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EDITORIAL.

World Affairs.

For the last fifteen years the world has been trying to restore itself to pre-war conceptions of life and living. All countries have striven desperately and in most cases vainly to bring back the good old days of prosperity, capitalism and the gradual amelioration of the masses' lot. Unfortunately the war was fought on the empty slogan " to make the world safe for democracy " and now since democracy rules its council chambers, the world seems to be more insecure and less stable in every sphere of human activity than it ever has been. Historians will assert that this is the natural reaction to any great upheaval, but the fact cannot be ignored that the armistice of 1918 ushered in the first flood of democracy at a time most disadvantageous to Demos and his ideals. The fantastic debts incurred by the warring nations were so astronomical in their dimensions to the ordinary layman that he was content to leave their reckoning and disbursement to the experts. The latter were able for a long time to camouflage their bankruptcy in technical colours—tariffs, gold standards, treaties, inflation, deflation and the rest—but the day of complete reckoning had to come.

It has now arrived. England, the world's most honest creditor, has made a token payment of her debt to America because she cannot pay in full. This is the climax to a series of international defaults and is definitely a landmark in world history. Heretofore there was a sort of sanctity to international agreements and the breaking of a treaty was often a *casus belli*. Now, with democracy

as ruler, there is not this spirit of honesty or bellicosity, and it is diverting to note that any unsigned measure of agreement made by European statesmen in their efforts to achieve some stability is dubbed "a gentleman's agreement."

It is the current fashion to disregard all formal agreements. Japan has resigned from the League of Nations because she disagreed with the findings of the impartial Lytton Commission which she helped to appoint; Persia renounced her Oil Treaty and has got away with it handsomely; the Irish Free State recognises herself as an independent Republic despite the shilly-shallying pronouncements in the House of Lords; and Germany will have the Treaty of Versailles torn up within five years. The pen continues to be mightier than the sword.

The League of Nations is popularly blamed for this sorry state of world affairs and its record for the thirteenth year of its existence gives facile scope for its many detractors. On its hands the League has three undeclared wars, in none of which it has been capable of any decisive action: Japan and China; Columbia and Peru; Bolivia and Paraguay. Its major project, the Disarmament Conference, has been a kaleidoscopic shifting of ground and formation so incomprehensible that the world has lost interest and enthusiasm. The United States of America and Soviet Russia, two of the greatest nations, are still non-members.

Democracy demanded "open diplomacy" and it got it in the League. Every nation sent its wind-bag to Geneva to expel platitudes and generalised fatuities. The trained diplomat has been ignored, his knowledge of the country to which he has been accredited has been brushed aside, and in his place some junior member of Government with sufficient press-appeal has been aired to Geneva to hold forth on any subject from World Economics to Traffic in Women in the Congo Hinterland. It is all slightly ridiculous, but it may be thankfully observed that recently the pendulum is swinging back to more business-like and ordered methods. Nations are tending to co-operate on mutual ground and on mutual interests. This may not lead to the goal of Internationalism and a world community of interests so cherished by the doctrinaire of the Cecil and Wells school, but it may lead to a period of peace. And even the League of Nations could not take objection to this.

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Economy.

In these sad times of depression and bankruptcy, when statesmen at the World Economic Conference expatiate on the penury of the Indian peasant (of whom there are about three hundred and twenty millions), it seems ironical and unfortunate that a new constitution is being hammered out in London which will only increase the financial strain on the masses. The proposals for Indian Constitutional Reform as laid down in the White Paper visualise many expensive innovations. In the Centre the Lower Chamber will more than double its membership and the Upper Chamber will quadruple its senators. The allocation of revenue by the Centre is proposed on generous lines. The Centre will return about half of the income-tax it receives at present to Provinces, and half of the export duty on jute which it now takes from Bengal will be assigned to that province. In addition heavy subventions will have to be paid by the Centre to the three new provinces—the N.-W. F. P., Sind, and Orissa. In other words, the more expensive Federation of India will have to exist on less money than it does at present—unless a great trade revival or more stern economies take place.

Despite the small signs of economic recovery to be seen in the improved railway returns and the gradual rise in commodity prices which give grounds for hope, the Finance Member has made it clear that there must be a very large revival of trade before India's exports of commodities (other than gold) are sufficient to balance the volume of imports upon which the Customs revenue of the Centre depends.

In the event of a great trade revival not materialising money will have to be found from either increased taxation or drastic economies, and probably both. Before further taxation is imposed we may expect the usual popular cry "Reduce the Army." The Army Budget, in spite of its phenomenal reduction from 54 to 46·6 crores, is to the uninstructed like a red rag to a bull; and it is certain to be the objective of incessant attacks by politicians. Further military economies may or may not be possible, so it will be interesting to see how this question is affected by the Report of the Expert Committee's Enquiry into the strength and composition of the Army in India, and the Capitation Rates Tribunal Report. These reports appear to take a long time for consideration.

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Tanks and Cavalry.

The most interesting development in training carried out this year has been the frontier "flag march" carried out by the 1st Cavalry Brigade and a company of Light Tanks. The main object of the exercise was to experiment with the co-operation of Light Tanks and Cavalry in the different phases of battle under Eastern conditions.

This is the first occasion on which any organised modern mechanised force has been brought into practical co-operation with the Army in India, and the lessons learnt—both from the enthusiastic mistakes and cautious successes in the handling of this sensitive and sensible arm—are numerous. In the first place it is apparent that the Light Tank in India is a delicate instrument, and, for its value to be fully exploited and used with best effect in battle, the Force Commander must employ this arm for some decisive rôle. When we refer to the delicacy of Tanks no disparagement of their mechanical efficiency or the ability of their crew is intended. India, being a non-industrial country, cannot now maintain or equip mechanised units and any serious damage to vehicles will have to be repaired by England; this entails serious delay and points to the necessity of great care and thought on the part of the Force Commander before armoured vehicles are thrown into a battle.

Similarly the conservation of the two-man crew's energy is of paramount importance. When in contact with the enemy the crew have a tremendous task; observation of the ground and enemy; negotiating obstacles, working a machine gun; control of driver or sub-section; maintenance of direction and co-operation with other arms. This is a full-time job when encased in a lurching, roaring shell of steel, and obviously requires consideration before the Light Tanks are employed in a task capable of performance by troops whose physical and mechanical difficulties are not so heavy. It should be remembered, also, that tanks require even more meticulous and detailed grooming after a day's operation than do horses.

These considerations clear the air and help to give us a clue to the most effective employment of Light Tanks in India. And that is offensive. They should not be frittered away in tasks—such as flank guards, reconnaissance, holding of ground pending the arrival of troops, and detachments for subsidiary operations—which can be performed by other troops. The consensus of opinion after their first

experiment in co-operation gives them more responsible rôles. These are briefly as follows :—

In the attack ; as a surprise weapon, concentrated and mobile, to operate on a flank or to overcome the enemy machine guns. In the defence ; again concentrated and ready to co-operate in planned counter-attacks. On the march their economical speed, both for crew and engines, needs careful attention ; being mechanically unsuitable for slow movement—(their average unit road speed is 15 m. p. h.)—in a column of all arms they must move by bounds. Their place, therefore, in a column is dependent on tactical considerations, but in an approach march there seems no reason why they should not accompany the mechanical transport in rear of the column and still arrive at the proper place and time to take an effective part in the battle. This would prevent undue wear and tear on the vehicles and the unnecessary waste of energy of the crews.

At the same time we think it would be wrong at present to stress dogmatism in Light Tank employment in the East ; they are novel weapons the effective employment of which depends on elasticity of temperament and an open mind. The proper utilisation of their mobility, surprise effect and fire power seems to be a more valuable problem for military study than the evanescent concern regarding their maintenance and mechanical fragility. Motor engineering is progressing so fast that one may assume that present imperfections will have disappeared by the time of the next war, and our time consequently might be more valuably devoted to the imaginative belief that our present tanks are perfect, and therefore capable of tasks which we are at present diffident to give them. It is easy to argue that you must employ the tools given you, but every war has produced new tools and, if we anticipate a better tank and train on it, the anticipation will broaden our military imagination and deepen our mechanical foundations. We seem inclined to take our experiments too seriously.

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The Indian Air Force.

By notification in the *Gazette of India*, No. 565 of 8th October, 1932, the Governor-General in Council formally constituted the Indian Air Force, and appointed the Air Officer Commanding the Royel Air Force in India to command the new force. Six months later, 1st April, 1933, the first unit of the I. A. F. came into being when the first flight of No. 1

Indian Air Force Squadron was formed at Karachi. It is intended to expand this nucleus to a squadron of three flights by gradual stages.

The main difficulty to be surmounted was the question of personnel and this matter has been dealt with successfully and satisfactorily. During 1932 five officers of the General Duties Branch completed their training at Cranwell and one officer trained for the Stores Branch returned from England. In India it was decided that all Indian enrolled personnel serving with the R.A.F. should, for administrative reasons, be brought within the scope of the Indian Air Force Act and should cease to be subject to the Indian Army Act as heretofore. Consequently all the personnel of the Indian Technical and Followers Corps, R. A. F, transferred voluntarily to the Indian Air Force. Thus the Indian Air Force consists of the following personnel in addition to flight cadets under training :—

Officers	6
Combatant Ranks ..	144
Non-combatant Ranks ..	332
Followers, Class I ..	271
Total, all ranks ..	753

The Suez Canal.

The transport link and vital artery which connects India to England is the Suez Canal. Recently there has been some important criticism in imperial and shipping circles regarding the commercial, financial and legal structure of the Suez Canal Company. This deserves our notice, for, disregarding the canal's strategical importance, the questions raised concerning its management affect our pockets in India to a serious extent. The company, officially known as the *Compagnie Universelle du Canal Maritime de Suez*, with its headquarters in Paris, exercises the world's greatest monopoly. The special Canal dues on shipping were reduced in 1931 to six gold francs per ton, gross tonnage, after considerable agitation by the interests concerned, and this is the limit of concession offered. When it is realised that a cargo steamer of 5,540 net tonnage, carrying cargo of 3,872 shipping tons, has to pay Canal dues of £2,181-6-9, it helps one to understand why steamship passages by unsubsidised British liners compare so unfavourably with some continental boats. Taking a

less personal view it is surprising to learn that the average surplus profits on the canal for the four years ending in 1931 were 67·83 *per cent.* On the other hand the average annual receipts of the British Government on their holding of Suez Canal shares in 1926—31 was over one and a half million sterling, about 44 *per cent.* on £3,460,000, the face value of the shares bought in 1875; but this comfortable investment hardly compensates for the damage done to British shipping, and, more important, to British and Indian consumers. French financiers have dominated the policy of the company with an astuteness worthy of their financial recovery after the war, and England seems to be content with her annual *douceur.*

In the statutes of the company it is laid down that the Board of thirty-two members should consist of members "*réprésentant les principales nationalités interessées á l'entreprise.*" Actually it consists of a Franco-British *bloc,* (excluding one Netherlands representative), in the proportion of 22 to 10. Taking as a criterion that the interested nationalities are those whose produce and passengers are wholly or mainly sent in either direction through the canal, the following nations would appear to be most interested in the enterprise:—Great Britain, India, the Netherlands, Persia, and the rest nowhere. In 1931 the amount of shipping using the Canal was as follows:—British, 55·46 *per cent*; German, 10·59 *per cent*; Dutch, 8·27 *per cent*; French, 6·60 *per cent*; and Italian, Japanese, Norwegian and American in decreasing percentages.

These are illuminating figures, which become more cogent when compared with the management of the Panama Canal. The Panama cost two and a half times the price of the Suez Canal and the annual upkeep is about the same. Yet the Suez authorities levy dues 44 *per cent.* higher per ton of cargo carried. This powerful monopoly affects India severely and it seems extraordinary that such an unfair commercial handicap should be allowed existence in a world clamouring for fluidity of trade and cheapness of transport. If present canal dues were halved it would give a fillip to British trade, help Indian commodities to gain a western market, and yet give the lucky canal shareholders twice the annual dividend earned by any gilt-edged security.

We have drawn attention to this peculiar state of affairs primarily because its equitable readjustment should reflect advantageously on Indian economics (in which we have all got to be so interested), and secondly because it seems rather ludicrous that the Royal Navy, the British Army and the Royal Air Force protect and keep inviolate the canal which is becoming a barrier rather than a highway to our trade.*

The Bungalow Imbroglio.

All officers will be glad to see the efforts now being made by Army Headquarters to improve the housing conditions for officers in certain cantonments. Since the war the accommodation in many military stations has been growing steadily worse. In some cases officers have had to live in or share mud-walled, leaking-roofed mausolea on which their landlords expended the minimum of repairs and for which they extracted the maximum of rent. Owing to the increase of officers and the influx into cantonment limits of large numbers of property-owning Indian civilians, there was not sufficient accommodation in many stations and officers were forced to live in expensive hotels and even in tents.

The present situation is really the result of the policy pursued for the last hundred years, by which Government, to save themselves the initial cost of building, gave wide powers to the military authorities to make free grants of the occupancy rights in land in cantonments to persons who were prepared to build for them. The grants were originally made to the officers themselves, but in course of time the bungalows changed hands and by 1929, when the new cantonment legislation was introduced, most of the houses in cantonments were owned by Indian civilians, a fair number were occupied by them and the balance were let to officers at ever-increasing rents. There was some justification for the rise in rents after the war. The houses had changed hands by speculatively-inclined owners, thatched roofs had been replaced by mud ones and there was a sharp rise in material and labour prices during this period. But even allowing for all this the rents charged must have paid over and over again for the few thousand rupees which represented generally the original cost of the bungalows. Even now, when the cost of building and the value of houses have dropped by nearly 40 per cent. all over India, there are cases of rents having increased in the last eight years by 100 per cent.

* The interested reader might study the article, "The Suez Canal," by Sir Arnold Wilson in "The Nineteenth Century," June, 1933.

If Government had only pursued from the beginning a policy of building for themselves or at least charging proper rents for land leased for that purpose, the military estate in cantonments would now be worth crores of rupees. As it is, the evil has grown to such large proportions that no simple remedy is possible. The present policy of resuming a limited number of sites in selected cantonments, complicated though it may be by legal and administrative considerations, is a step in the right direction. It is hoped that the transfer from private to military ownership will be carried out with the least possible friction.

Staff Officers and Regimental Duty.

One of the commonest gibes at *p.s.c.*-officers is that once they have graduated at a Staff College the remainder of their service is spent away as much as possible from their units. We do not believe this to be true. We can sympathise with the natural inclination of a trained staff officer to seek employment where his talents and ambition might have more scope, but there are regulations on the subject whereby it is ensured that *p.s.c.* officers alternate their periods of staff employment with spells of regimental duty. The latter periods, due to the annual increase in graduates, tend to grow longer.

This gibe is so hoary that it would not deserve attention, except that, by its frequent repetition, its influence has now invaded circles which appear to accept it as truth. In the discussion following a lecture on "The Training of the Army for War" at the Royal United Service Institution an officer stated: "I think it is no exaggeration to say that, after an officer leaves the Staff College, if he returns to his regiment for a year or eighteen months in the next ten years, that is the most that happens; frequently it is less."* In an article ("Training and Employment of Regimental Officers") in the same Number the author writes: "..... when a good regimental officer becomes a Staff College graduate and does well in his first staff appointment, except for two or three visits of six to nine months' duration—spread over the next ten or fifteen years—his services are virtually lost to his regiment until he becomes a second-in-command or a commanding officer."

These assertions are somewhat surprising, and, while we do not know if they correctly describe *p.s.c.* employment in England, we

* R.U.S.I. Journal, May, 1933.

are sure that they are not accurate concerning the Army in India. An examination of the employment of a batch of officers who left the Staff College over ten years ago—and this during a time when there was a shortage of *p.s.c.* officers—proves that the average period of regimental duty performed by these officers was over four years. One officer, it is true, spent only one-and-a-half years with his unit, but seven spent six years, four spent five, and seven others spent over four. These figures speak for themselves.

Furthermore, it is not generally realised that the majority of *p.s.c.* officers get only one four years' staff appointment between leaving the Staff College and becoming second-in-command. The average leaving age is 35, and when four years' employment, at least one year's regimental duty and leave are added, the officer has completed 19—22 years' service, which brings him into the zone of seconds-in-command. Thereafter he is not eligible for staff employ until he gets command, and his staff training is at the disposal of his unit.

We hold no brief for *p.s.c.* officers, and we are in cordial agreement with the desire that their abilities and knowledge should be utilised more than at present in their own units; but loose statements of the kind quoted above are liable to do more harm than good.

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MILITARY INTELLIGENCE IN TRIBAL WARFARE ON THE NORTH-WEST FRONTIER OF INDIA.

By Captain H. L. Davies, M. C.

General Considerations.

Although the general principles which govern the activities of the Intelligence Branch in normal warfare against an organised enemy will hold good in tribal warfare, there are certain considerations that affect the application of these principles in campaigns across the North-West Frontier.

These considerations, summarised, are :—

(*a*) The existing organization of the covering force Districts.

(*b*) The necessity for employing small columns, somewhat isolated from their higher formations.

(*c*) The dependence of such columns upon local intelligence sources.

(*d*) The nature of the country, and the tactics and psychology of the enemy.

The above points are discussed briefly below.

To maintain the tranquillity of the tribes, "Covering Force" Districts have been formed, *viz.*, Peshawar, Kohat, Waziristan and the Zhob Independent Brigade.

The Brigades within these Districts are situated, either, just behind the border, as in Peshawar and Kohat, or actually in the midst of tribal territory, as in Waziristan.

Operations in tribal country carried out by the Covering Troops may vary from a steady advance, the rapidity of which is controlled by the formation of an organized L. of C. (and possibly the building of an M. T. road) behind the striking force, to mobile operations, on a light scale of kit, carried out by a column based on a fortified camp inside tribal territory.

An example of the first situation was the Waziristan campaign of 1919-20, and of the second situation Waziristan operations in 1930.

In either case it is unlikely that the actual striking force will exceed a Brigade with attached troops, though, if an organized

L. of C. is being established, reserve Brigades may be distributed in depth on this L. of C. Such operations may become necessary in the Tirah or in Mohmand, but in Waziristan, where the control of the country is based on three fortified camps with mobile columns operating from them, the first situation, referred to above, will be almost inevitable.

It follows, therefore, that as the striking force will be normally limited to a Brigade, and that as the collection of information regarding the enemy and the country generally, will be primarily the task of the striking force, the responsibilities of the Brigade Intelligence staff are considerably enhanced in tribal warfare.

The enemy is not organized, that is to say he concentrates suddenly for specific operations and disperses with equal rapidity. Reconnaissance with ground troops is, therefore, of little value, particularly as the country discounts to a large extent the use of cavalry and armoured fighting vehicles. Consequently, until battle is actually joined with on enemy concentration, the striking force must depend for its information regarding the movements and intentions of the tribesmen upon political information, or news obtained from local friendlies and agents.

On the other hand there are few areas in tribal country that have not at one time been the scene of previous campaigns, and the tactics of the enemy are marked by an incorrigible conservatism. They will concentrate for serious opposition at certain definite positions and they will probably occupy these positions in exactly the same way as they did in previous campaigns in that area. For example, in Waziristan the Ahnai Tangi and Barari Tangi, have been the scenes of numerous actions during the campaigns of the past hundred years in that country, while the Mahsud tactics, and the positions they occupied, during the destruction of Makin in 1920 and in 1923 were practically identical.

Consequently, the information obtained by political sources can frequently be reinforced by intelligent forecasting based on a knowledge of previous campaigns. From the above considerations certain deductions can be made :—

(*a*) The Intelligence Staff, and particularly the Brigade Intelligence Officer, are of very enhanced importance in tribal warfare. The Brigade Intelligence Officer must be prepared to deal, not only with battle intelligence when contact

with the enemy has been gained, but with political intelligence, and local agents and friendlies, during the advance.

(*b*) To assist the Brigade Intelligence Officer in the above duties the attachment of a political advisor to Striking Force (Brigade) Headquarters becomes essential.

(*c*) The fullest possible information regarding the country, the inhabitants, the political situation, and previous campaigns in the area concerned, must be placed at the disposal of the Brigade Intelligence Officer before the advance begins and throughout the course of the operations.

Preliminary Arrangements for a column about to operate in Tribal Territory.

In the following paragraphs it is assumed that a Striking Force of one Brigade with attached troops (hereafter referred to as S. F.) is about to advance into tribal territory, forming an organized L. of C. behind it, the Headquarters of the Covering Force District concerned remaining in its peace station.

Bearing in mind the deductions arrived at in the preceding paragraph, certain preliminary arrangements are necessary before the advance begins.

(a) *Distribution of available information.*

At Peshawar exists the Military Intelligence Officer, whose task throughout the year is the collection of information relating to all parts of the North-West Frontier from Chitral to Waziristan. A similar office for the Zhob and Baluchistan exists in Quetta.

The first step, therefore, is to obtain from Peshawar (or Quetta according to the area of operations) the fullest information available regarding the topography, resources, political situation, possible friendly maliks, etc. The compilation of a tribal directory, which includes indexed air photographs of practically all the important valleys and village areas of the North-West Frontier has been proceeding for the past two years. With the completion of the Waziristan directory, now in hand, the whole of the North-West Frontier will be dealt with. These directories will be of enormous assistance in future operations across the border.

The above information will be reinforced by the relevant route books, hand books, and maps which already exist.

(b) *Provision of a qualified Brigade Intelligence Officer.*

Brigade Intelligence Officer is a permanent peace appointment in all Brigades. To deal adequately with the responsibility of his appointment in tribal warfare, a Brigade Intelligence Officer must possess the following qualifications :—

(*i*) Be trained in his task.

(*ii*) Be able to speak Pushtu and Urdu.

(*iii*) Have a good knowledge of the Frontier and of the tactics and psychology of the tribes. In addition, of course, he must have the confidence of his Brigadier.

Prior to the advance he must obtain and read the official accounts of previous campaigns in the area of operations.

(c) *Provision of a Political Advisor.*

The necessary arrangements must be made to obtain a political officer to accompany the column. The selection of this advisor will rest with the political authorities, who may appoint either an officer or a tehsildar, according to the importance of the operations. It is important to remember, however, that the individual selected will join the S. F. staff in the capacity of an advisor and not as an executive Intelligence Officer. All intelligence duties must remain under the control of the General Staff, represented in this case by the Brigade Intelligence Officer.

(d) *Co-operation with the R. A. F.*

In addition to the above arrangements, full consideration must be given to the assistance that can be obtained from the R. A. F. It is probable that the control of aircraft co-operating with the column will be retained by the District Headquarters concerned, who will decide whether it is necessary to embody an Intelligence Liaison Section to work with the co-operating squadrons, and the tasks required. The S. F. Headquarters, however, will be responsible for indicating any particular area of which photographs are required, and for demanding air reconnaissance to confirm reports received from ground sources, or to reinforce the knowledge already available regarding routes, camping grounds, water-supplies, and possible enemy positions, etc.

In imporant operations a R. A. F. Liaison Officer may accompany S. F. Headquarters in an advisory capacity. Normally, however, shortage of officers will render this difficult.

The Advance into Enemy Country.

During the preliminary advance the S. F. intelligence staff will be occupied principally in the collection of information relating to the intentions of the tribesmen in its immediate vicinity; also, in the collection of topographical information relating to the country through which it is advancing for addition to, or in amendment of, the relative route books, handbooks and maps.

District Headquarters, in close touch with the Military Intelligence Office, (Peshawar or Quetta) and the Political Authorities, will be watching the repercussions of the operations on neighbouring tribes, and the possibility of their joining in the struggle, either by direct reinforcement, or independent operations in their own areas. This information will, of course, be passed on to the S. F. intelligence staff.

The sources of information at the disposal of the S. F. intelligence staff will be :—

(*a*) Local agents and friendlies through the medium of the attached political advisor.

(*b*) Any special reconnaissances ordered by the S. F. commander. (*Note.*—Reconnaissance carried out at any distance must be a reconnaissance in force for which the whole Brigade may be required. Individual reconnaissance, or even the employment of patrols, will seldom be possible in tribal warfare).

(*c*) District Headquarters who will forward :—

(*i*) information received through the Military Intelligence Office or Political sources.

(*ii*) information obtained by air reconnaissance.

(*d*) L. of C. detachments.

Throughout the operations the responsibility of detachments in regard to local intelligence must be borne in mind. The enemy have no definite "front." They may concentrate in areas on either flank of the L. of C. with the intention of attacking posts on the latter. Consequently, all such posts must provide their own local intelligence arrangements which will include observation of the surrounding country from permanent piquet posts positions, and interrogation of local contractors or friendlies.

Generally speaking the main source of information during the preliminary advance, and before contact has actually been established

with enemy concentrations, will be agents, political and R. A. F. Very little information can be expected from the fighting troops and their "battle intelligence" organizations.

INTELLIGENCE DURING THE BATTLE.

(a) *Factors influencing battle intelligence in tribal warfare.*

These factors are:—

(*i*) The imposition upon our own troops of an "all round" front.

(*ii*) The number of small detachments in piquet positions necessitated by this "all round" front.

(*iii*) The tactics of the enemy, who seldom exposes his intentions until some error on the part of our own troops gives him an opportunity to operate in circumstances favourable to himself. Each of these factors deserves special consideration.

(b) *The "all round" front.*

In normal warfare a Battalion will seldom be deployed upon a front exceeding 1,000 yards. Normally, at least one flank of a Battalion acting in a Brigade operation will be covered by another deployed Battalion. Consequently, the front that must remain under the observation of the Battalion intelligence section will not usually exceed 1,500 yards of moderately level ground. In tribal warfare on the North-West Frontier, a Brigade will usually move up a river bed enclosed by hills. This applied equally to areas such as Waziristan where circular roads have been constructed, for it is unlikely that the tribesmen will select country traversed by these roads for their operations.

With the Brigade moving by a narrow valley, therefore, it will seldom be possible to deploy more than one Battalion during the advance, and this Battalion must protect its flanks by means of piquets. This piquetting is normal in all movements on the North-West Frontier, so a battalion when deployed, during either an advance or a withdrawal, will find itself spread in detachments over an area up to 1,500 yards in depth. That is to say, it will have a front of at least 3,000 yards to watch. There are occasions of course, when a Battalion may be called upon to attack a definite feature on a limited front, with its flanks protected by other portions of the Brigade, but normally,

as all movements in tribal territory is limited by the nature of the country to the river beds, these extended " fronts " will be necessary.

A Battalion intelligence section of six men, or three observation groups, cannot be expected to maintain continuous observation over 3,000 yards of mountainous country. Nor is it necessary ; for the piquet positions are sited to afford good observation, and are primarily responsible for watching their areas and the enemy movements therein.

But if the observation groups of the intelligence section are not to observe the enemy what are they going to do ? Before discussing this it is necessary to turn to the second factor mentioned above namely :

(c) *Isolated detachments necessitated by the " all round " front.*

As mentioned above a Battalion deployed will normally have to cover a depth of 1,500 yards with two fronts, one to the left and one to the right, making a total frontage of 3,000 yards. The piquets placed to protect this " all round " front will be sited on features offering good observation, and far enough off the line of advance to protect the moving column from small arms fire. Such piquets will seldom be more than 500 yards apart, and of not less than a platoon in strength. Consequently, a fully deployed Battalion may have at least six detachments in its area. Probably it will have more.

Observation of all these detachments from Battalion Headquarters will seldom be possible. Yet direct observation from Battalion Headquarters is most advantageous in view of the mobility of the enemy and the consequent importance of the time factor.

Consequently, it is suggested that the most important role for the observation groups of the Battalion Intelligence Section will be the maintenance of continuous observation over its detachments from the vicinity of Battalion Headquarters. In this respect the third factor mentioned above must also be considered. This factor is,

(d) *The tactics of the enemy.*

The tribesman will seldom commit himself to any operation until he has had an opportunity for studying the dispositions of his adversary. This is the reason why an advance is seldom disputed with vigour, whereas a withdrawal is ferociously harassed. A dangerous period also is the interim, when piquets have been posted and are waiting in position until the operations in train have been concluded,

and their withdrawal is ordered. Having selected as their objective a piquet which is badly sited, or at some other disadvantage, the tribesmen will concentrate with their usual mobility and deliver a sudden attack, worked out, generally, with considerable tactical skill. An attack of this nature is often prepared by an increase of sniping in that particular area in order to cover the approach of the main attacking party. Similarly just prior to the withdrawal, the volume of sniping (and also the volume of the fire from the piquets themselves) will often serve as a guide to the areas from which most danger may be anticipated. Intelligent observation of these indications, and their transfer to Battalion Headquarters by the Intelligence Section observation groups will assist the Battalion Commander in siting his reserves and making his dispositions generally. Any information also sent in by these groups indicating errors in the positions of piquets, or the appearance of enemy in the immediate vicinity of piquets, will forewarn Battalion Headquarters of projected attacks.

Hence the study of enemy tactics and the deductions to be made from certain specific indications must be part of the education of Intelligence Section personnel.

(e) *Role of the Battalion Intelligence Sections.*

From the above considerations, therefore, the role of the Battalion Intelligence Sections in tribal warfare may be summarised as follows :—

(*i*) To maintain a continuous observation over the Battalion area with particular regard to isolated detachments such as piquets.

(*ii*) To report to Battalion Headquarters all piquet activities indicating particularly, volume of fire directed against any such piquets, signs of enemy activity indicated by fire opened from piquets, enemy attacks against piquets, and the progress of any reinforcements moving up from company reserves.

(*iii*) To watch for and report any piquet occupying a badly sited, or otherwise disadvantageous position.

In order to carry out the above role successfully, Intelligence Section observation groups must be given definite zones containing specific piquets to observe. Their position must enable them to watch their zone adequately and must be within runner distance of Battalion

Headquarters. During movement these observation groups must move by bounds so that there is never less than one group in observation.

At Battalion Headquarters the Battalion Intelligence Officer, assisted by his N. C. O., will be responsible for formulating his observation group plans during rest and movement, issuing the necessary instructions to his groups to bring these plans into effect, maintaining the Battalion situation map, collecting and reporting the information received from all sources according to the instructions contained in the Manual of Military Intelligence.

(f) *The role of the Brigade Intelligence Section.*

It has long been a moot point whether the results they can achieve justifies the retention of the personnel of the Brigade Intelligence Section, (other than the Brigade Intelligence Officer and the N. C. O.) in tribal warfare.

It is argued that the redistribution of the six (or eight) men of the Brigade Section amongst the Battalion Sections would increase the efficiency of the latter by giving them an extra observation group each, and that such observation as is carried out by a Brigade Section is of little value to the Brigade Commander who will be in close touch with the situation.

To arrive at any conclusion in this controversy it is necessary to consider whether the Brigade Commander is invariably in such close touch with the situation of his Battalions that independent and continuous observation by Brigade Section Groups will remain unnecessary.

During movement, either forward or backward, it will be quite common to find three Battalions of a Brigade deployed along the route. This may mean that these Battalions are extended over a depth of some three miles of mountainous country.

It is true that the Brigade Commander himself will be in close touch with the leading Battalion Headquarters in an advance, or with the rear Headquarters in a withdrawal, and that these battalions are the ones most likely to be engaged by the enemy in the various circumstances. But the enemy is not invariably going to confine his attention to the Battalions actually engaged in movement, but will often select a stationary road piquet for the scene of his operations.

Hence at any point along these three miles, situations may arise with which the Brigade Commander is not in touch.

It is equally common to find a Battalion detached from the Brigade holding an important feature at some distance from the axis of operations, with the remainder of the Brigade employed in piqueting the route and carrying out operations against the enemy in some other area. Such a situation is illustrated in the attached diagram which shows the dispositions of the 9th Ladha Brigade during the burning of Makin in 1923.

During the period occupied by the preparation for destruction of BASAM village both 'A' and 'B' Battalions were being heavily engaged, and, in addition, enemy at point 'X' were sniping the destruction parties and threatening an attack against the protective detachments at point 'Y'.

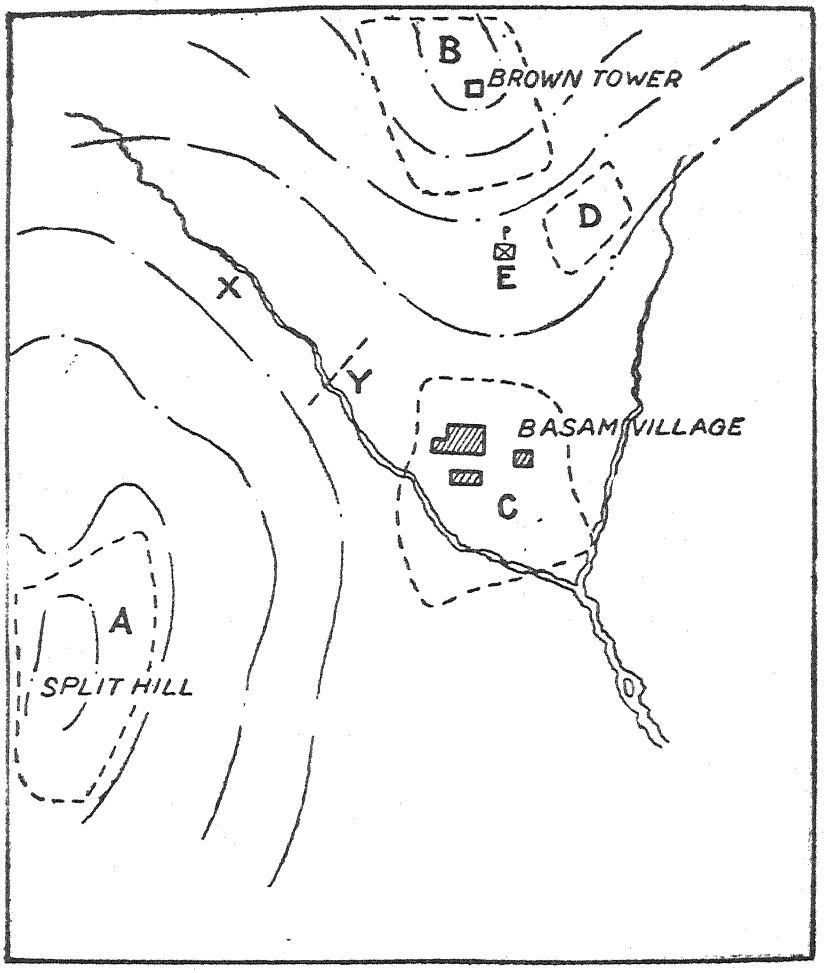
In these circumstances it is evidently impossible for the Brigade Commander to observe personally, with any degree of continuity, the events in each of the engaged Battalion's areas. The wide dispersion of the Battalions made it impossible to maintain any personal touch with the Battalion Headquarters of 'A' and 'C' detachments, consequently observation of the events in these areas was even more necessary than usual. It is not considered that the particular deployment illustrated in the diagram is in any way an uncommon one in tribal warfare. In fact such dispersion will be normal. Nor is it unusual for more than one of the detached Battalions to be engaged at the same time. Consequently, it is considered that on all occasions when the Brigade is deployed in action against tribesmen, independent observation byBrigade Intelligence Group will be most advantageous.

During movement there must be periods during which Brigade Headquarters are "bounding" from one position to another. Consequently, if the Brigade Commander is relying upon his personal observation to keep in touch with the situation in his Battalion areas, there will be moments when he is completely out of touch. With Brigade Observation Groups in position and bounding similarly in accordance with a pre-arranged plan, this hiatus would not occur.

Consequently, it would appear that a specific use can be found for the Brigade Intelligence Section both during movement and during stationary operations.

In addition to this, if provided with ponies or saddle mules, liaison groups of the Brigade Intelligence Section can keep in touch

ROUGH SKETCH SHOWING DISPOSITIONS DURING DESTRUCTION OF BASAM VILLAGE.



with Battalion Headquarters, using the covered route protected by piquets for their movements. It is suggested, therefore that the role of the Brigade Intelligence Section will be :—

(*i*) Observation of Battalion areas from the vicinity of Brigade Headquarters when Battalions are dispersed over a wide area.

(*ii*) Movement by bounds from observation position to position during movement, with one group invariably in observation.

(*iii*) Liaison with Brigade Headquarters by means of liaison groups mounted on ponies or saddle mules where a covered route between the Battalion and Brigade Headquarters exists.

At Brigade Headquarters the Brigade Intelligence Officer will carry out his duties of maintaining the situation map, and collating and distributing information received, in accordance with the instructions laid down in the Manual of Military Intelligence. He will be responsible also for issuing the necessary orders to his section to enable them to carry out their role.

(g) *The R. A. F. and "battle intelligence."*

During actual contact with the enemy one or more close reconnaissance machines will normally be co-operating with the Striking Force. In view of the scarcity of R. T. tenders in India, and also the difficulty of moving any form of wheeled vehicle over the country without metalled roads, it is probable that communication between the air and ground will be confined to light signals, dropping messages and ground strips.

From an intelligence point of view this represents a great disadvantage because specific instructions for reconnaissance cannot be given to the air. Despite this disadvantage the close reconnaissance machines can be of great assistance to the Intelligence Staff. By means of pre-arranged light signals fired over the vicinity of enemy concentrations they can impart considerable information regarding the movements, dispositions, and numbers of tribesmen engaged out of sight of the piquet positions. Also the reports of relieved pilots, given to the Intelligence Liaison Section at the aerodrome on return from a reconnaissance over the area of operations, can be relayed by W/T to the Striking Force Headquarters. To benefit to the full from the signals given by the close reconnaissance machine it will be necessary to keep it under constant observation. A group from the Brigade Intelligence Section will probably be the best means of maintaining this constant observation.

It is evident that a R/T tender with the Striking Force Headquarters would be most advantageous. Consequently, if the road communications admit of it, and if the tender is available, one should accompany the Striking Force.

Duties of the S. F. Intelligence Staff at the conclusion of operations.

Any operations undertaken in imperfectly surveyed territory will give considerable opportunities for increasing the existing information regarding communications, local resources, sizes and positions of villages, water supplies, camp sites, etc. Consequently, at the conclusion of operations the Intelligence Staff must prepare a report summarising the information gained under the above heads, and illustrated, where possible, by marked maps or enlargements. This report will be submitted by the normal channels to Army Headquarters for the amendment, or addition to, route books and maps.

It is a curious fact that despite quite a number of minor frontier campaigns carried out since the formation of battle intelligence sections, no report has been produced dealing, from a practical point of view, with their employment in this type of fighting. Consequently the training and employment of these Sections is largely influenced by experience gained during peace training. It is considered, therefore, that the Striking Force Intelligence Staff should draw up a brief report, on the conclusion of operations, embodying remarks on the working of the Brigade and Battalion Sections, with suggestions for improving their efficiency, either by additional equipment, or by new methods of employment.

Such reports would be a source of considerable assistance to the instructing staff at Command intelligence courses where the Brigade and Battalion Intelligence Officers of the future are trained.

Conclusion.

Space has precluded the discussion of this subject in any great detail. The object of the paper, however, has been to indicate the very considerable differences that exist between military intelligence in normal warfare, (which is exhaustively dealt with in the Manual of Miltary Intelligence) and military intelligence in tribal warfare, (which is dismissed in the manual in the space of fourteen pages dealing entirely with principles). As it is the lot of the Army in India to deal extensively in tribal warfare, and not at all in normal warfare, the above would appear to be a situation in need of amendment.

MODERN COUNTER-BATTERY.

By Br. Lt.-Col. R. G. Cherry, M.C., R.A.

Though counter-battery work is, primarily, the responsibility of the artillery, yet it should interest all arms. For, if the enemy has any artillery worthy of the name, that artillery will cause casualties to our troops, and will imperil the success of our operations in a greater or less degree according to the adequacy of the steps taken against it. It is proposed to consider and explain, briefly and not too technically, the theories that are now held on this subject of counter-battery. They are based largely on experience gained in the last war; yet the world has not stood still, conditions have altered, there is a great tendency to speed up in all professions, including that of arms. Obviously, therefore, much of that which is advocated has not yet been put into practice against a live enemy. It is not, therefore, easy to form an accurate idea of the effect of C. B. fire, as advocated to-day. However, if the theories are based on sound premises, one may be allowed to hope that they will prove efficacious in practice.

Let us consider the question from first principles:—(*a*) the object, (*b*) the weapons, (*c*) the organisation to produce that object with those weapons. Now, the main object of counter-battery work, as in all other artillery work, is to put down the requisite number of shell in the right place at the right time. If this sentence is analysed in detail, we shall very soon get a good grasp of the first principles of counter-battery work. Gunnery should always be considered in terms of Shell, and the size and nature of those shell will vary according to the task to be performed.

In counter-battery work, the task is neutralisation or destruction of hostile batteries. Generally speaking, neutralisation only need be considered in mobile warfare, as ammunition will seldom be available to allow a policy of deliberate destruction of enemy ordnance. Practical experience in the last war shewed us that the best way to neutralise a battery is to subject it to an intensive bombardment of high explosive shell of as large a calibre as possible.

This is all very well for position warfare, when unlimited ammunition and a considerable amount of heavy artillery is available, but it cannot be done in mobile warfare.

However a short, intensive, bombardment should, if accurate, suffice to disorganise the battery and prevent it from functioning for a period of time, and if this bombardment were repeated, then the period of disorganisation would be lengthened in proportion. As far as ammunition is concerned, modern research has provided us with powerful H. E. shell and an effective instantaneous fuze, so that the shattering effect of even a short bombardment would, we think, be considerable.

The policy as regards method may be illustrated by the following short example :—

About 150 shell are available to neutralise a hostile battery for about ¾ hour. They would be fired, more or less according to the following idea :—

5 minutes concentration ..	.. 60 rounds.
10 minutes off	.. nil.
4 minutes concentration ..	.. 40 rounds.
12 minutes off	.. nil.
4 minutes concentration ..	.. 40 rounds.
10 minutes off	.. nil.

The best weapon in the field army for this work is the Medium Howitzer, which fires a 100 lb. shell. According to the book, its maximum rate of fire is two rounds per gun per minute, but, by means of a simple quick-loading device, this rate has recently been increased to four. Any gun or howitzer may, however, be used for this work, the latter being preferable owing to their heavier shell. In order that this fire may be effective, a considerable proportion of the shell must fall on or near the target. As the effect of H. E. is mainly lateral, a battery that is not dug in is very vulnerable to H. E. that burst in or near the line of guns.

The likelihood that a large proportion of shell fired at a battery will fall in this area depends on a number of factors. The most favourable conditions exist when the fire of the battery can be controlled or corrected from a ground or air O. P. The occasions in war when a hostile battery can be seen from a ground O. P. should be rare.

Balloons are at the moment rather under a cloud—in fact it may be said (by those who like to mix their metaphors) that they fall between the Scylla of the Air Force, who see in them a home for tired

pilots, and the Charybdis of the army, who would be glad to take them over were it not for the expense involved. There remains the Arty/R. pilot, who can correct fire on to targets if he has the opportunity to do so. He is, however, a very overworked person and experience tends to indicate that he will seldom have the time to direct our fire on to more than three or four hostile batteries per hour, and a divisional commander will be lucky if he gets one Arty/R. machine up on his front continuously throughout a day's operations.

If the fire cannot be corrected, it must be predicted, and predicted fire is always more or less a gamble. The accuracy of predicted fire depends on the accuracy with which it has been possible to fix the guns, and the target, to get up-to-date meteorological corrections, and to calibrate the guns. Under conditions of mobile warfare it is not always possible to attain great accuracy in the above factors, consequently the effectiveness of a bombardment of hostile batteries carried out predicted cannot be guaranteed.

Given sufficient numbers of the right type of shell, and a reasonable chance of ensuring that a sufficient proportion of them will fall in the close vicinity of the target, it remains to ensure the timely arrival of those shells. This is, in all phases of a battle, a matter of organisation.

The problem of organising counter-battery work in the various phases of mobile operations has been receiving a good deal of attention lately and some interesting tactical exercises have been carried out at home to study this aspect of the fire plan.

But before considering these problems it is just as well to have some picture of how counter-battery work functions when time is available, *i.e.*, during a temporary static period. Effective counter-battery work depends on good organisation, accurate information and adequate communications. Whenever possible, this work is controlled on a corps basis, and a special countery-battery staff is allowed as part of the staff of the C. C. M. A. of corps. This staff consists of C. B. O., assisted by a Staff Captain (O) and a Staff Captain (I). Their job, in general terms, is to discover the enemy artillery dispositions and to take action generally in accordance with the C. B. policy laid down and particularly as part of the fire plan for an operation. They have various sources of information, aeroplanes, balloons, flash spotters, sound rangers, air photographs, etc., and given time

they should be able to obtain and keep up to date a fairly complete knowledge of hostile battery positions.

In order that information may reach the C. B. staff quickly and that they may be able to apply fire when and where required at short notice, adequate communications are essential. In fact the question of whether corps can control C. B. work or not depends primarily on communications.

Let us consider for a moment the situation during a temporary static period. We may picture the C. B. staff in possession of more or less complete information, having a certain number of batteries allotted to this work, enough A./R. aeroplanes and adequate communications. We may also assume that at this stage survey is complete, giving the C. B. staff the power to concentrate at will.

How do they set about their task ?

There are two situations to be considered.—

(*a*) a static period which may be purely defensive or preparatory for an attack.

(*b*) the atttack itself.

During a defensive or preparatory period, counter-battery work will depend on the policy laid down by Army or Corps H. Q.

This policy may be aggressive or the reverse. It may aim at constantly engaging hostile batteries and keeping them on the move, or it may aim at keeping them where they are and concentrating on getting accurate locations by every means other than shooting. In either case the work of the counter-battery staff is more or less a matter of routine, making out daily programmes of tasks, dealing with demands for neutralizations and recording information for use later on.

In the attack itself the important point to realize is that counter-battery work forms part of the fire plan just as much as the detailed arrangements for direct support by barrages or concentrations. It is, in fact, one form of covering fire. If full value is to be got out of it, the counter-battery plan must be carefully thought out and co-ordinated with the rest of the fire plan. In other words, the plan of attack must be studied with the map and the dispositions of the hostile artillery in order to decide which are the phases or periods during which hostile artillery fire may constitute the chief obstacle to the success of the attack and to ensure that an adequate number of guns is allotted to C. B. work during those periods.

It will not usually be possible or necessary to make a fixed allotment for the whole of an operation, since the requirements will vary, so that the relative importance of covering fire and counter-battery tasks must be considered phase by phase.

As an example of what is meant, take the case where tanks are to be used in the second phase of an attack after the first objective has been gained. In this phase the hostile field guns will be of particular importance as an obstacle to the tanks progress and C. B. attention should be specially concentrated on them. Support of our tanks may be given in the form of a timed concentration on these enemy field batteries or perhaps by a smoke barrage put down by our own field guns. Having decided on the periods during which counter-battery is of special importance, an adequate allotment of artillery for this task must be arranged and there then remain to be settled the details of the counter-battery fire plan.

This plan has to take into account two categories of hostile batteries, those whose positions are known sufficiently accurately for them to be engaged by predicted shooting, and those whose positions are suspected or quite unknown. The latter can, of course, only be dealt with by air observation after zero hour and when there are many of them, they constitute a very difficult problem. At the moment we are considering the attack after a static period when the number of unknown positions should be small and the number of known positions correspondingly large.

The normal method of dealing with these known positions is by a pre-arranged neutralization programme, consisting of a series of timed concentrations on groups of targets selected for their probable importance at those times. If our ideas on neutralization are right, it should be possible to engage them in groups in succession provided that no battery is given time to recover completely from one crash before the next arrives. This means, in practice, that not more than two or possible three successive groups can be dealt with during one phase and, even so, the crashes must be short and therefore at a high rate of fire. Each crash should be, if possible, a concentration of 2 to 1 and it will, therefore, often not be possible to engage all the known batteries which are potentially important. In this case a further selection will have to be made of the most important targets based on a knowledge of their positions and their normal zones.

Finally, in making out this neutralization programme, the probable rate of advance of the attack must be kept in mind to ensure that fire is lifted off the most forward enemy batteries in time.

There is one other point about these pre-arranged neutralisations. They are based on information up to the latest possible time, but as orders take time to produce and distribute, that time is, probably, about six o'clock the previous evening. Last minute moves of known batteries must always be anticipated, and it is, therefore, wise to tell the first A/R pilots, as their priority task, to send N. S. calls on batteries in the programme which have moved. This saves wasting ammunition on empty positions and also gives the C. B. staff guns in hand to deal with newly located batteries.

With all these factors to be considered, as well as the complications of ranges and arcs of fire of the various batteries allotted to C. B. work, it is almost always necessary for neutralisation programmes to be made out in complete detail by the C. B. Staff. In this they differ from other task tables where brigades are given tasks which they in turn allot among their batteries.

This is a very brief description of how C. B. is worked when time and information are available, and of how a C. B. fire plan is made. In England this organisation actually exists; officers are earmarked and take part in schemes as members of the C. B. staff.

It has been anticipated, and in fact it is obvious, that the necessity for some form of C. B. work will arise in operations that take place under divisional or brigade control, in fact whenever hostile artillery imperils the success of any operation. Accordingly, the C. B. staff captains are lent to C. R. A.'s of divisions to act as their C. B. advisors. At the earliest possible moment this C. B. S. O. should establish liaison with the A. C. squadron through the Squadron Artillery Officer, with artillery brigade commanders, and with the commander of any Medium artillery that may be attached to division. In conjunction with Div. "I" and the staff Lieut. R. A. he should help to organise artillery intelligence, making C. B. his own special concern.

In the early stages of operations, C. B. work will not be very complicated. The C. R. A. will have to ensure that a fair proportion of sorties, according to the tactical situation, are allotted to Arty/R. duties. He must arrange for batteries to be ready to answer calls

for fire on hostile batteries according to the general policy laid down, and for concentrations of fire to be put down, if and when required on batteries previously registered. These are, more or less, matters of routine and there are no special difficulties involved. Later on, when, for example, it is found that an attack on a comparatively large scale has to be launched, the problem is not so easy.

Infantry Brigade Commanders are always inclined to ask for all the available artillery to give covering fire for such an attack, in the form of either barrage or concentrations. They do not always realise that hostile batteries must often, if not always, be included among the targets for such covering fire. In fact every located hostile battery that might interfere with an attack should be included in the fire plan. In addition, provision must be made for engaging previously unlocated batteries as soon as they are observed from ground or air O. Ps. The chances of being able to bring concentrations of fire on any or all such batteries depends on the survey situation, and on the number of guns available for this work. It will usually be found that the number is quite inadequate to deal with all located hostile batteries at once. Often a selection will have to be made, and those noted as being specially dangerous from their position and previous activities will take precedence.

It will be recognised that the presence of this technical expert at Divisional H. Q. will ensure that C. B. work receives full consideration. Moreover, when the time comes for Corps to resume control of operations, including C. B., it will be found that much useful information has been collected, and much good liaison established. The C. B. O. will be able to start work with his two assistants completely in the picture.

How can officers of other arms help in making C. B. work effective? Much can be done by unit intelligence officers, who should make sure that all information, such as Shelling Reports, is sent through. Such reports should give as much detail as possible; the direction from which the enemy shelling is coming, a "scrape" of the shell, the time, intensity, and damage done. All this information may be, and often is, invaluable to those who are building up the C. B. picture.

Formation commanders and their staff officers can help by appreciating the importance of dealing with enemy guns, and not, therefore, diverting too much of the artillery to other purposes. In peace training there will always be a tendency to underrate the power of the

artillery. This is due to the fact that little is seen of the guns and less is heard of them. At practice camps spectators are seldom given the opportunity of seeing the effect of "fire for effect." This will be very quickly corrected in war, but it is better to start off with a true conception and conduct peace training accordingly.

It is suggested that umpires at manœuvres, and directors at T. E. W. T. S. should always paint the C. B. picture, and be prepared to discuss the action taken by those to whom the picture is painted. For example, a battalion commander is told by an umpire that this attack is being held up by artillery fire coming from a certain direction. He should appeal at once to the commander of the artillery supporting him. The latter may, and probably can do nothing with his own guns to neutralise this fire, but he can and should report at once. There may be a medium battery linked to his grid doing C. B. work with air observation and the offender may have been registered. In this case the answer is obvious. He may, however, have to report to the C. R. A. who should then take steps to have the offender neutralised.

It is suggested that whenever A. C. aeroplanes are available on manœuvres, a definite programme of C. B. work should always be included among their tasks, and artillery umpires carefully instructed to devote attention to this work. There is a tendency to-day to think that C. B. work is the sole province of the Medium Artillery, or that it is never decentralised below divisions.

It has been suggested that light field batteries acting in support of an attack can do no more than attempt to blind enemy O. Ps. with dust or smoke. But it should be remembered that an intelligent artillery commander spreads his O. Ps. over a wide area, and if only one O. P. is left unblinded, the officer installed therein can often control the fire of an artillery brigade.

Whereas batteries subjected to heavy bursts of fire, corrected from the air, will almost certainly be out of the picture for a time, and may suffer losses that may force their withdrawal. It is well within the power of a mountain or field brigade, well handled, to neutralise the fire power of their opposite number.

In conclusion, it is emphasised that success in battle depends on the appreciation of the capabilities of the supporting arms. Only thus can a commander hold a true balance between the various ways in which artillery can give it support to the best advantage.

THE SO-CALLED FORWARD POLICY.

By "Mouse."

"Any great power is ultimately forced to absorb barbaric states contiguous to its frontiers. This is the verdict of history."—C. Collin Davies, 1932.

"Frontiers are indeed the razor's edge on which hangs suspended the modern issues of war or peace, of life or death to nations."—Lord Curzon, 1907.

"It appears to the Government of India that the time has arrived when it becomes of extreme importance that an effort be made to bring under our control, and, if possible, to organise, for purposes of defence against external aggression, the great belt of independent tribal territory which lies along our north-western frontier, and which has hitherto been allowed to remain a formidable barrier against ourselves."—Government of India to Punjab Government, 1887.

The above quotations should be enough to show that I am not entering this controversy without the support of a few big guns. Before the days of broadcasted aviation the problem was simple; either the easy close-border system or the Forward Policy. Adherents of the former were content to sit behind the old Sikh demarcation, our present Administrative Boundary, whilst enthusiasts of the latter wished to push forward to the Durand Line. The Durand Line was fixed forty years ago, and, because our lack of policy—called the Forward Policy—has been so backward, nobody has ever seen it since. We have in the usual good old British way compromised. Those unhappy people rivetted to cool armchairs in Whitehall, New Delhi or Simla have found it comfortable to take both views; either butcher (now bomb) the beggars to hell, or bribe those gallant tribesmen so that we may have peace in our time, O Lat Sahib Bahadur. For the official or soldier on the frontier in direct contact with the tribes the problem cannot solve itself so agreeably. The soldier, rough, untutored and so licentious, has no axe to grind, no policy to enunciate and no avenue—Heaven's Light our Guide!—to explore; all he has to do is to sit tight. This he does with superb nonchalance. Occasionally—once a year at least—something goes wrong politically. And then the bugles blow, convoys creak, Brigadiers bulge, subalterns sob,

Generals germinate, sergeants swear, Majors migrate and the C. G. S—or some correspondingly high authority—presses a button and all the Army on the Frontier buttons up his.....For what purpose ?

The Afridi, starving, has come down for food to the plains of India, seduced thereto by propaganda tales, mostly true, of weakness or abdication of the powers that be. The Haramzada Faquir of Allmyai—a lunatic and therefore more influential than an Amir—has chosen to fish in the troubled waters of the Swat river. An Afghan renegade, cloaked in the mantle of Islam, holds out promises of loot and heavenly bliss in the bazaars of Kandahar, Bannu or Khost. Anything, anywhere, anyhow is enough to raise a brave, mobile *lashkar* of young, well-armed impetuous men on that most unscientific border of India which wriggles from Hunza to Harnai. The result of these alarums is a few columns on the move, a few bombs, a few shots, and a *feu de joie* at a *Jirga*. The Government of India purrs contentedly, self-persuaded that its " dissuasive restraint " policy has once again vindicated itself, smooths its waistcoat and goes out to dinner. Only when its prestige is affronted brutally in Waziristan or its women threatened in Peshawar does it, the Government of India, stir itself to real forward policy action.

The fundamental reasons—now in 1933—for these tribal disturbances and our timidity in dealing with them are economic; they are hungry and we are broke. We have succeeded for the time being in protecting the Peshawari plains and the Derajat from the ravages of the tribes. We have now imprisoned our fellow British subjects between the administrative border and the frontier of Afghanistan. More thorough than that, we are now enabled to bomb blazes out of any one of them who comes down to India—desperate, armed, uncivilised and as savage as his grandfather of 1870—to grab sustenance for his children. Indeed, sometimes we feel we ought to bomb the whole parish because one or two parishioners have misbehaved themselves. At the risk of appearing sentimental, soft, and unsoldierly I would like to submit that this bellicose attitude on the frontier is wrong. It is sinful ; it is stupid ; and, worst of all, it is directly contrary to all our historical teaching of frontier administration. The punitive system was condemned by Lord Lytton in 1877 in the following words :

" *I object to it because it perpetuates a system of semi-barbarous reprisal, and because we lower ourselves to the ideas of right and might*

common to our barbarous neighbours, rather than endeavour to raise them to our own ideas, because it seldom touches the guilty, and generally falls more heavily on the innocent ; because its natural tendency is to perpetuate animosity rather than lead up to good relations : because as a rule it leaves no permanent mark."

This opinion was provoked by the close border policy of scuttle and run punitive expeditions, and I honestly cannot see why it should not apply to some of our bombing operations. I admit that I am not air-minded in the accepted meaning of the term, but I try to be fair-minded and I, therefore, regard the tribesmen as people with whom our contact ought to be persuasive rather than explosive.

I contend that since 1893, when the Durand was fixed as our goal, we have never entered our enemy's twenty-five ; we have made a few missed drop-kicks ; we have dribbled ; we have scrimmaged. On three occasions we have made combined rushes with the forwards (the military), the halfs (the Political), the three-quarters (the Government of India) and even the back (the Secretary of State) on the half-way line, all co-operating magnificently ; but every time the enemy has kicked a beautiful length for touch—and touched us for a few more lakhs. Our frontier policy has been merely tidal ; it ebbs and flows. With the notable exception of Baluchistan, the dubious exception of Waziristan and the Khajuri Plain peace of resistance our policy still remains a contemptible compromise between bribery and bullying. It has never been coherent, consistent or clear ; it has always been conceited, invariably chameleonic and, since the last decade or so, constipated. To make it move forward at all it needs a dose of trans-border terrorism, and then it moves reluctantly and with great labour. This language may appear extravagant, too emphatic and perhaps melodramatic ; I don't really care. When one studies—even casually—the history of the frontier, when one reads that *four* generations ago our wise and courageous forebears urged a forward policy and proved its blessings by their own splendid labours, when one hears incessant, perfectly phrased lip-service paid to such a policy . . . . . and then, when one sees so little being accomplished, such tiny, timorous steps being taken, is it any wonder that a fellow becomes impatient ?

Sir Robert (and what a man !) Sandeman is the father of the forward policy and the present continual extraordinary tranquillity in Baluchistan is the edifice built on the foundations he laid fifty-five short years ago. There are those accustomed to the velvet lawns

of the Quetta Club, the *chikor* shoots near Torquan, the dreamy atmosphere of the Staff College and such Baluchi delights who will compare these civilised amenities with the rigours of Razmak and the blood-shot life of the Khyber. They will declare that the difference between the tribes of Baluchistan and those north of the Gumal River is the diffrence between a sheep and a wolf. They will assert that the Bugtis, Kakars, Marris, Achakzais and Suleman Khels are pacific, pastoral folk who obey their chiefs and love autocracy; but not so the other Pathans of the border. The Wazirs, Mahsuds, Afridis and Mohmands, the Orakzais, Yusufzais, Dawars and Tarkhanis are democrats, socialists, communists. They owe no allegiance, acknowledge no power greater than their own right arms, and are fiercely, fanatically independent.

I wonder. Indeed I wonder so much that I am prepared to take a perfectly safe small bet that if Lieutenant Sandeman had been posted as Deputy Commissioner of Peshawar instead of Dera Ghazi Khan in 1866 you and I would now be at a Staff College doing winter sports on the Safed Koh.

When Sandeman, a young man of less than ten years' service, broke the close border policy he met with great opposition. He was so zealous for the well-being of his people, so enthusiastic in his dream of peace, so passionate and so irrepressible that the Governments of the Punjab and India nearly wagged their heads off with disapproval. Nothing, however, succeeds like successful excess. One of his first tasks in Dera Ghazi Khan was to break the power of one Jamal Khan, a middle-man employed by government in its dealings with the trans-border tribes. This Tumandar was a thorough-paced scoundrel who hunted with hounds and ran with the hares and had conducted his villainy with such success that he thought himself omnipotent. Sandeman, after a long fight, broke him, and then started to clean up the border. This victory was Sandeman's stepping stone. And he rose on it from the depths of the riverain of the Indus to the highlands of Baluchistan.

He broke the might of the Marris, robbers and plunderers whom General Jacob described as "the worst enemies of the Khan of Kelat," and to whose charge was laid that "all is disorder, rapine and plunder on the Kachi side of the desert." Of the Bugtis Sir Lepel Griffin wrote "this was a tribe absolutely devoted to robbery." The Marris were outlawed and an award of ten rupees was offered on the Sind Frontier

for the capture of " any Marri." From Jacobabad, then a frontier post, to Dera Ghazi Khan, the Baluch border, was a sort of wild west Texas. The Khan of Kelat, a weak puppet, was being harassed by his Sirdars ; all commerce from Afghanistan was the legitimate prey of his tribes, sub-tribes, clans, villages and even individuals. These same marauders swooped continually in large, defiant bands across the border, murdering, looting and escaping. And within ten years Sandeman stopped it. He established a peace, the most enduring, save the Ulster Settlement, in modern history.

How did he do it ? I honestly cannot tell you. There are figures in modern history, Foch, Woodrow Wilson, Gandhi, Mussolini, Lenin, Montagu Norman, Hitler, Lloyd George, Hindenburg, al Capone, Amanullah, de Valera, Northcliffe—who, by sheer personality, apart from their several and often dubious gifts, have raised themselves and their followers from the common rut and brought something vital to humanity. It may be this something is too bad to be allowed existence but the personality that engendered it defies analysis. And so with Sandeman. He also was a visionary, but unlike some of the mixed crew I have cited above his visions were practical, his ideals were constructive and his aim was peace. It seems significant that his biographer, Thornton, wrote that Sandeman's policy was not a mere squabble between officials. " It was," Thornton records, " a protest against the existing systems of frontier management, against the uncompromising militarism of Sind and the " non-intervention-cum-expeditious " systems common to both Sind and the Punjab ; and was a first step towards a new policy, a policy believed by its promoters to be more humane, more sympathetic, more civilising, and, at the same time, imperatively called for on grounds of public expediency." How Sandeman achieved his goal depended entirely on his methods and character. First of all he was a man, fearless, straight and with a preference for personal action rather than impersonal letters; secondly, he was a gentleman and had therefore the hereditary background for dealing with affairs, the certain indefinable quality which the tribes acknowledged instinctively ; thirdy, he knew his own mind ; and finally, he always continued to learn his job. He based his administrative policy on giving his support to the local chieftain, and, so long as his ally played the game, he was ready to back him up in all his troubles. " Trust begets trust," and Sandeman proved the truth of the proverb. Withal he was sympathetic, his sympathy based on his

knowledge of the tribes. He knew their code, he knew their ignorance and when they transgressed the law he brought them to book. But, because he dealt with the delicate tissue of a savage's mentality, his punishments were often absurdly lenient when compared with the standards laid down by the British India Penal Code. His judgments deserve study by penologists, for he made his enemies his friends and turned all Baluchistan from Jacobabad to Fort Sandeman into loyalty to the British throne.

The histories of Waziristan and the Tirah are sadly different. Of Waziristan it is impossible to write without heat. Never in any of our possessions except Ireland have we behaved so incoherently. We have had no settled policy, have blown hot and cold, have cajoled and cursed, bribed and beaten and now ten years after the occupation of its highlands—but I will come to that later. In 1889-90 Sandeman from the Zhob arranged with his great subordinate, R. I. Bruce, at Dera Ismail Khan to open up the Gomal and effect a circular road *via* Wano (now Wana) to bring the Kakars under one uniform administration and to improve our frontier communications. The scheme had the official blessing of a Viceroy who actually went up the Gomal on a horse. Shortly afterwards in furtherance of the project Sandeman held a Jirga at Appozai attended by all the local tribes, and by Waziris, Mahsuds and Sherannis who came in after some natural hesitation. The road from Fort Sandeman to Wana *via* Kajuri Kach was roughly aligned and *Mahsud* labourers were employed at Kajuri Kach. Half a lakh per annum was granted by Government to keep the route open and pay for the local khassadars. Sandeman died in January 1892, and the road is not yet open.

Since Sandeman's death our frontier policy has been theoretical rather than practical. We have accepted the forward policy because there is no other, but we have fiddled with it to the detriment of ourselves and the derision of the tribes. Our main stumbling block has been financial because it is a shock to our budget to demand a few crores for such a purpose; whilst, on the other hand, the dribble of money spent on expeditions and allowances annually for the last fifty years (amounting to say twenty crores) has been as imperceptible as a slow puncture. In Waziristan, following upon a triennial series of costly punitive expeditions we at last took the bull by the horns in 1920 and decided to occupy the place. We established impregnable strongholds, we built roads, we reoccupied the badly-treated Wana,

and we continue to build roads. We now enlist Mahsuds and employ the tribes in civilised employment. Waziristan is British territory—for about five hundred yards on each side of the motor roads. Yet in spite of all these efforts and the great expenditure the heart of Waziristan is to any military officer *terra incognita*. Why? Admittedly one can take a few khassadars as an escort and prowl round the adjacent hills and that one meets with great hospitality and friendliness. But there are the great dark patches. If we do control the country—a supposition which I personally consider doubtful—why can't we move about more? Why can't I go outside my barbed wire at night? Why can't I take my company for a week-end in the hills away from the office, Brigadiers, telephones, clerks and all the other things that prevent me from being tactically mobile? If permission would be granted to the young company commander to move about on company training (his only pigeon in this over-administered age) on the condition that he passed colloquial Pushtoo and that his C. O., recommended him as not being a congenital idiot, I guarantee that not only would it lead to military efficiency but that it would have an incalculable political effect. There might be some regrettable incidents but these, I contend, would be minor in comparison with the annual ballyhoo which occurs whenever a faquir goes bolshy.

We are now the conquerors of Waziristan and our only desire is peace. There are no commercial, no political and no religious advantages to be wrung from that barren land. Any action we take there to preserve peace and ensure tranquillity is certain to have the blessings of the League of Nations and even the U. S. A. The most extreme sections of political opinion in England will applaud any effort to improve the conditions of life and employment in this sadly derelict portion of the Empire. There seems to be nothing to prevent an amiable forward policy except our imperial ingrowing toe-nails. Recent unrest in Waziristan shows that we are diffident, and so long as we are too timid to grasp the bull by the horns, so long to peace on the frontier!

Now for the Tirah. This is a more difficult question both ethnologically and geographically. The Afridis are more fiercely independent than even the Mahsuds. The Durand Line split their kinsfolk rather arbitrarily and left them convenient back-doors to walk down the gardens of Afghanistan. With them we have always adopted the "hands off" policy. All we have asked for is the integrity of the

Khyber Pass and the inviolability of British territory. History relates a sad tale of treachery, raids, broken promises, insults and invasion. Our first skirmish with the Afridis was in 1839, and from 1849 to 1898 there were eight expeditions to coerce them. In October 1898, an Agreement was made which bought peace at a price. The Maliks were on the whole loyal but were unable to oppose the intrigue of mullahs and anti-British propaganda, and in 1904 some desperate outrages occurred in British territory. In 1905 raids and murders, sponsored and concealed in the Tirah,—increased, and the Zakka Khels were as usual the prime movers. From 1905 to 1908 these outrages grew steadily in spite of all efforts to prevent them. In 1908 the Zakka Khels arranged a raid on Peshawar City and despoiled a Hindu *bania* to the tune of a lakh of rupees under the noses of political officers, police and military. Roos-Keppell, Sandeman's great successor, reported officially. "Year after year the evil has grown, and each year the necessity for punishing the Zakka Khel has become more pressing. Circumstances, larger questions of policy, and the natural dislike of Government to strong measures, have saved the clan from the punishment which it so richly deserves." He recommended the *permanent* occupation of the Bazar Valley. It is pleasant to record that the Viceroy, Lord Minto, agreed with this opinion. He wrote to the Secretary of State : "There need be no necessity for taking the country in the sense of forcing upon it British administration, collection of revenues, etc. We could simply hold it by the creation of one or two roads, or rather by the improvement of the existing roads by tribal labour.....and the establishment of a few advanced posts, leaving the tribesmen as heretofore to carry on their own tribal administration" (*cf.* Waziristan 1920—1933).

Our recent dealings with the Afridis are too fresh in our minds to permit dispassionate comment. We have managed to shut them up, which is, I suppose, an advantage, but a policy unlikely to lead to friendly relations when the pendulum of the Government of India swings back again to indecision and misplaced conciliation. A kindly light has forced us to occupy the Khajuri Plain. "One step enough for me, lead Thou me on."

What is the best solution of the frontier problem ? There are several academies of thought, and it might be amusing to display them under their various mottoes :—

I. The Government of India Policy :—

Vigilate et orate. (Watch and pray.)

II. The Foreign and Political Policy :—
Cedant arma togae. (Let the military yield to the politicians.)

III. The Army policy :—
Aut vincere aut mori. (We'll conquer or die.)

IV. The Air Policy :—
Sic itur ad astra. (This is another road to fame.)

V. The Mouse Policy :—
Flectere si nequeo superos, Acheronta movebo. (If I can't ginger up the high-hats I'll raise hell.)

Of these policies there are various permutations and combinations with which we are familiar in general vague outlines. We know that the Politicals and Scouts have run the Frontier, and can do it so long as no forward movement is adumbrated; we know that the Politicals and the Air could run the Frontier, but I doubt if this combination would be conducive to a permanent settlement of the problem; we think that the blessed co-operation of all services can keep the cursed place quiet, as at present; and in the end the unadministered territory runs itself, and remains in this year of grace the most untidy, slip-shod, dangerous part of the Empire.

For so far my criticisms have been destructive. I have not been fair. I have not acknowledged the great work done by political officers, soldiers, airmen and others who have ploughed the sands in the hope that their work would be permanent. I have ignored historical instances which might prejudice my case; I have quoted authorities suitable for my purposes. I have even been, I hope, unkind.

I plead forgiveness by producing that sterling motto: "*Flectere is nequeo superos, acheronta movebo,*" and I submit in all humility and sincerity a constructive solution. It is open to any criticism. It may be derided by the more knowledgable political officer, it may be abused by the more aggressive military officer, it may be ridiculed by the air officer, and it might even be laughed at by the Government of India. I pray that it does exhume these healthy reactions, because then I will know that I have made these people think about something which they are at present afraid to face up to.

My plan is necessarily based on a few assumptions. Firstly, the new Federation of India will extend to the Durand Line; secondly, the Forward Policy—from the point of view of a great civilised nation such as this Federation—is inevitable and, thirdly, I assume that we,

the British, wish to hand over to our successors a Defence Balance as secure and impregnable as the Finance Member's successive budgets. Our Defence Balance is shaky, and its weakness lies on the N.-W. F. P. If the covering troops immobilised in Chitral, the Khyber, the Kurram, Waziristan and the Zhob could be utilised for the normal purposes of military forces, instead of being the handmaidens of political (in its original sense) intrigue the Army in India could be reduced considerably. I submit therefore a plan; let us call it a Twenty Year Plan, and divide it into four phases.

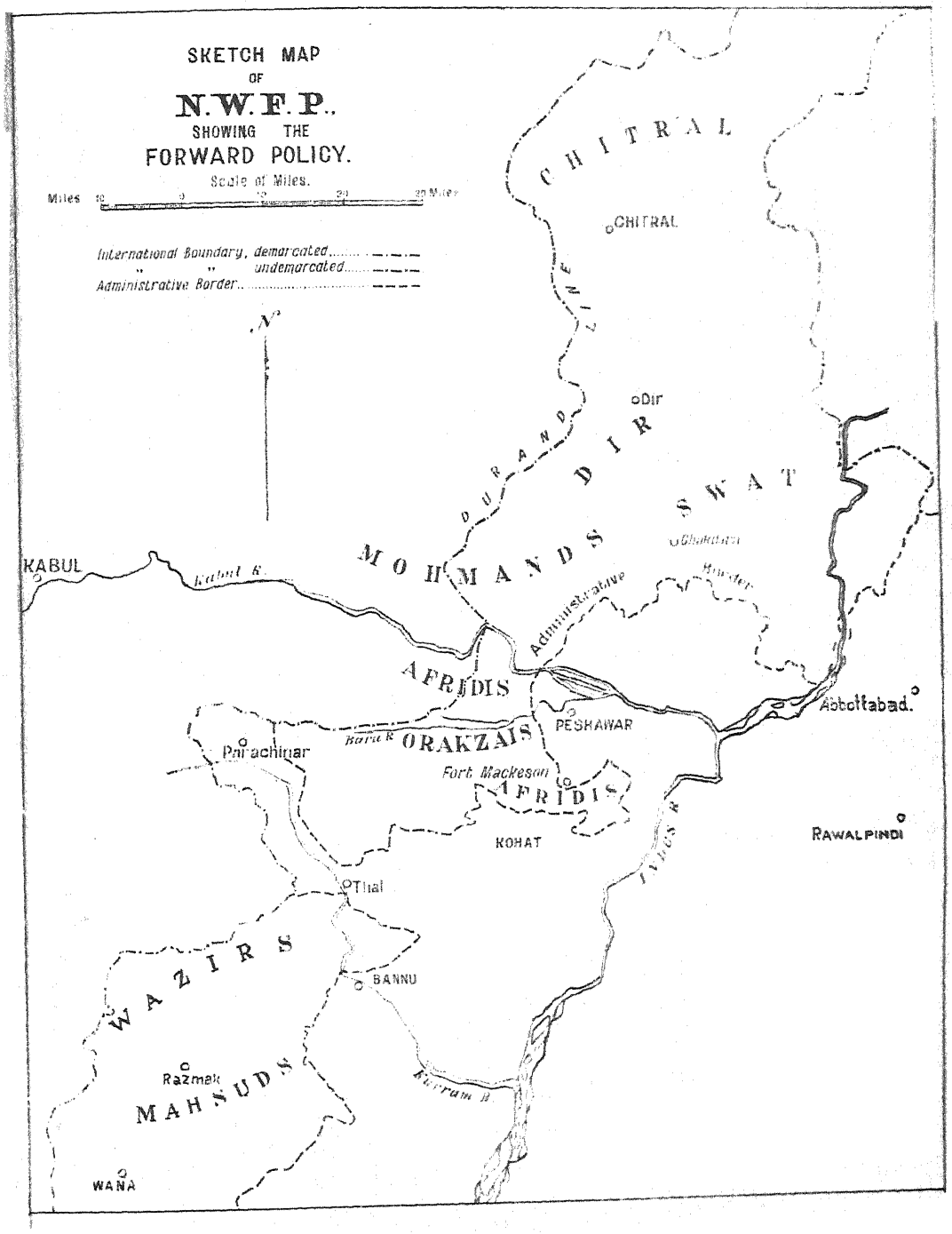
1*st Phase.*—Inform Afghanistan of our intentions and seek Afghan co-operation and understanding. Warn and keep warning the tribes of our determination to penetrate peacefully their countries as far as the Durand Line. Warn them that in the event of opposition the most severe action will be taken *vi et armis*. Place the whole of the unadministered territory during these phases under a military governorship. For, as Sir William Barton points out in his chapter in "Modern India" (Oxford University Press), "the problem of the Afghan Frontier is in its essence a question of military strategy." A study of the occupation of the Sudan and French Morocco will show that a military *règime* is a necessary prelude to the civilisation of a savage country. Commence with Waziristan by opening it up; and as a preliminary to the settlement of the Afridi problem nip off that impertinent salient into British territory between Fort Mackeson and Kohat.

2*nd Phase.*—Learning from our successes and mistakes in Waziristan then deal with the Tirah and the Mohmands.

3*rd Phase.*—These events will have had their reactions in the States of Buner, Swat and Chitral and it should not be a difficult matter to persuade these at present mediæval territories to come into line with our peaceful forward policy.

4*th Phase.*—Order general disarmament throughout the whole N.-W. F. P. as in British India, and after enforcing it hand the country back to the civil power.

Admittedly such a simple solution on paper teems with snags, but with resolution and money it—or any other planned advance—should not prove unworkable. To quote Sir William Barton, a political officer of thirty-five years' service twenty of which were in the N.-W. F. P.:—"As already observed, we have no definite policy with the tribesmen.....The ideal policy would be to


SKETCH MAP
OF
N.W.F.P.
SHOWING THE
FORWARD POLICY.
Scale of Miles.
Miles
International Boundary, demarcated
" undemarcated
Administrative Border
N.
CHITRAL
CHITRAL
DURAND LINE
Dir
DIR
SWAT
MOHMANDS
Shakdara
Border
Administrative
KABUL
Kabul R.
AFRIDIS
Abbottabad.
PESHAWAR
Bara R.
ORAKZAIS
Parachinar
Fort Mackeson
AFRIDIS
KOHAT
RAWALPINDI
Indus R.
Thal
WAZIRS
BANNU
Razmak
MAHSUDS
Kurram R.
WANA

develop the indigenous institutions of the Pathan tribesmen into some form of rough and ready administrative machinery with which the authorities of the Indian Government could deal..... Government support would be necessary and this would involve expense. Indian statesmen will, however, have to realise that if the Frontier menace is to be exorcised it will mean heavy expenditure; education, economic and political development are the main things necessary if the Afridi, the Mohmand, the Wazir are one day to sit as Senators in the Imperial Councils."

This ideal policy can never be achieved until we move to the Durand Line.

I can now see the majority of my readers fingering their moustaches, rather sorry that I have given vent to such wild-eyed enthusiasm, bred on ignorance and fantastic ideals. They will assert—and I agree cordially—that such a plan is founded on theory and in the present state of India's finances is totally impracticable. But let us look ahead and take the long view, the horizon view on which all policy should be based.

If we do not *now* begin some sort of progressive policy, what will be the result in, say, thirty years' time? My outlook is pessimistic, because of a cursory reading of Indian history, a petty knowledge of Indian politics and my own prophetic conceit. I visualise a Central Government with an inevitable Hindu majority; a Muslim minority continually in opposition on religious and imaginary grounds; an army cut to the bone so as to make Federation safe for democracy; and, finally, a forward policy such as we have now only less so.

Then the Mahsud loots the rich cantonment of Razmak, or the Afridi occupies the Hindu bungalows of Peshawar, or the Achakzai raids the Staff College in Quetta. A crisis will develope. The Commander-in-Chief will demand strong action and fifty crores, and will be supported by the Central Government. And then, ladies and gentlemen, the sinister figure of Pakistan will rear his arrogant head.

It is idle and extremely foolish for anybody in India to shut his eyes to the Islamic movement which dreams of an Indian Muslim Confederation composed of the Punjab, the tribal territory (called Afghan), Kashmir and Sind. On such a pretext of war against the Muhammadans of the border an agitation, speading through Provinces and States, will arise which will make Civil Disobedience look

like a dhobi-ghat scuffle. Pakistan will have tremendous backing; it already possesses great resources in fighting men; and it still dreams of the old Moghul glories in Hindustan. It would split Federation from top to bottom.

I have written enough. For these reasons, kind ladies and scoffing gentlemen, I do feel most earnestly that we ought to remove all possible sources of irritation and infection before we hand the baby over to its wet nurses.

THE EVOLUTION OF THE MODERN ATTACK.
THE FALLACY OF THE LINE.

By Lieut.-Colonel O. G. Body, d.s.o., r.a.

The rapid development of modern armament and its absorption into our fighting organization has led to great confusion of thought as to the handling of units and formations on the battlefield. The study of tactics as an art has been clouded by the introduction of a mass of new material with which to work and with which to produce new effects. In order to understand the true significance of recent innovations it is necessary to appreciate the old principles which have ruled the art of tactics since time immemorial; for, by respecting those principles we shall comprehend more fully the trend of tactical thought and whither it is leading us.

Within the realm of tactics the first principle to accept is, that we must arm and organize all fighting units and formations primarily for the attack. The evolution of the attack therefore is the important study and to that aspect in particular the following short survey is confined.

Throughout the last two centuries there have been two schools of tactical thought, in constant conflict one with the other; namely, those who have advocated the line formation in attack and those who have advocated the column. These two schools are still in conflict to-day. The three great masters of war who influenced the military thought of many succeeding generations were Frederick the Great, The Duke of Wellington and Napoleon. Of these, Frederick and the Duke were exponents of the line theory and Napoleon a wholehearted advocate of the column.

Frederick's success as a general was due to his perfection of battle drill. This enabled him to attain a greater degree of mobility on the battlefield. He attacked in line, but his increased mobility always enabled him to attack in flank on the restricted battlefield of that day. The line tactics of Frederick were not employed in frontal attack. Modern armies cannot expect to roll up flanks in the same manner. Strategical flank attacks hold good, but tactical flanks are not so clearly defined, neither can they be menaced by tactical manœuvre to the same degree as they could before the advent of the machine gun and smokeless powder. Now tactical flanks belong to the lighter affairs of war, advanced guard and rear guard fighting and the gaining of contact phases. In battle proper when both contending armies are

seeking decision the bulk of the attacking troops are condemned to the tactical frontal attack although the movement generally may be that of strategical flank envelopment.

The power of modern artillery had not made itself felt in Frederick's day and the Infantry arm could advance to the attack without the careful preparation which is now essential.

The Duke was the great exponent of the line school and his tactical doctrine was carried on in the British Army as a holy tradition right down to the outbreak of the Great War—a tradition which stood us in good stead in the lighter affairs of colonial warfare. The Duke's great reputation in battle was, however, gained on the defensive, and, indeed, perhaps no one has ever excelled him in the conduct of the defensive battle. He opposed the attacking French columns with the line and defeated them again and again. The column seemed powerless against the vigour of the Duke's defence—the column met by the line and counter-attacked by the line.

The Duke also used the line formations in main attack, but there are few battles in which we can study the minor tactics of the attack as employed by the Peninsular Army. At SALAMANCA the Duke was all set for the defence when his master hand set his troops in forward movement at such short notice. That battle was in reality a gigantic counter-attack. Success was due to the exploitation of the principle of surprise rather than the inherent soundness of the tactical principles employed. VITTORIA provides us with an example of an offensive, strategical as well as tactical. Here the Duke's line methods met with complete success, and furthermore carried the attack to great depth. The French defended successive features right back from the ZADORA river crossings about the heights of PEUBLA to VITTORIA itself—some seven or eight miles. One of the main arguments against the line in attack is that it cannot penetrate to sufficient depth to achieve decisive results. But we cannot pin our faith on isolated instances of success.

The Duke exploited to the full the power of musketry both in attack and defence, and this reliance on the rifle certainly demanded line formation. The Duke did not use his artillery offensively as Napoleon did, but he used it very much as close support artillery is employed to-day. To the Duke the Infantry was the Army—a condition which no longer exists.

All Napoleon's military operations are characterized by offensive action—strategical as well as tactical. He was a rigid adherent to the column school. He fought with a national army, whereas Frederick and the Duke fought with highly trained professional armies. The column was undoubtedly suited to the mass psychology of the personnel at Napoleon's disposal.

The attacking columns were preceded by skirmishers whose duty it was to provide the fire which covered the movement; the artillery having pounded and weakened the enemy by concentrations of fire on selected areas. During the twenty odd years of the Napoleonic wars the number of troops deployed as skirmishers considerably increased, and this tendency went on in the Continental armies right down to the outbreak of the Great War when the bulk of the attacking troops were deployed to form a firing line behind which the supports and reserves moved in closer formation—in small groups approximating to the column, but not in such large packets as in the Napoleonic days.

The attack formation consisted normally of the battalion moving in close column of half companies, something akin to a battalion moving forward in close column of platoons, *i.e.*, about 16 to 20 files in frontage and about 20 to 30 files in depth. Although the Duke's defensive methods seemed to beat the column every time, yet Napoleon always held that the principle of the column was correct, and that the failure of the column against the British Infantry was due to the fact that in his latter campaigns the columns were too dense. With the raw levies he called up, he and his Marshals were compelled to increase the density of the columns, and brigade columns were often resorted to. He maintained that the correct answer to a more efficient small arms fire was to have less dense columns and more of them, and also greater reliance on artillery preparation. He wished to distribute his columns in greater depth and in smaller groups and not to expand them into line.

Napoleon was an artillery general. His tactics were combined artillery and infantry tactics, and not based on the consideration of the latter arm alone. Again and again he exhorted his Marshals to make more use of their guns. "Artillery wins battles" he frequently declared. Just as the Duke's faith in the line was the natural outcome of his faith in the rifle, so was Napoleon's adherence to the column the logical outcome of his dependence on the artillery to blast a way for

the Infantry advance. As attacking Infantry have become more and more dependent upon Artillery to provide the fire which covers their movement, and as the power of the rifle in attack has waned, so, most surely, have the arguments in favour of the column become more evident.

In the century which intervened between the Napoleonic wars and 1914 those armies which had developed their attack formations from the column had been compelled to break their columns into smaller and smaller groups and also to garnish their columns with additional skirmishers. The line, too, had opened out with intervals between the files, and the supports and reserves moving in rear of the firing line had been broken up into smaller groups. In some respects the two methods of attack tended to approximate into one and the same thing, but nevertheless there was still an essential difference in principle. If the difference between the British and the German attack doctrine is to be fully appreciated, it must be clearly understood that the one was developed from the line and the other from the column.

The foremost British troops comprised a firing line charged with the duty of delivering the assault. The German firing line such as it was, had been evolved from the old skirmishing line and was in effect a protective screen behind which the assaulting troops advanced.

In their evolution of the attack however, the Germans had gone a stage further. They had realized even at the commencement of 1914 that the skirmisher could no longer provide the fire to permit movement. The fire of the skirmisher had been replaced by the fire of the Machine Gunner, while artillery concentrations were employed in the true Napoleonic style. In the British army the attacking Infantry were still expected to provide the bulk of the fire to cover their own movement, while the artillery attempted to satisfy the requirements of the infantry by placing their fire from the deductions of immediate observation.

The Germans held their troops in bigger packets, advanced straight on to their objectives without indulging in a fire fight and broke into the defences in groups and not in line. The assaulting infantry's role was movement and the rifle was scarcely used in working forward. The assaulting groups were given far more adequate protection than their own rifles could give. They were preceded, not by skirmishers but by a framework of artillery, machine gun and mortar

fire. There is a popular fallacy that the methods of attack employed by the Germans were costly in life. This was not so. Nothing could vindicate their minor tactical doctrine better than a comparative study of the casualty lists in some of the major battles of the Great War.

The figures at the outbreak of the war are not available for accurate comparison. The official history gives the following figures for the main attacks of 1915 :—

Second Battle of YPRES.

British losses. K. W. M.	..	Officers	2,150
		O. R's.	57,125
German losses. K. W. M.	..	Officers	860
		O. R's.	34,673

In this battle the Germans were attacking and the British and French were on the defensive. The French casualties, which must have been as big as our own, are not included, although the German casualty list includes the whole front involved. The Germans although employed in an unsuccessful attack were giving approximately three casualties to one received.

Loos.

British losses.	Officers	K. W. M.	..	2,013
	O. R's.		..	48,367
German losses.	Officers	K. W. M.	..	441
	O. R's.		..	19,395

At LOOS the British were attacking and the Germans on the defensive. These figures speak for themselves and show that the German Infantryman had a better fighting chance than the British.

The British attacks from Neuve Chapelle to the end of the Somme fighting were all " line " attacks. Old soldiers talking of these earlier battles will talk of the " first wave " the " second wave," etc., of an attack. In referring to the later attacks, Cambrai or the attacks of August 1918, they will not use such terms. There had been a marked change in our tactics after the lessons of the Somme had been absorbed. The instructions for the attack on 1st July 1916 stated that " each line of attacking troops must leave the trenches simultaneously, etc." The German official comment on the Somme fighting (also contained in the official history) states " great attacks were carried out in thick

and often irregular lines—to this must be attributed mainly the heavy losses of the British attacks, although they were certainly carried out with most conspicuous courage." The line pervaded our whole conception of attack at this time.

As regards artillery fire, the barrage was a British development and the natural consequence of the Infantry attack formations developed from the line, whereas the Germans employed concentrations which followed the application of the column theory.

The battle of Cambrai, marked the birth of a new tactical era as far as the British Army was concerned. In the space of this short article it would be impossible to trace the various modifications and changes which have been gradually introduced and which make up the sum total of a great tactical revolution. The modern attack, "arranged in depth so as to retain power of manœuvre," as Infantry Training explains, is nothing more than the attack arranged on the old column principle. Each successive edition of our training manuals marks a stricter adherence to the principle, but our equipment, organization and training still linger under the influence of the old line school, which is dying a very hard death. The fallacy of the line in the attack and all that pertains to it has now definitely been established. Much of the confusion in tactical thought which has occurred in these post-war years has been due to the fact that opinion has gradually veered round and few have understood the fundamental principles involved.

The role of the artillery remains much the same as heretofore. It is still the primary means of protecting the troops detailed to carry out the assault. The role of the skirmishers or Light companies has entirely disappeared and in their place we have the machine gun company and the tank. It seems likely that the machine gun company will develop into a fire support company in which mortars and anti-tank guns are also incorporated. The role of the fire support company will be the protection of the assaulting groups. If the artillery, the support company and the tanks fulfil their role, then the troops detailed for the assault will be able to proceed straight on to their objective, without the delay or hazard of being compelled to defend themselves during the approach by recourse to their rifles. The principle that the rifle companies should not open fire in attack if they can possibly continue to make ground is new to our manuals, and it is entirely contrary to the pre-1914 conception of building up a firing

line from the rear by pushing in supports and reserves, and the general conception that a fire fight must precede the assault.

The most recent edition of Section leading still divides the attack into five phases. The reconnaissance, the approach, the fire fight, the assault and the reorganization. The fire fight has no place in the column doctrine, and infantry should not be taught to look for it as a definite phase in the attack. This is an instance of the lingering influence of the old line school of tactics and it contravenes the principle that fire should not be opened with the rifle in attack if progress can be made without it. The section must advance in file and not in line. It assumes line formation only when it is compelled to defend itself. The column adherents have always attempted to guarantee the assaulting columns adequate protection from enemy fire so that they can retain their power of forward movement right on to their objectives. Umpires seldom let attacking infantry in on to positions until they have completed the fire fight phase. Infantry advancing on to their objective are invariably " blue flagged " half-way between the starting line and the foremost defended localities. If rifle fire has to be resorted to at this stage, then the covering fire has proved inadequate, and the attack definitely has failed.

The institution of the fire support company and the abolition of the Lewis gun as a platoon weapon are two immediate developments which the wholehearted application of the column theory demands. This will make for much greater speed in the attack and give it greater cohesion and impetus. The platoon commander cannot effectively control sub-units so distinct and separate in character as the Rifle section and the Lewis gun section. They must be charged with the responsibility of providing movement, while the fire to cover that movement is guaranteed from other sources.

A multiplication of instances in which the two great schools of tactical thought are in conflict cannot be entered into here. The appreciation of the fact that all that pertains to the old line theory is dead, and that the modern attack is based entirely on the column theory will give the correct answer to many of the problems concerning organization and tactical handling which are in doubt to-day. A distinct and separate relationship exists between the various arms and weapons according to the origin of the tactical doctrine applied.

THE CAPTURE OF KHAZANA GHUND. A FRONTIER EPISODE.

By "Shiggadar."

It was in September 1916, after a prolonged sojourn in India, which was happily shortly to be brought to an end by the move of my regiment to Mesopotamia, that I found myself on detachment at Abazai with my company and a troop of cavalry. Abazai is, or rather was, one of the old mud forts built during the Sikh occupation of the North-West Frontier, situated on the left bank of the Swat river where it debouches from the hills of Swat. It has since been pulled down, but in days gone by my regiment kept a permanent detachment there. Across the river is Mohmand country, of which the Swat river form the northern boundary, separating that tribe from the Utman Khel who occupy the hills and glens on the Abazai side of the river. North of, and close to, the fort lies the frontier village of Abazai and half a mile further up the river is Munda, a small Frontier Constabulary post guarding the headworks of the Lower Swat Canal and the weir, which latter in 1916 was under construction.

For some months past work on this weir had been constantly obstructed by Mohmand tribesmen, who used at intervals to occupy a hill called Khazana Ghund, which overlooks the weir from the Mohmand side of the river, and shoot up the coolies at work on the weir —just for the fun of the thing. Whenever this happened the coolies naturally bolted and the work was held up until others could be collected to take their place.

These periodical shooting matches became such a nuisance that negotiations were set on foot with a view to inducing the Mohmands to agree to handing over the ridge, of which Khazana Ghund formed the northern peak, in return for a consideration. The Mohmands, however, refused to surrender an inch of territory on their side of the border under any circumstances and announced, moreover, that if we ever set foot across their border in this vicinity they would resist with all their souls and with all their strength. To what extent the Mohmands fulfilled this typical frontier tribesman's boast, will be seen later.

At this time the Mohmands were thoroughly above themselves. They had been constantly raiding our border villages; and things

eventually got to such a pitch that Government decided to take action against them by a complete blockade of the tribe, to be effected by the construction of a barbed-wire line, with posts at intervals occupied by regular troops, right across their border from the Swat river in the north to the Kabul river in the south, a distance of about 13 miles. In conjunction with the erection of this blockade line it was decided to settle the question of the Abazai weir once and for all by occupying the Khazana Ghund ridge and by constructing on it three 'pucca' blockhouses, the northern one of which was to be on Khazana Ghund itself.

When I arrived at Abazai at the beginning of September this plan had just been decided upon and I was sent for by the Brigade Commander, whose headquarters were at Shabkadr, another fort seven miles along the Mohmand border in the direction of Peshawar, who told me that my company at Abazai would have to carry out the occupation of Khazana Ghund ridge and that it would be our job to afford protection daily for a fortnight or more to the civilian labourers who were going to build the three blockhouses.

After some discussion the Brigade Commander decided that two companies would be necessary for the job and he said he would order another company of my regiment to join me at Abazai. Meanwhile he told me to go away and think about it and to make a plan, which I was to submit to him in due course, and he warned me to keep what he had told me secret.

I rode back to Abazai that afternoon and the following morning accompanied by an Afridi Subedar, I went up to Munda post to have a look at the ground from there. We had a good look at the ridge through our glasses and as we could see no sign of life about we decided to risk it and do a reconnaissance of the ridge itself. We crossed the river by the foot-bridge over the weir, climbed up on to Khazana Ghund and thence walked along the ridge to the far end and down by a spur on to the open ground on the right bank of the river; and so back to Abazai, crossing the river again by the ferry opposite the fort. We had not stopped long in any one place, as we naturally did not want to attract attention, and this was the only occasion on which I had a chance of looking at the ground before the operation eventually came off.

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I had decided to take the Afridi Subedar into my confidence, as I knew I could trust him and I also knew that he was the best man I

could have found to assist me in making a plan for this particular kind of operation. My confidence was fully justified, as events proved later, and this Afridi's experience and knowledge of Pathans and their ways were invaluable.

As the result of my reconnaissance I discovered that the Khazana Ghund ridge was about half a mile long and was separated from the main Mohmand hills by a valley 300 to 400 yards broad and thus formed a very strong and commanding position. The average height was about 350 feet and the slopes were easy and covered with loose round stones, but there were no large stones or rocks suitable for building piquets. At its northern end was Khazana Ghund, a small circular peak artificially built up and evidently of Buddhist origin, whence the ridge fell precipitously down to the Swat river below.

In thinking over a plan for affording protection for the work which was to be done it struck me as obvious that, having once established oneself on the ridge it would be asking for trouble not to stick to it permanently, as if we evacuated it each evening, as was the original intention, it would probably mean fighting a battle each day to retake it.

I estimated that for permanent occupation six platoon piquets would be necessary and I found a good site for a camp for the reserve, close to the river and easily defended at the foot of the ridge. Moreover, I decided to occupy and consolidate the ridge during the hours of darkness.

The following day I rode over to Shabkadr again to see the Brigadier and explain my plan, which he approved. He told me that the erection of the blockade line would commence the day after the taking of Khazana Ghund, which would be a separate operation, and that zero day would be in about a fortnight's time. He also said that owing to the bellicose attitude which was being adopted by the Mohmands generally he had decided to increase the size of the Khazana Ghund force by the addition of the remainder of my battalion and a section of a Mountain Battery. The additional infantry would arrive on the morning before the operation took place and the Artillery would reach Khazana Ghund from Shabkadr at daylight on the morning after the ridge was taken.

Meanwhile I was to work out details and make all the preliminary arrangements for the night operation. The Brigadier subsequently

agreed to the Machine Gun troop of an Indian Cavalry regiment with which I had always been closely associated and who were very anxious to take part in the 'stunt' being included in the force, and it was decided that they should come up on the morning following the night operation.

A day or two later the other company of my regiment, which had been previously ordered up, arrived at Abazai. The Company Commander, who was known in the regiment as Harry Fragson (or 'Fragger' for short) owing to his alleged likeness to a music-hall comedian of that name, and who was subsequently killed in Palestine, was a first class soldier and a most delightful companion and we spent many long and humorous hours together working out details. Various difficulties confronted us, the first and foremost being how to get across the river. There were two possibilities. We could either cross by the foot-bridge at Munda, which would lead us almost directly on to the hill, or we could cross by the ferry at Abazai fort.

The former had two disadvantages: firstly, that it would necessitate our moving through Abazi village immediately after leaving the fort, which would give the show away at an early stage, and secondly that should the foot-bridge be held, even by a few armed men, we should have considerable difficulty in getting on to the hill at all. We therefore ruled it out.

The ferry on the other hand was safe enough as it was well inside British territory, but it had one grave disadvantage, *viz.*, the time it would take to get the whole regiment across in a single ferry boat. We had often crossed with the regiment this way before and in daylight, it always took at least four hours, so we could not rely on crossing at night in under about six hours. This, combined with a march of a little over a mile across a stony plain and then the climb up the hill, would result in our only just reaching our piquet positions at daylight, thus leaving no time to construct the piquets before it got light.

So that was no good. Eventually after a lot of thought and discussion we decided that the best thing to do would be to establish a battalion camp on the other side of the river on the morning previous to the operation and to endeavour to bluff the local inhabitants as to our real intentions. News travels with amazing rapidity on the frontier and trans-border tribes always have their spies in frontier villages, hence the necessity for caution.

The next difficulty we had to consider was the building of the piquets without suitable rocks or stones. On the ridge the stones were all small and round, such as one finds in a river bed, and they would not do for building sangar walls; and the ground too, was too hard for digging. This seemed to us an insuperable difficulty and we racked our brains for several days on end without result. We thought of brushwood gabions, but they were too heavy to carry up, and we thought of all sorts of other things, but they were all no good. At last a brain wave—why not gabions made of rabbit wire? They would be light, very easily made up and should serve the purpose admirably. Fortunately there was plenty of rabbit wire available, supplied like everything else we wanted by those handy-men, the Irrigation Engineers, who were building the weir, so we worked out how many gabions we would want for each piquet, cut the wire into the required lengths, joined the ends by interlacing them with thin bamboos, squashed them flat and tied them up in bundles suitable for man loads. So that was that.

Next we had to consider what we were going to do about wiring. We had plenty of barbed wire but no stakes. The Irrigation Department offered us wooden stakes, but the ground was too hard for them on the hill top, so what were we to do about it? Regimental brains again set to work and this time decided on knife-rests made up of light bamboos produced out of a godown by our general provisioners, the Irrigation Engineers.

And so for several days on end our soldiers were busy within the privacy of the fort wall making up knife-rests, no less than 120 of which they manufactured and eventually carried up the hill. Thus was another difficulty surmounted.

All this time we were doing all we could to keep our intentions secret and though we cast many surreptitious glances through our field glasses at the promised land, we took good care that no one noticed us doing so. Actually the only people 'in the know' were our two selves, the Afridi Subedar, and the two Irrigation Engineers—'Biggo,' the underling, and 'Frankie', the big noise. The former was a very solemn but extremely amiable and efficient canal officer and the latter a very spirited and amusing little Irishman, who had been out with us before on a small frontier show and had received an honourable mention for his ingenuity in fixing up "Heath Robinson" flares and booby-traps around our camp. These Canal Officers, in addition to

their ordinary work, were busy making arrangements for the three blockhouses which were to be constructed under their supervision and also for the live-wire line, the erection of which they had agreed to undertake right across the Mohmand border from the Swat to the Kabul river (in front of the barbed-wire line), the current being provided from the Canal Power House which was then in existence at Abazai.

One afternoon Frankie asked us to go out and watch a demonstration of the efficacy of this live-wire line, a section of which he had erected for experimental purposes between the fort and the village, and he told us to collect all the sepoys and villagers we could get hold of to watch the show. Accordingly we all assembled at the spot to witness the execution of a miserable goat, which had been purchased as the victim for electrocution.

In due course Frankie and Biggo arrived upon the scene, followed by the goat and several babus armed with sticks and umbrellas. When all was ready and the current had been turned full on the goat was urged to advance to his doom. This he was very unwilling to do, but after a series of shooings and proddings from the assembled babus he skipped gaily forward towards the wire. We all held our breath, expecting to see a flash, a sizzle and a dead goat, but what actually happened was that the goat, after tripping when he came to the wire, pushed his way through it and came out smiling—or rather bleating—on the other side. This performance was repeated three times, more volts, amperes and what-nots being added on each occasion, but the goat survived and was apparently none the worse at the end of it.

Then we went home, looking very solemn and trying not to laugh. What the reason was for the tenacity of this particular goat I was never able to discover, but the same could not be said for the Mohmands, for when the live-wire line was afterwards erected across the border, the first two Mohmands who had the temerity to endeavour to get through it were laid out as dead as mutton. After that they gave up trying and rumour had it that Frankie and Biggo were afterwards known in Mohmand country as the 'sparking plugs'.

Meanwhile we were collecting what information we could about what the Mohmands were doing and thinking, chiefly from a Border Police havildar who was attached to us for the purpose. This havildar was always very inquisitive about the occupation of Khazana

Ghund, which he knew was in the air, and as time went on we began to get suspicious as to his reliability.

A week before the operation was due to take place, the Chief Commissioner came out to Abazai from Peshawar and insisted on our taking him to Munda to have a look at Khazana Ghund. When we got there we went on to the roof of the Frontier Constabulary post and there, in front of everyone, the Chief Commissioner gazed at the hill and discussed its occupation, fortunately in English of which in those days the man of the mountains did not understand a word.

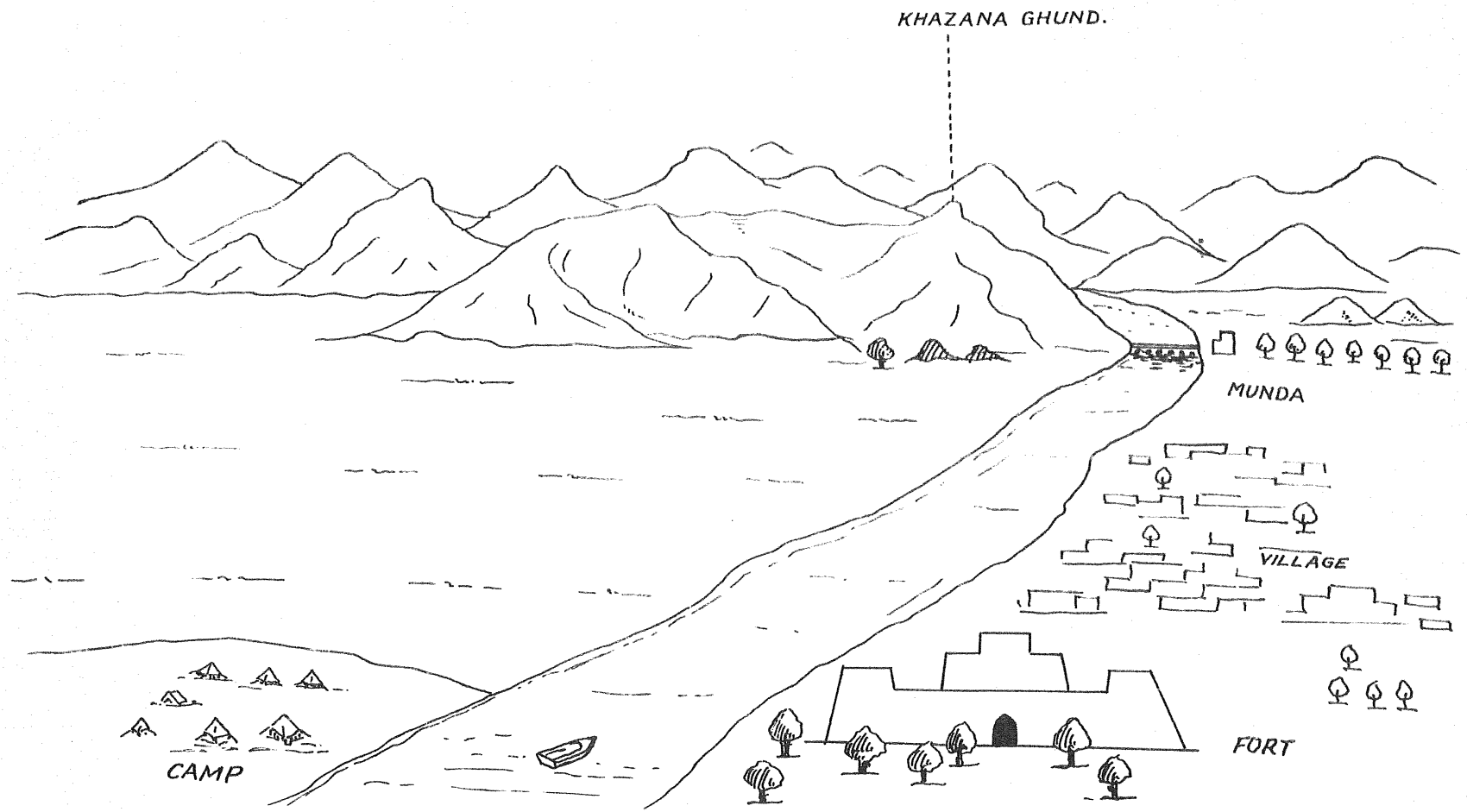
This episode, we felt sure, would give the whole show away unless we did something about it, so, at the suggestion of the Afridi Subedar who was a great deal wiser man than either of us, we decided to practise deception of a very unmilitary character.

The Subedar had discovered that the Border Police Havildar was married to the sister of a Mohmand Malik and he said he was sure that any information the Havildar got from us was going straight to the Mohmands. He suggested therefore that if we were to make the Havildar believe that the hill was not to be occupied, the Mohmands would probably believe it too. So the Havildar was sent for and was assured by us in all solemnity that, whereas it had formerly been our intention to occupy the hill, the Chief Commissioner had decided as the result of his visit that it was too difficult and the operation had consequently been cancelled. The Havildar went away duly impressed and the Afridi Subedar gave him still further assurances in private, conveying the impression that in reality the Sahibs were frightened of the great Mohmand tribe.

A day or two after this Biggo unwittingly nearly upset the whole apple cart by dumping a large stack of bricks at the foot of Khazana Ghund on the Mohmand side of the river. Next morning Mohmand tribesmen were seen on the ridge and we thought all hope of affecting a surprise was gone for ever. However the bricks were hastily brought back, the Mohmands went away and the Havildar was assured that this was merely a mistake on the part of the Canal Officer who had not heard that the show was off! So all was well for the time being.

The transportation of all the material for the construction of the blockhouses was a difficult problem which had to be solved somehow. It meant moving the bricks from Abazai by man-propelled

ROUGH SKETCH OF RIDGE



trucks on a miniature railway up to Munda, and then carrying them by hand across the footbridge over the weir, whence they would be transported up the hill on donkeys.

One night after dinner we found Biggo involved in abtruse calculations. He worked for about an hour and then announced with a woebegone smile that he would have to carry up a million pounds of bricks and only had thirty donkeys to do it with; moreover, that the donkey drivers were unreliable and would probably all bolt when the first shot was fired. This was such depressing news that I rode over to Shabkadr next day and managed to arrange for some Government mules and also the promise of a company of Pioneers to assist in the building of the block-houses. These Pioneers subsequently proved invaluable.

Another thing we had to think of was how to afford protection for the masons while they were working in the event of sniping.

The Canal Department again came to the rescue and produced some large iron sheets, which we eventually erected with some difficulty on the piquet walls, but which, as things turned out, were not actually required.

We had great difficulty in raising any bombs; although the Great War had been going for over two years, these everyday weapons of offence had not yet penetrated into India. However by making friends with a kindly Sapper subaltern at Shabkadr we managed to secure a small number of jam-tin bombs of local manufacture and also a few flares.

Zero day was now approaching and we had worked out all details about stores, carrying parties, etc., for each piquet and had drafted orders for the night operation. We had discussed various ways of advancing up the hill, as there were three distinct spurs which were possible routes, and we finally decided—and I think wisely—to use only one route, the spur furthest from the river and to drop piquets as we went along. This would take longer than a simultaneous advance up different spurs but it would eliminate all chance of a battle-fight in the darkness between separate parties of our own men. I made a rough sketch map of the ridge on which I marked the positions where I thought piquets should be located and a copy of this map was subsequently given to each British officer. The day before Zero I gave out that orders had been received for the regiment to

march to Shabkadr in two days time, complete with all the knife-rests which were required by the Brigade Commander, and that afternoon I established a camp on the other bank of the river and close to the ferry and moved most of the stores over to it.

On the following morning the rest of the regiment marched in and it took most of the day getting the men and the remainder of the stores and knife-rests across the river on the ferryboat.

We explained the whole scheme to the C. O. and other British Officers and two hours before sunset the Indian officers and men, who up to that moment were under the impression that we were marching to Shabkadr next day, were told what they had got to do.

Company Commanders had a very busy time detailing men for protective duties, working parties and carrying parties and they were still at it when darkness set in. A small guard was to remain at our temporary camp, which was to be moved to the foot of the ridge next morning.

The secret of the operation about which we were about to embark had been well kept and our Border Police Havildar had been so thoroughly bamboozled that he was quite convinced that we were off to Shabkadr next day. We heard afterwards that when some time that night he was told by a villager that the regiment was going up Khazana Ghund, he betted his informant a rupee that it was'nt true! Nevertheless we had no idea whether we should meet with opposition or not during our night advance.

At 8 p.m., the battalion fell in and started the march to the foot of the ridge, a long and straggling column in which every man seemed to be carrying something, for 240 men were required for the knife-rests alone and there were plenty of other stores to take up in addition. The night was very dark, there was no path and the ground was rough and stony, which caused much tribulation to the knife-rest carriers who were stumbling and falling all over the place. Fortunately the night operation prohibited all speech, otherwise the air would surely have been scorched by the curses of these unfortunates.

We had a short halt at the foot of the ridge to enable the Afridi Subedar, who was leading the column, to find the best route up; then we slowly and cautiously climbed the ridge, expecting each moment a volley from above. As we climbed we heard a noise like

thunder across the river, which proclaimed that Frankie and Biggo were busy pushing their bricks up the railway line to Munda. This frightful commotion we thought would surely awaken the whole Mohmand tribe, but nothing happened and we reached the summit of the ridge without opposition and hurried along the top dropping piquets as we went.

As each piquet got into place, it put out its covering party and building operations started, the men working like beavers.

The rabbit wire gabions proved an immense success and we soon had a solid breastwork of them round each piquet, on top of which we put sandbags filled with rubble for there was no earth available. As soon as the walls were complete, the knife-rests were put in position round them and securely wired together, and before morning we had six quite good piquets built and wired and were ready to take on all comers. But what of the Mohmands ?

Needless to say we anxiously awaited the dawn, to see what we should see, but when daylight came we saw nothing—not a sign of a Mohmand anywhere !

I was with the piquet on Khazana Ghund and with the dawn came Frankie with his babu and the masons who were going to build the block-house there. Frankie marked out the trace in no time and his men started off at once digging the foundations. They were extraordinarily quick off the mark and by that evening the walls of the block-house, which was inside my piquet, were three feet high. These building operations caused us a good deal of discomfort and every evening when the work was over for the day we had to clear up the mess before we could find room to lie down. That morning we had a succession of visitors, including the Chief Commissioner, and one of the first arrivals was our old friend the Border Police Havildar, who met me with a sickly smile and said "Sahib, you *have* done the dirty ; I would have expected this from a Politician, but not from a soldier."

Poor man, he had been properly 'had' and it is my everlasting regret that I never heard what his wife said to him when he got home.

Amongst various celebrities who visited Khazana Ghund was a Secretary in the Government of India, who caused much merriment by enquiring whether we had made use of hurricane 'Butties' to light our way up in the dark.

The following day the Staff sent us up an immense search light, complete with a British sergeant in charge. This was placed with much ceremony in Fragger's piquet which was next to mine. Fragger did'nt like the look of it much and the sergeant was obviously frightened of it, and when that night it let off a resounding explosion and nearly blew the two of them over the piquet wall, they hated the contraption even more.

Meanwhile the work on the blockhouses progressed rapidly and the Mohmands, so we heard, were running about Mohmand country trying to raise a lashkar. Nothing happened during the first two days and not a sign of a Mohmand was to be seen, but on the afternoon of the third day figures began to appear on the hill tops and a few snipers started to fire in our direction.

They found it very difficult to get nearer than about 800 yards however, for to do so meant exposing themselves on the forward slopes of the hills opposite us and those who were bold enough to try it were met with such a blast of rifle, machine gun and, sometimes, mountain gun fire that they soon scuttled back under cover. They tried this sniping spasmodically for the next day or two and then chucked it, evidently realising that our position, which we were rapidly strengthening with more barbed-wire, was impregnable.

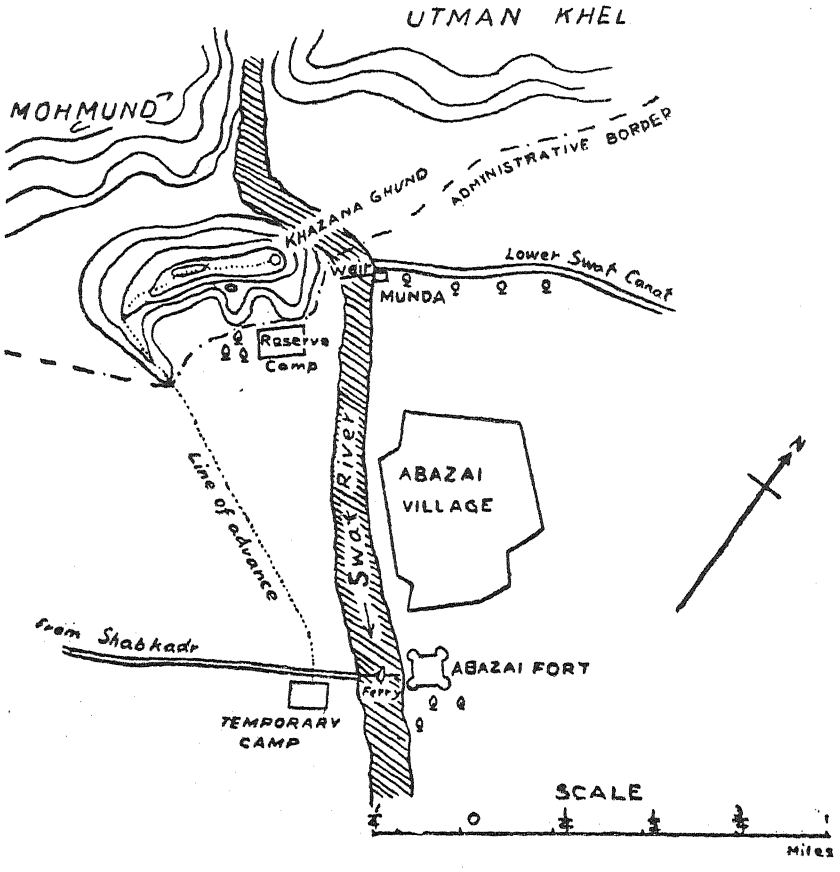
And so the days went by and in just over three weeks the blockhouses were complete and ready for occupation and we left the ridge for good. During this time our total casualties were one sepoy hit in the leg and one Canal babu, who was sitting on a block-house wall singing a lullaby and thinking of the girl he'd left behind him, wounded slightly in the hind quarters. He was a proud man afterwards, was that babu, and many were the yarns I expect he told when he got back to his village of fierce fighting on the Mohmand border.

Thus ended a battle without bullets, a very pleasant episode with quite enough excitement to make it interesting and none of the danger and bloodiness of real war, the happiest recollection of which will always be, to those who took part in it, the ever ready co-operation of our friends in the Irrigation Department.

Old Abazai fort is now no more and the Power House and live-wire have long since been removed; all that now remains to remind one of this frontier episode are the three block-houses sticking up on Khazana Ghund ridge, trying to look as if they had always been there.

But in Abazai village, if you ask for the headman's house, you will find sitting under a tree in the courtyard a fat little old gentleman with twinkly eyes and an immense loyalty to Government, who will always remember, and often talks of, the four mad sahibs—two soldiers and two civilians—who conspired to erect more bricks and mortar upon the 'bloody border'.

SKETCH SHEWING ADVANCE TO KHAZANA GHUND.



A FIRST DAY'S PIG-STICKING.

By "New Hand".

It was April. I happened to be paying a little visit *en passant* through Central India. We were recuperating in the Mess one evening when the leader of the local Tent Club came in and said there was a meet on the Sunday and what about it.

I must admit here and now, that this struck me as a leading question. What with the old grey hair, the baby farm at home and I being dismounted branch, etc., my first inclination definitely was to cry off, especially as all the company had a decidedly professional and horsy look about them. However, it did seem a marvellous opportunity and so I hesitatingly accepted.

An excuse that I had no horses cut no ice at all, the leader of the Tent Club offering to mount me at once. In the light of what came after, this was a truly noble action on his part, for people don't usually offer their best pig-stickers to unknown strangers to ride over ghastly country, with a large risk of losing them lame for the rest of the season.

Thus committed, the next step was to take aside the Leader, as I shall call him for short, and confess the whole situation—that I knew absolutely nothing about pig-sticking, had never even seen a pig, and so on. His nobility was merely accentuated thereby. He told me all about "heats" and pig-sticking tactics and which end of the spear to hold and many other things. I had some grand practice sitting on a chair and spearing oranges. I rather wondered at the time what you did if the chair swerved or bucked but by this time had become so enthusiastic that little things like that couldn't put me off.

So bright and early on the Sunday we set off, a party of nine. A storm overnight had taken some of the bone out of the ground and left the air cool. We drove out about 12 miles and coursed a sambhur doe and her bachha for about a mile on the way, for she wanted to cross our road to her jungle and couldn't quite beat our lorry. A pretty sight they were.

Arrived at the meet, I was introduced to my transport for the rest of the day, a spirited looking animal, which I must confess let me mount quite nicely with the aid of two syces. The spear I thought

rather got in the way. However, there we were and we jogged on a mile or more to the rendezvous with the beaters, near a little village.

Here a fine old man, whom I was told had run the beats for upwards of half a century, conferred with the Leader as to the days plans. There were to be three beats, two before lunch and one after. The first two were scrubby hills, the third a wide patch of jungle. The way in which the old man distributed his orders to 60 odd beaters would have been a lesson to Staff College candidates.

We then moved off to our first positions. We were divided into three heats of three spears each. The Leader kindly took me, with one B————as our third. We were trotting past a patch of scrub and discussing world politics when a most ridable boar (they told me afterwards that it was (*a*) boar and (*b*) " ridable "—all I could see was a pig!) darted out of the scrub. The Leader and B————appeared to me to become suddenly mental—I learnt subsequently a sure sign of a true pig-sticker—at any rate off they went at what seemed to my eyes a lunatic pace over bushes and rocks after this pig. I did a brave best to follow :—" George ", I said to myself at this point, " I wonder if this really is your metier! " The pig made first towards the hill which the beaters were about to drive. B——dived into a sunken pit and nearly crashed. The Leader, however, got near the pig and got him with what they said was a poor stroke, a surface prick in the hindquarters—but then, horror of horrors—the pig swung right handed, towards the village, and joined a herd of tame ones! The Leader was rather shaken. Not until lunch time, when the owner wanted backsheesh for his dear pet, raised so carefully from infancy, would our Leader admit that it had all been a mistake. Bad luck on him really, as I couldn't see how anyone could tell.

However, all this was only a curtain raiser. We rode on to lie up at the far end of the first hill, the three heats ready to ride any pig that might break across the fields to the hills beyond. The sight of fields filled me with hope. Even I could ride over fields.

We sat down and waited, each heat supplied with a man up a tree as scout. We sat I suppose for 30 minutes while the beat drew closer. Deer of various types darted along. Last year this beat produced two panther so a gun went with the beaters but this year all he shot was a peacock and some hares. Presently an excited " Sahib, Sahib " from the tree caused us to spring to our horses, only to see a largish pig break in the sector allotted to the heat on our right. We

had a fine view, however. Capt. A——galloped his line leisurely for a mile or so and then closed to spear. The pig, wounded, charged his pony and carried its forelegs, bringing rider and all nicely to ground. The supporting spears, however, soon killed and the heat came back to position. It was pretty exciting to watch.

Meanwhile, while we were sitting, suddenly two pigs came out on our near left and peered about. Like an idiot, I moved my hand. That was quite enough and back they darted again while I got a round curse from the Leader. However, presently they came again, but by this time it had been agreed they were just too small to ride and we let them by.

The beat produced no more, and neither did the next and we rode back to lunch definitely disappointed. When after lunch in the main beat we also viewed only a few small fry, it seemed a poor day. However, about 3 p.m. beaters and heats formed one long line to walk a rocky scrubby ridge back to the lorry. We had done this for some time when suddenly there was a great shout from somewhere and a tidy boar came rushing back through the line right through our heat. In about two seconds the whole scene was transformed. A couple of spears from other heats joined in and off we went on the craziest ride I have ever conceived possible.

The odd bit of hunting at home and in Ireland seemed child's play compared to it. There wasn't literally a yard of decent going, rocks, scrub, nullahs and trees alternating. My gallant horse, seeing the pig, went stark staring mad took charge and carted us willy nilly with astonishing success. The Leader lost a curb chain and control and soon hit a tree and missed the hunt, luckless man. It was B—, on a new young horse that filled me with admiration. He stuck to his pig in that thick stuff in a way I could never have believed possible. Personally, after preventing one jink, I found myself riding too wide and presently lost the hunt. When we joined up at the end of the day I heard B——caught his pig and speared so well as to go right through into the ground where the spear broke. The pig then charged him and his young horse jumped the pig so suddenly as to unseat B——fortunately another spear arrived just in time.

Meanwhile, searching about now quite alone I caught sight of a long sounder, ambling off in the distance. Catching them up gradually, the leaders seemed well over minimum size and off we went as fast as my excitable mount could go.

For a couple of miles we went over terribly rough stuff, sometimes gaining, sometimes losing. The trees were the chief trouble with low hanging boughs. It was clear what an advantage the pig has in bad going. Finally reaching impassable jungle, it was useless to pursue and we had to give up. Horse and I made our way slowly back.

On getting back, I found another heat had also met this sounder and cut out a leading boar and accounted for him. So after all, we returned very contented, with a bag of three—good for those parts—and oh; what a marvellous thirst!

I rather felt I had hardly done my share of the day's work. However I hadn't fallen off, and, obviously this sport required as much experience as any other, particularly over that going.

At least I returned very grateful to the Leader, infected with the germ of madness, and determined that my next move in India will be to a pig-sticking station, cost it what it may! The amazing thing about the whole day was that none of the horses came back lamed.

THE ORGANISATION OF SECOND AND THIRD LINE TRANSPORT IN INDIA.

By Capt. A. H. J. Snelling, I.A.S.C.

A study of the Home organisation of second and third line transport does not present much difficulty. On turning, however, to the Indian establishments one finds very little in the various manuals that give a clear picture of the system in this country. It is therefore proposed in this article to review briefly the existing Indian organisation and then to compare it with that at Home with a view to ascertaining to what extent the latter would, or would not, meet conditions in India.

As a change over to the Home system has recently been foreshadowed in a certain training report* it is considered that it may be of advantage to officers to know some few of the considerations involved.

Provision on Mobilisation.

Before the question can be considered in detail the provision of both vehicles and men on mobilisation must be discussed. While this problem does exist at Home it is very small when compared with the difficulties in India. In the United Kingdom there are many lorries on the roads that are suitable for military work and these could be impressed in an emergency. Again the factories that manufacture these vehicles exist in peace and could, within a short time, begin delivery of suitable lorries on war being declared. These factories could also deal with any heavy repairs thereby dispensing with the need for maintaining expensive military repair shops in peace. There are also a vast number of garages, large and small, which could turn out a considerable number of fitters and technical workmen should the army require them. Many firms have their fleets of lorries, all efficiently maintained, which could be reduced in a national emergency and drivers so liberated would be available for the Service even if the lorries were not of the required type. In England many men have a smattering of mechanical knowledge and these could, with a little training, be turned rapidly into efficient drivers or, in some cases, mechanics.

* A. H. Q. India Training Memorandum No. 4 of 1932.

In India the situation is very different. Except perhaps those with the larger firms in cities like Bombay, Calcutta and Karachi, the ordinary civil lorry receives short shrift at the hands of its driver and very few would be fit to impress for army use. One or two motor firms have now erected assembly shops in this country but their outturn is very small compared with the requirements of an army and even these shops have to import most of the " parts " of the vehicles. The ordinary Indian garage mechanics are quite unfit for absorption in the Service without a long period of training. Most drivers are also inefficient, have no ideas of maintenance and are imbued with the idea that, being made of metal, the vehicle just goes on for ever provided petrol is poured into the tank. India can thus rely on very few lorries, mechanics or drivers being available immediately on mobilisation.

From these two different situations it is clear that, while at Home the peace organisation can be small and capable of rapid expansion, India must maintain, at considerable cost, nearly all her mobilisation requirements in peace. As a natural corollary it follows that India cannot possibly visualise or afford the lavish Home war establishments. In the British Isles all mechanical transport units are on a cadre basis or are to be raised on mobilisation but there is every likelihood that these establishments could be raised, and raised rapidly, when required. In India, whilst a certain amount of " watering down " of existing units by insufficiently trained personnel might be allowed for, expansion on any considerable scale, either in men or vehicles, is out of the question for a long period. Thus it must be borne in mind that the organisation of M. T. in India is governed by the fact that what she can afford in peace time is all that she will get in the early stages of a war and the problem is how best this quantity can be organised to meet situations which may face the Army in India.

The Indian System.

The second line transport allotted to various units is shewn under the headings of " baggage and stores," " supplies " and " tents " in the establishment of each unit. In the Division itself the transport is shewn as being supplied by two M. T. companies. The organisation of these two companies, as now appears in establishments, has recently been altered and is now the equivalent of twelve sections of 30-cwt. light lorries, organised in two companies, each section comprising 25 working lorries and 5 spares. This transport will usually consist of

eight 30-cwt. sections and two 3-ton sections but it might be any other proportion as could be made available. At present no third line transport is permanently organised to serve the Division. At Home such transport is provided by the Maintenance Company.

It may thus be said that there are in India at present no definitely organised transport units allotted to serve a Division. The system is for all second and third line transport to be allotted from a " pool " of all the M. T. available. The allotment and organisation is based on the standard section of 25 working lorries. These sections are either 30-cwt. or 3-ton lorries, the composite section having been abolished under the recent reorganisation.

Mobile Warfare.

Generally speaking the Indian system has been organised to ensure the most economical employment of the M. T. available. While none is permanently allotted to a formation it can be made available in the required numbers when necessary. The most obvious objection to this method is that, were an Indian Division required to go overseas for mobile warfare, it would be necessary to organise second and third line transport units on the Home or some such system. Military history shews that sudden extemporisation of this type nearly always leads to failure. The protaganist of the Home system can, quite rightly, point out that a " pool " is very easily formed by withdrawing Divisional and Corps transport units when the formations concerned are within a short distance of railhead. It is the work of transport units within the Division that requires training and specialised knowledge. Provided the transport has this training pool work, such as the carriage of road metal or the transfer of stores from a dock area to a base depot, is a simple matter. On the other hand units which are only trained for pool work will have considerable difficulty in carrying out duties, especially ammunition supply, within the Division.

There thus seems little doubt that the Home system is undoubtedly preferable to the " pool " in mobile operations.

Major Frontier Warfare Operations.

Few will disagree that the primary task which the Army in India has to face is operations on the Frontier. It is, therefore, now proposed to examine the two systems in the light of this problem.

For various reasons, which it is unnecessary to discuss here, major operations on the Frontier will not consist of a rapid advance to

any great depth. It is probable that a Division, or part of one, may advance some thirty miles in, say, three days. On completion of this distance the force will halt. Supplies and stores will then be brought up, dumps and reserves formed for a further movement, L. of C. marching posts built and stocked, roads constructed and reinforced and perhaps even a railway laid. The advancing force will thus be immobilised for some considerable period. It will have no need for a Baggage company and, possibly being in the same perimeter camp as the advanced supply depot, a Supply company will be superfluous. While it is a principle in mobile warfare that the second and third line ammunition must nearly always be "on wheels" such a necessity cannot arise in this situation. It will be possible to give warning several days before the force is to move on again and thus there is no objection to the ammunition being dumped within easy reach of the troops. The Ammunition company can thus also be liberated.

There thus appears little doubt that all second line transport can be withdrawn and utilised to assist the third line transport in convoy work. As units will be drawing supplies from a depot where stocks exist, as opposed to drawing through the normal S. R. P. where no stocks are maintained, the Maintenance company might not load with the specific stores required for the Division for one day. It is more likely to carry any commodities required to stock advanced depots. Thus the normal *raison d'etre* of even this unit has ceased to exist. Here it should be noted that it may be some time before "as required" stocking of supplies can be resorted to. If it is allowed to begin too early and the L. of C. is cut, then the advanced depot may find itself with large quantities of bhoosa and none, perhaps, of flour. It is thus open to argument whether it will ever be possible to do other than send up so many days' complete rations by each delivery.

When, as above, convoy work only is required, it issuggested that it would be much simpler to have standard sections than to have three (Divisional)* companies of different load capacities, different types of vehicles and varying organisations with which to deal. This must be admitted, as also the fact that the organisation, with its three unit headquarters and consequently high overhead charges, is an expensive method when only convoy running is required. The organisation difficulty, while it may give extra work to the L. of C. authorities, can hardly be said to be a valid excuse for extemporisation as opposed to

* The Maintenance Company, being a Corps unit, is not part of a Division and though normally serving one Division, has not been included here.

organisation within the Division. Any extra expense during a stationary period is likely to be more than set off by the additional efficiency and liaison within the Division when it moves forward again. War is expensive in any case and possibly Mesopotamia has proved to India the danger of excessive parsimony. Even if the three company organisation be expensive for some given period, this should not be allowed to outweigh other considerations.

The conclusion, therefore, as regards this type of warfare is that, while the present "pool" system may be cheaper and easier to work during, perhaps, a considerable period of the operations, yet the Home system can carry out such work without difficulty. On the other hand, under the existing system, when the Division moves forward extemporisation of second line transport units from the "pool" of standard sections will be necessary. Thus, in the circumstances discussed, it would seem preferable to adopt the Home system.

Minor Frontier Operations.

It often happens that operations necessitating the employment of a smaller force than a Division have to be undertaken.

One of the chief reasons for the adoption of the existing system at Home was the realisation that supply, baggage and ammunition lorries would have entirely different functions to perform and that, on any given night, they would be scattered throughout the Divisional area. Thus baggage lorries might be with Brigades, supply lorries near S. R. P., while the ammunition lorries, some at F. A. P., might be anywhere where cover and accommodation permitted. Such a situation could not arise in the circumstances now to be considered as all lorries, except possibly supply vehicles, would have to be inside the perimeter camp with the Brigade. From this point of view there is thus no objection to the employment of a single company.

To discuss minor frontier operations, it is proposed to consider a mixed Brigade with the usual ancillary arms and services. Its actual composition need not be detailed here but it may be concluded that it requires M. T. as follows :—

	Baggage.	*Supplies.*	*Ammn.*	*Total.*
For the Inf. Bde. ..	25	10	8	43
For attd. Div. Tps. ..	19	16	16	51
Total 30-cwt. light lorries ..				94

Under the " pool " system there is little difficulty. One company of four sections (100 working lorries) could be allotted complete. This would be a single self-contained unit with its workshop and headquarters.

With the Home organisation the situation from a transport point of view is much more complicated. Detachments from all three companies are involved and the lorries will be drawn from different sections of those three companies. No headquarters is available. Presumably the commander of one of the Brigade sections (supply or baggage) will command but he has no adequate staff. Again the detachments from the Divisional Troops sections will have to be attached to the corresponding Brigade sections. Some workshop organisation will have to be extemporised or detached from the headquarters of one of the companies. Actually this is not a great difficulty as companies can detach workshop units of one workshop lorry and suitable personnel up to maximum of four each.

Thus, where a mixed Brigade is concerned, the Home system would require to be broken up to some extent and extemporisation of headquarters, cooking arrangements, etc., would be necessary. The Indian standard section organisation would, however, meet the situation adequately and efficiently.

Transfer of Units between and within Divisions.

Under the Home organisation the attachment of Divisional Troops to a certain Brigade for a particular operation provides no transport difficulties. The Divisional order would state what such units are to be and supplies, etc., for them would be automatically diverted to the S. R. P. of that Brigade. Corps Troops attached to a Division would similarly be diverted from the Corps Transport Column to the Division concerned. Similarly if a Brigade of one Division was temporarily attached to another Division, the supply and baggage lorries would deliver automatically in the area of the augmented Division. In this last case the supply lorries for that Brigade in the supply section of the Maintenance company would be temporarily attached to the Maintenance company of the larger Division.

With the Indian " pool " system the matter is not so simple. The number and detail of lorries would have to be worked out each time by the C. I. A. S. C. and the two M. T. companies of the Division, or each of the Divisions, informed of all alterations to be made.

Lorries would have to be detached individually instead of one complete Brigade section being detailed. If third line were involved the H. Q. Army (Corps at Home) would also have to calculate and give detailed orders for the diversion of the necessary number of lorries from the M. T. companies carrying out such duties. Such calculations would inevitably cause delay and confusion and the Indian system cannot be said to be efficient in such circumstances.

Ammunition.

At present no fixed organisation exists in India for the delivery of ammunition beyond railhead. While it may be admitted, not without some reservations, that Supply and Baggage companies could be improvised, this is hardly so with ammunition. This commodity requires expert handling and a fairly complete knowledge of all the widely differing types of shell, their different fillings, the various kinds of fuzes and how all are packed and marked. The Home Ammunition company has attached to it 3 Officers and 27 Other Ranks of the R. A. and it might appear that these are for sorting duties. But further investigation will disclose that these are "located at the F. A. P." and that 21 of the Other Ranks, on motor cycles, are normally located with Artillery Brigade H. Qs., etc. For superintending the loading at A. R. P. there is one R. A. S. C. (not R. A.) Officer. Perhaps Ordnance personnel might be allotted to assist in this work. But even then they could not do everything, and it is doubtful if they and the I. A. S. C. Officer could do all the sorting and superintending in detail which is required. It thus seems essential that N. C. Os. and even Drivers of the Ammunition company should know something of the different types and packings of all ammunition in common use if loading is to be done expeditiously and efficiently. Inefficiency in loading may result in delay, or even worse, if shell of an incorrect filling is delivered at the gun. It is not generally realised that there are four different "packings" for S. A. A. excluding the "special for R. A. F." Again there are seven different types of shell for the 18 pdr. gun. These are all fused and special precautions are necessary with certain types of fuze. A further complication is the necessity, where possible, of delivering to any one Battery shells of the same "batch" of manufacture of the type required in order to produce level shooting. In addition there are the various shells, charges and fuzes of 4·5″ and 3·7″ hows. as well as the different explosives and pyrotechnics used in the Division.

There thus seems little doubt that the personnel charged with the carriage and delivery of ammunition should have at least a working knowledge of the different types with their " packings " and markings. The fact that no organised carrying unit exists as such in published establishments at the moment is a little disquieting. Possibly the fact that the " endless chain " system is under investigation at Home makes the authorities out here reluctant to introduce the Ammunition company in its present form with the possibility of a further reorganisation in the near future. However some form of Ammunition company appears essential. If the R. A. S. C. unit is adopted it would appear reasonable to introduce the Home second, and perhaps third, line organisation *in toto*.

As regards the actual carrying capacity of the Ammunition company in India. Recently the number of rounds to be carried in advance of railhead has been much reduced.

At railhead and at advanced base the number has been correspondingly increased. This presumably is due to the fact that the large quantity of rounds considered necessary to be at immediate call in ordinary mobile warfare would never be required on the Frontier. It is therefore suggested that the carrying capacity of an Indian Ammunition company need only be roughly 50 per cent. of the carrying capacity of the Home company. Should a Division be called upon to go overseas then the existing company could easily be diluted with the remaining 50 per cent. vehicles and that this would not adversely affect the efficiency of the whole unit.

Peace Training.

It is suggested that the peace training of M. T. in India is almost entirely neglected, except for its technical duties. For financial reasons all available M. T. is employed on " Carter, Patterson " work in the large cantonments. The fact that this absence of war training is tacitly approved of may possibly be due to the fact that the M. T. units themselves have no defined end to which to direct such training. If the Home system were introduced then every M. T. company would have its war duties automatically defined. A certain company would know that it was the Supply company of the 1st Division and it could train for its specific war duties. The Divisional Commander in peace would know that this unit was just as much a part of his war Division as was his Infantry. The probability is that he would then demand that the unit be given the time and opportunity for training. The

efficiency of such companies would be bound to improve once they felt that they formed part of a definite formation and were under a Commander who insisted on a high standard of training and who saw that time " off the road " was allotted for such work. Naturally, if I. A. S. C. training were brought under the D. M. T., as is the case with the R. A. S. C., the situation would be even better. The necessity for such training is especially conspicuous in the Divisional Ammunition Company which cannot be expected to function efficient ly in war, as already explained, without a thorough peace training.

Whether it will be decided to include in the company the R. A. personnel as allotted to the Home unit is a matter for discussion. But, if they are to be so attached, then it is suggested that such personnel should do some training with the Ammunition company in peace. This would enable the R. A. and I. A. S. C. to understand each other's difficulties. As a result impossible demands on the carrying service would not be made and the I. A. S. C. would understand the difficulties, delays and dangers that might result from incorrect loading. As things are at present the Gunner must view the ammunition situation with some alarm. The introduction of an Ammunition company would go some way to allay this but would still not settle the question as to whether the company should be an R. A. or an I. A. S. C. unit to the satisfaction of the Gunner. But the attachment of R. A. Officers and men in peace time would go much further and would be bound to result in considerably increased confidence between the " user " and the carrying service.

General Conclusions and Provision.

There thus seems little doubt that some system on the lines of the Home second and third line transport is necessary in India. Only in minor Frontier operations does the Indian system appear the better and, as the whole force is likely to be an extemporisation, there would be little disadvantage in temporarily changing the M. T. organisation to meet the special situation. Owing to financial stringency it is manifestly out of the question to consider the provision of more lorries, even if it was considered otherwise advisable. It is therefore proposed to examine very roughly how far the vehicles now in the Service would go if the suggested organisation were adopted. As a basis of calculation only load carrying lorries are being considered, workshop and technical vehicles being excluded. Except in the Ammunition Company it is assumed that the loads to be carried are similar to those at

Home as far as weight goes. This would not be quite the case but, for purposes of comparison, it is not an unfair basis.

In every section of 30 lorries in India, 25 are working vehicles and 5 are spare. The percentage of spares to working lorries is thus 20 per cent. As most replacement lorries in this country have to be imported, it is necessary to maintain a higher percentage of spares than is required at Home. But, under the recent reorganisation, the Vehicle Reserve Depot is now definitely established. It holds as a reserve for I. A. S. C. units and as a general reserve some 99 medium 3-tonners and 200 odd light 30-cwt. lorries, all load carriers. In view of this it is suggested that a 10 per cent. reserve with units is sufficient during the present financial emergency and that we cannot afford more. When money is available the matter could be reconsidered. Thus, in considering what units could be formed, only 10 per cent. spare lorries, as at Home, have been allowed for.

There are now in India 11 M. T. carrying companies of different load capacities. These contain 11 headquarters, 960 30-cwt. lorries and 360 medium 3-tonners. A Baggage company and a Supply company require 109 and 134 light 30-cwt. lorries, respectively. An Ammunition company requires, as stated above, about 50 medium 3-ton lorries. A Maintenance company needs, on a reduced ammunition lift, some 121 medium 3-ton lorries. It would thus be possible to supply second line transport to either four Divisions or three Divisions and Army Troops (Corps Troops at Home), or any other suitable combination. In addition two Maintenance companies on a cadre scale with 70 medium 3-ton lorries each would be available. These figures give only a rough indication of actual requirements but they do shew that the introduction of the Home system is at least feasible and that, at the very worst, the first two or three Divisions can be completed while M. T. for the rest could be arranged on a cadre basis.

There is one serious objection to the above proposed distribution of the available lorry power. Some 80 per cent. of the available lorries have been allotted to second line transport and only about 20 per cent. to third line, thus making the organisation appear very top heavy. As has already been explained major Frontier operations entail a series of bounds and it is not possible for a force to move forward on its second bound until adequate stocks have been laid in at the post which marks the limit of the first bound. Thus, while the force is halted the greater part of its second line mechanical transport vehicles

can be withdrawn and employed as third line. Under these conditions of warfare in the early stages the force is unlikely to proceed beyond the radius of one echelon of transport (25 miles) from its railhead or advanced supply depot. When so withdrawn the second line will merely be required for convoy work which, it is suggested, requires little or no special training. At the same time, when supplies have been built up and the force is ready to move forward again, the specifically trained second line transport can be released for its proper specialist duties. Once again it is emphasised that trained second line transport can easily perform third line work whereas the converse is not the case.

As regards the other situations that have been discussed, that is to say minor Frontier operations or a force proceeding overseas. It is unlikely that more than one Division, if as much, would be employed on the former or, at the outset, more than two on the latter. Then the two cadre Maintenance companies would probably suffice but, if more third line was required, then the second line could be withdrawn from the 3rd and 4th Divisions and formed into Maintenance companies for the other two, the original Ammunition companies forming the Ammunition sections of the Maintenance companies. Admittedly this is extemporisation but it is a case of specially trained companies carrying out simpler duties than those for which they have been trained and not *vice-versa* as is visualised in the present "pool" system.

Again there may be a few lorries and trained drivers available from civil resources. As less training is required for convoy work than for second line duties these drivers could be formed into Maintenance companies and would then be ready for work much earlier than they would be if it were necessary to train them for second line duties.

It is therefore considered that the proposed organisation does possess sufficient "fluidity" to meet any situation that may arise while its efficiency, as compared with the existing system, is likely to be much greater.

The above does not take into consideration the somewhat lavish scale of technical personnel and drivers that are allowed for in existing Home establishments for reasons that have been given earlier in the article. Further economy is foreshadowed and some may fall on the M. T. If further cuts are necessary, a modification of the cadre system as exists at Home is at least likely to be considered in India.

With impressed or subsidised (if any) lorries the need for unit organisation for second line work is even more apparent than with a fully maintained company. Thus the necessity for economy itself seems to call for a Divisional M. T. organisation analogous to that which serves a British Division.

" THE LION OF THE PUNJAB."

Some extracts from the diary of Captain Lowe, of the 16th (Queen's) Lancers, describing the meeting between Lord Auckland, Governor-General, and Maharaja Runjeet Singh, at Ferozepore, November 1838.

—By "ZARIF."

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The extremely interesting article, "An Historic Durbar," by Colonel E. B. MAUNSELL in the April 1932 number of this Journal, has inspired the writer to present for comparison an account of the meeting between Lord Auckland, Governor-General, and Maharaja Runjeet Singh, at Ferozepore, in November, 1838. Extracts are taken from "The Diary of an Officer," which was printed by Messrs. Thacker Spink & Co. of Calcutta, in 1894, 'for private circulation only;' a copy of which came into the hands of the writer as a present from an Indian friend, some years ago. The author of the diary is a Captain Lowe of the 16th (Queen's) Lancers, and the period which he covers in this one volume ranges from June the 16th, 1822, to June 16th, 1840.

The meeting referred to in this instance was on the occasion of the passing through the Maharaja's territory of the British Force, whose actions in Afghanistan culminated in the occupation of Kandahar on April 26th, 1839.

The majority of the names mentioned in this diary are blank, merely an initial being given; but the present writer has been able to fill in a number of these names where he has reason to believe them to be correct, and those names appear in full in the text given below; otherwise the text is unchanged, and given in full, save for the omission of a few irrelevant passages.

CAPTAIN LOWE'S DIARY.

November 28th, 1837.

Joined my Regiment (from leave) at Meerut, and shall now count the days till I obtain my leave to return to England.

1838. During the months of May and June rumours were afloat of the probability of a war with the Afghans, and of its being

the intention of our Government to depose Dost Mohamed from the throne of Cabul, and to re-establish the sovereignty of Shah Sujah, the rightful ruler, who has long been a pensioner of our Government, and who was for his misdeeds kicked out of Afghanistan by Dost Mohamed. It is also said the views of our Government extend to Herat, which we are to recapture, should it fall into the hands of the Persians, who, now aided by Russia, are beseiging it.

In July it was supposed these extensive views had been abandoned, and I applied for leave of absence to England.

My leave was, however, refused with the intimation that the Commander-in-Chief thought it probable that I should not wish just now to be absent from my Regiment. So that we are to be employed on service seems certain, and I gladly abandon all thoughts of immediate return to England.

October 30th, 1838.

The probability of a campaign beyond our North-West Frontier had been for some months the general topic of conversation, but till the beginning of August it was not decidedly known, our Government had determined to march an army down the left bank of the Indus, while a force from Bombay would march up the right bank and meet us at Shikarpur.

After the free navigation of the Indus has been established, the united forces proceed through Kandahar to Cabul, depose Dost Mohamed from the Throne of Cabul and reinstate Shah Sujah.

It is supposed all this will be effected by the summer of 1839, and the force is to pass the hot weather in Guzni or some Highlands of Afghanistan. We are then to proceed to Herat (at a rough guess I suppose 2,000 miles from our territories) now beseiged by the Persians, aided by Russia, and recapture the Fort for Kam Raan should it have fallen.

Kam Raan is, I believe, first cousin to our protégé Shah Sujah.

Such is the programme of our campaign, and in good truth if we accomplish all this we must not remain idle.

It will be well to take view of the characters of Dost Mohamed, who we style a usurper, and Shah Sujah, who, after thirty years consideration, our Government discover to have been an extremely ill-used potentate.

Sir A. B.————————and all European travellers who have visited his court speak of Dost Mohamed as a fine soldier of high character, governing his country mildly and beneficially for all classes, and well-disposed towards our Government.

One of the best actions of his life, undoubtedly, was kicking Shah Sujah for his many misdeeds out of Afghanistan.

Our protégé Shah Sujah is, we understand, universally despised as a coward and tyrant in the country he lost.

When he took refuge at Lahore he was treated with every indignity and humiliation by Runjeet Singh who plundered him remorselessly of the Koh-i-Nor, the supposed largest diamond in the world, and all the valuables in his possession, and who then allowed him to fly, a beggarly outcast, to our territories where since he has remained our pensioner.

Now, Runjeet is our good and trustworthy ally (?) in espousing the cause of the injured Shah (I have not heard whether he has restored or will give up the Koh-i-Nor), and is about to march a large force of Sikhs through Peshawar, and by the Kybur Pass attack Cabul on that frontier.

The policy of Government cannot be fathomed, and we can only surmise there must be some intelligence of Russia intriguing with Dost Mohamed for a passage of troops through Afghanistan for the invasion of Hindustan.

Meanwhile all we have to accomplish is talked of just as if we should have no further trouble than to order the Afghans to pluck their ripest fruit for us, and chastise them if they hesitate. I should say the Afghans are as fine a race of men as ever I saw, as muscular as Europeans, and they have the reputation of being brave and extraordinary fine horsemen.

There will be more work for us than is thought of.

On the 20th of October, 1838, after being inspected in marching order, the 16th Lancers encamped on the exercising ground of the Regiment preparatory to commencing their march....to Ferozepoor, where they are to join the Bengal Divisions of the Army of the Indus.

On the 30th of October, at sunrise, the 16th Lancers commenced their march from Meerut to Ferozepoor, where the Bengal Divisions of the Bengal Army, the first commanded by Sir Willoughby Cotton,

the second by Major-General Duncan, are to be assembled and reviewed by Lord Auckland, Sir H. Fane, and Runjeet Singh, our ally of the Punjab.

The route we are ordered to take, increases the length of our march considerably; and we hear we may expect difficulties in obtaining supplies; and in the scarcity and brackishness of water at many stages; that after quitting Dehlee there is no regular road; and, in short, nothing can be more ill-judged than throwing these obstacles in the way of cavalry, who have such an endless march before them. Over and over again, we hear, all this has been urged to Sir H. Fane, but he only replies with a growl; and the more he is asked to alter the route the more he won't; so all we have to do is to make the best of it and overcome any difficulties that may present themselves.

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On the 21st, at Rampoorah, official information arrived of the Persians having raised the siege and retreated from before Herat, this will have considerable influence on our proceedings; and it is supposed our campaign will not now extend beyond Cabul.

At Kotkapoorah there is a strong little mud fort carrying guns, with a double ditch; it belongs to Runjeet Singh and we were not allowed to enter the gates.

At Furreedkote there is a dilapidated brick fort with an endless number of bastions, the curtain presenting the impression of several shot presented in days of yore by Runjeet.

November 28th, 1838.

Marched into Ferozepoor and joined the Army of the Indus. I forgot to mention the 2nd Cavalry, under the command of Colonel D————, had accompanied us from Meerut, and Major Pew's Camel Battery from Dehlee; Major Pew has the merit of having introduced the camel as a beast of draught into the artillery service, and his system has proved successful beyond expectation. Four camels are attached to each gun in strong and well-constructed harness, and in no instance was there any delay on the road; there can be no doubt whatever of the camel being a better beast of draught than the bullock; and in this country, unless where very rapid manœuvres are to be effected, I think superior to the horse. A driver is seated on each camel, the animal requires comparatively little care or breaking, and

thrives upon scanty food; he walks along at the rate of nearly, if not quite, 4 miles an hour, and the team will trot away with a gun at 8 and keep this pace up for a distance if required.

It appears Sir H. Fane was quite right in not altering the route he laid down for us; no difficulties of any kind presented themselves, and all through the protected Sikh States the road had been recently and well laid down; through our own territories, from the Kurnaul road, no care or trouble appeared to have been taken by the overpaid civil functionaries.

Ferozepoor has only lately lapsed into the Company's possession and is about four miles east of the River Sutledje, the old brick fort is in ruins and could never have been a strong place. We have already encircled the town with a broad deep ditch and a well-constructed mud wall and bastions and, before long, I make no doubt this place will be strongly and regularly fortified; in the town large brick store-houses have recently been erected, and it seems intended Ferozepoor should form an extensive mart for the merchandise brought up the Indus and the Sutledje. Against this, however, there is one great drawback, it is situated in so unhealthy a spot, the natives at one time of the year (after the rains, when the waters subside) are obliged to leave it.

A General Order promulgates, in consequence of the retreat of the Persians from Herat the aspect of our affairs to the North-Westward have so materially changed, that a smaller force is now deemed adequate to execute the views of Government, and, therefore, only the First Division under Sir Willoughby Cotton will proceed down the Indus, while the Second Division under Major-General Duncan will remain at this point, and form a *corps de reserve*.

The First Division under Sir Willoughby Cotton is composed of:-

Brigadier Arnold's Brigade:—

16th Lancers, 2nd and 3rd Regiments Native Cavalry, 4th Local Horse, Captain Grant's Troop of Horse Artillery.

The Camel Battery, Major Pew.

The Siege Ordnance, Captain Garbetts.

Brigadier Sale's 1st Brigade Infantry:—

13th Light Infantry, 16th and 48th Regiments Native Infantry.

Major-General Nott's 2nd Brigade (subsequently Brigadier Denny's) :—

31st, 42nd and 43rd Regiments Native Infantry.

Brigadier Robert's Brigade :—

4th European Regiment, 35th and 37th Native Infantry.

Major-General Nott commands the three Brigades.

The Second Divsiion under Major-General Duncan, remaining at Ferozepoor, consists of :—

Captain Alexander's Troop Horse Artillery.

The Artillery of the Park, Captain Sanders Skinner's Horse.

Brigadier Paul's 5th Brigade :—

The 5th, 20th, 53rd Regiments of Native Infantry.

Brigadier Dennis—3rd Brigade :—

3rd Buffs, 2nd and 27th Regiments Native Infantry.

Loud and deep are the execrations of the Buffs at being left behind !

Our encampment is semi-circular, and must extend four miles ; Lord Auckland's tents are pitched at the S.-W. extremity, the Commander-in-Chief's at the N.-W. Altogether about 13,500 troops are under canvas, independent of S——'s and S——'s Irregular Horse, amounting to 1,500 more ; while the camp-followers will be, I should say, full six times the number.

November 29th, 1838.

I was on escort duty with the right squadron at the tents of the Governor-General. Lord Auckland this morning held a durbar to receive Runjeet Singh, and to present him with two beautifully ornamented howitzers.

I was posted at the extremity of the line, a squadron of the 4th Native Lancers opposite.

After an hour's suspense the Sikhs were heard approaching from the Sutledje, and as they drew near Mr. T——, one of the Secretaries of the Governor-General, passed on a quick-running elephant and very accurately folded up in a military cloak. When he perceived Lord Auckland's line of elephants were advancing, and at such a distance as must ensure the meeting taking place at precisely the proper spot, Mr. T——stood up in the *howdah* and at arm's length flourished certainly the very largest cocked hat I ever saw ; it was deeply

fringed on the edges with white feathers, and must have been purchased from the Drum-Major of the Coldstream. He now put on the most determined expression of countenance, and resolutely waved his cocked hat for Runjeet and the Sikhs to advance.

Assuredly Mr. T—must have convinced himself that he was engaged in a most desperate enterprise, his manner and attitude precisely what you can imagine V——'s when he fell cheering on his men with "On, on, my lads, every bullet has its billet." What immensely important people Secretaries fancy themselves!

I could not leave my Squadron and therefore only saw the meeting between Lord Auckland and Runjeet on their elephants; and being at open order and my horse very unsteady, it was as much as I could prevent being driven away or crushed.

Runjeet was very plainly dressed in crimson muslin, with a turban of the same; he wore no ornaments, the only mark to distinguish him was the yellow 'chattah' (umbrella) carried over him. In the Durbar tent I heard the two howitzers were drawn up, and a pile of shrapnel shot disposed between them. The tent was so dark and crowded that Lord Auckland and Sir H. Fane who were dandying about little Runjeet, as you may fancy two giants exhibiting themselves with a dwarf between them, in a booth at a country fair, did not perceive the shot, and they proved such trustless conductors that Runjeet pitched over the shot and almost alighted on his nose on the other side of them. The Maharaja will consider this a bad omen for his new treaty with us.....Since then Runjeet has discovered the guns are flawed and asked for others.

The crowd in the tent was now beyond bearing, and the bandmaster, who must be a wag, played "We met 'twas in a crowd," and this was by far the best thing that transpired at the visit of the Lion of the Punjab to the Governor-General of India. There never was, I believe, so silly a conversation recorded, as the public observations of these mighty potentates.

On returning from the Durbar, Runjeet stopped at the flank of the troops lining the road and had Major Pews' CamelBattery paraded for his inspection, and he seemed much pleased with it.

Several of Runjeet's parade horses were drawn up opposite my squadron; they were all large fat northern horses, and appeared very highly broke; they were most sumptuously caparisoned.

November 30th, 1838.

Lord Auckland visited Runjeet's camp on the Western bank of the Sutledje, where he has assembled about 40,000 of his troops ; our Regiment and the 2nd Cavalry formed the escort, and having crossed the Sutledje on a bridge of boats, formed a street from the bridge towards the Sikh Camp. The Sutledje is here a clear rapid river, about the breadth of the Severn at Gloucester.

Lord Auckland, who is generally very punctual, soon made his appearance, and as soon as he passed, I followed his retinue.

About two hundred yards on our right rested the left of Runjeet's Regular Cavalry ; four numerically strong Regiments, tawdrily dressed in scarlet, and miserably mounted on under-sized ill-conditional horses, now lined the road and to do them justice were immovably steady, for I don't think they could have concentrated a kick. (There are some European officers in this branch of the service and amongst them Mr. F——, who I remember passing through Cawnpore as an adventurer). On the right of the Cavalry rose a sandbank sufficiently high to obstruct all view except of the Zambureks, who were posted on its summit and fired a salute from their camels as Lord Auckland passed. This termination of the view was most judicious. Having ascended the sand-bank an entire new scene developed itself. A broad street now appeared formed of the Regular Infantry drawn up three deep " à la Francaise " on one side, and two deep on the other ; these troops wore scarlet cloth jackets, generally faced with yellow, red turbans, and white trowsers : their arms the musket and bayonet, the belts black leather. I have never seen so tall a body of men collected together, or so steady, standing under arms. This street extended nearly, if not quite, half a mile, and the view was now terminated by the Maharaja's line of superbly caparisoned elephants drawn up in front of the arch leading to the Durbar tents. As Lord Auckland appeared, Runjeet advanced in the centre of his line of elephants, each line moving with the exactest regularity till the meeting took place in the centre of the Infantry. The ' Salaam ' having been made, Runjeet stepped from his own into Lord Auckland's ' howduh,' and after embracing, proceeded on the same elephant through the arch to the Durbar.

Here a guard superbly dressed in yellow silk (the favourite colour of the Sikhs) some of these in curious and delicate chain armour, and

all most sumptuously armed, were stationed to prevent intrusion. There was some little difficulty in persuading this magnificent guard to allow us ingress; at length, however, this was permitted, and I found myself in a square of about four acres artificially laid out as a garden with shrubs and flowers, which must have been brought from a considerable distance; this space was enclosed with canvas walls seven feet high and in it were collected the body-guard, all armed with sword and matchlock, the stock curiously inlaid with gold, or silver, or ivory; these troops were dressed in kincob, a thick and costly manufacture of silk, wrought with gold thread in various rich patterns—the appointments and belts worked in gold on scarlet cloth, as rich as embroidery could make them.

On arriving at the Durbar tents, formed of the choicest fabric of Cashmeer, worked in most beautiful patterns and gorgeous colours, I perceived Runjeet seated between Lord Auckland and Sir H. Fane; there was no mistaking him from the loss of his left eye; yet, notwithstanding this, the expression of his countenance is remarkably acute and intelligent—I may perhaps observe, restless.

The Lion of the Punjab was by far the plainest attired man in his court; he wore the same dress he appeared in when he visited Lord Auckland, of dark crimson and turban of the same colour, and he had not decked himself in any of the jewelry of immense value which he has in his possession. I was disappointed in not getting a glimpse of the Koh-i-Nor, which he generally exhibits on his person on great occasions. I fear Shah Sujah has little chance of ever recovering this inestimable diamond—who knows in a few years in whose possession it may be found; Shah Sujah's ancestors plundered it from the treasure of Nadir Shah after he was assassinated, and Nadir extorted it from the Great Mogul after the massacre at Dehli.

Runjeet is a little man but not emaciated, as I had been led to expect, from debauchery; he is dark for a Sikh, and has not the usual hooked nose of the Sect; his face rather full and his beard long and white. Those of the Sikh Court who were admitted to the Durbar were most superbly dressed, some in flowing yellow or bright red silk dresses their 'kummerbunds' always a Cashmeer shawl of very great value, some in highly polished cuirasses, and others in choice and glittering armour, and all appeared decked in jewels of immense price.

I should mention Runjeet has wrested Cashmeer from the rule of Cabul, and will perhaps restore the Unequalled Valley to Shah Sujah

with the Koh-i-Nor ; however, at the Sikh Court, under a tent formed as it were of immense shawls, seemed to be collected the very choicest fabrics of that heavenly country ; whilst all that superb armour, jewels of inestimable value, silks of the richest manufacture, ornaments of pure and elaborately wrought gold, shawls of the finest texture and most beautifully worked colours and patterns, and embroidery curiously worked on cloth or velvet, here met the eye.

Even those in the retinue who were far too inferior to gain admittance to the Durbar wore shawls of such beauty as would have excited the envy of our richest ladies.

Immediately in front of the Maharajah and Lord Auckland the never failing 'nautch' was exhibiting, the singer was covered in jewels, and wore a dark green dress, very tastefully embroidered in silver, and she modulated her voice sufficiently not to make herself very disagreeable.

The presents were now handed round and we took our leave.

I rode down both lines of the Sikh Infantry : I think I mentioned I never saw so tall a body of men collected. I don't think there was one man under six feet in the front rank, and many appeared six feet four inches, and even more than that.

I think one of the standard bearers must have been close on seven feet ; but these giants in height wanted breadth and muscle. Several of the officers were magnificently dressed, and I observed more than one whose epaulettes were formed of pearls.

Runjeet has several Europeans, both English and French, in his service ; he devotes almost his whole attention to the Artillery and Infantry, which accounts for the inferiority of the Regular Cavalry.

December 1st.—The whole force under Sir H. Fane was out to rehearse a grand field day for Lord Auckland and Runjeet : 10,000 men of all arms were on the ground. We supported the guns on the right of the line, and had little to do but sit on our horses and endeavour to see through the dust what was going forward. We made one charge over some ground, dotted with small wells, which threw our advance sadly out.

December 2nd.—The Regiment was seen by Sir Willoughby Cotton, who went through his inspection as quickly as possible.

December 3rd.—A grand review for Lord Auckland and Runjeet, the same number of troops were on the ground, as at the rehearsal.

The troops worked with the greatest precision, and the marching past of the Buffs elicited unqualified approbation.

Everything went off very well, and even Sir H. Fane was, we understood, pleased.

December 4th.—Runjeet had a review of his troops which I did not attend ; but I hear the Sikhs worked very well and steadily."

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This account of a meeting between Runjeet and the Governor-General just seven years after the meeting described by Colonel Skinner in Colonel Maunsell's article provides at least one interesting comparison.

To borrow from Colonel Maunsell's article :—

" The Maharaja was dressed very richly with jewels and wore on his left arm the famous diamond called the Khoe Noore." Seven years later at an almost exactly similar function we read : " The Lion of the Punjab was by far the plainest attired man in his Court, he had not decked himself in any of the jewelry of immense value which he has in his possession. I was disappointed at not getting a glimpse of the Koh-i-Noor."

It is to be wondered whether Runjeet had outgrown his taste for personal decoration or whether the change was due to a tactful desire not to draw too much attention to the source from which much of this " jewelry of immense value " had been obtained.

On the 10th of December, the First Division left Ferozepore and began its march up to Kandahar, with what result History has already told us. Captain Lowe accompanied this force with his Regiment, but the incidents recorded in his diary are not concerned with Runjeet Singh, the Lion of the Punjab, any further.

A MATRIMONIAL TANGLE (OR MOUNTAINS AND MACHINE GUNS).

By "Auspex."

An action has been brought for the dissolution of the union solemnised during the Great War between the Rifleman (ex-King) and a young lady, a nouveau riche, who, by virtue of the marriage, now styles herself the Queen of all Battlefields. The plaintiff is the Rifleman and the grounds are alleged coercion and misrepresentation, followed by neglect and desertion. The plaintiff sought to show that the conditions of the marriage had been unbearable to him, particularly when his business had compelled the couple to reside on the Frontier of India away from the social diversions and distractions of civilisation.

The costs, which had already been paid by the Rifleman, were unfortunately not recoverable.

The address of the plaintiff's counsel is given verbatim and ran as follows:—

Description of the neighbourhood. Its disadvantages and advantages.

1. The disadvantages of ground with which we have to contend on the Frontier are:—

The cover from view and fire for the enemy, given by rocks and bushes. This gives him a great measure of immunity and makes it extremely difficult for us to pick up a target.

The rocky ground, which makes it difficult to see the strike of bullets and so to observe or to range properly.

The lack of roads and tracks by which we can move our transport and heavier weapons. This limits the scope of our action and puts us at the severe disadvantage of moving this transport and these weapons by the few roads and paths that there are, thus enabling our opponent to predetermine our direction of movement and to prepare his positions for, and to lay his weapons on to, one or two definite routes up which we must move.

The command which the ground gives him,

Its Advantages.

2. But there are, paradoxically many advantages for us, born, in many cases, of these very disadvantages.

The most important is the lack of paths and tracks and the lack of obstacles insuperable to the movement of men of rifle companies. This enables us to move almost at will from one point to another, provided that we leave our transport and heavier weapons behind. The great expanse of barren and unwatched country makes it almost certain, as long as we march on no known track or road, that we will reach our objective undetected and unopposed and so have the initial advantage of surprise. We can achieve this provided that our original movement from camp or place of concentration is properly concealed. This is worth some trouble as the advance is almost always more important than the actual conduct of the battle, for a good, concealed approach that brings with it the benefits of surprise may make a battle a very simple affair for us.

The cover from view and fire is again a great advantage if we will only allow ourselves to make use of it. The tribesman is assisted in his use of cover by the fact that he can, once he has predetermined our movements on tracks and roads and to protect ourselves on these tracks and roads, take cover from a known direction and make full use of it to oppose us. If our movements are not from a known direction, a great deal of the disadvantage to ourselves disappears. We may, in fact, if we know the enemy's concentrations, be able to make use of this cover to turn the tables on him as he leaves his villages or bivouacs.

Their Rustic Neighbours.

3. As the enemy may be supposed to make what is, for his purposes, the best use of ground, then we should, up to a point, imitate him and surpass him in his own methods. His method of obtaining possession of commanding ground is to make for that ground by a detour or by arriving there some time before we can arrive there. Very occasionally he obtains this high ground by a skilful surprise attack on our piquets.

But his tactics are almost always qualified by his desire to achieve what he wants without undue risk to his person and by the fact that, being unorganised, he cannot for long hold what he has gained. Throughout, he nearly always has the initiative, owing to his knowledge of the ground about our road, to his lack of hampering weapons and

supplies and to the fact that we are never there to molest his advance and to make it a slow progress, undertaken with great care and step by step. By seeking for surprise, while we are unable to get surprise by allowing ourselves to be tied to our column, he keeps the initiative. It is, however, less likely that his knowledge of the ground will help him so much over country seldom trodden by human beings, away from villages and tracks, as it does about the few routes that exist and that he treads daily in his search for a livelihood. But in the hills we may expect to be on more even terms with him.

The Social Whirl.

4. We still make the killing of the enemy the first object in our tactics and, if that object can be achieved sufficiently often and completely, it is undoubtedly the most effective. In order to get at one's enemy one must so place oneself as to obtain a suitable target at which to hit. That usually means, in this country, that one must be above him. The Pathan has no great wish to sacrifice his life so he will not ordinarily stay for very long after the tables are turned on him. Hitherto, we have placed great reliance on the bullet or shell fired from below, from the road, path or nullah, for the inflicting of casualties. This is a promiscuous method of trying to kill which seldom yields any great results because the enemy is at liberty to go when he pleases. We must, therefore, restrict this liberty and can only do this by "hoisting him on his own petard;" by mobility and surprise to place him so that he cannot easily get away from us.

Against his mobility and knowledge of the ground, we place our superior firepower. It is questionable how far our better organisation confers a further advantage on us. In part, if we gain surprise, it must benefit us and in one way in particular. Once his loose organisation is broken, it becomes for him a matter of each man for himself and he cannot put up any co-ordinated resistance owing to his lack of methods of communication. At such a time we can put up an organised offensive if we make use of our simplest and quickest means of communication, but very seldom if we use our more complex forms. If, in attempting surprise, we should in our turn be surprised, our habits of cohesion stand us in good stead.

Effect of the terrain on the lady's mobility.

5. Looking at a typical piece of Frontier country, one soon concludes that riflemen can get over it without great difficulty and that

pack animals can only traverse it by carefully selected detours after excellent reconnaissance. If, then, we are to move over the hills, avoiding the tracks, we conclude that usually our pack animals cannot go with us. That is, we will have to leave behind us our Vickers and Lewis gun mules, our reserve ammunition and other pack-carried equipment. Without these mules we have with us rifles and manhandled Lewis guns. Troops that are physically fit can manhandle Lewis guns over great distances for a limited operation, though their mobility will suffer thereby. We are then at least on equal terms with our enemy except for his better knowledge of the ground, possibly his keener sight and, assuredly, our better marksmanship.

This last asset is an important one, for it is our habit to contend that the tribesman is a superlative shot and thereby to infer that he is a better shot than our own men. This cannot be true for he has but a limited supply of ammunition with which to practice and lacks proper means of caring for his weapons, while our men are carefully trained in the use of the rifle, have a large supply of ammunition and have experts to keep their arms in good condition. If, by chance, it were true that the tribesman is a better shot, then the whole of our weapon training is at fault as far as the rifle is concerned. It is naturally to be regretted that there is a tendency to reduce the number of rounds that the rifleman may use in a year.

However, even the advantage that better marksmanship may confer upon us is not sufficient. We need a further advantage and that must be the advantage of surprise.

6. Trained troops can carry their Lewis guns over considerable distances along with a proportion of ammunition. This is not so with the Vickers gun and it is a very serious disadvantage for it means that only by stepping these guns painfully and carefully forward—and that is a slow process—can we get any use from their fire. The question is whether, in the ordinary way, attempting a surprise operation, this slow process is worth the fire effect that we can expect from the weapon. To answer this it is necessary to examine the probable fire effect that we may in reality rely upon, allowing the guns all the ammunition they require—an unlikely condition for a prolonged offensive action.

To begin with the probable target to be offered. In hill country and with an enemy who is adept at taking cover, the target is well

concealed and hard to pick up at over 500 yards ; it is also a scattered one. To keep the guns at even 500 yards from the leading rifleman is nearly always impossible owing to the slowness engendered by constantly moving the guns and to their vulnerability and need for command for firing over the forward troops.

Next, the matter of getting the range. Inaccuracies due to the man at the range-finding instrument, the hard use to which the instrument is subjected, the conditions of battle and lack of good marks on which to range, all tend to throw the bullets clean off the mark. As the guns are usually firing at a crest line or against a steep hill, this inaccuracy is seldom offset by the width or depth of the beaten zone. The target is usually fleeting, so that there is little time to range by fire even if the strike could readily be observed ; it is not often that strike can be seen at over 800 yards and then only the strike of an occasional bullet.

It is therefore more than risky to base an offensive on the neutralising or destructive effect of machine gun fire. It is no good to argue that the fire will have a great moral effect for this effect is problematical, varying and indeterminate.

Then the difficulty of fire direction and "recognition." Where it is so hard to select reference points and to pick up targets, it is, even under peace conditions, a matter of great uncertainty that the gunners will get on to the correct targets.

From all this one has to deduce that the guns can usually only operate against an area in which an enemy is expected to be. This must mean a great waste of ammunition and a small chance of killing. With the eight guns in an Indian infantry battalion, the minute size of the bullet and the sparseness of the spray of the bullets over an area, there is no great chance of even neutralising an enemy's fire except at short ranges, where accurate fire on to an obvious target can be obtained.

The immobility and vulnerability of the guns must again be emphasised. They are, in withdrawal, by a long way the first to go and their going is a matter of anxiety until they are out of harm's way.

Demoralising Effect on the Plaintiff.

7. It is the machine gun and our conventional columns that are tying us down to the use, or rather abuse, of continually fighting and moving along Frontier tracks and roads. We are for ever fighting for

ground—for a reasonable command—to get protection for our columns, instead of being free to concentrate on outwitting our enemy by movement in any direction of our, and not his, choosing. We are thus forced back more and more on the unreliable and wasteful firepower of these weapons and on entrusting to them the task of putting our riflemen on to their objectives. This is having a disastrous effect on the training of the rifleman, both in his use of his weapon and in the use he makes of the ground. He moves to the attack over ground that he can only just, most painfully slowly climb, and on which he cannot, after supporting weapons have ceased their fire, get forward with his own weapons or collect to deliver a strong and speedy assault. There is a lack of realism and of true comprehension of the actual conditions of a fight under these circumstances, resulting in a lack of confidence by the man both in his rifle and in his ability to get himself to his enemy with its aid and with the aid given him by the ground. If this process continues it will lead to his complete demoralisation.

Examples of misrepresentation by the Defendant.

8. Without doubt the prevalent conception of mountain warfare has been that of the much-encumbered column moving along a road, probably in the nullah bed, throwing out piquets as it goes and so clawing itself forward as a cat claws its way up a tree.

In the precis of a lecture at one of our instructional establishments, this remark occurs. (The lecture deals with warfare on the North-West Frontier.)

"Battle is, as a rule, only a fight to secure, maintain or evacuate piquet positions. Defence, etc....."

Frontier fighting is no different in essentials from any other form of fighting except that it is modified and exaggerated in some respects by the conditions peculiar to the country and the enemy. We cannot take as our pattern the fighting in Waziristan in 1919-20, undertaken as it was largely by untrained or partially-trained troops. It is, however, remarkable that the Official History of those operations shows more than once the success of a movement undertaken in an unexpected direction perhaps by night, and the casualties of the succeeding withdrawal in an obvious destination by day. Machine guns could not well have participated in these operations by night and their withdrawal by day would have been a nightmare.

In a precis of another lecture from the same establishment, not, admittedly, dealing with frontier warfare, there is this remark.

" The task of the attacking Commander. To get his troops across the ground swept by the fire of the defender's weapons. He cannot, therefore, attack with more men than he can effectively cover with fire."

If this is all there is in the Commander's task, then the idea of manœuvre is deader than ever, and the infantryman is still there to be fed to the lions, still there for a Roman holiday.

Capital Sentence not applied for.

9. We cannot, at present, do away with the machine gun for we have no substitute for it and, even on mules or in limbers, it has proved its use abundantly as a defensive weapon in suitable country and under suitable conditions, but we must realise that its uses in attack and withdrawal are confined to those occasions when we cannot get surprise by movement and have to rely on a slow-moving, staged attack, or on surprise by volume of fire in the few cases when this opportunity offers; and to those occasions when the guns can be sited beforehand to form a strong pivot on which to withdraw.

The Plaintiff's Future.

10. This future is likely to be a very much longer one than that of the mule-borne machine gun.

There seems to be every chance that the rifleman will now be trained as an expert, if it is only in order to save his own skin, and that he will once more be given a higher status on the battlefield. One very much hopes that, while the methods of training, lightening and improving him are under consideration, his rifle will be given a careful examination with a view to substituting for it a light sporting rifle sighted up to 1,000 or 1,200 yards, with a " V " backsight and, perhaps, a smaller bore. Perhaps a separate weapon might be found as useful as the bayonet.

The Defendant's Future.

11. It is possible that the evolution of the rifleman may lead to separation from his machine guns and that these weapons, if they do not evolve at the same pace, will, instead of queening it within the unit, once more be herded into bevies of royalty in machine gun companies.

Finally.

12. The rifleman's motto must be, "Use your brains to save your legs and your legs to save your skin." With greater skill, quicker movement and more confidence, he can instil the fear of God into his enemy and so avoid the humility of being continually pushed uphill at him.

ESCAPE FROM DELHI, 1857.

By "Samej."

I.—Introduction.

On Sunday, the 10th May, some troopers at Meerut, who had refused to take the new cartridges, were sentenced by Court Martial to different periods of imprisonment. Their comrades, after releasing them and killing some of the officers there, and committing outrages on helpless women (in which they were joined by the people in the Suddar Bazaar), left Meerut for Delhi the same evening which place they entered about 8-30 a.m. on Monday morning, the 11th.

The bungalows on the Jumna Canal were first burnt by them and the officers of the Telegraph Office killed.

On entering the city, they met Captain———of the Palace Guard and the Commissioner and killed them. After this it is not certain how they proceeded. Some say they divided into parties; one party entered the Palace and then went to Dusruao Gunge and after burning all the houses there and murdering the European men and women whom they met, joined the other party which had gone towards the Cashmere Gate, and had killed on their way families of the———and———; also the Chaplain and his party. They were attacking the offices of the Quarter Guard, when the N. I. entered the Cashmere Gate; and on the Commanding Officer, Colonel R.————, ordering his men to fire on the mutineers, they turned round and killed him and the other officers, and secured the guns which had gone over with them. Here they remained some time firing into the Quarter Guard on the officers on Guard and others who had taken refuge there.

It is said that one trooper was killed by Captain———of the N. I. before he fell by the hands of his own men. From this they proceeded to the Bank and killed Mr.———and his family; and then the Delhi Gazette Press, which they burnt.

I was informed about 10 a.m., that all this had taken place by one of my chaprasis who had come in breathless from the City. I had heard the firing for some time, and had seen the N. I. marching in, but of course concluded that some slight outbreak had taken place in the City, which was being quelled by a high hand.

Some of my men, however, told me that the disturbance was a serious one—which I did not believe till a note and carriage was sent over by Captain———for us to go to his house.

II.—Narrative.

I had reluctantly gone to the Kutchery on the 11th May, as I was not feeling well: and this made me return earlier than usual. Had I gone to the City as I generally did of a morning to inspect some disputed place and as I had intended to do that morning to look after some work a carpenter was doing for me, I should certainly have shared the fate of so many other Europeans. I got home at 8 a.m. and was lying on the couch when Nurput (my bearer), reported that all the masons and coolies who were engaged in building our new rooms had bolted; and shots were heard in the direction of the Cashmere Gate.

I ordered my horse with the intention of going to see what the row was, as I thought it must be some slight disturbance; but, before the horse came, the N. I. was seen marching towards the City—the sepoys shouting vehemently.

Soon after the firing increased and cannon shots were heard. I was deliberating what to do, when a man whom I had not seen before, came breathless and said the Europeans in the City had all been killed by some troopers from Meerut. I cross questioned him; he said he had seen the Killedar Sahib lying in a ditch; the Barra Sahib had also been killed; the Collector Sahib had been attacked; that he did not wait but ran along the road, and on passing the Cashmere Gate he saw 3 or 4 "goras" lying there dead—and advised me to save myself.

Shots were now heard in every part of the City, and occasional volleys of musketry.

Even then I thought the N. I. having arrived at the City had quelled any disturbance on the spot, but when one of my chaprasis told me that the sepoys had turned against us and killed their own officers and had sworn that they would not leave alive any European in the place, I began to think more seriously of the outbreak. At this time a carriage came from Captain N.———for Eliza, asking her to come over and keep Mrs. H.———company, who was alone at his house. The baby had just gone to sleep, but Eliza said she would not go without her. I therefore put both into the

carriage and told her I would fetch Miss S———who might not perhaps be aware of the disturbance, and meet her at Captain N.'s house.

I got into my buggy and fetched Miss S———the doctor said he would remain there. We drove over Hindoo Roy's hill and came into Cantonments, and went first to the Brigadier's bungalow, and then to Captain N.'s house, but Eliza was at neither place, and our enquiries about her were useless.

The houses seemed empty; the servants would hardly reply to our questions, and the people in the Suddar Bazaar were standing in groups—well armed detachments of sepoys were marching hither and thither.

My anxieties had increased. We drove to every place we would think of in this confusion. At last we met an officer who said several carriages had gone to the Sergeant's house. When we got there, we could get no information, but saw several carriages going along the parade ground. On driving up to them, I found Eliza and Mrs. H.———in one carriage crying, and other ladies who were in great distress. I told the former to be calm—that everything would soon be right—but on consulting Captain N———, he said matters were very serious, that none of the sepoys could be relied on and he wished to take us to a place of safety, and we had better go to the Flagstaff, where others had taken refuge. We had now been out for upwards of one hour, and the heat was excessive. On arriving at the Flagstaff, we found the room nearly crowded with ladies and children; and the Brigadier and some officers consulting outside. It was agreed that the place should be put into a state of defence; muskets were loaded and piled upon the upper storey, and water and provisions ordered in the hope that relief would soon be coming from Meerut, which was not more than 35 miles from Delhi, but we soon saw the folly of expecting any help.

The heat was fearful and the confusion increasing—the ladies were sometimes ordered up, and then down again.

The alarm that we were about to be attacked was given several times by the sepoys standing around us, and parties of men were seen moving about the hill. An explosion was now heard and a column of smoke rose up to the skies and soon after enveloped the City in a cloud. There was no mistake that the magazine had blown up.

We spoke to the sepoys and asked if they would do their duty and stand by us should they be required, and this question was repeated with promises of presents and advancement; but I shall not forget the fiendish expression of their countenances. One man called out to the others in a loud voice what we said, but before they could reply, he added "Yes, we will fight against our enemies, but not against our friends." This was enough—we knew their mind. It was only a wonder that they continued passive.

The whole City was now in a cloud—the Bank in flames on one side and the Press on the other. Colonel R———was brought in badly wounded and covered with blood, and then a cart load of the bodies of the officers killed in the City with the dresses of ladies thrown over them. The sight was most distressing and sickening. I knew not why the corpses were brought to us—except as a taunt to show us how much we were in their power, to be sacrificed at their pleasure. The cart was pushed by two sepoys, who, when it came near the Flagstaff, gave it a shove and left it. There was a grin on the countenances of those standing round—such a fiendish grin as I shall never forget.

Everybody's attention was now attracted on hearing a rumbling noise, and soon after, seeing the guns which had gone to the City in the morning with the N. I. making their way to Cantonments, Captain De T———mounted his horse and rode up to them within 50 yards and ordered them back (not knowing they were in possession of the enemy), but a volley was fired at him, when he turned back. His horse staggered and we thought he would have fallen. Other shots were fired but the horse, though shot through the head and rump, got up to the Flagstaff and Captain De T———covered with blood, (but not touched) got off. The horse soon after rolled over. The guns were then levelled at us and I expected to be blown to bits, but they soon turned them away, and after securing the magazine in the Cantonments cantered back to the Cashmere Gate.

Our state, which was always dangerous, was now becoming really precarious, but a special Providence watched over us. It was indeed a miracle that we were spared. We were told the troopers, who had committed all the outrages in the City, were refreshing themselves in the Subzee Mundee and would soon be on us. It was madness to remain where we were.

The Brigadier was consulted—he said, "My advice is to remain here, but you may do as you like."

On this a general rush was made to the conveyances standing around. Captain N———very kindly called out to us "Take my carriage"—into which we went, and almost all left the Flagstaff at the same time. The sepoys turned into their lines, but the two guns went with us as far as the Cantonment gardens, and then refused to go any further. We passed them, and C———who was on one, called out if we would take him up. Mrs. P———and her two daughters, with another lady, were running along the road. I told them to get into our buggy,—our carriage being full—as we had previously taken up a poor sergeant's wife and her child—the husband having been killed.

Dr. N———was lying on the road wounded, and Mrs. N——— standing by him. The rush of carriages was now very great. I had made up my mind to go to Umballa, but all drove for some 6 or 8 miles on the Kurnaul Road (we left Delhi at 6 o'clock in the evening) from where De T———and a few others turned off to Meerut. There was a great dread of the troopers following us—the only hope being that they were tired and glutted with blood and loot in the City to go any further. The road was covered with large bodies of men, and on one occasion they tried to stop us but thought better of it.

After a wearisome drive of some 40 to 50 miles, we arrived at a Dak Bungalow. It was, however, not thought safe to remain there long. The horses were dead beat—it was impossible to take them on further. There were besides ourselves a great many ladies who were anxious to go on (Mrs. P———, 3 Misses B———, Mrs. A———and two children, Miss N———who had lost her brother, Mrs. P———and two daughters, Mrs. H———Miss H———, and Mrs. T———and two children). I promised to do my best to get them on, and on hearing a bugle sound, I went to the road where a Government conveyance with parcels was going to Delhi, but the driver would not hear of my detaining him and I was determined he should not go on. As persuasion was of no avail, I pulled him down and with a sound box on the ear brought him to terms. The parcels were thrown out on the road. In this way, two other carriages belonging to private companies were secured and the ladies as comfortably stowed away as circumstances would permit. We

drove on, finding changes of horses on the road—as we were a large party and carried a high hand (the police sowars being also turned out to accompany us), we got into Kurnaul between 10 and 11 a.m.

The news of the fall of Delhi having previously been spread by an officer who had preceded us—we were hospitably received in Mr. McW's house and received every assistance and kindness from the Assistant Collector. The heat, excitement, and fatigues of the travelling, added to the anxiety of the previous day, had very much done up the ladies, but it was admirable the way they bore it all. The sepoys here on the Treasure Guard could not be trusted, and after refreshing ourselves we were determined to push on, and with some difficulty procured carriages. We started from Kurnaul at about 7 or 8 p.m., and arrived at Thanasur between 12 and 1 a.m. We put up at a friend's and the ladies having had no rest or sleep since our flight, had gone to sleep on the floor.

At 3 a.m., we were roused by the servants with the news that some sowars had surrounded the Deputy Commissioner's house. We concluded at once that they had come from Delhi to cut us up and of course were in a great fix what to do, and really thought though we had escaped so far, there was no hope left for us and we must be lost. I consulted with my friend and the ladies were directly roused up, and taken into the fields and ditches to hide, and there they remained for nearly two hours.

We heard the tramp of horses and voices of natives laughing and talking. Our suspense during this time was very great and it was only at daybreak that we ascertained that some troopers had been sent to Thanasur to escort the Treasure away as the guards of sepoys could not be relied on, and had shown signs of disaffection. This was indeed a great relief to us and it appeared even a more miraculous escape than from the Flagstaff at Delhi.

From Thanasur we proceeded in a parcel gharree in which all the party was stowed away, packed close, and 30 coolies engaged to push the vehicle. The roads were dreadful but we managed to reach Umballa at about 8 a.m., quite worn out.

We were very hospitably received by the———who got us a small house, but there was no rest for us even here. We were taken away to the lines of the 9th Lancers as soon as it was evening, as there was a report that the———and——— N. I. Regiments were

going to rise and murder the residents. In this confusion and uncertainty we remained for more than a month. Our daks were several times laid for Simla, but as often countermanded, as we were told the Ghoorkhas had mutined and murdered the inhabitants of Simla ; but when the report was proved incorrect, we went up to Kussoolie and there remained.

LETTERS TO THE EDITOR.

Reconnaissance.

Sir,

In European countries reconnaissance is almost always undertaken to find out something about the enemy, but, when we come to conduct operations, whether real or training, in countries that are not so well mapped and in which roads are comparatively few, there arises the need for information about the ways and means of moving from point to point.

Aircraft are becoming more and more expert at finding the enemy, who, like ourselves, is growing an alarmingly large M. T. tail that can't be hidden.

Distant reconnaissance the book says is an Armoured Car job (and may possibly become a Light Tank job when improvements are introduced).

The problem that faces the Commander and most particularly the mechanized Cavalry Brigade Commander is whether a certain route is feasible, firstly for light tanks, and secondly, for six-wheeler M. T.

He may be able to get this information by using his Light Tanks or Armoured Cars, if he has any, but it is far more likely that he will have to rely on Cavalry reconnaissances.

The whole situation as regards flanking or turning movements by mobile forces has changed ; generally speaking whatever surprise is to be gained by any such movement is possible only as the result of a march from dust till dawn the next morning. To send Armoured Cars or Light Tanks to reconnoitre on the afternoon before a night march may give away the Commander's intention and they may not be available or may want the time for overhaul and rest. Incidentally comparatively small obstacles hold up reconnaissances of this kind which have no means of improving crossings over nalas, etc.

Cavalry, most likely have been on the move and are at the end of a long and tiring day. Patrols have got to go out at speed and to come back at speed, for, on their information, the Commander bases his plans and without it his move may be a pure gamble.

There is a limit to the pace and endurance of Cavalry horses but, as matters stand at present, we send out our patrols in full marching kit, which must reduce their chances of getting through and nearly double the time taken. The Navy and the Air Force maintain special light craft capable of the highest speeds so as to escape by pace rather than fighting.

If we take the example of the hunting field, not to mention the race course, the greatest attention is paid to reducing weight on the horse to a minimum.

The answer lies in having certain officers and men specially trained in getting over country at speed—their horses must be specially selected and should be led and not ridden till they start on special patrols. They should have light hunting saddles and snaffle bridles and their riders should carry only an automatic pistol and a light haversack.

Very considerable training of the rider is necessary to teach him how to nurse his horse on long distance rides or endurance tests if you prefer the latter term and, of course, very special training of the horse is necessary. Ignorance often means the riding of a horse to death in any attempt to cover upwards of 30 miles at 8 miles per hour or faster.

It is reasonable to suggest that the first people to welcome the idea of "Speed patrols" would be those interested in horse breeding in India—the satisfaction of seeing your brand on the horses of speed patrols ought to be at least equal to that of seeing it on the winners of a 3 furlong race. Carefully worked out speed patrolling contests would provide a welcome change from the annual tent-pegging competitions, which, to say the least of it, are difficult to justify in the light of our various manuals on horsemanship. Classes for teams of speed patrol horses might be introduced into our premier horse show even at the cost of excluding four in hand teams and coaching marathons, which we all like to see but for which it is not easy to produce any convincing arguments.

If a precedent for speed patrols is required, we have only to refer to the British Officers in the Peninsular war who, mounted on blood hunters, brought in information for the British Armies.

Yours faithfully,

"LUMBIDUM."

Mechanization.

Sir,

There has been some correspondence lately in Service and other journals about the lack of progress in mechanization of the Army, and in particular, about the demonstration of a post-war Division on the march, held in the U.K. a year or two ago. The criticisms were generally to the effect that, in spite of partial mechanization of certain components of the Division, the formation as a whole, was longer and more unwieldy than its predecessor of pre-war days. There is much point in these remarks but it seems that many of the critics have missed the main point, which is that if the Division is to be more mobile, it must be smaller. The whole tendency of modern thought is for increase of speed and reduction of man-power by increased use of mechanical devices. It seems, therefore, that the time may have come to adopt the continental system of Brigades of 3 Battalions. The reduction of the 4th Battalion in each Brigade would automatically bring about a reduction of the ancillary services within the Division, thus bringing about a considerable reduction in the length of the columns and an increase in flexibility and mobility.

2. It is not suggested that there should be any further reduction in the actual number of Battalions noted for Defence Services, but that existing Battalions would be more suitably organized in a slightly larger number of Divisions, each Division being smaller. With the reduced number of Battalions in a Brigade, it would be advisable to allot sufficient extra mechanical transport to the Division to allow of a portion of the Infantry being made really mobile.

3. A further point which has been adversely commented on is the inclusion of a Cavalry Regiment as Divisional Troops. The inclusion of this unit has, it is said, tended to overload the Division and its ancillary services without any real compensating advantage. The trend of modern opinion and especially those who have been privileged to observe the recent Sino-Japanese operations in Manchuria, is that Cavalry should be organised in large formations, acting boldly and rapidly in advance of or on the flanks of the main bodies of Corps, in co-operation with armoured units and aircraft. It is thought that the Divisional Cavalry could be largely reduced if not entirely abolished, and the units thus set free, used to form additional Cavalry Brigades.

4. In view of the proposed demonstrations in the Northern Command next winter, it is thought that the question of the most suitable organization for a Division under modern conditions, will be very much in the foreground during the next year or two.

Yours faithfully,
"HORSEMAN."

GROUND TROOPS.

SIR,

As an ancient member of the Institution of at least twenty-five years' standing, I crave your indulgence. I have not the pen of a ready writer. I confess that once, many years ago, I did submit an article for consideration to one of your distinguished predecessors. It was returned with the usual polite expressions of regret. You will realise, then, that only the strongest feelings can have impelled me to write to you to-day.

The April number of the Journal contains the usual able "Editorial" in which, under the heading of "Frontier Unrest" occur the words "ground troops and irregulars."

"Ground troops"! Slugs! Blind worms! I do not know who was responsible for the introduction of this detestable expression. I wish I did. You may ask what is wrong with the term. It is hard to give a definite answer to this question, but let me assure you that to me and to many other simple soldiers it conveys a veiled expression of contempt.

Shades of Marlborough, Wellington, Roberts and a hundred more! who are we that we should be thus labelled?

There are sea forces, land forces and air forces. You do not speak of "water troops" or "air troops." Why, then, "ground troops"? Ships are ships, troops are troops and aircraft are aircraft.

I ask you, of your goodness, to erase this horrible phrase from your vocabulary.

Yours faithfully,
"EARTHWORM."

[We admit the horrible impeachment, and hasten to offer our apologies for such a catastrophic slip of the Editorial pen, at the same time we can hardly agree that the use of the term "ground troops" implies a feeling of contempt.—ED.]

FRANCE.

Release from the Colours of the 1st half of the 1931 Class.

The 1st half of the 1931 Class of conscripts will be released from Colour service on 31st March, 1933, instead of 15th April. Soldiers thus due for transfer to the reserve will be shown on leave without pay until 15th April, from which date their reserve service (*disponsibilité*) will count.

Auxiliaries (soldiers unfit for general service who are employed as orderlies, batmen, &c.) will not be liberated on 31st March, but will be retained with the Colours for a period of three weeks, which period will count as one of the periods of training which they are liable to carry out during their *disponsibilité* and reserve service.

Appointment of Under-Secretary of State for War.

By a Decree dated 18th December, 1932, Monsieur Guy de Chambre has been appointed *Sous-Secrétaire d'Etat* at the *Ministére de la Guerre.*

This Under-Secretaryship was allowed to lapse on the formation of the second Laval Ministry at the end of January, 1932. When Monsieur Tardeu formed his Cabinet in February and introduced a Ministry of National Defence, the Minister, Monsieur Piétri, was given two Under-Secretaries. On the fall of this Government in May, Monsieur Herriot, who reappointed the three separate Ministers for War, Marine and War, did not appoint an Under-Secretary of State for War.

In a recently published statement, the duties of the Under-Secretary of State for War are stated to be as follows :—

Article 1. He will assist, and if necessary act for, the War Minister in the consideration of any questions which the latter may pass to him for opinion or decision. In the latter case the full powers of the Minister are delegated to him.

Article 2. The main object of his post is to study the possibilities of economy in the administration of the various departments and services.

Article 3. Questions relative to pay, cost of movements, supplies, clothing, bedding, hygiene, the comfort and health of the troops, fall more particularly within his functions. In fact any decree affecting the above will come to him for approval before being submitted to the War Minister for signature.

Article 4. He will study the question of the creation of a special department dealing with the manufacture of arms, and of a Corps of Military Engineers, as well as possible measures for the reorganization of the *Service des Poudres.*

Article 5. In addition, the Minister for War may delegate him to speak in either House on subjects concerning the War Department.

Military Appointments.

Under Presidential Decrees dated 7th January *Général de Division* Weygand is confirmed in his appointments as Vice-President of the *Conseil Supérieur de la Guerre* and Inspector-General of the Army for the year 1933.

General Gamelin, Chief of Staff, and all the other members of the *Conseil Supérieur de la Guerre,* are similarly confirmed in their appointments for 1933.

General Baratier, *Chef de la Section Militaire d'Etudes des Traites,* has been placed on the Reserve with effect from 11th December, 1932. He is succeeded by Colonel J. Mollard.

Appointments to the Higher Command and Staff in the Air Force.

General Hergault, member of the *Conseil Supérieur de la Guerre,* Inspector-General of the Air Force and Chief of the Staff of the Air Force, has relinquished these two appointments in the Air Force on the appointment of an Air Force General Officer to these appointments.

General Barés, member of the *Conseil Supérieur de l'Air,* has been appointed Inspector-General of the Air Force and Chief of the Air Staff *vice* General Hergault.

General Amengaud, member of the *Conseil Supérieur de l'Air,* and Assistant Chief of the Air Staff, has been appointed Assistant Inspector-General of the Air Force.

General Denain, member of the *Conseil Supérieur de l'Air,* has been appointed Assistant Chief of the Air Force.

Army Reorganization.

Details of the new reorganization of the infantry divisions stationed near the frontier fortifications have been recently announced.

(*a*) *Fortified Regions.*

There will be two fortified area commands (*Régions Fortifiées*), *i.e.* :—

(i) Metz.

(ii) The Lauter.

In addition there will be three Rhine fortified sectors (*secteurs fortifiés du Rhin*). The fortified area commanders will have under their command all the infantry, artillery and engineer units detailed for the permanent occupation and defence of the fortified works in their respective areas.

The infantry units which are to form part of the permanent garrisons of these fortified areas are to be taken from the four divisions (11th, 12th, 42nd and 43rd) at present stationed in the 6th and 20th regions, and will consist of the four infantry regiments (23rd, 146th, 153rd and 168th) which are to be transformed into regiments of the *Type Région Fortifiée*, and one regiment (170th) of those which are to be transformed into *Type Mixte* regiments. This reorganization involves practically no movement of troops.

As a consequence of the above measures, the four infantry divisions concerned will be reduced to two infantry regiments each, instead of the normal three, which they all have at present, except the 43rd Division, which has four regiments. In other words the 11th, 12th and 42nd Divisions are to be reduced from nine battalions to six battalions each and the 43rd Division from twelve battalions to seven battalions.

(*N.B.*—The 43rd Division is to include one *Type Mixte* regiment, the 158th, of four battalions.)

It is announced that the groups of fortified area horse drawn artillery will be organized into one regiment consisting of eight batteries of light and four batteries of heavy guns, and one group consisting of four batteries of light and two batteries of heavy guns. It is also stated that the five regiments of foot artillery are to have increased establishments and will consist of a varying number of batteries—seven to twelve. These five regiments are to be mechanized.

(*b*) *Mechanization.*

The artillery of the 15th Division is to be mechanized, for which purpose credits have been asked for in the 1933 Estimates.

(*c*) *Foreign Legion* (*Infantry Units*).

A decree dated 1st February, 1933, lays down new establishments for the infantry units of the Foreign Legion. The principal features of this decree are—

(i) The 5th Regiment (stationed in Indo-China) will have three instead of four battalions.

(ii) The establishment of each infantry regiment of the Foreign Legion will be 80 officers, 2,924 other ranks, an increase of 2 officers and 24 other ranks.

(iii) The establishment of the French *cadre* is now laid down, *i.e.*, 100 per regiment.

(iv) A depot is formed for the five regiments, the establishment of which will be 50 officers and 4,246 other ranks.

(v) Motor companies will take the place of mounted companies, except in the case of certain regiments as decided by the War Minister.

(*d*) *Colonies.*

Certain changes are contemplated in the organization of the troops in the Colonies :—

(i) *Indo-China.*—The autonomous Tong Brigade will be transformed into a division.

A battalion will (as noted above), be withdrawn from the 5th Regiment of the Foreign Legion.

(ii) *West Indies.*—A machine-gun company and a battalion headquarters are to be created at Martinique. The reasons given for this are :—

To enable the natives to receive their military training under the recruiting law (although for reasons of economy they will only receive 6 months training instead of the usual 12 months).

To make a start with the organization of the naval station at Fort-de-France.

(*N.B.*—This naval station has not been in use since 1924 when it was sold.)

(iii) *Pacific.*—The detachment at Tahiti is to become a company.

(iv) *French Somaliland.*—The creation of a company of *tirailleurs indigenes* at Djibouti.

This port of call has hitherto possessed no military defensive organization. The Colonial Department considers that the time has come when a military organization should be given to this base which forms an important strategical link.

For reasons of economy it will not be possible to carry this out before 1st January, 1934, but token credits have been asked for in this year's estimates.

The native police forces in French Somaliland are to be reorganized into a native militia, which however, in peace remains a police organization under the civil authorities.

The organization and establishment of this militia will be as follows :—

Commander : A captain of Colonial infantry.

A foot "brigade" :

Europeans—1 subaltern officer.
5 warrant officers and non-commissioned officers.

Natives—180 other ranks.

A camel troop :

Europeans—2 warrant officers and non-commissioned officers.

Natives—50 other ranks.

On mobilization the militia will be placed entirely at the disposal of the military authorities. The mobilization of the militia will be authorized by the Governor after consultation with the O. C. Troops.

INDO-CHINA.

Pacification.

The Headquarters of the French forces in Indo-China have issued a statement on the work of peaceful penetration which has been carried out in the central plateau of South Indo-China.

In December, 1931, the Governor-General, acting on military advice, drew up a plan for the occupation of the central plateau on the

borders of Cambodia, Cochin-China and Annam. The task was entrusted to two companies. The first company of Annamite Mountain Light Infantry set out from Ban-Me-Thuot in a south-westerly direction and after a difficult advance through almost impenetrable forest made a strong post at Buon Djeng Drom in the heart of the unsubdued area from which the work of pacification and reconnaissance was carried out. By the end of the year over 60 villages, the existence of which had been unknown, submitted to authority.

Meanwhile the second company of Cambodian Light Infantry marching eastwards reached its advance base at Shrektum in February and there, with the aid of penal labour, made a road through an extremely unhealthy region of dense forest. At the end of six months they had advanced 40 kilometres and reached the Plateau des Herbes. It was decided after a reconnaissance carried out in October to make a permanent base 80 kilometres from Shrektum, which it is hoped the Annamite company will also shortly reach.

The authorities are very well satisfied at the peaceful manner and the short time in which the occupation has been carried out. It will be consolidated by building roads, establishing medical posts and by making local heads of tribes responsible for minor administration.

Repatriation of Indo-Chinese-Malgache troops.

In pursuance of the policy by which the number of Indo-Chinese-Malgache troops serving in France is to be greatly reduced, Annamite and Tonkinese troops are being steadily repatriated.

Promotions and Appointments.

General Bidon has taken over the command of the Cochin China-Cambodia Division, *vice* General Vallier.

General Thiry, it is said, will take over the supreme command of the Indo-China Group when General Billottee returns to France early in 1933. General Thiry at present commands the Annam-Tonkin Division.

ALGERIA.

Tour by Governor-General.

M. Carde, the Governor-General of Algeria, has been making an official tour by air through the Southern Territories. M. Carde left Algiers on the morning of 4th March in a military aeroplane escorted

by four other machines carrying his personal staff, and covered the 1,320 miles from Algiers *via* Biskra to Janet in 14 flying hours.

The Italian officer in charge of the Southern Territories of Tripolitania came from Ghat to Janet to greet the Governor-General by order of Marshal Badoglio, the Governor of Tripolitania, acting on instructions from Signor Mussolini. Franco-Italian courtesies were exchanged at an official banquet at Janet on 7th March.

BELGIUM.

Gendarmerie.

The press announces that the budget for the *Gendarmerie* for 1933 shows a reduction of 12,000,000 francs as compared with the budget for 1932. There is, however, one new item of importance, a sum of 410,000 francs for the installation of a permanent special system of wireless communication in the *Gendarmerie*.

Change in organization in the Ministry of National Defence.

It has been decided to do away with the Directorate of Military Personnel and Recruitment in the Ministry of National Defence, and to create a bureau in the General Staff to perform its functions. Colonel Colpin, who has been commanding the Regiment of *Carabiniers* in Brussels, will be at the head of this bureau. At the same time a new General Inspectorate of Recruiting and External Services (*Bureau de recruitment et des services extérieurs*) is being created, and Lieut.-General Maton, the late Director-General of Personnel and Recruitment, has been appointed Inspector-General.

Appointments.

Lieut.-General Swagers, the present Commandant of the Staff College, is to be replaced in June by Major-General Tasnier, the present *chef-de-cabinet* of the Minister of National Defence. Major-General Tasnier is to be attached to the Staff College almost at once, and is being replaced in his present functions by Colonel Duvivier, who is at present commanding the Air Defence Regiment in Brussels.

Non-commissioned officers statute.

The Minister of National Defence has submitted a *project de loi* to the Chamber with the object of reforming the statute under which professional non-commissioned officers serve in the army, with the object of giving them an assured position up to the age limit. The

basis of the new statute is similar to that which governs the conditions of service of commissioned officers. Non-commissioned officers will only come under the statute when they have been admitted to the *cadre* of non-commissioned officers which can only take place after a certain period of service during which they have given proof of efficiency and goodwill. Vacancies in the *cadre* are published quarterly in all units and may be applied for by non-commissioned officers and are filled, other conditions being equal, by seniority. A non-commissioned officer may forfeit his membership of the *cadre* for the following reasons :—

(i) Loss of Belgian nationality.

(ii) Retirement in the normal way.

(iii) Public manifestation of opinions hostile to the Constitutional Monarchy, to the fundamental institutions of the State, to the liberties guaranteed by the Constitution, or for offences against the person of the King.

(iv) Having been condemned to a criminal award or to a sentence of imprisonment for certain offences.

(v) Deprivation of rank as a result of a military award.

The linguistic question in the army.

An Army Order has recently been published on this subject with the object of reducing the penalties of failure to pass the language examinations required for commissions. Henceforward any cadet of the Military College who fails to pass the examination in French or Flemish may present himself for re-examination in this subject only after a lapse, of not less than 3 months and not more than 12 months. In case of success he receives his commission immediately after the examination. While waiting for the new examination the cadet is sent either to the School of Application, to the school of his arm, or to his future unit in the rank of *adjudant*. In the event of failure to pass the second examination he is posted to his unit in the rank of *adjudant*. The same conditions will apply to candidates for commissions through the ranks.

Cadet schools.

The Minister of National Defence proposes as a measure of economy to suppress the elementary cadet schools which cater for the education of boys from ten to twelve years of age, who can, it is considered, perfectly well be educated in the ordinary State schools. There is no

question of abolishing the secondary or higher grade cadet schools. It is, however, probable that the Flemish section of the higher grade school now situated at Namur will be moved to Flanders.

Army Strength.

A *Project de loi* fixing the contingent for 1933 at 61,500 men was recently passed by the Chamber of Representatives. The numbers are made up as follows :—

Volunteers and re-engaged men	..	23,000
Recruits of the Annual Class	..	34,200
Reservists called up for training	..	4,300
Total	..	61,500

The total figure, 61,500, shows a diminution of 1,500 men as compared with 1932. The Government stated that the major portion of this reduction has been achieved by the suppression of certain employments occupied by re-engaged men.

Financial situation.

The *project de loi* submitted to the Chamber by the Government to deal with the financial situation of the country and to institute the necessary economies has been voted by the Chamber. It includes certain amendments to the recruiting law. In future, conscripts serving over 8 months will receive an indemnity of 200 francs a month for the extra period of their service instead of 400 francs a month as heretofore. Married conscripts will in future receive an allowance of 100 francs a week during the period of their reservist training instead of 150 francs a week as in the past. The Minister of National Defence is authorised, however, to carry forward to 1933 the credits which remain from the sum of 210,000,000 francs which was voted in 1931 for fortification purposes. About 60,000,000 francs still remain unspent.

Inter-Ministerial Commission.

In the opinion of the Government, certain incidents during the strike of July last have shown the necessity of establishing a constant liaison between the three Departments of the Interior, Justice, and National Defence, with a view to the maintenance of order in the country. With this object it has been decided to create an inter-ministerial commission which will have the duty of studying the problem of the maintenance of order and deciding the measures which shall be taken to prevent a repetition of the errors committed in July.

ITALY.

The calling up of conscripts in 1933.

Instructions have recently been issued for the calling to the colours of this year's conscript class. As in former years, the class is divided into four main categories corresponding to the various periods of service —18 months, 12 months, 6 months and 3 months—to which conscripts may be liable. The normal period is 18 months but, provided that a conscript has passed his courses of "pre-military" training he may, for various family reasons, be allowed to serve for a reduced period.

The rules which govern the various kinds of "family situations" are lengthy and somewhat complicated. There are, for instance, 15 different "situations" which normally entitle conscripts to serve for a reduced period of 6 months, provided that they possess the requisite "pre-military" qualification. This reduction is, however, by no means automatic and the Minister of War is empowered to cause conscripts "collectively to pass from one category of liability of service to another." Thus, this year, conscripts belonging to 7 of the 15 categories are being excused all military training, whilst the greater part of the remainder are being held to serve for 12 months instead of 6. Conscripts who, for family reasons, are nominally liable to only 3 months service are, as usual, not actually being called to the colours.

Conscripts are enrolled at different times of the year according to the length of service to which they are liable. Those liable to serve for the full period of 18 months or for a reduced period of 6 months join their units in March. Those liable to serve for 12 months are called up in the autumn. The total strength of the annual class normally available for service in the army is approximately 250,000, of whom some 200,000 join the colours, whilst the remaining 50,000 obtain total exemption.

Promotion of Officers.

The question of blocks in promotion has for some time been exercising the attention of the Italian military authorities, and has, more than once, been ventilated in the Chamber and Senate. A special law has now been promulgated which is designed to deal with this problem.

There are two main blocks. The first consists of some 2,500 infantry captains commissioned in 1916, or earlier, and quickly

promoted to their present rank. The other is in the list of lieutenants, and includes those who were commissioned from the Reserve in 1921 with ante-dates according to war service.

Under the new law accelerated promotion is to be given to selected officers who are successful in passing certain tests or examinations, whilst a number will be absorbed by being seconded for special appointment in connection with mobilization, store-keeping and record duties. Special terms are also offered to a certain number of officers who, during the next 5 years, may elect to accept transfer to the half-pay list with a view to subsequent retirement. Provision is also made for the removal from the Active List of officers who are definitely not being considered for promotion. The law, in addition, makes special provision for dealing with promotion difficulties in the Carabinieri, and raises the age limit for the final retirement of those war disabled officers who are employed in government offices.

Protection of the civilian population against air attack.

For some time past the Italian Government has shown a keen interest in the question of the protection of the civilian population against air attack, and recently a law has been published which is intended to ensure that all tunnels constructed in urban districts shall be suitable for use as shelters against aerial bombardment.

It is laid down that in important towns or in their vicinity, newly constructed tunnels for roads, tramways, underground railways, ordinary railways, &c., must be fit for use as permanent shelters in case of air raids. In order to fulfil this purpose, they must comply with certain conditions specified in the law relating to depth, strength of roof, number of entrances, ventilation, lighting, &c. In the event of non-compliance with these regulations the offender will be liable to a fine varying from a minimum of 5,000 lire to a maximum equivalent to double the cost of the work executed. Responsibility for bringing the offender to justice will lie with the "Central Inter-Ministerial Organ for air protection of the national territory."

Apart from the fact that this is the first legislation of its kind, interest attaches to the reference to the "Central Inter-Ministerial Organ." This is presumably a Committee created to assist the Minister of War in discharging the responsibilities for passive air defence which were transferred to him last year from the Ministry of the Interior by decision of the Supreme Council of Defence.

Pre-military training in the Colonies.

Under a recent decree pre-military training has now been made compulsory in the Italian Colonies. The system is apparently to be similar to that in force in the mother country which provides for the training, under the direction of the Minister of War of all youths between the ages of 18 and 21 by means of two annual courses each of about 20 lessons.

In Lybia responsibility for the training is allocated to the 1st and 2nd Lybian Legions of the Fascist Militia and in Eritrea and Italian Somaliland to the autonomous cohorts of the Fascist Militia stationed in those colonies. As a temporary measure it is laid down that the young men of the 1912 class will only attend one annual course.

JAPAN.

Patriotic contributions to the Army.

On 26th January, 1933, the Tokyo "Nichi-Nichi" reported that public monetary donations to the army for national defence had reached a total of Yen 6,764,779 (roughly £676,000 at par). The following were some of the items purchased with this money:—

63 aeroplanes.
27 A. A. guns.
27 A. A. machine guns.
7 observation cars.
9 searchlights.
32 audiophones.
1 tank.
3 armoured cars.
1 tractor.
9 motor trucks.
4 infantry guns.
3 motors.
23 heavy machine guns.
137 light machine guns.
32 bullet proof vests.
190 gas masks.
29,600 steel helmets.

In addition to specific subscriptions for the above material, numerous other voluntary contributions are being made to supplement army funds. For example, officers' wives, through a form of savings associations have contributed a sum of Yen 33,000 ; school children are encouraged in many instances to make small daily savings and the sum collected by this means is used to swell the funds raised for various patriotic motives. A further example of the constant and intensive patriotic propaganda that is being carried out, is provided by the action of the entire staff of the Osaka arsenal who worked one Sunday, which is normally a holiday, and gave their day's earnings of over Yen 10,000 to the " State Defence Fund of the Army."

Army Estimates.

According to the Japanese Press, the Cabinet has given approval to draft estimates for the financial year 1933-34 amounting to Yen 2,233,000,000 (£223,300,000 at par), which, incidentally, is the highest figure in the history of Japan. Of this total, approximately Yen 900,000,000, or 40 per cent., is, apparently, to be raised by loans. The estimated expenditure on the Army is Yen 447,883,000, and on the Navy Yen 372,606,000 ; together these sums amount to 37 per cent. of the whole. These estimates have to receive the sanction of the Diet before they become effective.

PORTUGAL.

Chief of General Staff.

General Eduardo Marques, who was Minister for the Colonies in the Portuguese Cabinet in 1930, has been appointed Chief of the General Staff of the Portuguese Army. This appointment became vacant on the death of General Ivens Ferraz on 16th January, 1933.

Peninsula War Memorial.

A monument commemorative of the Peninsula War was unveiled at Lisbon on Sunday, 8th January, 1933. The decision to erect this memorial dates from the centenary celebrations of 24 years ago, but the completion of it has been delayed by various causes, among others the Great War, and then by what was judged to be the prior claim to commemoration of that cataclysm, to which a monument was inaugurated last year.

The new memorial stands in the main avenue of Lisbon. It takes the form of a high *stele*, surrounded by stone figures, life-like and allegorical, including a British lion, and surmounted by a bronze eagle about to take flight, symbolic, no doubt, of the expulsion of the armies of Imperial France.

The programme was such as is usual on these occasions. It was carried out with commendable punctuality and order, and was followed by a march past of representative units of the garrison of Lisbon. The troops were well turned out, and had the serviceable appearance which marks the Portuguese Army.

At the conclusion of the ceremony, the President of the Republic spoke to the British Minister gratefully of the participation of the British Army in the Peninsula War, and especially of the services of Wellington and Beresford.

Recruiting laws.

By a decree dated 22nd November, 1932, the Portuguese Recruiting Laws have been amended as follows:—

(*a*) *Duration of active service.*

In normal circumstances the duration of service in the ranks will be 17 months. Of this period the first 5 months will be devoted to general instruction and the elementary instruction of specialists. The remaining 12 months will be devoted to completing the instruction of specialists and to the professional instruction of the permanent cadres.

In exceptional circumstances, when the financial situation of the country so demands, the period of 5 months, referred to above, for general instruction, may be reduced by the Minister for War to 3 months.

(*b*) *Incorporation of Recruits.*

In future there will be two incorporations annually in all arms and services. The first will take place between 1st-5th May; these recruits concluding their first 5 months by 30th September. The second incorporation will be from 1st-5th November, the recruits finishing their first period by 30th March in the following year.

The two incorporations, as far as possible, will consist of an equal number of recruits.

The first incorporation in 1933 took place from 1st-5th April, an exception being made in this instance only.

(c) *Discharge.*

Normally the discharge of recruits of the first and second incorporations in any year will take place respectively as follows: 1st-5th October, and 1st-5th April.

Anti-aircraft battery.

The arrival at Lisbon is announced of the first anti-aircraft battery for the Portuguese Army, purchased from Messrs. Vickers Armstrong.

It is further stated that the contract for a second battery, exactly similar to the first, is shortly to be signed with the same British firm.

Thus a first anti-aircraft group will be formed, with probable headquarters at Cascais.

Other anti-aircraft material is to be acquired for the Coast Artillery School, for training purposes.

Conversion of rifles.

The *Diario da Manha* announces that contract will shortly be signed between the Portuguese Government and the firm of Steyr Solothurn Waffen, of Zurich, for the conversion of all the rifles at present in use in the Portuguese Army.

Obituary.

General Arthur Ivens Ferraz, D.S.O., died on 16th January at Lisbon. General Ferraz was successively Chief of Staff, Chief Liaison Officer, and Commander-in-Chief of the Portuguese Corps in France during the Great War. From 1919 to 1922 he was Portuguese Military Attaché in London, holding later the same appointment at Washington. In 1928 he became Colonial Minister in Portugal, whilst in the following year he became Prime Minister. He subsequently held appointments as Administrator-General and Chief of Staff of the Portuguese Army. The funeral took place on 18th January with full military honours.

SPAIN.

Strength of the Army in Spain.

The *Gaceta de Madrid* of 1st January, 1933, contained the text of a law fixing for 1933 the strength in other ranks of the Army in Spain at 145,000. This law annulled the decree of 8th September, 1932,

which gave the figure as 151,000, and also provided further that " the Minister of War shall proceed to examine the question of a future reduction of the period of service in the ranks."

Strength of the Army in Morocco.

A Circular Order of 26th December, 1932, fixed the establishments of the Army in Morocco for 1933. The total figures given were :—

Officers.	Other ranks.
1,509	36,897

Co-ordination of Air Services.

In the Budgetary Law published on 29th December, the President of the Council of Ministers was authorized to organize the National Air Service by the co-ordination of the three branches—War, Marine and Interior.

Communist outbreak.

On 29th December, following an accidental explosion which led to the discovery of a bomb factory and arms store in Barcelona, the organization of a widespread revolutionary plot was prematurely set in motion. It is believed that the plot was originally intended to coincide with the railway strike due to take place on 20th December but which was eventually called off. On Sunday, 8th January, the anarchist outbreak became general, the more serious incidents being at Barcelona, Lerida, Valencia, Cadiz and in the neighbourhood of Madrid. Everywhere the scheme appears to have envisaged an assault on the barracks and military posts, in the belief that they would be found almost deserted on a Sunday.

In all cases the attacks failed, but a considerable number of the police, civil guard and *Guardias de Asalto* were killed in the disturbances.

Subsequent investigations have revealed extensive ramifications of the plot in all parts of Spain together with " cells " in the army, but there is no evidence to show that any military element was connected with the movement ; indeed, the soldiers appear to have acted loyally everywhere, nor is it probable that the Monarchists were concerned. The plot was undoubtedly organised by the Anarchists (*Federacóin Anarquista Ibérica*) with strong foreign financial backing. The situation is now once again normal.

Military frontier areas.

By the Decree of 15th February, the new boundaries of the military frontier areas are laid down. The frontier zone is divided into four sectors as follows :—

(1) Pyrenees or North Frontier.

(2) Portuguese Frontier.

(3) North Coast.

(4) East and South Coast.

The entire area of the Balearic Islands, the Canary Islands, and Spanish possessions in Africa will be regarded as military territory.

In the military districts there will be no restrictions in regard to building with the exception of roads, railways and aerodromes, which must be submitted for the approval of the War Ministry.

MOROCCO.

Spanish Zone.

Army reductions.

A Circular Order of 26th December fixes the establishment of the various units of the army in Morocco for 1933. These came into force with the new Spanish Budget on 1st January 1933, and entailed a slight reorganization and a reduction of some 245 officers and 5,280 other ranks. The total strength is :—

Officers, 1,509 ; other ranks, 35,169 ; grand total, 36,678.

The principal changes are as follows :—

(i) Suppression of the Military Commands of Ceuta and Melilla, the troops coming directly under the orders of the G.O.C. the Circumscription.

(ii) The 8 *Cazador* battalions to be reduced to 7 by the suppression of 1 battalion in the Western Circumspection (the battalion to be disbanded will be decided by ballot).

(iii) The remaining 7 *Cazador* battalions will form two Infantry Groups, one in the Western Circumscription consisting of 4 battalions, and the other in the Eastern Circumscription, with 3 battalions.

(iv) The cavalry Squadron of the *Tercio* to be suppressed.

(v) The *Tercio* to consist in future of 2 Legions each of 3 *Banderas.*

(vi) Cyclist sections are to be converted into platoons.

(vii) The number of military hospitals will be reduced to three, *viz.*, Tetuan, Ceuta and Melilla. All other hospitals, both military and civil, will be converted into subsidiary hospitals under these three main hospitals.

In this reorganization, preference will be given to the volunteer personnel. All surplus soldiers will be discharged.

Surplus officers will be placed *en disponsibilité.*

Administration.

A decree reorganizing the administration of the Spanish Protectorate of Morocco was published on 6th January. All officials who have held posts for more than nine years in Morocco will be retired. The High Commissionership is henceforth attached to the Presidency of the Council, so that the High Commissioner will be under the direct orders of the Prime Minister instead of the Foreign Minister, and all officials, both civil and military, will be appointed by the former.

Orders and decrees affecting Morocco must be approved by both the Calipha and the Prime Minister, and will be published in the official "Journal" of the Protectorate before taking effect in that country.

New Gun.

The Ministry of War has adopted a new 40-mm. gun for infantry, invented by Major Antonio Ramirez de Avellano (artillery). It will be known as the *Canon Acero de* 40 *millimetros para Infanteria modelo,* 1933; abbrev.: *C. Ac.* 40 *mm. I. mod.* 1933.

Military Appointments.

The following appointments have just been gazetted:—

To be Under-Secretary of War.

General de Brigada.—D. Luis Castello Pantoja, Commanding 6th Infantry Brigade, *vice* General Ruiz Fornells, stated to have resigned. General Ruiz Fornells has held the appointment since February, 1931. (General Castello was promoted *General de Brigada* in 1932).

To be Inspector-General—3rd Inspectorate.

General de Division.—D. Miguel Cabanellas Ferrer, the last Director-General of the Guardia Civil, which appointment was

abolished on the organization of the Corps following the 10th August Revolution, 1932. Previously he was C.-in-C., Morocco.

This appointment has been vacant since June 1932.

To be Chief of Central General Staff.

General de Division.—D. Carlos Masquelet Lacaci, who has been acting Chief of the General Staff since the removal of General Goded in June, 1932.

To be G. O. C. 2nd Division.

General de Division.—D. Miguel Nunez de Prado, Military Commander of the Balearic Islands. This command has been vacant since General Gonzalez was removed from it after the 10th August Revolution. It has been held temporarily by General Ruiz Trillo in addition to his other duties as Inspector-General, 1st Inspectorate.

To be G. O. C. 6th Division.

General de Division.—D. Jose Fernandez Villa Abrille.

To be G. O. C. 7th Division.

General de Brigada.—D. Juan Garcia Gomez Caminero.

To be Military Commander—Balearic Islands.

General de Brigada.—D. Franciso Franco Bahamonde, commanding 5th Infantry Brigade.

U. S. A.

Mechanization.

The Chief of Staff of the United States Army, General Douglas MacArthur, deals with the subject of mechanization at considerable length in his annual report for the year ending 30th June, 1932. After tracing the progress of mechanization from the introduction of the tank in the Great War and referring to the study of the problem in foreign armies, he states that during the past year seven combat vehicles of the "Christie" combination wheel and track type were obtained at a cost of 262,000 dollars (£55,000 at par) and 12 armoured cars of the most modern type for 190,000 dollars (£40,000 at par). Viewed solely from the standpoint of the acquisition of mechanized equipment these accomplishments appear small specially when compared with the probable requirements of the United States Army in a major mobilization; in contrast it is interesting to note that the United States

Government had made arrangements at the time of the Armistice for the production of 19,000 tanks for the 1919 campaign. Nevertheless the Chief of Staff claims that progress in the solution of such a complicated problem cannot be measured by the number of vehicles produced.

He then reviews the progress of mechanization in the various arms of the service, for the United States Army has no separate Tank Corps. The cavalry are chiefly interested in armoured cars and cross country vehicles possessing a high degree of strategic mobility, with fighting power and tactical mobility an important, though secondary, consideration. One cavalry unit, the 1st Cavalry (Mechanized) stationed at Fort Knox, Ky., has been set aside as a laboratory in which to develop tactics and test the machines made available. Development cannot come suddenly and cavalry must still depend upon mounted units in carrying out certain of its missions. While the eventual elimination of the horse can be predicted, it is certain under present conditions some mounted units must be kept available for use in emergency.

The infantry, on the other hand, require a machine with a high degree of tactical mobility even at the cost of reducing strategic mobility. An essential requisite in the assaulting tank is sufficient armour to enable it to negotiate the band of fire laid down by the defence. Defence against small arms fire alone is possible, anything else being impracticable owing to the weight of armour which would have to be carried. For protection against artillery fire the tank must rely on mobility and the use of ground.

The Tank School has been incorporated as a part of the Infantry School at Fort Benning, Ga., during the year.

The artillery also has made progress in substituting machines for animals, and early mechanization of practically all field artillery can be predicted. This arm is not primarily concerned with protective armour for its personnel and the problem is principally one of mobility.

The Chief of Staff next reviews some of the limitations governing the practical application of mechanization. He mentions the inability of armoured fighting vehicles to negotiate unsuitable terrain such as swamps, mountains, thick woods, streams and extremely rough ground. Another factor is the lack of sustained defensive power in machines whether armoured or not, their usefulness in battle being limited to situations demanding continuous movement.

If the attack is to be supported by strong mechanized units, development in infantry equipment must be towards the inclusion of greater numbers of weapons capable of disabling the tank. A factor complicating tank design is the continuous progress in producing bullets of extraordinarily armour piercing qualities. A very high velocity bullet (5,800 feet per second) has recently been developed which gives promise of being able to pierce any armour now carried on tanks and other fighting vehicles. If this development should prove capable of general application in all types of small arms, tank design and even the whole theory of mechanization will necessarily undergo revolutionary changes.

Models of armoured fighting vehicles tend to become rapidly obsolete owing to new inventions. Under present conditions General MacArthur considers that any attempt to maintain large units equipped with efficient models of armoured fighting vehicles would entail the replacement of equipment every few years at prohibitive cost. He says:— "In view of these considerations present progress towards mechanization must consist principally in the production of the best in pilot models; making precise pre-arrangements for speeding up their production in emergency; procuring annually sufficient numbers for thorough tactical test and for developing tactical doctrine of mechanized units; and indoctrinating the whole army in methods of co-operation so as to capitalize fully the inherent capabilities of these machines and make allowances for their inherent weaknesses."

Reviewing the actual production of pilot models he refers to the "Christie" wheel-cum-track vehicle which, owing to its speed, was responsible for awakening the cavalry to the possibility of supplanting the horse in some of its units by fighting machines. Seven of these tanks have been acquired during the past fiscal year and are being tested by both infantry and cavalry. He says: "Preliminary reports indicate that mechanical defects are still such as to bar the adoption of these machines as standard equipment, but hope exists that improved models may yet prove satisfactory." Development in armoured cars has been more satisfactory.

There can be no possibility for some years to come that units equipped with the most modern types of fighting vehicles will be available at the outbreak of war. The army must therefore be prepared to utilize existing means at the same time that it tries to develop more efficient means to achieve victory.

"This brings up the important question of providing for speedy production by commercial firms of tanks and other types of armoured vehicles in emergency. These arrangements cannot be complete while experimental types are still being developed as exact manufacturing specifications cannot be prepared. Plans will necessarily be revised continuously. In spite of difficulties definite progress in this direction has been realized the supply branches working under the supervision of the Assistant Secretary of War are making every practicable preparation. As a result it is now possible to predict that, in any emergency involving a major mobilization, tanks will reach quantity production in approximately 12 months. While this estimate may eventually be somewhat reduced, it is certain that an appreciable length of time will always be required for the conversion of manufacturing plants from peace time activity to production of this character."

The effect of mechanization on the manpower required for mobilization cannot be foreseen owing to maintenance problems. Complicated weapons and machinery applied to the battlefield have tended to require a highly trained personnel and the use of more rather than fewer men.

Philippine Independence.

On 29th December 1932, a Philippine Independence Bill was finally passed by both Houses of Congress and submitted to the President for his approval. On 13th January, President Hoover returned the bill to Congress without approving it. The President's veto was, however, subsequently over-ruled by the necessary two-thirds majority of both Houses and the measure thus became law, subject to its acceptance by the Filipinos.

The Bill provides for a Philippine Convention to be called within two years to draft a Constitution which shall then be submitted to a plebiscite of the Filipinos. If they accept this constitution they accept independence. As soon as the constitution is accepted, a ten-year period of transition government under an American High Commissioner begins. During this period American military occupation of the islands continues and certain measures are put into force to prepare the way for complete independence. Philippine immigration into the United States is regulated, and duty free exports to the United States are restricted to specific quantities and tariffs gradually intro-

duced so that by the end of the period the islands are prepared to take their place outside the tariff walls of the United States.

Finally, after the ten-year period, when independence becomes complete, the United States retains the right to maintain naval and military stations in the islands and promises to make an effort to secure the international neutralization of the islands.

GERMANY.

Changes in organization and drill movements.

The new organization of companies in 3 platoons each of 3 homogeneous groups (*Einheitsgruppen*) of a light automatic section and a rifle section, and a new column of route system (column of threes instead of column of fours).

German Army Orders of January, 1933, lay down that the organization of nine homogeneous groups will now be adopted in all rifle and pioneer companies. In addition, other units (*e.g.*, cavalry, &c.) will adopt this organization and the column of threes when fighting or marching dismounted.

REVIEWS.

"Modern Military Administration, Organisation and Transportation." By Major-General J. C. Harding-Newman, C.B., C.M.G.

(*Messrs. Gale and Polden, Ltd., London*, 1933) 2*s.* 6*d.*

Many men who retire from active employment feel the urge to put down on paper something of the experience they have gained in the hope that thereby they may benefit the younger generation. Some write a 'Story of My Life,' and when the writer is an outstanding national personality, a public is assured. When the writer has led a life off the beaten track, full of adventure and strange occurrences, a public to read his 'Life' will not be wanting.

The author of "Modern Military Administration, Organization and Transportation" belongs perhaps to a third category. He has no desire to inflict on the public his personal history but he does wish those of his own profession to benefit by his knowledge and experience of his subject. In this pamphlet he hopes to appeal to "a wider public than the ranks of the Regular, Territorial and National Armies of this country and the Dominions."

Unfortunately he has chosen a title for his work which definitely will not attract the non-military public. Indeed it will not attract the military reader except perhaps those who already are interested in the subject or who are serious students of military matters. I use the word 'serious' with intention because the author has a style of expression which is often not easy to follow, a style which will soon tire the casual reader.

It is not possible in a short note to comment on the very great range of subjects which are covered in this pamphlet of eighty pages. Those portions of the work which give the teachings of experience and principles in matters of transportation are of particular value to the student. In other places there are expressions of opinion which although it is not possible sometimes to see eye to eye with the writer, definitely stimulate thought and put a different view on matters which have come to be accepted by most soldiers as irrevocable.

W. V.