LEAGUE OF NATIONS

Conference for the Reduction and Limitation of Armaments

LAND COMMISSION

REPORT TO THE GENERAL COMMISSION

under the Terms of that Commission's Resolution of April 22nd, 1932.

(Document Conf.D./C.G.28(2).)

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INTRODUCTION.

1. The General Commission of the Conference for the Reduction and Limitation of Armaments, at its meeting on April 22nd, 1932, adopted the following resolution (document Conf.D./C.G.28(2)):

"In seeking to apply the principle of qualitative disarmament, as defined in the previous resolution (document Conf.D./C.G.26(1)), the Conference is of opinion that the range of land, sea and air armaments should be examined by the competent special commissions with a view to selecting those weapons whose character is the most specifically offensive or those most efficacious against national defence or most threatening to civilians."

2. The Land Commission met on April 26th in response to the request thus addressed to it.

The Soviet delegation makes the following reservation with regard to the present report:

"The present report, instead of giving direct answers to the questions put by the General Commission, merely enumerates the opinions of the various groups of delegations, as formulated by the Experts when questions concerning artillery and armoured vehicles were under consideration. The Land Commission had instructions to determine what calibres of artillery and what classes of armoured vehicle answered to the three criteria laid down by the General Commission on April 22nd. The Land Commission was to answer these questions; it was to say whether these classes of armament should be subject to qualitative reduction, and, if so, to what extent.

"Instead of answering the questions, the Land Commission, by repeating the opinion expressed by the Committee of Experts in an interminable series of technical arguments, is still further complicating the task of the General Commission. Land armaments, especially armoured vehicles and heavy artillery, offer sufficient material to be submitted to the General Commission for its decision in regard to qualitative disarmament. The Land Commission's voluminous report is full of arguments about the relative value of different calibres of artillery, the impossibility of making an absolute distinction between a tank and a motor vehicle, and the efficacy of artillery and tanks against permanent fortifications; but all this is merely preparing the ground for bringing the whole principle of qualitative disarmament into question. Public opinion is beginning to realise this, and numerous protests are now being heard from every side against this tendency, which is visible in all the Commissions.

"The Soviet delegation quite realises that this total absence of positive results is not due to any bad work on the part of the Experts. The Experts are only expressing the ideas and wishes of their respective delegations. Be that as it may, the Soviet delegation cannot associate itself with this refusal to give any specific reply to the questions put, and is therefore unable to pronounce in favour of the report.

"While making this general reservation, the Soviet delegation proposes to continue to uphold its own view in the General Commission, maintaining that the following classes of arms should be subject to qualitative disarmament: all guns and howitzers of calibre exceeding about 100 mm., firing shells weighing more than 16 kg. and having a range exceeding 15 km., and all armoured vehicles — tanks, cars, and trains."

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IX. DISARMAMENT

1932. IX. 47.
It was of opinion that generally for land materials the weapons which are "most efficacious against national defence" should be considered as being those whose character is "the most specifically offensive", and that the first two criteria named in the resolution of April 22nd might thus be held to form one single criterion.

3. The Commission rapidly decided that, instead of dealing successively with the whole series of land armaments, it would, without prejudice to the question, be effecting a considerable saving of time if it confined its examination to certain of these armaments already designated as requiring special treatment under the concrete proposals submitted to the Conference.

That was the case as regards: (1) artillery, (2) armoured vehicles, (3) certain fortifications, (4) chemical warfare gases.

The General Commission having decided, at its meeting on May 10th last, to entrust the study of that last item to a special committee, the Land Commission was able to confine itself to the first three categories of armaments.

### I. ARTILLERY MATERIAL.

4. The general discussion which took place on the subject soon revealed the necessity of entrusting to a committee of experts the preliminary examination of certain technical aspects of the problem. That Committee, on which all the delegations were entitled to be represented, had to consider a questionnaire, to which it replied in the terms appearing in the documents attached hereto (document Conf.D./C.T.8, 8a, 8b, and 8c).

5. The report of the Committee of Experts having been communicated to the Land Commission, the latter employed the material which it contained for the purpose of informing the General Commission. The discussion which took place on those lines resulted, on May 23rd, in the unanimous adoption of the following text:

"Basing its opinions upon the conclusions embodied in the replies of the Committee of Experts to the questionnaire submitted to it, the Land Commission offers the following recommendations for consideration by the General Commission:

(a) All artillery can be used for offensive and for defensive purposes, but its offensive capacity becomes greater as its effectiveness increases as far as defensive organisations and the civilian population are concerned—i.e., with the increase of its power and its range.

(b) Subject to such solutions as may hereafter be found by the General Commission for the questions raised by the fact that the fixed artillery of permanent fortifications and mobile artillery can be rendered interchangeable, the Land Commission is of opinion that the types of mobile artillery most threatening to national defence are those which are capable of destroying permanent fortifications of considerable strength, namely:

1. In the case of permanent fortifications of great strength, artillery of a calibre exceeding 320 mm. firing projectiles exceeding 500 kg. in weight.

2. In the case of permanent fortifications of medium strength, artillery of a calibre of about 250 mm. and above, firing projectiles exceeding 200 kg. in weight.

(c) In a lower category of inferior power should be included pieces of a calibre between 250 and about 100 mm.

As a rule, artillery of a calibre up to about 100 mm. can only be effectively used against the least strongly protected personnel and objectives of the battlefield.

Artillery of a higher calibre—particularly of about 150 mm., which is the calibre most commonly employed—and up to a calibre of 220 mm. inclusive, is capable of effective action against most entrenchments, field works and other objectives of the battlefield, which can be organised and constructed in a short time with limited personnel and material. The necessary calibre may even reach 250 mm. when the time, personnel and material available have permitted the increase of the resisting power of the position.

(d) It was not possible to obtain unanimity either as to the threatening character in relation to national defence of this second category of artillery (referred to in Section (c) above), nor as to the calibre above which this character exists.

Whilst certain delegations consider that this category of artillery is more necessary for national defence than threatening to it, a first group of other delegations places at about 100 mm. the limit above which artillery is threatening to national defence, a second group places it at 155 mm. and a third group at 220 mm.

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1. The German delegation includes under the terms "about 100 mm." guns of a calibre of 77 mm. and over.

2. The delegations of Afghanistan, Germany, Bulgaria, China, Hungary, Italy, Turkey and Union of Soviet Socialist Republics make a reservation in regard to this phrase on the ground that the terms of reference of the Land Commission, as defined in the General Commission's resolution, do not include the examination of the weapons necessary for national defence.
The lowest limit of calibre above which artillery possesses an essentially offensive character is, moreover, a relative one.1

Certain delegations consider that the limit of calibre above which the artillery of a State is of an essentially offensive character is lower in proportion as the means at the disposal of the defender are weaker.

Other delegations consider that the problem is more complex. In their opinion, the limit of calibre above which artillery need be regarded as possessing an essentially offensive character depends on the power (calibre and range) of the artillery capable of resisting it; it also depends on the nature and the protection of the objectives on which it is to fire, and more generally on the whole of the activities brought to bear on the one side and on the other. This limit also depends on the strategic situation then existing, which situation generally varies according as the offensive is launched by a defender by way of counter-attack on an aggressor who has penetrated the defender’s territory, or is undertaken by an aggressor with the intention of invading the territory of another State. Lastly, the limit in question also varies according to the nature of the system to which artillery of higher calibre may be subjected.

(e) As regards the third element of the resolution of the General Commission, the replies of the Technical Committee to questions 1 and 2 of Section III of the questionnaire lead to the conclusion that, in the view of certain delegations, artillery material of over 200 mm. calibre “having an effective range of more than 25 km. is the most menacing to the civil population. Other delegations attribute this character to artillery of calibre over 150 mm. with an effective range of over 15 km.; they would not go further than this figure, seeing that beyond that distance are situated objectives of military importance (places for the assembling of reserves, with motor transport, railway stations, air-ports, armament factories, etc.), for which, as regards the distance from the battle front, it is impossible, in existing circumstances, to indicate a limit, and that it is therefore necessary that in this zone the protection of the civil population should be regarded as more important than military requirements.

Other delegations, on the other hand, think it necessary to include in the zone of the battlefield tactical reserves capable of joining in the battle in a few hours with the aid of motor transport and which may be 50 km. away from the front; these delegations consider that artillery designed to fire beyond the corresponding range is more dangerous to the civil population than to military objectives, and is consequently the most menacing to the civil population.”

II. ARMORED FIGHTING VEHICLES.

6. The Commission adopted for this category of material the same procedure as for artillery. A Committee of Experts was first requested to answer a series of technical questions relating to: (a) tanks, (b) armoured cars, (c) armoured trains, (d) mobile armoured cupolas. Its replies form the subject of document Conf.D./C.T.34 attached hereto (Appendix 2).

7. The question was then discussed in the Commission itself, with a view to extracting from those replies positive and practical conclusions which might be submitted to the General Commission.

Since, however, a very marked divergence of views had been apparent from the outset and since that divergence had diminished but little during the discussions, it seemed impossible to arrive at a unanimous vote in the matter, and the Commission deemed it preferable to state the main groups of opinion into which it was divided.

8. A first difficulty arose as regards the distinction to be established between tanks and armoured cars.

The Committee of Experts expressed itself on the subject as follows:

“Tanks and armoured cars are armoured and armed self-propelled vehicles. Although it is not possible to draw a precise technical distinction between tanks and armoured cars, it may be said that tanks possess to a higher degree the power of moving across any terrain (due particularly to the use of tracks) and that they are capable, to a degree varying with the particular type, of crossing trenches and overthrowing obstacles. Armoured cars, on the other hand, are not specially designed with a view to their employment on an organised battlefield. There are two kinds of armoured car: one which keeps to the road, the other capable of moving across country.

Some types of tanks, and especially armoured cars, are capable of great speed and a considerable radius of action.”

9. A large number of delegations were of opinion, however, that it is possible to establish between the two categories of vehicles a clearer and more definite distinction. In their view, while it is difficult to find for such vehicles definitions applicable to all cases, owing to the

1 The Soviet delegation makes a reservation on this point on the ground that no reference should be made to this question of relativity.
fact that there is no clear technical distinction between light tanks and armoured cars, it may, however, generally speaking, be said that:

"Tanks are fully armoured, armed, self-propelled vehicles designed to cross broken ground, usually by means of tracks, and to overcome obstacles encountered on the battlefield. They are primarily intended for employment actually on the battlefield, but the lighter types of tanks are also utilised for reconnaissance.

"Armoured cars are armoured, self-propelled, wheeled fighting vehicles primarily for employment on roads, with the possible addition of limited cross-country capacity conferred by multi wheels, four-wheel drive or semi-track device. Their chief characteristics are great range and speed on roads, but they have only a slight capacity for crossing trenches. Their rôle is reconnaissance and they are useless for attack against any form of organised defensive position."

10. Some delegations pointed out that, failing a perfect scientific definition of the two categories of material under consideration, it might perhaps be possible to agree on a conventional definition, sufficient to specify the obligations to be assumed in regard to them.

11. Certain delegations consider that if a distinction was sought between tanks and armoured cars it should be sought rather in the direction of a difference of use than in that of a difference of definite technical characteristics. These delegations point out that, in such circumstances, in the absence of effective means of control it will always be possible to use these weapons for purposes different from those for which they were theoretically designed. In the opinion of these delegations, the only category of armoured vehicles of combat in regard to which a sufficiently definite technical distinction could be established would be that of armoured motor-cars which have not more than four wheels, only two of them being driving wheels, to the exclusion of caterpillars, and which are obliged to keep to roads.

12. The replies of the Committee of Experts relating to the characteristics of mobile armoured cupolas and armoured trains received general endorsement from the Commission.

13. The Commission was, however, divided on the fundamental point as to whether, and if so to what extent, the different kinds of armoured vehicles answer to the criteria named in the General Commission's resolution of April 22nd, 1932.

Various opinions, sometimes very divergent from one another, sometimes differing only on minor points, were expressed. In order to convey a faithful picture of them, and one which would at the same time be of practical assistance to the General Commission, the best plan would seem to be to consider in succession the four categories of vehicles with which the discussion dealt, and to note for each of those categories the main currents of opinion which appeared.

(1) Tanks.

14. A large number of delegations is of opinion that all tanks should be included in the list of weapons to which the resolution of April 22nd applies. They consider that the possession of such vehicles considerably facilitates offensive operations based on surprise, operations which are in the highest degree dangerous to national defence. While recognising that other factors (such as the transport of infantry by means of motor vehicles of all kinds) may also play a part in surprise operations, supporters of the above-mentioned opinion consider that the danger presented in this respect by tanks is incomparably greater.

Several of them point out that even modern fortifications are exposed to the attack of tanks because, while it is always possible to protect fortified works sufficiently to resist those attacks by the use of natural or artificial obstacles, it should be noted, on the one hand, that the action of tanks may strengthen considerably infantry attacks against troops and objectives placed at intervals either in front of or between those works, and, on the other hand, that the establishment, which is always very costly, of a complete system of artificial obstacles for the protection of forts is impossible in peace-time in certain districts, such as those under cultivation.

Certain delegations point out, moreover, that if, as the Committee of Experts has stated, even light tanks can usually cross trenches and make breaches in the usual wire entanglements of the battlefield, while they are capable of effective action against certain strong organisations of the latter, that statement is particularly disturbing to countries which do not possess the necessary anti-tank weapons, or do not possess any tanks.

It has been pointed out within the same group of delegates that whatever the utility that tanks might sometimes offer for defensive purposes, the menace which they constitute

1 The United Kingdom delegation in the Committee of Experts, dissented from this statement unless the trenches had been previously damaged by shell fire.
2 The Italian and Soviet delegations, reiterating a reservation which they had already put forward in connection with the text relating to artillery matériel, expressed the opinion that any decision as to the arms required for the purposes of national defence was outside the Land Commission's competence.
to the defence within the hands of the aggressor outweigh the advantages which they might confer on the defence, and that, in any case, such a menace was sufficiently serious to be regarded as decisive.

15. All the delegations belonging to the first group agree that tanks, of whatever type, are particularly efficacious against national defence and should, in consequence, be regarded as specifically offensive. These delegations cease to be unanimous, however, when it comes to deciding whether tanks should be included among the weapons most dangerous to civilians. Some delegations affirm that that is the case. They point out that tanks, owing to their mobility, enable the aggressor, either by stealing a march on the adversary or by outflanking his defences, to penetrate deep into the country invaded and not only to expose the civilian population to grave material danger but also to produce so intense a psychological effect as seriously to cripple the defence and even in the end to render it impossible.

Others, on the contrary, are of opinion that tanks, considered in themselves, and unless the party employing them can be credited with an illicit intention of terrorising the civilian population, do not constitute particularly dangerous weapons, since their action can be regulated with precision and confined to the military objectives deliberately selected.

16. A second large group of delegations establishes between tanks distinctions based essentially on the criterion of weight and includes among the weapons to which the resolution of April 22nd applies only tanks exceeding a certain tonnage.

17. Those delegations—like the delegations belonging to the previous group—admit that the principal danger of armoured fighting vehicles to the national defence lies in their power to carry out a surprise attack with the intention of delivering a rapid knock-out blow. They point out that, with the help of tanks, for example, a surprise attack carried out at the beginning of a war of aggression, when neither occupied permanent fortifications nor an organised battlefield exist, acquires a greatly enhanced degree of effectiveness, power of penetration and chance of success.

They hold, however, that this power of surprise is not confined to tanks, but is shared by armoured cars and even by commercial motor vehicles converted to military uses.

18. For the purposes mentioned above, tanks, they add, possess, in varying degrees, the characteristics of speed and radius of action, armour, and a capacity for carrying and reducing obstacles. Each of those factors affects the weight of the vehicle, weight thus constituting the principal element whereby the power of the latter may be determined with any precision.

19. On the basis of this criterion distinctions may be established, which some delegations define as follows:

(a) Heavy tanks of a weight from about 25 tons upwards. These are heavily armed and armoured vehicles of sufficient weight and solidity to give them great powers of crushing obstacles and with comparatively wide trench-crossing capacity, which increases in proportion to their size.

(b) Medium tanks of a weight between about 20 tons and about 10 tons. These are less heavily armed and comparatively lightly armoured vehicles with considerably restricted trench-crossing capacity and limited crushing power. Their special characteristics of range and speed render them of great value as a mobile reserve and in counter-attack against troops which have pierced a defensive position.

(c) Light tanks (below 10 tons in weight), with which may be included armoured cars. These are lightly armed and armoured scouting vehicles essentially designed for reconnaissance.

20. Taking account of these observations and taking account also of the nature of the defensive organisations likely to be encountered on a modern battlefield, as well as of the frontier defences, which vary very greatly in strength as between different States, the delegations belonging to the second group are of opinion that the heaviest category—namely, tanks of a weight from approximately 20 to 25 tons upwards—possess offensive qualities to a degree which should render them liable to qualitative disarmament within the meaning of the resolution of April 22nd.

On the other hand, they are of opinion that tanks of a lower weight are definitely less offensive in character and should not come under such a regime. Certain delegations stressed, in this connection, the police purposes for which light tanks are employed in some countries and their great value in the maintenance of public order.

1 The Italian and Soviet delegations are of opinion that the question of the utilisation of tanks for police purposes and the maintenance of order is outside the competence of the Disarmament Conference.
21. In the view of delegations belonging to the second group, tanks, whatever their type, are not particularly dangerous to civilians. They can, on the other hand, be employed for attacking military objectives, even beyond the battlefield, with a minimum of accidental risks for the said civilians.

22. The French delegation expressed its views in the following terms:

"The following opinion, based upon the conclusions (document D./C.T.34) contained in the replies of the Committee of Experts to the questionnaire addressed to it by the Land Commission (document D./C.T.33), is submitted by the French delegation to the General Commission for consideration:

"A. No armoured fighting vehicle of the nature of those contemplated for armies in the field is capable of assaulting a modern fortified work of even medium strength. Only tanks specially designed for this purpose and of a minimum weight of 70 tons could be effective against permanent fortifications. The same applies to armoured trains carrying artillery capable of similar effective action—i.e., of a calibre exceeding 250 mm.

"B. Apart from tanks and armoured trains possessing the above defined characteristics, there is no technical reason for stating that armoured fighting vehicles are more specifically offensive, more efficacious against national defence or more threatening to civilians than any other means of warfare.

"I. As regards efficaciousness against national defence, armoured fighting vehicles are used, not only by an aggressor desiring to invade the territory of another State and penetrating more or less far into that territory according to the mobility, speed and radius of action of the said vehicles, but also in counter-offensive operations conducted by a defender on the front, flanks or rear of an aggressor who has penetrated into his territory and entrenched himself there.

The characteristics as regards armament, armour, mobility, the power of crossing obstacles and the radius of action of these vehicles, most of which are primarily intended to accompany the infantry and to save it from losses, correspond to the prevalent conditions in both cases.

"The use of armoured vehicles, particularly tanks, in the course of a defensive action is, moreover, tending to become more and more important:

"(a) In order to support a counter-attack when it is difficult to provide artillery support owing to ignorance of the exact position of the assailant and the point of departure of the infantry making the counter-attack;

"(b) Because the anti-tank weapons which are being perfected can easily, in an organised position, be arranged so as to provide a complete and effective system of defence, whereas it is much more difficult for them to accompany an offensive, so that troops which are attacking are more vulnerable to the armoured vehicles of the defenders than troops established in a defensive position are to the tanks of the attackers;

"(c) In the defence of a permanent system of fortification, to act as mobile fortresses capable, thanks to prepared routes, of advancing to any points which are particularly threatened or of stopping any breach which may be made by the assailant in the defensive arrangements;

"The fact that the last-mentioned use is strictly defensive, requiring heavily armed and armoured tanks which are consequently very heavy and can with difficulty be moved away from the area prepared for their action suffices to show that any discrimination between armoured vehicles according to weight, designed to prove that the heaviest tanks are most offensive, would not be technically justified. It is, moreover, impossible to make distinctions based upon the question of weight, as it is well known that very light tanks have been able to exercise effective action against important battlefield constructions. On the other hand, if tanks are exposed to the action of anti-tank weapons or enemy tanks, it may be necessary for their own protection, whether passive (armour) or active (armament), that their weight should be considerably increased if they are to be usefully employed on the field of battle, without reference to the offensive or defensive character of such employment.

"Armoured fighting vehicles of less than 70 tons in weight and armoured trains with armaments of a calibre inferior to 250 mm. cannot therefore be regarded as being offensive rather than defensive in purpose, and cannot be included among the weapons most menacing to national defence.

"2. As regards the characteristic of being threatening to civilians, armoured vehicles, with the exception of armoured trains, as to which the reply must depend upon the artillery which they carry, should be regarded as among the weapons least menacing to civilian populations. The small range of their guns and the fact that they are normally only employed against visible military objectives enable them to concentrate entirely on the objective, with the least risk of accident for the neighbouring civilian population."
23. Certain delegations declared themselves in favour of including armoured cars of all types in the list of weapons covered by the resolution of April 22nd. They point out that, like tanks, armoured cars considerably facilitate surprise actions, that they may sometimes prove effective against field works and, furthermore, that their suitability for rapid penetration into the interior of a country makes them threatening to civilians.

All these delegations belong to the group which classes all tanks among the most specifically offensive weapons. It should be noted that the converse is not true.

24. Some of the delegations, which hold that all tanks should be subject to qualitative disarmament, adopted the formula submitted by the Netherlands delegation according to which armoured cars should only be regarded as most specifically offensive when they were "provided with special appliances rendering them capable of being used on the battlefield".

25. Other delegations, finally, while in favour of including all tanks in the list of specially offensive weapons, unreservedly excluded armoured cars.

26. This is naturally the conclusion arrived at on the latter point by those delegations which refuse to include tanks in the category of weapons covered by the resolution of April 22nd, or which include only the heaviest tanks weighing from about 20 to 25 tons or more.

27. It was urged in support of this view that the effectiveness of armoured cars against organisations of the battlefield is very limited; that it is usually easy, when armoured-cars are confined to the road, to paralyse their offensive action by cutting the routes they have to use; that they cannot go far away from the troops with which they are operating; that they are only lightly armoured, and, finally, that certain countries regard them as essential for maintaining order in the vast territories under their jurisdiction.

(3) Mobile Cupolas and Armoured Trains.

28. According to the Committee of Experts, the above "are only effective against entrenchments, field works, etc., in so far as the guns which they carry are able to reach them". In the Committee's opinion "mobile cupolas are not capable of any action outside the battlefield. As regards armoured trains, their possibilities of action against military objectives outside the battlefield and against the civil population depend on the range of their artillery and the action of any personnel they may carry."

29. Generally speaking, the Commission adopted this view and therefore concluded that neither armoured trains nor mobile cupolas correspond to the criteria laid down in the resolution of April 22nd. Some delegations, however, took the opposite view.

(4) General Remarks.

30. The Committee then discussed the difficulties which might arise if motor vehicles normally used for agricultural or commercial purposes could be converted into armoured fighting vehicles.

31. Some delegations felt that it would be useless to prohibit or restrict the light classes of tanks and armoured cars, in view of the ease with which these could be replaced, after effecting a few changes, by certain vehicles used for economic purposes.

32. Other delegations applied the argument to all armoured fighting vehicles. They urged, further, that, if these vehicles were subjected to qualitative disarmament, countries possessing a powerful metallurgical industry would be given an advantage and might possibly have an incentive to encourage the construction of non-military vehicles containing certain features which, it might justifiably be said, would enable them more adequately to discharge their pacific mission but which were really planned with a view to facilitating their conversion to military purposes.

33. Other delegations held that, though industrial development undoubtedly enhanced the military potentialities of a country, the importance attached by some parties to the agricultural tractor as a possible weapon was highly exaggerated. Such a vehicle would always be definitely less effective than an appliance specially constructed for fighting purposes.
34. Certain delegations asked that the attention of the General Commission should be drawn to this point. In the words of the motion submitted by the Polish delegation, they held that:

"Should the General Commission decide to apply certain measures of qualitative disarmament to tanks, it would be absolutely essential to take simultaneous action with a view to preventing:

"(1) The conversion of agricultural and other tractors into tanks;

"(2) The utilisation of tractor factories for the manufacture of tanks."

III. Fortifications.

The German delegation submitted a note expressing its point of view on this question to the Land Commission.

Certain other delegations also submitted, in writing, their observations on this proposal. The Commission, realising that it would be extremely difficult for it to arrive at practical conclusions for the time being on this point, decided to forward to the General Commission the above-mentioned documents for any necessary action (document Conf.D./C.T.46 attached) (Appendix 3).

Appendix 1.

Conf. D./C.T.8, 8(a), 8(b), 8(c).

REPLY BY THE COMMITTEE OF EXPERTS TO QUESTIONNAIRE OF THE LAND COMMISSION CONCERNING ARTILLERY.

I.

(1) What is meant by fixed and mobile artillery?

Fixed artillery includes all artillery which, in view of its special technical construction, cannot, without the use of special appliances or materials, be used outside the fortified land or sea frontier position in which it was originally placed.

Mobile artillery includes all artillery except artillery which is covered by the above definition.

(2) What are the existing possibilities of rendering fixed artillery mobile and vice versa?

Generally speaking, the guns of fixed and mobile artillery can be made interchangeable. The convertibility of fixed artillery to mobile use depends primarily upon the mount required for mobile use. The time element involved depends upon the kind and amount of preparation, the size of the gun, the existence storage and distribution of the mounts, and the availability of means of handling the material. This time element varies from a few hours, if mobile mounts are in existence, to two or three months if no prior preparation has been made (assuming that the country concerned has sufficiently developed metallurgical industry). In the absence of such an industry, rapid conversion would not be possible unless the necessary material were already in store.

II.

(1) What are the characteristics of artillery necessary for effective action against the essential organs of permanent fortifications (a) weight of the projectile, (b) weight of explosive, (c) calibre, etc.?

Field artillery of all calibres may be employed in attacking fortified works; it may be used against the intervals between forts and, in particular, against unprotected personnel or material, or it may, in exceptional cases, produce some effect on the armament of one of the works—for example, by a fortunate direct hit on or in an embrasure.

But in order to break down a system of permanent fortification, it is indispensable to destroy at least a certain number of its essential works. The efficacy of artillery against the permanent fortification therefore depends on the degree of strength of the essential works of such fortification and the penetrating power of the projectiles which may be employed for the purpose.¹

¹ As an indication, we may mention that the 155 projectile, weighing 43 kg., has a penetrating power in concrete of only 45 cm.; the 280 projectile, weighing 200 kg. with 36 kg. of explosive, penetrates only 65 cm. into concrete. The armoured cupolas can be effectively attacked only with the 320 at least. Finally, to reach a depth in the ground of 2 m. in average soil, at least 220 is required.
Taking these two factors into account, the following may be distinguished:

(a) Permanent fortification of great strength (thickness of concrete about 2 m., armouring or organisations under rock). — In order to act effectively against the essential elements of such fortification use must be made of projectiles weighing more than 500 kg. and calibres over 320.

(b) Permanent fortification of average strength (thickness of concrete about 1 m., or depth of earth of more than 2 m.). — The characteristics of the guns required to act effectively against the essential elements of this fortification are, in accordance with the data given in the artillery rules of various States as a result of experience, at least the following:

- Weight of projectile about 200 kg.
- Weight of explosive about 35 kg.
- Calibre about 250 mm.
- Range at least 10 km.

(c) Permanent fortification with little protection (thickness of concrete less than 1 m., or thickness of earth less than 2 m.). — Against this kind of permanent fortification variable results may be obtained according to the kind of projectile, the nature of the fire (flat trajectory or high-angle trajectory), thickness of earth or concrete, with calibres varying from 105 to the calibres defined in paragraph (b) above.

(2) What are the characteristics of artillery necessary for effective action against entrenchments, field works and other objectives of the battlefield?

As a rule, artillery of a calibre up to about 100 mm. can only be effectively used against the least strongly protected personnel and objectives of the battlefield.

Artillery of a higher calibre—particularly of about 150 mm., which is the calibre most commonly employed—and up to a calibre of 220 mm. inclusive, is capable of effective action against most entrenchments, field works and other objectives of the battlefield which can be organised and constructed in a short time with limited personnel and material.

When the time, personnel and material at the disposal of the defence are increased, the degree of resistance of the position may be that of permanent fortification with little protection (II, 1, c), and require the same means for its reduction.

III.

(1) In modern warfare, what is the depth over which the troops and services and their equipment engaged in battle are distributed?

(a) Reply of the Belgian Delegation:

In modern warfare:

(1) The depth of the field of battle may extend to about 20 km.;
(2) The depth over which troops and services and their equipment capable of being engaged in the battle within one day are distributed is 50 km. or more.

(b) Reply of the Austrian, Bulgarian, German, Hungarian, Italian and Union of Soviet Socialist Republics Delegations:

The depth over which the troops and services and their equipment to be regarded as engaged in the battle are distributed is 15 km. and may extend to about 20 km. on either side.

Beyond that distance are situated objectives of military importance (places for the assembling of reserves, with motor transport, railway stations, air ports, armament factories, etc.) for which, as regards the distance from the battle front, it is impossible, in existing circumstances, to indicate a limit.

(c) Reply of the following Delegations: Brazil, United Kingdom, Czechoslovakia, Denmark, Estonia, Finland, France, India, Japan, Netherlands, Norway, Poland, Portugal, Roumania Spain, Sweden, United States of America, Yugoslavia:

The troops engaged in the battle are distributed over a depth of about 20 km.

Beyond that distance and up to about 50 km. from the front line there may be essential military objectives such as tactical reserves, which, if motor transport is available and roads are practicable, may be placed 50 km. from the line, while still being capable of use at a required point within five or six hours. Depots, and especially ammunition dumps, are normally at similar distances.
To sum up, the depth over which the troops and their services and equipment engaged in the battle are distributed is 15 to 25 km., if one does not include tactical mechanised reserves and munition depots, and may reach 50 km. if one includes them.

(2) What are the characteristics of the artillery capable of firing beyond that depth?

For firing beyond the depth over which the troops and services and their equipment engaged in a battle are distributed, it is necessary to have guns with a range amounting to that depth plus the distance of the gun emplacements of one of the parties from the front line of the other party. This distance is at least 10 per cent of the range. This distance may be as much as 10 km. in the case of guns on railway mountings, or when practicable means of communication are insufficient, or when the artillery must be distributed in depth, particularly when on the defensive.

Considering the minimum distance as 10 per cent of the range and considering the effective range of normally constructed guns at present existing, it is to be observed that:

(a) Only guns of over 105 mm. calibre have a range of 15 km. beyond the front line;
(b) Only guns of over 155 mm. calibre have a range of 20 km. beyond the front line;
(c) Only guns of over 200 mm. calibre have a range of 25 km. beyond the front line.

As regards ranges of 50 km. beyond the front line, there is no technical obstacle to the construction of a gun with such ranges.

If the characteristics of such a gun, which is not a current model, had to be determined, it would be necessary to consult specialists in artillery construction. This would also be necessary in order to ascertain what general restrictions should be imposed to prevent abnormal ranges being obtained with any calibre.

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LETTER FROM GENERAL VAN TUIJNEN, EXPERT OF THE NETHERLANDS DELEGATION, TO THE CHAIRMAN OF THE COMMITTEE OF EXPERTS OF THE LAND COMMISSION RELATING TO QUESTION 2, SECTION II OF THE ABOVE QUESTIONNAIRE.

In order to avoid holding up our work, I will not raise any objection at the moment to the reply given to Question 2 of Section II. I should like to state, however, that in my opinion this reply differs to an appreciable extent from the question asked and is too similar to the reply given to Question 1 of this same Section. Question 2 does not, I think, refer to the organs of permanent or semi-permanent fortifications, but merely to temporary works constructed on the battlefield—that is to say, more or less hastily. There is thus a clear distinction between the artillery necessary for effective action against those objectives and the artillery intended to be used against fortifications of a permanent or semi-permanent character.

In my opinion it is not necessary to contemplate the destruction of concrete shelters on the battlefield selected by the aggressor, as, including the time needed for their construction, it would take four or five weeks for the concrete to harden sufficiently. Field works with such elaborate entrenchments which could withstand the aggressor's fire to that extent could not be made in time in an invaded territory. In such a case, therefore, we should only have to deal with constructions organised in war time on the national soil—which means that they would be of a purely defensive character—and against which a strengthening of the means of aggression would be contrary to our efforts in the matter of disarmament.

Consequently, I am of opinion that the characteristics of the guns necessary for effective action against entrenchments, etc., of an improvised character to which, I think, Question 2 refers, are: 155 mm. maximum calibre, 45 kg. maximum weight of projectile, with 9 kg. of explosive.

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NOTE BY THE DELEGATIONS OF NORWAY AND SWEDEN CONCERNING THE REPLY OF THE COMMITTEE OF EXPERTS TO SECTION III, QUESTION 1, OF THE ABOVE QUESTIONNAIRE.

The delegations of Norway and Sweden consider that:

The words of the questionnaire "engaged in the battle" should not be interpreted as meaning "capable of becoming engaged in the battle" and should only refer to troops situated on the battlefield itself;

The depth over which these troops are distributed is generally from 15 to 20 km. on either side, according to the number of troops engaged; and
Troops situated at such a distance from the battlefield that they could not be engaged in the battle without motor transport—the possibility of which depends in any case on the road system and the state of the existing roads at a given moment—should not be regarded as "engaged in the battle".

Nevertheless, those delegations, recognising that in its summary the text of the majority of the delegations states that the depth of the true battlefield is from 15 to 25 km. if these more distant troops are not reckoned, and wishing to facilitate as far as possible unanimity among the experts, have thought it proper to accept this majority text.

Appendix 2.

Conf.D./C.T.34.

REPLY OF THE COMMITTEE OF EXPERTS TO THE QUESTIONNAIRE OF THE LAND COMMISSION CONCERNING ARMOURED FIGHTING VEHICLES.

(1) What are the general characteristics of:

(a) tanks,
(b) armoured cars of all kinds,
(c) mobile armoured cupolas,
(d) armoured trains?

(a) and (b). Tanks and armoured cars are armoured and armed self-propelled vehicles. Although it is not possible to draw a precise technical distinction between tanks and armoured cars, it may be said that tanks possess to a higher degree the power of moving across any terrain (due particularly to the use of tracks) and that they are capable, to a degree varying with the particular type, of crossing trenches and overthrowing obstacles. Armoured cars, on the other hand, are not specially designed with a view to their employment on an organised battlefield. There are two kinds of armoured car: one which keeps to the road, the other capable of moving across country.

Some types of tanks and especially armoured cars are capable of great speed and considerable radius of action.

(c) Mobile armoured cupolas. — As distinct from armoured cars, mobile cupolas have remarkable characteristics as regards armour and equipment, but their mobility is very limited. They are, in short, a kind of heavy tank with very limited mobility. Like heavy tanks themselves, they are specially suitable either for filling the gaps in the permanent defensive organisation or, in the defence of a position, for blocking up a breach in which the enemy may have penetrated.

(d) Armoured trains. — Armoured trains are very powerful, armed and strongly equipped weapons; but instead of being able to cross any ground their movement depends upon the existence of a railway. They are particularly suitable for the defence of land frontiers and sea coasts.

(2) What is the effectiveness of the various categories of the above against permanent fortifications? Is there any type of these appliances incapable of breaking through the latter?

No armoured machine of the nature of those contemplated for armies in the field is capable of assaulting a modern fortified work of even average strength.

Moreover, any modern system of fortification exposed to attack by tanks can be rendered almost invulnerable to their attack by the use of natural obstacles or by the construction of artificial obstacles or defences (deep, wide ditches, blocks of concrete, mines, etc.).

In answer to Question II(a) and (b), therefore, it may be said that no armoured fighting vehicle will be effective for assault against a permanent system of fortifications provided that a complete system of natural or artificial obstacles exists.

As regards armoured trains, their action is no more and no less than that of the artillery which they carry.

1 The Committee agreed that the word "armoured" must be reasonably understood by "as well armoured as possible". In other words, the given definition could not apply to a partially-armoured vehicle. The United Kingdom delegation would have preferred that this idea should be conveyed by the words "fully armoured", but the word "fully", which is not as strong as "completely", would have been difficult to translate into French. In these circumstances, in order that the two texts should correspond, the United Kingdom delegation has agreed to withdraw their proposal, subject to the present explanation being given.
Notes.

1. The French delegation consider that the attack of permanent fortifications can only be attempted by tanks armoured powerfully enough to be proof against projectiles shot by weapons mounted in first-line fortifications. They consider that such tanks would weigh at least 100 tons; the lowest weight of tanks of this kind, making very ample allowance for possible technical improvement in construction, may be put at 70 tons.

2. The delegations of Austria, United Kingdom, Finland, Germany, Hungary, Italy, Netherlands and Sweden add the following explanation to the reply given by the Committee:

While the destruction and neutralisation of the fortified works and artillery of the defence are the task of the heavy and super-heavy artillery, it is for tanks to assist the infantry in attacking troops and other objectives distributed in front of the fortifications and between them.

This being so, as regards the attack of permanent fortifications also, tanks take on a character menacing to national defence which increases in proportion to their weight and capabilities.

3. The delegations of Austria, Hungary, Italy and Netherlands add the following explanation to the reply given by the Committee:

The preparation of a complete system of artificial obstacles as here described against attack by tanks would in a number of cases be impossible in a line of permanent fortifications situated in cultivated country. In such cases, even a modern system of fortifications would, at the beginning of a war, be very vulnerable to attack by tanks.

Furthermore, the addition to a system of permanent fortifications of artificial obstacles to attack by tanks would involve supplementary expenditure which would often be very considerable.

(3) What is the effectiveness of the various categories of the above against entrenchments, field works and other objectives of the battlefield? Is there any type of these appliances incapable of breaking through the elements of national defence referred to above?

Tanks are capable of effective action on an organised field of battle, and some armoured cars are capable of such action where the organisations are improvised or not continuous.1 Even light tanks can usually cross trenches and make breaches in the usual wire entanglements of the battlefield. It is asserted that very light tanks (7 tons) have been capable of effective action against strongly organised battlefields.

If, however, tanks are exposed to the fire of anti-tank weapons or enemy tanks, their own protection, whether passive (armour), or active (armament), may involve a considerable increase in their weight if they are to be used effectively in defence as well as offence on the battlefield.2 Armoured cupolas and trains are only effective against entrenchments, field works, etc., in so far as the guns which they carry are able to reach them.

(4) Are there any characteristics of armoured fighting vehicles which make them specially menacing:

(a) to the civil population;

(b) to military objectives outside the zone of the battlefield properly so-called?

(a) and (b). — If we exclude the hypothesis of direct and deliberate action, contrary to international law, against the civil population, tanks and armoured cars could only be specially menacing to them if, when acting against military objectives, they risked at the same time injuring the civil population.

1 The German, Hungarian and Soviet delegations add to this paragraph that this applies particularly in the case of a defence which does not dispose of adequate anti-tank weapons and tanks.

2 The United Kingdom delegation substitutes for the first three paragraphs the following text:

"The effectiveness of tanks against entrenchments, field works and other objectives of the battlefield depends upon their ability to cross ditches and trenches. As the object of the question is to elicit the performance of these vehicles without the assistance of other weapons, it is assumed that the ditches and trenches have not already been partially destroyed by shell-fire. The following are examples of the capacity of different types of tanks:

"A tank of about 35 tons is required to cross a gap from 2.4 to 3 metres wide. A tank of 16 tons could, under favourable circumstances, cross a gap 2.2 metres wide. A tank below 10 tons in weight is not capable of crossing a gap more than 1.5 metre wide."

"It will be seen from the above that tanks below 10 tons are incapable of crossing any but the most narrow field entrenchments. Armoured cars, on the other hand, are usually incapable of crossing any undamaged trench."
On the contrary, since they can act only at very short range and generally against visible objectives, which makes them as accurate as can be desired, they can attack military objectives even outside the zone of the battlefield with less risk to the civil population than is represented by aeroplane and artillery projectiles, which can much more easily fall on some point other than the objective aimed at. This characteristic, together with their speed and radius of action, makes certain armoured fighting vehicles particularly suited to attack military objectives outside the battlefield, and enables the battle to be extended to the rear and flanks of the forces engaged. All motor-driven vehicles of similar speed and radius of action which are able to carry troops also possess this quality in varying degrees. The essential quality to carry out such missions is the mobility of the vehicle. So long as the fire-power can be conveyed to the place required, it is immaterial whether the conveyance is itself armoured and armed or not.

Mobile cupolas are not capable of any action outside the battlefield. As regards armoured trains, their possibilities of action against military objectives outside the battlefield and against the civil population depend on the range of their artillery and the action of any personnel they may carry.

(5) To what extent and in what time can any vehicle be converted into:

(a) a tank;
(b) an armoured car;
(c) an armoured train?

(a) and (b). — There exist in many countries a considerable number of vehicles, tracked or otherwise, which could rapidly be turned into tanks or armoured cars.

A converted tractor would be less efficient than a tank constructed as such. For constructional reasons they are unlikely to be fitted with turrets, unless special arrangements have been made for this purpose, and therefore all-round fire would not be practicable.

Armoured cars could be improvised to a degree of effectiveness comparable to that of an armoured car designed for the purpose. The road speed and fighting capability would possibly be less, but, as armoured cars are primarily vehicles for reconnaissance, improvised cars would adequately fulfil this duty.

It is understood that the possibility of effecting the conversions mentioned above, and the effectiveness of such converted vehicles, depends essentially on the industrial resources of each country.

The time required for conversion would depend upon the existence of semi-skilled labour, engineering resources and suitable armour in stock. The manufacture of bullet-proof plate is a lengthy process, but even if none were available, ordinary mild steel plate, which can readily be obtained commercially, might be employed as an improvised measure and, by increasing the thickness, sufficient bullet-proof protection could be achieved. A certain amount of protection can be given to a vehicle in a few hours if the necessary technical preparations have been made beforehand.

As a general rule, the time is less for a given vehicle in proportion as:

(a) More complete arrangements have been made at the time of its construction to facilitate the conversion,
(b) The conversion has been more completely prepared especially as regards the stock of essential parts and necessary engineering resources.

1 The German and Soviet delegations make the following observations as regards the end of this paragraph, from the words: "All motor-driven vehicles":

"It is impossible to make a comparison between an ordinary motor conveyance and tanks or armoured cars. It is of decisive importance that tanks should be armoured, that they should be able to move off the roads, that they should possess weapons always in readiness for firing, and that all these qualities should be contained in as small a space as possible.

"The same may be said in a lesser degree of armoured cars the effectiveness of which is very much greater than that of any other motor-car.

"The possibility of attacking military objectives outside the battlefield properly so-called and of extending thus the battle to the rear and flanks of the forces engaged in front depends, taking into account purely military considerations, on the protection which can be given to convoys of troops by tanks and armoured cars."

These delegations interpret in this sense the last two sentences of the second paragraph.

2 Some delegations consider that certain types of tractor, however, may be more efficient after conversion than tanks of old patterns.
Under favourable circumstances the production in quantity of tanks, improvised on these lines, could commence within three weeks, and that of armoured cars within a week or ten days.  

If engineering resources and the necessary armour-plating are available, a train could be armoured within a few weeks. However, the organisation of an armoured train, specially equipped with powerful artillery, would require a longer time and a considerable previous stock of special material.

Appendix 3.

EXAMINATION OF THE GENERAL COMMISSION’S RESOLUTION OF APRIL 22ND, 1932 (document Conf.D./C.G.28(2)): DRAFT QUESTIONNAIRE AND DRAFT REPLY CONCERNING FORTIFICATIONS SUBMITTED BY THE GERMAN DELEGATION.

Introduction.

The German delegation has taken as the basis of its draft questionnaire and replies, given below, the following general question:

“Supposing one State either (a) adopts a policy of armed aggression or (b) undertakes offensive operations against another State, what are the weapons which, by reason of their specific character, and without prejudice to their defensive purposes, are most likely to enable that policy, or those operations, to be brought rapidly to a successful conclusion?”

The delegation was, moreover, guided by the following paragraph of the report of Sub-Commission A to which it desires to draw the attention of the Land Commission:

“The category of organisations which can only be used for territorial defence cannot be said to include:

(1) Organisations the principal purpose of which is obviously to enable long-range artillery or air attack to be brought to bear on the communications of a neighbouring country or its exposed points near the frontier, and which are not indisputably justified by the necessity of protecting specially exposed points in the country concerned.”

Questionnaire and Replies.

Question 1. — What are the characteristics of fortifications, fortified towns and fortified works (with special reference to the extreme limit of their organisations) which must be considered as offensive and which constitute a threat to the national defence of the neighbouring State?

With regard to this question, the following must be taken into consideration:

(a) The possibility of accommodating troops and material for the purposes of an attack;
(b) The range and efficacy of their artillery;
(c) Distance from the frontier.

Reply: — The Land Commission considers the “extreme limit” of the organisations of a fortress to be the points at which the most advanced organisations of any kind capable of firing are situated.

(a) Any fortress, owing to its considerable possibilities for lodging and protecting troops, enables men and material to be held in reserve. It follows that, in addition to its defensive importance, it must be regarded as having offensive possibilities, which are the more important in proportion as the frontier is near.

(b) If the range of the artillery in the fortress is sufficient for effective fire across the frontier of the neighbouring State, it will prejudice that State’s defence. The effect against that defence is naturally increased in the case of guns of large calibre.

(c) If a fortress is so close to the frontier that the troops assembled there can rapidly cross the frontier of the neighbouring State by starting from the extreme limit of the fortress, and if the range of the artillery enables it to fire across the frontier, the fortress must be regarded as specifically offensive and threatening to national defence.

1 The Italian delegation is of opinion that in view of the great variety of ordinary vehicles that may lend themselves to conversion into armoured fighting vehicles, which in turn vary greatly in the multiplicity of their characteristics, it does not seem possible to fix exact or even approximate limits for the possibility of such conversion and the time it will require.
Question 2. — What are the characteristic features of fortifications, fortified towns and fortified works (with special reference to the extreme limit of their organisations) which constitute a threat to the civilian population of the neighbouring country?

With regard to this question, the following must be taken into consideration:

(a) The moral effect on the population of the neighbouring country in peace time;

(b) The range and efficacy of their artillery, with special reference to populous territories and to dense populations and to their vital centres and centres of communication;

(c) Distance from the frontier.

Reply. — (a) The qualities referred to under 1 are sufficient to be a considerable menace to the population of the neighbouring State. The mere idea of a sudden and unforeseen attack by the troops of the aggressor and the fear that the national defence may be paralysed produces an unfavourable moral effect upon the civilian population.

(b) This menace is all the greater when, owing to the range and effectiveness of the fortress's artillery, the life of the civilian population of the neighbouring State, its residential and business places and its centres of communication are threatened, and when the frontier territory in question is densely populated or industrial.

(c) As regards the distance of a fortress from the frontier, the remarks contained under 1 (c) also apply as regards the threat to civilians.

Question 3. — What is the influence of the characteristics mentioned under 1 and 2, when

(a) The opponent has no permanent fortifications, fortified towns and fortified works or has only weak fortifications, etc.;

(b) The opponent can rely only on prepared or improvised field fortifications for the defence?

Reply. — (a) When there are no permanent fortifications or even weak fortifications on the frontier territory of the neighbouring State, the qualities referred to under 1 and 2 are all the more important in proportion as a surprise attack from a fortress close to the frontier, meeting with no prepared resistance, might penetrate deeply into the country; it would thus be not only most efficacious against national defence but also particularly threatening to civilians.

(b) The same remarks apply where the other party has only prepared or improvised field fortifications, since the defensive power of such fortifications is much less than that of permanent fortifications; the former, owing in particular to the possibility of a surprise attack by a fortress close to the frontier, must be distant from the frontier and cannot be completed, occupied and put in a state of defence within the time necessary.

Conclusion.

It follows from the above that fortresses possessing such characteristics are of an offensive nature, that they are specially efficacious against national defence and particularly threatening to civilians.

Observations by the Afghan Delegation.

The Afghan delegation, in its declaration of April 26th, stated that:

"Although, generally, fortifications on the frontier lines of countries are constructed for defensive purposes, those which may be situated opposite countries which have no means of defence and no fortifications comparable with those of their neighbouring countries can more directly command the other's frontiers, and should be counted within the sphere of aggressive means and measures."

At this time, when all the resolutions adopted by the Land Commission are in course of being collectively submitted to the General Commission, the Afghan delegation reaffirms its previous statement and emphasises that the very existence of strongly protected fortresses, with their connected means of communication near the frontiers of a less-protected country with no possible means of adequate communications, is efficacious against national defence and threatening to the civilians of that neighbouring country, and this danger is further increased by the possibility of a sudden attack being launched from such fortifications.

With this point of view, the Afghan delegation supports the above draft reply submitted by the German delegation.
Observations by the Argentine Delegation.

The Argentine delegation does not consider it necessary to formulate, for its part, observations on the questionnaire submitted by the German delegation on the subject of fortifications near frontiers, as the Argentine Republic has no permanent fortifications on the frontiers which it has in common with Chile, Bolivia, Paraguay, Brazil, and Uruguay, respectively.

The Argentine Republic, faithful to its pacific sentiments, signed a treaty with the Republic of Chile on July 23rd, 1881, delimiting their frontiers in the south, and in that treaty perpetual neutrality and the free navigation of the Strait of Magellan for all the flags of the world are established in the following terms:

"To secure this freedom and neutrality, no fortification or military defence work capable of endangering the object in view shall be constructed".

Observations of the Belgian Delegation.

1. The Belgian delegation is of opinion that no permanent fortification is to be regarded as particularly offensive or as representing a threat to the defence of the neighbouring State.
   The military power of a State consists of two factors: its field army and its fortresses. In order to conduct an offensive war and threaten the defence of the neighbouring State, it is necessary to invade the territory of that State. In such an operation, only the field army is concerned; fortresses, being fixed, have no appreciable influence.
   On the other hand, in the conduct of a defensive war, the fortresses have to be reduced by the aggressor just as much as the field army, and hence represent a factor highly favourable to the national defence.
   Fortresses are almost valueless in offensive warfare, but most valuable in defensive warfare, because their reduction immobilises large attacking forces.
   Consequently, the more purely defensive are the intentions of a country, the greater will be the proportion of its resources that it devotes to fortresses; and, on the other hand, if its intentions are aggressive, it will keep almost all its resources for the field army.

2. The Belgian delegation is further of opinion that the fortifications of a State do not constitute a threat to the population of a neighbouring State unless the range of their artillery enables it to fire across the frontier.
   It must be observed that modern fortifications are provided with artillery only in very small quantities, owing to its high cost, and that the calibre of such artillery seldom exceeds 105 millimetres—i.e., the calibre of light field artillery.
   Naturally, the sense of security of the civilian population of frontier areas is always less great than that of the civilian population of the interior; but this is due, not to the frontier fortresses, but to the assembling of the opposing field army, which is rendered possible by the proximity of the frontier, and to the relative strength of that field army.
   Concentrations of troops and material can be carried out under the protection of frontier garrisons with a speed and to an extent depending not on the fortresses but on the system of communications leading up to the frontier.

Conclusion. — It follows that all fortresses are of a specifically defensive character, that they favour the national defence, and that they are not intrinsically threatening to the civilian population of the neighbouring State unless their artillery can fire across the frontier.

Observations of the Danish Delegation.

On the subject of fortifications, the Danish delegation would make reference to page 2, paragraph 3 of its Memorandum of April 13th last (document Conf.D.112), in which the delegation explains its views.

Observations of the Spanish Delegation.

Sub-Commission A, in its report (document C.P.D.28, page 141), unanimously specified the armaments which are only capable of being used for the defence of a State's territory. The location of fortifications depends on topographical considerations, more especially the position of the junctions and lines of communication between two neighbouring States.
   Fortifications, considered in themselves, are defensive in character, but they may indirectly favour the offensive by making it possible to economise forces in the fortified area and use them en masse elsewhere.
   The position of the most advanced forts, based on the above considerations, may be close to the frontier, so that the range of their artillery may enable them to fire on points in the territory of the neighbouring country.
   These possibilities are, generally speaking, reciprocal.
Observations of the French Delegation.

1. As the experts of Sub-Commission A of the Preparatory Disarmament Commission unanimously recognised, "the following can only be used on the spot for the defence of a State's territory: all parts of defensive systems which are in the nature of obstacles and cover for troops; permanent works for the use of armaments, such as gun-platforms; and, in exceptional circumstances, certain armaments which are in turrets or cupolas."

It is therefore not possible to attribute a priori a "specifically offensive" character to a permanent defensive system. The question can only arise as applied to the artillery in such a system if that artillery should have a calibre greater than the limit fixed for "specifically offensive" artillery, regard being had to the possibility of rendering fixed artillery mobile.

2. Permanent defensive systems situated in the immediate vicinity of the frontiers—as they generally are, because their normal purpose is frontier defence—could not be "specifically threatening" to the national defence and civilian population of the neighbouring country unless they were designed for that purpose.

The sites on which permanent defensive systems are constructed are determined, however, by quite different considerations:

(a) They depend upon the ground, and are therefore placed where the ground is most favourable to the defence;

(b) Their location depends primarily on the point (a large and important city, a vital centre of communications, an industrial area, etc.) which they are intended to protect. If this point is very close to the frontier, the system designed for its protection is also necessarily close to the frontier.

3. The possibility of action by the garrisons or armaments of permanent defensive systems on the territory or against the civilian population of a neighbouring State is undoubtedly less than the possibility of action of troops that can be brought up into the frontier zones only when needed. A State contemplating an attack, whose best chance of success would be surprise, would have every interest in using, not the known and located means of action in permanent defensive systems, but means of action brought up at great speed with the aid of lines of communication prepared for that purpose, especially motor transport.

4. Consequently, permanent defensive systems are not:

(a) The most specifically offensive,

(b) The most threatening to national defence,

(c) The most threatening to civilians,

within the meaning of the terms of reference given to the Land Commission by the General Commission.

Observations of the Italian Delegation.

1. Any fortification, fortified town or fortified work (with special reference to the exterior limit of its organisation) situated close to the frontier should, as a general rule, be regarded as defensive in character, seeing that its main object is to prevent the aggressor from crossing the frontier, and that it thus constitutes a real obstacle intended to bar the most dangerous lines of approach to the territory.

As a general rule, the fortifications of the two neighbouring countries are situated on such lines of approach, owing to the fact that their situation is determined by the geographical configuration of the frontier line.

2. In order that these fortifications may be considered exclusively defensive in character, it is necessary, however, that the two neighbouring countries should possess approximately the same number of fortifications, that the latter should be approximately equal in power and that they should be situated, on either side, close to the frontier.

3. The defensive character of a country's fortifications becomes modified and the latter gradually assume an offensive character when the fortified works of the neighbouring country are much inferior in power, even to the extent of being non-existent, or when, for special reasons, the said fortifications are so distant from the frontier as to leave a completely undefended zone of territory outside the range of action of their armaments.

4. The offensive character of the fortifications does not, of course, lie in the whole system of concrete or steel works, in view of their absence of mobility, but consists, on the other hand, of the two elements contained therein—namely, the artillery or the troops for which they may furnish a safe shelter during the process of concentration, a favourable point d'appui for an offensive or counter-offensive and a base for the subsequent development of operations.
5. Excluding the case referred to in number 2, in which it is clear that each system of fortifications assumes a defensive character as against the action of the other, the offensive character of a fortification is determined:

(a) By the effective protection of the process of concentration and the support of troops to be employed in the offensive or counter-offensive;

(b) By the action of its own artillery of different calibres designed primarily to destroy with ease the adversary's works with a low power of resistance and, secondly, to support effectively (owing to the strong protection thus ensured) troops that are to be used in the offensive;

(c) By actions designed as a menace to civilians when the fortress or fortified works are so close to the frontier that their artillery can reach the closely populated industrial centres or important centres of communication in the neighbouring territory.

To sum up:

1. Fortifications or permanent fortified works are, generally speaking, defensive in character.

2. Frontier fortifications may, on the other hand, be regarded as more or less offensive in character, and hence more specifically efficacious against national defence, when the territory of the neighbouring State possesses no fortifications or permanent fortified works whatever, or only possesses field works or improvised works, or possesses fortified works situated so far inland as to be unable to protect the frontier zone over a given depth.

3. Frontier fortifications may be particularly threatening to civilians when the fortress or fortified works are so close to the frontier that their artillery can reach those zones in the territory of the neighbouring State over which thickly populated industrial centres are scattered and which are also indispensable for the military organisation.

Observations by the United Kingdom Delegation.

The following observations upon the German proposal regarding fortifications are submitted by the United Kingdom Delegation:

They draw attention to the speech of the United Kingdom delegate on June 2nd, which pointed out that the German proposal was, in effect, not a question of the abolition of fortresses near the frontier, but of a restriction of the right to station troops or guns in its vicinity. The technical aspect of guns and their offensive possibilities has already been fully dealt with by the Land Commission.

For these reasons, the United Kingdom delegation sees no utility in discussing the questionnaire, nor do they find themselves able to accept the German proposal regarding fortifications. They suggest that the latter should either be put to the vote without further discussion, or that it should be forwarded to the General Commission with the names of such delegations as find themselves able to support it.