

第四節 航空分科會

第一款 航空分科會ノ經過

第一項 第一回分科會

列席者

一、大正十年十一月三十日午前十時三十分汎米會館ニ於テ開催
列席各國委員氏名

(米)	Rear-Admiral Moffet	(海軍)
	Major-General Mitchell	(陸軍)
	Captain Mustin	(海軍)
	Commander Whiting	(海軍)
(英)	Air Vice-Marshal Higgins	(空軍)
	Group-Captain Channier	(空軍)
(佛)	Lieut.-Colonel Requin	(陸軍)
	Captain Roper	(陸軍)
(日)	Captain Nagano	(海軍)
	Major Nishihara	(陸軍)
	Lieut. Kuwabara	(海軍)
(伊)	Colonel Mozzo	(陸軍)
	Lieut.-Colonel Guicloni	(陸軍)

二、議長選舉

最先任者タル英國委員「ヒツギンス」少將ノ發議ニ依リ米國委員「モツフエ」少將ヲ議長ニ推ス

三、佛國委員變更

佛國委員「ルクッソ」中佐ハ本分科會ノ専門的ナル關係上自今「ローベル」大尉佛國代表委員タルヘク通告ノ上辭去ス

四、會議經過

イ 會議用語ハ英語ト決定

ロ 特ニ速記録ハ作製セサルモ委員會書記ヲシテ一般的記録ヲ作ラシムルコトニ決議而シテ該書記ハ議長之ヲ選定シ次回開會ノ際同意ヲ求ムルコトトス

ハ 英國委員「ヒツギンス」少將ヨリ本航空専門分科會ノ任務及研究ノ範圍等ニ關シ明確ナル訓令ヲ與ヘラレンコトヲ事務總長ニ要求スルコトヲ提議シ之ヲ可決ス

ニ 次回會議十二月一日午前十時三十分開催ノコトニ決定但シ後ニ至リ十二月二日午前十時三十分開催ノコトニ變更セリ

第二項 第二回分科會

一、大正十年十二月二日午前十一時汎米會館ニ於テ開催
列席各國委員

Rear-Admiral Moffet	
Major-General Mitchell	
Air Vice-Marshal Higgins	外三名
Group-Captain Channier	

Captain Roper
 Captain Nagano
 Major Nishihara
 Lieut. Kuwabara
 Colonel Moizo
 Lt.-Colonel Guidoni

分科會ノ
 權限問題

二、會議經過

(イ) 前同英國委員ノ提議ニ依リ要求シタル本分科會ノ任務ニ關スル訓令トシテ議長ハ單ニ十一月二十三日軍備制限委員會ノ議事録中専門分科・編成ニ關スル記録一部(第一章參照)ヲ各國委員ニ交付セリ
 シノ航空ニ關スル分科會設立ニツキテハ左ノ文字アリ

The Chairman therefore proposed that the following Committees be set up:

1. *Aircraft, as to number, character and use.*
2. (以下略)

(ロ) 右記録末項ニ關シ佛國委員ヨリ佛國全權「ヴィヴィアン」ハ航空問題ニ關シ何等提議スヘキ意思ヲ有セサル旨ヲ言明セリ

(ハ) 英國委員ヨリ右記録ノミヲ以テシテハ本分科會ニ於テ航空兵力制限ノ可否ヲ議スヘキヤ又ハ其實行方法ヲ研究スヘキモノナルヤ其任務依然トシテ明カナラサルヲ以テ本件ニ關シ更ニ一層具體的ナル訓令ヲ軍備制限委員會ニ仰クコト及之ト同時ニ右記録ニ示サレタル航空機ノ數、性質及用法ニ關シ研究ノ方針タルヘキ從ツテ新ニ請求セントスル訓令ノ骨子トナルヘキ事項ヲ列舉シテ上申スルコトトシテハ如何ト提議シ之ヲ可決ス

(ニ) 之カ爲次回(十二月五日)ニ於テ先ツ右諸問題ニ關スル各國ノ所見ヲ提示シテ審議スルコトニ決ス

三、正午閉會

備考

航空兵力制限ニ對スル各國委員ノ態度

本分科會ハ未タ航空兵力制限問題ヲ研究スヘキ任務ヲ受ケサルヲ以テ素ヨリ公然之カ論議ヲ爲ササリシモ他ノ事項ニ關聯シ發露シタル各國委員ノ該問題ニ對スル意見概ネ左ノ如シ

米委員ハ「ヒューズ」ノ海軍制限案中ニ明記シアル「航空機ニ就テハ制限ヲ提議セサル」主旨ハ陸軍ニモ適用セラルヘキモノト思考スト述ヘ佛委員ハ「ブリアン」ノ聲明セル陸軍制限反對ノ意見ハ當然航空兵力ヲモ包含スルモノナリト云ヒ伊太利委員ハ軍用航空機ハ其制限必スシモ不可能ニアラサルヘシト説キタリ
 日英委員ハ本問題ニ關シ何等言及スルコトヲ避ケタリ

第三項 第三回航空専門分科會

一、大正十年十二月五日午前十一時汎米會館ニ於テ開催

列席者 伊國委員ノ中「ギドス」中佐缺勤シタル外前回ニ同シ

二、會議經過

議事方針
 各國案
 (イ) 前回ノ決議ニ依リ各國委員(米佛ヲ除ク)ニ於テ作成セル委員會訓令ノ骨子トナリ得ヘキ事項ヲ列記セル別紙覺書ヲ提出ス

MEMORANDUM.

BY AIR VICE MARSHAL HIGGINS FOR GREAT BRITAIN :

NUMBER.

(1) Is it the wish of the committee that your sub-committee should discuss the *desirability* of any limitation of the numbers of "service" aircraft, or should they only consider the *possibility* of such limitation and (if possible) the methods recommended to secure such limitation? Or is a report required on both heads?

(2) Does the committee wish your sub-committee to tabulate a statement of the existing relative strengths of state owned aircraft of the Powers, as a preliminary to any further discussion?

(It is observed that such a statement may prove somewhat misleading as the "military" value of air forces may be largely dependent on the civil aeronautical resources behind them, and your sub-committee have no means of estimating civil resources.)

CHARACTER

(3) Is it desired that your sub-committee should attempt to deal with the question of the *desirability* of the limitation of the character (e.g. size, etc.) of service aircraft, or with the *possibility* thereof, or with both questions, or neither?

(4) Is it desired that your sub-committee should discuss the *desirability* of the limitation of the character of civil aircraft with a view to limiting their use in warfare, or the *possibility* of such limitation, or should the sub-committee deal with both questions, or with neither?

USE

(5) Is your sub-committee to discuss in general terms the *desirability* of limiting the use of aircraft in war, or the possibility of such limitation, or are both question to be considered, or neither?

(6) If the above question is answered in the affirmative in any respect is your sub-committee expected to deal with the rough drafting of the laws of aerial warfare? It is observed that it is difficult to separate such entirely from the laws of sea or land warfare and the latter subject is already engaging the attention of a separate sub-committee.

(7) Your sub-committee ask instructions as to whether they are to consider the question of the use of gas in aerial warfare, in view of the appointment of a separate sub-committee to deal with gas in warfare."

BY COLONEL MOIZE FOR ITALY.

"The sub-committee should first of all express an opinion about this fundamental question; is it possible or not to impose any limitation of air armaments, and if so to what practical extent?

If it is possible, the Political Committee is accordingly requested to tell us whether we are or are not to prepare the elements for the study of the limitation of air armaments"

BY CAPTAIN NAGANO FOR JAPAN.

"Japanese members of this sub-committee desire to have the opinion of the main committee clarified on the following points:

1. Does the main committee desire reports from the sub-committee on the following points?

A. Regarding possibility or impossibility of limiting the number of aircrafts, or regarding the method of carrying such limitation into effect.

B. Regarding possibility or impossibility of limiting characters of aircraft, or regarding the method of carry-

ing such limitation into effect.

C. Regarding possibility or impossibility of limiting uses of aircrafts, or regarding the method of carrying such limitations into effect.

2. With regard to prohibition or limitation of use bombs or poison gases, which might come under I-C, is it in order to consider that study will be made and reports submitted to the main committee by the sub-committee on laws of warfare and poison gases?"

BY GENERAL MITCHELL FOR THE UNITED STATES.

1. "Does the Main Committee desire an expression from the sub-committee as to whether aerial armaments can be limited as to number, character and use?"
2. If there is to be a limit to aerial armaments, shall recommendation be made as to the means to be employed to control and regulate civil or commercial aviation?"

BY CAPTAIN ROPER FOR FRANCE.

- "1. Air armament, being in the present state of the world a part of the land or sea armament, does not the solutions adopted for the land and sea disarmament cover the question of the air disarmament?"
2. Does the council desire that sub-committee on aeronautics consider the possibility of the limitation of the development of civil and commercial aeronautics?"
- (ロ) 右各國家ヲ綜合シ分科會稟申案ヲ作ルニ決シ右ノ中英國委員提出ノモノ最精細ニ記述シアル爲不取敢之ヲ原案トシテ研究ヲ開始セリ
- (ハ) 原案ニ就キ逐次研究中其第一項ニ關シテハ Service air-craft & air-craft of army, navy and airforce ト改正シ第二項ニ至リ賛否決セス日本委員ハ問題ノ繁雜ヲ避クル爲本項ヲ削除シテハ如何ト提議シタルニ米佛伊之ニ賛シ米國委員

ハ寧ろ簡潔ナル日本委員覺書ヲ原案トスルコトヲ主唱シ佛國モ亦之ニ同意シタルモ英委員ハ之ヲ肯カス爲ニ議事ノ進行困難トナル

(ニ) 議長ハ本研究ノ續行困難ニシテ時日之ヲ許ササル故己ヲ得ス各國ノ覺書ヲ其儘一括シテ委員會ニ提出スルコトニシタシト述ヘ之ニ決ス

右ニ依リ米佛ヨリモ各覺書ヲ作成シ後刻直接議長ニ提出スヘシト通告ス

三、次回ハ委員會ヨリ新ニ訓令ヲ受ケタル後開催スルコトトシ正午閉會

第四項 第四回航空専門分科會

一、大正十年十二月八日午後二時半汎米會館ニ於テ開催

列席者前回ニ同シ

二、會議經過

分科會ノ
任務ニ關
スル訓令

(イ) 議長ハ本分科會ノ任務ニ關シ前回ニ於テ各國ヨリ提出セル質問覺書ヲ「ヒューズ」ニ交附シタル處「ヒューズ」ハ航空機ノ數、性質及使用ニ關スル制限ニ就キ成ルヘク詳細ニ審議報告セムコトヲ欲スル旨回答セリト報告シ同時ニ之ニ基キ議長自ラ作製セル別紙議題及研究順序案ヲ配布セリ

It is proposed that the discussion in future be conducted along the following lines and in the following order:—

- I. Limitation as to number of aircraft.
- II. Limitation as to character of aircraft.
- III. Limitation as to use of aircraft.

It is further proposed that the discussion follow the form as outlined below:—

SUBJECT: (Limitation as to number of commercial aircraft)

- I. Possibility of limitation of numbers.
- II. Method of doing same.
- III. Desirability.
- IV. Practicability.
- V. Decision.

After arriving at a decision on this subject it is proposed that we next take up the discussion of the limitation as to numbers of military aircraft as follows:—

SUBJECT: (Limitation as to numbers of military aircraft.)

- I. Possibility of limitation of numbers.
- II. Method of doing same.
- III. Desirability.
- IV. Practicability.
- V. Decision.

Upon arriving at a decision in the above cases we would then discuss the next subject ("Limitation as to character of aircraft") in the same manner until a decision has been reached.

The same procedure would be followed in the discussion on the subject "The use of aircraft"

(ロ) 右ニ對シ各國委員ハ之ヲ基礎トシテ研究ヲ開始スルコトニ同意セシモ獨リ英國委員ハ前項「ヒューズ」ノ回答カ軍備制限委員會ノ決議ヲ經タルモノニアサルヲ以テ英國委員トシテハ未タ之ニ關シ自國全權ヨリ必要ノ訓令ヲ受ケアラストノ理由ニ依リ即時審議ヲ開始スルコトニ反對ス

(ハ) 結局各國委員ハ前記議長ノ提議セル議題順序案ニ付各自國全權ノ同意ヲ得タル後審議ヲ開始スルコトニ決定シ閉會

第五項 第五回航空専門分科會

一、大正十年十二月九日午後三時十五分汎米會館ニ於テ開催

列席者前回ニ同シ但米國委員中「ミツチエル」陸軍少將歐洲出張ノ爲自今陸軍航空部長「バリトック」陸軍少將之ニ代ルコトナレリ

二、會議經過

民用航空
機

(イ) 前回ニ於テ米國ノ提議セル議題順序案ニ付キ各國委員ハ自國全權ノ同意ヲ得タルヲ以テ之ニ依テ審議ヲ開始ス

(ロ) 議長ハ第一問タル民用航空機制限問題ニ就キ米國委員トシテ左ノ意見ヲ述フ

能否—民用航空機ノ數及性能ヲ制限スルコトハ可能ナリ

實行方法—制限ニ關スル國法ノ制定ニ依テ之ヲ爲ス

希望ノ有無—斯ノ如キ制限ハ希望スル所ニアラス

實行ノ能否—制限ノ實施ハ國民ノ要望ニ應スル如キ國法ニ依ル外他ニ方法ナシ

結論—民用航空機ノ數及性能ニ關シテハ制限ヲ設クヘカラス

(ハ) 伊太利委員ハ本問題ニ對スル意見ハ米國ト同様ナルモ斯ノ如キ制限ニ對シ何等「デザイラビリチー」ヲ有セサルコトヲ特ニ表明スト述フ

(ニ) 英國委員ハ本問題ノ中「デザイラビリチー」ハ本分科會ニ於テ云々スヘキ項目ニアラス寧ロ軍備制限委員會ノ問題ト思考ス其他ニ關シテハ米國ノ意見ニ同意ナルモ充分精細ナル研究報告ヲ提出スルヲ本分科會ノ任務ト信スルカ故ニ此見解ヲ以テ準備セル意見ヲ述フヘシトテ別紙第一ノ記載事項中民用航空機制限問題ニ就キ詳細ナル説明ヲナ

Notes by British Representatives Aircraft Sub-Committee.

1. In considering the question of the limitation of *CIVIL AIRCRAFT* as regards numbers, character, and use a distinction must be drawn between heavier-than-air-craft, and lighter-than-air-craft, it will be shown that the conditions governing the two classes are not, in all cases, the same.

I. *HEAVIER-THAN-AIR-CRAFT*

LIMITATION OF NUMBER

Abolishment.

2. The extreme form of limitation of number is the complete abolishment of civil aircraft. It is unnecessary to labour the point that such a measure could find no general support. Transportation in any form is of definite value to every civilized community and the natural tendency of the world is to speed up methods of travel and communication. It is true that certain communities whose surface communications are well developed, may view with comparative indifference the desirability of establishing air-ways, but others differently situated may derive the greatest advantage from this method of travel. Should the air carrying trade develop in a manner similar to that in which the mercantile marine has developed it promises prosperity and power to nations who are enabled to secure commercial aerial supremacy.

IMPOSITION OF A MAXIMUM

3. But the possibility of a less drastic measure of limitation must be considered. If it is inevitable, as it appears to be inevitable, to this sub-committee, that aerial commerce must develop, it follows that it is impossible to lay down what numbers of civil aircraft will ultimately be required. The needs of air transportation to-day are little guide to the

needs of the future. If air commerce is not to increase, it must automatically die, in the former case a permanent limitation of numbers cannot be laid down, in the latter case a limit is unnecessary. It is *possible* however to limit numbers for a certain length of time e.g. for 2 years, subject to a revision of the numbers at the end of every period.

METHOD OF CARRYING OUT A LIMITATION OF NUMBERS.

3. The carrying out of such a limitation pre-supposes an agreement among the Powers as to the numbers to be maintained. A system of national registration or license for every civil aircraft whether in use or not would ensure that the number agreed would not be exceeded.

DESIRABILITY OF SUCH LIMITATION.

4. On the question of the *desirability* of imposing a limitation of this kind on the number of civil aircraft the sub-committee feels they are not entitled to give an opinion. It is for the main committee on procedure to decide this question of policy, after consideration of the matters dealt with in this report. The sub-committee, however, ventures to point out that it will be difficult in the present state of civil aviation to find a fair and reasonable basis on which the quota to be maintained by the various Powers should be assessed. They are further of the opinion that it is their duty to point out that any limitation of the number of civil aircraft will undoubtedly greatly hinder the full and natural development of aviation.

LIMITATION OF CHARACTER.

Possibility.

4. Assuming that aerial commerce is permitted to develop so as to become a real factor in national life, the whole question of limitation is bound up in the character of civil aircraft, i.e., in the extent to which these commercial aircraft can be used for war purposes.

The war value of an aeroplane may be said to lie in a combination of two or more of the following characteristics.

- (a) its radius of action
- (b) its speed
- (c) its carrying capacity
- (d) the height it can attain
- (e) its suitability for offensive and defensive equipment.

It is not desirable to go to deeply into technical matters in this report but the sub-committee content themselves with pointing out that the first four of these characteristics are dependent upon the relation between the amount of petrol carried, the horsepower of the engine, the lifting surface, and the total weight. The sub-committee are of the opinion that formulae could be evolved defining the inter-relationship of these factors in such a way as to limit the war value of the machine built in conformity therewith. It is more difficult to ensure that war equipment shall not be mounted in a commercial aeroplane. In this matter the sub-committee is of opinion that definite rules cannot be laid down, but if a limit is put on the performance, i.e., on the first four characteristics the value of the aircraft in war would hardly warrant its equipment for warlike purposes.

Broadly speaking, therefore, the sub-committee is of opinion that it is *possible in theory* to place limitations on the character of commercial aircraft.

DESIRABILITY OF SUCH LIMITATION.

5. This sub-committee does not consider itself competent to discuss the desirability of such limitation. They wish, however, to point out that the peace value of aircraft is intimately bound up with the chief characteristics which make

up the value of the aeroplane in war.

For example, radius of action is of high commercial value. A reliable air-service from Europe to America in say, 24 hours should prove a highly profitable undertaking. Again, in countries where there is perhaps the greatest scope for the development of air-ways, countries of great deserts for example, radius of action is essential.

Speed is plainly the characteristic on which aircraft rely to gain advantages in their competition with other means of transportation. It is not yet comfort and security but time saving that will tempt passengers, mails, and valuable cargoes from old established services. To limit speed is to stop progress, to throttle aviation in its infancy.

The power of carrying numbers of passengers or quantities of goods is of obvious commercial value and even the attainment of considerable heights may eventually be a definite requirement to enable aircraft to take advantage of favorable high velocity permanent winds.

The factors which comprise "military performance" have therefore a high commercial value, and it is the opinion of this sub-committee that any limitation of the character of civil aircraft must hinder the natural development of aviation, it is probable that restriction as to character will have in fact an even more adverse reaction on the progress of aviation than would be caused by a restriction on numbers.

METHOD OF CARRYING

OUR LIMITATION AS TO CHARACTER.

6. As regards the methods by which such limitation can be carried into effect this sub-committee wish to point out that the rules or formulae whereby alone the character of civil aircraft can be limited must be detailed, and stringent, but that, at the same time, they will be easy to evade.

Infringement will not be obvious to the casual glance, and measurements of horsepower, supporting surface, petrol

tankage, and weight will be necessary if security against evasion is to be ensured. The only way in which infringements against any rules devised can be detected is by *continuous and careful international inspection*. It is inconceivable to this sub-committee that nations should willingly assent to such inspection.

FACTICABILITY.

7. But there is yet another difficulty in the carrying out of this limitation of character. The rules themselves may be the best that can be made, inspection may be submitted to up to the outbreak of war and may be efficient to prevent civil aircraft being of immediate war value, but once strained relations have resulted in the cessation of inspection even these innocuous civil aircraft can be rapidly transformed to be of war value. No rules can prevent aircraft being designed *in peace* to permit of the ready installment of larger tanks in war; engines can be made interchangeable enabling one of higher horsepower to be rapidly installed; even carrying surfaces can be increased by the standardization and interchangeability of wings and other methods, and it is not impossible to conceive of civil aircraft being designed with a view to ultimate war requirements of guns, armour, bomb gear, etc., etc.

In fact in their present state of development civil aircraft can be so designed that while obeying stringent limitations they can be converted by no great effort and with little delay into serviceable war machines.

8. All these points received the closest of consideration with reference to the limitation of Germany's airpower and the matter is so complicated that agreement has not yet been reached among the Allies. But taking the rules as drafted and even assuming continuous inspection of a most stringent character, it appears that there are still loopholes for evasion.

9. For the above reasons the sub-committee is agreed that in the present stage of development of aviation the

limitation of the character of civil aircraft (of the heavier-than-air-type) is impossible.

II. LIGHTER-THAN-AIR-CRAFT

PECULIARITY OF LIGHTER-THAN-AIR-CRAFT.

10. The foregoing remarks have been made with reference to heavier-than-air-craft: the characteristics of lighter-than-air-craft are such that limitation of numbers and character present little difficulty.

It is a peculiarity of these craft that their efficiency is very intimately bound up in their size. Small dirigibles have a war value of their own, but it is limited and they cannot be considered as offensive weapons. For example a small vessel of this kind cannot attain any considerable height while carrying a useful load, and even if filled with non-inflammable gas its vulnerability to gun fire at the heights it could reach preclude its being utilized for such purposes as aerial bombardment. Only in large sized dirigibles can a useful load be carried to a reasonable military height at a fair speed. Limitation of size is therefore sufficient to ensure that lighter-than-air-craft should be incapable of offensive aerial action.

11. Moreover the construction of large dirigibles requires large shed accommodation and cannot be kept secret, in this respect they resemble surface warships.

It is therefore possible to regulate their numbers and size, by a simple system of international agreement and infringement of such agreement can be readily detected without a detailed system of control.

DESIRABILITY OF LIMITATION.

12. This sub-committee does not consider that it should express an opinion as to the desirability of such limitation. They are agreed that the possibilities of war use for large dirigibles may still exist. Although in the later stages of the world war it appeared as if the defence had the mastery over attack by lighter-than-air-craft, the introduction of larger craft

filled with non-inflammable gas and carrying their own protective aeroplanes may again permit bombardments being carried out by dirigibles.

This sub-committee desires also to draw attention to the fact that dirigibles become increasingly efficient with increase of size. Any limit which is imposed on the size of commercial dirigibles must shut the door on the possibility of their development for legitimate civil enterprises.

LIMITATION OF THE USE OF CIVIL AIRCRAFT OF ALL KINDS.

13. The sub-committee are of the opinion that it would be useless to attempt to lay down a rule that civil aircraft should not be used in war, as they consider that no nation could deny itself the value for war purposes of their commercial machines provided that they are suitable for any warlike purpose. It is understood that when so used they will be managed by service personnel of the State and carry the proper distinguishing marks, and will in fact become war aircraft; their use does not, therefore, require discussion in this part of the sub-committee report.

The use of civil aircraft in peace is governed by the International Air Convention which apply safeguards a state's sovereignty in the air against abuse.

(キ) 日本委員ハ本問題ニ關スル英國委員ノ意見ニハ大體同意スルモ猶書面ニ就キ充分研究シタル後確定的意見ヲ述フ
レシト答フ

(ヘ) 米國委員亦略日本ト同様ノ希望ヲ述ヘ結局各國委員ハ英國意見ヲ書面ニ依テ研究ノ上次同ニ審議ヲ進ムルコトニ決定ス

(ト) 佛國委員ハ今日ノ會議ハ曩ニ決定セル議題順序ト少シク變更シ第一ニ民用航空機ノ數、性能及使用制限問題ヲ同時ニ審議シタルカスク修正ス可キヤト質問シ修正スルコトニ決ス

(チ) 議長ハ第二章第四節所說戰爭法規專門分科會ヨリノ質問書寫ヲ配布シ之ニ對スル回答ニ付研究シ置クコトヲ希望ス
三、午後四時十五分開會次同十二月十三日午前十時開催ノ豫定

第六項 第六回航空專門分科會

一、大正十年十二月十三日午前十時十五分汎米會館ニ於テ開催

列席者各國委員全部

民用航空
機

二、會議經過

(イ) 議長ハ先ツ前回英國ヨリ提出シタル民用航空機制限問題決議案草案ニ對スル各國ノ意見ヲ求ム

(ロ) 右ニ對シ米伊佛委員ハ字句ノ修正文章配列ノ變更等ニ關シ其ノ意見ヲ述ヘ日本委員ハ民用航空機制限ハ航空機ノ利用ニ依リテ人類將來ノ福祉増進ヲ計ラントスル現代ノ要求ニ反スルモノナルカ故制限ノ強制ハ事實不可能ナルノ主
意明瞭ナル限り文章ノ配列等ニ就テハ別ニ意見ナシト述フ

(ハ) 議長ハ會議ノ進行上本分科會書記官「ヒツカム」少佐及英委員「シャシエー」大佐ヲ以テ右決議案起草委員トナシ各國意見ヲ參酌按配シテ一ノ草案ヲ作製シ之ニ依テ次回ニ審議シタシト述ヘ即決ス

(ニ) 米國委員「バトリック」少將ハ米國ハ國際航空條約ニ加入ノ希望ヲ有スレ共國際聯盟ニ參加シ居ラサル關係上之ヲナスコト不可能ナリ故ニ今回成立セル四國協商ノ如キ何等カノ形式ノ下ニ米國ノ加入シ得ル一ノ協定ヲナスノ意見ヲ軍備制限委員會ニ具申シテハ如何ト述ヘ之ヲ爲スニ決ス

佛國委員ハ右意見ハ同時ニ戰爭法規專門分科會ノ研究ヲ要スルモノアルヘシト述フ

(ホ) 議長ハ次ニ議題順序ニ從ヒ續テ軍用航空機制限問題ヲ審議シタシト述ヘ各國委員之ニ同意ス

(ヘ) 英國委員ハ本問題ヲ研究スルニ當リ先ツ海軍制限案ノ主義ニ準リ各國航空兵力現狀表ヲ作製シ委員會ニ提出スルコトニ致シタシ本件ハ英國全權「バルフォア」氏モ賛成シタルコトナリト述ヘ之ヲナスコトニ決ス

軍用航空
機

戦時法規
委員會議
決案ノ
質問

右ニ依リ議長ハ「モアゾー」大佐(伊)「ワイチング」中佐(米)及「ロベル」大尉(佛)ヲ航空兵力現狀表形式起草委員ニ任命シタシト述ヘ即決ス

(ト) 議長ハ前回ニ交付セル戰爭法規専門分科會ヨリノ質疑事項タル航空機ノ臨檢搜索行爲能否問題ニ付意見ヲ求メ英伊佛委員ハ航空機ハ臨檢搜索行爲ヲ特別ノ狀況ノ場合ニ於テナシ得ルノ意ヲ述フ

(チ) 右ニ對シ日本委員ハ右行爲ノ可能ナル場合アルコトニ就テハ同感ナルモ實施上困難多キ現狀ニ於テハ之カ爲弊害ヲ伴フカ故此點ニ付充分ナル考慮ヲ要スルモノト認ムル旨ヲ述フ

(リ) 右日本意見ニ對シ各國委員ハ至極同感ナルモ本分科會ノ回答トシテハ單ニ能否ノミニ關スル點ヲ明ニスルヲ以テ足レリトスヘシト述ヘタリ

本問題ニ關シテハ各國意見參酌ノ上米委員ニ於テ回答案ヲ起草シ更ニ審議スルコトニ決定

三、午前十一時三十分閉會次會十五日開催ノ豫定

四、翌十二月十四日特別委員ノ作成セル左ノ如キ別紙民用航空機制限問題ニ對スル決議案草案ヲ送付シ來レリ

民用航空
機決議
草案

COMMITTEE ON AIRCRAFT.

In considering the question of the limitation of *CIVIL AND COMMERCIAL AIRCRAFT* as regards to number, character, and use, a distinction must be drawn between heavier-than-air-craft and lighter-than-air-craft; it will be shown that the conditions governing the two classes are not, in all cases, the same.

Different methods of imposing such a limitation may be adopted by different states. The precise methods adopted by any state must be in conformity with its organic law. In some states it may be possible to impose an arbitrary limitation; in others, by the exercise of the police power, or of the power to tax, a practical limitation may be enforced. In the United States, where laws passed by the Congress must conform to the written Constitution of the Country, there

may be some difficulty in finding an effective means of imposing this limitation, but nevertheless it is believed that such means can be found.

1. Possibility.

It is theoretically possible for a state to limit the number of aircraft that may be owned and operated by its citizens.

The extremist form of limitation of number is the complete abolishment of civil aircraft. It is unnecessary to labour the point that such a measure could find no general support.

Before discussing any other phase of the matter it will be well to consider carefully the effects which would follow the imposition of the limitation upon the numbers of commercial aircraft which may be owned and operated by the citizens of a state. In the first place, if commercial aeronautics is allowed to follow the national laws which have governed the development of all other means of transportation and communication, the number of such aircraft will probably be effectively limited by financial considerations. That is, commercial aeronautics as a business will not thrive unless the operation of the aircraft will return a substantial profit. The state may interfere with the operation of these natural laws any granting to the owners and operators of such aircraft a direct or indirect subsidy. By so doing enterprises which would not otherwise be financially successful may be enabled to live and in this way the number of aircraft used for commercial purposes will be greater than if the natural laws of development had been allowed to take their course. If, among commercial aircraft, we class those owned and operated for sport or pleasure or convenience, the numbers of these will depend largely upon the wealth of the nation, upon the inclination of the people toward aeronautics, upon the cost of the aircraft thus employed.

The development of aircraft has presented the world with a new and improved means of transportation and communication. One of the causes of warfare in the past has been a lack of the proper distribution of the world's resources in raw material, food products, and the like. Another potent cause of war has been the lack of understanding between races, peoples, and nations. Any addition to the communication facilities of the world should operate to improve the distribution of resources and likewise to lessen the causes of misunderstandings between peoples, and thus lessen the causes of warfare.

Any limitation, therefore, placed upon commercial aeronautics would have the effect of limiting a means of transportation and communication between the different parts of the same state and between different states.

It seems inconceivable that any limitation should be imposed upon commercial aviation unless it were with the avowed object of thereby limiting the air power of a state and thus decreasing the liability of war. Commercial aeronautics with its attendant development of an aeronautical industry and a personnel skilled in the manufacture, operation, and maintenance of aircraft does furnish a basis of air power. The development of commercial aeronautics and the development of a nation's air power are inseparable.

The war value of an aeroplane may be said to lie in a combination of two or more of the following characteristics.

- (a) its radius of action
- (b) its speed
- (c) its carrying capacity
- (d) the height it can attain
- (e) its suitability for offensive and defensive equipment.

It is not desirable to go too deeply into technical matters in this report but the sub-committee content themselves with pointing out that the first four of these characteristics are dependent upon the relation between the amount of petrol carried, the horsepower of the engine, the lifting surface, and the total weight. The sub-committee are of the opinion that formulae could be evolved defining the inter-relationship of these factors in such a way as to limit the war value of the machine built in conformity therewith. It is more difficult to ensure that war equipment shall not be mounted in a commercial aeroplane. In this matter the committee is of opinion that definite rules cannot be laid down, but if a limit is put on the performance, i.e. on the first four characteristics the value of the aircraft in war would hardly warrant its equipment for warlike purposes.⁽¹⁾

This committee wishes, however, to point out that the peace value of aircraft is at present intimately bound up with the chief characteristics which make up the value of the aeroplane in war.

For example, radius of action is of high commercial value. A reliable air service from Europe to America in, say 24 hours, should prove a highly profitable undertaking. Again in countries where there is perhaps the greatest scope for the development of air-ways, countries of great deserts for example, radius of action is essential.

Speed is plainly the characteristic on which aircraft rely to gain advantages in their competition with other means of transportation. It is not yet comfort and security but time saving that will tempt passengers, mails, and valuable cargoes from old established services. To limit speed is to stop progress, to throttle aviation in its infancy.

The power of carrying numbers of passengers or quantities of goods is of obvious commercial value and even the

(1) In making the above remarks this Committee is referring to the present day: it is certain that in the future military and civil or commercial aircraft will develop on divergent lines. A day will undoubtedly come when military aircraft will differ from commercial aircraft just as war vessels now differ from mercantile marine vessels. Limitation of commercial aircraft will then be of little importance.

attainment of considerable heights may eventually be a definite requirement to enable aircraft to take advantage of favorable high velocity permanent winds.

The factors which comprise "military" performance have therefore a high commercial value, and it is the opinion of this sub-committee that any limitation of the character of civil aircraft must hinder the natural development of aviation: it is probable that restriction as to character will have in fact an even more adverse reaction on the progress of aviation than would be caused by a restriction on numbers.

This committee feels that the desirability of placing any limitations whatever upon commercial aircraft is a matter of policy, one which it is for the Conference itself to determine, nevertheless, it feels it to be a duty to point out the above facts which will have a decided bearing upon any discussion of the proper policy to be adopted.

The differences in organic law as between nations will probably prevent a single system of limitation being of universal application. Moreover, the rules or formulae whereby alone the character of civil aircraft can be limited must be detailed, and stringent. At the same time, they will be easy to evade, and infringement will not be obvious to the casual glance. Measurements of horsepower, supporting surface, petrol tankage, and weight will be necessary if security against evasion is to be ensured by any other means than by trusting to the good faith of the contracting parties. No state could consent to having the nationals of another power continually inspecting all of its manufacturing plants in order to ascertain whether the limitations it imposed were being enforced.

All these points received the closest of consideration with reference to the limitation of Germany's air-power and the matter is so complicated that the final drafting of the technical rules has not yet been completed. But taking rules as drafted and even assuming continuous inspection of a most stringent character, it appears that there are still loopholes

for evasion. No rules can prevent aircraft being designed *in peace* to permit of the ready installment of larger tanks in war; engines can be made inter-changeable enabling one of higher power to be rapidly installed; even carrying surfaces can be increased by the standardization and inter-changeability of wings and other methods, and it is not impossible to conceive of civil aircraft being designed with a view to ultimate war requirements.

For the above reasons the sub-committee is agreed that in the present stage of development of aviation the limitation by formulae of the character of civil aircraft (of the heavier-than-air-type) is impracticable.

But without expressing an opinion as to the desirability of abolishing subsidies for the encouragement of civil aviation, the Committee points out that such subsidies, direct or indirect, can have a great influence on the character and number of commercial aircraft in relation to their war value. In fact, subsidies will tend to decrease the natural divergence between military civil aircraft and render the latter more readily adaptable to war uses. It is necessary, however, to add that indirect subsidies or other encouragement are most difficult to prevent, and even when acting in good faith governments of different nations will place different interpretations on such encouragement.

In this discussion a distinction is drawn between commercial aircraft and civil aircraft, the latter will comprise all aircraft operated by a state except those which it operates in connection with its military enterprises. Civil aircraft will, therefore, include any which are state-operated in the customs service, for transporting the mails, the exercise of its police powers, and the like. It is readily apparent that as aircraft operate in a medium where there are no physical barriers, they can compete in some measure with every means of transportation used on land or water. It is therefore possible for much of the transportation requirements of any state to be met by the operation of aircraft. Such aircraft manifestly are not dependent for their being upon their ability to be operated at a profit. The state will decide how

best it may enforce its laws, exercise its police power, transport state-owned merchandise or mails, and the means used will be those which are most efficient and most economical from the standpoint of the state itself. The cheapest will not always be the best or the most satisfactory.

The number and the legitimate use of aircraft by any Government for such civil purposes will, therefore, be limited only by the estimate placed upon the service which they can render and by the consent of the people to raising by taxation the amount of money which must be employed for their acquisition, operation, and maintenance.

If the civil agencies of a state use aircraft for police or other purposes that are essentially military in character this class of civil aircraft should be discussed under the limitation of military aircraft rather than of civil or commercial.

II. *Method.*

The number of such civil aircraft can be limited arbitrarily by agreement among the states.

III. *Desirability.*

The same remarks apply here as those which were used to discuss the desirability of the limitation upon commercial aircraft.

IV. *Practicability.*

It would, again, be utterly impracticable to set up any agency acting under authority other than that of a nation itself to regulate the number of civil aircraft owned and operated by the state.

The foregoing remarks have been made with reference to heavier-than-air craft; the characteristics of lighter-than-air craft are such that limitation of numbers and character present little difficulty.

It is a peculiarity of these craft that their efficiency is very intimately bound up in their size. Small dirigibles

have a war value of their own, but it is limited and they cannot be considered as offensive weapons. For example, a small vessel of this kind cannot attain any considerable height while carrying a useful load, and even if filled with non-inflammable gas its vulnerability to gun fire at the heights it could reach preclude its being utilized for such purposes as aerial bombardment. Only in large sized dirigibles can a useful load be carried to a reasonable military height at a fair speed. Limitation of size is therefore sufficient to ensure height at a fair speed. Limitation of size is therefore sufficient to ensure that higher-than-aircraft should be incapable of offensive aerial action.

Moreover the construction of large dirigibles required large shed accommodation and cannot be kept secret; in this respect they resemble surface warships.

It is therefore possible to regulate their numbers and size, by a simple system of international agreement and infringement of such agreement can be readily detected without a detailed system of control.

This committee does not consider that it should express an opinion as to the desirability of such limitation. They are agreed that the possibilities of war use for large dirigibles may still exist. Although in the latter stages of the world war it appeared as if the defense had the mastery over attack by higher-than-air craft, the introduction of larger craft filled with non-inflammable gas and carrying their own protective aeroplanes may again permit bombardments being carried out by dirigibles.

This sub-committee desires also to draw attentions to the fact that dirigibles become increasingly efficient with increase of size. Any limit which is imposed on the size of commercial dirigibles must shut the door on the possibility of their development for legitimate civil enterprises.

The committee are of the opinion that it would be useless to attempt to lay down rules that civil aircraft should

not be used in war, as they consider that no nation could deny itself the value for war purposes of their commercial machines provided that they are suitable for any warlike purpose. It is understood that when so used they will be managed by service, personnel of the State and carry the proper distinguishing marks, and will in fact become war aircraft: their use does not therefore require discussion in this part of the sub-committee report.

The use of civil aircraft in peace is governed by the International Air Convention which amply safeguards a State's sovereignty in the air against abuse.

This Convention has already been ratified by Great Britain, France, Japan, Belgium, Greece, Portugal, Serb-Croat and Slovene State and Siam. It will at a very near date come into force for these various Powers and later for their other signatory States and also non-signatory Powers who desire to adhere to it.

The Committee is aware, however, that owing to the connection of the Convention with the League of Nations and certain clauses to which exception is taken, the United States of America and certain other powers are unable to adhere to it. The Committee suggest for the consideration of the Sub-Committee on Program and Procedure that a convention could be drawn up at this Conference to which the assent of all powers represented could be gained.

SUMMARY OF CONCLUSION.

This committee is unanimously of the opinion that in the present state of development of aeronautics there is a technical possibility of the limitation of numbers, character and use of civil and commercial aircraft with regard to their utilization in war; they are, however, agreed that such limitation of numbers and character is impracticable except in the case of lighter-than-air craft of above a certain displacement.

As regards the desirability of limitations, the Committee has touched on those factors it is necessary should be

understood in arriving at a decision, but feels that the question of placing any limitations whatever upon commercial and civil aircraft is a matter of policy, one which it is for the Conference itself to determine.

第七項 第七回航空専門分科會

一、大正十年十二月十五日午後三時汎米會館ニ於テ開催

列席者各國委員全部

二、會議經過

(イ) 議長ハ先ツ特別委員ノ起草セル民用航空機制限問題ニ對スル決議案草案ハ過日配布セル通ナルカ其ノ後英國委員ヨリ更ニ一ノ草案(別紙第一)ヲ提出シ前草案ト比較審議スルコトヲ要求セラレタルカ何レヲ原案トスヘキカニ就キ意見ヲ求ムト述フ

COMMITTEE ON AIRCRAFT INTRODUCTION.

1. One of the causes of warfare in the past has been a lack of the proper distribution of the world's resources in raw materials, food products, and the like. Another potent cause of war has been the lack of understanding between races, peoples and nations. Any addition to the communication facilities of the world should operate to improve the distribution of resources and likewise to lessen the causes of misunderstanding between peoples, and thus lessen the causes of warfare. The development of aircraft has presented the world with a new and improved means of transportation and communication; it would appear therefore at first sight that aircraft should be a factor in maintaining peace. But though it is true that aeronautics should indirectly contribute to the cause of peace, it would be shown that in the present stage of development of aircraft they are of direct value for purposes of war, even when originally designed for civil or commercial purposes.

Interdependence of Air Power with Commercial and Civil Aeronautics.

2. Viewed from broad a standpoint commercial aeronautics with its attendant development of an aeronautical industry and a personnel skilled in the manufacture, operation, and maintenance of aircraft does furnish a basis of air power. The development of commercial aeronautics and the development of a nation's air power are inseparable.

3. But apart from this great underlying consideration, civil and commercial aircraft in their present stage of development* possess qualities which are of direct value for purposes of war.

* In making the remarks which follow, this Committee is referring to the present day; it is certain that in the future military and civil or commercial aircraft will develop on divergent lines. A day will undoubtedly come when military aircraft will differ from commercial aircraft just as war vessels now differ from mercantile marine vessels. Limitation of commercial aircraft will then be of little importance.

For example, radius of action is of high commercial value. A reliable air service from Europe to America in, say, 24 hours, should prove a highly profitable undertaking. Again, in countries where there is perhaps the greatest scope for the development of airways, countries of great deserts for example, radius of action is essential.

Speed is plainly the characteristic on which aircraft rely to gain advantages in their competition with other means of transportation. It is not yet comfort and security but time saving that will tempt passengers, mails and valuable cargoes from old established services. To limit speed is to stop progress, to throttle aviation in its infancy.

The power of carrying numbers of passengers or quantities of goods is a most desirable attribute of commercial aircraft, and even the attainment of considerable height may eventually be a definite requirement to enable aircraft to take advantage of favorable high velocity permanent winds, and to fly at greater speed with less expenditure of fuel.

4. But these very characteristics of radius of action, speed, carrying power and climbing capacity are of the highest

war value; it is on the framework of a performance of this nature that military armament and equipment are at present imposed. It is impossible to deny therefore that civil and commercial aeronautics are intimately connected with aeronautics in war. The question therefore at once arises as to whether their growth warrants or is likely to warrant consideration of their limitation, with the avowed object of thereby limiting the air power of a state and thus decreasing the liability of war.

Is Consideration of the question of limitation of Civil and Commercial Aeronautics warranted.

5. If the development of commercial aeronautics is allowed to follow natural laws, financial consideration will be the dominant factor: that is, commercial aeronautics will not thrive as a business unless the operations of aircraft will return a substantial profit. If is difficult to forecast the probable measure of such growth but the tendency is to demand greater speed in communications and transportation even at the expense of higher operating costs. The steamship ousted the sailing ship in spite of the expense involved in burning fuel. Climate and geographical considerations will influence air development and wealthy nations will achieve higher results than poor ones, but development in some degree appears inevitable.

But whatever may be the result of the operation of natural laws, the State may interfere with them by granting the owners and operators of such aircraft a direct or indirect subsidy. By so doing enterprises which would not otherwise be financially successful may be enabled to live and in this way the number of aircraft used for commercial purposes will be greater than if the natural laws of development had been allowed to take their course. Moreover, such subsidies, direct or indirect, can have a great influence on the character and number of commercial aircraft in relation to their war value. In fact, subsidies will tend to decrease the natural divergence between military and civil aircraft and render the

latter more readily adaptable to war uses.

Assuming international good faith, direct subsidies may be abandoned but direct encouragement may take so many forms and is subject to such diverse interpretations of what constitutes such encouragement that regulation appears impracticable.

7. In this discussion a distinction is drawn between commercial² aircraft and civil aircraft, the latter will comprise all aircraft operated by a state except those which it operates in connection with its military enterprises. Civil aircraft will, therefore, include any which are state-operated in the customs service, for transporting the mails, the exercise of its police powers, and the like. It is readily apparent that as aircraft operate in a medium where there are no physical barriers, they can compete in some measure with every means of transportation, used on land or water. It is, therefore, possible for much of the transportation requirements of any state to be met by the operation of aircraft. Such aircraft manifestly are not dependent for their being upon their ability to be operated at a profit. The state will decide how best it may enforce its laws, exercise its police power, transport state-owned merchandise or mails, and the means used will be those which are most efficient and most economical from the standpoint of the state itself. The cheapest will not always be the best or the most satisfactory.

8. The number and the legitimate use of aircraft by any Government for such civil purposes will, therefore, be limited only by the estimate placed upon the service which they can render and by the consent of the people to raising by taxation the amount of money which must be employed for their equipment, operation and maintenance. It is also possible that these civil types may more nearly approximate to those designed for warlike purposes.

9. It is a reasonable assumption therefore that the magnitude of civil and commercial aeronautics warrants consider-

ation of the question of their possible limitation and of the methods whereby such limitation may be effected.

Method of limitation of Civil and Commercial Aircraft.

10. It is theoretically possible for a state to limit the number of aircraft that may be owned and operated by its citizens. The extreme form of limitation of number is the complete abolishment of civil aircraft. It is unnecessary to labour the point that such a measure could find no general support.

11. Different methods of imposing such a limitation may be adopted by different states. The precise methods adopted by any state must be in conformity with its organic law. In some states it may be possible to impose arbitrary limitation; in others, by the exercise of the police power, or of the power to tax, a practical limitation may be enforced. In the United States, where laws passed by Congress must conform to the written Constitution of the country, there may be some difficulty in finding an effective means of imposing this limitation, but nevertheless it is believed that such means can be found.

12. The next question is the limitation of character of aircraft. It is not desirable to go too deeply into technical matters in this report, and the Committee content themselves with expressing the view that the first military possibilities of aircraft are largely dependent upon the relation between the amount of petrol carried, the horsepower of the engine, the lifting surface, and the total weight. The Committee are of the opinion that the formulae could be evolved defining the inter-relationship of these factors in such a way as to limit the war value of the machine built in conformity therewith. It is more difficult to ensure that war equipment shall not be mounted in a commercial aeroplane.

* If the civil agencies of a state use aircraft for police or other purposes that are *essentially* military in character this class or civil aircraft should be discussed under the civil or commercial.

In this matter the Committee is of the opinion that definite rules cannot be laid down, but if a limit is put on the performance, i.e., on the four characteristics mentioned above the value of the aircraft in war would hardly warrant its equipment for warlike purposes.

13. The rules or formulas whereby alone the character of civil aircraft can be limited must be detailed, and stringent. At the same time they will be easy to evade, and infringement will not be obvious to the casual glance. Measurements of horsepower, supporting surface, petrol tankage, and weight will be necessary if security against evasion is to be ensured by any other means than by *trusting to the good faith* of the contracting parties. No state could consent to having the nationals of another power continually inspecting all of its manufacturing plants in order to ascertain whether the limitations it imposed were being enforced.

14. But no simpler method is possible in the absence of good faith. All these points received the closest attention with reference to the limitation of Germany's air-power, and the matter is complicated that the final drafting of the technical rules has not yet been completed.

15. To the considerations mentioned above there is one notable exception: the characteristics of lighter-than-air craft are such that limitation of numbers and character present little technical difficulty.

It is a peculiarity of these craft that their efficiency is very intimately bound up in their size. Small dirigibles have a war value of their own, but it is limited and they cannot be considered as offensive weapons. For example, a small vessel of this kind cannot attain any considerable height while carrying a useful load, and even if filled with non-inflammable gas its vulnerability to gun fire at the heights it could reach preclude its being utilized for such purposes as aerial bombardment. Only in large sized dirigibles can a useful load be carried to a reasonable military height at a

fair speed. Limitation of size is therefore sufficient to ensure that lighter-than-air craft should be incapable of offensive aerial action. Moreover, the construction of large dirigibles requires large shed accommodation and cannot be kept secret: in this respect they resemble surface warships.

16. It is therefore possible to regulate their numbers and size, by a simple system of international agreement and infringement of such agreement can be readily detected without a detailed system of control.

Question of the practicability of such limitation.

17. Rules of the most stringent character appear to this committee to leave loopholes for evasion. No rules can prevent aircraft being designed *in peace* to permit of the ready installment of larger tanks in war; engine can be made interchangeable enabling one of the higher power to be rapidly installed; even carrying surface can be increased by the standardization and interchangeability of wings and other methods, and it is not impossible to conceive of civil aircraft being designed with a view to ultimate war requirements in the matter of military equipment. To Committee is agreed that in the present stage of development of aviation the limitation by formulae of the character of civil aircraft (of the heavier-than-air type) is impracticable.

18. This Committee feels that the desirability of placing any limitations whatever upon commercial aircraft is a matter of policy, one which it is for the Conference itself to determine. Nevertheless, it feels to be a duty to lay stress on one consideration, which will have a decided bearing upon any of the discussion of the proper policy to be adopted.

Any limitation as to the number and character of civil and commercial aircraft, heavier than or lighter than air, which is efficacious to hinder their utility for war purposes, must interfere disastrously with the natural development of

aeronautics for legitimate civil enterprises. To limit the science of aeronautics in its present stage is to shut the door on progress.

It is for the Conference to decide whether the limitation which can with difficulty be devised and imposed are to adopted at such a cost.

The Question of the Limitation of the use of Civil and Commercial Aircraft.

19. The Committee are of the opinion that it would be useless to attempt to lay down a rule that civil and commercial aircraft should not be used in war, as they consider that no union could deny itself the value for war purposes of their civil and commercial machines, provided that they are suitable for any warlike purpose. It is understood that when so used they will be manned by service personnel of the State and carry the proper distinguishing marks, and will in fact become war aircraft, their use does not, therefore, require discussion in this part of the Committee report.

20. The use of civil and commercial aircraft in peace is governed by the International Air Convention which apply safeguards a State's sovereignty in the air against abuse. This Convention has already been ratified by Great Britain, France, Japan, Belgium, Greece, Portugal, Serb-Croat and Slovene State and Siam. It will at a very near date come into force for these various and later for their other signatory States, and also non-signatory Powers who desire to adhere to it.

21. The Committee is aware, however, that owing to the connection of the Convention with the League of Nations and certain clauses to which exception is taken, the United States of America and certain other Powers are unable to adhere to it. The Committee suggests for the consideration of the Sub-Committee on Program and procedure that a convention could be drawn up at this Conference to which the assent of all Powers represented could be gained.

SUMMARY OF CONCLUSIONS.

22. This Committee is unanimously of the opinion that in the present state of development of aeronautics there is a technical possibility of the limitation of numbers, character and use of civil and commercial aircraft with regard to their utilization in war; they are, however, agreed that such limitation of numbers and character is impracticable except in the case of lighter-than-air craft of above a certain displacement.

As regards the desirability of limitations, the Committee has touched on those factors which must be understood before arriving at a decision, but feels that the question of placing any limitations whatever policy, upon commercial and civil air craft is a matter of policy, one which it is for the Conference itself to determine.

(ロ) 右ニ對シ各國委員ハ大體ニ於テ英國案ヲ可トスルニ一致セシモ字句ノ追加修正等ニ關シ論議アリ

(ハ) 議長ハ英國案ハ本日ノ會議ニ切迫シ提出サレ從テ充分之ヲ研究スルノ餘裕ナカリシモノナルカ故各國委員ハ右二箇ノ草案ニ就キ精細ニ考究シタル上意見ヲ提出サレ度然ル後再ヒ特別委員ヲシテ更ニ新草案ヲ作製セシムヘシト述
ル

(ニ) 日本委員ハ前記二案ノ何レニモ「補助金制度ノ廢止ニヨリ民有航空機ノ軍用轉化ヲ困難ナラシムル云々」ノ項アルカ本項ノ次ニ別紙第二ニ依ル日本ノ意見ヲ追加サレ度旨ヲ述ヘ各國委員之ニ贊ス

別紙第二

The question whether subsidies are granted or not will have great bearing upon development of commercial aircraft in general, and will affect the future welfare of the nations. This question, therefore, can not be determined from the point of view solely of the adapt ability for war uses.

(ホ) 次テ議長ハ航空兵力現狀作製ノ狀況ニ就キ該起草委員ノ報告ヲ求メ「ワイチング」中佐ハ首席委員タル「モア

ゾー」大佐ニ代リ時日ノ餘裕ナク能否未タ完成セサル旨ヲ答フ

(ハ) 議長ハ航空機臨檢搜索問題ニ對スル回答案ニ付報告ヲ求メ「フイチング」中佐ハ目下考慮中ニシテ次回迄ニハ完成スヘキ旨ヲ答フ

三、午後四時閉會次回十二月十九日午前十時三十分開催ノ豫定

第八項 第八回航空専門分科會

一、大正十年十二月二十日午前十時三十分汎米會館ニ於テ開催

列席者各國委員全部

二、會議經過

民用航空
機報管決

(イ) 議長ハ特別委員ノ新ニ起草セル民用航空機制限問題ニ對スル決議報告案ヲ配布シ之ニ對スル修正意見ヲ求ム
(ロ) 右ニ對シ二三字句ノ小修正ヲナシ別紙第一ノ通りニ決定ス

COMMITTEE ON AIRCRAFT.

Report on Limitation of Aircraft as to Numbers, Character and Use.

Form of Procedure.

1. In considering the limitation of aircraft as to numbers, character and use, the Committee on Aircraft adopted a form of procedure which took up the various questions involved in the following order:

(1) Commercial aircraft: (2) Civil aircraft: (3) Military aircraft. Heavier-than-air and lighter-than-air craft were considered separately since the conditions governing the two are not in all cases the same. An effort was made to determine whether or not it is possible to impose limitation upon their (1) number, (2) character, (3) use, and after discussion of the methods that might be employed to effect such limitation, whether limitation was prac-

ticable or not. This Committee feels that the desirability of placing any limitation whatever upon aircraft is a matter of policy, one which it is for the Main Committee itself to determine. Nevertheless, it feels it to be a duty point out the essential facts which will have a decided bearing upon the determination of the proper policy to be adopted, and this is done in this report.

Commercial Aircraft.

2. Different methods of imposing such limitation may be adopted by different states. The precise methods adopted by any state must be in conformity with its organic law. In some states it may be possible to impose an arbitrary limitation; in others, by the exercise of the police power; or of the power to tax, a practical limitation may be enforced. In the United States, where laws passed by the Congress must conform to the written Constitution of the country, there may be some difficulty in finding an effective means of imposing this limitation, but nevertheless it is believed that such means can be found.

3. Before discussing any other phase of the matter it will be well to consider carefully the effects which would follow the imposition of the limitation upon the numbers and character of commercial aircraft which may be owned and operated by the nationals of a state. In the first place, if commercial aeronautics is allowed to follow the natural laws which have governed the development of all other means of transportation, and communication, the number and character of such aircraft will depend on financial consideration. That is, commercial aeronautics as a business will not thrive unless the operation of the aircraft will return a substantial profit. The state may interfere with the operation of these natural laws by granting to the owners and operators of such aircraft a direct or indirect subsidy. By so doing enterprises which would not otherwise be financially successful may be enabled to live and in this way the number of aircraft

used for commercial purposes will be greater than if the natural laws of development had been allowed to take their course. If, among commercial aircrafts, we class those owned and operated for sport or pleasure or convenience, the number of these will depend largely upon the wealth of the nation, upon the inclination of the people toward aeronautics, upon the cost of aircraft thus employed. It is easy to foresee what consequence to human progress will come in the future from the development of aeronautics in all its branches. They will certainly be marvelous where natural conditions are favorable to such development. To try to limit them now with arbitrary law, even if these laws have the purpose of preventing war, would be presumptions in the opinion of this Committee—disastrous from the point of view of world progress.

The development of aircraft has presented the world with a new and improved means of transportation and communication. One of the causes of warfare in the past has been a lack of the proper distribution of the world's resources in raw material, food products and the like. Another potent cause of war has been the lack of understanding between the races, peoples and nation. Any addition to the transportation and communication facilities of the world should operate to improve the distribution of resources and likewise lessen the causes of misunderstandings between peoples and thus lessen the causes of warfare. Any limitation, therefore, placed upon commercial aeronautical would have the effect of limiting a means of transportation and communication between different parts of the same state and between different states. It seems inconceivable that any limitation should be imposed upon commercial aeronautics unless it were with the avowed object of thereby limiting the air power of a state and thus decreasing the liability of war. Commercial aeronautics with its attendant development of an aeronautical industry and a personnel skilled in the manufacture, operation, and the maintenance of aircraft does furnish a basis of air power. The development of commercial aeronautics and the develop-

ment of a nation's air power are inseparable.

5. Speaking broadly, all aircraft will be of some military value no matter what restrictions may be placed upon their character. Some can probably be converted with but few changes into military aircraft; others can be designed so that with major or minor alterations, or even with none at all, they can be employed for military purposes. As matter of fact, the uses of aircraft in war are many. During the World War highly specialized types were designed for special uses. Military aircraft have likewise been developed to a degree of perfection not yet reached in commercial aircraft. It is quite reasonable to suppose that similar development will take place in commercial aircraft, that they too will be especially designed for the uses to be made of them, and that they may depart quite radically from the military types used in the World War.

In military aircraft as a rule a premium is placed upon performance. Considerations of initial cost, of cost of operation and of maintenance are largely disregarded. The safety and convenience of the operators and passengers are considered only as these affect their ability to perform their military duties. If, as seems evident, commercial aircraft must be specially designed for the service they are to perform in order to have a chance of being financially successful, any effort to provide for their conversion into military craft will introduce complications which will increase the cost of production and operation. This may itself automatically act as a limitation, for business enterprises will not be willing to have such conditions imposed unless they are compensated in some way for the extra cost.

Heavier-than-Air.

6. The war value of an aeroplane may be said to lie in a combination of two or more of the following characteristics:

- (a) its suitability for offensive and defensive equipment.
- (b) its radius of action
- (c) its speed
- (d) its carrying capacity
- (e) the height it can attain

It is not desirable to go too deeply into technical matters in this report. The Committee wishes, however, to point out that the price value of aircraft is at present intimately bound up with the general characteristics which make up the value of the airplane in war. The last four of the characteristics enumerated above are dependent upon the relation between the amount of fuel carried, the horsepower of the engine, the lifting surface and the total weight. The Committee is of the opinion that formulae could be evolved defining the inter-relationship of these factors in such a way as to limit the war value of the machine built in conformity therewith. It is more difficult to ensure that war equipment shall not be mented in a commercial aeroplane. In this matter the committee is of the opinion that definite rules cannot be laid down.

Radius of action is of high commercial value. A reliable air service from Europe to America in say, 24 hours should prove a highly profitable undertaking. Again, in countries where there is perhaps the greatest scope for the development of air-ways, countries of great deserts for example, radius of action is essential. Speed is plainly the characteristic on which aircraft rely to gain advantage in their competition with other means of transportation. It is not yet comfort and security but time saving that will tempt passengers, mails and valuable cargoes from old established services. To limit speed is to stop progress, to throttle aviation in its infancy.

The power of carrying numbers of passengers or quantities of goods is of obvious commercial value and even the attainment of considerable heights may eventually be a definite requirement to enable aircraft to take advantage of favorable high velocity prevailing winds.

The factors which comprise "military" performance have therefore a high commercial value, and it is the opinion of this Committee that any limitation of the character of civil and commercial aircraft must hinder the natural development of aviation; it is probable that restriction as to character will have in fact an even more adverse reaction on the progress of aviation than would be caused by a restriction on numbers.

Method of Limitation.

7. Aircraft can be limited as to number and character by an agreement arbitrarily fixing a maximum number for each nation that will not be exceeded any by imposing technical restrictions in such a way as to limit performance.

8. The difference in organic law as between nations will prevent a single system of limitation being of universal application. Moreover, the rules or formulae whereby alone the character of civil and commercial aircraft can be limited must be detailed, and stringent. At the same time, they will be easy to evade, and infringement will not be obvious to the casual glance. Measurements of horsepower, supporting surface, fuel capacity, and weight will be necessary if security against evasion is to be ensured by any other means than by trusting to the good faith of the contracting parties. No state could consent to having the nationals of another power continually inspecting all of its manufacturing plants in order to ascertain whether the limitations it imposed were being enforced.

All these points received the closest of consideration with reference to the limitation of Germany's air-power and the matter is so complicated that the final drafting of the technical rules has not yet been completed. But taking rules

as drafted and even assuming continuous inspection of a most stringent character, it appears that there are still loopholes for evasion. *No rules can prevent aircraft being designed in peace to permit of the ready installment of larger tanks in war;* engines can be made inter-changeable enabling one of higher power to be rapidly installed; even carrying surfaces can be increased by the standardization and it is not impossible to conceive of civil and commercial aircraft being designed with a view to ultimate war requirements.

9. For the above reason, the Committee is agreed that in the present stage of development of aviation a universal limitation by formulae of the character of commercial aircraft is impracticable.

Question of Subsidy.

10. Without expressing an opinion as to the desirability of abolishing subsidies for the encouragement of commercial aviation, the Committee points out that such subsidies, direct or indirect, can have a great influence on the character and number of commercial aircraft in relation to their war value. In fact, subsidies will tend to decrease the natural divergence between military and commercial aircraft and render the latter more readily adaptable to war uses. It is necessary, however, to add that indirect subsidies or other encouragement are most difficult to prevent, and even when acting in good faith governments of different nations will place different interpretations on such encouragement.

The question whether subsidies are granted or not will have great bearing upon development of commercial aircraft in general, and will affect the future warfare of the nation. This question, therefore, cannot be determined from the point of view solely of the adaptability for war uses.

Civil Aircraft.

11. In this discussion a distinction is drawn between commercial aircraft and civil aircraft the latter will comprise all aircraft operated by a state except those which it operates in connection with its military enterprises. Civil aircraft will, therefore, include any which are state-operated in the customs service, for transporting the mails, the exercise of its police powers, and the like. It is readily apparent that as aircraft operate in a medium where there are no physical barriers, they can compete in some measure with every means of transportation used on land or water. It is therefore possible for much of the transportation requirements of any state to be met by the operation of aircraft. Such aircraft manifestly are not dependent for their being upon their ability to be operated at a profit. The state will decide how best it may enforce its laws, exercise its police power, transport state-owned merchandise or mails, and the means used will be those which are most efficient and most economical from the standpoint of the state itself. The cheapest will not always be the best or the most satisfactory.

The number and the legitimate use of aircraft by any Government for such civil purposes will, therefore, be limited only by the estimate placed upon the service which they can render and by the consent of the people to raising by taxation the amount of money which must be employed for their acquirement, operation, and maintenance.

12. If the civil agencies of a state use aircraft for police or other purposes that are essentially military in character this class of civil aircraft should be discussed under the limitation of military aircraft.

13. The number and character of such civil aircraft can be limited only an arbitrary agreement among the states.

14. It would, again, be utterly impracticable to set up any agency acting under authority other than that of a nation itself to regulate the number of civil aircraft owned and operated by the state.

Lighter-than-Aircraft.

Limitation of number and character.

15. The characteristics of lighter-than-air craft are such that limitation of number and character presents little technical or practical difficulty. It is a peculiarity of these craft that their efficiency is very intimately bound up in their size. Small dirigibles have a war value of their own, but it is limited and they cannot be considered as offensive weapon. For example, a small vessel of this kind cannot attain any considerable height while carrying a useful load, and even if filled with non-inflammable gas its vulnerability to gun fire at the heights it could reach preclude its being utilized for such purposes as aerial bombardment. Only in large sized dirigibles can a useful load be carried to a reasonable military height at a fair speed. Limitation of size is therefore sufficient to ensure that lighter-than-aircraft should be incapable of offensive aerial action. Moreover, the construction of large dirigibles requires large shed accommodation and cannot be kept secret; in this respect they resemble surface warships.

16. It is therefore possible to regulate their numbers and size, by a simple system of international agreement and infringement of such agreement can be readily detected without a detailed system of control.

17. The Committee is agreed that the possibilities of war use for large dirigibles may still exist. Although in the later stages of the world war it appeared as if the defense had the mastered over attack in lighter-than-air craft, the introduction of large craft filled with non-inflammable gas and carrying their own protective aeroplanes may gain permit bombardment being carried out by dirigibles.

This Committee desires, however, to draw attention to the fact that dirigibles become increasingly efficient with increase of size. Any limit which is imposed on the size of commercial dirigibles must shut the door on the possibility of

their development for legitimate civil enterprises.

Limitation of the use of Aircraft.

18. The Committee is of the opinion that it would be useless to attempt to lay down rules that civil and commercial aircraft should not be used in war, as they consider that no nation could deny itself the value for war purposes of their commercial machines provided that they are suitable for any warlike purposes. It is understood that when so used they will be manned by service personnel of the State and carry the proper distinguishing marks, and will in fact become war aircraft; their use does not therefore require discussion of this part of the Committee report.

19. The use of civil and commercial aircraft in peace is governed by the International Air Convention which amply safeguards a state's sovereignty in the air against abuse.

20. This Convention has already been ratified by Great Britain, France, Japan, Belgium, Greece, Portugal, Serbia and Slovene State and Siam. It will at a very near date come into force for these various Powers and later for the other signatory States and also non-signatory Powers who desire to adhere to it.

21. The Committee is aware, however, that for certain reasons the United States and Italy have not yet announced their adherence to this Convention. The Committee, therefore, suggests, for the consideration of the Sub-Committee on Program and Procedure, that a Convention covering the different phases of aerial navigation and based upon the one mentioned above could be drawn up at this Conference to which the assent of all powers represented could be given. The Committee further believes that this is most desirable.

Summary of Conclusions.
Civil and Commercial Aircraft.

22. This Committee understands that the purposes of this Conference is to promote peace and to remove the causes of warfare. It must be understood distinctly that if the Conference concluded to limit the development of commercial aircraft in order to regard the development of air power, the immediate result will be the retarded development of means of transportation and communication which will itself, if unrestricted, largely act to bring about the same result, the removal of some of the causes of warfare.

23. This Committee is unanimously of the opinion that in the present state of development of aeronautics there is a technical possibility of the limitation of numbers, character and use of civil and commercial aircraft with regard to their utilization in war; they are, however, agreed that such limitation of numbers and especially character is not practicable, except in the case of lighter-than-aircraft of above a certain displacement.

24. As regards the desirability of limitations the Committee has touched on those factors which must be understood before arriving at a decision. It feels it to be a duty to lay great stress upon the following fact which will have a decided bearing upon any determination of the proper policy to be adopted; any limitation as to number and character of civil and commercial aircraft, heavier-than-air or lighter-than-air, which is efficacious to hinder their utility for war purposes, must interfere disastrously with the natural development of aeronautics for legitimate civil and commercial enterprises. To limit the science of aeronautics in its present stage is to shut the door on progress. It is for the Conference to decide whether the limitations which can with difficulty be devised and imposed are to be adopted at such cost.

(ハ) 次ニ議長ハ特別委員ノ作製セル航空兵力現狀表ヲ配布シ之ニ對スル意見ヲ求ム

(ニ) 右ニ對シ小修正アリタル後別紙第二ノ通ニ決定然シテ各國委員ハ同表二通ノ配布ヲ受ケ一通ニハ千九百二十一年十月一日現在ノ實數他ノ一通ニハ既定計畫定數及定員數ヲ記入スルコトトス

HEAVIER-THAN-AIR.

Active and Immediate Reserve Aircraft-Service Types.

TYPES OF PLANES.						PERSONNEL.			
Classification of United in which Aircraft or Personnel are maintained.		CHASSE (Pursuitor or Combat)	BOMBING & TORPEDO		OBSERVATION. Spotting, Photographing, Artillery Control Infantry, Contact patrol.	Long Distance Observation or Scouting.	ACTIVE.		
			Day	Night			Pilots	Non-Flying	Total.
Full Strength.	HOME.						HOME		
SQUADRONS.	ABROAD						ABROAD		
Cadre or other part.	HOME						TOTAL		
Strength Squadrons.	ABROAD								
Headquarters, Schools Training Establishments.	HOME								
	ABROAD								
OTHER STATE OWNED.	HOME								
Organisations.	ABROAD								
TOTAL.	HOME								
	ABROAD								

LIGHT-THAN-AIR.

Active and Immediate Reserve Aircraft-Servicemen Types.

	RIGIDS	SEMI AND NON-RIGIDS	KITE BALLOONS
ACTIVE			
RESERVE			
TOTAL			

PERSONNEL.			
	ACTIVE.		
	Pilots	Non-Flying	Total
HOME			
ABROAD			
TOTAL			

DURATION OF SERVICE.

COUNTRY	Method of Enlisting	PILOT		Non-Flying
		Off	N. C. O.	
FRANCE				
G. BRITAIN				
JAPAN				
ITALY				
U.S.A.				

戦時法規
委員会ニ
對スル回
答

- (ホ) 次ニ議長ハ戦時法規委員会ノ諮詢ニ係ル航空機臨檢拿捕能否問題ニ對スル回答案(米國案)ヲ附議ス
- (ハ) 右ニ對シ日本委員ハ第四項ノ艦艇カ船舶ヲ港灣ニ回航セシメ然ル後臨檢スルノ方法ハ單ニ歐洲戰爭中各國力便宜實施セルトコロニシテ今猶專門家間ニ於テ其ノ是非ニ就キ研究中ノ問題ナリ
- 故ニ斯クノ如キ法律上未決ノ場合ニ迄本分科會トシテ立入リ研究スルノ必要ナカルヘシト述フ
- (ト) 右日本委員ノ所說ニ對シ各國委員同意シ「若シ右ノ方法ニシテ戰時法規上正當ト認メラルルニ至リタル場合ニハ航空機モ亦「タ」ナル句ヲ挿入スルコトナリ結局右回答案ハ本章第二節第八款所說ノ通りニ決定
- (チ) 次ニ議長ハ軍用航空機制限問題ニ對シ米國委員ノ起草セル決議案草案(別紙第四)ヲ示シ之ヲ原案トシテ審議スルノ可否ニ就キ意見ヲ求ム

軍用航空
機

SECRET CONFIDENTIAL.

SUBJECT: Limitation as to numbers of Military Aircraft, or strength of the Military Aviation Forces.

(A) Heavier-than-air.

QUESTION I: Is it possible to limit the number of military aircraft, or strength of the military aviation forces?

ANSWER: Yes, by international agreement.

QUESTION II: What methods may be employed?

ANSWER: The following methods may be employed;

- 1st. The limitation of the total amount of military aircraft.
- 2nd. The limitation of the total amount of horsepower for military aircraft.
- 3rd. The limitation of the total lift tonnage for military aircraft.
- 4th. The limitation of personnel for military aircraft.

5th. The limitation of military aircraft budgets.

QUESTION III: Is the limitation of military aircraft practicable?

ANSWER: As related to international control, it is not practicable.

COMMENT: The four methods of limitation suggested might be applied singly or in combination. Owing to the varying administrative methods of different nations of handling aircraft of war, it will, however, from the standpoint of international agreement be impossible to distinguish between naval aircraft of war and army aircraft of war.

Limitation of the number of aircraft is the most obvious method of limiting the strength of the aviation force, but in attempting to apply this method the question of size and type at once arises. It might be necessary to limit the maximum wing surface permitted to a single aircraft or it might be necessary to prescribe the number of aircraft in each of the type groups, such as combat planes, bombing planes, etc. The question of definition of type presents great difficulty. Also, in order to make an effective limitation of the numbers of military aircraft to be maintained in peace time by the nation, it will be necessary to have a detailed understanding on the following points:

- (1) On the number actually in use by original aerial units;
- (2) On the number held in reserve;
- (3) On the proportion of spare parts.
- (4) On the replacement of planes crashed, worn out, or replaced by later models. On the case of obsolete and other planes that are replaced by other models, it would be necessary to enter into an agreement regarding the disposal of planes so replaced. Otherwise it would be possible to build up an unlimited war reserve merely by classifying the planes so held as obsolete.

(5) Steps would have to be taken to prevent obsolete or other replaced war planes from being converted into commercial planes or planes used by the civil government. Otherwise, an unlimited war reserve of this class of planes might be built up.

The second method of limitation—limitation of total horsepower—may apply to :

- (1) Horsepower in assembled planes.
- (2) Horsepower in assembled engines.
- (3) Horsepower in assembled engines plus potential horsepower in engine parts not assembled.

The more inclusive the term is made the greater will be the difficulty of administrative control. There is the further obstacle to effective limitation in the adaptability of commercial engines to use in aircraft in war.

The third method of limitation—limitation of total lift tonnage—may apply to :

- (1) Total lift tonnage in assembled planes.
- (2) Total lift tonnage in assembled planes plus potential lift tonnage in parts of planes not assembled.

The more inclusive the term is made the greater will be the difficulty of administrative control. There is the further obstacle to effective limitation in the adaptability of commercial engines and commercial aircraft.

The fourth method of limitation—the limitation of total organized aircraft-of-war personnel. It seems impossible to limit the unorganized personnel capable of being usefully incorporated in the organized force. This method would therefore prove ineffective.

The fifth method of limitation—limitation by means of limiting the budget and thereby controlling the amount of money that may be expended annually for aviation—seems simple in theory, but it is difficult of application. The various

methods of distributing budgets for material under different sub-heads makes it impracticable to determine or compare the actual sums expended exclusively for aircraft.

Of the five methods of limitation, the limitation by lift tonnage appears to be the most acceptable, but to make this or any other method effective it would be necessary to organize a system of international inspections. Any system of international inspection would be almost certain to arouse jilkeeling and would tend rather to cause friction rather than to insure harmony and good feeling between friendly power. Furthermore, a limitation of the military aviation forces would not effect a limitation on the air power of a nation unless a limitation were also imposed on its commercial aviation.

(B) Lighter-than-air.

QUESTION I : Is it possible to limit the number of military aircraft or strength of the military aviation forces ?

ANSWER : Yes, by International agreement.

QUESTION II : What methods may be employed ?

ANSWER : The following methods may be employed :

- 1st. The limitation of the number of military aircraft .
- 2nd. The limitation of the total amount of horsepower for military aircraft.
- 3rd. The limitation of the total lift tonnage for military aircraft.
- 4th. The limitation of personnel for military aircraft.
- 5th. The limitation of military aircraft budgets.

QUESTION III : Is the limitation of military aircraft practicable ?

ANSWER : It is not practicable without also limiting commercial aircraft.

COMMENT: Of the five methods of limitation, the limit by lift tonnage appears to be the most effective. But such a limitation of lighter-than-air aviation forces would not affect a limitation on this kind of air power of a nation unless a limitation were also imposed on its lighter-than-air commercial activities. The line of demarkation between the large commercial airship and the military airship is very slight.

A commercial rigid airship would require little, if any, alteration in order to convert it to military purposes. It is possible that large rigid airships will be of a value equal to that of heavier-than-air craft in advancing the peaceful projects of transportation; as has already been explained by the Committee, any limitation of commercial aircraft would be undesirable.

(リ) 右ニ對シ英國委員ハ本決議案ハ民用航空機制限問題ニ對スルモノト同様ノ形式ニ依ラレ度米國案ハ本分科會ノ決議案トシテハ簡單ニ過キ要ヲ盡ササルモノアリト信ス故ニ各國委員ハ詳細ナル意見ヲ提出シ「シャミエー」大佐及「ビツカム」少佐ヲ再起草委員ニ指定シ右各國意見ヲ取纏メ新ニ草案ヲ作成スルコトニ致シ度ト述ヘ可決

航空機ニ
關スル戰
時法規

(ヌ) 次ニ議長ハ戰時法規専門分科會ヨリ新ニ交付ヲ受ケタル米國諮問委員會起草航空機ニ關スル戰時法規上ノ諸問題ヲ列舉セル書類(第二節第七款)ヲ配布シ之ニ對スル意見ヲ求ム

(ル) 英國委員ハ右ノ諸問題ハ本分科會ノ權限外ニ屬スルモノト信スルノミナラス將來極メテ重要ナル議案ナルヲ以テ各國各々充分ニ研究シタル後他日更ニ國際法並航空兩專門家ヨリ成ル聯合會議ヲ開催シ審議スルヲ至當ト認ムル旨ヲ述ヘ各國委員大體之ニ贊ス

三、正午閉會

第九項 第九回航空專門會

一、大正十年十二月二十三日午前十時三十分汎米會館ニ於テ開催

列席者各國委員全部

二、會議經過

軍用航空
機報告案

(イ) 特別委員「シャミエー」大佐及「ビツカム」少佐ノ起案セル軍用航空機制限問題決議報告案ニ付審議ヲ開始ス
(ロ) 若干字句ノ小修正ヲナシ日英米佛四ヶ國委員ハ原案(別紙)ニ同意セルカ伊國委員ハ結論ノ項ニ於テ今日直ニ同意シ難キ點アリ熟考ノ餘裕ヲ與ヘラレ度旨ヲ述フ

(ハ) 依テ議長ハ其ノ審議ヲ次回ニ延期スヘキ旨ヲ宣ス

三、正午閉會次回十二月二十七日開催ノ豫定

Military Aircraft.

Note: In the part of the report which follows the word "Military" is used in its widest sense to denote "pertaining to the fighting services whether naval, military or air."

26:

Preliminary Remarks.

The Committee agreed that before entering upon a discussion of the possible limitation of the numbers of military aircraft, it was desirable that the present relative air strength of the nations represented should be ascertained and tabulated in a simple form designed to facilitate comparison between them. The results of this investigation are tabulated in appendices.....attached to this report. It is remarked that these forms afforded a guide to the relative military air strength at the present day, it is impracticable to present a complete estimate of a nation's air power, since air power is (as has already been shown) intimately bound up in factors other than the military establishments. Differences in organization and administration of the various national aerial forces are a further obstacle to direct comparison in detail; these factors must not be forgotten when studying the statement presented and must be kept in the foreground of all discussions as to

the possibility of limitation.

27 :

As to Number.

The limitation of the number of military aircraft presents from one point of view less difficulty than the similar problem in the case of commercial aircraft. It is obvious that if a limitation on the number of military aircraft is agreed upon between nations, it can be imposed by a state without that interference with the liberty of citizens which complicates the question of aircraft devoted to commercial pursuits. But when the details of such an agreement are considered, it will be found a matter of great difficulty to find a reasonable basis on which the allotment of relative strengths can be made. For example :—

(I) The "status quo" cannot serve as a starting point, since the statement of development of air services differs widely in the case of the various powers (see appendices), and in no case can these services be considered as complete.

(II) The size of a nation's navy and army will influence the basis, in so far as aircraft are essential auxiliaries to those services.

(III) National policy will differ as between nations ; some nations, for example, will wish to have large air forces for coast defense, where other prefer to trust to older methods. Development on the lines of the substitution of air forces for other forms of force are likely to be considerable.

(IV) The potentialities of air forces in policing and garrisoning semi-civilized or uncivilized countries are as yet only partially realized. The number of aircraft required for such duties will vary with the size and nature of the territories to be patrolled and with the value placed on their services by different nations.

(V) The geographical positions and peculiarities of a state, the situation and strength of its possible enemies, and

the nature of a possible attack must influence the number of aircraft it will desire to maintain.

(VI) Different terms of service for personnel will influence the effectiveness of air services and the size of the reserve.

(VII) The state of development or possibilities for civil aeronautics will have, as has been shown above, a direct bearing on the number of military aircraft which it may be desirable for a state to maintain.

The problem of finding a suitable ratio between the air forces of various powers is thus at the present time almost insuperable.

28 :

As to the Character.

But even should it be possible to fix the ratio, such a limitation would be of little value without some limit as to the character of the aircraft. When the question of limitation of naval armaments was considered by the Conference it was found necessary to limit the displacement of individual ships as well as the total tonnage. In the absence of similar provision the limitation of numbers of aircraft would only result in competitive building of aircraft of greater and greater power and size. The methods of limitation must therefore attempt to legislate for both number and character.

Heavier-than-Air.

Methods of Limitation.

29. The following methods may be employed :

- 1st. The limitation of the number of military aircraft.
- 2nd. The limitation of the amount of horsepower for military aircraft.
- 3rd. The limitation of the lift tonnage for military aircraft.

41b. The limitation of personnel for military aircraft.

5th. The limitation of military aircraft budgets.

These five methods may be applied in combination or singly and are considered in detail below :—

30. Limitation of the number of aircraft is the most obvious method of limiting the strength of the aviation forces, but in attempting to apply this method the question of size and type at once arises. It might be necessary to limit the maximum wing surface permitted to a single aircraft, or it might be necessary to prescribe the number of aircraft in each of the type groups, such as combat planes, bombing planes, etc. This question of definition of type presents great difficulty. In order to make an effective limitations of the numbers of military aircraft to be maintained in peace time by any nation, it will be necessary to have a detailed understanding on the following points :

- (1) On the number and types actually in use by organized aerial units.
- (2) On the number and type held in reserve.
- (3) On the number and type of engines held in reserve.
- (4) On the replacement of planes crashed, worn out, or replaced by later models.

In the case of obsolete and other planes that are replaced by other models it would be necessary to enter into an agreement regarding the disposal of planes so replaced. Otherwise, it would be possible to build up an unlimited war reserve merely by classifying the planes so held as obsolete, or by converting them into civil or commercial planes.

- (5) On the limitation of the adoption of new and more powerful types.

All these points will present great difficulty in an age when aircraft can become obsolete in a few months, and when their nature is such that was wastage may be as high as 100% *per month*.

31. The second method of limitation, limitation of horsepower, may apply to ;

- (1) Total horsepower in assembled planes.
- (2) Total horsepower in assembled engines.
- (3) Horsepower in a single individual plane of a given type.

This can only be based on the cubic capacity of the engines : there will be no guarantee that a nation has not discovered a secret which will enable greater horsepower to be got out of a limited capacity nor is it reasonable to expect any nation to disclose such secrets. The more detailed the limitation the greater the administrative difficulty of enforcement particularly under present conditions when administrative methods are so widely different, and as pointed out in the first part of the report, any enforcement to be effectual, would entail such detailed inspection by a foreign commission as to be intolerable to any nation.

32. The third method of limitation, limitation of lift tonnage, may apply to :

- (1) Total lift tonnage in assembled planes.
- (2) Total lift tonnage in all planes assembled or not assembled.
- (3) Lift tonnage of a single individual plane of a given type.

Any method must be presumably based on wing area and horsepower. It has been mentioned that the actual horsepower may be unknown and it is likewise conceivable that a nation may discover a wing shape of extreme lifting efficiency and neglect to disclose the fact. Limitation of lift tonnage may therefore be wholly illusory and the remarks as to inspection made in the last paragraph apply to this method also.

33. The fourth method of limitation, whether if the total of organized personnel for war aircraft, or only of

pilots in the permanent military establishment, fails by reason of the difference in organization between different states. A nation which has a separate air service has to include in its organized personnel, those employed in recruiting, supply transport, administrative headquarters, etc., etc. In the case of nations whose air forces are contained in their naval and military forces, supply, etc., personnel are included in naval and military establishments; a fair comparison cannot therefore be made. Moreover, the difference in terms of service, long or short, voluntary service or conscription, must introduce incalculable factors which directly affect the efficiency of organized air forces and the size and efficiency of the reserve.

34. The fifth method of limitation, limitation by means of limiting the budget and thereby controlling the amount of money that may be expended annually for aviation, seems simple in theory but it is difficult of application. The various methods of distributing budgets for material under different sub-heads make it impracticable to determine or compare the actual sums expended exclusively for aircraft, and the question is at present further complicated by the factor of the relative purchasing power of the currency of various nations.

35. Of the five methods of limitation, limitation by lift tonnage or horsepower appears to present least objection, but to make these or any other methods effective, it would be necessary, as previously pointed out, to organize a system of international inspections. Any system of international inspection would be almost certain to arouse ill feeling and would tend to cause friction rather than to insure harmony and good feeling between friendly powers.

Impracticability of limitation of number and character.

36. Objections in detail to each suggested method of limitation have been advanced above; there is one insuperable objection which is common to every method, namely the close relationship which at present exists between civil and com-

mercial aeronautics and air power. Unless civil and commercial aeronautics are strictly limited, and it has been shown in the early part of this report that it is not practicable to limit them a nation desiring air power in excess of the limit imposed or agreed to will develop its civil and commercial aeronautics to any extent desired.

Granted a flourishing aeronautical industry, the number of the present type of perishable military aeroplanes active on any given date is only one of the elements of air power. During the war a single American firm contracted to deliver *100 aircraft a day*, and the output of engines can be organized on a similar scale. A nation's air power can thus be multiplied not only by the actual number of civil and commercial aircraft in use but also by the capacity of the industry to turn to the manufacture of military aircraft in large quantities. Limitation of the number of horsepower and lift tonnage would under such conditions prove illusory. This commercial industry will further provide a great potential reserve of pilots and skilled personnel and will thus discount to a great extent any limitation of numbers of the personnel of military aviation.

37. It is the opinion of this Committee that the limitation of military air power (as regards heavier-than-air craft) is not practicable at the present time. Their reasons for this decision are as follows:

- (I) The difficulty of finding a basis for the proportion of aircraft to be allotted to the various nations.
- (II) The difficulty of devising technical method to impose such limitation.
- (III) The difficulty of enforcing such methods.
- (IV) The interdependence between air power and a commercial aircraft industry which it is not practicable to limit.

Lighter-than-air craft.

38. Many of the remarks already made apply to lighter-than-air craft but, as in the case of commercial aircraft of this nature, limitation is both possible and practicable. It is unnecessary to recapitulate the argument that the military value of a dirigible is dependent on its size, and the size of dirigibles and the number maintained can be limited by agreement of a few simple rules. Infraction of such rules can be rapidly ascertained without detailed inspection. But such a limitation of lighter-than-air aviation forces would not effect a limitation of this kind of air power of a nation unless a limitation were also imposed on its lighter-than-air commercial activities. The lines of demarkation between the large commercial airship and the military airship is very slight, and a commercial dirigible would require little, if any alteration in order to adapt it to military purposes. The objections to the limitation of the number or character of commercial lighter-than-air craft have already been remarked on.

The question of the use of military aircraft.

39. It is necessary in the interests of humanity and to lessen the chances of international friction that the rules which should govern the use of aircraft in war should be codified and be made the subject of international agreement.

40. The matter has been considered by this Committee in connection with a draft code of "Rules for aircraft in war" submitted for remarks by the Committee on the Laws of War. The subject appears to the Committee to be one of extreme importance and one which raises far reaching problems, legal, political, commercial and military;

It requires, therefore, exhaustive discussion by a single committee in which experts on all these issues are assembled.

The representatives of the United States and Japan on this Committee are prepared to discuss the rules submitted from a technical point of view as provided for in the agenda under paragraph on limitation of new types of military

arms, but the Representatives of Great Britain, France, and Italy are not so prepared. They state that the time between receipt of the agenda for the Conference and their date of sailing has not permitted that exhaustive discussion of the subject that would enable them to advance a national viewpoint on a matter which affects so many and varied interests. In some cases the national policy has not yet been determined.

41. This Committee recommends, therefore, that the question of the rules for aircraft in war be not considered at a Conference in which all the members are not prepared to discuss so large a subject, but that the matter be postponed to a further conference which it is recommended be assembled for the purpose at a date and place to be agreed through diplomatic channels.

Summary of Conclusions arrived at by the Committee on Number, Character, and use of Aircraft.

42. The Committee are agreed that among the more important elements which influence the power that a nation may exert by means of aircraft are the following:

- (1) The adaptability of its people to aeronautics.
- (2) Geographic location and characteristics of the territory occupied by the nation and its dependents.
- (3) The ability to produce and maintain aircraft and accessories.
- (4) The amount and character of aeronautical activity outside the military establishments, such as commercial and civil aeronautical activities, and sport and pleasure flying.
- (5) The size and efficiency of its air establishment for military purposes consisting of (a) the active establishment including permanent headquarters, bureaus, squadrons, schools, technical establishments, depots of material and personnel, etc., (b) the reserve establishment including organized and unorganized reserve personnel and war reserve of material.

43.

The adaptability of a nation to aeronautics.

(1) Interest of the general public in aeronautics seems to be inherent in some nations ; in others it is dormant or almost lacking. The confidence of a people in aeronautics in general is undoubtedly a factor worthy of serious consideration when estimating the air power of that country. It is possible that a far-seeing Government may stimulate the interest of its general public in aeronautics by exhibitions, general educational measures, and by the encouragement in a financial way of individuals already interested, and thus increase the adaptability of its people to aeronautics.

44. *Geographic location and characteristics of the territory occupied by the nation and its dependencies.*

(2) This may be looked on as clearly akin to

(1). The physical characteristics of a country will have a considerable influence on the attitude taken by its inhabitants toward aviation. It is obvious that while government action may improve the natural characteristics of a country to a certain degree, by making aerodromes, etc., it is not possible for any limitation of such action to be made except by limiting the total amount by the nation on aviation, a method which has already been shown to be largely ineffective.

45.

The ability to produce and maintain aircraft and accessories.

(3) The maximum aeronautical industry possible for a nation to build up under the ideal conditions is determined by (1) the extent to which manufacturing in general is carried on ; (2) by the character of articles manufactured ; (3) by the manufacturing methods in general, that is, whether articles are manufactured by machinery or by hand ; (4) the supply and availability of essential raw materials. In the manufacture of many articles the raw materials used and the manufacturing methods are similar to those employed in the manufacture of aircraft and accessories. The amount of this class of manufacturing carried on in any country is an essential factor in estimating the ability of a nation to produce

aircraft.

The ability to expand an existing aeronautical industry rapidly enough to meet war conditions is one of the most important elements of air power. This may be estimated by (1) the number of individuals skilled in the manufacture of aircraft and accessories ; (2) the number of individuals whose training in industries similar to the aeronautical industry forms a basis for learning readily and rapidly the special problems encountered in the manufacture of aircraft and accessories ; (3) the size and condition of the existing aeronautical industries and the size and number of manufacturing concerns that can readily be converted to the manufacture of aircraft and accessories ; (4) the existence of a definite program previously determined upon and the extent to which orders have been previously placed in anticipation of an emergency with a consequent perfection of plans ; (5) the amount and state of availability of the essential raw materials ; (6) the quantity of available jigs, tools, dies and production drawings for going into quantity production of standard equipment.

46. (4) The amount and character of aeronautical activity ? outside the military establishment has been exhaustively discussed under the Limitation of Civil and Commercial Aircraft. It has been shown that this is intimately bound up with (1), (2) and (3), above, and that, with the exception of lighter-than-air craft of above a certain size, it is not practicable to limit it except perhaps by limiting the amount of subsidies to commercial aviation, a method which has been shown to be difficult of application and to be otherwise objectionable. It has also been shown that the limitation of lighter-than-air craft would have a disastrous effect on aviation.

47.

Existing establishment of aircraft used for military purposes and the reserve.

(5) The size of the organized reserve will depend upon the size of the military establishment and the rate at which

members of the military establishment are trained and returned to civil pursuits. Any reduction in the permanent peacetime establishment will carry with it a consequent reduction in organized and trained reserves. There is, however, a type of personnel where civil pursuits fit them for immediate service in the air establishment. This class is made up by those engaged in commercial and civil aeronautics and industrial pursuits which require the same trades and basic knowledge and experience as is required in the operation and maintenance of military aircraft. This class will not be seriously affected by any change in the military establishment.

48. Technical considerations have led the Committee to the conclusion that the limitation of the 5th element, namely, the size and efficiency of peacetime air establishment for military purposes (including the active establishment and the organized reserve), although theoretically possible, is not practicable. The Committee also desires to lay stress on the fact that, even if such limitation was practicable, it would not prevent the use of air power in war, but would only operate to give greater comparative importance to the other elements of air power which cannot be limited for the reasons given in the report.

FINAL CONCLUSION

Number and Character.

The Committee is of the opinion that it is not practicable to impose any effective limitations upon the numbers or characteristics of aircraft, either commercial or military, excepting in the single case of lighter-than-air craft.

U.S.

The Committee is of the opinion that the use of aircraft in war should be governed by the rules of warfare as applied to aircraft by a further conference which should be held at a later date.

第十項 第十回航空委員會

一、大正十年十二月二十七日午前十時三十分汎米會館ニ於テ開催

別席者各國委員全部

二、會議經過

- (イ) 議長ハ前回ニ引續キ軍用航空機制限問題決議報告案ノ審議ヲナスヘシト述ヘ伊國委員ノ修正意見ヲ求ム
- (ロ) 伊國委員ハ結論ノ項ニ於テ航空機操縦者數ノ制限ハ可能ニシテ最モ實行的ノ方法ナル旨ヲ明記センコトヲ主張シ他ノ各國委員ハ例令軍隊ニ於テ養成維持スル操縦者ノ數ヲ制限協定スルモ各國ハ軍隊以外ニ於テ之ヲ養成スヘキヲ以テ本案ノ實行のナラサルコト他ノ方法ト同様ナル旨ヲ述ヘ之ニ反對ス
- (ハ) 然レトモ伊國委員ハ極力自說ヲ固守シ結局決議報告ノ末尾ニ伊國意見(別紙)ヲ追加シ伊國委員ノミ之ニ調印スルコトニ決ス

三、正午閉會各國ノ航空兵力現狀表出揃次第次回開催ノ豫定

NOTE: The Italian Representative believes and desires to place on record, that one way in which it would be possible to limit the air power of a nation would be by placing a limit on the number of pilots in the permanent military establishment and consequently agrees with the general reasoning of the report in so far as it is not contrary to this opinion.

第十一項 第十一回航空専門分科會

一、大正十年十二月二十九日午後三時汎米會館ニ於テ開催
列席者各國委員全部

二、會議經過

報告完成

(イ) 議長ハ航空機制限問題ニ對スル決議報告ハ伊佛兩國航空兵力現狀表ノ外全部完成シタルヲ以テ各國委員ノ署名ヲ求ムル旨ヲ述フ

(ロ) 伊國委員ハ署名ニ先チ質問シタキコトアリ即航空機ノ數、性能等ヲ制限スルコトハ事實不可能ナリトノ結論ニ到達シタルヲ以テ各國航空兵力現狀表ハ本報告ニ添付スル必要ナシト思考ス若シ必要アリトセハ其ノ理由ヲ明ニシタキ旨ヲ述フ

(ハ) 右質問ニ對シ各國委員ハ其ノ必要如何ハ今更研究スヘキ時期ニ非ス本表ヲ添付スルコトハ既決ノ事項ナルヲ以テ之ヲ履行セサルヘカラサルモノナルコトヲ交々説明ス

(ニ) 伊國委員ハ本件ニ關シ一應伊國全權ノ意見ヲ確メ度旨ヲ述ハ議長ハ署名ヲ十二月三十日ニ延期スルコトヲ宣ス

三、午後三時三十分閉會ス

第十二項 第十二回航空專門分科會

一、大正十年十二月二十日午後三時汎米會館ニ於テ開催

列席者各國委員全部

二、會議經過

(イ) 議長ハ前回ニ於テ伊國委員カ航空兵力現狀表提出ヲ保留シタルニ對シ更ニ決心如何ヲ質ス

(ロ) 右ニ對シ伊國委員ハ自國全權ノ承認ヲ得タルヲ以テ該表提出ニ同意スル旨ヲ述ヘ然シテ佛伊兩國委員ハ共ニ該表未完成ナルモ之ヲ急キ出來次第提出スル旨ヲ附言ス

(ハ) 此處ニ於テ議長ハ航空制限問題ニ對スル決議報告ニ各國委員ノ署名ヲ求メ米、英、佛、伊、日ノ順序ニ從ヒ之ヲ了ス報告全文左ノ如シ

(ニ) 議長ハ簡單ニ一場ノ挨拶ヲナシ今後更ニ必要ヲ認ムル迄休會スヘキ旨ヲ宣ス

報告署名

三、午後三時三十分閉會

航空機委員會

航空委員報告

航空機ノ數、性質及使用ノ制限ニ關スル報告

研究方法

研究方法

一、航空機委員會ハ航空機ノ數、性質及使用ノ制限ニ付キ審議ヲナスニ當リ一ノ方法ヲ定メ種々ノ之ニ關係アル問題ヲ左ノ順序ニ依リテ研究セリ、(一)商用航空機、(二)民用航空機、(三)軍用航空機、空氣ヨリ重キ航空機及空氣ヨリ輕キ航空機ハ兩者ヲ支配スル幾多ノ條件常ニ相同シキヲ得サルヲ以テ之ヲ分チテ論シタリ之カ(一)數、(二)性質、(三)使用ニ制限ヲ附スルコトヲ得ルヤ否ヤ更ニ其制限ヲ有效ナラシムルタメ適用スヘキ方法ニ付キテ論シタル後其制限ハ之ヲ實施シ得ヘキモノナリヤ否ヤ決スル爲メ努力セリ本委員會ハ航空機ニ關シ何等カ制限ヲ附スルコト望マシキヤ否ヤハ政策上ノ問題ニシテ主タル委員會自體ニ於テ之ヲ決スヘキモノト思惟ス然レトモ本委員會ハ採用スヘキ政策ノ決定ニ重大ナル關係ヲ有スル要素の事實ヲ指摘スルハ本委員會ノ義務ナルヘキヲ思ヒ本報告中ニ之ヲ爲セリ

商用航空機

商用航空機

二、制限ノ方法ハ國ニ依リ種々之ヲ異ニスルコトヲ得一國ノ採用スル確定的方法ハ自國憲法ト一致スルモノナルコトヲ要ス若干ノ國ニ於テハ任意的制限ヲ附スルコトヲ得ヘシ他ノ國ニ於テハ警察力又ハ租稅賦課權ニ依リテ事實的制限ヲ強制スルコトヲ得ヘシ合衆國ニ於テハ議會ノ議決セル法律ハ更ニ成文憲法ニ一致スルコトヲ要スルヲ以テ有效ナル制限手段ヲ設クルコト困難ナルヘシト雖モ必要アル場合ニ於テハ其手段ハ見出し得ラルルモノト信ス

三、本問ノ他ノ點ノ審議ニ入ルニ先チ一國人民ノ所有シ及運用スル商用航空機ノ數及性質ニ制限ヲ附スルニ因リテ生スル效果ニ付キ慎重ナル考察ヲナスヲ可トス先ツ若シ商用航空術ニシテ他ノ一切ノ運輸通信手段ノ發達ヲ支配スル自然ノ法則ニ從フモノトスルナラハ商用航空機ノ數及性質ハ財政上ノ理由ニ依リテ左右セラルヘキナリ此ヲ以テ商用航空ハ營業

トシテハ航空機ノ運用カ實質の利益ヲ齎スニアラサレハ繁榮スルコトナシ右ノ如キ自然ノ法則ノ作用ニ對シ國家ハ商用航空機ノ所有者及運用者ニ對シテ直接又ハ間接ノ補助金ヲ下附スルニ依リテ之ニ干渉スルコトヲ得他ノ方法ヲ以テハ財政上好結果ヲ收ムルコト能ハサルヘキ企業モカクスルニ依リテ之ヲ繼續スルコトヲ得ルニ至ルヘクカクシテ商業上ノ目的ニ使用スル航空機ノ數ハ之ニ因リテ自然ノ法則ノ活動ニ委シタル場合ヨリモ大ナルニ至ルヘシ

將來ニ於テ航空術ノ進步ハ其ノ各部門ニ互リ人文ノ發達ニ如何ナル結果ヲ齎スカハ測リ知ルコト難カラス自然ノ條件ノ適當ナルモノアラハ其ノ進步ノ驚クヘキモノアルヤ必セリ然ルニ今獨斷のナル法律ヲ以テ之ヲ制限セントスルハ譬ヒ其制限力戰爭防止ノ爲メナリト雖モ委員會ハ之ヲ以テ世界進步ノ見地ヨリ見テ不幸ナルコトナリトスルモノナリ

四、商用航空機中競技娛樂又ハ便宜ノ爲ニ所有シ運用スルモノヲ別ニ論スレハ此種航空機ノ數ハ國家ノ富裕ナルコト航空術ニ對スル國民ノ嗜好此種ノ用ニ供スル航空機ノ經費如何ニヨリテ左右セラルルコト甚タ多カルヘシ

五、航空機ノ發達ハ運輸及通信ノ手段ヲ嶄新ナラシメ且之ヲ改善シタリ過去ニ於ケル戰爭ノ原因ハ一ハ世界ノ財源タル原料品食糧品其他ノ分配其宜シキヲ得サリシニアリ他ノ有力ナル原因ハ民族國民及國家ノ間ニ了解ヲ缺ク所アリシニヨル世界ノ運輸通信ノ便益ヲ少シニテモ増加スルコトキハ財源ノ分配ヲ改善スルノ效果アルヘク之ト同時ニ諸國民相互ノ誤解ノ原因ヲ減少シ隨テ戰爭ノ原因ノ減少ニ貢獻スル所アルヘキナリ此ヲ以テ如何ナル制限ト雖モ之ヲ商用航空機ニ加フルトキハ同一國家内ノ異地方間及異國家間ノ運輸及通信ノ手段ニ制限ヲ附スルノ結果トナルヘシ即一國ノ空軍力ヲ制限シ戰爭ノ發生ヲ防止セントスル明白ナル目的ヲ以テスルニアラスンハ商用航空機ニ制限ヲ加ヘントスルカ如キハ豫想シ得ラレサル所ナリ商用航空機ハ其發達ニ伴ヒ航空機製造工業ノ發達製造技術運用術及保存方法ノ熟練ヲ來シ空軍力ノ基礎ノ一部ヲナスモノナリ商用航空機ノ發達ハ國家空軍力トハ離ルヘカラサル關係ニアルモノナリ

六、一般ニ云ヘハ一切ノ航空機ハ其性質ニ如何ナル拘束ヲ加フルトモ或軍事の價值ヲ有スルモノナリ或モノハ極メテ僅少ナル變更ヲ加フルノミニテ軍用航空機タラシムルコトヲ得ヘク又或モノハ多少ノ改造ヲナシ又ハ全然改造ヲナスコトナ

ク軍事的目的ニ之ヲ使用シ得ル様設計セララルコトアリ得ヘシ事實問題トシテ戰時ニ於ケル航空機ノ使用ハ多方面ナリ世界大戰中特殊ノ目的ノタメ極メテ特殊ナル型ノモノ設計セラレタルカ軍用航空機ノ完成亦商用航空機ノ及ハサル處ナリ商用航空機ニ於テモ軍用航空機ト同様發達ヲ遂ケ其固有ノ用途ノタメニ特殊ノ構造ヲ有スルニ到リ世界大戰ニ於テ使用セラレタル軍用航空機トハ根本的ニ其型ヲ異ニスルニ到ルヘシト想像スル充分ナル理由アリ

然ルニ軍用航空機ニ於テハ原則トシテ其模範ヲ特ニ重シシ建造費運用費及維持費ハ大體ニ於テ問題トセラレス運用者及乗客ノ安全及便宜ハ唯該航空機カ軍事の義務ヲ遂行スル能力ニ影響スル範圍内ニ於テ之ヲ考慮ス若シ商用航空機カ其ノ財政的成功ヲ收ムルタメニハ其果スヘキ職分ニ適スル特殊ノ構造ヲ有セサルヘカラストセハ之ヲ軍用ニ變更シ得ル爲メ豫備裝置ヲ施スコトハ徒ニ混雜ヲ來シテ生産費及運用費ヲ増加スルニ至ルヘシ是即自然的ニ制限ノ實ヲ舉クルモノニシテ蓋シ營業者ハ何等カ他ニ特別ノ經費ヲ償ハサルニ非レハカカル條件ヲ甘受セサルヘケレハナリ

空氣ヨリ重キモノ

七、飛行機ノ戰爭ニ於ケル價值ハ左ニ示ス特性ノ二或ハ其以上ヲ結合シタル點ニアリト云フコトヲ得ヘシ

(A) 其攻撃及防守裝置ノ適否

(B) 其行動範圍

(C) 其速度

(D) 積載量

(E) 其到達シ得ヘキ高度

本報告ニ於テ専門的ニ過シル問題ニ入ルハ望ム所ニアラス唯本委員會ハ現在航空機ノ平時ニ於ケル價值ハ戰時ニ於ケル其ノ價值ヲ形成スル一般特性ト密接ナル關係アルコトヲ指摘セムトス上ニ列舉セル特性中最後ノ四者ハ搭載燃料ノ量、發動機ノ馬力、「リフティング、サーフエース」ト總重量トノ關係ニ依リテ左右セラル本委員會ハ此等ノ要素ノ相互關係ヲ

限定スル公式ヲ作り以テ之ニ從ヒテ建造セラレタル機械ノ軍用價值ヲ制限シ得ルモノト信ス戰闘裝置ヲ商用飛機行ニ搭載スルコトノ禁止ヲ保障スルハ更ニ困難ナリ此ノ點ニ於テ本委員會ハ確定的法則ヲ制定スルコトヲ得サルモノト認ム行動範圍ノ如何ハ商業的價值ヲ定ムルニ甚タ重要ナルモノナリ歐洲亞米利加間ヲ例ヘハ二十四時間ヲ以テスル空中輸送ノ信賴シ得ルモノアラハ其ハ大ニ有益ナル事業ナリ更ニ空中路ノ發達範圍ノ極メテ廣大ナル國即チ例ヘハ廣キ沙漠ヲ有スル國ノ如キニ於テハ行フ範圍ハ缺クヘカラサル要素ヲナス速度ハ云フマテナク航空機械カ他ノ運送機關トノ競争ニ優越スル爲メ重大ナル特性ナリ旅客郵便物及高價ナル載價ヲ從來ノ交通機關ヨリ吸收スル所以ハ愉快ニモアラス安全ニモアラス唯時間ヲ節約シ得ルヲ以テナリ此ヲ以テ速度ヲ制限スルコトハ進歩ヲ阻止シ航空事業ヲ成長セサルニ先ツテ殺スモノナリ

旅客又ハ貨物ノ積載量ハ商業的價值ヲ定ムルコト明瞭ニシテ上昇力ノ増大モ結局ハ論議ノ餘地ナキ必要條件タルニ至ルヘシ事實ニ於テ最近ノ實驗ノ成功ニ徴スルトキハ將來航空術ハ特別ノ持續力ヲ有スル發動機ヲ以テ空氣ノ抵抗少ク且ツ大速力ノ順風ヲ利用スル爲メ高空ヲ利用スルニ至ルヘシ

之ヲ以テ之ヲ見レハ軍事的目的ヲ満足スヘキ要素ハ商業的ニモ大ナル價值ヲ有スルモノニシテ本委員會ハ私用及商用航空機ノ性質ニ如何ナル制限ヲナスモ其ハ空中飛行ノ自然的發達ヲ阻止スヘキ性質ニ關スル拘束ハ事實ニ於テ數ニ拘束ヲ設クルヨリ遙ニ悲シムヘキ反動ヲ其進歩ニ來スヘキモノト信ス

制限法

八、航空機ハ各國ニ付キ其ノ最大數ヲ定メ又其ノ行動ヲ制限スルカ爲メノ技術的制限ヲ設ケ以テ其ノ數及性質ノ制限ヲ行フコトヲ得ヘシ

九、各國其ノ構成法ヲ異ニスルニヨリ全世界ニ適用スヘキ單一ノ制限法規ヲ規定スルハ困難ナルヘシ加之私用及商用航空機ノ性質ヲ制限スル公式法則ハ之ヲ詳細ナラシメ且嚴密ナラシムルヲ要ス之ト同時ニ右制限法規ハ之カ脫法ヲ計ルコト

容易ナルノミナラス其違犯ハ之ヲ發見スルコト難カルヘシ協定國ノ信義ニ信賴スル以外他ノ方法ヲ以テ脫法行爲ニ對スル安全ヲ保障セムトセハ馬力、支持面積、燃料搭載量及重量ノ測定ヲ必要トスヘシ然レトモ制限カ實行セラレツツアリヤ否ヤヲ確知スル爲メ自國ノ一切ノ製造工場ヲ間斷ナク他國氏ニ依リテ検査セラルルハ何國ト雖モ應諾シ能ハサル所ナルヘシ

右一切ノ諸點ニ付キ獨逸國ノ空軍力制限ニ關シ最慎重ナル審議ヲ遂ケタルモ該問題ハ複雜セルコト甚タシカリシヲ以テ専門的法規ノ決定草案ハ未タ完成セラルルニ至ラザリキ然レトモ假リニ右法案出來シ且ツ最モ嚴格ニシテ間斷ナキ査檢ヲ行ヘリトスルモ尙未タ脫法シ得ルノ餘地アルカ如シ如何ナル規定ヲ設クルモ戰時直ニ大油槽ヲ裝置シ得ル如ク平時ニ於テ航空機ノ設計ヲナスコトヲ防クコトヲ得ス機關ハ之ヲ取換得ル様ニ造リ大馬力ノモノヲ迅速ニ裝置スルコトヲ得上昇面積スラ翼ノ標準ヲ統一スルコト及其ノ代替及其他ノ方法ニ依リテ之ヲ増加スルコトヲ得斯クノ如ク私用及商用航空機ヲ究極ニ於テ軍用ニ供スル目的ヲ以テ建造スルコトハ考ヘ得ルコトナリ

十、以上ノ理由ニ依リ本委員會ハ今日ノ空中飛行ノ發達ノ程度ニ於テハ法ヲ以テ商用航空機ノ性質ニ付キテ世界的ニ制限ヲ行ハントスルハ實際ニ行ヒ得ヘカラサルモノト認ムルニ一致ス

補助金問題

十一、商用航空獎勵ノタメニスル補助金廢止ノ希望スヘキモノナリヤ否ヤニ關シ何等ノ意見ヲ發表スルニ非ルモ本委員會ハ右ノ如キ補助金ハ直接又ハ間接ニ軍用價值トノ關係ニ於テ商用航空機ノ性質及數ニ影響スルコト甚タ大ナルモノアリ得ヘキヲ指摘ス實際上補助金ハ軍用航空機及商用航空機關ノ自然的差異ヲ少ナカラシメ且後者ヲシテ一層戰用ニ供シ得易カラシムル傾向ヲ有ス然リト雖モ茲ニ附言スヘキハ間接補助金又ハ其他ノ獎勵法ハ之ヲ防止スルコト最モ困難ナルモノニシテ假令善意ヲ以テ行動セル場合ニ於テモ諸國政府ハ右ノ如キ獎勵法ニ付キテ各異ナレル解釋ヲ採ルコトアリ得ヘキコト是ナリ

補助金下附ノ有無ハ商用航空機全般ノ發達ニ大ナル關係ヲ有スヘク從ツテ國家將來ノ安否ニ影響ヲ及ホスヘシ故ニ本問題ハ單ニ軍用ニ供シ得ルヤ否ヤノ見地ヨリ之ヲ決スルコトヲ得サルナリ

民用航空機

民用航空機

十二、此審議ニ於テ商用航空機ト民用航空機トノ間ニハ劃然タル區別ヲ設クルニ至レリ後者ハ國家カ其軍事的事業ト關聯シテ運用スルモノヲ除ク一切ノ航空機ニシテ國家ノ運用スルモノヲ含ム此ヲ以テ民用航空機ハ稅關事務、郵便物輸送、警察權ノ行使及其他ノタメ國家ノ運用スル總テノモノヲ含ムモノトス航空機ハ何等ノ物の障礙物モ存セサル空中ニ於テ運用セラルルモノナルヲ以テ或程度マテハ陸上又ハ水上ニ使用セラルル一切ノ運輸機關ト競争スルコトヲ得ヘキハ見易キ理ナリ故ニ如何ナル國ニ於テモ運輸ノ需要ノ多クノモノヲ航空機ニ依ツテ滿スコト可能ナリ右ノ如キ航空機ハ其運用營利ノ如何ニ依リテ左右セララルコトナキヤ明ナリ國家ハ如何ニセハ最ヨク其法規ヲ實施シ警察權ヲ行使シ國家所有ノ商品又ハ郵便物ヲ輸送シ得ヘキカヲ決定スヘク而シテ其使用スル手段ハ國家自體ノ立場ヨリ最モ效果アリ最經濟的ナルモノナルヘシ必スシモ經費ノ最少ナルモノカ常ニ最善又ハ最上ノモノニアラサルヘシ故ニ各國政府カ上ノ如キ公共ノ目的ノタメニ使用スル航空機ノ數及適法ナル用法ノ制限ハカカル航空機ノ用途ニ如何ニ政府カ重キヲオクカ又之カ獲得、運用及維持ノタメ使用スル費用ヲ租稅ニ依リテ徵收スルコトヲ國民カ諾スルヤ否ヤニ依リテノミ決セラルヘシ

十三、アル國ノ民事官憲力性質上軍事警察其他ノ目的ノタメ航空機ヲ使用スルトキハ此種ノ民用航空機ハ軍用航空機制限ノ條下ニ審議スヘキモノトス

十四、右ノ如キ民用航空機ノ數及性質ハ各國家間ノ任意協定ニ依リテノミ之ヲ制限スルコトヲ得

十五、國家ノ權力以外ノ權力ノ下ニ機關ヲ設ケ以テ當該國ノ所有シ運用スル民用航空ノ數ヲ整理セントスルハ到底行ヒ得ヘカラサル所ニ屬スルコト茲ニ再言ス

空氣ヨリ輕キ航空機（數及性質ノ制限）

十六、空氣ヨリ輕キ航空機ハ其數及性質ニ對スル制限ヲ行フニ學術上ニ於テモ實行上ニ於テモ殆ント困難ヲ感セサル如キ特質ヲ有スルモノナリ此種ノ航空機ハ其能率カ形狀ノ大小ニ關係スルコト極メテ密接ナルモノアルコト其一特質ナリトス小形飛行船ハ其自體ニ於テ軍用價值ヲ有スルモ其用途ハ制限セラレ攻撃用ノ武器トシテ之ヲ認ムルコトヲ得ス例ヘハ此種ノ小形飛行船ハ有用ナル積荷ヲナストキハ相當ノ高所ニ達スルヲ得ス且非燃燒性ノ瓦斯ヲ以テ之ヲ充スモ尙其達シ得ヘキ高度ニ於テハ砲火ノ攻撃ヲ蒙リ易キヲ以テ空中砲撃用トシテ之ヲ使用スルコト能ハサルナリ唯大形飛行船ノミ有用ナル積荷ヲナシ相當ノ速度ヲ以テ軍事的ニ適當ナル高度ニ達スルコトヲ得ルナリ此ヲ以テ容積ニ對スル制限ハ空氣ヨリ輕キ航空機ヲシテ空中攻撃戰ヲ行ヒ得サラシムルコトヲ保障スルニ餘リアリ加之大形飛行船ノ建造ハ大ナル格納庫ノ設備ヲ要シ隨ヒテ之カ秘密ヲ保ツコトヲ得ス此點ニ於テ之ハ水上戰艦ニ類似ス

十七、故ニ單一ノ國際的協定ヲ以テ之カ數及容積ヲ規定スルコトヲ得ヘク且右協定ノ違反ハ取締規則詳細ナルモノヲ要セスシテ直ニ之ヲ發見スルコトヲ得ヘシ

十八、本委員會ハ大形飛行船ヲ軍用ニ使用スル可能性ノ未タ存在スルヲ認ム世界大戰ノ後期ニ於テハ空氣ヨリ輕キ航空機ニ對シテハ防禦方法攻撃方法ヲ凌駕セル觀アリト雖モ非燃燒性瓦斯ヲ充填シ庇護用飛行機ヲ搭載スル大形航空船ヲ使用スルニ至レル結果再ヒ飛行船ニ依ル砲撃ヲ可能ナラシムルニ至ルヘシ

然レトモ本委員會ハ飛行船ハ其容積ヲ増スニ因リテ益々其能率ヲ増進スル事實ヲ指摘セント欲ス商用飛行船ノ容積ニ對シ何等カ制限ヲ加フルコトハ其正當ナル民事的企業ノ爲メノ發達ヲ閉塞スルモノナルヤ明ナリ

航空機使用ノ制限

十九、本委員會ハ民用及商用航空機ハ之ヲ戰爭ニ使用スルヲ得サル旨ノ規定ヲ設ケントスルハ徒事ナルヘキコトヲ認ム蓋シ何國ト雖モ其商用機械ニシテ何等カ軍事用ノ目的ニ適當ナラムカ其ノ軍用價值ヲ否定スルヲ得サルヘシト思惟スレハ

ナリ若シ戰爭ノタメニ使用セラルルニ至レハ軍人之ニ搭乘シ正式ノ標識ヲ掲ケ以テ事實上軍用航空機ニ化スヘシ故ニ其ノ使用ノ問題ハ委員會ノ報告ノ此部分ニ述フルノ要ナキモノトス

二〇、平時ニ於ケル民用及商用航空機ノ使用ハ萬國航空條約ニ規定スル所ニシテ以テ一國ノ空中主權ハ其侵犯ニ對シテ充分保護セラレタリ

二十一、右ノ條約ハ英帝國、佛蘭西國、日本國、白耳義國、希臘國、葡萄牙國、「セルブ、クロアチ、スロヴェニア」國及暹羅國ニ依リテ既ニ其批准ヲ了シタリ右ノ諸國間ニ於テ間モナク之カ實施ヲ見ルヘク爾餘ノ調印國及ヒ未タ調印ヲ了セサルモ之ニ加盟センコトヲ希望スル國ニ對シテ追ツテ效力ヲ生スヘシ

二十二、然レトモ本委員會ハ亞米利加合衆國カ或ル理由ニ依リ右ノ條約ニ對スル加盟ヲ未タ明言セルコトヲ了知セリ此ヲ以テ本委員會ハ議題及議事進行委員會ニ對シ上述ノ條約ヲ基礎トシ航空ノ各種方面ニ渡ル條約ニシテ本會議ニ代表セラルタル一切ノ諸國カ之ニ同意シ得ルカ如キモノヲ本會議ニ於テ作成センコトヲ提示シ且ツ本委員會ハ之ヲ以テ最モ希望スヘキモノト信ス

結 論

民用及商用航空機

二十三、本委員會ハ本會議ノ目的トスル所ハ平和ヲ促進シ且戰爭ノ原因ヲ除去スルニアルコトヲ了知ス本會議ニシテ空軍カノ發達ヲ防止スルタメ商用航空機ノ發達ヲ制限スルコトニ決センカ其直接ノ結果ハ運輸通信機關ノ發達ヲ阻害スルコトトナルヘシ然ルニ此運輸通信ノ機關ハ若シ之ニ制限ヲ加フルコトナクハ空軍ヲ制限スルト同結果即チ戰爭原因ノアル者ヲ除去スルモノナルコトヲ明ニセサルヘカラス

二十四、本委員會ハ全會一致ヲ以テ現在ノ航空術ノ發達程度ニ於テ民用及商用航空機ノ數、性質及戰時ニ於ケル利用ニ關聯シテ其使用ヲ制限スルコトハ技術上可能ナルモノト認ム然レトモ右ノ數及特ニ性質ニ關スル制限ハ一定容積以上ノ空

氣ヨリ輕キ航空機ノ場合ノ外之ヲ實行スルコト不可能ナルモノト認ム

二十五、制限ノ希望スヘキコトナリヤ否ヤニ付キ本委員會ハ議決ニ先チ了解ヲ必要トスル諸事項ヲ研究シタリ委員會ハ次ノ事實ヲ高調スルヲ以テ其ノ義務ト信ス蓋シ之レ採用スヘキ政策ノ決定ニ極メテ緊要ナル關係ヲ有スレハナリ即チ民用及商用航空機ヲ空氣ヨリ輕キモノタルト重キモノタルトヲ問ハス其ノ數及性質ニ關シテ戰爭ノタメ之ヲ使用スルコトヲ有效ニ防止シ得ルカ如キ制限ヲナストキハ必ス適法ナル民事及商事ノ事業ノタメニスル航空術ノ自然的發達ヲ妨害スルコト之ナリ現在ノ程度ニ於ケル航空術ノ理論ニ制限ヲ附スルハ恰モ進歩ノ途ヲ閉塞スルニ似タリ右ノ如キ大ナル犠牲ヲ拂ヒテマテモ困難ナル制限法ヲ立案シ強制スヘキヤ否ヤハ本會議(Conference)ノ決スヘキ所ナリ

軍用航空機

註、本報告中軍用(Military)ナル語ハ「海軍、陸軍又ハ空軍タルヲ問ハス戰闘ノ役務ニ屬スルモノ」ヲ指示シ其最廣義ニ之ヲ用ヒタリ

緒 論

二十六、本委員會ハ軍用航空機數ノ制限ニ付キテ審議ヲ始ムルニ先チ本會議ニ代表セラルル各國ノ現空軍力ノ比例ヲ明確ニシ且之カ比較ニ便ナラシムル爲メ同一形式ノ表ヲ作成スルヲ以テ當ヲ得タルモノト認メタリ之カ調査ノ結果ハ本報告ニ添附セル附屬書一、二、三、四、五ニ表トシテ之ヲ示ス(英文報告ノ最後ノ頁參照)右ノ表ハ現今ニ於ケル列國空軍力ノ比例ヲ示ス手引ヲ爲スモノナリト雖モ空軍力ナルモノハ前記ノ如ク軍事施設以外ノ要素ニ依リテ拘束セラルルコト大ナルモノアルカ故ニ之ハ一國空軍力ノ完全ナル比例ヲ示スモノトシテ用フヘキニアラサルナリ更ニ各國ノ航空隊ハ皆其編成及管理ノ方法ヲ異ニスルカ故ニ其詳細ニ亘リテ直接ニ之ヲ比較スルコト能ハス此等ノ要素ハ右ニ舉示セル一覽表ヲ審查スルニ當リテ之ヲ閑却スヘカラス且其制限ノ可能不可能ニ關スル一切ノ審議ニ於テ特ニ之ヲ明白ナラシメ置クコトヲ要ス

數ニ關シテ

二十七、軍用航空機數制限ハ或觀察點ヨリシテ商用航空機ノ場合ニ於ケル制限問題ヨリモ困難ナラス若シ列國カ軍用航空機數ヲ制限スルコトニ同意セハ商用航空機ノ場合ノ如ク國民ノ自由ヲ阻害スルニ因リテ生スル複雜ナル問題ヲ惹起スルコトナクシテ國家ニ依リ其制限ヲ行フコトヲ得ヘキハ明白ナリトス然リト雖モ右ノ如キ制限協定ノ詳細ナル點ニ付キテ審議ヲ爲スニ當リテハ依テ以テ空軍力ノ比例ノ割當ヲナスヘキ理論的根據ヲ求ムルニ付大ナル困難ナル問題ヲ生スヘシ例セハ

(一) 國ノ異ナルニ從ヒ航空軍ノ發達ノ程度大ニ異ナリ(附屬書參照)且如何ナル場合ニ於テモ其航空軍ヲ完全ナルモノト認ムルコトヲ得サルヲ以テ「現狀」ハ之カ出發點タルノ用ヲナスコト能ハス

(二) 航空機カ海軍及陸軍ノ重要ナル補助的兵力ヲナスモノタル以上ハ一國ノ海軍及陸軍ノ兵力ハ之カ根據ニ影響ヲ及ホスヘシ

(三) 國ニ依リテ政策ヲ異ニス例ヘハ或種或國ハ沿岸ノ防禦ノ爲大ナル空軍ヲ欲スヘク之ニ反シテ他ノ國ハ舊式ノ方法ニ信賴スルヲ可トスヘシ他種ノ兵力ヲ代フルニ空軍ヲ以テセムトスル傾向ノ進展ハ重大ナラムトスルカ如シ

(四) 半文明國又ハ非文明國ニ於ケル警察及守備ノ爲メニスル空軍ノ實力ハ未タ單ニ其ノ一部實現セルノミ右ノ職分ヲ盡スタメ必要ナル航空數ハ警備スヘキ地位ノ大小及性質ニ依リ且各國力カ之カ警備ニ對シ拂ヘル尊重ノ程度ニ依リテ異ナルヘシ

(五) 一國ノ地理的位地及特殊ノ狀況、該國ノ假想敵國ノ狀態及勢力、及受クルコトアルヘキ攻撃ノ性質ハ維持セムトスル航空機ノ數ニ影響ヲ及スヘシ

(六) 兵員ノ服役期間ヲ異ニスルコトハ空軍ノ能率及豫備役ノ員數ニ影響スヘシ

(七) 民用航空術ノ發達又ハ其可能性ノ程度ハ前ニ一言セル如ク一國ノ爲メ維持スルコトヲ可トスヘキ軍用航空機ノ數

ニ直接ノ關係ヲ有スベシ

各國間ノ空軍力ニ適當ノ比率ヲ設ケムトスルハ以上ノ如ク困難ニシテ現今ニ於テハ其困難ヲ打破スルコト殆ント不可能ナリ

性質ニ關シテ

二十八、數ノ比率ヲ定ムルコト可能ナリトスルモ航空機ノ性質ニ關シテ一定ノ制限ヲナサシムルハ其制限ハ殆ント無價值ノモノナリ獨ニ本會ニ於テ海軍軍備制限問題ノ審議セララルヤ總噸數ヲ制限セルト同シク單艦ノ排水量ヲモ制限スルノ要アルコトヲ認メラレタリ航空機數ノ制限ニ付キテモ之ト同一ノ規定ヲ缺クトキハ威力及體積ノ大ナル航空機建造ノ競争ヲ齎スニ過キサリヘシ此ヲ以テ制限方法ハ數及性質ノ兩者ニ付キテ規定ヲ設クルノ要アルナリ

空氣ヨリ重キ航空機

制限方法

左ノ方法ヲ用フルコトヲ得

第一、軍用航空機ノ數ノ制限

第二、軍用航空機ノ馬力量ノ制限

第三、軍用航空機ノ揚昇噸數ノ制限

第四、軍用航空機ノ兵員ノ制限

第五、軍用航空機ノ豫算額ノ制限

右五方法ハ之ヲ結合シ又ハ單獨ニ之ヲ適用スルコトヲ得ヘク詳細ニ互リテノ審議ハ以下ニ之ヲ示ス

三十、航空機ノ數ノ制限ハ最モ明白ナル空軍力ノ制限方法ナリト雖モ此方法ヲ適用セントセハ直ニ體積及型ノ問題ヲ生ス同一ノ種類ノ航空機ノ翼ノ面積ノ最大限度ヲ制限スルノ要アルニ至ルヘク或ハ戰闘用飛行機爆彈用飛行機等ノ如キ各同

一型ノ航空機ノ數ヲ明定スルノ要アルニ至ルヘシ此ノ型ノ劃定ノ問題ハ大ナル困難ヲ生セシムルモノナリ平時ニ於テ各國カ維持スヘキ軍用航空機ノ數ノ制限ヲ有效ナラシムル爲メニハ左ノ諸點ノ細微ニ至ルマテ諒解ヲ遂クルノ要アルヘシ

(一) 航空部隊ノ現ニ使用セル數及型

(二) 豫備トシテ保有スル數及型

(三) 豫備トシテ保有スル機關ノ數及型

(四) 破壊、破損又ハ新式ノモノヲ以テ代換シタル飛行機ノ代換

他式ノモノヲ以テ代換シタル舊式其他ノ飛行機ニ就テハ其代換シタル飛行機ノ處分ニ關シテ協定ヲ遂クルノ要アルヘシ然ラスンハ飛行機ヲ單ニ廢用ノ部ヘ編入シ又ハ之ヲ民用若ハ商用飛行機ニ變用スルコトニ由リテ無制限ニ戰時ノ豫備機ヲ建造スルヲ得ルコトトナルヘシ

(五) 新型及從來ヨリモ威力アル型ノ採用ニ對スル制限

航空機カ數ヶ月ナラスシテ廢棄トナリ戰時耗損率月二百「パーセント」ニモ達セントスル現代ニ於テハ右ノ諸點ハ何レモ極メテ難問題タルヘシ

三十一、第二ノ制限方法タル馬力ノ制限ハ左ノモノニ之ヲ適用スヘシ

(一) 集合セル飛行機ノ馬力ノ總計

(二) 集合セル機關ノ馬力ノ總計

(三) 一定ノ型ノ各個ノ飛行機ノ馬力

之ハ獨リ機關ノ容積ノミヲ其基礎トナスコトヲ得然ルニ或國カ一定容積ノモノヨリ從來以上ノ馬力ヲ出シ得ル秘法ヲ未タ發見セストノ保障ナク而モ何國ト雖モ此ノ如キ秘法ヲ發表センコトヲ期待スルハ理ニ合セサル所ナリ制限カ細部ニ涉レハ涉ル程其ノ強制ハ困難ナリ特ニ諸國間ノ管理法ヲ異ニスルコト甚タシキ現在ノ狀態ニ於テ然リ且本報告ノ初メニ之

ヲ指摘セル如ク其ノ強制ヲ有效ナラシメムトセハ外國委員ニ依リ詳細ナル検査ヲ行フヲ必要トナスヘク此ハ何國ト雖モ堪フヘカサル所ナルヘシ

三十二、第三ノ制限方法タル揚昇噸數ノ制限ハ左ノモノニ之ヲ適用スヘシ

(一) 集合セル飛行機ノ總揚昇噸數

(二) 集合シ又ハセサル一切ノ飛行機ノ總揚昇噸數

(三) 一定ノ型ノ各個ノ飛行機ノ揚昇噸數

如何ナル制限方法モ恐ラクハ翼ノ面積及馬力ニ其基礎ヲ置カサルヲ得サルヘシ事實上ノ馬力ノ不明ナルヘキコトハ既ニ之ヲ述ヘタリ之ト同様ニ或國家ニシテ卓越ナル上昇能力ヲ有スル形狀ノ翼ヲ發明シ且其實事ヲ明白ニスルコトヲ拒ムモノアルヘキヲ想像スルコトヲ得之ヲ以テ揚昇噸數ノ制限ハ全然虛妄ノモノナルヘク前節ニ於テ検査ニ關シ述ヘタル所ハ此制限方法ニモ亦適用セラル

三十三、第四ノ制限方法タル軍用航空機兵員ノ全部又ハ編成サレタル航空隊或ハ單ニ常備軍隊ニ於ケル操縦者ノ制限ハ何レモ國ヲ異ニスルニ隨ヒテ其編成法ヲ異ニスルノ理由ニ因リテ成功セス空軍ナル別個ノ軍家ヲ有スル國ニ於テハ其編成隊中ニ新兵募集、兵ノ給養、運輸、司令本部等ニ使用セラルルモノヲ含マシムルヲ要ス其空軍カ海軍、陸軍ノ一部ヲ成ス國ニ於テハ兵ノ給養等ノ爲メノ兵員ハ海軍及陸軍ノ編制中ニ包含セラル故ニ公平ナル比較ヲナスコトヲ得ス加之服役條件ノ差異即其長短、志願兵制、徵兵制ノ別ハ編制セラレタル空軍ノ能率及豫備隊ノ大小及能率ニ直接ノ影響ヲ及ホス無數ノ要素ヲ伴フモノナリ

三十四、第五ノ制限方法タル豫算ニ制限ヲ加フルニ依リ以テ航空ノタメ毎年費消スル金額ヲ取締ル制限ハ理論ニ於テハ簡單ナリト雖モ之カ適用ハ困難ナリ異ナル項目ノ中ニ材料ニ對スル豫算ヲ分配スルノ方法種々アリ精確ニ航空機ノ爲メニ使用スル事實上ノ金額ヲ定メ又ハ之ヲ比較スルカ如キハ實際ニ行ヒ得ヘカラス且問題ハ現今ニ於テハ各國通貨ノ購買力

ノ比例ニヨリ更ニ紛糾ヲ極ムルナリ

三十五、右ノ五個ノ制限方法中揚昇噸數又ハ馬力ノ制限カ障害最僅少ナリ然レトモ右兩者又ハ其他如何ナル方法ト雖モ之ヲ有效ナラシメントセハ前ニ示セルカ如ク國際検査制度ヲ確立スルノ要アリ然レトモ國際検査制度ハ如何ナルモノナリト雖モ必スヤ惡感ヲ惹起セシメ交親國間ノ融和及好感情ヲ保障スルヨリモ寧ロ軋轢ノ原因ヲナスヘシ

數及性質ノ實行不能

三十六、提示セラレタル各制限方法ニ對スル障害ノ詳細ハ既ニ之ヲ述ヘタリ制限方法ノ一切ニ共通ナル打破シ得サル障害一アリ即チ現在民用又ハ商用航空術及空軍力ノ間ニ存在スル密接ナル關係之也民用及商用航空術ヲ嚴ニ制限スルニ非スンハ一國ニシテ其課セラレ又ハ之ニ同意シタル制限ヲ超ユル空軍力ヲ有センコトヲ希望スルニ於テハ其希望スル境界ニ達スルマテ其ノ民用及商用航空術ヲ發達セシムヘク而モ之カ制限ノ實行不能ナルコトハ本報告ノ前半ニ於テ之ヲ示シタルカ如シ盛ンナル航空機製造工場ノ存スル限リ一定時期ニ於テ活動シツツアル破損シ易キ軍用飛行機ノ現在ノ型ノ數ノ如何ハ單ニ空軍力ヲ構成スル一要素タルニ過キス戰時中一亞米利加商店ハ一日ニ百臺ノ航空機ヲ製造スルコトヲ契約シタリ機關ノ產出高ニ於テモ之ト同規模ノ計畫可能ナリ右ノ如ク一國ノ空軍力ハ使用ニ堪フル民用及商用航空機ノ現在數ノミナラス軍用航空機ノ大量建造ニ轉用シ得ル工業力ニ依リテモ亦之ヲ増加セシムルコトヲ得ルナリ

馬力數及揚昇噸數ノ制限ノ如キハ右ノ如キ事情ノ下ニ於テハ虛妄ノコトニ過キサルヘシ更ニ又斯ノ如キ營利的工業ハ操縦者及熟練ナル技術ヲ有スル兵員ノ有力ナル豫備ヲ具ヘ得シメ以テ航空軍隊ノ員數制度ヲ甚シク無效力ナラシムヘシ

三十七、本委員會ノ意見ハ空軍力ノ制限ハ(空氣ヨリ重キ航空機ニ關スル限リ)現在ニ於テハ實行不可能ナリトス此結論ニ至ル理由左ノ如シ

(一) 各國ニ割當ツヘキ航空機ノ比例ノ基礎ヲ求ムルコトノ困難

(二) 此制限ヲ強行スヘキ技術的方法ヲ求ムルコトノ困難

(三) 右ノ如キ方法ヲ實施スルノ困難

(四) 空軍力ト制限不能ナル商用航空機製造工業トノ間ノ相依關係

空氣ヨリ輕キ航空機

三十八、既述ノ所言ノ多クハ之ヲ空氣ヨリ輕キ航空機ニ適用ス然レトモ空氣ヨリ輕キ商用航空機ノ場合ノ如ク其制限ハ可能且實行シ得ヘキモノナリ飛行船ノ軍事的價值ハ其體積ニ依リテ左右セラレ飛行船ノ體積及保持スヘキ數ハ數個ノ簡單ナル法規ヲ認ムルニ依リテ之ヲ制限スルコトヲ得右ノ如キ法規ノ違反ハ精密ナル検査ヲナスコトナクシテ直ニ之ヲ探知スルコトヲ得

然レトモカクノ如キ輕氣航空機ノ制限ハ商用輕氣航空機ニモ制限ヲ課セズンバ一國空軍力ニ對シ此種ノ制限ヲナスノ效果ヲ生セサルヘシ大形商用飛行船ト軍用飛行船トノ區別ハ極メテ些少ニシテ商用飛行船ヲ軍事的目的ニ使用センカタメ之カ變更ヲ要ストスルモ甚タ僅少ナリ商用輕氣航空機ノ數及性質ノ制限ニ對スル障害ハ既ニ之ヲ指摘セリ

軍用航空機ノ使用問題

三十九、人類ノ利益ノタメ及國際間ノ軋轢ノ機會ヲ減少スルタメ戰爭ニ於ケル航空機ノ使用問題ヲ支配スヘキ法規ヲ定メ之ニ付キ國際間ノ同意ヲ得ルノ要アリ

四十、本問題ハ本委員會ニ對シ戰時法規委員會ヨリ意見ヲ求メ來リタル「航空機ニ關スル戰時法」ノ草案ト關聯シテ審議シタルカ之レ甚タ重大ニシテ且ツ法律的、商業的及軍事的ニ非常ナル難問題ヲ惹起スル問題ト認メラルルヲ以テ此等ノ諸點ニ付キテノ専門家ノ集合セル單一委員會ニ依リテ徹底的ニ之ヲ審議スルノ要アリ

本委員會ニ於ケル合衆國及日本國代表者ハ華府會議議題中ニ新式兵器ノ制限ノ項ハ掲ケラレタル所ナレハ移牒ヲウケタル法規ニ付キ技術の見地ヨリ之ヲ討論スルノ準備アリタルモ英帝國、佛蘭西國及伊太利國ノ代表者ハ之カ準備ナク彼等ハ本會議ノ議題ノ通知ヲ受タル日ヨリ出發ノ日マテニ時間僅少ニシテ此多種方面ニ利害關係ヲ有スル事項ニ付キ彼等ヲ

シテ國家ノ意思ヲ提示スルヲ得セシムルニ足ル丈ケニ本問題ノ徹底的審議ヲナスノ餘裕ナカリシコト又或場合ニ於テハ國家ノ政策ハ未タ之ヲ決スルニ至ラサルコトヲ述ヘタリ

四十一、此ヲ以テ本委員會ハ戰時航空機規定ノ問題ハ出席委員ニカカル大問題討議ノ準備ナキ本會議ニ於テハ審議セス之ヲ將來ノ會議ニ讓ルコトヲ勸告シ且ツ右將來ノ會議ハ外交手續ニ依リ定ムヘキ一定ノ時期及場所ニ於テ上記ノ目的ノ爲メ開催センコトヲ勸告ス

議決要領

航空機ノ數、性質及使用ニ付キ本委員會ニ於テ到達セル議決ノ大要

四十二、本委員會ハ一國ノ航空機ニ依ル勢力ニ影響ヲ及ホス最モ重ナル要素ノ中左ニ掲クルモノアルコトニ意見一致ス

- (一) 國民ノ航空術ニ對スル順應性
- (二) 一國ノ領土及其屬地ノ地理的位置及特性
- (三) 航空機及其附屬物ノ生産及維持ノ力
- (四) 軍事的施設以外ノ航空勢力即チ商事及民事の航空勢力及競技及娛樂用航空機ノ如キモノノ總數及性質
- (五) 左ノ諸點ヨリ成ル軍用航空施設ノ大小
 - イ 常設司令部、事務局、飛行機隊、學校、技術的施設、材料倉庫及兵員等ノ現役施設
 - ロ 編成ヲ有シ或ハ之ヲ有セサル豫備兵員及戰時豫備材料等ノ豫備施設

四十三、(一)國民ノ航空機ニ對スル順應性

一般公衆ノ航空機ニ對スル興味ハ或國ニ於テハ先天のナルカ如ク又他ノ國ニ於テハ潛在的の或ハ殆ント之ヲ缺クモノアリ國民ノ一般航空術ニ對スル信頼ハ該國ノ空軍力ヲ評價スルニ當リテハ慎重ナル審議ニ價スル一要素タルニ疑テシ先見ノ明アル政府ハ一般教育ノ手段ニ依リ或ハ展覽會ノ開催ニ依リ又或ハ既ニ航空術ニ興味ヲ有スル個人ヲ財政の方法ヲ以テ獎勵スルコト等ニ依リテ一般公衆ノ航空術ニ對スル興味ヲ刺激シカクテ其國民ノ航空術ニ對スル順應性ヲ増加セシムル

コトアルヘシ

四十四、(一)一國ノ領土及其屬地ノ地理的位置及特性

此點ハ(一)ト大ニ類似スルモノアリ一國ノ領土ノ外形の特性ハ其ノ住民ノ航空術ニ對スル態度ニ甚大ナル影響ヲ及ホスヘシ一國ノ政府ハ飛行場ノ設置其ノ他ノ方法ヲ以テ或程度マテ其領土ノ自然の特性ヲ改良シ得ルモノナルカ右ノ如キ施設ニ對スル制限ハ其ノ國ノ航空ノ爲メ費消スル經費ノ總額ヲ制限スルニ非レハ不可能ナルハ明ナリ然ルニ經費制限ノ殆ント效果ナキハ既ニ明ニセル通ナリ

四十五、(二)航空機及附屬物ノ生産力及維持力

理想的狀態ニ於テ一國ノ建造シ得ヘキ航空製造工場ノ最大限度ハ(一)一般製造工場ノ發達程度、(二)製造物ノ性質、(三)一般製造方法即機械工業ナリヤ手工業ナリヤ、(四)重要原料ノ供給ニ依リテ決定セラル航空機及附屬物ノ製造ニ使スル原料及製造方法ハ他ノ多クノ製造工業ト同一ナルカ故ニ各地ニ於ケル此種ノ製造量ハ一國ノ航空機製造力ヲ評價スル上ニ必要ナル要素ヲナスモノナリ

現存ノ航空機工業ヲ戰爭ノ狀況ニ適合スル様迅速ニ擴張シ得ル力ハ空軍力ノ最モ重要ナル要素ヲナス之ハ次ノ諸事項ニ依リテ評價セラルヘキモ即チ(一)航空機及附屬物製造ニ熟練セル個人ノ數、(二)航空機製造工業類似ノ工業ニ於ケル訓練ニ依リ航空機及附屬物ノ製造ニ存スル特殊ノ問題ヲ容易且迅速ニ了得シ得ルヘキ基礎ヲ有スル個人ノ數、(三)現存航空機製造工業ノ規模及狀況竝ニ容易ニ航空機及附屬物ノ製造ニ變更シ得ヘキ製造事業ノ規模及數、(四)豫メ決定セル既定計畫ノ存否竝危急ノ場合ヲ豫想シテ計畫ノ完成ハ後ニ譲リ豫メ發セル注文ノ限度、(五)必要ナル原料ノ使用額及使用ノ狀態(六)利用シ得ヘキ機軸、機械工具及鑄型ノ數量及標準型ノモノノ大量生産ヲ行フコトニ依ル賣上高

四十六、(四)軍事的施設以外ノ航空事業ノ分量及ヒ性質ニ付キテハ民用及商用航空機ノ制限ノ項ニ於テ餘ス處ナク討議セラレタリ之上上記(一)(二)及(三)ト密接ナル關係ヲ有シ又輕氣機ノ或太サノモノヲ除キテハ其制限ハ補助金ノ制限ニ

依ルノ他實行不能ナルヘク而モ補助金制限ノ實行困難ニシテ其他ノ點ニ於テモ障害アルコトハ嚮ニ述ヘタリ又輕氣機ノ制限ハ航空術ノ上ニ恐ルヘキ結果ヲ齎スヘキコトモ又既ニ之ヲ示シタリ

四十七、(五)現存ノ軍事の航空設備及其豫備

編成セラレタル豫備ノ大小ハ軍事の施設ノ大小及軍事の施設ニ屬スル兵員カ訓練セラレ又民衆ニ復歸セシメラルル割合ニ依リテ左右セラル平日常備施設ノ縮少ノ結果トシテ編成セラレ訓練セラレタル豫備ノ縮少ヲ來スヘシ然レトモ職業ノ種類ニ依リ直ニ航空隊ノ役務ニ服スルニ適當スルモノアリ即チ商用及民用飛行ニ従事シ又ハ軍用航空機ノ運用及維持ニ必要ナル技能及ヒ基礎の智識經驗ト同一ノモノヲ必要トスル工業ヲ其ノ職業トスル人々之ナリ

故ニ此階級ハ軍事の施設ニ變更ヲ加フルニ依リテ大ナル影響ヲ蒙ルコトナカルヘキモノトス

四十八、技術の見地ヨリ本委員會ハ第五ノ要素即チ軍事上ノ目的ノ爲ニスル平時ニ於ケル航空施設(現役施設及編成セル豫備ヲ含ム)ノ大小及能率ノ制限ハ理論上ハ可能ナリト雖モ實行ハ不可能ナリトノ結論ニ到達シタリ更ニ本委員會ハ右ノ如キ制限ハ之ヲ實行可能ナリトスルモ空軍ノ戰時使用ヲ防クコトヲ得サルヘク而モ本報告中ニ述ヘタル理由ニ依リテ制限不可能ナル他ノ空軍力要素ヲ一層重要ナラシムルノ用ヲナスニ過キササルヘキ事實ヲ切言セント欲ス

最終決定

數及性質

本委員會ハ空氣ヨリ輕キ航空機ノ場合ヲ除クノ外商用タルト軍用タルトヲ問ハス航空機ノ數又ハ特性ニ有效ナル制限ヲ課スルハ實行シ得ヘカラサルモノト認ム

使 用

本委員會ハ戰時ニ於ケル航空機ノ使用ハ今後開催セラルヘキ會議ニ依リテ航空機ニ適應スヘキ交戦法規ヲ定メ以テ之ヲ規律スヘキモノト認ム

航空委員會ノ委員左ノ如シ

亞米利加合衆國

ウィリアム、エイ、モツフエット海軍少將議長 (William A. Moffet, Chairman Rear Admiral, U. S. A.)

メーゾン、エム、バトリック陸軍少將 (Mason M. Patrick Major General, U. S. A.)

英 帝 國

ジエイ、エフ、エイ、ヒツギンス空軍中將 (J. F. A. Higgins Air Vice Marshal, R. A. F.)

佛 蘭 西 國

アルベール、ローベル陸軍大尉飛行機操縦士 (Albert Roper, Capitaine Fille Aviateur, French Army)

伊 太 利 國

リツカルド、モイツォ陸軍大佐 (Riccardo Moizo, Colonel, R. I. A.)

日 本 國

長 野 治 海軍大佐 (Osami Nagano, Captain, I. G. N.)

附記 伊太利國代表者ハ一國空軍力ヲ制限シ得ヘキ一方法ハ常備ノ軍事の施設ニ於ケル航空機操縦兵員ノ數ニ制限ヲ設クルニアルコトヲ信シ且之ヲ議事録ニ記載センコトヲ希望ス隨テ右ノ意見ト背馳セサル限り本報告ノ一般理論ニ同意スルモノナリ

(署名) Col. R. Moizo.

リツカルド、モイツォ陸軍大佐

STRICTLY CONFIDENTIAL.

COMMITTEE ON AIRCRAFT.

Report on Limitation of Aircraft as to Numbers, Character and Use.

Form of Procedure.

1. In considering the limitation of aircraft as to numbers, character and use, the Committee on Aircraft adopted a form of procedure which took up the various questions involved in the following order: (1) Commercial aircraft; (2) Civil aircraft; (3) Military aircraft. Heavier-than-air and lighter-than-air craft were considered separately since the conditions governing the two are not in all cases the same. An effort was made to determine whether or not it is possible to impose limitations upon their (1) number, (2) character, (3) use, and after discussion of the methods that might be employed to effect such limitation, whether limitation was practicable or not. This Committee feels that the desirability of placing any limitations whatever upon aircraft is a matter of policy, one which it is for the Main Committee itself to determine. Nevertheless, it feels it to be a duty to point out the essential facts which will have a decided bearing upon the determination of the proper policy to be adopted, and this is done in this report.

Commercial Aircraft.

2. Different methods of imposing such limitation may be adopted by different states. The precise methods adopted by any state must be in conformity with its organic law. In some states it may be possible to impose an arbitrary limitation; in other, by the exercise of the police power, or of the power to tax a practical limitation may be enforced. In the United States, where laws passed by the Congress must conform to the written Constitution of the country, there may be a some difficulty in finding an effective means of imposing this limitation, but nevertheless it is believed that if

necessary, such means can be found.

3. Before discussing any other phase of the matter it will be well to consider carefully the effects which would follow the imposition of the limitation upon the numbers and character of commercial aircraft which may be owned and operated by the nationals of a state. In the first place, if commercial aeronautics is allowed to follow the natural laws which have governed the development of all other means of transportation and communication, the number and character of such aircraft will probably depend on financial considerations. That is, commercial aeronautics as a business will not thrive unless the operation of the aircraft will return a substantial profit. The state may interfere with the operation of these natural laws by granting to the owners and operators of such aircraft a direct or indirect subsidy. By so doing enterprises which would not otherwise be financially successful may be enabled to live and in this way the number of aircraft used for commercial purposes will be greater than if the natural laws of development had been allowed to take their course.

It is not easy to foresee what consequences to human progress will come in the future from the development of aeronautics in all its branches. They will certainly be marvelous where natural conditions are favorable to such development. To try to limit them now with arbitrary laws, even if these laws have the purpose of preventing war, would be in the opinion of this Committee disastrous from the point of view of world progress.

4. If, among commercial aircraft, we class those owned and operated for sport or pleasure or convenience, the numbers of these will depend largely upon the wealth of the nation, upon the inclination of the people toward aeronautics, upon the cost of the aircraft thus employed.

5. The development of aircraft has presented the world with a new and improved means of transportation and

communication. One of the cause of warfare in the past has been a lack of the proper distribution of the world's resources in raw material, food products, and the like. Another potent cause of war has been the lack of understanding between races, peoples and nations. Any addition to the transportation and communication facilities of the world should operate to improve the distribution of resources and likewise to lessen the causes of misunderstandings between peoples, and thus lessen the causes of warfare. Any limitation, therefore, placed upon commercial aeronautics would have the effect of limiting a means of transportation and communication between the different parts of the same state and between different states. It seems inconceivable that any limitation should be imposed upon commercial aeronautics unless it were with the avowed object of thereby limiting the air power of a state and thus decreasing the liability of war. Commercial aeronautics with its attendant development of an aeronautical industry and a personnel skilled in the manufacture, operation, and the maintenance of aircraft does furnish a basis of air power. The development of commercial aeronautics and the development of a nation's air power are inseparable.

6. Speaking broadly, all aircraft will be of some military value no matter what restrictions may be placed upon their character. Some can probably be converted with but few changes into military aircraft; others can be designed so that with major or minor alterations, or even with none at all, they can be employed for military purposes. As a matter of fact, the uses of aircraft in war are many. During the world war highly specialised types were designed for special uses. Military aircraft have likewise been developed to a degree of perfection not yet reached in commercial aircraft. It is quite reasonable to suppose that similar development will take place in commercial aircraft, that they too will be especially designed for the uses to be made of them, and that they may depart quite radically from the military types used in the world war.

In military aircraft as a rule a premium is placed upon performance. Consideration of initial cost, of cost of operation and of maintenance are largely disregarded. The safety and convenience of the operators and passengers are considered only as these affect their ability to perform their military duties. If, as seems evident, commercial aircraft must be specially designed for the service they are to perform in order to have a chance of being financially successful, any effort to provide for their conversion into military craft will introduce complications which will increase the cost of production and operation. This may itself automatically act as a limitation, for business enterprises will not be willing to have such conditions imposed unless they are compensated in some way for the extra cost.

Heavier-than-Air.

7. The war value of an aeroplane may be said to lie in a combination of two or more of the following characteristics:

- (a) its suitability for offensive and defensive equipment.
- (b) its radius of action.
- (c) its speed.
- (d) its carrying capacity.
- (e) the height it can attain.

It is not desired to go too deeply into technical matters in this report. The Committee wishes, however, to point out that the peace value of aircraft is at present intimately bound up with the general characteristics which make up the value of the aeroplane in war. The last four of the characteristics enumerated above are dependent upon the relation between the amount of fuel carried, the horsepower of the engine, the lifting surface and the total weight. The Committee is of the opinion that formulae could be evolved defining the interrelationship of these factors in such a way as to

limit the war value of the machine, built in conformity therewith. It is more difficult to ensure that war equipment shall not be mounted in a commercial aeroplane. In this matter the committee is of the opinion that definite rules cannot be laid down.

Radius of action is of high commercial value. A reliable air service from Europe to America in, say, 24 hours, should prove a highly profitable undertaking. Again, in countries where there is perhaps the greatest scope for the development of air-ways, countries of great deserts for example, radius of action is essential. Speed is plainly the characteristic on which aircraft rely to gain advantage in their competition with other means of transportation. It is not yet comfort and security but time saving that will tempt passenger, mails, and valuable cargoes from old established services. To limit speed is to stop progress, to throttle aviation in its infancy.

The power of carrying numbers of passengers or quantities of goods is of obvious commercial value and even the attainment of considerable heights may eventually be a definite requirement. As a matter of fact the success of recent experiments indicates that, with special means of super-charging motors, navigation of the air will in the future utilize high regions of the atmosphere to take advantage of a loss resistance of the air and of favorable high velocity winds.

The factors which comprise "military" performance have therefore a high commercial value, and it is the opinion of this Committee that any limitation of the character of civil and commercial aircraft must hinder the natural development of aviation; it is probable that restriction as to character will have in fact an even more adverse reaction on the progress of aviation than would be caused by a restriction on numbers.

Method of Limitation.

8. Aircraft can be limited as to number character by an agreement arbitrarily fixing a maximum number for

each nation that will not be exceeded and by imposing technical restrictions in such a way as to limit performance.

9. The difference in organic law as between nations will probably prevent a single system of limitation being of universal application. Moreover, the rules of formulae whereby alone character of civil and commercial aircraft can be limited must be detailed, and stringent. At the same time, they will be easy to evade, and infringement will not be obvious to the casual glance. Measurements of horsepower, supporting surface, fuel capacity, and weight will be necessary if security against evasion is to be ensured by any other means than by trusting to the good faith of the contracting parties. No state could consent to having the nationals of another power continually inspecting all of its manufacturing plants in order to ascertain whether the limitation it imposed were being enforced.

All these points received the closest of consideration with reference to the limitation of Germany's air-power and the matter is so complicated that the final drafting of the technical rules has not yet been completed. But taking rules as drafted and even assuming continuous inspection of a most stringent character, it appears that there are still loopholes for evasion. No rules can prevent aircraft being designed *in peace* to permit of the ready installment of larger tanks in war; engines can be made interchangeable enabling one of higher power to be rapidly installed; even carrying surface can be increased by the standardization and interchangeability of wings and other methods and it is not impossible to conceive of civil and commercial aircraft being designed with to ultimate war requirements.

10. For the above reason, the Committee is agreed that in the present stage of development of aviation a universal limitation by formulae of the character of commercial aircraft is impracticable.

Question of Subsidy.

11. Without expressing an opinion as to the desirability of abolishing subsidies for the encouragement of commercial

cial aviation, the Committee points out that such Subsidies, direct or indirect, can have a great influence on the character and number of commercial aircraft in relation to their war value. In fact, subsidies, will tend to decrease the natural divergence between military and commercial aircraft and render the latter more readily adaptable to war uses. It is necessary, however, to add that indirect subsidies or other encouragement are most difficult to prevent, and even when acting in good faith governments of different nations will place different interpretations on such encouragement.

The question of whether subsidies are granted or not will have great bearing upon development of commercial aircraft in general, and will affect the welfare future of the nations. This question, therefore, can not be determined from the point of view solely of the adaptability for war uses.

Civil Aircraft.

12. In this discussion a distinction is drawn between commercial aircraft and civil aircraft, the latter will comprise all aircraft operated by a state except those which it operates in connection with its military enterprises. Civil aircraft will, therefore, include any which are state-operated in the customs service, for transporting the mails, the exercise of its police powers, and the like. It is readily apparent that as aircraft operate in a medium where there are no physical barriers, they can compete in some measure with every means of transportation used on land or water. It is therefore possible for much of the transportation requirements of any state to be met by the operation of air craft. Such aircraft manifestly are not dependent for their being upon their ability to be operated at a profit. The state will decide how best it may enforce its laws, exercise its police power, transport state-owned merchandise or mails, and the means used will be those which are most efficient and most economical from the standpoint of the state itself. The cheapest will not always be the best or the most satisfactory.

The number and the legitimate use of aircraft by any Government for such civil purposes will, therefore, be limited only by the estimate placed upon the service which they can render and by the consent of the people to raising by taxation the amount of money which must be employed for their acquirement, operation, and maintenance.

13. If the civil agencies of a state use aircraft for police or other purposes that are essentially military in character this classes of civil aircraft should be discussed under the limitation of military aircraft.

14. The number and character of such civil aircraft can be limited only by an arbitrary agreement among the states.

15. It would, again, be utterly impracticable to set up any agency acting under authority other than that of a nation itself to regulate the number of civil aircraft owned and operated by the state.

Lighter-than-Air Craft.

Limitation of Number and Character.

16. The characteristics of lighter-than-air craft are such that limitation of number and character presents little technical or practical difficulty. It is a peculiarity of these craft that their efficiency is very intimately bound up in their size. Small dirigibles have a war value of their own, but it is limited and they cannot be considered as offensive weapons. For example, a small vessel of this kind cannot attain any considerable height while carrying a useful load, and even if filled with non-inflammable gas its vulnerability to gun fire at the heights it could reach preclude its being utilized for such purposes as aerial bombardment. Only in large sized dirigibles can a useful load be carried to a reasonable military height at a fair speed. Limitation of size is therefore sufficient to ensure that lighter-than-air craft should be incapable of offensive aerial action Moreover the construction of large dirigibles requires large the shed accommodation

and cannot be kept secret ; in this respect they resemble surface warships.

17. It is therefore possible to regulate their numbers and size, by a simple system of international agreement and infringement of such agreement can be readily detected without a detailed system of control.

18. The committee is agreed that the possibilities of war use for large dirigible may still exist. Although in the later stages of the World War it appeared as if the defence had the mastery over attack in lighter-than-aircraft, the introduction of larger craft filled with non-inflammable gas and carrying their own protective aeroplanes may again permit bombardments being carried out by dirigibles.

This Committee desires, however, to draw attention to the fact that dirigibles become increasingly efficient with increase of size. Any limit which is imposed on the size of commercial dirigibles must shut the door on the possibility of their development for legitimate civil enterprises.

Limitation of Use of Aircraft.

19. The Committee is of the opinion that it would be useless to attempt to lay down a rule that civil and commercial aircraft should not be used in war, as they consider that no nation could deny itself the value for war purposes of their commercial machines provided that they are suitable for any warlike purposes. It is understood that when so used they will be manned by service personnel of the State and carry the proper distinguishing marks, and will in fact become war aircraft ; their use does not therefore require discussion in this part of the Committee report.

20. The use of civil and commercial aircraft in peace is governed by the International Air Convention which amply safeguard a State's sovereignty in the air against abuse.

21. This Convention has already been ratified by Great Britain, France, Japan, Belgium, Greece, Portugal, Serb-

Croat and Slovene State and Siam. It will at a very near date come into force for these various Powers and later for the other signatory States and also non-signatory Powers who desire to adhere to it.

22. The Committee is aware, however, that for certain reasons the United States has not yet announced its adherence to this Convention. The Committee, therefore, suggests for the consideration of the Sub-Committee on Program and Procedure, that a Convention covering the different phases of aerial navigation and based upon the one mentioned above could be drawn up at this Conference to which the assent of all Powers represented could be given. The Committee further believe that this is most desirable.

Summary of Conclusions.

Civil and Commercial Aircraft.

23. The Committee understands that the purpose of this Conference is to promote peace and to remove the causes of warfare. It must be understood distinctly that if the Conference decided to limit the development of commercial aircraft in order to retard the development of air power, the immediate result will be the retarded development of means of transportation and communication which will itself, if unrestricted, largely act to bring about the same result, the removal of some of the causes of warfare.

24. This Committee is unanimously of the opinion that in the present state of development of aeronautics there is a technical possibility of the limitation of numbers, character and use of civil and commercial aircraft with regard to their utilization in war ; they are, however, agreed that such limitation of numbers and especially of character is not practicable, except in the case of lighter-than-air craft of above a certain displacement.

25. As regards the desirability of limitations the committee has touched on those factors which must be under-

stood before arriving at a decision. It feels it to be a duty to lay great stress upon the following fact which will have a decided bearing upon any determination of the proper policy to be adopted; any limitation as to number and character of civil and commercial aircraft, heavier-than-air, or lighter-than-air, which is efficacious to hinder their utility for war purposes, must interfere disastrously with the natural development of aeronautics for legitimate civil and commercial enterprises. To limit the science of aeronautics in its present state is to shut the door on progress. It is for the Conference to decide whether the limitations which can with difficulty be devised and imposed are to be adopted at such a cost.

Military Aircraft.

Note: In the part of the report which follows the word "military" is used in its widest sense to denote "pertaining to the fighting services whether naval, military, or air".

Preliminary Remarks.

26. The Committee agreed that before entering upon a discussion of possible limitation of the numbers of military aircraft, it was desirable that the present relative air strength of the nations represented should be ascertained and tabulated in a simple form designed to facilitate comparison between them. The results of this investigation are tabulated in appendices 1-2-3-4-5 attached to this report. It is remarked that though these forms afford a guide to the relative military air strength at the present day, it is impracticable to present a complete estimate of a nation's air power, since air power is (as has been already shown) intimately bound up in factors other than the military establishment. Differences in organization and administration of the various national aerial forces are a further obstacle to direct comparison in detail; these factors must be forgotten when studying the statement presented and must be kept in the foreground of all discussions as to the possibility of limitation.

As to Number.

27. The limitation of the number of military aircraft presents from one point of view less difficulty than the similar problem in the case of commercial aircraft. It is obvious that if a limitation of the number of military aircraft is agreed upon between nations, it can be imposed by a state without that interference with the liberty of citizens which complicates the question of aircraft devoted to commercial pursuits. But then the details of such an agreement are considered, it will be ground a matter of great difficulty to find a reasonable basis on which the allotment of relative strengths can be made. For example:

(I) The status quo¹ cannot serve as a starting point, since the state of development of air services differs widely in the case of the various powers (see appendices), and in no case can these services be considered as complete.

(II) The size of a nation's Navy and Army will influence the basis, in so far as aircraft are essential auxiliaries to those services.

(III) National policy will differ as between nations: some nations, for example, will wish to have large air forces for coast defence where others prefer to trust to older methods. Development on the lines of the substitution of air forces for other forms of force are likely to be considerable.

(IV) The potentialities of air forces in policing and garrisoning semi-civilized or uncivilized countries are as yet only partially realized. The number of aircraft required for such duties will vary with the size and nature of the territories to be patrolled and with the value placed on their services by different nations.

(V) The geographical position and peculiarities of a state, the situation and strength of its possible enemies, and the nature of a possible attack must influence the number of aircraft it will desire to maintain.

(VI) Different terms of service for personnel will influence the effectiveness of air services and the size of the reserve.

(VII) The state of development or possibilities for civil aeronautics will have, as has been shown above, a direct bearing on the number of military aircraft which it may be desirable for a state to maintain.

The problem of finding a suitable ratio between the air forces of various powers is thus at the present time almost insuperable.

As to Character.

28. But even should it be possible to fix the ratio, such a limitation would be of little value without some limit as to the character of the aircraft. When the question of limitation of naval armaments was considered by the Conference it was found necessary to limit the displacement of individual ships as well as the total tonnage. In the absence of similar provision the limitation of numbers of aircraft would only result in competitive building of aircraft of greater and greater power and size. The methods of limitation must therefore attempt to legislate for both and character.

Heavier-than-Air.

Methods of Limitation.

29. The following methods may be employed :

- 1st. The limitation of the number of military aircraft.
- 2nd. The limitation of the amount of horsepower for military aircraft.
- 3rd. The limitation of the lift tonnage for military aircraft.
- 4th. The limitation of personnel for military aircraft.

5th. The limitation of military aircraft budgets.

These five methods may be applied in combination or singly and are considered in detail below :

30. Limitation of the number of aircraft is the most obvious method of limiting the strength of the aviation force, but in attempting to apply this method the question of size and type at once arises. It might be necessary to limit the maximum wing surface permitted to a single aircraft or it might be necessary to prescribe the number of aircraft in each of the type groups, such as combat planes, bombing planes, etc.: this question of definition of type presents great difficulty. In order to make an effective limitation of the numbers of military aircraft to be maintained in peace time by any nation, it will be necessary to have a detailed understanding on the following points :

- (1) On the number and types actually in use by organized aerial units.
- (2) On the number and types held in reserve.
- (3) On the number and type of engines held in reserve.
- (4) On the replacement of planes crashed, worn out, or replaced by later models. In the case of obsolete and other planes that are replaced by other models it would be necessary to enter into an agreement regarding the disposal of planes so replaced. Otherwise it would be possible to build up an unlimited war reserve merely by classifying the planes so held as obsolete, or by converting them into civil or commercial planes.

(5) On the limitation of the adoption of new and more powerful types.

All these points will present great difficulty in an age when aircraft can become obsolete in a few months, and when their nature is such that war wastage may be as high as 200% *per month*.

31. The second method of limitation, limitation of horsepower, may apply to :

- (1) Total horsepower in assembled planes.
- (2) Total horsepower in assembled engines.
- (3) Horsepower in a single individual plane of a given type.

This can only be based on the cubic capacity of the engines: there will be no guarantee that a nation has not discovered a secret which will enable greater horsepower to be got out of limited capacity nor is it reasonable to expect any nation to disclose such a secret. The more detailed the limitation the greater the administrative difficulty of enforcement, particularly under present conditions when administrative methods are so widely different, and as pointed out in the first part of the report any enforcement, to be effectual, would entail inspection by a foreign commission as to be intolerable to any nation.

32. The third method of limitation, limitation of lift tonnage, may apply to:

- (1) Total lift tonnage in assembled planes.
- (2) Total lift tonnage in all planes assembled or not assembled.
- (3) Lift tonnage of a single individual plane of a given type.

Any method must presumably be based on wing area and horsepower. It has been mentioned that the actual horsepower may be unknown and it is likewise conceivable that a nation may discover a wing shape of extreme lifting efficiency and neglect to disclose the fact. Limitation of lift tonnage may therefore be wholly illusory and the remarks as to inspection make in the last paragraph apply to this method also.

33. The fourth method of limitation, whether of the total of organized personnel for war aircraft, or only of pilots in the permanent military establishment, fails by reason of the difference in organization between different states. A

nation which has a separate air service has to include in its organized personnel, those employed in recruiting supply, transport, administrative headquarters, etc., etc. In the case of nations whose air forces are contained in their naval and military forces, supply, etc., personnel are included in naval and military establishments, a fair comparison cannot therefore be made. Moreover the difference in terms of service, long or short, voluntary service or conscription, must introduce incalculable factors which directly affect the efficiency of organized air forces and the size and efficiency of the reserve.

34. The fifth method of limitation, limitation by means of limiting the budget and thereby controlling the amount of money that may be expended annually for aviation seems simple in theory but it is difficult of application. The various methods of distributing budgets for material under different sub-heads make it impracticable to determine or compare the actual sums expended exclusively for aircraft and the question is at present further complicated by the factor of the relative purchasing Power of the currency of various nations.

35. Of the five methods of limitation, limitation by lift tonnage or horsepower appears to present the least objections, but to make these or any other methods effective, it would be necessary as previously pointed out to organize a system of international inspections. Any system of international inspection would be almost certain to arouse ill-feeling and would tend to cause friction rather than to insure harmony and good feeling between friendly powers.

IMPRACTICABILITY OF LIMITATION OF NUMBER AND CHARACTER.

36. Objections in detail to each suggested method of limitation have been advanced above—there is one insuperable objection which is common to every method, namely the close relationship which at present exists between civil or commercial aeronautics and air power. Unless civil and commercial aeronautics are strictly limited—and it has been shown in the early part of this report that it is not practicable to limit them—a nation desiring air power in excess of the limit

imposed or agreed to will develop its civil and commercial aeronautics to any extent desired.

Granted a flourishing aeronautical industry, the number of the present type of perishable military aeroplanes active on any given date is only one of the elements of air power. During the war a single American firm contracted to deliver *100 aircraft a day*, and the output of engines can be organized on a similar scale. A nation's air power can thus be multiplied not only by the actual number of civil and commercial aircraft in use but also by the capacity of the industry to turn to the manufacture of military aircraft in large quantities. Limitation of the number of horsepower and lift tonnage would under such conditions prove illusory. This commercial industry will further provide a great potential reserve of pilots and skilled technical personnel and will thus discount to a great extent any limitation of numbers of the personnel of military aviation.

37. It is the opinion of this Committee that the limitation of military air power (as regards heavier-than-air craft) is not practicable at the present time. Their reasons for this decision are as follows:

- (I) The difficulty of finding a basis for the proportion of aircraft to be allotted to the various nations.
- (II) The difficulty of devising technical methods to impose such limitation.
- (III) The difficulty of enforcing such methods.
- (VI) The interdependence between air power and a commercial aircraft industry which it is not practicable to limit.

Lighter-than-Air Craft.

38. Many of the remarks already made apply to lighter-than-air craft, but as in the case of commercial aircraft of this nature, limitation is both possible and practicable. It is unnecessary to recapitulate the argument that the military

value of a dirigible is dependent on its size, and the size of dirigibles and the number maintained can be limited by agreement of a few simple rules. Infraction of such rules can be rapidly ascertained without detailed inspection. • But such a limitation of lighter-than-air aviation forces would not effect a limitation of this kind of air power of a nation unless a limitation were also imposed on its lighter-than-air commercial activities. The line of demarkation between the large commercial airship and the military airship is very slight, and a commercial dirigible would require little, if any, alteration in order to adapt it to military purposes. The objections to the limitation of the number or character of commercial lighter-than-air craft have already been remarked on.

The question of the use of military aircraft.

39. It is necessary in the interests of humanity and to lessen the chances of international friction that the rules which should govern the use of aircraft in war should be codified and be made the subject of international agreement.

40. The matter has been considered by this Committee in connection with a draft code of "Rules for aircraft in War" submitted for remarks by the Committee on the laws of war. The subject appears to the Committee to be one of extremes.....and one which raises far reaching problems, legal, political, commercial and military; it requires therefore exhaustive discussion by a single committee in which experts on all these issues are assembled.

The representatives of the United States and Japan on this Committee are prepared to discuss the rule submitted from a technical point of view as provided for in the agenda under paragraph on limitation of new types of military arms, but the representatives of Great Britain, France, and Italy are not so prepared. They state that the time between receipt of the agenda for the Conference and their date of sailing has not permitted that exhaustive discussion of the subject that would enable them to advance a national viewpoint on a matter which affects so many and varied interests.

In some cases the national policy has not yet been determined.

41. This Committee recommends therefore that the question of the rules for aircraft in war be not considered at a Conference in which all the members are not prepared to discuss so large a subject, but that the matter be postponed to a further conference which it is recommended be assembled for the purpose at a date and place to be agreed through diplomatic channels.

Summary of Conclusions Arrived at by the Committee on Number, Character, and Use of Aircraft.

42. The Committee are agreed that among the more important elements which influence the power that a nation may exert by means of aircraft are the following:

- (1) The adaptability of its people to aeronautics.
- (2) Geographic location and characteristics of the territory occupied by the nation and its dependencies.
- (3) The ability to produce and maintain aircraft and accessories.
- (4) The amount and character of aeronautical activity outside the military establishment, such as commercial and civil aeronautical activities, and sport and pleasure flying.
- (5) The size and efficiency of its air establishment for military purposes consisting of (a) the active establishment including permanent headquarters, bureaus, squadrons, schools, technical establishment, depots of material and personnel, etc., (b) the reserve establishment including organised and unorganised reserve personnel and war reserve of material.

43. (1) The adaptability of a nation to aeronautics.

Interest of the general public in aeronautics seem to be inherent in some nations; in others it is dormant or almost lacking. The confidence of a people in aeronautics in general is undoubtedly a factor worthy of serious consideration when

estimating the air power of that country. It is possible that a far seeing government may stimulate the interest of its general public in aeronautics by exhibitions, general educational measures, and by the encouragement in a financial way of individuals already interested, and thus increase the adaptability of its people to aeronautics.

44. (2) Geographic location and characteristics of the territory occupied by the nation and its dependencies.

This may be looked on as closely akin to (1). The physical characteristics of a country will have a considerable influence on the attitude taken by its inhabitants towards aviation. It is obvious that, while government action may improve the natural characteristics of a country to a certain degree, by making aerodromes, etc., it is not possible for any limitation of such action to be made except by limiting the total amount spent by the nation on aviation, a method which has already been shown to be largely ineffective.

45. (3) The ability to produce and maintain aircraft and accessories.

The maximum aeronautical industry possible for a nation to build up under ideal conditions is determined (1) the extent to which manufacturing in general is carried on; (2) by the character of articles manufactured; (3) by the manufacturing methods in general, that is whether articles are manufactured by machinery or by hand; (4) the supply and availability of essential raw materials. In the manufacture of many articles the raw materials used and the manufacturing methods are similar to those employed in the manufacture of aircraft and accessories. The amount of this class of manufacturing carried on in any country is an essential factor in estimating the ability of a nation to produce aircraft.

The ability to expand an existing aeronautical industry rapidly enough to meet war conditions is one of the most important elements of air power. This may be estimated by (1) the number of individuals skilled in the manufacture of aircraft and accessories; (2) the number of individuals whose training in industries similar to the aeronautical industry

forms a basis for learning readily and rapidly the special problems encountered in the manufacture of aircraft and accessories: (3) the size and condition of the existing aeronautical industries and the size and number of manufacturing concerns that can readily be converted to the manufacture of aircraft and accessories; (4) the existence of a definite program previously determined upon and the extent to which orders have been previously placed in anticipation of an emergency with a consequent perfection of plans; (5) the amount and state of availability of the essential raw materials; (6) the quantity of available jigs, tools, dies and production drawings for going into quantity production of standard equipment.

46. (4) The amount and character of aeronautical activities outside the military establishment has been exhaustively discussed under the Limitation of Civil and Commercial Aircraft. It has been shown that this is intimately bound up with (1) (2) and (3), above, and that, with the exception of lighter-than-air craft of above a certain size, it is not practicable to limit it except perhaps by limiting the amount of subsidies to commercial aviation, a method which has been shown to be difficult of application and to be otherwise objectionable. It has also been shown that the limitation of lighter-than-air craft would have a disastrous effect on aviation.

47. (6) Existing establishment of aircraft used for military purposes and the reserve.

The size of the organized reserve will depend upon the size of the military establishment and the rate at which members of the military establishment are trained and returned to civil pursuits. Any reduction in the permanent peace-time establishment will carry with it a consequent reduction in organized and trained reserves. There is, however, a type of personnel whose civil pursuits fit them for immediate service in the air establishment. This class is made up by those engaged in commercial and civil aeronautics and industrial pursuits which require the same trades and basic knowledge and experience as is required in the operation and maintenance of military aircraft. This class will not be

seriously affected by any change in the military establishment.

48. Technical considerations have led the Committee to the conclusion that the limitation of the 5th element, namely, the size and efficiency of peace-time air establishments for military purposes (including the active establishment and the organized reserve), although theoretically possible, is not practicable. The Committee also desires to lay stress on the fact that, even if such limitation was practicable, it would not prevent the use of air power in war, but would only operate to give greater comparative importance to the other elements of air power which cannot be limited for the reasons given in the report.

FINAL CONCLUSION.

Number and Character.

The Committee is of the opinion that it is not practicable to impose any effective limitations upon the numbers or characteristics of aircraft, either commercial or military, excepting in the single case of lighter-than-air craft.

Use.

The Committee is of the opinion that the use of aircraft in war should be governed by the rules of warfare as adapted to aircraft by a further Conference which should be held at a later date.

Respectively submitted by

COMMITTEE ON AIRCRAFT.

For the UNITED STATES of AMERICA:

William A. Moffett, Chairman.
Rear Admiral, U.S.A.

Mason M. Patrick,
Major General, U. S. A.

For the BRITISH EMPIRE:

J. F. A. Higgins,
Air Vice Marshal, R. A. F.

For FRANCE:

Albert Roper, Capitaine
Pilote Aviateur, French Army.

For ITALY:

Roccardo Moizo,
Colonel, R. I. A.

For JAPAN:

Osami Naganu,
Captain, I. H. N.

Note: The Italian Representative believes and desires to place on record, that one way in which it would be possible limit the air power of a nation would be by placing a limit upon the number of pilots in the permanent military establishment and consequently agrees with the general reasoning of the report in so far as it is not contrary to this opinion.

(Signed) COL. R. MOIZO.

Ricardo Moizo,

Colonel, R. I. A.

Total Number of

Total Number of

Planes	Air Ships		Kite Balloons	Pilots	Non-flying
	Rigid	Semi and Non Rigid			
U. S. A....Actual (10. 1. 1921)	1229	1	9	2629	20674
	537	0	5	1269	13044
G. Britain....Actual (10. 1. 1921)	1077	—	—	30880	
	1048	4	—	2385	26585
France....Actual (10. 1. 1921)	2163	2	15	36500	
	1722	2	15	32100	
Italy....Actual (10. 1. 1921)	1382	1	2	980—X (for airship) 523	8,400 + X (for airship) 7350
	494	1	2		
Japan....Actual (10. 1. 1921)	1101	0	4	528	4894
	537	0	1	293	2762

第二款 軍備制限總委員會ニ於ケル航空分科會報告討議

第一項 第十七回總委員會

一、大正十一年二月七日午前第十七回總委員會ニ於テ毒瓦斯問題ヲ決定セル後議長ハ航空機制限問題ノ討議ニ入ル旨ヲ宣シ航空分科會ノ報告書ニツキ論議ヲ始ムヘシト述ク「サー、ロバート、ボーデン」(Sir Robert Borden)氏ノ要求ニヨリ

報告書ヲ大略説明シ次テソノ拔萃ヲ朗讀セリ

二、「サロー」氏

報告書ハ之ヲ翻譯セサルヘカラス且又之ヲ朗讀スルノミニテモ時間ヲ要ス且本問題ハ議事日程ニハアラサリシモノナルヲ以テ此ノ報告書ノ内容審査ノ爲猶豫ヲ與ヘラレ度シト請求シ議長ハ月曜日迄ノ延期ヲ提議セル所議事内容ニツキ論議起リ「リー」卿ハ航空機ニ關スル報告書ノ後ニ如何ナル問題ヲ討議スヘキモノナリヤヲ質問シ議長ハ之ニ對シ三分科會即チ毒瓦斯、航空、戰時法規ノ三分科會任命セラレ今本委員會ハ瓦斯ニ關スル報告書ヲ商議シ決議案ヲ可決シ次テ航空機ニ關スル報告書ヲ提出セルモノナリ

戰時法規分科會ハ恐ラク戰時法規ノ審査ノ必要ナルヲ提案スル以上ニ此ノ會議ニ求ムルコトナカルヘク之ヲ他ノ會議ノ問題トナスヘシ隨ツテ次ノ問題ハ海軍條約ノ審議ナリ但シ右ハ次ノ會議ニ提出セラルルヤ否ヤ明言スルコトヲ得スト述ヘ「バルフォア」氏之ニ贊ス

三、「サー・ロバート・ボードン」(Sir Robert Borden)

余ハ過日「リー」卿ノ提示セラレシ再ヒ戰爭ノ勃發スルカ如キコトアラハ商船ノ臨檢搜查、拿捕及捕獲ニ關スル潛水艦ノ不法使用ト同様ナル問題カ航空機ノ使用ニ就テモ起ルヘシトノ意見ニ大ニ共鳴スル所アリ敢テ茲ニ本件ヲ本會議ニ於テ審議センコトヲ求ムルモノニアラサルモ此問題ハ或ル意味ニ於テ商船ノ臨檢搜查、拿捕、捕獲ノ條件ト關聯スルモノナリ若シ之ニ關シテ何等ノ原則ヲ立ツルニ非レハ航空機ニ關シテ同様ノ問題ヲ生スルコトアラン

四、「シャॅンツェ」氏 (Senator Schanzler)

専門家分科會ノ決定ニ依レハ本會議ハ飛行機ニ關スル規制ヲ確定スヘキモノニ非スシテ此ノ問題ハ將來ノ會議ニ俟ツヘキモノナリトセリ余ハ現ニ提議セントスルニハ非サレトモ尠クトモ本問題ハ討論スヘキモノナリト信ス時間ニ限リアルヲ以テ戰時法規問題ヲ討論スヘキモノニ非スト「バルフォア」氏ノ意見ニ贊成スルモノナレトモ潛水艇ニ關スル

「ルート」案ノ如ク本會議ニ於テ現在法規カ確認セラレタル事實ハ之ヲ看過スヘカラス這般ノ戰爭中伊太利國ノ都市ニ砲撃ヲ加ヘタル不法ナル行爲ハ之ヲ忘ルルコト能ハサルナリ之レ海牙條約ノ禁シタル所ニシテ本委員會カ潛水艇ノ不法行爲ニ對シテ之ヲ所罰スルコトヲ必要トセルト同様無防禦ノ都市砲撃ハ之ヲ所罰スルコト有益ナラスヤ此際斯ノ如キ提議ヲナスノ適當ナリヤ否ヤハ知ラスト雖モ無防禦都市ノ砲撃ヲ禁止スル決議ヲ爲スヘキモノナリヤ否ヤヲ確ムル爲メ議スル所ナカルヘカラスト信スルモノナリ

五、議長素ヨリ各委員ノ希望アルニ於テハ此戰時法規問題ノ討議ニ反對スルモノニハ非ルモ之ハ徒ラニ議事ヲ長ヒカス惧アリ何レニセヨ來ル月曜日ニ航空機ニ關スル討議ヲ開始スヘシトテ散會ス

第二項 第十八回總委員會(一月九日午前十一時)

一、議長「ヒューズ」氏 (Chairman Hughes)

一般海軍軍備制限ニ關スル條約案ハ二三ノ點ヲ除キ草案ヲ得タルヲ以テ便宜上之ヲ首席全權ノミノ會議ニ附議シタシトテ之ヲ議場ニ諮リタル後航空分科會報告ノ審議ニ移リ其ノ二個ノ結論ニ關シ注意ヲ喚起ス

第一 決議(數及性質ニ關スルモノ)

「本委員會ハ空氣ヨリ輕キ航空機ノ場合ヲ除クノ外商用タルト軍用タルトヲ問ハス航空機ノ數又ハ特性ニ有效ナル制限ヲ課スルハ實行シ得ヘカラサルモノト認ム」

第二 決議(使用ニ關スルモノ)

「本委員會ハ戰時ニ於ケル航空機ノ使用ハ今後開催セラルヘキ會議ニ依リテ航空機ニ適應スヘキ交戰法規ヲ定メ以テ之ヲ規律スヘキモノト認ム」

議長ハ委員會ニ於テ戰時ニ於ケル航空機使用ニ關シ例ヘハ防備セサル都市村落ノ砲撃禁止又ハ潛航艇ニ關スル第一決議ノ如キ商船ニ關スル航空機使用ノ制限等ヲ議セントスル希望アラハ之ヲ第二決議ヲ論議スル場合ニ譲リ先ツ第一決

議殊ニ最初ニ空氣ヨリ重キ航空機ノ制限ニ關シ意見ヲ求メタリ

二、「シャントエ」氏 (Senator Schauzer)

分科會ハ陸海航空機ニ關シ何等實行の制限方法ナシトノ結論ニ達シタルカ分科會ニ於テ伊國委員ノミハ常備軍隊中ノ航空操縦者數ヲ制限スルコトニ依リテ此制限ヲナシ得ヘシト主張セリ然レトモ分科會ノ決議ハ各國之ヲ容レ空軍制限ハ今日採用セラルルノ望ナキヲ以テ唯伊國代表ハ將來航空戰規則ヲ審議スル會議ニ於テ航空機制限問題ヲモ研究センコトヲ希望スルニ止ム本會議ニ於テ海軍制限ヲ決議シタル結果軍備ノ競争カ陸海ノ空軍ニ移ルカ如キコトアラハ伊國全權ノ大ニ遺憾トスル處ニシテ之レ經濟の復興ニ對スル大ナル障害ナリ

三、「アンダーウッド」氏 (Senator Underwood)

余ハ會議カ從來成就セル所ニ満足シ眞ニ軍備縮少永久平和ヲ希望スルモノナレトモ唯航空機ハ海陸軍共ニ必要ナル武器ニシテ其ノ操縦者モ機械モ僅カノ練習變更ニヨリテ海陸何レニモ使用セラルルモノナリ然ルニ今日陸軍問題ハ本會議ニ於テ議セラレサルコトトナリ居レル際航空機ヲ制限スルコトハ適當ニアラス

四、「バルファア」氏 (Mr. Balfour)

目下ノ問題タル空氣ヨリ重キ航空機ノ制限ニツキ分科會ノ實際のナル決議ニ反對スルコトハ不可能ナリ右ハ甚タ遺憾ナルモ事實ヲ事實トシテ承認シ將來航空機ノ平時用及戰時用ノ技術上ノ差違分明スルニ至ル時期ヲ待チ他日ノ問題トスルノ外ナシ又「アンダーウッド」氏ノ指摘セラレタル如ク航空機ハ陸軍軍備ノ一部分ニシテ今日之ヲ論セントスルモ之ト關係アル陸軍軍備ノ他ノ重大ナル部分ニ及フ能ハス尙又潛航艇ト異ナリ航空機ノ場合ハ軍用ト民用トノ區別明ナラス潛航艇ニシテ商業ニ用フルモノ事實上ナケレトモ航空機ニ關シテハ將來經濟の發達及交通ニ偉大ノ影響ヲ及ホスヘシ今日商業上使用セラルルモノヲ制限セスシテ軍用航行機ヲ制限スルコトハ不可能ナリ即軍用航空機制限ヲ行ハントセハ一方ソノ數ヲ減少スルト同時ニ民用航空機ノ數ヲモ減セサルヘカラス之吾人ノ不本意乍ラ然シ確信ヲ以テ分科會ノ意見ヲ正

シトスル所以ナリ余ハ第一決議ニ賛成ナリ

五、「サロー」氏 (Mr. Sarraut)

余モ第一決議ニ賛成ス將來ノ航空發達ノ人類ニ及ホス福祉ハ深ク余ノ信スル所ニシテ若シ之カ偉大ナル武器ナリトセハ又平時ニ於テ最モ重要ナル機關タルヘシ又航空機ハ遠方ニシテ人煙稀ナル沙漠地行政ニ必要ナリ佛國殖民地ニ於テハ醫藥其他ノ生活必需品ノ遠距離輸送ニ之ヲ用ヒ效果顯著ナルモノアリタリ、カカルカ故ニ航空ノ發達ヲ防害スル如キ事ハ凡テ不可ニシテ佛全權ノ委員會提案ニ賛成スル所以亦茲ニ在リ

六、加藤男爵

航空機ノ問題ハ目下精密ナル論究ヲ要セス但シ將來軍用航空機ニ制限ヲ爲スノ必要アルノ時來ルヲ信ス唯目下空氣ヨリ重キ航空機ヲ制限スルコトノ不可能ナルヲ認ムルカ故ニ分科會決議ニ賛成ス

七、議長

戰時ニ於ケル航空機使用及軍用航空機ノ製造ニ關シ制限ヲナスヲ得サルハ一同ト共ニ遺憾トスル所ナリ恐ラク諸君ハ凡テ將來最モ怖ルヘキ武器ハ航空機ナルヲ知ルヘシ而モ實際家トシテ分科會ノ有力ナル議論ニ反對スルコト能ハス蓋シ航空機ノ有效ナル制限ハ聽テ文明發達ノ阻礙トナルヘケレハナリト第一決議ハ採擇ノ旨宣シ空氣ヨリ輕キ航空機ノ問題ニ移ル議長ハ分科會報告ノ右ニ關スル部分ヲ少シク朗讀ス

「空氣ヨリ輕キ航空機ニ關シテハ此種ノ商用ノモノト同シク制限ハ可能ニシテ實行シ得ヘシ飛行船ノ軍事の價值ハソノ大サニヨルコト又其ノ大サ及ヒ其ノ數ハ協定ニヨリテ制限シ得ルコトハ再說ノ要ナシ又ソノ違背ハ詳細ナル監視ナクトモ明ニスルコトヲ得然レトモ右輕氣航空機ノ制限ハソノ制限カ同時ニ商業上ノ輕氣航空機ニ及フニ非レハ一國ノ航空力ヲ制限スルモノニ非ラス大形商用航空船ト軍用航空船トノ境界ハ甚タ不明ニシテ商業上ノ飛行船ハ軍用ニ轉化スルニ大ナル變化ヲ要セサルナリ商業上ノ輕氣航空機ノ性質又ハソノ數ノ制限ニ對スル反對論ハ既ニ述ヘタル如シ」

既ニ述ヘタル所トハ次ノ點ナルヘシ

「制限ノ希望スヘキヤ否ヤニ關シ分科委員會ハ結論ニ至ルニ先チ了解ヲ得サルヘカラサル要點ニツキ考慮セリ委員會ハ適當ナル政策ヲ採用スルニ當リ決定的影響ヲ有スル以下ノ事實ヲ高調スルヲ以テ一ノ義務ナリト感セリ即チ空氣ヨリ輕キト重キトヲ問ハス民用又ハ商用航空機ノ性質及ヒ數ニ對シテ其軍用上ノ效力ヲ有效ニ障害スルニ足ル丈ケ制限ヲ加フルハ正當ナル民事又ハ商業上ノ事業ノ爲ニスル航空學ノ自然的發達ニ對シ重大ナル干涉ヲサルヲ得ス今日ノ狀態ニ於ケル航空學ヲ制限スルハ進歩ヲ塞クモノナリ右ノ如キ犠牲ヲ拂ツテ此困難ナル制限ヲ行フト否トハ會議ノ決定スル所ナリ」

議長ハ航空船ノ數ノ制限ハ姑ク置キ其ノ大サニツキテノ制限協定ハ可能ナリ然レトモ問題ハ軍用船ノ大サヲ制限スル利益カ商用船ノ大サヲ限ル不利ヲ償フヤ否ヤニアリトテ、此問題ヲ提出シタルモ何人モ之カ討議ニ入ルヲ欲セザリシヲ以テ更ニ分科會報告ノ通り空氣ヨリ輕キ航空機ヲ制限スルハ實行のニ非スト決議スヘキヤ或ハ何等カノ制限ヲ包含スル決議ヲナスヘキヤト諮レルニ

八、「シャントエ」氏 (Senator Schanzer)

第一決議ヲ認メタリトセハソノ例外ハ認メラレシニハ非ラサルカ故ニ「單ニ輕氣航空機ノ場合ヲ除キ」(Excepting in the single case of lighter-than-air craft) ナル文字ヲ削除スヘシ

九、議長

「シャントエ」氏ノ議論ニ依レハ決議ハ次ノ如クナルヘシ

「委員會ハ航空機ノ性質又ハ數ニツキノ商業用タルト軍事上タルトヲ問ハス有效ナル制限ヲ加フル事ハ不可能ナリトノ意見ヲ有ス」

又「バルフォア」氏ノ提示ニ基キ「目下」ナル文字ヲ「不可能ナル」文字ノ前ニ挿入シ將來ノ如何ヲ問ハス現在ニ於テ

ハ不可能ナリトノ主旨ヲ示ス様修正シ可決、次ハ分科會最後ノ勸告ヲ問題トス

「本委員會ハ戰時ニ於ケル航空機ノ使用ハ今後開催セラルヘキ會議ニ依リテ航空機ニ適應スヘキ戰時法規ヲ定メ以テ之ヲ規律スヘキモノト認ム」

議長ハ之レ分科會カ本會議ニ於テ細目協定ヲ行フノ困難アルヲ見タルニ依ルモノナルカ今次ノ戰爭ニ依リ新戰時法規ノ絶對の必要ハ明ニセラレ而シテ此等新法規ハ航空學ノ發達及其ノ軍事の應用ヲ考慮ニ入レサルヘカラス此ノ爲メニハ專門家カ相當ノ長日子會議スルヲ必要トスヘシ尤モ簡單ナル二三ノ點ニツキテハ今次大戰ノ慘害ヲ防止スルカ如キ協定ヲ茲ニ代表セラレタル諸國間ニ協定ヲ遂クルコト不可能ニアラストテ米國全權顧問委員會ノ一分科會(「バーシング」)將軍ヲ議長トス)ノ報告ヲ披露セリ

「戰時ニ於ケル航空機使用ハ防備セサル都市村落住宅建物ハ如何ナル方法ニヨルヲ問ハス砲撃又ハ砲撃ヲ禁シタル交戰法規ニ合致スルヲ要ス防備セル地域軍需品貯藏所ノ砲撃ハ正當ナリ然レ共都市町村ハ防備ナキトキハ之ヲ砲撃スヘカラス而シテ空中攻撃ニ際シ非戰闘員ヲ保護スル爲凡ユル手段ヲ執ラサルヘカラス」議長ハ本會議ハ法律家會議ヲ開キ詳細ナル陸戰法規審議ノ必要ヲ認ムルモノナリト雖モ何等カ簡單ナル宣言ヲ自ラナスヲ得サル理ナシトテ「シャントエ」ニ其ノ決議案ノ提出ヲ慫慂セリ

十、「シャントエ」氏 (Senator Schanzer)

伊國全權ハ航空ニ關スル戰時法規制定ノ爲會議開催ノ案ニ賛成スルモノナルカ同時ニ航空戰ニ關係スル國際法ノ一般原則ニシテ本會議ニ於テ莊嚴ニ宣言スル價值アルモノアルヲ信ス

伊國全權ハ潛航艇ノ通用破壊ニ使用ヲ禁止ヲ認メタル以上正義ト統一ノ原理ニ基キ軍用航空機其他ノ戰爭手段ヲ以テスル無防備都市砲撃ニツキ提議スルヲ以テ其ノ義務ト感シタリ何人ト雖モ這般ノ戰爭ニ於テ獨逸及其ノ同盟國ノ無防禦都市砲撃ニ依リ非交戰者婦女子カ犠牲ニ供セラレ其ノ他都市、歷史上記念物藝術品等カ破壊セラレタル暴虐慘害ヲ記憶ス

ヘシトテ次ノ如キ決議ヲ朗讀シタリ

「締約國ハ航空機ニ依ル防備セサル都市村落住宅及ヒ建物ノ砲撃ヲ禁止スル國際法規ノ強制セラレンコトヲ希望シ右禁止カ現行國際法ノ一部タリト認ムルコトヲ宣シ且ツ相互間ニ於テハ之ニ依ツテ拘束セラルルコトニ同意シ他ノ凡テノ文明諸國ヲ之ニ加入スヘク招請ス」

十一、「ドウ・ボン」將軍 (Admiral de Bon)

伊太利ノ提案ニ賛成スルト共ニ右ハ既ニ海牙條約(一九〇七年)第二十五條ニ之ヲ認メタル所ナリ這般ノ大戰ニ於テ獨逸ハ之ニ違反シタルカ當時ニ於テモ右ノ規則ハ嚴存セシナリ

十二、「ルート」氏 (Mr. Root)

防備セル都市竝ニ防備セサル都市何レニ關シテモ砲撃ニツキ規定アレ共之ハ空中ヨリノ砲撃ニ關セスカカル空中攻撃ニ對シ防備セラレタル都市ナシ法規ヲ嚴重ニ解セハ巴里ノ砲撃ハ許サルヘキモノナリ蓋シ防備ヲ有スレハナリ而シテ歐洲ノ都會ハ概ネ若干ノ防備ヲ有ス余ハ「シャンツエ」氏ノ言ニ大ニ同感ナルモノニシテ氏ノ明晰ナル頭腦ヲ以テ此規則ヲ現下ノ事情ニ適應スル様即チ今日ノ都市ハ陸戰ニ對シテハ防備アルモ航空戰ニ對シテハ防備ナク右ノ法規カ空中攻撃ヲ豫想セルモノニ非ル點ヨリ殘ル疑點ヲ起ササル様改正セムコトヲ望ム防備セル都市ハ非戰闘員ノ退去ニ充分ナル通告ヲ與ヘタル後ニ非サレハ之ヲ砲撃スルヲ得ス防備セサル都市ハ砲撃スルヲ得ストノ二原則ノ精神ヨリ論スレハ如何ナル都市ト雖モ其ノ空中砲撃ヲ認ムヘカラサルモノナリ停車場、鐵道交叉點或ハ軍需品工場ハ砲撃シ得ヘシ然レトモ無辜ノ人民ノ中心タル都市ハ如何ナル事情ノ下ニモ之ヲ砲撃スヘカラス斯ノ如ク現行法規ハ適當ナルモノニ非ルヲ以テ會議ニ於テ之ヲ審議スルナラハ之ヲ適當ナルモノトセサルヘカラス

十三、「シャンツエ」氏

余ハ這般ノ大戰ノ經驗ニ基キ右ノ提案ヲ爲シタルモノナルモ之ニ關シ解釋上疑義アルカ如クナレハ敢テ右提案ヲ主張セ

ス來ルヘキ會議ニ於テ恐ラク充分ナル審議ヲ見ルヘシ余ハ今耳ニシタル討論ニ依リ各國全權カ余ノ支持セル主義ニ賛成ナルヲ明ニセリ之レ余ノ最モ重ンスル所ナリ

十四、右「シャンツエ」氏ノ陳述ニ「ドウボン」「バルフォア」何レモ贊意ヲ表シ議長ハ一同「シャンツエ」氏ノ述ヘタル主義ニ賛成ナル所本問題ノ審議ハ自ラ細部ニ涉リ法律家ノ委員會ヲ組織スル要アルヘシトテ新委員會問題ニ入りタリ
(以下ハ第三章參照)