot in the galley fire. Then a French Naval officer came on board. Such was the relief of the Skipper and our O.C. that they got angry and refused to show him anything unless he produced his credentials, which seemed to me, at least, to be sufficiently substantiated by the destroyer, its searchlights, and its guns. However, all was well in the end, and our Naval friend was consoled with a drink—and so to bed again.

At Havre we disembarked, and I can remember little there except that the sailors dropped one of my loaded pontoon wagons "complete" into the hold and smashed it to atoms, and that I stole a day's rations for the company from the A.S.C., which were most useful later on in the great retreat. We were two nights at Havre in a dirty, wet rest camp, and then proceeded up country by rail. We left at 1 p.m. on the 20th, and had an uncomfortable journey *viâ* Amiens and Le Cateau to Landrecies.

The March to Mons.—We detrained at Landrecies at 4 a.m. on the 21st August, and here at last we took to our feet. It was a lovely morning. We fed ourselves first thing while I looked for orders. However, there were none and no staff about. The Division I was told had gone on towards Bavai, and a staff officer whom I met could only suggest my following. There was no news of Germans, and nothing to guide us as to what was the military situation. However off we started. It was piping hot and very thirsty work. The poor old reservists were soon dying with thirst, their water bottles were soon emptied, and then they took to raw fruit, apples, pears, plums, etc., which were freely dispensed by the

country folk, but at last I had to stop the fruit. The road was littered with stragglers of the Division, and we had a lot of chasing to do to try and get them on. We were all decorated with flowers. I know I had two bunches of roses on my wallets and roses stuck behind my horse's ears. Every one was full of hope—soldiers and country people. We had a good billet at Bavai, plenty of food and wine and a good bed, and then on next day, the 22nd, over the Belgian Frontier through Dour and Elouges to the Mons Canal near Thuin. We got in about 3 p.m., and were ordered to put the bridge heads into a state of defence. No one was told what was happening, but we set to work to help the Infantry.

There was no warning to us of anything serious coming, and so far we had not seen a German or heard a shot fired.

Mons.—Next morning, the 23rd, the fun began. Bridges to be destroyed was the order, and we set to work to prepare. I think we had three to do. However, I was sent back to reconnoitre a second line, and did not meet the company again until midnight that night, when they marched into Dour. They had got their bridges down and had not had many casualties, although the Germans were close up with field guns before the charges were fired. One exploder was actually knocked to pieces by a 77 mm. shell at Thuin, and the men were hit by the flying fragments of the iron bridge.

Though all our demolitions were successful it did not stop the Germans long. The canal was narrow and they soon bridged it with pontoons. We lost our last pontoon this day. It had been used to make a bridge over a small stream near the canal to help the infantry, and had to be blown up to prevent it falling into the hands of the Germans. I did not hear the last of this for a long time, and came to the conclusion that some people would have preferred to lose a lot of men as well as the material.

It was a horrid night, no sleep for me and many more, though the men got some. Infantry and Artillery retiring to the position I had been reconnoitring, all with the same tale of casualties and overwhelming odds, lots of friends gone, but still there was no sign of panic or fear. Next morning, 24th, we were out at work on the new position at cock-crow—we were on the left of the line. Personally I was on the extreme left with my junior subaltern Carr, who had only six months' service. His section and an infantry battalion were preparing a farm place for defence. The work went on quite quietly. We were not fired at, and had a grand view of the German flank movement. They were trying to get round our left and we could see them in action against a British Cavalry Brigade that were covering us in that direction. Quite an exciting show to see a real cavalry charge, and still no bullets or shells. They were trying to lull us into a sense of security, but they were disappointed.

At 11 a.m. came the order to withdraw, and away we went quite quietly and orderly. I met my other sections by Dour Church, and we marched slowly back through the narrow streets of that squalid little mining town. It was a tedious business, and we were not clear of the place until 2 p.m., but we were never shelled. I found afterwards that the fighting was mostly on the right of the 2nd Corps, or on their left rear, so that we in the left centre had a quiet time.

When we got clear of the town on the Bavai road we could hear a furious battle in the direction of Elouges. This was the 2nd Cavalry Brigade covering the left flank. They were being supported by infantry and guns from the Division and I got an order to escort some guns. Luckily the Cheshires arrived in time to relieve me, and I pursued my way to my ordered halting place for the night. One curious point cropped up in connection with this, as no route was given to me I was told to do what I liked, I went *viâ* Bavai and found later if I had gone the other way I should have been caught by German Cavalry. I got to Bavai all right, passing en route the remnants of the 2nd Cavalry Brigade returning from their fight. At Bavai I found the H.Q. of the 2nd Corps, the British G.H.Q., and the 3rd Division, which had been on our right at Mons, marching through. We spent the night sleeping on the cobbled streets, and filled up our food wagons from a dump beside the road. A good supper for the officers, consisting of omelette and beer, in a café. I found the Divisional H.Q. late that night but no orders, and we were roused from stony couches at 3 a.m., and told to march at once (25th). The night was quiet, only a few outpost affairs, but we got no shells, and we started off and took the road for Le Cateau. It was a long 12 hour march and very hot, but we did it all right and got a nice bivouac in an orchard at Roumont, just behind what became the battlefield of Le Cateau on the morrow. It was a wet night but the rain was refreshing, though we all slept in the open.

We got our orders for a further retirement next day at 11 p.m. Next day, 26th, we sent off our baggage and what remained of our bridge equipment at 6.30 a.m., and were ready hooked in and ready to follow at 7.30, when Sir C. Fergusson, our G.O.C., came up and told us we were going to fight and not retire. Shortly afterwards the C.R.E. ordered us down to Le Cateau railway station, about four miles away, to collect stores in order to improve the trenches. I think in the light of after events that it was the old story of not knowing what to do with the R.E., they did not much know where the trenches were, and the battle had been actually started. I remember asking the C.R.E. if he knew whether Le Cateau was clear, and he was rather surprised at me for asking this question. However, I was not taking any risks, and sent my

Captain on with all the cyclists as an advanced guard. It was lucky I did so, for when about 1½ miles from the station, I met some ammunition wagons retiring at a gallop. They ran into us and scattered us on the road. We gathered that the "Germans were coming" as we picked ourselves up, and I could see the troops retiring westwards on the heights above the town. It was a question of what to do; go on or back. I extended two sections, one on either side of the road (the country was very open and we could see well), and we moved on for a short time until I met a perspiring cyclist from my advanced guard with a note from my Captain telling me not to go on, as the Germans were in the station and had fired on him. He shortly afterwards rejoined us and we decided to move up the downs on our left (north) and try and get in touch with the infantry. We did this and hit off two Reserve Battalions of the 19th Brigade—we got our picks and shovels, sent the carts to the rear, and set to work to help entrench the two battalions. As far as I remember they had no tools except entrenching implements, and we had our work cut out for us—tools with the infantry in those days were considered trifles. They learnt wisdom later, but it took months before they did.

We laid out a line and got to work and stuck at it all day. Meanwhile the battle in front went on. It was the finest pyrotechnic display I have ever seen. The German shells were bursting all about. They came from all directions except the rear, and the bursts were of all colours, white, black and white, black and pink, and yellow. We could see but little of the infantry, but could see the yellow bursts of our Lyddite shells in the enemy's lines. It was a lovely day, brilliant sun and no wind, and a German 'plane sailed placidly to and fro over our heads directing the fire. We could see the Artillery Ammunition Columns disposed in solid squares on the reverse slopes of the ground in front, and altogether it was very like the pictures of an old-fashioned battle.

The country was a huge corn field with the corn cut and put up in stooks, and one of the saddest things I have ever seen was the wounded horses trying to keep themselves on their legs by leaning against the stooks of corn. Our casualties were *nil* so far, as the shelling did not seem to catch us, though it was unpleasantly close at times. At about noon some of the 19th Brigade made a counter-attack. I, in my enthusiasm and ignorance, thought we were going to win, and I sent back for my horses and tool carts, but alas! it was to be the other way about. Very soon the counter-attacking troops re-appeared over the ridge, and came dribbling back, many wounded, and all shaken, very few officers. I met one huge Highlander of the Argylls who said to me, "They call this war; I call it b—— murder."

Now our time came—we knew nothing officially—a staff officer

appeared just about this time and he and I went together to emphasize the fact that there was to be no retirement. He very soon left us and he was the only staff officer I saw until 5 p.m. that night. We spent the time collecting the straggling infantry and putting them into our trenches, the sappers being evicted and made to lie in the open. It was a trying job as the infantry were shaken and we officers knew nothing. However, we were determined not to go back and we gradually steadied the men. The sappers behaved beautifully and never turned a hair, whatever they may have thought, but they had not suffered like the others. One incident at this time struck me very much. I saw a Company of infantry led by an officer deliberately rise from their trench and begin to retire. I dashed over to him and asked why. I was told by the Captain that he had had the order. On asking from whom, he replied: "From that officer there," pointing out an individual, who promptly replied: "You are a —— liar." I mention this as an instance of how such things may happen. I am pretty certain that someone who wanted to be off passed the word down to the officer, who, thinking it *bona fide*, acted on it. However, they all went back to their trenches at once.

Things were by this time looking pretty shaky and the question really presented itself of what we were all to do. As far as we knew our flanks were open; we had no orders, and we could see the German infantry coming on in large numbers. A major of the Argylls and myself sized up the situation and came to the conclusion that there were two alternatives—one to stick it out to the end, the other to remain as long as we could and then retire in order to a second position, behind us on the outskirts of the village of Roumont. The senior officer on the spot, a Lieut.-Colonel (since dead), decided on the latter, and we opened fire with our rifles at about 1,500 yards, too long a range I thought, but the firing steadied the men. We had no artillery support and the Germans were coming on, some in extended order and some in a heavy column of fours. They came pretty gingerly and the column wheeled about and retired when we opened fire, so I suppose we hit someone. I imagine that they were surprised to find any further resistance. Our fear was for our right flank, where there was a deep valley which we could only watch and as far as we knew we had no supports anywhere. As a matter of fact I heard long afterwards that this flank was covered by a whole battalion, echeloned behind us, so really we were fairly safe. I mention this to show what a fog we were in. I believe the truth to be that the staff was at this time so busy getting troops on the road that they forgot us altogether. However, we did not forget ourselves. Our Lieut.-Colonel gave the order to move back I think about 4.30. I am afraid this was not a very orderly movement. Although it was ostensibly to a second

position it never stopped, and that was the last I, or any of us, saw of the field of Le Cateau. We got so mixed up that I shouted out "59th Company, Halt!" and the sappers stood like stones and let the others go on. We formed up in two ranks and marched solemnly off in fours and not a shot was fired at us. I personally felt pretty cheap, but when I got down to Roumont Cross Roads I met my C.R.E., who said he was very glad to see any of us alive! A staff officer then told us we had done quite right, and to get along down the road.

I must here mention a curious incident as regards my horse, a fidgety black mare I had hunted for two years before the war. I sent her back with the wagons about 8.30 a.m., and when they were sent to the rear by the staff the subaltern in charge left the mare tied to a tree, hoping I should find her. As we were leaving the field at 4.30 p.m. I saw an officer on a familiar-looking horse, and on closer inspection found that he had my mare. He was very loath to give her up. That mare has a large experience, as I eventually took her with me to Macedonia, where I had to leave her with a friend when I was invalided home. I don't suppose I shall ever see her again. So much for the narrative of what I saw.

What struck me most was the absolute lack of orders and the fog so to speak in which we acted, next, the steadiness of the men, and lastly, the way the artillery were disposed. They were shoved up so close that their ranging power seemed to be a neglected quantity. They suffered dreadfully, and one brigade that I marched with often during the retreat only had two guns left out of 18. At the end they could not get the teams up alive to take the guns away. I have said nothing of the battle generally, speaking only of what I saw, which was very little.

The Retreat.—When we got on the line of march again a dismal prospect presented itself to us. The road was lined with overturned vehicles, from motor lorries to forage carts; the troops were marching steadily and in good order, but were terribly mixed up, each unit and arm took the road in the order it appeared off the field. I had no wagons, food, or stores, but was told I would meet them down the road. We marched on slowly unmolested as we had a rear guard behind us, and eventually arrived about 9 p.m. at Estrées, where our wagons were parked in a ploughed field. I never was so glad to see anything in my life, and lay down in the pouring rain to get some sleep, as we were told we were to go on again at midnight. No fires were allowed, and we were all pretty miserable, though I heard no grousing. The Signal Company which had come in before us gave me a bit of cold chicken and some whiskey, but only a few got anything. We marched on at midnight, a horrible experience, though carried out strictly, the march routine being the same as on manœuvres at home. At about noon on the

27th we halted on the canal at St. Quentin. We had three hours here for washing, feeding, and sleeping, and then on again into our bivouac at 7 p.m. We had thus been on our legs practically since 8 a.m. the previous day, and were pretty well done. Most of the men got a good sleep and a dinner, but some, and most of the officers, were up all night preparing the bridges over the canal for demolition. We left these bridges eventually in the hands of the Field Squadron, R.E., to blow up, but I never heard if they did it. I know we had some trouble long after with them about some of their exploders which they said we had stolen.

Next morning, 28th, we were off again at 4 o'clock, but there was much delay in starting. This was dangerous, as we heard the Germans were on our heels. The delay was caused by the Ammunition Columns and Field Ambulance that had gone ahead. I got a message that a broken down traction engine was blocking the road, and that I was to blow it up. I went off with cyclists and a tool cart with a six-horse team at a gallop, but could find no engine, only some mounted unit calmly watering and holding us all up. I was told to leave my Company and keep chasing these people along all day, which I did until we got to Noyon, when I picked up my own Company and a staff officer, who told us we were to be put into trains and taken away for a rest!

Noyon was blocked with wagons, and we had a good deal of difficulty getting through. However we got on eventually, and were very happy to see our bivouac near Pontoise. All was peaceful, and we were told we should have a day's rest. Heavens, how we slept, and the luxury of a shave! Our bridging wagons rejoined us here, after wandering about for two days. I thought they must have been taken. Next day, 29th, at about 4 p.m., we were ordered to prepare five bridges on the Oise for demolition, and to let them go when the last troops were over. The H.Q. of the Company to continue the retreat that night. The four sections moved up to the river and we set to work. The bridges were all steel girders and it was a lengthy job. Another complication was that no one would or could tell who was to give the word to fire. I had a curious experience that evening. I was going from one bridge to another when I met a small party of French cavalry—some officers and an escort of Cuirassiers. I was struck by the strict way they questioned me in perfect English. I believed there were no French troops about, and I could hear the firing on the north of the river. I got very suspicious and told them nothing. That night I had a runner shot by Germans right behind the river, and I think the men I saw must have been Germans in disguise However, all went well, we got our bridges down and away safely at 4 a.m., marching outside the rear guard as far as I remember.

About 8 a.m. this morning, 30th, I got a message by motor cyclist

from the 2nd in Command of the West Kents in the 13th Brigade that the Suspension Bridge at Pontoise was not properly down, and could I do anything? Pontoise was 2½ hours march back, say about 7 or 8 miles outside rear guard. What was to be done? However one of my subalterns came forward and volunteered for the job. I told him I would not order him, as I thought it almost impossible. However, he pressed me so that I let him go. He first put 14 lbs. of gun cotton on the carrier of the motor bike, filled his pockets with fuzed detonators, mounted on top of the gun cotton, and off this priceless pair started. I wondered if I should ever see them again. I warned them that the charges must be put on top of the piers, not in the centre of the bridge.

About four hours after they both turned up smiling. They got down to the river safely and saw no Germans, mounted one pier, placed and lighted their charge; result, a misfire. Nothing daunted they put in new detonators, and got it off successfully; the shock pulled the cable off the other pier and made a good job of it. They were both awarded the D.S.O., and well they deserved it. This reminds me of the subaltern of the 17th F. Company, who set off a misfired charge on the Mons canal by a well-directed revolver bullet. He was a beautiful shot with a revolver, but must have been dangerously close to bring off this coup. He was killed by a shell at Hooge in the second battle of Ypres in 1915.

This venture cleared me out of explosives and no one could produce any more and this therefore was the last bridge demolished. I am glad to say that though we destroyed, I think it was, eleven bridges in all we never had a failure, but we never spared guncotton. I think that is a very wholesome rule to follow when you are in a hurry. The French engineers destroyed the bridges by which we crossed the Marne. We pursued our way pretty peacefully after this. Only once did we have any excitement, namely at Crèpy en Valois. We were with the rear guard and the Germans were close behind and were shelling. I got an order to entrench a position for an unknown number of men. I started as quickly as I could and then a staff officer came to look at us. He entirely disagreed with all I was doing so I said: "Perhaps you will say what should be done." He spent half an hour looking round, could not make up his mind, said he was busy and levanted, and glad I was to see the last of him. A few minutes later I got an order to continue my march and that was the last day I saw a shell burst during the great retreat. So we went on marching, marching incessantly. The agonies of want of sleep were indescribable. I have seen men fall down on the road as dead—they were dead with sleep. The longest nightmare has an end however and, at last, we reached the end of ours in a beautiful orchard at Tournon, a few miles (15 or so) south-east of Paris. We got in on Saturday morning and had a long rest that day and a

good wash and shave and boots off. That night we were sent the cheerful news that "The British Army will advance." Those I think were the very words.

Now for a few points of military interest :—

March Discipline.—This was extraordinarily good and the discipline in camps and sanitation equally so. We left our camps as clean as on manœuvres. We had no stragglers but I was lucky, as I had two empty bridging wagons on which the lame ducks sat like crows on a fence. The only other people carried were the cooks and officers' servants, and the 14-year-old bugler who went through it all in the arms of my gigantic wheeler, Swan. I was very particular about marching in fours and keeping dressing and, when the men realized that it helped them, they did it without trouble. We were never short of food. One day I was asked what food I had for the next and said a full ration. The D.A. & Q.M.G. said : "You are very lucky as no one else has." It was the food I stole at Havre that pulled me through! The maxim that "Heaven helps those that help themselves," may be bad morals, but in practice I have found it a useful one to follow.

Watering horses was our great difficulty. There was plenty of water about, but when the periodical halt came the mounted units were not always near the water. The horses did not get enough water and lost condition in consequence. The weather was sultry, the roads dusty and men and animals thirsty. Training will make a man do without water but an animal cannot be trained in this way. Another difficulty was that 75 per cent. of the horses were fat and soft when they started, harness had been rapidly fitted, and consequently there was much galling. Our spare pontoon teams were a great help and I don't think we ever lost a horse. What we did lose was harness. We used to march sick horses light and put harness up on any available wagon. Result, it got dumped when we started in the dark. Led horses should always be marched fully equipped. Even during this retreat we always attended to the men's feet regularly and with good results. My own personal difficulty was that I got my boots off so seldom, but the men had more opportunities than I had. A last word about orders. When I started, I always stayed up until Divisional Orders came in. The result was that a lot of people had to stay up too. I soon found that the best way was to arrange for a very early start and let everyone turn in early. Then, when the orders came in I usually had only to say, "Call us so much later" and everything went like clockwork.

I cannot remember the total casualties up to this but they were few and none of the officers were hit. Of 22 men missing at Le Cateau 12 turned up about a fortnight later having been half over France, as they said, in a train.

The Advance.—We started from Tournon on September 6th full of life. To be going forward was like wine in our veins.

The two Field Companies took turns with the advance guard and as before, the 59th did not see much. It was a question of pushing in rear guards and there were no very serious obstacles to overcome. What I remember best was the joy of the inhabitants as we came along. Nothing was too good to give us and we were surfeited with the most beautiful fruit. It was a splendid country and the weather glorious also, and we were full of life and hope. I have forgotten the names of our various halting places from day to day except Mort Cerf and Villeneuve St. George and Coullomiers. Sometimes we had billets, more often bivouacs. We saw little of German atrocities except the horrible way they had turned the houses and cottages inside out, furniture broken, clothing thrown about and crockery and glass smashed on the floors. On one shutter of a house, however, I saw a legend in German to the effect that these were kind people and should not be molested. What did strike me however was the characteristic smell that pervaded every place that had been occupied by Germans. You could smell it in the open fields and as we marched along the roads.

The Marne.—At last, September 10th, we reached the Marne at a place called Mery. We marched down to the river in column of route and not a shot was fired. We were with the rear guard. Mery Bridge was intact, so there was nothing for us to do. When we got into the village we were told to park beside the road, and await orders. Meanwhile the battle was proceeding on the wooded heights above us. We could get no news and I rode off to see what I could of what was going on. The 14th Brigade was starting the attack in thick woods, and the 17th Company, R.E., was with them. It was heavy work, the fighting stubborn and the casualties heavy. Still I got no news or orders. About 3 p.m. some sort of flank move was made against the German rear guard and they began to withdraw, and the battle died down. We bivouacked where we had been halted all day, and late that night got orders to move with the advance guard at 5 a.m. The pursuit was taken up again on this morning (11th) and as we marched we passed a great many dead on the roadside, mostly 14th Brigade, I think, but still we had won our battle and all were cheerful. The Division had been very lucky in finding a bridge in being and in not having to use pontoons under fire as was the case with the Division on our left at La Ferté sous Jouarre.

We moved on rapidly meeting with little serious opposition. One day with the advance guard we saw a German column knocked to pieces by our guns as they marched along a road, lined with poplars, on a skyline. When we got there it was almost a ludicrous scene—wagons overturned, cookers abandoned and equipment lying about.

The dead and wounded horses however struck a tragic note. I here saw my first German prisoner. He was a wretched little creature about 5ft. high, with feet so sore that he could not put them on the ground. Poor little devil he thought he was going to have his throat cut and tears were streaming down his cheeks. His captors, the Norfolks, however perched him on the back of a water cart and plied him assiduously with biscuits and cigarettes. That night we had a good bivouac, and an alarm which turned out to be a mare's nest, British being mistaken for German cavalry.

On we went next day in rain and filth for the weather had broken, through Chacrise and on Sunday, 13th, we arrived at Serches. A lovely morning and the forerunner of fine weather. We were with the advanced guard and as we passed along up the hill behind Serches I was ordered to send an officer to reconnoitre the bridge over the Aisne at Missy. I sent off Pennycuick and some cyclists and then pushed on over the Serche Ridge down into the Aisne Valley to Ciry. I think we were the first dismounted troops to go down. I parked the company at Ciry, and went on to Ciry station to reconnoitre. I often wonder now who was in front of me; I doubt if there was anyone!

The Battle of the Aisne.—It can hardly be called a battle in the ordinary sense though we did make one attack, after the failure of which, we settled down to consolidate, which amusement occupied us until about the 1st October. To return to our experiences on the 13th September. The road down from the heights above Serches to Ciry was in full view of the enemy. No hedges, no cover, and the descent to Ciry was down a long hill in full view of the enemy. I thought as I went over the crest that we were "for it" in real earnest. The men marched in file on either side of the road, the wagons following us. However nothing happened and we got safely down, though a field ambulance that followed later got it hot and strong. One of my sections, No. 1 under Sergt. Buckle, that had been left behind at first, saw this unpleasantly close, but as far as I remember lost no one. I was thankful that we got safely into Ciry village and we hid ourselves pretty well so they did not trouble us with shells. I went on to the station with a few people to look for material to rebuild Missy Bridge. I did not find much, and meanwhile got Pennycuick's report, which said that he could only reconnoitre the bridge with glasses. He is commonly believed to have done the work on a raft, but that is an error. He gave me a sketch of the bridge which was, I found when I got on to it later in the day, short of one 50-ft. span. There were three such in all and two were broken. The piers were 15 ft. high and the water 10 to 12 ft. deep. A nice job for a Field Company with nothing but what they carried in tool carts.

Towards 3 p.m. I got a message from the West Kent Regiment,

13th Brigade, that they were ordered to cross at Missy at all costs, and could I help them. I met the Colonel and told him I would collect such stuff as I could in Sermoise, which was about 1,000 yards from the bridge, and I sent for the company to meet me there. Of course there was nothing of much use, but such as there was we took along with us, with the aid of a carrying party of the West Kents. The battalion pushed on to the river and had a tough fight to clear the Germans from their end of Missy Bridge. I got down to the bridge at the same time as the second-in-command of the West Kents and we went on the bridge together to find it as I have described above. We were I think the first Englishmen to get on to it. I saw that nothing could be done to make it fit to cross under two or three days, so I said we must try rafts. As we stood on the bank considering this a machine gun, one of the few left, opened fire over our heads at the bridge, I presume on the assumption that we, when on the bridge, were Germans. The gunner was rather erratic at first, and got our orderly in the leg but his aim improved later and he plastered the bridge well; I know I never lay flatter in my life until the performance was over. Then we got to business. We made five rafts—one of planks and three of straw and wagon covers. Each would float five men. We sent a man over swimming with a hambro line and got cables over and with this outfit the crossing started. I may say here that we were entirely unmolested. The sappers manœuvred the rafts at first until the infantry were trained and then the latter carried on. To make a long story short three battalions, 13th Brigade, got over before daybreak 14th. It was, in my opinion, the best job we did during the time I was with the company. While we were all on the river our H.Q. and horses, etc., were in Sermoise and they had a very bad time. Apparently the Germans did not spot us on the river and thought we were in the village. They killed some and stampeded the rest of the outfit and when I got back I found them very much shaken. I and the company were as usual on such occasions reported dead by the sole survivor who got away.

Next morning, 14th, I got the wagons out to the east to a farm near Ciry station where they formed a good billet which however got too hot for us later on. The rest of us returned to the river. I and the Captain (W. H. Johnston) made a section for a trestle bridge under rather fiery circumstances, as the Germans had found us by now. Long afterwards I heard the explanation of our immunity the night before It appeared that the first five men of the West Kents killed the whole of a German patrol of six on the north bank of the river, so that no news of our movements got back.

I must now return to Johnston and the river. After completing the section I left him to make some corrections and went off to visit one of the other sections. While I was away a violent battle started

in Missy and the river was covered with bullets. I came back soon after to join Johnston but when I got near him he signalled me not to approach. He and Flint were working a raft to and fro —carrying wounded one way and ammunition the other. I sat down under cover with Pennycuick and a few men ready to assist and so we spent the day. Buckle with his section were close by also. Johnston and Flint continued this work until 7 p.m. when they were relieved, quite worn out. Johnston received a V.C. for this and Flint a D.S.O. I was able to recommend them personally as I saw it all.

The battle at Missy had died down and the night was fairly quiet and we withdrew to sleep and feed. I spoke above of our having attacked the Germans on the Aisne. This attack was carried out by the 14th Brigade against Chievres Ridge. The Brigade crossed on a pontoon bridge made by the 17th Company, R.E., at Venizel and after being repulsed withdrew and held Missy village, the 17th Company were with them. The 13th Brigade were withdrawn south of the river and we remained with them during the rest of the operations, digging trenches, preparing the trestle bridge, which was never made, and working on retired line defences. We lived at Ciry station for some time but eventually were shelled out and took up our quarters at Couvrelles Chateau where we had good beds, electric light, and fed on the fat of the land.

One more incident remains to be mentioned namely the light infantry bridge at Missy. It is interesting from the R.E. point of view. The bridge train brought up their gear to Venizel, where we unloaded and made up rafts. These we navigated up river for two miles in the dark by towing and rowing to the site of the bridge, which had been selected just out of view of the opposite heights. We were really hidden by a wood. On arrival we dismantled the rafts and disembarked the stores and then started our light bridge. Such a riot I have seldom seen or seldom heard. The majority of the men were untrained, and it was only by the mercy of heaven, and our N.C.O.'s that we got it through. I expected shelling every moment, but it never came, in fact, no shot was fired at us. We were done at midnight and so to bed, and Missy was at last safely joined up to the south bank. I say safely advisedly, as this bridge was never hit while I was there.

This I think finishes our experiences on the Aisne. We did many odds and ends and suffered little. We left by stealth on the night of the 1st October for our march *viâ* Villers Cotteret to Pont à Maxance, where we entrained for the north.

So ends my narrative. It is scrappy no doubt but the time is long past and I have seen many things since then, but none that interested me more. What has impressed me most in looking back is not the memories of the incidents, exciting though they were, but

the thought of how much our successes depended upon the old-fashioned training. First, the training of the officers at school and in the military colleges, a training, the essence of which was the suppression of the individual for the benefit of his fellows and secondly the training of the men, first, in the technicalities of soldiering and then in the belief in his officer, which was the hall-mark, so to speak, of all good regiments. I believe that nothing counts so much in the army than the old-fashioned relationship between officer and man. It was a real brotherhood. The men had a standard which they expected from their officer—knowledge, uprightness, justice, and leadership, and if that standard was attained they would follow them to death quite cheerfully. I believe that standard was attained and I believe that it was this that made our men so steadfast. I remember speaking to the men of the 59th Company on parade at the Curragh just before we marched off to the train on the 16th August. I said to them I had never been let down by a sapper in my life, and that I knew that whatever happened to us they would always behave like gentlemen. I was answered by a growl of "Hear, hear" from the ranks and I knew that I had those men behind me in good and evil times as long as they were alive. Nobly they kept their word. Nothing was too much for them, and never did they waver. I owe them a debt of gratitude that can never be repaid.

MEMOIR.

BREVET MAJOR W. H. JOHNSTON, V.C., R.E.

THE subject of this notice was the son of the late Major and Riding Master W. Johnston, Royal Artillery. He was born on 21st December, 1880. He was educated privately, and at the Boys' High School, Woolwich, under the late C. L. Draper, D.S.C., and then at Bosworth & Stern's, at Roehampton, and the R.M.A., Woolwich, from which he passed into the Royal Engineers, and was gazetted a Second Lieutenant on 23rd of March, 1897.

After the usual course at the S.M.E. Johnston served for five years at Gibraltar, and on his return home went to the Survey and subsequently to North China, where he was employed on the staff for four years. His work in China was of an important and confidential nature, and he received great credit for the way in which he carried it out. After his return from China in July, 1912, he was employed for short periods at the War Office, Chatham, and at Bulford until he joined the Staff College in January, 1914.

At the outbreak of war Johnston, then a Captain, joined the 59th Field Company, R.E., which belonged to the 5th Division, and was stationed at the Curragh, as its Captain. The other officers were myself (in command), with Pennycuick, Flint, Stevenson and Carr, as subalterns. I remember he joined us one morning after a dreadful journey from England, during which he had lost his kit and his horse, and was more dead than alive. His only anxiety having been to join as quickly as possible.

We had a very strenuous fortnight mobilizing, during which Johnston did more than his share of the work, until he eventually started off with the mounted party by road for the North Wall, Dublin, where we all embarked together on the 16th of August.

All through the subsequent weeks, at Mons, Le Cateau, during the retreat, at the Marne, the Aisne, and in the first battle of Ypres, he was the life and soul of the party. He seemed to enjoy fighting. I remember his saying with glee as we went up in the train from Havre, "I expect we shall be scrapping in a couple of days now." He certainly was right.

On the Aisne he performed the service which won him his V.C. We had been together on the river all the early morning, and I had left him to go and see one of the sections of the Company that was in

trouble. When I came back to the river I found him on the raft with Flint, carrying the wounded back and the ammunition forward to the troops in Missy Village. These two continued to carry out this work all day, and well they earned their rewards (Flint was given a D.S.O.).

From the Aisne we went up to Bethune and Richbourg L'Avoue, and from thence to Bailleul and Neuve Eglise, then on to Ypres, where the first battle was raging. We had 14 strenuous days of it, and were then relieved by the French. Johnston took over command of the company after this, as I went sick, and was subsequently attached to the 2nd Corps Headquarters. His command was a great success, and I think he was one of the best known personalities in the 5th Division.

It was during this time, about January, 1915, that he was selected to command the first Tunnelling Company raised in the Second Army. It was important that the organization and tone of the first unit should be good and Johnston was the best man that could have been chosen. At first he chafed terribly at the idea, but Sir Horace Smith-Dorrien and Sir Charles Fergusson were sure of their choice, and he nobly justified it. I have met some of his men since then, and their respect, almost reverence, for him was wonderful.

I personally saw but little of Johnston after March, 1915, as we were in different parts of the country. I saw him, however, just after he had been appointed Brigade Major, 15th Infantry Brigade, in May, 1915. We never met again as he was killed soon after, near Hill 60.

He was so pleased that he had got his heart's desire, and it was a tragedy that he was not permitted to keep it.

His death was a terrible blow to his friends and a great loss to the British Army and the Corps of Royal Engineers.

I personally was fortunate enough to become very intimate with him during our short friendship, and his high qualities of head and heart were wonderful. He was a fiery soldier, and as gentle as a woman. The men followed him like children. His religion was the mainspring of all his actions. I doubt if any man can have higher praise.

But his own gentleness and chivalry made him stern and uncompromising in his judgment of all that has stained the record of the German in warfare. In the few brief days of leave which he had in December 1914 his friends asked him his opinion of the German as a soldier, and also as to the truth about the Belgian atrocities. He replied that he had heard tales of atrocities, but had never seen evidence of such, and that so far as his own personal experience went he was convinced that the German was a brave, hard, and clever fighter. The crucifixion of a Canadian, and later the use of gas by the enemy in April, 1915, of which he was an eye-witness, stirred

him to the depths of his being, and that there may remain a record of the effect which wickedness and inhumanity of this type had upon us who experienced it I quote from a letter from Sir William Furse who knew Johnston well. He says of him, "I never met, even amongst the many hundreds of splendid, devoted and hard-working officers I have come across in the last four years, anyone whose conception of duty was higher than it was with Johnston. His personal bravery was just amazing. I never met any officer who so entirely devoted his energies to thinking out means of destroying the enemy. I shall never forget a conversation in my office just after the Hun first attack in April, 1915, with gas. My brother, the Bishop of Pretoria, was, as we all were, exasperated by the enemy having made use of this muck against all the laws of civilized warfare and expressed the hope that it would not be found necessary for us to copy him." After Johnston had finished his business with me I remember his referring to this conversation and saying, "You know, personally, I do not agree with your brother. I would stick at nothing in the way of devices for killing Huns. Indeed, when my turn comes, I should feel happy if I knew my body would be dropped in a well from which the Huns would draw their drinking water."

Such an opinion expressed by a Christian English gentleman, for such Johnston most certainly was, may shock some people, but I expect that if these people had gone through some of our experiences they would probably share our feelings. That he, who was the soul of gentleness should have been forced into such condemnation of an enemy, whom he began by respecting, is for us, who knew him, not only the most severe indictment of the foe, but also an exhortation to the task of so educating the conscience of mankind, that such fiendish devices may never again stain the annals of war.

In conclusion I can only say, that although Johnston's death was a grievous loss to us all, his ideals and the example he set in trying to live up to them are a precious legacy to all those who had the privilege of knowing and serving with him, and to the country which he served so devotedly.

G. WALKER, *Brig.-General.*

21st February, 1919.

Bt Major W H Johnston VC RE

CORRESPONDENCE.

FUTURE TACTICS.

To the Editor of the *R.E. Journal*.

Sir,

Brig.-General Schreiber, in his article on future tactics, indicates the lines upon which thought and discussion on this subject should progress.

After our great successful advance in France it seems right that our thoughts should turn to the attack, and I venture to think that our Army Chiefs, from the beginning, were always looking forward to the day, when the vicissitudes and trials of their great defensive action would bear their hoped for fruit, and make us able once more to attack. I sincerely hope that all our schoolmen of the future will teach the principles of defence in this way, namely, that all defensive measures must be looked upon as a preliminary or auxiliary to the offensive.

Engineers are prone at times to take a somewhat short view of their work. All this, however, does not minimise the importance of our endeavouring to evolve the most suitable methods of defence to meet the weapons of the times. I do not propose to enter into any details but just to touch upon two aspects of the question indicated by General Schreiber. He alludes to the two schools of ideas whose respective watchwords have been continuous lines and *points d'appui*. I do not propose to father either of them in this letter, but I wish to make a digression to drag in a subject, which I believe has an important bearing upon any discussion as between the merits of these two, or any other schools of theory.

I have, I at least consider fortunately, been serving with troops, except for one short period, throughout my service. If this experience has taught me anything, it has taught me that an officer who has no knowledge of the mentality, psychology, call it what you will, of his men, and who is not in sympathy with them, is not fit to lead them in the field. It is the old story of "the proper study of mankind." Now, how does this affect our question? I remember, years ago, the present Lord Sydenham declaiming against what he called, I think, the drawing-board school of military engineers. Let us beware of following too blindly the text-book soldier. Not that I decry text-books that give the result of the experiences of war, far from it, but I do decry those who in their theoretical keeness drive theories too hard.

We theorists, I was one once, took our theories before the war from Germany, from France, and from almost anywhere, so long as they were

not home grown. Did we ever stop to think what manner of man he was, who would have to put those theories to the test in practice and whose blood was to be the sacrifice, if those theories were wrong? I speak of the "man who works the bayonet." I am putting it this way because I went to the war myself in command of a field company and stuffed to the muzzle with the latest ideas concerning *points d'appui*, defended localities, mutual support, the power of the modern rifle, etc., etc. I believed it all, it worked out beautifully on paper, and when I first went into action I found the man with the bayonet would have none of it. It may seem curious, because he had been taught it too; but, when he was out alone he began to think about darkness, fog, how he was to know who was on his right and left, and what was happening there; and he suddenly realized what he wanted and *he* declared with oaths that it had nothing to do with *points d'appui*." That is what he thought at the beginning and that is what I imagine he thinks now. He may be a poor theorist, but he is the greatest fighting animal on earth.

To turn to the original French system. They evolved it because it suited them. They preferred not to be "shelled to Hell" in the front line, but rather to retake it by assault from a retired position. The British officer and man, I believe, hated to allow a German to even take a yard of his front line, and they were prepared to lump the shelling. A difference of temperament, possibly of good taste, but a difference that commanders have to reckon with when putting theory into practice.

I have no wish to criticize anyone and I have written this letter with the sole object of putting a point of view before those who are better able than myself to continue this discussion. Put shortly, I believe that all theories for giving effect to the great principles of war should take into consideration the mentality of the troops that will be called upon to carry them out.

Yours faithfully,

G. WALKER, *Brig.-General.*

2, Carlton Gardens, S.W. 1.
10th March, 1919.

REVIEWS.

SYNOPSIS OF MILITARY LAW AND DISCIPLINE.

This work (which with the two below are issued by the A.S.C. Printing Works, Aldershot) is an attempt to produce in a condensed and easily accessible form all the ordinary rules and regulations governing Arrest, Investigation of Charges, Assessment of Fines and Awards, preparation of Charge and Guard Reports, Conduct Sheets, and all other matters met with in the daily routine of the disposal of military offenders. It gives clearly, fully, and in proper sequence the various stages in the disposal of the accused from the moment of arrest until the case passes into the hands of a Court Martial. It is well indexed, and fully referenced. It should be of great value to students either as a synopsis of these rather unhandy volumes *The Manual of Military Law* and *King's Regulations*, or even as a supplementary index to them, and will also be found useful for ready reference by officers who may be rusty in the subject.

FEEDING STUFFS AS APPLIED TO THE MANAGEMENT OF ARMY HORSES.

This book contains in Chapter I. a short treatise on Equine Dietetics, and in the remaining chapters deals in detail with the inspection and correct use of the various types of Feeding Stuffs. It does not add much to Chapter V. Animal Management, except as regards the use and advantages of cooked maize (of which the writer has had special experience), and omits a good deal. It is designed to "facilitate the instruction of Officers and Cadets of Mounted Units in these subjects." The price of the work is 1s. 6d.

THE ART OF PRACTICAL HORSE SHOEING.

This handy little book describes briefly but clearly the structure of the foot, the main points in the actual operation of shoeing and the chief ailments of the foot to the extent that is necessary for a shoeing smith in order that he may assist in the relief or treatment by suitable shoeing. It should be of value to young shoers and also to others concerned with horse-mastership, who have not ready access to Chapter VII., "Animal Management." The work is issued at 6d. per copy.

PAGES D'HISTOIRE, 1914—1918.

(Librairie Militaire Berger-Levrault, 5—7 Rue des Beaux Arts, Paris).

(*Continued from R.E. Journal for February*, 1919).

The 153rd number of this series contains the official communiqués issued by the Central Government at Paris to the Provincial Authorities in France during the first three months of the year 1918; it is the XXXVI. volume dealing with such matters. In an Appendix are given the texts of the New Year's greetings addressed by the Sovereigns of Great Britain, Serbia, and Greece, and by Prince Alexander of Serbia to the President of the French Republic; the replies sent by the latter to the foregoing messages are also published.

The 154th number of the series is entitled *Le Mémoire Lichnowsky et les Documents Muehlon*; it is provided with a Preface written by M. Joseph Reinach (Polybe).

The Preface is headed *Une page d'histoire*, and therein M. Reinach declares that Charles Max, Sixth Prince Lichnowsky, Lord of Woschtüz, may thank the gods he has retained something of the human being about him. The great majority of his compatriots call him "traitor," he has been too conscientious to become a hero in the Fatherland, he did not wish to have buried with him in his tomb the particles of truth which were in his possession.

One of the most important of the German lies has been that Great Britain, jealous of peacably-minded and honest Germany, planned the Great War; mistress of the seas, she wished also to become Lord Paramount of the Continents of the World.

This is not the first time in the history of great political or judicial crimes that the offender has endeavoured to escape responsibility for his own acts and designs by imputing them to his victims. Lichnowsky, from his official position, was well aware of the continual effort Great Britain made, over a long period of years, to live in peace and harmony with Germany, and particularly, during the twelve critical days preceding the War, to avert the impending catastrophe.

On his return to Berlin, Lichnowsky remained silent. Nevertheless, he was indignant at the insolent and bare-faced lies, told by the Kaiser himself, charging Great Britain with responsibility for the war; lies which all Germany recklessly accepted. The irreparable mischief h d been done; Lichnowsky's country was at war, but it was not fear that caused him to hold his tongue. His country was at fault; however, his patriotism was too sound to permit him openly to accuse the Fatherland, at a critical period of its history, of the crime of having provoked a most barbarous war. Nevertheless, Lichnowsky did not wish, in the years to come, to be numbered amongst the instigators of the outrage on civilization. He, therefore, put on record an account of his mission at

the Court of St. James (1912—1914) for the sake of posterity. The document was prepared in all sincerity and with perfect frankness; it is free from bias and signs of ace bity; matters are recorded therein as they occurred.

Now comes the drama. The manuscript was kept by Lichnowsky locked up in a drawer. The war was lasting longer than anticipated; doubts began to arise as to the possibility of Germany winning a victory. The hatred of the world towards Germany was increasing. Lichnowsky read over his memoirs and, in view of the disastrous situation with which his country was faced, formed the opinion that some of his countrymen should be in possession of his secrets, in order that a little light might be thrown on the path they were treading. Under the seal of secrecy, Lichnowsky let a few trusted f iends have copies of his memoirs. These friends had other friends and, thinking that they would be performing a useful service, passed on to the latter the information given them. Thus it was that a copy of the memoirs fell into the hands of the editor of a Swedish newspaper who published the same to the wide world.

The information contained in Lichnowsky's memoirs added no new knowledge to that which was already known in Great Britain, France, Serbia, and Russia. But in Germany the publication of the document caused great consternation; her people either did not know, or had not wished to know, that which the ex-Ambassador has placed on record in his memoirs. The Germans now know that their Emperor was responsible for the great calamity which overtook Europe in the autumn of 1914. He it was that urged Austria on " to attack Serbia although no German interest was threatened and he well knew that the danger existed of the war becoming world-wide." A hint from Wilhelm II. to Austria that she should content herself with a diplomatic success would have enabled her to adjust her policy accordingly, but that hint was never given. On the contrary, the view at the Wilhelmstrasse was that Serbia should be utterly destroyed (*massakriert*). It was Germany that declared war against Russia, although the Czar had given his word of honour that the Russian Army would not advance whilst the negotiations then in progress continued.

Lichnowsky was the first person to suffer from the publicity given to his memoirs. He was deprived of his seat in the Prussian House of Peers.

Lichnowsky, however, is not the only German who has had the courage of his convictions. Muehlon, a former director of Krupp's works, has, in his turn, come forward to depose that the text of Austria's ultimatum to Serbia was well known at the Wilhemstrasse; that, indeed, its text was edited at a secret conclave at Potsdam; that the visit of the Hohenzollern autocrat, on board the Imperial Yacht, o the No wegian Fjords wa but a " blind "; the war had already been planned, its date fixed.

But little had changed in Germany at the time that M. Reinach wrote the Preface, except that the Kaiser, the Crown Prince, and the German Generals and Ministers no longer denounced Great Britain as the instigator of the war.

Lichnowsky's Memoirs.

The memoirs begin with a statement as to the circumstances under which Lichnowsky was appointed German Ambassador at the Court of St. James. Baron Marshall had died somewhat suddenly in September, 1912; his appointment is said to have been one of the numerous errors committed by the old *régime* at the Wilhemstrasse. Baron Marshall was a stranger to Anglo-Saxon ideas and was too old, when he arrived in this country, to adapt himself to his surroundings. He was an official rather than a diplomat. He was called upon to persuade the British people that the German Navy was no menace to Great Britain; however, he failed to do so and on the contrary confirmed the opinion then held in this country on the subject.

When Lichnowsky was offered, in October, 1912, the vacant Ambassadorship in London, he had already been on the unemployed list for eight years. Five years earlier he had quitted Vienna with the title of Minister and his last appointment in Germany had been that of Director in charge of the staff of the German Foreign Office.

Candidates nominated for important positions by the Kaiser were, as a rule, opposed by the German Foreign Office. Lichnowsky, therefore, feels that his appointment was not due to Wilhelm II. He tells us that von Kiderlen, the then Foreign Minister, wished to send von Stumm to London and received Lichnowsky, on his visiting the Wilhelmstrasse, in a rude manner, hoping thus to intimidate him. Von Bethmann-Hollweg was, at this time, well-disposed towards the ex-Ambassador and had very recently visited him at Grätz.

At the date that Lichnowsky was sent to London, it might have been the intention of the Wilhelmstrasse to make an attempt to improve the relations between the German Empire and the British; more particularly so as the enigmatical policy being pursued in Morocco by Berlin had almost completely destroyed the confidence of the world in Germany, and it was even then suspected that she was preparing for war and seized every opportunity to humiliate France. An Austrian colleague once remarked to Lichnowsky in Paris: "Every time that the French we e beginning to forget '*la revanche*,' you have regularly quickened their memories by a vigorous kick."

Germany repelled all attempts made by Delcassé to arrive at an understanding with Berlin on the subject of Morocco, although she had solemnly announced that she had no political interests in that region. A second Krüger was discovered in the person of Abd-ul-Aziz, and, as happened in the case of the Boers, he was promised the protection of the mighty German Empire. As was the case in S. Africa in 1896, so years later in N. Africa, Germany had to beat an ignominious diplomatic retreat. Neither the Algeçiras Congress, nor the fall of Delcassé helped Germany to "save face."

The German peril was responsible for the Russo-Japanese *rapprochement*, and later for the Russo-British *rapprochement*. The possibility of a new Franco-German War, in the immediate future, was borne in upon all thoughtful persons; it was realized, at the same time, that Russia and Great Britain would not be able, as in 1870, to stand outside the ring.

The Conference at Algeçiras disclosed the real value of the Triple Alliance. The events that succeeded that Conference showed that the agreements entered into at Algeçiras were valueless. The German people, at the same time, formed the opinion that the foreign policy of France was weak and would collapse in face of the German "encirclement."

Finally, the Agadir incident increased the suspicions regarding German designs; indeed, to so great an extent that Mr. Lloyd George publicly warned Germany of the dangers she was running in pursuing her misdirected policy in Morocco. Prior to Delcassé's fall and the Algeçiras Conference, Germany might have obtained a port and territorial concessions in the western regions of Morocco; it now became impossible.

Lichnowsky tells us that when he took up his appointment in London in November, 1912, the Morocco question had adjusted itself. France and Germany had arrived at an understanding. On the other hand, the Haldane Mission had failed, owing to Germany's impudent demand that Great Britain should promise to remain neutral in the event of the outbreak of hostilities. Sir Edward Grey, however, had not given up all idea of arriving at an understanding with Germany. He first turned his attention to the colonial situation and the sphere of economics for the purpose of reaching some common ground for agreement. Pourparlers had been entered into in relation to the renewal of a Treaty regarding the Portuguese Colonies and with regard to Mesopotamia (*i.e.*, the Baghdad railway)—the idea was to lay down spheres of influence in connection with these Colonies and also in Asia Minor.

The British Statesmen, says Lichnowsky, having arranged their many differences with France, were desirous of doing the same in the case of their differences with Germany. Sir Edward Grey's programme aimed at bringing about a *rapprochement* with Germany, without disturbing the then existing alliance between France and Russia; he wished "to bring the two groups nearer."

There were in Germany, as in Great Britain, at the time two factions; the optimists, who believed that an understanding could be reached, and the pessimists, who were convinced that war was inevitable sooner or later.

So far as Great Britain was concerned, Lichnowsky places the following individuals and newspapers in the former category—Lord Haldane, Sir Ed. Grey, Mr. Asquith, the majority of the Radical members of the Cabinet, the *Westminster Gazette*, *Manchester Guardian*, and the *Daily Chronicle*. Among the pessimists the ex-Ambassador ranks Mr. Balfour and the politicians belonging to the Conservative Party, the late Lord Roberts, the *Observer* and the Northcliffe Press.

Lichnowsky next calls attention to the fact that the First Balkan War brought about the dismemberment of the Turkish Empire, and therefore, resulted in a defeat for German diplomacy. Two courses were open to the Germany at the time; on the one hand, to take up the attitude that she had no interest or concern whatever in the settlement of the frontiers of the Balkan Countries but left it to them to work out the proper solution; on the other hand, to stand by her allies.

Lichnowsky favoured the adoption of the former course, but the German Foreign Office decided to pursue the latter course, the diplomacy of the Triplice. The critical situation was that in relation to Albania. Germany's allies wished to see Albania created an independent state; Austria was desirous of preventing Serbia having a seaboard on the Adriatic, whilst Italy was anxious that Greece should not be allowed to extend as far as Valona, or even north of Corfu. On the other hand, Russia supported the claims of Serbia, and France those of Greece.

Lichnowsky is of opinion that had Serbia been given a "window by the sea" the Great War might have been avoided. On the other hand, a serious difference would have arisen between France and Italy with regard to the aspirations of Greece. The Italians, however, would not have risked a rupture single-handed with the French and, in consequence, would have become resigned to the extension of the Greek frontiers to the north of Janina—a great part of the population of Albania is of Greek origin. Lichnowsky's attitude on the subject caused him to be looked upon as an "enemy of Austria"; and he was reproached by the Imperial Chancellor for holding the views which he did.

The ex-Ambassador is of opinion that Germany would have acted wisely if she had freed herself from the fatal diplomacy of the Triple Alliance in the East and had recognized that it was a serious mistake for her to ally herself with the Turks in the South and the Austro-Magyars in the North. By pursuing the policy inaugurated at the Congress of Berlin, Germany was bound sooner or later, in the absence of highly-skilled statesmanship in her rulers, to come into collision with Russia. Instead of arriving at an understanding with Russia regarding the principle of the independence of the Sultan, instead of refraining from military and political interference at Constantinople and being content with safeguarding Germany's economic interests by agreeing to spheres of influence in Asia Minor, the Wilhelmstrasse aimed at establishing Teutonic dominance on both banks of the Bosphorus. German ambitions caused a feeling to grow up at Petrograd that, so far as Russia was concerned, all roads to Constantinople and the Mediterranean lay through Berlin. Instead of encouraging the development of the Balkan States, which, once that they had been emancipated, would not have been strongly Russophil, Germany deliberately ranged herself on the side of the Turkish and Magyar oppressors.

Germany's mistaken policy in the Near East pushed Russia, which should have been her best friend, into the arms of France and Great Britain and caused her to abandon her policy of expansion in Asia.

Lichnowsky considers it useless to discuss the value of Germany's alliance with Italy. The latter country, he says, was in need of German money and German tourists, even after the war, with or without an alliance. There should have been no difficulty in foreseeing that, in the event of war, the Italian alliance would have *no value*. Austria was in need of German protection in peace as well as in war; such protection was necessary on political, national and economic grounds. Had Germany adopted a proper policy and succeeded in maintaining good relations with Russia, Austria must have become the former's vassal.

Under such circumstances Austria would have been bound to take her cue from Berlin. On the other hand, with Germany's policy badly managed and ill-directed as it was, it became necessary for her to shape her course to suit the needs of Vienna. According to Lichnowsky, the alliance was, in consequence, *purposeless*.

The alliance between Germany and Austria had, at the time of its formation, only a single eventuality in contemplation; but by transforming it into one of a complete community of interests, in whatever domain those interests might lie, the alliance acted as provocative of just that very thing that it had been created to avoid, namely, war. The alliance also deprived Germany of the sympathies of young and energetic States, which were in the ascendant and whose markets should have been secured for German goods.

In recent times Germany has always managed to back the wrong horse; first it was Krüger, then in turn Abd-ul-Aziz, Abd-ul-Hamid, William of Wied, and, finally, a great plunge was made on the Berchtold stable, with disastrous results, as it now proves.

Lichnowsky tells us that shortly after his arrival in London, towards the end of 1912, Sir Edward Grey exchanged views with the Ambassadors at the Court of St. James; he endeavoured, without binding the parties thereto, to come to an understanding whereby an outbreak of hostilities in the Balkans might be localized in such a manner as to prevent its involving a general European war.

Sir Edward Grey took up the attitude that as Great Britain had no interests in Albania, she did not want to be dragged into a war on this question. He desired to act as a mediator to smooth the difficulties arising from the differences between the parties; he by no means took the side of his associates, namely, the Entente Powers. During the eight months that the matter was under discussion, by his good will and influence, he helped to a great extent in bringing the parties into agreement. Germany, instead of acting in a similar spirit, was always taking up the cudgels on behalf of Austria and following the dictation of Vienna. Count Mensdorff was the spokesman for the Triple Alliance in London; Lichnowsky was, according to his own account, "second fiddle," and it devolved upon him to support the Austrian Ambassador.

Lichnowsky acknowledges that Sir Edward Grey directed the negotiations with prudence, harmony, and tact. He steered the bark of diplomacy through troubled waters with skill. His personality inspired confidence in all the parties to the negotiations. Germany, however, continued on her ill-chosen course, and, although it was leading her over the precipice, no attempt was made to cry a halt.

The Russian Ambassador, Count Benckendorff, seems to have created a favourable impression on Lichnowsky, who gives him credit for possessing many of the desirable qualities required in a diplomat and also admits that the Count, during the critical negotiations, showed himself ready to follow the pacific tendencies of Great Britain and France.

The Conference on the Balkan Question took place in London about this time and Lichnowsky was thus brought into contact with the distinguished personages representing the Balkan States. M. Venizelos

proved an attractive personality to the German ex-Ambassador; the Greek statesman showed himself to be a man of the world and one possessing the art of winning the sympathies of others. Mention is also made of M. Danew, the Bulgarian Premier, and M. Take Jonesco, the Roumanian statesman. The former was a man of energy, but his head was turned by the flatteries of his friends at Vienna and Budapest. It is suggested that this may have accounted for his folly in refusing the mediation of Russia and in thus bringing about the Second Balkan War. M. Take Jonesco succeeded at the Conference in obtaining from M. Danew certain concessions in favour of Roumania, but at a later period Bulgaria would not ratify the agreement of her diplomatic representative.

The defeat of Bulgaria in the Second Balkan War, resulting in a victory for the Serbs and the invasion of Bulgaria by Roumanians, was a nasty slap in the face for Austria. It was in order to compensate herself for this check that, shortly afterwards, a campaign against Serbia was planned at Vienna; a fact subsequently made public in the Italian Chamber of Deputies. Herein lies the immediate origin of the recent world war.

A close relationship existed between Italy and Russia at this time, so that the information concerning the Austrian project was known at Petrograd. Indeed so well informed was M. Sazonoff that he had openly announced that Russia would consider an attack by Austria on Serbia a *casus belli*.

Lichnowsky states that he learnt, in the spring of 1914, from one of his officials who had been spending his leave in Vienna, that this official had been informed by Von Tschirschky, the German Ambassador at Vienna, that there would soon be war. But since Lichnowsky was kept in ignorance of important matters, he felt that there was no solid foundation for his subordinate's pessimism.

There can be little doubt now that, at the time that the Treaty of Bukharest was signed, the Ballplatz had determined to bring about a revision of its terms, well-knowing, no doubt, that the support of the Wilhelmstrasse would be forthcoming for this purpose.

A reference is made to the part played by Sir Edward Grey in December, 1913, at Lichnowsky's request, to allay the extreme irritation caused at Petrograd by the Limand von Sanders affair. The influence of the British Foreign Minister was at that time so great that he succeeded in settling the Russo-German quarrel.

Lichnowsky points out that he had succeeded in a large measure in bringing about a friendly attitude towards Germany on the part of the British public and that his efforts in this direction were loyally supported by Sir Edward Grey.

A short history is given of the Secret Treaty of 1898, entered into between Great Britain and Germany, wherein provision was made for the division of the Portuguese colonial possessions between these two Powers, in certain eventualities, and the negotiations, in relation to a second Secret Treaty, which were in progress when Lichnowsky took up his duties in London. These negotiations were continued by Lichnowsky, who expresses satisfaction at the success which attended his efforts

to obtain valuable concessions for his country in the new Treaty; he found the British Government accommodating and ready to further German interests and wishes. A Cabinet Minister is reported to have said to the ex-Ambassador: "We don't want to grudge Germany her colonial development."

Originally, provisions relating to the Congo State were to have been included in the new Secret Treaty, whereby Germany would have obtained a right of pre-emption and the possibility of economic penetration ino this colony. Generous Germany, having regard for Belgian susceptibilities, voluntarily decided not to pursue this matter, although the British Government was ready and desirous of improving her position in Central Africa.

By May, 1913, the essential details of the new Secret Treaty had been agreed upon; an exchange of views on the subject then took place in Berlin under the presidency of the Imperial Chancellor, Lichnowsky being also present, when new demands were formulated by Germany; these Lichnowsky succeeded getting incorporated into the new Treaty, which was ready for signature in August, 1913. However, further difficulties were raised by Germany and obstacles were thrown in the way of completing the agreement by the affixing of the signatures of the parties thereto. Just before the war broke out Lichnowsky received authority definitely to complete the agreement, but the necessary signatures were never affixed thereto.

Sir Edward Grey was only willing to sign the new Treaty on condition that it should be made public, as also the Secret Treaty of 1898; but he was prepared in order to suit Germany's convenience to postpone the publication of these treaties for a period not exceeding one year from the date of affixing signatures to the new Treaty. This offer was rejected by the German Foreign Office, owing, Lichnowsky thinks to jealousy of him on the part of an individual who wished to oust him from his post in order to step into the vacancy that would thus be created.

Lichnowsky tells us that he found himself out of favour in influential quarters in the German capital; however, in June, 1914, authority was given him both to attach his signature to the Treaty and for its publication; but the peace of the world was already in danger, and, in consequence, the Treaty fell a victim to the war.

About the same period, Lichnowsky was engaged, with the assistance of von Kühlman, in negotiating with the British Foreign Office the Baghdad Treaty, which had for its object the partition of Asia Minor into spheres of influence. The most important of the concessions made in relation to this matter by Sir Edward Grey, it is stated, was the provision for the extension of the Baghdad railway to Basra. This Treaty provided for the whole of Mesopotamia, as far as Basra, being in the German sphere of influence, subject to a reservation in respect of certain British rights in relation to the navigation of the Tigris and the irrigation works of the Wilcox Company; the Germans also acquired thereby control over the regions served by the Baghdad and Anatolian railways.

Great Britain's sphere comprised the coasts of the Persian Gulf and the Smyrna-Aidin line; that of France Syria; that of Russia Armenia.

Lichnowsky is of opinion that, if the two Treaties in question had been adopted and published, an Anglo-German alliance would have become an accomplished fact.

Lichnowsky recognizes that it was not unnatural for Great Britain, in view of Germany's position as a great military power, to feel somewhat uneasy at the effort that his country was making to become also a great naval power. He never at any time discussed the question of the German fleet with Sir Edward Grey; nor did the latter mention the proposal of the First Lord of the Admiralty relating to a "naval holiday" to the ex-Ambassador. However, it is admitted that Mr. Churchill did discuss the matter on more than one occasion, when it was explained to him by Lichnowsky why the German Government could not fall in with his proposal. Lichnowsky states that even without a "naval holiday" he could, if properly supported by the Wilhelmstrasse, have brought about an understanding between Great Britain and Germany.

Dealing with the German view that Great Britain's jealousy of Germany's commercial expansion was responsible for the war, Lichnowsky points out that, without doubt, Germany's commercial success, in the period succeeding the 1870 War, did menace the interests of British traders, who had by their industry and export houses, obtained some sort of monopoly of foreign trade. But, on the other hand, the exchange of commodities between the British Isles and Germany was continually increasing; and it was to Germany that Great Britain exported most largely. For this reason there was every desire on the part of the British traders to live on good terms with their best clients.

Lichnowsky places on record that, in *his* view, the Briton is a matter-of-fact individual and readily accepts the situation as he finds it; he does not tilt at windmills. It was in commercial circles that he met with the most cordial welcome and it was in those same circles that the strongest desire existed to promote the common economic interests of the two countries; whilst, in these circles, little interest seemed to be taken in the diplomatic representatives of Russia, Italy, Austria or France. The Ambassadors of Germany and the United States of America had the field to themselves.

A short description is given by Lichnowsky of the British Court and of Society. In King George he found a man of good common sense, one who, whilst acting strictly within the British Constitution, wielded considerable power and exercised a wholesome influence in his dominions.

Lichnowsky speaks of the ramifications of the House of Lords and of the House of Commons, and seems to have an idea that English Society was largely made up of the Unionist party. He states that the Englishman hankers to be in *Society!* His wish is to be a somebody, a *gentleman!* Even men of humble origin, such as Mr. Asquith, says Lichnowsky, by preference move in Society and seek the company of the upper classes. He points out that many of the members of both the old political parties belong to the same stratum of Society and have many interests in common; the only boundary between them is

a political one and until the split on the Veto and the Home Rule questions, the members of these two parties frequently met in Society. After this split, personal relations between Unionists and Radicals became so strained that at a dinner party given by Lichnowsky, at which the King and Queen were present, the late Lord Londonderry, it is said, left the Embassy as soon as the guests had risen from the table, presumably because Sir Edward Grey was also of the party. The Englishman is summed up by the ex-Ambassador as being a person who hates *a bore, a schemer* and *a prig*, but who is always glad to meet *a good fellow*.

The memoirs contain appreciations of Sir Edward Grey, Mr. Asquith, Sir A. Nicholson and Sir W. Tyrrell. The ex-Ambassador formed the opinion that Sir A. Nicholson was not a friend of Germany; however, his attitude was always strictly correct. He wished to prevent the war, but when it became inevitable, he worked hard for solidarity with France. Sir W. Tyrrell was at first anti-German, but was converted, it is stated, and became a firm partisan for an *entente* with Germany.

The success which Lichnowsky met with in London did not stand him, he says, in good stead at the Wilhelmstrasse. He mentions reports of secret agents of which he had no knowledge and that he was kept completely in ignorance of all important matters; it was only towards the end of July, 1914, that he heard, by accident, from the German naval attaché of the secret Franco-British convention providing for the co-operation of the fleets of the two countries in the event of the outbreak of war.

Lichnowsky, shortly after his arrival in London, had formed the opinion that Germany had nothing to fear from Great Britain; the latter was not likely to attack her or to join in an attack begun by any other Power. On the other hand, it was evident that Great Britain would not stand by with arms crossed if France were attacked.

Towards the end of June, 1914, Lichnowsky was on a visit to his Sovereign, who was then at Kiel. Whilst he was on board the *Meteor* news was received of the assassination of the heir to the Austrian Crown. Wilhelm II. deplored the tragic end of the Archduke, since all that H.I.M. had done to win over the latter to his views was labour lost. Lichnowsky, being unaware of what was taking place in Vienna, did not attach any great importance to the Serajevo crime.

Lichnowsky proceeded from Kiel to Berlin where he saw the Imperial Chancellor and informed him that, in his opinion, Germany's relations were at that time satisfactory. Von Bethmann-Hollweg, however, did not share the ex-Ambassador's optimism. Lichnowsky also called on von Zimmermann, who informed him that Russia was about to increase her army by 900,000 men, and seemed ill-disposed towards Germany's great eastern neighbour. Nothing was, of course, said to Lichnowsky concerning von Moltke's desire to force on hostilities. However, he did learn that von Tschirschky had been rebuked for counselling the Ballplatz to treat Serbia with moderation.

On his return journey to London, from his seat in Silesia, Lichnowsky broke his journey at Berlin and was there informed that Austria proposed taking steps to put an end to the intolerable situation arising from

Serbia's conduct. He, however, did not appreciate the importance of this information. Some time later, he learnt that at a meeting held at Potsdam on the 5th July, 1914, the draft of the Austrian ultimatum to Serbia had been approved by all the important personages present on that occasion; it had even been stated that it would not matter should the delivery of the document result in war with Russia.

Lichnowsky received instructions from the Wilhemstrasse to endeavour to win over the British Press to the cause of the Central Empires should Austria strike a blow at the "Greater Serbia" scheme. However, in view of the attitude of the British people in the past, the ex-Ambassador felt that he could not obtain the support asked for and warned his Government accordingly. The warning fell on deaf ears. The ultimatum was delivered at Belgrade and a chorus of disapproval of its terms went up at once in Great Britain. Lichnowsky gives an account of all that was done in London to avert the great conflict which was to result in the waste of so many valuable lives and so much treasure; a conflict that has brought into existence untold misery and bitterness, and is responsible also for the present labour unrest. It was recognized by Sir Edward Grey that, by pushing their claims to extremes, the Central Empires were drawing Europe into a wide-spread war; more than once he said to Lichnowsky, "It will be the greatest catastrophe the world has ever seen," and it has proved so.

Lichnowsky tells us of the hesitation that was shown by the British Cabinet in coming to a conclusion as to the course it should adopt; up to the 1st August, 1914, no definite decision on the subject had been arrived at. When it was too late for Germany to withdraw from the fatal course which she had been pursuing for years she realized that after all the Briton was by no means "decadent," but would be found standing side by side with gallant Frenchmen and Belgians ready to meet her Pomeranian Grenadiers and Prussian Guards on the fields of Northern France and in Flanders.

Lichnowsky took leave of Sir Edward Grey on the 5th August, 1914; the latter was deeply moved and expressed his willingness to act at any time as a mediator. "We don't want," he said, "to crush Germany."

The ex-Ambassador has placed it on record that the arrangements for his departure from England were befitting his station, and carried out with dignity and perfect calmness. A special train conveyed him to Harwich, where a guard of honour was furnished, the ex-Ambassador being treated as a Sovereign departing from our shores. He makes the confession that the failure of his mission was due not to the intrigues of Great Britain but to the policy pursued in his own country. Count Mensdorff saw Lichnowsky off in London, and expressed himself as satisfied; the former also let it be understood that he hoped to remain in England, attributing Great Britain's entry into the war to Germany and not to his own country.

In reviewing the work of the two years which he spent in London, Lichnowsky states that only when it was too late did he discover that he had taken up a position for which his temperament did not fit him; a position which was part of a system wherein tradition and routine reigned supreme. A system in which those who had to furnish reports

had to be careful not to write unpleasant truths or candidly to express their own opinions on all matters coming to their knowledge.

Lichnowsky had ceased to fight against the insensate policy of the Triple Alliance; he had recognized that his efforts in this direction were useless. He is of opinion that in spite of the mistakes made in July, 1914, peace could still have been maintained. But he had to pursue in London a policy which he felt to be a mistaken one; its failure has, in the eyes of his own countrymen, brought discredit upon his head, for it was an offence against the Holy Ghost.

On his arrival in Berlin, Lichnowsky saw at once that he was to be made a scapegoat, although his Government had refused to accept the advice which he had frequently tendered.

An attempt was made to fix the responsibility for the war on "perfidious Albion," whose agent, Sir Edward Grey, was said to have duped the German Ambassador at the Court of St. James. Count Pourtales, however, it is that must bear a large share of the blame for the outbreak of the war. After eight years spent at Petrograd, as Germany's Ambassador, this man it was who asked the question, "What concern of Russia's is Serbia?" The view of the Wilhelmstrasse appears to have been that the War was inevitable and must break out in 1916 at latest, for then Russia would be "ready"; therefore, it was argued, Germany must choose her own time and bring it off in 1914.

Lichnowsky calls attention to the circumstance that there is agreement in relation to the following facts (which are not contradicted by any thing that is published in the German White Book):—

1. Germany encouraged Court Berchtold to attack Serbia, although no German interests were involved.

2. During the critical period 23rd-30th July, 1914, although M. Sazonoff had announced in emphatic terms that Russia would not tolerate any aggressive act against Serbia, Germany refused Great Britain's offer of mediation—in spite of the acceptance by Serbia of practically the whole of the demands in Austria's ultimatum, thanks to the good offices of Great Britain and Russia.

3. On the 30th July, 1914, when Count Berchtold showed a disposition to relent, although Austria had not then been attacked, Germany sent an ultimatum to Russia and followed this up next day by a declaration of war.

In the face of these irrefutable statements, it is not surprising, says Lichnowsky, that the whole civilized world places the responsibility for the war on Germany's shoulders.

The ex-Ambassador also places on record his opinion that, under all these circumstances, it is but natural that the enemies of his country should have come to a determination to destroy the system which had become a permanent danger to Europe. A Germany dominated by the spirit of a Treitsche or a Bernhardi, ruled by feudal lords and Prussian militarism, it is admitted could not be an acceptable neighbour to the enlightened nations of the West.

Germany had continued to allow herself to be governed by the "dead hand." In their determination to bring about a change in the situation, the highest aim of Germany's enemies has been to bring

about her democratization; their purpose, says Lichnowsky, will be realised.

An outline of Bismarck's activities are set out by Lichnowsky, who tells us that the Iron Chancellor loved a fight for the sake of fighting but planned to avoid new wars, recognizing their futility. He generally contented himself in engaging in battles wherein there was no effusion of blood. Having rapidly disposed of the Danes, Austrians, and the French, he then picked quarrels in succession with von Arnim, Pius IX. and Queen Augusta. Not satisfied with accomplishing this much, he next turned on Gortchakoff and found himself within an ace of war; it was this experience that caused Bismarck to bring into existence the Triple Alliance. Finally, he challenged Wilhelm II. and was knocked out of the ring by the then young monarch.

In spite of his quarrelsome nature, Bismarck always took care to avoid a rupture with Great Britain. He held Queen Victoria in high esteem, although he hated her daughter, the Princess Royal; he paid court to both Beaconsfield and to Salisbury, and even Gladstone had nothing to complain of regarding the Iron Chancellor.

The ultimatum to Serbia was the crowning folly to the policy inaugurated at the Congress of Berlin; such is Lichnowsky's view.

When Lichnowsky sat down to write his memoirs the war had lasted two years; he makes the admission that at that date Germany no longer expected to win an *absolute* victory against the Russians, British, French, Italians, Roumanians, and Americans, but he still clung to the hope that there might be a "stale" mate. He recognized that a *peace by compromise* would involve the evacuation of the occupied territories; he felt that advantages would accrue to Germany from such an evacuation, as she would thereby be relieved of a heavy burden and of the anxiety of another war.

Lichnowsky accepts the dictum that "Germany's future is on the sea"; but Germany's future, he says, is neither in Poland nor in Belgium, nor in France, nor in Serbia. To seek fields of activity in these regions would be to re-establish the Holy Roman Empire, to fall into the mistakes of the Hohenstaufens and the Hapsburgs. That would be the adoption of the policy of the Plantagenets, and not that of a Drake and a Raleigh, of a Nelson and a Rhodes.

The policy of the Triple Alliance, in Lichnowsky's view, meant a retrograde step; it meant turning one's back on the future. The Mitteleuropa scheme belonged to the Middle Ages. The Berlin-Baghdad railway led to a blind-alley; it was not the road leading to freedom, to infinite possibilities, to fields wherein lay the historic mission of the German people.

Lichnowsky protests that he is not the enemy of Austria, nor of Hungary, nor of Italy, nor of Serbia, nor of any other State; but he is an opponent of the policy of the Triple Alliance.

The result of the great conflict, Lichnowsky conjectures, will be that the United States of Africa will be British, as are the United States of America, those of Australia, those of Oceania; the Latin States of Europe will occupy a position in relation to the United Kingdom similar to that of the Latin States of South America to the United States of

America—they will be dominated by the Anglo-Saxon. France, exhausted by the war, will make her alliance with Great Britain closer. Spain will follow suit.

In Asia, the Russians and Japanese will continue to expand territorally and to spread their civilization; the British will maintain their position in Southern Asia.

The world will belong to the Anglo-Saxons, the Russians, and the Japanese; Germany will remain in isolation with Austria-Hungary. Germany will have to confine herself to intellectual pursuits and to commerce; power will no longer be wielded in her affairs by bureaucrats and soldiers. She arrived too late on the scene to share world power; this disadvantage might have been overcome could she have founded a Colonial Empire; but, with the advent of the World War, the possibility of accomplising this task has vanished for ever.

The welfare of humanity will, in the time to come, be safeguarded by the expansion of Britain's power, by Anglo-Saxon Imperialism; such is the final declaration of Lichnowsky.

Dr. Muehlon's Memorandum.

Dr. Muehlon's memorandum was written in 1917; he informs us that in the middle of July, 1914, he had, as was often the case, an interview with Dr. Helfferich, then a Director of the *Deutsche Bank*. The *Deutsche Bank* had taken up a hostile attitude in relation to certain large transactions in Bulgaria and Turkey in which Krupp's were interested commercially. The future Imperial Chancellor, on the occasion of this interview, informed Dr. Muehlon that, the political situation being critical, the *Deutsche Bank* had to act with caution and was not willing to increase its commitments in foreign countries. Further, that, in eight days time, Vienna would be addressing an ultimatum to Serbia imposing exceedingly stringent conditions. A refusal on the latter's part to give immediate satisfaction in respect of the demands to be made upon her would, Dr. Helfferich stated, be followed by a declaration of war by Austria.

Dr. Helfferich, at the same time, informed Dr. Muehlon that the Kaiser had expressed himself strongly in favour of the course proposed to be taken by Vienna; and had declared that a conflict between Austria-Hungary and Serbia was a matter of domestic concern to these countries alone and he would not permit any other Power to interfere. If Russia mobilized, he also would mobilize. A German mobilization would mean immediate war. The Austrians, it is stated, were not altogether satisfied with the extremely bellicose attitude of Wilhelm II.

Dr. Muehlon then told Dr. Helfferich that the ominous information imparted to him confirmed his worst fears and made him absolutely certain that the long-talked of World War was about to begin. Dr. Helfferich, whilst agreeing with Dr. Muehlon, expressed the opinion that Russia and France might yet think it wise to accept the situation without coming to blows. Serbia, he stated, had to be taught a lesson.

Dr. Muehlon was aware that Dr. Helfferich was in a position to be well-informed as to what was taking place in official quarters, so that,

on his return to Essen, he reported to Herr Krupp von Bohlen und Halbach what he had learnt at Berlin. Von Bohlen seemed to be astonished that Dr. Helfferich should have given the information in question to Dr. Muehlon and made a disparaging remark concerning the want of discretion shown by members of the Government. Von Bohlen then stated that he had himself recently seen the Kaiser from whom he had learnt the same information as that conveyed to him by Dr. Muehlon, but, being under the impression that it was a great secret, he had not communicated the same to Krupp's Board of Directors.

Dr. Muehlon was in Berlin on the day that the terms of the ultimatum to Serbia were made public—the predicted day—and had occasion again to interview Dr. Helfferich. At this interview Dr. Muehlon did not hesitate to say that, in his opinion, the terms of the ultimatum were monstrous; Dr. Helfferich explained that the expressions used in the German translation made the ultimatum appear more harsh than was the case in the French text of the original document. Dr. Helfferich also vouchsafed the information that the Kaiser had gone on his trip to the Norwegian Fjords for appearance sake, and, further, that the *Deutsche Bank* had taken the necessary precautions to meet all eventualities: *e.g.*, gold was being withdrawn from circulation.

Dr. Muehlon comments severely on the untruthfulness of the statements that have appeared in the German press declaring that the German Government was ignorant of the terms of the Austrian ultimatum sent to Serbia. Von Bohlen seems to have recognized that the course adopted by Germany must bring discredit upon her, since it was not likely that she could have given another Power, Austria-Hungary, full liberty of action in a situation affecting the peace of the whole world.

Von Bohlen tackled von Jagow on this matter; the latter denied that he had had anything to do in the preparation of the ultimatum, but admitted that the document did come into his hands before despatch to Serbia; it was, however, then too late for him to take any diplomatic action, owing to the Kaiser having already personally committed himself regarding the terms of the ultimatum.

Copies of two letters written on April 27th, 1918, and May 2nd, 1918 by Dr. Muehlon to the *Journal de Genève* are also published in the volume under notice; in the first of these letters he deals with the violation of the neutrality of Belgium by Germany. It is pointed out that the question of the violation of the neutrality of Belgium and also of Holland had been often discussed before the war. The only matter which the German military authorities attempted to keep secret was their plan of campaign providing for operations to begin simultaneously on the two fronts, West and East, a plan having for its object the crushing of France before Russia was ready, so that the whole strength of Germany might later be exerted against the giant Power of the East. Time was the essence of the plan, and Belgium had accordingly to suffer.

Dr. Muehlon takes up the cudgels on behalf of Belgium and tells us that he has spoken to many men in Germany, well-informed in relation to official matters, but not one of them has ever accused Belgium of

having acted in any way improperly ; the charges against her of having entered into a conspiracy with France and Great Britain were levelled against her by paid agents of Germany in order to discredit her.

In this letter it is stated that before the war, Belgium had placed an order for four large guns (11-in.) with Krupps, of Essen, intended for the Antwerp defences. These guns were ready at the beginning of 1914, passed for acceptance, paid for and ready to be despatched ; but the defence works in which they were to be mounted had not been completed. In consequence, the Belgian Goverment asked Krupp to hold these guns for it temporarily ; the firm agreed to do so, but with reluctance. The Belgian Government was written to on several occasions and requested to remove these guns, but it always replied asking that Krupp should store them and even offered to pay any necessary expenses for their storage. When war broke out the Prussian Minister of War claimed these guns (value, £160,000) and took them over as booty.

Dr. Muehlon points out that if the Belgian Government had borne any ill-will to Germany, or had even expected a German invasion, it is improbable that it would have ordered artillery material in Germany ; at all events, it would never have been so foolish as to allow guns, which it had paid for, to remain in that country. Further, just before the outbreak of hostilities, the Belgian Government had entered into an important contract with Krupp for the supply of a new type of ammunition for field guns. The Krupp house arranged, with the consent of the Belgian Government, that Cockerill, of Seraing, should act as its sub-contractor for carrying out this contract. Had the Cockerill firm and the Belgian War Minister expected that war was imminent, as it actually proved to be, it is absolutely impossible to conceive that a contract of such importance would have been let to the chief armament firm in Germany. The above facts provide convincing evidence that Belgium is innocent of the charges, which impute a violation by her Government of her obligations as a Neutral Power, laid against her by Germany.

In the second of the two letters, Dr. Muehlon points out that Germany was guilty of two serious political blunders ; firstly, in that she took up the attitude that Austria-Hungary ought to be allowed to punish Serbia without a third Power being in any way permitted to interfere. And secondly, in that she decided that a mobilization in Russia should be immediately followed by a declaration of war by Germany.

Dr. Muehlon is of opinion that the ex-Kaiser was personally responsible for the wrong turnings that German policy took in both these matters. He considers that, although there are many to blame for the Great War, the real culprits are few in number and to be found in high places in Berlin and Vienna.

The 155th number of this series is entitled *Les Combats de Steenstraat (Avril-Mai* 1915) and is from the pen of Commandant Willy Breton, of the Belgian Army. The narrative is divided into six chapters, which are illustrated by nine sketch maps.

Chapter I. deals with the general situation in Flanders in April, 1915. The first part of the chapter briefly describes the situation

immediately after the Battle of the Yser had been fought. The check which the Germans met with at the Yser and at Ypres having brought the First Battle of Flanders to end, there was a lull along the whole front in Belgium. A continuous trench system had by then been established from the North Sea to the Vosges Mountains. The superhuman efforts of the Entente Armies -the British, French, and Belgian, during the gigantic battles of October and November, 1914, had brought the German push on Calais to a halt, but at the conclusion of the fighting both sides were equally exhausted. It was therefore necessary for both belligerent groups to set about reorganizing their forces and consolidating the positions taken up by them. The advent of winter, by transforming Flanders into a sea of mud, rendered all major operations impossible and thus brought about a cessation of active hostilities. Advantage was taken of the truce by both sides to form new units and to provide themselves with war material of those kinds, a lack of which had hitherto much handicapped them.

The Belgian Army found itself faced with a prodigious task. After the great Battle of the Yser, following on two and a half months of incessant fighting with an enemy superior in numbers and equipment, the Belgian troops were literally at their last gasp; they had suffered so severely that only about 60,000 combatants still remained in the ranks—of these 32,000 were infantry. Many regiments had no more than a dozen officers and a very reduced number of N.C.O's. left. About half the guns, machine-guns, and rifles were for a time useless, and the stocks of ammunition were dangerously low. The supply and ordnance services were much disorganized by reason of the hasty withdrawal from Antwerp. Everything had to be re-fashioned on foreign soil—magazines, workshops and arsenals. However, all obstacles were surmounted by degrees and deficiencies were made good.

The Belgian troops quickly recovered their *morale* and set about with courage and energy to put the Yser region into a thorough state of defence; they succeeded in erecting a formidable defensive barrier under most trying climatic conditions and under the harassing fire of the invaders. When the Flanders front was divided between the Allied armies, the Belgians, in spite of their reduced numbers, became responsible for some 12 miles of this front—Nieuport to Knocke. At first, some French troops were dovetailed into this sector, but they were withdrawn as soon as the Belgian defence arrangements were completed.

The Belgian Army increased in numbers, so that in January, 1915, the front held by it was extended to the celebrated Maison du Passeur on its right, thus adding about another four miles to the length of the line held by it. In March, 1915, the Belgian front was further extended on the north of Steenstraat, making its total length about 18 miles. In a second part of this chapter, we are told that the main position held by the Belgian Army in April, 1915, was practically the same as that in which it had held its own during the Battle of the Yser. On its left a French force held a bridgehead at Nieuport, closing the road to Dunkirk along the coast. The Belgian front lay along the Nieuport-Dixmude railway from the W. of Stuyvekenskerke to a point N. of

Steenstraat—the position is marked on a sketch map accompanying the text of the volume under notice.

Towards the end of April, 1915, the Belgian Army consisted of six infantry divisions, two cavalry divisions and some Corps troops. A Belgian artillery regiment had at this time been placed under F. M. French and some labour companies had been attached to French and British formations in Belgium.

The Belgian Army was well in hand and had recovered its *élan* in spite of its terrible experiences in 1914; its strength was being continually increased by the trained recruits joining it from the camps of instruction and by the new batteries of artillery which were being raised. Its armament and equipment were being continually improved.

Although the Belgian troops had worked hard during the winter strengthening the defence works, which had been thrown up when the line was first occupied, the positions held were still far from strong. The German bombardment did a considerable amount of damage to the Belgian defences and caused considerable inconvenience to the defenders.

In Chapter II. an account is given of the events preceding the attack on Steenstraat. The German plans are discussed in the first part of this chapter. The sudden attack launched by the Germans on April 22, 1915, after the heavy discharge of asphyxiating gas against the front Steenstraat-Langemarck, marks the beginning of the second battle of Ypres. The events which preceded this attack did not indicate that the enemy was about to undertake any important operations.

It is probable that the Germans hoped that the surprise effect produced by the nefarious and diabolical use of gas against the French front, where it connected up with Belgian front on the W. and the British front on the E., would enable them to break through the Allied line at its weakest point and on a sufficiently wide front to place the Ypres Salient in extreme jeopardy. It is possible also that the Germans attacked in order to forestall an Allied offensive in Flanders; they could not be blind to the fact that the serious checks sustained by them in October and November, 1914, had enormously raised the *morale* of the Allied troops.

The effective counter-measures of the French and the loyal assistance afforded them by the Belgian troops prevented the Germans from reaping any permanent advantage from their gas attack. The British troops also played a heroic part and their incessant counter-attacks saved the Ypres Salient.

A brief account is given in a second part to this chapter of the situation in the sector held by the Belgian 6th Division and the position of affairs at midday of April 22 is shown in a sketch map. It was fortunate that the Belgians were able to hold on to this sector, in spite of the incompleteness of their defence works. Had the Germans penetrated the front held by the 6th Division, the safety of the whole Belgian Army would have been imperilled.

In Chapter III. the story is told of the German gas attack which led to the loss of the bridgehead at Steenstraat by the French and their withdrawal to the west of the canal. The first part of the chapter deals with the events of April 22; the measures taken by General De

Ceuninck to meet the situation are described therein. He realized the importance of retaining the positions, N.W. of Streenstraat held by the Belgian 6th Division ; the right flank of this Division was in consequence gradually reinforced by moving troops southwards from other parts of the front until eventually, at nightfall, a defensive crochet was formed N. of Lizerne.

In a second part to this Chapter, the events of April 23 are briefly described. During the night of 22—23 April the enemy was very active. A little after midnight General Wielemans, the Belgian Chief of the Staff, got into communication with General De Ceuninck and confirmed the information that the counter-attack of the Allies would be launched at 4.30 a.m., and stated that the French had requested the Belgians to co-operate therein.

Fighting began early in the morning and continued late into the evening of the 23rd *idem*. The defensive crochet N. of Lizerne was strengthened and the Belgians succeeded in connecting up with the French forces on their right at Lizerne (held by French territorials).

Chapter IV. deals with the loss of Lizerne. In the first part of this chapter an account is given of the events of the 24th *idem*. Very early on the morning of this day, the Belgians were surprised to find themselves under fire from the outskirts of Lizerne, which they imagined to be still held by the French. Patrols were sent forward and they reported that Lizerne was in the hands of the enemy and that the French trenches had been vacated. The Belgian right was now attacked in force by Germans, who advanced northwards from Lizerne and suffered heavy losses. The Germans attempted to turn the right flank of the Belgian crochet, and severe hand-to-hand fighting took place. The French delivered a splendid counter-attack during the afternoon of this day against Lizerne and Steenstraat, but at nightfall the Germans still remained in possession of these two places. During their attacks against the Belgian right the Germans again made use of gas.

In a second part to this chapter, an account is given of the operations of the 25th *idem*, which resulted in checking the further advance of the Germans.

Chapter V. contains an account of the operations which ended in the recapture of Lizerne. The first part of the chapter deals with the Franco-Belgian attacks on Lizerne ; in consequence, the Allies succeeded in closing in on the N. and S. of this hamlet. In a second part to the chapter, the story is told of how the Germans were driven out of Lizerne.

In Chapter VI. an account is given of the attack on Steenstraat which resulted in the Germans being thrown back to the E. bank of the Canal. In the first part of the chapter, a description is given of the heavy fighting in which the French were engaged from the 28th to 30th *idem* ; when the Germans put up a stubborn resistance. A second part of this chapter deals with the last phase of these operations which, lasting from the 1st to 5th May, ended in a Franco-Belgian victory whereby the Germans lost the footing that they had gained W. of the Canal.

In conclusion, Commandant Breton points out that the Germans, from a strategic point of view, gained nothing substantial by these operations, in spite of their heavy sacrifices. On the other hand, by introducing

the use of asphyxiating gas for the first time in the war, the Germans added one more to the infamies for which they will remain notorious and execrated so long as the world lasts.

"Steenstraat" will ever be memorable in the military annals of Belgium; to commemorate the glorious part the Belgian troops played in this region during the period of the war described in the pages of the volume under notice, King Albert has granted the Grenadiers and the 3rd Infantry of the Line, regiments which bore the brunt of the fighting during the trying days of April and May, 1915, the distinction of bearing *Steenstraat* in letters of gold on their Colours.

W. A. J. O'Meara.

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THE RAISING OF A NEW ARMY IN THE UNITED STATES OF AMERICA.

The author of the original article is M. George Nestler Tricoche; he points out that, in order properly to understand the part played by America on the Western Front, it is necessary to examine the steps taken in 1917 to raise her New Army.

General Organization.—During the War, matters affecting the military forces of the United States of America have been regulated by two principal laws:—(*a*) the Law of 3rd June, 1916; and (*b*) the Emergency Law of 18th May, 1917, which authorized conscription.

In theory all American citizens between the ages of 18 and 44 inclusive, who are medically fit, are liable to serve in the American Army; this liability is expressly referred to in several enactments and particularly in the Law of 22nd April, 1898.

In practice, the American Army consists of:—

(i.). *The Regular Army* recruited on a seven-year's engagement, (three years with the Colours and four years in the Reserve), by voluntary enlistment of men between the ages of 18 and 35 years.

(ii.). *The National Guard* of the several States and territories recruited on a six-year's engagement (three years with the Colours and three years in the Reserve), by voluntary enlistment of men between the ages of 18 and 64 years (the upper age limit applies to officers only).

(iii.), *The National Army* (*i.e., the New Army*) raised, for the duration of the war, by conscription of men between the ages of 20 and 30 years inclusive, who do not belong to the two preceding categories or to the Navy.

The organization of the Reserves of the American Army is somewhat complex; they consist of the following categories:—

(1). *Reserves of the Regular Army.*—All men who have enlisted in the Regular Army and are under 45 years of age automatically fall into this category on completion of their colour service for the remaining term of their engagement. The men of the enlisted *Reserve Corps* also belong to this category; these men are specialists, between the ages of 18 and 45 years, who engage to serve for 4 years in the Reserve; they consist of engineers, electricians, hospital attendants, bakers, etc.

(2). *Reserves of the National Guard.*—All men who have served in the National Guard are, on completion of their colour service, transferred to this category for the remaining term of their engagement. Men are also directly enlisted into this category.

(3). *Reserve Training Battalions of the National Guard.*—The men composing this category are in theory the reservists in the depôts of

the National Guard formed for training the recruits to be drafted into the active units.

ESTABLISHMENT.—*Regular Army.*—The Law of 1916 provided that in the course of five years the peace establishment of the American Army should be raised to 175,000. War was declared on Germany by the United States of America on the 6th April, 1917; at this date the number of men serving in the Army fell far short of the eventual establishment authorized by the Law of 1916. On the 6th May, the President of the Republic decided to place the Regular Army on a war footing, with an establishment of 293,000 men, increased shortly afterwards to 300,000 men.

National Guard.—In May, 1917, only 123,605 men were serving in the National Guard; it was decided to increase this force to 450,000 men by voluntary enlistment. In addition 24,700 men were to be enlisted in a *Naval Militia.*

National Army.—*The Emergency Law* provided for raising two contingents of half a million men each. About 680,000 men had been called up by the 1st January, 1918, under this law. The many circumstances under which exemptions from military service could be claimed rendered the introduction of conscription somewhat complicated in America; the details of the method adopted for obtaining recruits under the Emergency Law are set out in the original article.

COMPONENT PARTS OF THE ARMY.—*Regular Army.*—When America declared war against Germany her Regular Army consisted of:—

4 Infantry Divisions for general service.
2 Cavalry Divisions.
1 Infantry Division in the Philippines.
Troops for the Panama Canal zone.
Coast Artillery.
Auxiliary services.

In August 1917, in view of the experiences of the war, it was decided to reorganize the Infantry Divisions, the European model being adopted, and to raise their number (exclusive of the Division serving in the Philippines) to 25 (numbered 1 to 25).

Note.—Each infantry Division, as reorganized, consisted of 2 Brigades numbered from 1 to 50) of 2 regiments each (numbered 1 to 100).

National Guard.—At the date of the declaration of war, the National Guard consisted of 16 Infantry Divisions, Coast Artillery and Auxiliary services.

In August, 1917, the number of Infantry Divisions was raised to 50 (numbered from 26 to 75).

Note.—The Brigades were numbered from 51 to 150; the regiments from 101 to 300. A part of the Coast Artillery was utilized in forming divisional trench mortar batteries.

National Army.—The paper organization of the New Army was at first as follows:—

16 Infantry Divisions.
2 Cavalry Divisions.
Divisional Services.
Army Troops.
Coast Artillery.

In connection with the reorganization carried out in August, 1917, when an increase to the New Army was made, the new Infantry Divisions were numbered from 76 to 91; the new Brigades from 151 to 182; and the new regiments from 301 to 364.

The composition of the various formations, as authorized by the Law of 1916, is fully set out in the original article.

The total strength of the American Army was on the 31st March, 1918, as follows:—

Regular Army (number of Divisions kept secret)	300,000 men.
National Guard (17 Divisions)	450,000 men.
National Army (first levée: 16 Divisions and various other units)	687,000 men.
Marine Infantry	30,000 men.
Grand total	1,467,000 men.

The very extraordinary nature of the Great War is well exemplified by the character of the special engineer, and supply and transport units, details concerning which are given in the original article, raised in America. Among the engineer units were regiments, battalions and companies for "gas and flame-thrower" services, mining, water supply, engineering supplies, running workshops, surveying and printing, electric services, forestry, etc.

The supply and transport units included companies for the manufacture of ice, repair shops (for mechanical transport), fire protection services, grave-digging, etc. There were also several Stevedore Regiments.

COMPOSITION OF UNITS.—The establishments for the various branches of the American Army are given in considerable detail in the original article.

In August, 1917, the four company organization was introduced in the battalion; the establishment of a company being fixed at 250 all ranks. The company consists of a headquarters and four platoons.

The establishment of an American regiment is now as follows:—

Regimental and Company Staffs	303	all ranks.
3 Battalions (each of 4 Companies) ...	3,078	,,
1 Supply Company	140	,,
1 Machine-gun Company	178	,,
1 Medical detachment	56	,,
Total (103 officers and 3,652 men) ...	3,755	,,

The establishments of the American Cavalry units are as follows:—

	Officers.	O.R.	Riding Horses.
Squadron	3	105	108
Group (4 Squadrons)	14	420	435
Regiment (3 groups)	59	1,520	1,541

The field artillery is organized in regiments of two or three groups, each of three or two batteries. The coast artillery consists of 263 companies, the strength of each, exclusive of officers and specialist N.C.O.'s, being 109 other ranks. The establishment of the divisional Engineer regiments was raised in August 1917 from 1,098 to 1,666 men.

At the beginning of 1918, the communication services were provided for by the allotment of a Field Signal Battalion, divided into three companies (for telegraph, wireless, and outpost service respectively), and a supply section to each Division. The establishment of the Field Signal Battalion is 262 all ranks, 16 vehicles, 170 riding horses and 69 draught animals.

The medical services in each Infantry Division are provided for by the four Ambulance Companies and four Field Hospitals attached thereto, and consist of 949 all ranks.

Details relating to the establishments of the Quartermaster Department, the Veterinary Corps, the Ordnance Corps, and Staff Clerks are given in the original article.

The composition of the Independent Cavalry Division is as follows :—

Headquarters	150	all ranks.
3 Brigades, each of 3 regiments	14,268	,,
1 Regiment of horse artillery (6 batts.) ...	1,374	,,
1 Battalion of mounted engineers ...	387	,,
1 Battalion of mounted signallers ...	259	,,
1 Aero Squadron	173	,,
Total	16,611	all ranks.
Total including divisional train ...	18,164	all ranks.

(*Note.*—Length of Division in column of route = 16¼ miles.)

TACTICAL ORGANIZATION.—The Infantry Division, under the terms of the Law of 1916, consisted of three Infantry Brigades, each of three regiments. The establishment of a regiment was 2,020 all ranks and total strength of the infantry in a Division, 18,559 all ranks.

When the first American contingent arrived in France, it was felt that the foregoing organization was not suitable for the requirements of European warfare. The numbers of infantry regiments in a Division were too large, whilst the establishment of the regiment was too low; the divisional cavalry regiment was not wanted, whilst, at the same time, more engineers were wanted than provided in the Engineer Regiment with each Division. It was felt also that the Flying Squadron attached to the Infantry Division could be more effectively employed by grouping it with other Flying squadrons, under a special Commanding Officer. Further, the Divisional Bridging Unit was of no use during the period of trench warfare; on the other hand, the field artillery was insufficient—72 guns, and the number of machine-gun companies were too few in relation to the strength of the infantry. No trench artillery had been provided. In consequence, the organization of

the American Division was altered, and it eventually was composed of the following units:—

Divisional Headquarters	164	all ranks.
1 Machine-Gun Battalion—4 companies ...	768	,,
2 Infantry Brigades, each of 2 regiments and a machine gun battalion (of 3 companies)	16,420	,,
1 Field artillery brigade; 3 regiments and 1 trench-mortar battery	5,068	,,
1 Field signal battalion	262	,,
1 Engineer regiment	1,666	,,
Train	2,804	,,
Total	27,152	all ranks.

In peace time the Division only existed as a paper organization and naurally there was no higher formation. When America developed her strength on the Western Front, the Divisions were grouped into Army Corps (six to each), so as to meet the requirements of a war of positions, *i.e.*, in order to provide three lines of defence. Corps Troops, consisting of artillery, telegraph battalions, etc., amounting to 30,000 men, were allotted to each Army Corps. An Army consisted of three Army Corps and various additional units, composing Army Troops, which alone numbered 130,000 men.

W. A. J. O'MEARA.