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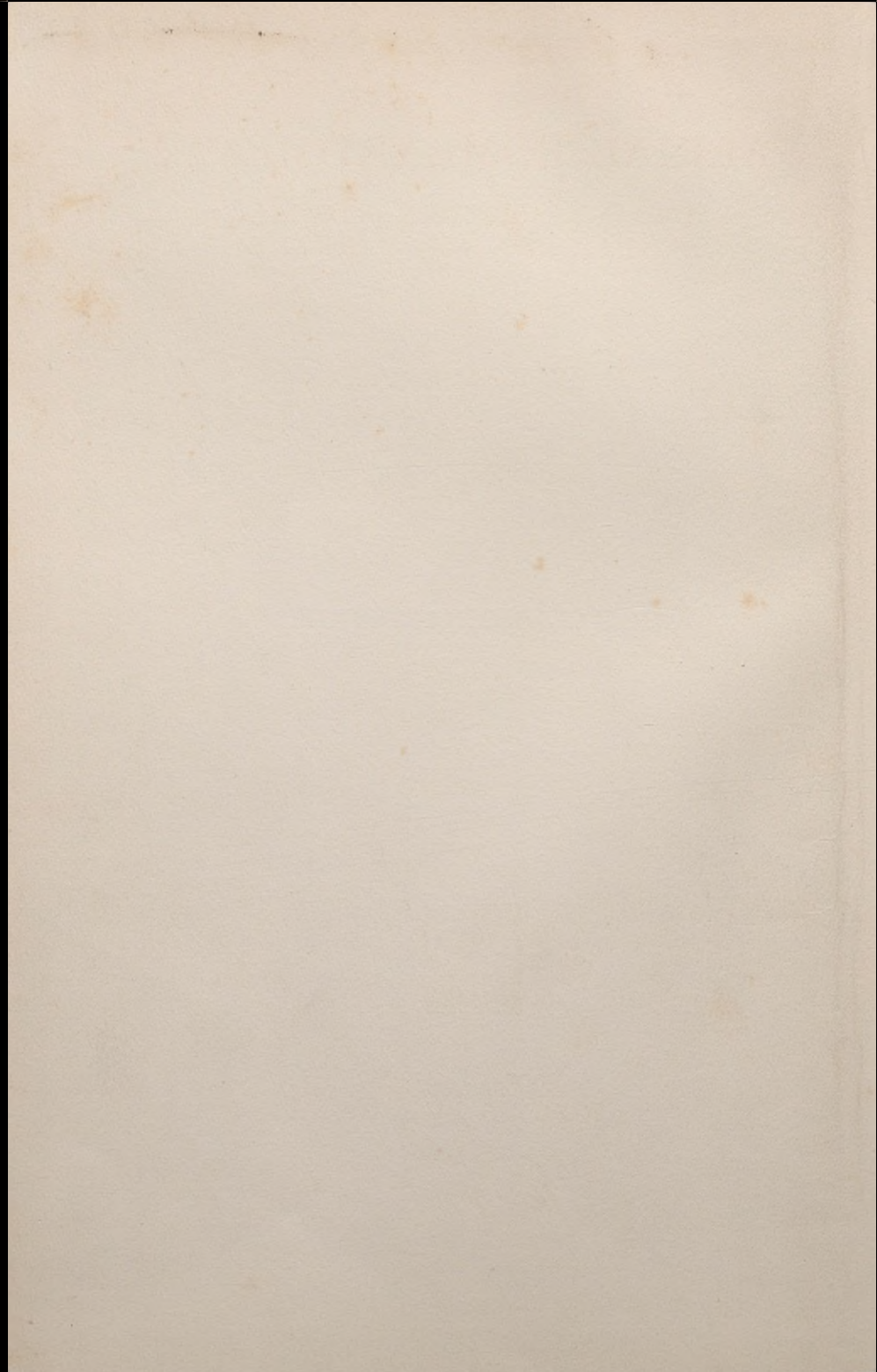
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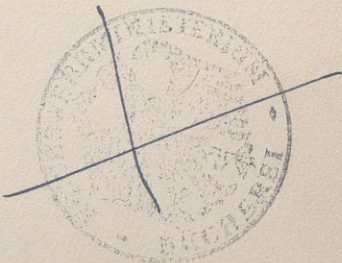
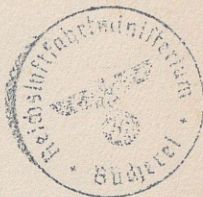
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AERIAL BOMBARDMENT

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**AND THE INTERNATIONAL
REGULATION OF WARFARE**

BY

aut. **M. W. ROYSE, PH.D.**



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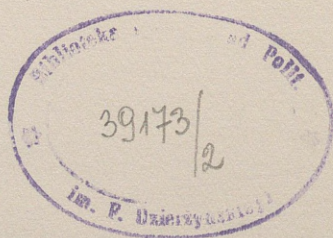
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FOREWORD

THIS study, in dealing with the legal aspects of aerial warfare, attempts to point out the extent to which weapons of war, or warfare itself, is subject to restriction. In a general way it attempts to answer the question whether civilian populations, including even women, children, and the aged, have any inherent right of immunity against attack or destruction—whether peaceable non-combatant populations far removed from the traditional zone of actual hostilities can be garbed with the character of combatants and exposed to attack merely through the vastly increased powers of destruction brought about by the progress of science. The answer must be made in the affirmative. In the realm of war, populations whether actively engaged in combat or whether remote from all hostilities are subject to whatever force the enemy can apply.

An attempt has been made to show that at no time in modern history has an effective weapon been voluntarily curbed to the disadvantage of the Power possessing the weapon; and that whatever immunities non-combatant populations to-day enjoy are due to the mechanical limitations on the present-day weapons. As an instance, until the late war London was safe from bombardment simply because no cannon could reach it from the Continent. Once aerial bombardment became practicable, as during the last war, London found itself subjected to regular combatant treatment.

The aircraft employed in the World War were primitive machines compared to the post-war bomber. With the advent of Air Power modern warfare has come to

embrace the whole of a nation, including civilian centers remote from actual land or naval operations. The essence of Air Power is its ability to ignore entirely the land and sea forces and to strike directly at the heart of an enemy nation, at its bases of supply, its trunk lines, its economic and industrial centers. This new means of warfare thus threatens to wipe out the long-established immunity of non-combatant populations. Judging from constant practices of past warfare it hardly seems likely that the mere danger to civilian populations will prevent the full use of this new and powerful weapon. The direct contrary appears more likely—that the possibility of achieving victory through the demoralization of an enemy nation will lead even to terrorization by means of widespread bombardment.

The two Hague Conferences, representing in a general way the first international attempts at the regulation of war, have been considered in detail. The purpose of so minute a study of these past conferences was to determine the extent to which international conferences are instrumental in actually limiting warfare, and whether they are at all concerned with the restriction of effective means of warfare.

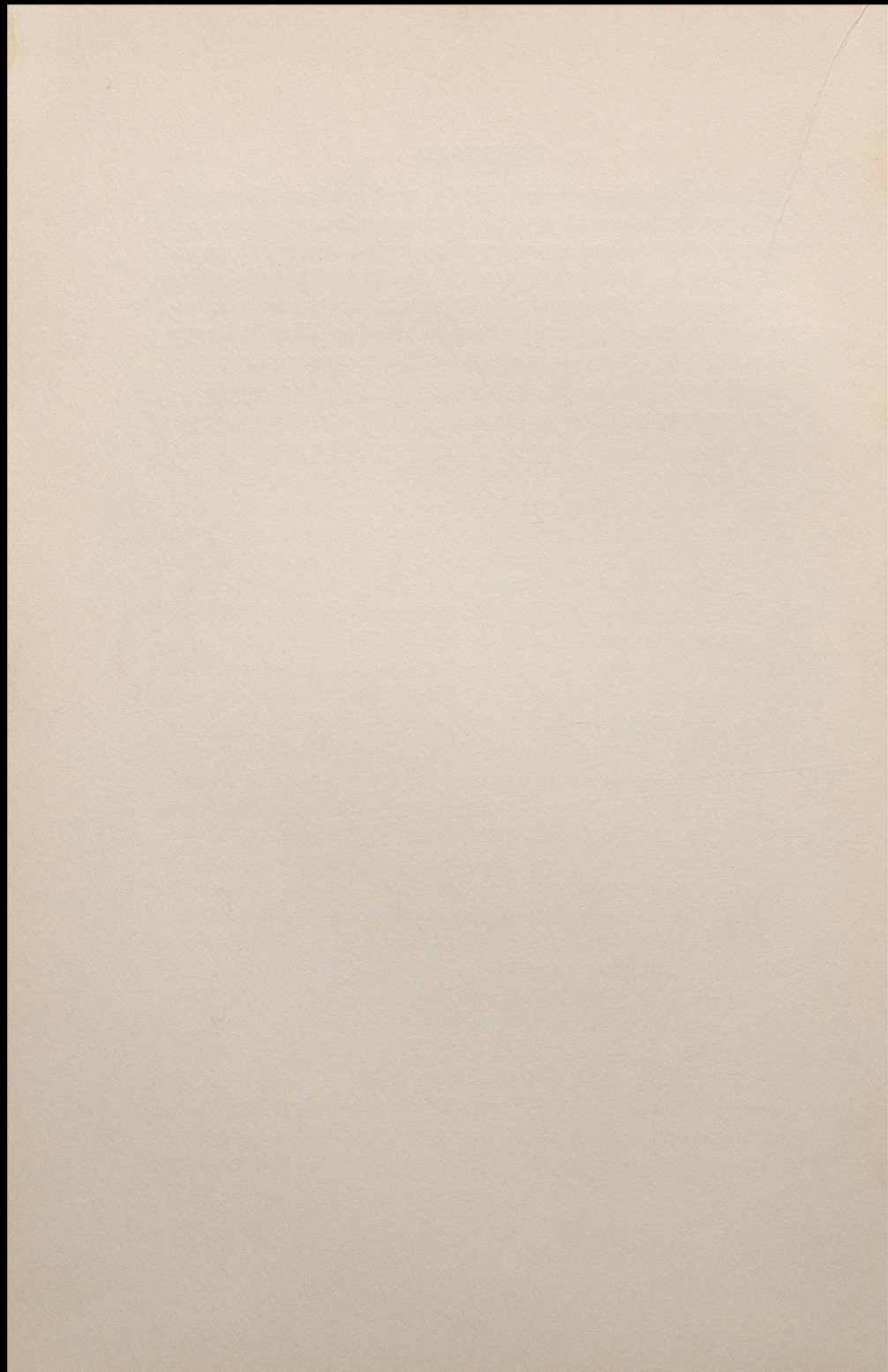
As Cutting Fellow of Columbia University the author was able to carry on extensive field work throughout Europe. Official archives in the various countries were made use of, as well as the compilations and reports available in the War Offices. For bombardment data the author also covered the different Fronts of the late war, including the West Front, the Italian Front, and the East Front from Riga down to Turkey.

The author is deeply indebted to the Honorable John Bassett Moore, under whom this work was begun, and who continued to give invaluable criticism even after severing connections with the University and taking up his work at The Hague. Gratitude is also expressed to

Professor Charles Cheney Hyde, under whom the work was continued, and especially to Professor Philip C. Jessup who worked over the manuscript at a great sacrifice of time. Professors Howard Lee McBain and Julius Goebel were unfailing in their helpful criticism and encouragement. Particular thanks are due Miss Rebecca Vincent for her work in reading the manuscript.

M. W. R.

May 23, 1928.



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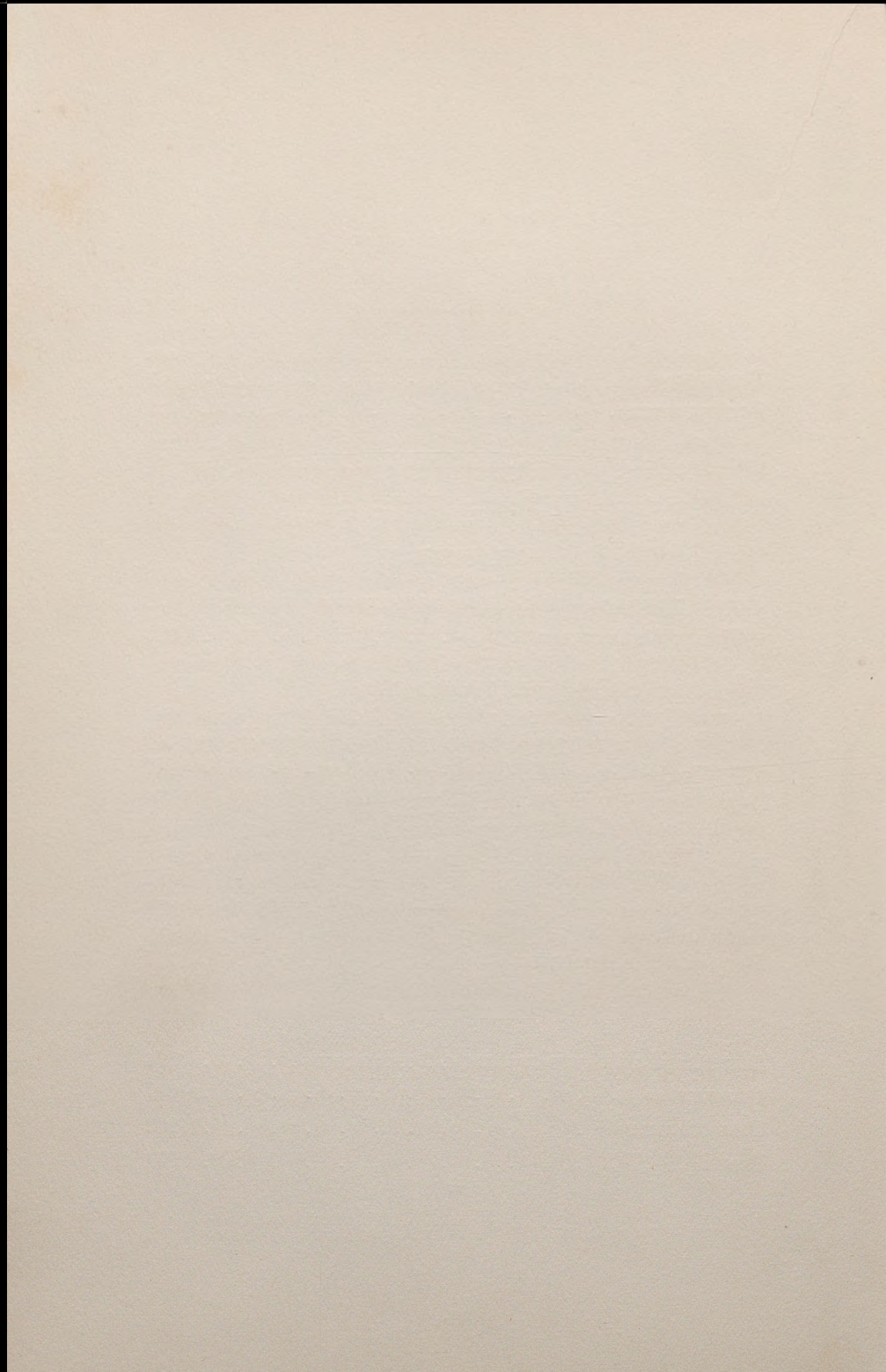
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INTRODUCTION

THE present study deals primarily with the problem of regulating or restricting bombardment from aircraft, but the author has chosen to deal with this question not as if some new and esoteric facts were involved calling for peculiar rules of law, but has proceeded on the assumption that aircraft are simply another engine of warfare whose employment will be restricted only on the principle of ultimate utility.

Mr. Royse tenders much historical evidence in support of his theory, and those who are convinced of the soundness of his proposition will find it most helpful in evaluating the affirmative results of the various conferences to regulate the use of weapons.

Of a kindred nature with these efforts to regulate the use of weapons of war was the ambitious attempt at Washington in 1922 to impose Limitations on Naval Armament, and here Mr. Royse's utilitarian theory is particularly illuminating.

At the present time (1928), the character of the 5-5-3 ratio as a measure of relative strength in Naval Armaments is well recognized. The numerals 5-5-3 represent the numerical ratio of battleship tonnage, and that but among a few nations.

Sea Power, as distinguished from Naval Armament, consists of Naval Armament and Merchant Marine. It is only in the last few years that Naval Armament, by the development of highly specialized and diversified types of war vessels, has been distinguished from Merchant Marine. If all nations of the world agreed to eliminate Naval Armament, and in pursuance of that

agreement, with appropriate ceremonies, sank every battleship, cruiser, gunboat, torpedo boat, submarine, airplane carrier and all combat planes and bombers in the middle of the Atlantic Ocean, the Merchant Marine would be supreme. That nation with the largest Merchant Marine could, by the installation of guns and torpedo tubes, create the greatest Sea Power in the world and take command of the seas. And by the same token the nation having the largest commercial air fleet could take command of the air.

It follows as a corollary that: "The nation with the greatest Merchant Marine increases her relative Sea Power by international limitations on, or elimination of, Naval Armaments."

At present there exists no political tradition in respect to "air power" comparable to that of sea power and consequently we may assume that the employment of aircraft will not be embarrassed by political considerations, at least until some power makes itself mistress of the air as Great Britain has of the sea. How far-reaching may be the effect of such considerations is well illustrated by the following:

On the 19th of June, 1803, the Secretary to the Lords Commissioners of the Admiralty in London (Evan Nepean) addressed a

"SECRET CIRCULAR"

To:	Admiralty Office
Adm. Lord Keith—Sheerness	19th June 1803.
Adm. Montagu—Portsmouth	
Rear Adm. Montagu—Downs	
Hon. Adm. Cornwallis—at Sea	
Adm. Sir John Colpoys, K. B.—Plymouth	
"My Lord:	

My Lords Commissioners of the Admiralty having

been informed that a plan has been concerted by Mr. Fulton, an American resident at Paris, under the influence of the First Consul of the French Republic, for destroying the Maritime Force of this country; I am commanded by their Lordships to send you herewith the substance of the information they have received relative thereto, that you may be appraised thereof, in order to your taking such measures as may appear to you necessary for frustrating any attempt on the part of the Enemy, connected therewith.

I have the honour to be, etc.

(Sgd.) EVAN NEPEAN.

“(ENCLOSURE) Mr. Fulton, an American resident at Paris, has constructed a vessel in which he has gone down to the bottom of the water, and he remained thereunder for the space of *seven* hours, at one time—that he has navigated the said vessel under water, at the rate of two miles and a half per hour; that the said submarine vessel is uncommonly manageable, and that the whole plan to be effected by means thereof, may be easily executed, and without much risk; that the ships and vessels in the port of London are liable to be destroyed with ease, and that the Channel of the River Thames may be ruined; and that it has been found that only twenty-five pounds of weight of gunpowder is sufficient to have dashed a vessel to pieces off Brest, tho’ *externally* applied.”

Fulton, hearing that Napoleon considered him a charlatan, and having received offers of financial assistance and rewards from a mysterious Mr. Smith, arrived in England 28 April 1804, and:

“Contract—Article of Agreement between the Right Honorable William Pitt, first Lord Commissioner of his Majesty’s Treasury and Chancellor of the Exchequer;

and the Right Honorable Lord Viscount Melville, first Lord of the Admiralty, in behalf of his Majesty's government on the one part; and Robert Fulton citizen of the United States of America and inventor of a plan of attacking fleets by Submarine Bombs on the other part.

ROBERT FULTON.

Signed this seventeenth day of July 1804
exchanged with a counterpart signed by
the Right Honorable Wm. Pitt (20 July 1804)
and the Right Honorable Lord Melville.
Witness (Sgd.) Home Popham."

In execution of the terms of this contract, above, Fulton constructed a submarine boat and on the 15th of October 1805, in the presence of Pitt and other officials, blew up the brig *Dorothea*, the operation being similar to the test off Brest a few years previously.

However, on 21 October 1805, Nelson destroyed the French and Spanish Fleet at Trafalgar and soon thereafter the authorities appreciated the force of Earl St. Vincent's criticism of Pitt, when that great minister was encouraging Fulton, that "Pitt was the greatest fool that ever existed to encourage a mode of war which they who commanded the seas did not want, and which, if successful would deprive them of it."

Fulton received no further encouragement or financial assistance and eventually returned to America to establish Steam Navigation in the Hudson.

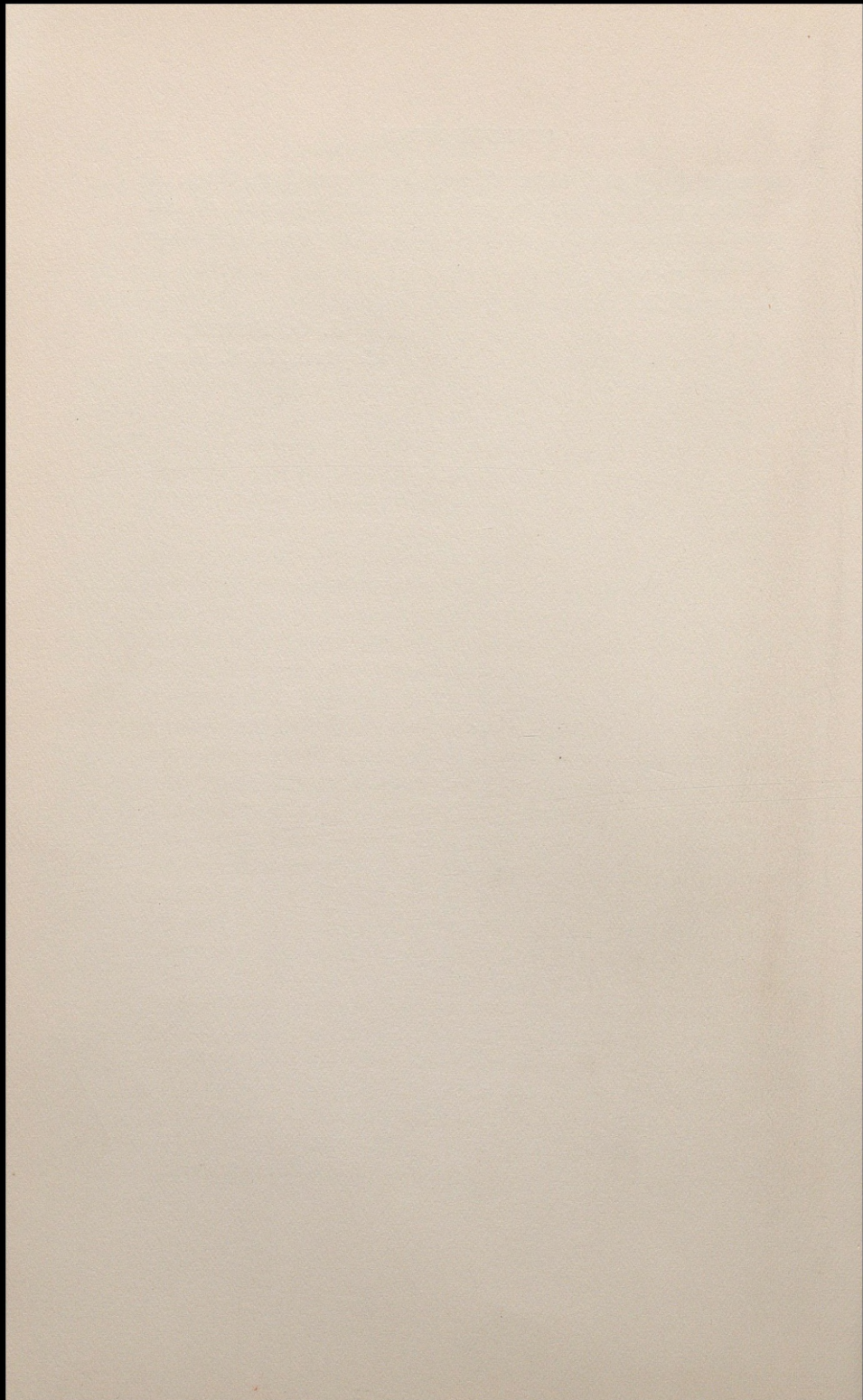
How near the submarine came to depriving Great Britain of command of the seas prior to the entry of the United States in the World War is of very recent memory. Of more recent memory is the desire of Great Britain to outlaw the submarine.

The thought suggests itself that very possibly as a corollary to the principle of ultimate utility, developed

so admirably and exhaustively by the author, that: A Nation neglects *at its peril* the development of all possible weapons and methods of warfare to a high state of efficiency.

16 May 1928.

J. O. FISHER,
Captain, U. S. Navy.



AERIAL BOMBARDMENT

CHAPTER I

THE REGULATION OF MILITARY INTERESTS

THE elements which form the basis of warfare rules fall into two main categories: a dominating group of military interests and a minor group growing out of "social sanction." This dominating group of military interests is bound up with state security and is motivated solely by utility. Its one standard is effectiveness. Checks on this effectiveness never come from within the group. The few restraints in force come from without—from the common culture of the time expressed as social sanction.

Military interests are made up entirely of considerations of defense and offense. They restrict themselves exclusively to war objectives centering about weapons and methods of warfare. Precedence is given to the local or immediate effectiveness of a weapon or method of warfare while its effect upon society in general is ignored. The torpedo and the aerial bomb, for instance, are judged solely upon their direct effectiveness—upon range, mobility and destructiveness—regardless of the general effect upon civilian populations.

Military interests, as one of the major public interests, stand apart from the mass of civilian or social interests in that they need no laws for their security and perpetuation. Their actual existence is not basically dependent upon a legal system, in sharp contrast to the social interests which arise from economic, social and political competition, from clashes among groups and in-

dividuals, and which exist only by law. Social interests also arise apart from law, but they are secured by law only, for competition demands limitation of rights and the safeguarding of interests within defined limits. Without law, for instance, there could be no property in the sense that we know it to-day. Land in itself, for example, needs no law, but ownership of land, or property, exists only through law and it is only by the device of a system of law that social interests are secured and perpetuated. "A legal system," Dean Roscoe Pound says, "attains its end by recognizing certain interests, individual, public and social; by defining the limits within which these interests shall be recognized legally and given effect through the force of the state, and by endeavoring to secure the interests so recognized within the defined limits."¹

Rules of war, consequently, are to be carefully distinguished from the laws governing society in general. They do not arise from economic competition or from a clash of social interests.² Security, the common source of all laws governing social interests, is therefore superfluous here since there is no need for defining or securing interests where no clash or competition occurs. Within a state military interests are generally unified and the state itself, as a sovereign and independent unit, protects these interests against foreign interference and carefully secures their unity in the name of national security. Self-defense is admitted by most writers to be

¹ Roscoe Pound, *Spirit of the Common Law*, p. 91. In his *Introduction to the Philosophy of Law*, p. 92, Dean Pound considers law "as existing to secure social interests, so far as they can be secured through an ordering of men and of human relations through the machinery of organized political society." For a similar view see also *Œuvres de Raymond Saleilles*, p. 32; also Vinogradoff, *Historical Jurisprudence*, p. 151.

² This whole study involves an examination of the extent of the influence of humanitarian interests when they clash with military utilitarianism. We are not here concerned with those rules of prize law and of neutrality which do arise as a compromise between the conflicting interests of belligerents and neutrals.

the most important fundamental right of the state; and it is this right of self-preservation which protects and maintains the military interests in a state.³

Both municipal law and rules of warfare spring from utilitarian interests. Municipal law, however, instead of subjecting itself to utilitarian interests places limitations upon them, in order to reconcile and secure opposing interests. It is often pointed out that even municipal law does not extend over all social activities. In the United States, for instance, the amount of land which may be owned by any one individual is unlimited, whereas in many European countries individual ownership of land is now limited to comparatively small acreages.⁴ John Bassett Moore ascribes the "civil calamities," to which nations at times have been subject, partly to "the circumstance that there is a large part of human activities, especially of a competitive kind, not yet brought within the sphere of legal regulation."⁵ It is not implied here that the state cannot limit utility. The meaning is, rather, that although some social activities are still unrestricted by law the right of state jurisdiction nevertheless exists; and where competition

³ Rivier calls the rights of self-preservation "essential, or fundamental, primordial, absolute, permanent rights." *Principes du droit des gens*, vol. 1, pp. 277-279. Hall says, "In the last resort almost the whole of the duties of states are subordinated to the right of self-preservation." *International Law*, 7th edition, p. 278. See also Lawrence, *The Principles of International Law*, 7th edition, p. 125. Westlake, however, is opposed to the unlimited, absolute right of self-preservation. *International Law*, 2nd edition, vol. 1, p. 294. See also Moore, *Digest*, vol. 2, sec. 217, for the case of the *Virginus*. For the case of the *Caroline*, see *ibid.*, vol. 2, p. 412; also Hall, *op. cit.*, p. 282; Oppenheim, *International Law*, 1920, vol. 1, sec. 133 c; also Lawrence, *op. cit.*, pp. 126-127. For the right of self-defense see also Hyde, *International Law*, vol. 1, sections 65, 70. For the right of self-defense and its relation to the Monroe Doctrine see Charles E. Hughes, *Observations on the Monroe Doctrine*, an address delivered before the American Bar Association, August 30, 1923.

⁴ Constitutional clauses limit land ownership in such countries as Finland, Esthonia, Latvia, Lithuania, Poland, Czechoslovakia and the Balkan states.

⁵ *International Law and Some Current Illusions*, 1924, p. 304.

between interests becomes acute, state action is certain to follow. Thus, although it is conceded by all writers that a sovereign state has complete jurisdiction over all property and persons within its territory,⁶ international law has limited its exercise over aliens. In the same way, where no clash of interests occurs the state often refrains from legislating, although it has the power even "to group its citizens into various classes and to award to the members of each special class such special public and private rights and duties as it may judge best."⁷ The amount of limitation by the state on social activities will thus always be determined by the interests involved. Rules of war, on the other hand, do not limit utility, since the opposing interests in warfare are sovereign interests, and since there is no super-sovereign with power to limit such opposing interests. The ultimate fate of proposals designed to limit air bombardment must inevitably be determined by this fact. Illustrations of this situation may be found in every international conference dealing with rules of war. Where a conference has dealt with non-opposing interests, such as the revision and clarification of accepted rules and usages of war, agreements were often reached. Where a conference, however, has attempted to prohibit or limit weapons or methods of warfare deemed vital by some states no agreement could be reached and the attempt has ended in failure. The Conferences of Paris, 1856, of St. Petersburg, and Brussels, the two Hague Conferences and the Washington Conference of 1921-22, as will be shown later, succeeded only in so far as they conformed with military utility, and failed where they

⁶ W. W. Willoughby says: "Of the complete jurisdiction of a sovereign state over all property within its territorial limits, whether for purposes of taxation, of eminent domain, or the regulation of its use in private hands, there is no dispute." *The Fundamental Concepts of Public Law*, p. 444.

⁷ *Ibid.*, p. 355.

clashed with vital military interests. An international conference was thus able to abolish the use of the non-effective soft-nose bullet, poison, a weapon which was dangerous to the army employing it and which had long been outlawed through custom, and the throwing of projectiles from the early balloons, when the free balloon was the only air vehicle and practically worthless for bombing purposes. Conferences were also able to bring about the great body of Red Cross regulations, since these rules distinctly furthered military interests without having the effect of placing one or more states at a disadvantage.

Where the weapon or method of warfare, however, fills an important place in the defense scheme of a state or group of states, any attempt at its abolition has been and will be opposed. Thus the United States in 1856 refused to sign the Declaration of Paris abolishing privateering. The grounds, as plainly stated, are strictly utilitarian. In the Crimean War the Allies had abolished privateering by their own nationals, principally because of fear that Russia in return might make use of the American merchant marine through letters of marque, and prey upon Allied merchant vessels.⁸ When the question of privateering came up at the Paris Conference in 1856 the United States, with its comparatively small navy, was inclined to look upon privateers as an auxiliary naval force. To Americans the abolition of privateering meant "the augmentation of the aggressive capacity of great naval powers while the defensive ability of others would be reduced."⁹ Although the French and British at the conference condemned privateering as a barbarous practice "incompatible hence-

⁸ Twiss, *Belligerent Rights*, cited in Moore, *Digest*, vol. 7, p. 539; also Malkin, "The Inner History of the Declaration of Paris," 1927 *British Year Book of International Law*, p. 1.

⁹ President Pierce, Annual Message, December 2, 1856, *Richardson's Messages*, vol. 5, p. 412; also Moore, *Digest*, vol. 7, p. 564.

forth with the usages of civilized nations,"¹⁰ the United States refused to surrender her right to a practice which offered some potential auxiliary strength unless she received compensation in the form of total immunity for private property at sea.¹¹ "If it [the abolition of privateering] were adopted as an international rule, the commerce of a nation having comparatively a small naval force would be very much at the mercy of its enemy in case of war with a power of decided naval superiority."¹²

A striking parallel to the American attitude at the Conference of Paris was that of Great Britain at the Brussels Conference of 1874. Whereas the United States had refused to abolish privateering because it would augment the "aggressive capacity of great naval powers," Great Britain refused to proceed with the work of the Brussels Conference respecting irregular troops on the grounds that certain of the proposed clauses would greatly augment the advantages of the continental powers maintaining compulsory military service.¹³ Although the Brussels Declaration is looked upon as "a landmark in the history of international codification,"¹⁴ with its articles forming the basis for most

¹⁰ *Ibid.*, vol. 7, p. 539.

¹¹ See the Annual Message, December 4, 1854, of President Pierce in which he pointed out that in case of war between the first maritime power and the United States, "without resort on our part to our mercantile marine, the means of our enemy to inflict injury on our commerce would be ten-fold greater than ours to retaliate." Moore, *Digest*, vol. 7, p. 551. As the American naval power increased the ban on privateers was accepted, as conceded by Secretary Lansing in 1916. See *Special Supplement, Am. J.*, 10, p. 312.

¹² President Pierce, in his Annual Message, December 4, 1854, Moore, *Digest*, vol. 7, p. 551.

¹³ Lord Derby to Lord Loftus, January 20, 1875. *Parliamentary Papers*, 1875, *Miscellaneous*, No. 2, p. 2. The note ends with the statement that "Her Majesty's Government regard the result of the Brussels Conference to have been to demonstrate that there is no possibility of an agreement upon the really important Articles of the Russian Project that the interests of the invader and the invaded are irreconcilable."

¹⁴ Garner, *International Law*, 1925, p. 744. On the influence of the Brussels Declaration upon military codes see also Rolin Jaequemyns,

manuals of war as well as international conventions, Great Britain at the time refused to adhere to them or to limit what she considered to be her military interests. As Maine says, "the matters at stake were the differences in the interests of states who possessed such vast armies as served under the colors of the Germans or the French, and those smaller states which, either from policy or from poverty or from smallness, declined or were unable to keep on foot armies on that scale."¹⁵

The Brussels Conference brought out differences not only on the question of irregular troops. Great Britain, for instance, refused to send a delegate to the Conference unless it was assured that naval matters would not be considered.¹⁶ Her naval power had already been somewhat curtailed at the Paris Conference of 1856, in the several concessions made to neutrals, and there was no desire on her part, apparently, to give another opportunity to the great land powers of the continent further to restrict marine warfare. The British delegate, Major-General Horsford, was not appointed until assurance was received from the various governments that naval warfare would not be taken up.¹⁷

Revue général du droit international public, 1875, pp. 87-91, 438-552; *Annuaire de l'Institut de Droit International*, vol. 1, p. 133; Holland, *Studies in International Law*, p. 89; Higgins, *The Hague Peace Conferences*, p. 258; Moore, *International Law and Some Current Illusions*, p. 298. Many official manuals are based on the Brussels draft, such as the French *Manuel*, 1877, Serbian, 1878, Spanish, 1893, Italian, 1896, Swiss, 1904, Russian, 1904, German, 1902.

¹⁵ Maine, *International Law*, p. 171. Great Britain was not alone in her opposition to the article on irregular troops. Belgium and the Netherlands refused to accept any measures weakening their national defense. *Parliamentary Papers*, 1875, Misc. No. 1, Protocol 1 of the Committee. The Swiss delegate insisted that the right to *levée en masse* was a part of the right of self-defense. Portugal and Turkey also supported these views of the smaller states, which in this respect were also those of Great Britain.

¹⁶ *Parliamentary Papers*, 1874, Miscellaneous No. 1, pp. 27-28.

¹⁷ Despatch of Lord Derby to Lord Loftus at St. Petersburg. *Parliamentary Papers*, 1874, Miscellaneous No. 1, p. 28.

Military matters were hardly touched at the Hague Conferences. Although the First Hague Conference had been called primarily for the purpose of limiting land and sea armaments its final action on the subject was restricted to the mere expression of a *vœu* that the Governments in the future "examine the possibility of an agreement as to the limitation of armed forces."¹⁸ The circular first sent out by the Russian Government, August 24, 1898, had been too sweeping in its request that a conference be called "to put an end to these incessant armaments and to seek the means of warding off the calamities which are threatening the whole world."¹⁹ The Powers declined the invitation. Another circular, that of January 11, 1899, proposed a more modest program, asking for a preliminary exchange of ideas on the question of armaments.²⁰ This invitation was accepted by the various governments, and was given as the basis of the First Hague Conference. But when the Russian proposal providing for a five-year *status quo* in military forces and budgets was advanced, it was rejected without delay.²¹

The second Russian proposal, on limitation of naval forces and budgets, likewise failed.²² The German delegate, General von Schwarzhoff, assailed the Russian projects for disarmament as impracticable and from an economic point of view wholly unnecessary.²³ But Germany at the time possessed perhaps the most powerful land forces and was rapidly building up her sea power.

¹⁸ This wish was passed unanimously. Lémonon, *La Seconde Conférence de la Paix*, p. 3, states that the wish was no solution to the problem but rather proof that an agreement on the question was impossible.

¹⁹ See Scott, *Texts of the Peace Conferences at the Hague*, p. 2, for Russian Circular, August 24.

²⁰ *Ibid.*, p. 3.

²¹ Gilinsky draft. *Conférence Internationale de la Paix*, 1899, Ministère des Affaires Étrangères, La Haye, 1899, *Protocols*, II, 33.

²² Capt. Scheine's draft, *Protocols*, II, p. 33.

²³ *Protocols*, II, p. 36.

Any limitation or reduction at this time would have interfered with her military interests, and limitation for that reason was promptly rejected. France, on the other hand, seemed to fear the German land forces, and her delegate, M. Léon Bourgeois, supported the Russian project for the limitation of land forces.²⁴ France, however, did not support the second Russian project on limitation of sea power. Together with Great Britain and the United States, France rejected the naval project, and before the Conference was long under way the whole problem of armaments was completely abandoned. Limitation of land forces and sea power conflicted too vitally at that time with military interests to be tolerated, or as the British delegate diplomatically phrased it, the problem was found to present "so many difficulties from a practical point of view that it was necessarily abandoned for the present."²⁵

The problem of armaments in 1906 still presented too many difficulties for any serious consideration. The military interests involved were in fact so great as to have the question of armaments entirely omitted from the program submitted in the Russian proposal for a new conference.²⁶ Russia no longer was in a position to press negotiations for limitation of armaments as her fleet had been destroyed in her late war with Japan, and her armed force reduced to "complete military impotence."²⁷ The mission of the Russian Councillor of

²⁴ See Lémonon, *op. cit.*, p. 3.

²⁵ Sir Julian Pauncefote to the Marquess of Salisbury, *Parliamentary Papers*, Miscellaneous No. 1 (1899), p. 353, quoted in Higgins, *op. cit.*, p. 42. The delegates of Great Britain, France and the United States gave, among other reasons, that Governments could not interfere with the budgets laid down by their national legislatures. This reason has been rejected by many writers. Wehburg, in his *Limitation of Armaments*, p. 16, cites such writers as Zorn, Renault, Lammasch, and Scott.

²⁶ Circular of Count Benckendorff, April 3, 1906. Higgins, *op. cit.*, p. 54. Also Ambassador Rosen's letter to the American Secretary of State, April 12, 1906. Scott, *Texts*, p. 104.

²⁷ It was not until 1910 that Russia began the reconstruction of

State, de Martens, on which he discussed the problem of armaments with the various Powers, resulted in nothing. Great Britain was indeed eager to enter into negotiations on the subject as competition in armaments had not only run up into colossal costs but had given Germany the greatest military power in Europe and a naval program which was gradually threatening English supremacy on the seas. The British and American delegates to the Second Conference were instructed to bring the question on their own initiative to the attention of the Powers.²⁸ France again approved of reopening the question, as did also Italy, both being willing to reduce the tremendous naval budgets, providing the two great naval powers, England and Germany, did likewise. But Germany, apparently, was not prepared to stop. She had declared "that under no circumstances would they [the German Government] take any part in such a discussion."²⁹ The question was again dropped as at the First Conference, with a mere resolution, unanimously adopted, that "the conference declares that it is eminently desirable that the governments should resume the serious examination of this question."³⁰

The Russian attempts to restrict the size and power of rifles and guns also resulted in nothing but a formally expressed wish "that the questions with regard to rifles and naval guns may be studied by the Governments." The discussions surrounding the various proposals bristle with practical military considerations, the basic one being the balancing of military armaments. An agreement on any of the proposals was never reached, although there seems to have been an earnest effort on

her depleted army. See General Youri Danilov's *La Russie dans la Guerre Mondiale* (1914-1917), ch. I.

²⁸ Letter of Sir Edward Grey to Sir Edward Fry, the British delegate at the Conference. *Parliamentary Papers*, Miscellaneous No. 1 (1908), p. 11; also in Higgins, *op. cit.*, appendix.

²⁹ *Ibid.*, Grey's letter, p. 11.

³⁰ Scott, *Texts*, p. 138.

the part of the small powers to stop for a period of five years the competition in rifles and guns. In the votes on the different projects the small powers were invariably in favor of prohibition while the great powers were opposed to any restrictions. The Dutch-Russian proposal,³¹ providing for a *status quo* in small arms for five years, with no additions and no improvements which changed the type or caliber, was rejected by all the great powers, excepting the proposer, Russia.³² The cause of the rejection is given as purely technical, there being no possible method of determining the extent of improvement or changes permitted, and no means for certifying the extent of improvement or change without giving up a military secret.³³ The subsequent Russian proposal³⁴ and later the Dutch³⁵ were also rejected by the great powers although accepted by the small states.³⁶ The proposal on guns met a similar fate.³⁷ The economic

³¹ For decisions on the various proposals see the Report of the American delegate, Captain Crozier, Holls, *The Peace Conference at the Hague*, pp. 506-514. For Dutch-Russian proposal see *Protocols*, II, p. 42.

³² Voting for rejection were: Austria-Hungary, France, Great Britain, Italy, Japan, Portugal, Serbia, Turkey and the United States. Those who voted in favor of the proposal were: Denmark, Bulgaria (with reservations), the Netherlands, Norway, Persia, Russia, Siam, Spain, Sweden and Switzerland.

³³ See the German delegate's remarks, *Protocols*, II, p. 68. Also the United States delegates' Report to the Secretary of State, *Foreign Relations of the United States*, 1899, p. 515.

³⁴ The Russian proposal provided for a 4 kg. minimum weight for a rifle, a minimum caliber of 6½ mm., a minimum bullet-weight of 10½ gr., a maximum initial velocity of 720 m.p.s., with a maximum rapidity of fire of 25 shots per minute, with a complete prohibition of explosive or expanding bullets and automatic loading.

³⁵ The first Dutch proposal would have prohibited the use of any new rifle or gun, with no improvements other than those which did not change the type, caliber or prevailing initial velocity. *Protocols*, II, p. 61. The second Dutch proposal permitted improvements of any kind, but no complete replacement of arms then in use, except by those states whose weapons at the time were antiquated. *Protocols*, II, p. 71.

³⁶ Those voting against were Austria-Hungary, France, Germany, Great Britain, Italy, Japan, Turkey and the United States. Those voting for were Belgium, Denmark, Bulgaria, the Netherlands, Persia, Russia, Siam, Spain and Switzerland.

³⁷ Practically the same division occurred in the vote on the various

burden of military competition had grown too heavy for the small nations. The military establishment had come to embrace vast industries and the military budget had to take care of new technical improvements and rapid replacement of arms. The various proposals for a halt in the armament race therefore came from the small states and from Russia which at that time was still dependent upon other countries for her arms and technical equipment.³⁸ The large states, however, could come to no agreement on the matter of arms-limitation or supervision. The military interests involved were so intimately related to the safety of the state, or to what the various Powers considered to be the safety of the state, that no program for the limitation of arms would at that time have been accepted. Any weapon or military method which augmented the strength of the military establishment was eagerly accepted and retained, whereas any attempt at the limitation or restriction of the military power was quickly discouraged.

The powder question, which came up early in the discussions of the First Hague Conference, was never seriously considered. The delegates pronounced themselves unanimously in favor of complete independence of action by the individual state. The practical military considerations, as explained by the American military delegate, Captain Crozier, shut out any possibility of

proposals restricting the use of naval guns. See *Protocols*, II, p. 81, for the van Karnebeck proposal; *Protocols*, II, p. 84, for the Pephau proposal; *ibid.*, for the Scheine proposal which also provided for a maximum thickness for armor plate (14 inches and of a quality equal to the "latest Krupp patent").

³⁸ The British delegate, Admiral Fisher, in objecting to any restrictions on naval guns, not only pointed to the difficulty of control, the hardships in wars against savages, but also to the fact that it was to the advantage of small nations to be perfectly free in the development of new types of guns, since their safety could be best insured by having superior military equipment, with no restrictions on new inventions. But the small nations apparently disagreed with Admiral Fisher, judging by the votes favoring such restrictions. *Protocols*, II, p. 85.

powder regulation.³⁹ The same negative action was taken on the question of explosives, the large states, with the exception of Russia, voting against any restrictions on their use.⁴⁰ The abrupt rejection of the proposed restrictions on the strengths and use of powder and explosives was to have been expected even more than the rejection of the arms restrictions, since powder and explosives form the basis of all modern weapons. International restrictions upon their employment would have been in effect a limitation upon the most vital military interests of a state. Judging from the discussions on the motion, and from its subsequent unanimous rejection, no state was prepared even to consider any international interference with its effective military power.⁴¹ This attitude had not changed by the time the Second Hague Conference was convened, for no motion on powder or explosives, as such, was brought up at that conference. As late as 1921-1922, at the Washington Conference, official international opinion was still silent on the subject.

The Russian attempts to interdict the use in naval warfare of submarine torpedo boats, or weapons of the same nature, received a different treatment at the hands of the First Hague Conference.⁴² Their effectiveness was already apparent in 1899, and the smaller states "regarded them as a cheap defense against possible aggression from a strong and unscrupulous belligerent."⁴³

³⁹ See Capt. Crozier's speech, *Protocols*, II, p. 57.

⁴⁰ The Gilinsky proposal provided for the prohibition of high-explosive shells for field artillery. Explosives, furthermore, were to be restricted to existing types; and the powerful explosives used for sieges were not to be employed for ordinary field use. *Protocols*, II, p. 64. Voting in favor of the motion were: Belgium, Denmark, the Netherlands, Bulgaria, Persia, Portugal, Russia, Serbia, Siam, Switzerland. Voting against were: Austria-Hungary, Germany, Sweden, the United States, Turkey.

⁴¹ *Protocols*, II, p. 56 *et seq.*

⁴² Scott, *Texts*, p. 4. Proposal 4 of the Russian Circular.

⁴³ Lawrence, *International Law*, 7th edition, p. 516.

As early as 1866 the Chilean Government threatened to destroy the Spanish fleet before Valparaiso with torpedoes.⁴⁴ In 1877 Russia complained of the Turkish practice of placing torpedoes indiscriminately in the Danube during the war with Russia.⁴⁵ The effective employment of submarines, for the firing of torpedoes, was also recognized long before the meeting of the First Hague Conference. As early as 1776 the battleship "Eagle," flagship of Lord Howe, narrowly escaped destruction in the torpedo attack by Captain David Bushnell's torpedo boat.⁴⁶ During the American Civil War the Confederates made effective use of the torpedo boat, destroying a total of 7 Union ironclads, 13 wooden war vessels and 7 army transports.⁴⁷ Later the invention of the automobile torpedo⁴⁸ became the basis for the modern weapon, being used in warfare for the first time in 1878, at Batum, later by the French against China, 1884, and in 1895 by the Japanese against China where the Japanese torpedo flotilla sank several warships, two of which were armored.⁴⁹ In the vote on the motion, at

⁴⁴ Moore, *Digest*, vol. 7, p. 365.

⁴⁵ *Ibid.*, p. 366.

⁴⁶ H. Maxim, "Torpedoes and Warfare," *Illus. Review of Reviews*, May, 1904.

⁴⁷ *Ibid.*, p. 260; also G. Fitzgerald, "Torpedo in Modern Warfare," *Harper's Weekly*, 49: 602-5. The Union vessels, on their part, lost an ironclad by the exploit of Lt. Cushing who used a spar torpedo. Long before the Civil War, Robert Fulton had attempted to introduce a system of submarine warfare into the French Navy, his "Nautilus" in 1801 blowing up a launch in the harbor of Brest—the first known instance of a vessel being destroyed by a submarine explosive. His project was, however, rejected by the French, and later by the British Government. He next proposed an elaborate scheme to the United States Government, including buoyant mines, line torpedoes, harpoon torpedoes and black ship torpedoes. Not long after Fulton's attempts Col. Samuel Colt worked out his system of electrically operated submarine mines, 1829, and in 1843 blew up a brig under full sail in the Potomac. His project was also rejected by Congress.

⁴⁸ Invented by Capt. Whitehead of the Austrian Navy. See Maxim, *op. cit.*, p. 561.

⁴⁹ Maxim, *op. cit.*, p. 562. Also Benjamin, "Japanese Attacks," *Illustrated Independent*, 56: 353-6, February 18, 1904. The more modern improvement of the Whitehead model was used successfully during

the First Hague Conference for limiting the use of this weapon, the smaller states may be noted as having been in favor of no restrictions, whereas such strong naval powers as Great Britain, Germany and Italy agreed to vote for an interdiction if unanimity could be achieved. Only Greece, Persia, Siam and Bulgaria voted for absolute interdiction.⁵⁰ In the discussion surrounding the Russian proposal for the interdiction of submarine torpedo boats are to be noted striking examples of the practical utilitarian motives with which states approached the question of warfare rules. The smaller states, on the whole, were eager to retain this cheap means of defense, whereas the naval powers saw in the submarine torpedo boat a threat to their fleets. The Austro-Hungarian delegate, representing a relatively small naval power, saw an opportunity of defense service of ports and roads with such a weapon.⁵¹ The delegate of the Netherlands considered it a weapon for the weak, a weapon therefore which could not be forbidden. The Swedish and Norwegian delegate supported the Netherlands in this view. The Turkish delegate, also, wanted to retain the weapon as a means of defense, and the Siamese delegate reserved the question on the grounds that though he had been instructed to support as far as possible humane measures, at the same time he thought it important to consider the necessities of the defense of weak states. The French delegate, with a fleet much inferior to those of Great Britain and Germany, saw in the submarine torpedo boat a weapon of great defensive

the Chilean Revolution of 1891, when the "Blanco Encelada," an armored Congressist vessel with 120 men aboard was sunk in the Bay of Valparaíso by the Balmacedist torpedo boat "Lynch," after its consort had discharged several torpedoes which missed their mark.

⁵⁰ *Protocols*, II, p. 26. Voting against the proposed interdiction were: Austria-Hungary, Denmark, France, Norway, the Netherlands, Portugal, Spain, Turkey and the United States. Abstaining from voting were: Russia, Serbia and Switzerland.

⁵¹ See Moore, *Digest*, vol. 7, pp. 367-368, for the statements made by the different delegates.



value. He considered that it therefore was not necessary to prohibit it. Germany, with its great fleet, was skeptical of the torpedo boat's capacity to undermine entire fleets. Its delegate, therefore, was willing to accept an interdiction, providing that other states consented. Great Britain, as the first naval power in the world, was in full agreement with the German proposal. The other naval powers, Italy and Japan, were also willing to accept an interdiction. The prime consideration in these discussions was that of defense. Regulation was hardly conceivable in this case where international restrictions would have interfered with the employment of a weapon considered vital in the defense schemes of an entire group of states.

By the time the Second Hague Conference convened the submarine had developed into a modern, efficient war machine. It was recognized as such by all states. Even before the Russo-Japanese War of 1904-5 had demonstrated the destructive capacity of the submarine and its torpedo, the larger states were experimenting with the weapon.⁵² The Japanese successes in the war against Russia⁵³ gave an immediate impetus to further construction of torpedo boats by the different naval powers.⁵⁴ By 1907 submarine construction had become

⁵² In 1902 Great Britain ordered a number of Holland boats, due to "French activity in submarines." R. G. Skerrett, "The Invisible Navy," *Harper's Weekly*, 52: 14-15, April 4, 1908.

⁵³ The Japanese torpedo flotilla attacked the Russian fleet which was lying outside of Port Arthur quite unprotected against underwater attack. Several of the warships were severely damaged, but all the vessels succeeded in reaching Port Arthur. (*Encyclopædia Britannica*.) The sinking of the Russian flagship, "Petropavlosk," has been called a victory for the torpedo, but it was a mine which sunk the vessel. Benjamin, "Japanese Attacks," *Illustrated Independent*, 56: 353-6, February 18, 1904. Also "Torpedoes in the Eastern War," *The Nation*, 78: 162-3, May 3, 1904. Fitzgerald, *op. cit.*, states that at least a dozen ships were either destroyed or disabled by torpedo boats.

⁵⁴ The Navy Department of the United States drew up plans for submerged torpedo tubes in the battleships of the "Virginia" class then (1904) building. An order was issued providing that the battleships "Connecticut," "Minnesota" and "Vermont" be equipped with torpedo

part of most naval programs. In view of the great importance attached to undersea craft and torpedoes it is not surprising to find no interdiction proposed such as was advanced at the First Hague Conference.⁵⁵ In the conventions themselves no mention is to be found concerning submarine or torpedo boats. The torpedo, indeed, has been dealt with, but only to the extent of providing that torpedoes must become harmless when they have missed their mark.⁵⁶ The torpedo, with its vehicle the submarine, except for this mild restriction was thus left entirely unencumbered by regulations. The right of employing the torpedo against a belligerent remained unquestioned.⁵⁷ During the World War, however, and since, different provisions of the Hague Conventions have been referred to as being in essence a limitation on the use of the torpedo and submarine.⁵⁸ Thus it is

tubes. Great Britain was said to be building a half-dozen submarines, following the example set by France, which was then constructing two 400-ton boats, double the size of any then in existence. Skerrett, *op. cit.*, pp. 14-15, reports the following activity in submarine construction, for the year 1907-8: France ordered 10 submersibles; Austria, 2; Norway, 1; England, 16; and the United States, 8. See also the *Nation*, *op. cit.*, p. 162; Fitzgerald, *op. cit.*, p. 163.

⁵⁵ Count Benckendorff's Circular omits any direct reference to submarines or torpedo boats. Reference is made only to the "laying of torpedoes." Article 3 reads: "Elaboration of a Convention relative to the Laws and Usages of Naval Warfare concerning—Special operations in naval warfare, such as the . . . laying of torpedoes, etc." Higgins, *op. cit.*, p. 54. On the other hand, express assertion is made in the preamble of the Circular that it is at present desirable to "leave untouched those questions which might effect the limitation of military or naval forces." Benckendorff's Circular, *ibid.*

⁵⁶ Hague Convention, VIII, 1907, Article 3. Scott, *op. cit.*, p. 253. For Russian Proposal, see report of the Committee of Examination to the Third Commission of the Second Hague Conference, in which absolute prohibition is qualified by the phrase "so far as possible." *Deuxième Conférence Internationale de la Paix, Actes et Documents*, III, 404. Scott, *Reports of the Hague Conferences*, 660, 661.

⁵⁷ See also Hyde, *op. cit.*, vol. 2, p. 428; Garner, *International Law*, p. 334; Lawrence, *op. cit.*, p. 518.

⁵⁸ For a full discussion see Hyde, *op. cit.*, pp. 478-486. In the Washington Conference of 1921-1922, the signatory powers, in a special article, recognized "the practical impossibility of using submarines as commerce destroyers, without violating, as they were violated in the recent war of 1914-1918, the requirements universally accepted by civi-

pointed out that the use of torpedoes against merchant ships is regulated by Article 23 (e) of the Hague regulations of 1907,⁵⁹ also by the prize regulations as laid down in Article 3, 1907.⁶⁰ Belligerents are said not to have an unlimited right as to the choice of means of injuring the enemy;⁶¹ and that crews and passengers on board merchant vessels, enemy or neutral, must be removed in safety before sinking a vessel.⁶² There seems to be no good reason for believing that the delegates to the Second Hague Conference wanted a special sphere of absolute freedom for the torpedo and submarine in naval warfare. Although there was practically no discussion of the automobile torpedo at the conferences,⁶³ there is no indication that its employment was not to be covered by the several regulations dealing with merchant vessels, and persons aboard them.⁶⁴ No limitation, however, on the weapon, as such, was wanted at the 1907 conference. Not even the United States, which finally went to war apparently because of the submarine policy of Germany, is said to have been opposed to the use of submarines as commerce destroyers. Her objections, rather, were directed against the "existing methods" of

lized nations for the protection of the lives of neutrals and non-combatants." *Senate Document*, No. 126, 67th Congress, 2nd Session, pp. 378-379.

⁵⁹ *Annex to the Convention, Regulations Respecting the Laws and Customs of War on Land*, Scott, *Texts*, p. 219. See also Pierce Higgins, "Submarine Warfare," *British Year Book of International Law*, 1920-1921.

⁶⁰ Convention Relative to the Status of Enemy Merchant Ships at the Outbreak of Hostilities, Hague, 1907, Article 3. Scott, *Texts*, p. 242. See also Garner, *op. cit.*, pp. 334, 335, who states that this rule is also laid down in the prize regulations of nearly all states, including that of Germany (Article 116, *German Prize Code*, July 1, 1915), and in the Declaration of London, Article 50.

⁶¹ Regulations Respecting the Laws and Customs of War on Land, Article 22, Hague, 1907.

⁶² Hague, 1907, Convention VI, Article 3.

⁶³ Higgins, *op. cit.*, p. 328.

⁶⁴ Report of Advisory Committee of the American Delegation, *Senate Document*, No. 126, 67th Congress, 2nd Session, pp. 273-277.

submarine warfare, not against the submarine as a weapon of warfare.⁶⁵

Utilitarianism appeared at the Washington Conference of 1921-22 as a dominating motive in the submarine debates. The same attitude was taken toward the submarine, by most of the Powers present, as that taken by the United States Government during the late war, that the submarine was not an illegitimate weapon in itself.⁶⁶ The British delegation, however, wanted its complete abolition on the grounds that it was an illegitimate weapon. The British delegate pointed to the submarine practices of the World War, as proof that submarine warfare inevitably led to indiscriminate destruction on the high seas.⁶⁷ The French delegation vigorously opposed the British contention and insisted upon the right to make use of a weapon which it considered of utmost effectiveness in its national defense.⁶⁸ The other delegates supported the French attitude, and the British proposal was defeated.⁶⁹ The abolition of submarines in warfare was thus blocked by those Powers which found it an effective check on battleship strength.

⁶⁵ See Hyde, *op. cit.*, vol. 2, p. 481, who quotes from the telegram of Mr. Lansing to Mr. Gerard, April 18, 1916; also Mr. Lansing to the British Ambassador, January 18, 1916. See also, *ibid.*, in which Hyde condemns the use of submarines against unarmed ships, but nevertheless holds that "the question involved is, however, one which concerns primarily the right of a belligerent to attack or destroy, rather than one concerning the use of a particular means of so doing." See also *Am. J., Special Supplement*, October, 1916, p. 312.

⁶⁶ *Senate Document*, No. 126, 67th Congress, 2nd Session, pp. 275-277.

⁶⁷ Earl Balfour stated his Government's view as follows: "The British Empire delegation desires formally to place on record its opinion that the use of submarines, whilst of small value for defensive purposes, leads inevitably to acts which are inconsistent with laws of war and dictates of humanity, and the delegation desires that united action should be taken by all nations to forbid their maintenance, construction or employment." *Senate Document*, No. 126, p. 269.

⁶⁸ For the statement of the French Government, see *ibid.*, pp. 270-271; for statement of Admiral de Bon, see *ibid.*, pp. 278-285.

⁶⁹ Japan and Italy asserted that the submarine was an effective and legitimate weapon of war. *Ibid.*, pp. 270, 289-290. The American Advisory Committee's Report also supported the French view. *Ibid.*, p. 276.

The great naval power of Great Britain could still be met with the threat of submarine warfare. The question of apportioning submarine strength, proposed by the American Government after the British proposal for abolition had been defeated, met a similar opposition.⁷⁰ The opposition of the French to an inferior submarine tonnage finally led to the dropping of this question.⁷¹ The next attempt to restrict the use of submarines was finally adopted, although as yet it remains unratified by the signatories.⁷² The resolution, as finally adopted, reads as follows:⁷³

"The signatory Powers, desiring to insure the enforcement of the humane rules of existing law declared by them with respect to attacks upon and the seizure and destruction of merchant ships, and the enforcement of the prohibition against the use of submarines as commerce destroyers, after that prohibition shall have been accepted as a part of the law of nations, further declare that any person in the service of any power who shall violate any of the rules thus adopted, whether or not such person is under orders of a governmental superior, shall be deemed to have violated the laws of war and shall be liable to trial and punishment as if for an act of piracy, and may be brought to trial before the civil or military authorities of any Power within the jurisdiction of which he may be found."

Thus ended the latest attempt by an international conference to abolish and to restrict an effective weapon

⁷⁰ France based her opposition partly on the grounds that whereas battleships constituted offensive naval armament, submarines involved a question of defensive naval armament, and as such should be left to the consideration of each country. *Ibid.*, pp. 294-295.

⁷¹ See *ibid.*, p. 315. For the tonnage proposed by Secretary Hughes, see *ibid.*, p. 303.

⁷² The resolution was unanimously adopted on January 6, 1922, by the five Powers originally called to the conference, including France, Italy, Japan, Great Britain and the United States.

⁷³ *Ibid.*, p. 382.

of war. Failure for the earlier attempts at the Hague in 1899 and 1907 could have been forecast as long as the armaments under consideration were vital to the military interests of any of the great Powers. The question as to what constitutes "vital" could be answered only by each individual government in the light of its own military interests. No effective limitation of armaments could be laid down as long as these interests among the Powers clashed. The proposals made at both Hague Conferences for the proportionate limitation of armaments did not coincide with the military interests of the various governments and was accordingly completely rejected in spite of the huge financial burdens that naval competition entailed.⁷⁴ Such weapons as powder, explosives, cannon, small arms, torpedoes and submarine torpedo boats in fact formed the very basis of the military establishments—a position which made them immune from interdictions or even restrictive regulations. Thus the military forces could proceed unhampered in the development of powder and explosive of any demolition strength, cannon of any size, arms of any capacity, automatic rifles, and all types of torpedoes and submarines. The Hague Conference left these weapons entirely untouched.

⁷⁴ For the German objection in 1899, see *Protocols*, II, p. 43; for the Swedish objections, see *Protocols*, II, p. 42. For the attitude of various governments, see *Protocols*, II; also Mèrignhac, *La Conférence Internationale de la Paix*, 1900, p. 81; Hull, *The Two Hague Conferences*, pp. 169-177; Wehberg, "Die Rüstungsfrage im Wandel der Zeiten," in the *Friedenswarte*, 1911, p. 93. For the 1907 discussions see Sir Edward Grey's letter, *Parliamentary Papers*, Miscellaneous No. 1 (1908), p. 11 *et seq.*; Hull, *ibid.*; Lémonon, *La Seconde Conférence de la Paix*, p. 3 *et seq.*; Meurer, *Die Haager Friedenskonferenz*, vol. 2, 1907. Germany seems to have been the chief objector at both conferences, at least the most outspoken.

CHAPTER II

PROHIBITION OF AERIAL BOMBARDMENT AT THE FIRST HAGUE CONFERENCE

AT the first Hague Conference of 1899 none of the Russian proposals fixing the military and naval strengths and budgets for periods of five and three years was accepted, but the proposal prohibiting the dropping of projectiles from balloons received a different treatment.¹ Most of the Powers which had proposed a general reduction of armaments, or even a five-year *status quo* in arms, seemed favorably disposed toward the balloon prohibition. Scant notice, in fact, was given this proposal, the conference in plenary session accepting it without debate.² No change of attitude, however, favorable to disarmament is to be attributed to this. The earlier proposals for limitation of armaments dealt with existent, effective weapons. They were directed against the basic elements of warfare, against powder, explosives, rifles, guns and torpedoes. As already shown, no check on such "vitals" was at that time acceptable to the great Powers.³ The balloon proposal, on the other hand, prohibiting "the throwing of projectiles or explosives of any kind from balloons or by any similar means,"⁴ dealt with ineffective and untried weapons,

¹ See the "Report of the American Delegation," Scott, *The Hague Peace Conferences*, vol. 2, p. 19.

² Scott, *Proceedings, Conference of 1899*, Sixth Plenary Meeting, p. 79.

³ See *supra*, Ch. I.

⁴ Russian Circular, January 11, 1899, proposal 3. Scott, *Texts*, p. 4. The Russian proposal, as presented to the sub-commission by Mr. Beernaert, reads: "Prohibition of the discharge of projectiles or explosives of any kind from balloons or by similar methods." Scott, *Proceedings*, 1899, p. 341.

and the temporary prohibition was accepted primarily on the grounds of "non-efficiency." This was clearly brought out in the sub-commission debates of the conference. Capt. Crozier, the American military delegate, was perhaps the most outspoken in pointing out this utilitarian basis of the entire proceedings surrounding the question of arms. He said:⁵

"The general spirit of the proposals that have received the favorable support of the sub-commission is a spirit of tolerance with regard to methods tending to increase the efficacy of means of making war and a spirit of restriction with regard to methods which, without being necessary from the standpoint of efficiency, have seemed needlessly cruel. It has been decided not to impose any limit on the improvements of artillery, powders, explosive materials, muskets, while prohibiting the use of explosive or expanding bullets, discharging explosive material from balloons or by similar methods.

"If we examine these decisions, it seems that, when we have not imposed the restriction, it is the 'efficacy' that we have wished to safeguard, even at the risk of increasing suffering, were that indispensable."

The free or non-dirigible balloon was obviously an inefficient machine for bombardment. It was entirely dependent upon the wind, and incapable of carrying out a flight over enemy territory and returning again to friendly soil. In the 115 years which had passed since balloon flight became practicable, few commanders had ever attempted to employ the balloon for bombing. The free balloon, or non-dirigible, had been used for observation purposes by the French since 1783 when the Montgolfier brothers and Professor Charles had first

⁵ Fourth Meeting, Sub-commission of First Commission, June 7, 1899, Scott, *Proceedings*, 1899, p. 354.

made balloon flight possible. Charles' bullet-shaped balloon contained nearly everything which the balloon a century later possessed, including sand-bag ballast, a long anchor tow and even a barometer. Heights of over ten thousand feet were reached and the balloon could be kept aloft for many hours. In the French campaigns of 1793 to 1800, the balloon companies under Coutelle saw service at Mauberge, where the Austrians in vain tried to shoot them down, and later at Charleroi, Fleurus, and in the Rhineland and Danube fighting. Daily ascents were made and observations lasting as long as six hours were carried out by captive balloons. After 1798, when Napoleon disbanded the balloon companies as impractical for a rapid campaign of movement, no more use of balloons for observation was made until 1814, when Carnot employed a balloon at Antwerp. Balloons were used again for observation in 1859, at the battle of Solferino.⁶

Napoleon had made no attempt to bombard from the air.⁷ The Russians, in the war of 1812 with the French, attempted to send a balloon filled with explosives toward the French in the hope that it would explode in the midst of the French troops. The experiment failed.⁸

⁶ For early uses of balloons see Le Bon de Selle de Beauchamp, *Des Mémoires d'un Officier des Aéroliers*, pp. 3-10; Colonel de Vernon, *Science of War*, (1805) vol. 1, pp. 392-395; Franklin, in 1784, saw the military value of balloons. See his letters, republished in the *Aeronautical Annual*, 1895, pp. 118-122. Also G. Espitallier, *Les Ballons et leur emploi à la guerre*, ch. 1; G. Tissandier, *La Navigation Aérienne dans les temps anciens et modernes*, ch. 1; also *Histoire des Ballons*, Introduction, p. xiv; also G. de La Landelle, *Dans les Airs*, 1884, pp. 48-142; W. von Dallwitz, *Der Praktische Luftschiffer*, pp. 23-33; and especially, for German source, see Moedebeck, *Handbuch der Luftschiffahrt*, 1886, pp. 13-44, for early French; for other countries see *ibid.*, pp. 45-80.

⁷ See Paul Renard, *L'Aéronautique*, p. 297; also Moedebeck, *Handbuch*, pp. 146-159; also *supra*, note 6.

⁸ Originally a dirigible had been proposed by a German named Leppig large enough to carry 50 soldiers and explosives. The large balloon was to be propelled by giant wings. The Russian Emperor accepted and Leppig was given facilities for constructing the airship. Smaller models, carrying two men, were built but the steering mecha-

The Austrians, in 1849, made a disastrous attempt to bombard Venice with small balloons, the veering wind carrying the balloons back into the Austrian lines.⁹ Trials were made in 1854 with aerial bombs; perhaps the first time since flight began that real experiments were made in aerial bombing. But no application of this was made shortly afterward at Sebastopol.¹⁰ Thus it may be said that in all the wars which occurred up to 1854 no actual aerial bombardment ever occurred, that experiments were rare, and the few attempts at bombing from balloons failed. For the next half century, that immediately preceding the First Hague Conference, bombing from balloons was totally unknown, not even trials or experiments being on record. In the American Civil War balloons were used only for observation, no proposals being made for bombing from balloons. The Union forces made considerable use of balloons for observation, but balloon service was confined almost entirely to the operations of the Army of the Potomac.¹¹

nism failed. The French troops, on entering Moscow, found such a balloon, ready for flight, but apparently unable to rise on account of the weight of the propelling mechanism. See Moedebeck, *Handbuch*, p. 191; also A. Hildebrandt, *Airships Past and Present*, 1908, p. 138; also *supra*, note 6.

⁹ See Paul Renard, *op. cit.*, p. 322; also cited by Albéric Rolin, *Le Droit Moderne de la Guerre*, 1920, p. 396. Moedebeck, *Handbuch*, pp. 184-5, gives a good account of the incident, quoting also from an anonymous work, *Erinnerungen eines Oesterreichischen Veteranen*, 1852, p. 306. The account of the "Veteran" differs from all other accounts, in that he states that the 200 balloons, with the bombs tied to them, did not fall, except for a few, in Venice, but in the sea. Most authorities have these "airtorpedoes" being swept back by the wind into the Austrian ranks. See also sources cited *supra* note 6.

¹⁰ See *War Department Bulletin*, No. 32, 1901, Military Information Division, p. 111, for statement that captive balloons were used in 1854, in conjunction with explosives, and that these attempts were unsuccessful.

¹¹ Many generals, including Porter, Butterfield, Barnard, Heintzelman, Humphreys and Stoneman, went aloft for observation with the Chief Aeronaut, Mr. T. S. C. Lowe. Observations were communicated by telegraph, the first time that such use was made of the telegraph. Nevertheless, little support was given the balloon service and after 1863 it fell into disuse. For American sources, see *War of the Rebellion*, Official Records of the Union and Confederate Armies, Series III,

A captive balloon was also used in 1898 by the American forces at Santiago, but only for observation work.¹² In 1899 the free balloon was as much at the mercy of the winds, and as impracticable for bombing purposes, as it was a century before.¹³

In view of this it seems reasonable to interpret the Russian proposal either as being directed at some instrument more efficient than the free balloon,¹⁴ at the

vol. 3, pp. 252-319, for the report of Mr. T. S. C. Lowe, Chief Aeronaut, U. S. Army, to Mr. Stanton, Secretary of War. This includes a collection of all the orders and communications dealing with the balloon service in the operations of the Army of the Potomac. See also General G. B. McClellan's report, *ibid.*, Series I, vol. 5, p. 32; also report of General S. G. French, December 10, 1861, *ibid.*, vol. 1, p. 409. Joseph Henry, Director of the Smithsonian Institution, also discusses the work of the balloon in the Civil War, *ibid.*, Series III, vol. 1, pp. 283-4. See also B. J. Lossing, *The Civil War*, vol. 2, p. 132, for an opinion on the worth of balloons in the war. Foreign sources are numerous, especially among the French and German military writers. See *History of the American Civil War*, pp. 428-9, by the English writer, Colonel H. C. Fletcher, who minimizes the value of balloons in the war. French and German writers, such as Espitallier, Bornecque, Moedebeck and Hildebrandt, say good service was rendered. Prince de Joinville (translated by W. H. Holbert, 1862), in his *The Army of the Potomac*, pp. 47-75, also refers to the work of the balloons. For reference to the Confederate balloon, of which only two instances have been found, see *War Department Bulletin* No. 32, 1901, Military Information Division, p. 112; also *Rebellion Records*, vol. 5, edited by F. Moore, p. 103.

¹² Report of J. C. Maxfield, Lieutenant Colonel, U. S. Army, August 20, 1898, to the Chief Signal Officer, U. S. Army.

¹³ In 1867, in the War of the Triple Alliance against Paraguay, a balloon was employed by the commanding general, Caxias, at Passo Pocu, to observe the Paraguay troops entrenched behind walls and embankments. A heavy smoke barrage was set up by the Paraguay troops, but in spite of this some observation was made, the number of artillery pieces was counted and the terrain to some extent overlooked. Not sufficient service, however, was rendered, and after some trials the work was discontinued. See L. Schneider, *Der Krieg der Triple-Allianz gegen Paraguay*, vol. 2, p. 102; also Moedebeck, *op. cit.*, p. 176; also Bornecque, *op. cit.*, p. 72.

¹⁴ Scott, *Proceedings*, 1899, p. 280. Colonel Gilinsky, Russian military delegate, in defending the proposal said that "experiments had been made for the purpose of utilizing kites in warfare." The English at that time were indeed experimenting with man-carrying kites, as observation instruments which would eliminate the gas of balloons. It is unknown whether Colonel Gilinsky included such heavier-than-air machines as those of Sir Hiram Maxim and Clemente Ader under the term "kite." Both machines, one in France, the other in England,

other "similar means," or, as many writers have judged it, as being merely a platonic expression.¹⁵ To prohibit an admittedly useless, certainly a rarely used means of warfare was obviously superfluous, although for that very reason certain to be accepted by the conference as an extension of the humanitarian principles laid down at St. Petersburg and Brussels.¹⁶ Most of the delegates

had shown great possibility for flight. Maxim's machine is said to have lifted itself for a moment off the ground. Ader's machine, in a trial flight before the French military authorities, actually left the ground, although it was finally rejected by the French. For details see *infra*, p. 34. Certainly Colonel Gilinsky must have known the opinion of Russia's foremost authority in aeronautics, Colonel Kowanko, who in 1898, before the 10th Russian Congress of Natural Research at Kiev, stated that only the need of a powerful small motor prevented the practical solution of the airship problem. See *Illustrirte Aeronautische Mittheilungen*, vol. 3, 1899.

¹⁵ De Lapradelle is perhaps the most widely quoted of the writers holding this latter view. He holds that the prohibition of aerial bombardment in 1899, when the balloon was still incapable of being used as a bombing weapon, was the result of a mere platonic agreement and that "Les délégués, certain du caractère chimérique de l'hypothèse ne pouvaient manquer de s'accorder pour la prévoir." "La Conférence de la Paix," 1899, *R.G.D.I.P.*, 1899, pp. 690-691. For same view see also Paul Boidin, *Les Lois de la Guerre et Les Deux Conférences de la Haye*, pp. 101-103; J. Bouruet-Aubertot, *Les Bombardements Aériens*, p. 16; P. LaCroix, *Le Domaine Aérien et la Guerre*, p. 80; Henri Guibe, *Navigation Aérienne*, p. 257. For same view see also Albéric Rolin, *Le Droit Moderne et la Guerre*, t. 11, 1920, p. 398. E. D. D'Hooghe, *Droit Aérien*, p. 32, quotes Fauchille in holding that the 1899 balloon declaration was of little importance. For similar views see Le Moyné, *Le Droit Futur de la Guerre Aérienne*, pp. 179-180; L. Rolland, *La Pratique de la Guerre Aérienne*, pp. 11-12; also de Lapradelle in the special First Hague Conference edition, *R.G.D.I.P.*, 1900, pp. 44-45. Some of the German writers holding this view are: Meyer, *Die Luftschiffahrt*, p. 13; H. K. Kohler, *Luftfahrt und Wissenschaft*, p. 26; Major Gross, *Zweizerische Monatschrift*, No. 9, p. 419; Zeitelmann, *Die Rechtsfragen der Luftfahrt*, p. 11. Other writers are: Staël-Holstein, *La Réglementation de la Guerre des Airs*, pp. 30-31; Enrico Catellani, *Le Droit Aérien*, p. 179 (translated from the Italian in 1912); C. M. Picciotto, "Some Notes on Air Warfare," *Journal of the Society of Comparative Legislation*, 1915, pp. 150-151; P. H. Winfield, "Air Attacks," *Law Magazine and Review*, vol. 40, Series V, p. 261; Lawrence, *op. cit.*, 7th edition, p. 527. Spaight, *Aircraft in War*, pp. 4-6, calls the balloon declarations "minor and non-essential elements in the armory or methods of war."

¹⁶ Scott, *Proceedings*, 1899, p. 264. The Preamble of the Declaration reads: "The undersigned, . . . inspired by the sentiment which found expression in the Declaration of St. Petersburg." See also the statement of Mr. de Martens of Russia, *ibid.*, p. 417; Mr. Beernaert of

discounted the importance of the proposal, but apparently no harm was seen in prohibiting, on general humanitarian grounds, a negligible means of warfare.¹⁷ Some of the delegates, however, seemed to favor the prohibition apparently on the grounds that unless some prohibition was laid down the next war would witness inhuman devastating aerial bombardments. At the session of May 29, 1899, General den Beer Poortugael made the following declaration:¹⁸

Holland, *ibid.*, p. 324; also Mérignhac, "Le Domaine Aérien," *R.G.D.I.P.*, vol. 21, p. 225.

¹⁷ See Scott, *Proceedings*, 1907 Conference, vol. 3, p. 153, for the speech of the Belgian delegate, van den Heuvel, who declared that the Powers should renew the 1899 Declaration in order to refute the charge of many of the delegates that the 1899 Declaration was passed merely because it had no military significance. See Auguste Beernaert, President of the First Commission of the Conference, in his report presented to the Interparliamentary Conference, Geneva, September, 1912, in which he states that many of the delegates to the first conference at the Hague believed that dirigible flight was impossible. *Revue de droit international et de législation comparée*, Series II, t. 44, 1912, p. 572. Holls says: "The action was taken for humanitarian reasons alone, and was founded upon the opinion that balloons as they now exist form so uncertain a mean of injury that they cannot be used with accuracy." *Peace Conference*, p. 95. But the sentence following the above-quoted one implies another possible cause, not too closely connected with humanitarianism. "The limitation," he continues, "of the prohibition to five years' duration preserves liberty of action under such changed circumstances as may be produced by the progress of invention." *Ibid.*, p. 95. Colonel Schwarzhoff, the German military delegate, carefully pointed out that the prohibition should apply solely to "new methods not yet invented and analogous to the use of balloons." Scott, *Proceedings*, 1899, p. 342. See also *Naval War College, International Law Situations*, 1912, p. 57; also Mérignhac, *La Conférence de la Paix*, p. 80; and in *R.G.D.I.P.*, vol. 21, p. 228. See also citations given in note 15.

¹⁸ Scott, *Proceedings*, 1899, p. 342. In his report to the First Commission, General Poortugael goes even farther in denouncing aerial bombardment. "As it is impossible to guard against such proceedings, it resembles perfidy, and everything which resembles that ought to be scrupulously guarded against. Let us be chivalrous even in the manner of carrying on war." Scott, *ibid.*, p. 288. See, however, Meurer, *Das Kriegerrecht der Haager Konferenzen*, p. 467, who ridicules General Poortugael's statement. He says: "Für die Treulosigkeit aber fehlt schon die Hinterlist." Lapradelle calls Poortugael's statement an "erreur manifeste," "La Guerre Aérienne et le Droit," *Correspondant*, vol. 271, p. 587.

"The Government of the Netherlands has authorized me to support this [Russian proposition]. Does it not seem excessive to authorize the use of infernal machines which seem to fall from the sky? I know well that when one is obliged to wage war one must wage it as energetically as possible, but this does not imply that all means are permissible. At the Brussels Conference in 1874 it was decided, in Article 12 (which approximately agrees with Article 2 of the Russian preliminary draft) that the laws of war do not recognize belligerents as having an unlimited power as to the choice of means of injuring the enemy. . . . Now, the progress of science, and of chemistry in particular, is such that things which were but yesterday most terrible may be realized to-day. We may foresee the use of projectiles or other things filled with deleterious or soporific gases and hurled from balloons among troops, placing them at once *hors de combat*."

Colonel Gilinsky, the Russian delegate, likewise favored prohibition on the grounds that the existing means of warfare were already sufficient for injuring the enemy.¹⁹ Others supported the proposal on the grounds that projectiles launched from balloons would result in haphazard, indiscriminate bombardment and that it might make victims of non-combatants. The chief concern of these delegates appears to have been the possible non-combatant victims that might suffer from such indiscriminate bombing. There was, nevertheless, another reason for this support—the ineffectiveness of such bombing. Although omitted as an express reason for their support, the speeches indicate that they were aware of the fact that no practical advantage could be

¹⁹ Scott, *op. cit.*, p. 288. But see W. E. Ellis, "Aerial-Land and Aerial-Maritime Warfare," *American Journal*, vol. 19, p. 262, who says that such reasons are "stock arguments invoked against the use of all new methods of attack."

gained by such a means of warfare; that although these delegates appeared to be concerned over the question of permissible injury and destruction, it was nevertheless well known that the balloon was still uncontrollable and capable only of carrying a few pounds of ballast.²⁰

There were still other delegates who supported the interdiction precisely because the non-dirigible balloon was unreliable as an effective weapon of destruction. In other words, since the free balloon was an inefficient bombing weapon, its use as such could, for the time being, be eliminated from warfare without detriment to the military strength of the different Powers.²¹ Those

²⁰ Holls, *op. cit.*, p. 95, maintains that the fear of making victims of "persons or objects entirely disconnected from the conflict" was the real cause for the prohibition. But he adds in the same sentence that "their injury or destruction would be of no practical advantage to the party making use of the machines." General Mounier of France also appears to be concerned with the danger to non-combatants. Nevertheless, he was one of the chief supporters of the five-year limitation. For Mounier's view see Scott, *op. cit.*, p. 280. See also Dr. Alex Meyer, *Die Luftschiffahrt in kriegsrechtlicher Beleuchtung*, p. 13, who points to the danger to non-combatants, but he, too, adds that it was only for a limited period. See also Seth Low, American delegate, "The International Conference of Peace," *North American Review*, October, 1899, p. 630; Captain Crozier, the American military delegate, mixes humanitarianism with utility, although he is perhaps the most frank of the delegates in holding up effectiveness as the primary object. See *supra*, p. 2, also his speech of June 22, 1899. Scott, *op. cit.*, p. 280; also Mèrignhac, *La Conférence de la Paix*, p. 7.

²¹ Scott, *Proceedings*, 1899, p. 280. General Mounier, French military delegate, concerned here entirely with effectiveness, correlates lawful means of warfare with practical—that "the use of more perfect balloons may become a practical and lawful means of waging war. It would therefore be suitable to limit prohibition to some definite period of time, for instance, 5 years or even more." *Ibid.*, p. 280. General Sir John Ardagh, British military delegate, also agreed with Captain Crozier. *Ibid.*, p. 280. Colonel Gross von Schwarzhoff, German military delegate, was concerned only that the prohibition "apply solely to 'new' methods not yet invented and analogous to the use of balloons." *Ibid.*, p. 342. The Roumanian delegates, without giving any specific reason, were opposed to any permanent prohibition. *Ibid.*, p. 342. Paul Boidin said that some of the delegates viewed the entire subject from the utilitarian viewpoint, and that "Plus tard, pensèrent-ils, de nouvelles inventions permettront sans doute le diriger, les ballons et feront de ceux-ci une arme sérieuse." *Op. cit.*, p. 103. See also Meyer, *op. cit.*, p. 26, for same views. Others holding similar views are Meurer, *Luftschiffahrtsrecht*, p. 38; Hilty, *Archiv. f. Offent-*

holding this view frankly subordinated the question of non-combatant danger to that of military effectiveness. Had the balloon been capable of efficient destruction, like the cannon, it would have been also retained as a legitimate bombing weapon. According to this point of view, since the free balloon of 1899 was non-dirigible and not under control, its employment in warfare could be postponed until science had made motored flight practicable. From the work and experiments then in process it appeared reasonable to suppose that a practical machine might be produced within the next few years.²² The prohibition was therefore supported only with the understanding that it would be limited to five years.²³ The portion of the interdiction, dealing specifically with the free balloon, was in fact never opposed

liches Recht, vol. 19, p. 81; Henri Guibé, *Navigation Aérienne*, p. 257; Catellani, *op. cit.*, p. 179; de Constant, *Pour L'Aviation*, p. 205; Le Moyne, *op. cit.*, pp. 179-180; P. La Croix, *Le Domaine Aérien*, p. 80; Lapradelle, *op. cit.*, p. 690. J. B. Moore speaks of the balloon as a "device essentially at the mercy of the winds, and of limited and uncertain offensive value in war. Under these circumstances the conference unanimously adopted, with little or no opposition," the prohibition. *International Law and Some Current Illusions*, p. 192. See also L. Rolland, *op. cit.*, p. 12. Seth Low, American delegate, says projectiles thrown from balloons "may also do merely useless damage, that is to say, damage that does not advance at all the military object of the fighting. Under these circumstances the United States delegation was glad to join in the Declaration, limited as it is to five years." *North American Review*, October, 1899, p. 630.

²² Santos-Dumont had already made flights in his third motor-driven airship. The French engineer, Henri Julliot, had already completed his dirigible project, later to become famous as the Lebaudy semi-rigid. See Captain L. Sazerac de Forge, *Revue d'Artillerie*, vol. 70, June, 1907, p. 178. Zeppelin also had already completed his model of a rigid dirigible. For the 13 patents applied for, including those of Count Zeppelin, and Dr. K. Danilewsky of Russia, during 1896-1898, see *Illustrierte Aeronautische Mittheilungen*, vol. 2, 1898, and vol. 3, 1899. See also the speech of M. Janssen, President of the International Aeronautical Congress, on September 15, 1900, at the opening of the Congress at Meudon. Mr. Janssen declared that part of the duty of the French aeronautical center at Chalais was the investigation and the actual experimentation in the new engines connected with aerial navigation. *Annual Report of the Smithsonian Institution*, 1900, p. 188; translated from the *Annuaire du bureau des longitudes*, 1901.

²³ See Scott, *Proceedings*, 1899, pp. 287, 341.

at the conference, either in commission or in the plenary sessions. The balloon, as already pointed out, had never been effectively employed as an offensive weapon, and the attempts to employ it as such were so rare and had occurred so long before that the question of its being employed again as an offensive weapon was given no serious consideration. Thus no issue of even minor importance was involved in the balloon question, and few delegates, other than the military experts, took part in the debates on the matter.²⁴ The conference, therefore, unanimously accepted the interdiction on the non-effective, free balloon.²⁵

Whatever may have been the real motive behind the Russian proposal, no general concern is to be noted on the part of the civilian delegates to the conference.²⁶ Mechanical flight was still considered visionary. Although airplane flight had nearly been achieved by 1899, no man-carrying flight had as yet been confirmed. The long years of work in motor-driven heavier-than-air craft had produced no machine which could take the air with a man. The epoch flight of the Wright brothers was not made until 1903, but much progress had been made in heavier-than-air work. During the latter half of the nineteenth century attempts had been made to

²⁴ Those taking part were General den Beer Poortugael, Netherlands, Colonel Gilinsky, Russia, Captain Crozier, United States, General Mounier, France, Colonel Gross von Schwartzhoff, Germany, General Sir John Ardagh, Great Britain, Lieutenant Colonel von Khuepace, Austria, Colonel Coanda, Roumania, all military delegates. Two civilian delegates, Mr. G. Bihourd, France, and Mr. A. Baldiman, Roumania, made minor comments.

²⁵ No protests or reservations were made in regard to prohibiting bombing from the free balloon. Opposition was directed only at the permanent prohibition, at the elimination of the dirigible and other means when they should become practicable. See *ibid.*, pp. 287, 341.

²⁶ Albéric Rolin points out that the First Hague Conference did not examine in a general way the legality of aerial warfare, nor did it seriously consider its possibility. The time seemed still too remote when aircraft would be employed as serious weapons. *Le Droit Moderne de la Guerre*, No. 890, p. 398. See also Paul Fauchille, *Traité de Droit International Publique*, 8th edition, Paris, 1922, vol. 2, p. 603.

apply steam to ornithopters, imitating the flapping of bird wings, and to vertical-rising helicopters. The failures of these attempts turned scientists to the soaring kite-type machine. As early as 1848 Henson, an Englishman, patented his steam-driven model monoplane. Stringfellow, in 1868, at the first aeronautical exhibition, in London, placed on display a twelve-pound steam-driven model triplane. In Germany, Otto Lilienthal had carried out a long series of motorless soaring flights, and by 1895 he had made over 2,000 such flights and had developed a machine which was at least to some extent controllable and which needed only an engine to turn it into a power-driven flying machine. In America, Octave Chanute was carrying on his gliding flights, and after 1890 Professor Langley had started on his experiments. Being in need of power, he built for himself a small steam engine and was successful in having his models actually fly. In 1896 one of his models covered over half a mile, making three complete circles.²⁷ Aeronautics thus had already reached the stage where actual flight depended solely upon a more powerful engine, but the general public could still point to what were termed the fantastic failures of Clemente Ader and Sir Hiram Maxim as proof of the impossibility of mechanical flight.²⁸ This was the attitude taken by many

²⁷ For the work of these three men, immediately preceding the First Hague Conference, see Lilienthal, *Bird Flight*, translated 1911; also on Lilienthal, see R. Nimführ, *Die Luftfahrt*, 1913, pp. 95, 103. For Chanute, see his *Gliding Experiments*, 1897; also *Progress in Flying Machines* (27 articles). For Langley's work see his *Researches and Experiments in Aerial Navigation*, 1908; also his *Memoir on Mechanical Flight*, 1911; also an article by Cyrus Adler, *Annual Report of the Smithsonian Institution*, 1906, pp. 526-529; also for flights of his models, see Maxim and Hammer, *Chronology of Aviation*, 1911, p. 5.

²⁸ Sir Hiram Maxim's airplane carried two steam engines, weighed 7,800 pounds, and measured 126 feet in length. In the trials, conducted on rails for the purpose of measuring the lifting power of the machine, the plane is said to have developed so great a lifting force as to rise from the rail, for a moment, with two men aboard. The machine was wrecked while experimenting, due to faulty rails, before a real flight had been attempted. Lack of funds forced Maxim to

of the delegates to the conference, some of whom went so far as to ridicule as chimerical the use of flying machines as bombing weapons.²⁹ Even the military authorities, under whom trials approaching success had been carried out, were skeptical of airplane flight. The French War Ministry, after witnessing Ader's attempted flight in 1897, refused him the further financial support necessary for the carrying on of his experiments.³⁰ Of the other Powers only the United States had subsidized any flying machine project.³¹ Sir Hiram Maxim, after wrecking his large steam-engined airplane, had to aban-

abandon further work. See Maxim and Hammer, *op. cit.*, p. 6; also an explanation by Sir Hiram Maxim of his machine, in his preface to *Hearne's Aerial Warfare*, p. xi; see also E. C. Vivian, *A History of Aeronautics*, 1921, pp. 127-132. Clemente Ader is said to have flown as early as 1890 in his steam-driven machine. In a later machine he made his trial flight before the French Minister of War and a group of military officials. A controversy arose over this attempt, most of the experts denying that he had actually flown, while a few supported Ader in his claim that he had flown for nearly a thousand feet. The machine, however, was wrecked, and the Ministry refused further funds for a new machine. For Ader's case, see Clemente Ader, *L'Aviation Militaire*, 1909, pp. viii, ix; also Estournelles de Constant, *Pour L'Aviation*, pp. 69-72; Commandant Bornecque, *L'Aérostation Militaire en France et à l'Étranger*, in *Journal des Sciences Militaires*, 1899, Séries X, vol. 2, p. 59. For the adverse opinion of the judge, General Mensier, see Vivian, *op. cit.*, pp. 121-127. Sir Hiram Maxim, *Chronology of Aviation*, p. 6, states that Ader did not fly. Chanute, *Progress of Flying Machines*, p. 214, says that Ader's machine was really a gliding machine, with the motor used to launch it, and that the hops made were really gliding flights rather than actual motored-flight. Bonnefoy, *Le Code de L'Air*, p. 8, however, writes of the great enthusiasm with which Ader's reported flight was received in 1897. The journal, *L'Illustration*, 28, July, 1898, went so far as to consecrate a long article to the alleged flight of "200 metres à quelques centimetres du sol."

²⁹ See *supra*, note 15. See also Wilbur Wright, in a paper read before the Western Society of Engineers, September 18, 1901, on the "odium" attached to the study of aerial navigation. *Annual Report of the Smithsonian Institution*, 1902, p. 133; also Langley, *Experiments in Aerodynamics*, 1902, p. 3, in which he speaks of the skepticism toward aeronautics, and "that it is commonly supposed the long record of failures has left such practical demonstration of the futility of all such hopes for the future that no one of scientific training will be found to give them countenance."

³⁰ See *supra*, note 28.

³¹ See *infra*, note 34.

don his work in 1890, the government refusing to come to his aid.³² Germany, after subsidizing the Schwartz metal airship, stopped its support of aeronautics. No experimentation in heavier-than-air craft was to take place in Germany for years to come. Active interest was to be found in Austria by 1899, perhaps more actual experimentation taking place there than in any other European country, but this work was not supported by any Government funds.³³

Thus in the period immediately preceding the First Hague Conference no official interest was to be found in the heavier-than-air craft. With the military authorities unsympathetic toward this branch of aeronautics, little interest in it could have been expected from the various governments and their representatives at the conference. Only in America did active work in heavier-than-air craft continue.³⁴

The Russian proposal, therefore, in so far as it was aimed at the airplane, met its chief opposition from the American military delegate. Langley's steam-driven model airplane, in 1896, had flown for a distance of three-quarters of a mile, and by 1899 Langley was already at work on a man-carrying "aerodrome" supported by an allotment of \$50,000 from the United States Government.³⁵ Although no mention of heavier-than-

³² R. P. Hearne, *Aerial Warfare*, pp. 9-10.

³³ See Hermann Hoernes, *Die Luftschiffahrt der Gegenwart*, 1903, chapter on Wilhelm Kress and his airplane experiments.

³⁴ Such men as Chanute, Herring, J. J. Montgomery, Langley and the Wright brothers were busily occupied in heavier-than-air work. Thousands of experimental flights had been made with motorless gliding machines. For details see *supra*, notes 27, 28. Also J. L. Pritchard, *The Book of the Airplane*, pp. 16-20; also Loening, *Monoplanes and Biplanes*, pp. 5-10. For early work of the Wrights see their article "Some Aeronautical Experiments," *ibid.*, pp. 133-149; also Vivian, *ibid.*, pp. 145-175.

³⁵ The funds out of which this award was made to Langley were part of those at the disposal of the Board of Ordnance and Fortifications, United States Army. See *8th Report of Board of Ordnance and Fortifications*, 55th Congress, 3rd Session, 1898-9, pp. 5, 6.

air craft appears in the conference proceedings, and though Captain Crozier, the American delegate, made his plea on the grounds "that practical means for using balloons can be invented," it was probably in good measure the airplane experiments then being carried out in America which prompted him to ask for a five-year prohibition in place of the permanent one proposed by the Russian delegates.

The real significance of the Russian balloon proposal lies in the phrase "or by any similar means." Both the airplane and the powered dirigible fall within the scope of this clause, but it seems to have been primarily the dirigible against which the Russian proposal was directed. The dirigible was by no means unknown to Russia. During the Franco-Prussian War of 1870 a French engineer, Depuy de Lôme, had been ordered by the Government of National Defense to construct a dirigible, to help break the siege of Paris and reestablish relations with the country. Balloons had been used to great advantage by the French. Sixty-four balloons had been sent out of the besieged city carrying nearly a ton of despatches, ninety-one passengers, including Gambetta, some 350 carrier-pigeons and several dogs. No balloon succeeded in reaching the city, but the pigeons carried out of Paris in the balloons were sent back with despatches. The success of the balloons encouraged the government to allot 40,000 francs for the building of a dirigible which could communicate directly with Paris. The dirigible built by Depuy de Lôme was at once begun but it was not until 1872, long after the end of the war, that it was completed and a short flight was made.³⁶

³⁶ Although it was said to have flown a short distance, its performance was discouraging, and the airship was never used. For Dupuy de Lôme's airship see Girard and Roubille, "Les Ballons Dirigeables," *Revue du Génie Militaire*, vol. 32, 1906, pp. 555-561; also Moedebeck, H.W.L., *Die Luftschiffahrt*, 1906, p. 21. For the use of the balloons in the Franco-Prussian War see Captain Bellenger's pamphlet, *L'Aviation Militaire*; also, Clerval, G. de, *Les Ballons Pendant le Siège de*

Shortly afterwards the French War Ministry created an aeronautical commission, later establishing the aeronautical center at Chalais. It was here that Renard and Krebs, in 1884, completed the celebrated airship, "La France," and made their flight.³⁷ By 1899 Santos-Dumont had become known for his motor-driven airships, and Julliot had begun his large semi-rigid project.³⁸ Germany was also occupied with airship work. After the experiments of Paul Haenlein, in 1872, interest in dirigibles continued to grow. A society was formed in 1881 which had for its special object, as set forth in the preamble, the solving of the dirigible problem. Marshal von Moltke, writing to this new society in 1881, stated that the problem of the dirigible was no longer looked upon as insoluble but rather as a problem dependent upon a practical motor for its solution.³⁹ Wölfert's unsuccessful airship appeared in 1880; his second in 1896.⁴⁰ In the year following, the aluminum

Paris; W. de Fonvielle, *Les Ballons Pendant le Siège*, 1871. See also Moedebeck, *op. cit.*, pp. 20-21, for German view. For details of the German unsuccessful attempt to raise two balloons before Strassburg, under guidance of an English balloonist, the only attempt made by the Germans, see Hildebrandt, *Die Luftschiffahrt*, 1907, p. 166.

³⁷ The "La France" is often credited with having made the first practical flight. It was electric-driven, but otherwise is supposed to have had all the elements of the later non-rigid dirigibles. Albéric Rolin says that it was the "La France" which proved the dirigibility of the airship. *Le Droit Moderne de la Guerre*, 1920, p. 397. Among the many authors dealing with the "La France" are G. Tissandier, *Les Ballons Dirigeables* and *Histoire de mes Ascensions*; Charles Renard, *Les Piles Légères du Ballon "La France."* For German accounts see Moedebeck, "Das Geheimnis beim Luftschiff La France," *Ill. Aëro. Mitt.*, 1908, p. 282; Raimund Nimführ, *Die Luftfahrt*, pp. 73-74. See also *Proceedings of the International Conference on Aerial Navigation*, 1893, pp. 7, 13-14.

³⁸ Santos-Dumont flew his first dirigible airship in 1898. His airship No. 2 collapsed during a flight over Paris in May, 1899. His airship No. 3 is said to have made as high a speed as 15 miles an hour. The No. 3 was ready for flight in October, 1899, but the flight was made in early November. See *infra*, chp. 3, notes 45-47, for details and list of references on the work of Santos-Dumont.

³⁹ For Moltke's letter see Moedebeck, *Die Luftschiffahrt*, p. 25.

⁴⁰ The first airship had been electrically driven, but proved unable to make headway. The later airship was equipped with a gas motor,

dirigible of David Schwartz, appeared, and in its trial flight made headway in the face of a high wind before it was forced down and wrecked by buffeting on the ground.⁴¹ By the time the First Hague Conference was called, Zeppelin had already started his first all-metal dirigible.⁴² Russia had also by that time experimented in dirigibles. As early as 1886 the Russian Government had ordered a dirigible from the French firm, Yon.⁴³ The balloon service was increased, experiments were carried on in connection with the marine, and in 1895 the Austrian, David Schwartz, had constructed his first aluminum steam-driven airship at St. Petersburg. The fact that the Schwartz dirigible met with disaster dur-

the first time a gas motor had been applied to aircraft. While in the air, in 1897, the airship exploded, killing both occupants. For details of the airship see Moedebeck, *op. cit.*, p. 23; Hildebrandt, *Airships Past and Present*, 1908, pp. 57-58; Commandant Bornecque, *Journal des Sciences Militaires*, 1899, Series X, vol. 2, pp. 65-66.

⁴¹ The Schwartz dirigible is said to have been aerodynamically sound, except, perhaps, for structural defects in the great aluminum envelope. A gas engine was used for power, of 12 h.p. The airship was some 156 feet in length. Schwartz, having died before the airship was completed, his wife continued the work. The trial flight was made on November 3, 1897. The airship rose to a height of 800 feet, and was making headway in the face of a strong wind when the motor stopped, and the mechanic, becoming excited, brought the airship down out of control. With no anchorage facilities available, the airship was soon destroyed by the wind. For details see R. W. von Dallwitz, *Der Praktische Luftschiffer*, 1909, pp. 35-36; Hildebrandt, *op. cit.*, pp. 58-59; Girard and Rouville, *op. cit.*, pp. 590-592; also Bornecque, *op. cit.*, p. 70, who adds that the Schwartz machine should be followed by another of the same type, but larger and better constructed.

⁴² The dirigible project had been completed by Count Zeppelin in 1894, but the German Government, after an investigation, had refused to finance the undertaking. In 1898, however, Count Zeppelin was able to form his own company and start the construction of his dirigible. For details see Zeppelin, *Die Eroberung der Luft*; T. E. Curtis, in the 1900 *Annual Report of the Smithsonian Institution*, pp. 217-222.

⁴³ The Russian Government, after ordering the dirigible, refused to accept it after a Russian commission had inspected the airship in France and found it deficient. For details see Hildebrandt, *Die Luftschiffahrt*, 1907; p. 189; also Moedebeck, who writes in 1886 that great efforts were being made by the Russians in all aeronautical work, including captive balloons, dirigibles and the perfection of "quick acting" gas engines. Great progress was at that time supposed to have been made by the Russians. See Moedebeck, *op. cit.*, p. 195; also Olszewski and von Elgott, *Das Flugzeug in Heer und Marine*, 1912, p. 208.

ing its inflation, before a trial flight could be made, may have caused an ebbing of Russian interest in dirigibles, but only for the moment, for Schwartz was soon at work in Germany on his second dirigible, this time with the support of the German Government.⁴⁴ Russia thereafter was obliged to watch other states' progress in this work. The specific interdiction of aerial bombardment, proposed by Russia, thus came at a time not only when bombing from free balloons had long been discarded as impracticable, but also after Russia's own dirigible efforts had failed and attempts elsewhere had succeeded.⁴⁵ Russia's attitude towards this question indicates that she was in some measure convinced that attempts might be made by certain states to apply the power-driven dirigible to offensive warfare, a weapon with which she was neither equipped nor which she seemed capable of constructing.⁴⁶

⁴⁴ Dallwitz, *op. cit.*, p. 35; also Hearne, *op. cit.*, p. 38; C. C. Turner, *Aircraft of To-day*, 1918, p. 63.

⁴⁵ The Russian Government may have had in mind the early Wölfert attempt, and the dirigibles of the Tissandier brothers and of Renard, all of whom employed electric power for propulsion. Mr. Beernaert, President of the First Commission of the Conference, on May 26, 1899, said: "And without doubt, although the circular does not say so, it is the thought of the Russian Government that for the firearms of the present day there could not be substituted other engines of destruction due to some new idea and which, for instance, might borrow their force from electricity." Scott, *Proceedings*, 1899, p. 273. But there were the later efforts of Schwartz and Santos-Dumont, both of whom succeeded in actually propelling an airship through the air. There was also the well-known project of Zeppelin, and the one by Julliot.

⁴⁶ In answer to Captain Mahan's statement that the aerial bomb was not an existing projectile, Colonel Gilinsky, the Russian military delegate, stated that the launching of projectiles "is an existing fact since it is under study in England and in several other countries." Scott, *Proceedings*, 1899, p. 86. Christian Meurer, although of the opinion that the dirigible was still an unsolved problem, states that the discovery of special "bombing balloons" seems to have been reckoned with at the First Hague Conference. "Luftschiffahrtsrecht," *Annalen des Deutschen Reichs*, vol. 42, 1909, p. 217; see also "Mitarbeiter" in *Ill. Aéro. Mitt.*, vol. 4 (1900), p. 102. Staël-Holstein, *La Réglementation de Guerre des Aërs*, 1911, p. 15, states that the most to be feared from aerial warfare was bombardment. Albéric Rolin, *op. cit.*, t. 2, p. 399, speaks of the Russian proposal being influenced by the disastrous dirigible trials. A. K. Kuhn states that various General Staff plans for

It was the dirigible which was most instrumental in replacing the permanent interdiction by a brief five-year prohibition. The original Russian proposal for permanent prohibition had been opposed in sub-commission by Captan Crozier on the grounds that the delegates were "without experience in the use of arms whose employment we propose to prohibit forever," and that the incomplete state of aeronautics made it desirable to prohibit its use temporarily, but not forever.⁴⁷ He therefore proposed an amendment, providing for a five-year prohibition. His proposal, being out of order, was not put to a vote, but in the vote on the original Russian proposal France, Great Britain and Roumania voted against permanent prohibition, expressing themselves in favor of Crozier's five-year restriction.⁴⁸ Later, in full commission, Captain Crozier again proposed his five-year amendment. Only the Russian delegate, Colonel Gilinsky, objected. He wanted a minimum of at least ten years.⁴⁹ The five-year proposal was, however, unanimously carried, the Russian delegate accepting the proposal in order, as he affirmed, to give it the strength of a unanimous agreement.⁵⁰

The debates on the Russian balloon proposal, in commission and in sub-commission, indicate but one primary concern on the part of the delegates—the effectiveness or the potency of the airship.⁵¹ Captain Crozier

launching projectiles from the air were known to the Russian Government in 1899. See *American Journal*, 4, pp. 117-8.

⁴⁷ See Crozier's speech, Scott, *Proceedings*, 1899, p. 354.

⁴⁸ See *ibid.*, p. 288, for the reservations of Great Britain, France and Roumania; also *ibid.*, p. 342, for the German inquiry, earlier in the proceedings, as to whether "the prohibition, once voted for and accepted by the Governments, shall remain in force forever or only for a period of time to be determined, for instance, for a period of five years, as was proposed for small arms."

⁴⁹ *Ibid.*, p. 280.

⁵⁰ *Ibid.*, p. 281.

⁵¹ Colonel Gilinsky mentions also kites. *Ibid.*, p. 280. These kites were large man-carrying soaring machines, with which the British army was then experimenting, and it is possible that the Russian mili-

deliberately pointed out that in prohibiting the bombing from free balloons no effective method of warfare was being touched, and that it would result in no disadvantage to any power.⁵² The question of prohibiting the use of an effective weapon never really arose at the conference. The whole tendency was rather the strict avoidance of such discussions, and in the debates on the balloon proposal it was carefully indicated that no attempt was being made to prohibit the use of a practical airship, but only the use of an impractical balloon.⁵³ Should the airship become dirigible, there would always be time to provide for its use, but in the meantime a prohibition of the non-dirigible, non-controllable balloon would deprive no power of defensive or offensive armaments.⁵⁴ No mention of any specific power-driven dirigible was made at any time during the debates, but the speeches indicate, and have been interpreted as indicating, that the military delegates, if not the civilian members, had the dirigible well in mind and reckoned with it.⁵⁵ In answer to the delegates, for instance, who

tary delegate may have assumed that they were to be used in some way for offensive purposes. Major Baden-Powell, in fact, had devised a system for the offensive use of kites, the kites, carrying explosives, being sent up to great heights and there exploded by electrical means. See Hearne, *op. cit.*, pp. 67-68.

⁵² Scott, *Proceedings*, 1899, p. 354.

⁵³ See Crozier, Mounier and Sir John Ardagh. General Mounier says: "But the use of more perfect balloons may become a practical and lawful means of waging war. It would therefore be suitable to limit the prohibition to some definite period of time, for instance, five years or even more." Scott, *Proceedings*, 1899, p. 280.

⁵⁴ See speech of Colonel von Schwarzhoff, military delegate for Germany, before the First Commission, June 22, wherein he pointed out that it was not the purpose of the conference to prohibit any means of warfare then in use, but rather that since "the words *similar methods* are applied only to new methods not yet invented the sub-commission, in accord with this interpretation, adds to dissipate every misunderstanding the word 'new' between the words 'methods' and 'similar.'" *Ibid.*, p. 288.

⁵⁵ Most writers attribute the five-year prohibition to the fact that the dirigible was still unperfected at the time, the Powers being willing to accept this prohibition as long as it was limited to a period when efficient bombing aircraft were lacking. Among those holding this view

were concerned with the indiscriminate bombing of civilian populations, it was pointed out that such a valid argument against the use of the haphazard balloon would no longer hold once the balloon became manageable.⁵⁶

The declared intention of the original proposal was thus, in the case of the balloon, discarded. It was no longer the elimination of all new methods of war on the grounds that "in the opinion of the Russian Government the different ways of injuring the enemy used at present are quite sufficient."⁵⁷ A different criterion, that of effective bombardment, became the basis for the consideration of the balloon proposal. The debates show that a practical dirigible would not have been prohibited in spite of the fact that it was a new means of warfare; that it was precisely the non-dirigibility and the non-effectiveness of the balloon which were held up as the

are: Jean Bellenger, *La Guerre Aérienne*, 1912, p. 64; J. Bourvet-Aubertot, *Les Bombardements Aériens*, 1923, p. 16; Le Moyne, *Le Droit Futur de la Guerre Aérienne*, 1913, pp. 179-180; De Lapradelle (quoted by most French writers), "La Conférence de la Paix," *R. G. D. I. P.*, 1899, pp. 690-691; Rolland, Louis, *Les pratiques de la Guerre Aérienne*, 1916, pp. 11-12; Albéric Rolin, *Le Droit Moderne de la Guerre*, t. 2, 1920, p. 399; Pierre La Croix, *Le Domaine Aérien et la Guerre*, p. 80. Among the German writers holding this view are: Christian Meurer, *Die Haager Friedenskonferenz*, vol. 2, p. 217; Alex Meyer, *Die Luftschiffahrtsrecht in kriegsrechtlichen Beleuchtung*, 1909, p. 13; F. Meili, *Das Luftschiff im internen Recht und Völkerrecht*, 1908, p. 49, note 10; Edgar Daus, *Die Luftschiffahrt in Staats und völkerrechtlicher Hinsicht*, 1908, p. 36; J. K. Kohler, "Die Luftschiffahrt im Völkerrecht," *Zeitschrift f. Völkerrecht und Bundesstaatsrecht*, vol. 4, 1910, p. 594; also his *Luftfahrt und Wissenschaft*, 1912, p. 26; Träger, *Deutsche Juristen-Zeitung*, vol. 1, October, 1916, pp. 930-931; also Hildebrandt, *Die Luftschiffahrt*, p. 13. Among the works in English see Lawrence, *International Law*, 7th edition, p. 527; Hazeltine, *The Law of the Air*, 1911, pp. 117-118; Scott, *The Hague Peace Conferences*, vol. 1, p. 650; Percy H. Winfield, *Law Magazine and Review*, vol. 40, Series V, p. 261. See also report of Captain Crozier, "General Report of the United States Commission," Scott, *Hague Peace Conferences*, vol. 2, p. 31.

⁵⁶ See speeches of Crozier, Mounier and supporting vote of Sir John Ardagh, Scott, *Proceedings*, 1899, p. 280.

⁵⁷ Gilinsky, Scott, *ibid.*, p. 342. J. B. Moore, *Current Illusions*, p. 314, states that the Hague Conference of 1899 was originally called for the purpose of disarmament, but that this was "sedulously avoided."

chief reason for prohibiting bombardment from the air.⁵⁸ Had it been definitely known that the lighter-than-air craft was destined to remain in the form of a non-dirigible balloon, even a permanent prohibition might have been accepted. But this was not the case. It was reported that both France and Germany were engaged in secret dirigible experiments.⁵⁹ The French and German Governments had in fact been encouraging dirigible experiments ever since the successful liaison use of balloons at the siege of Paris. After 1871 aeronautical centers had been established by the different countries, the French center at Chalais becoming the most active experimental station in Europe for powered aircraft.⁶⁰ It was during the period between the end of the Franco-Prussian War and the First Hague Conference of 1899 that European powers were building up their air forces. Air power in those days was based entirely upon the balloon, and as such was purely technical, as an instrument of observation. France not only had the large experimental station and training school at Chalais but possessed balloon stations for air battalions at Versailles, Verdun, Epinal, Toul and Belfort, with additional stations for practice at Montpellier, Arras and

⁵⁸ See Scott, *Proceedings*, 1899, pp. 280, 287, 341-42.

⁵⁹ O. Chanute, in the opening address of the International Conference on Aerial Navigation, 1893, speaks of a new dirigible being constructed by the French Military Department under the direction of Commandant Renard, and reported as being 230 ft. long, equipped with a 45 h.p. motor, with a ten-hour capacity and a speed of $24\frac{1}{2}$ miles per hour. Chanute adds "it is understood that the French authorities are maintaining such secrecy as they can concerning this new war engine. But the Germans also, as well as several other European nations, are said to be in possession of navigable war balloons." *Proceedings*, 1893 Conference on Aerial Navigation, p. 7. W. Hastings, "The Problem of Aerial Navigation," states that four powered airships had been built in France but that the successful one, the La France, was being kept a secret by the French Government. *Ibid.*, p. 15. See also *supra*, note 36, for further references.

⁶⁰ See speech of Mr. L. Barthou, Minister of Public Works, on the early encouragement by the French and German governments, of dirigible experiments. Constant, *Pour L'Aviation*, p. 58; also Albéric Rolin, *Le Droit Moderne de la Guerre*, 1920 edition, pp. 396-8.

Grenoble. Germany was trying to follow French methods in establishing her experimental station and school at Tempelhof field near Berlin, and in building up her aviation detachments. Great Britain was actively at work at Woolwich as a center, chiefly in balloon manufacturing, her peace-time strength being only 33 pilots, 2 officers and 58 men. Russia, on the other hand, was credited by most military writers as the most active in aeronautics, before 1900, except for France, but the activity was confined to balloon battalions, her motored airship experiments having resulted in failures.⁶¹

Government subsidies were later granted for dirigible experiments. The French Government was said to be vigorously supporting aeronautical experiments, using "more money than the most enthusiastic company of promoters could hope to secure, and with, presumably, the best ability that it was possible to obtain"⁶² The German Emperor in 1892 had started public subscriptions for the newly organized aeronautical societies with a personal donation of 50,000 marks.⁶³ Inventors were also being supported by government funds.⁶⁴ In this period national aeronautical societies were formed, their purpose being to support aeronautical work. Aerial defense leagues in France and Germany were said to be "doing invaluable work."⁶⁵ The Aeronautical Society

⁶¹ For details on the air strength of the various powers see Commandant Bornecque, *Journal des Sciences Militaires*, 1899, Série X, pp. 70-71, 73-86; Moedebeck, *Die Luftschiffahrt*, pp. 24-44; Girard and Rouville, in *Revue du Génie Militaire*, pp. 571-589, especially in regard to the work at the French aeronautical center at Chalais-Meudon; Olszewski und von Elgott, *op. cit.*, pp. 153-208; Hildebrandt, *Airships Past and Present*, pp. 157-167; Paul Renard, *L'Aéronautique*, pp. 334-337; Sir F. H. Sykes, *Aviation in Peace and War*, p. 19, for the work at Woolwich arsenal; Staël-Holstein, p. 15, *op. cit.*; Hearne, *Aerial Warfare*, chapter IV.

⁶² Hastings, *Problem of Aerial Navigation*, *op. cit.*, pp. 13-14.

⁶³ See Moedebeck, *op. cit.*, pp. 28-29.

⁶⁴ See Dallwitz, *op. cit.*, p. 35; also Barthou, *op. cit.*, p. 129.

⁶⁵ Hearne, *op. cit.*, p. 215; also Paul Painlevé and Emile Borel, *L'Aviation*, 1910, for the work of the Société française de Navigation

of Great Britain, founded in 1866, laid claim to being the oldest in the world. But the German societies, the first of which, the "Deutscher Verein z. Förderung der Luftfahrt," was founded in 1881 with a special object of solving the dirigible question, had grown so rapidly that by 1908 they numbered from six to seven thousand members and could be termed by a noted military writer as an "Air Fleet Association for the Fatherland."⁶⁶ The training of technical ground personnel was part of the program of some of the French aeronautical clubs, a practice later followed by the Germans. The United States Consul at Paris could report that while well known men headed the aeronautical clubs as honorary members, the men trained in ballooning were young working men who could be trained as ground personnel, and that one of the purposes was "to facilitate for young men who have not as yet rendered their military service, admission to the balloon corps, and to give certificates of aptitude which will enable its members to reach the grade of corporal after four months of service."⁶⁷

Dr. A. Wilhelm, writing as early as 1891, pointed out the need of studying the legal questions involved in aerial bombardments from powered dirigibles.⁶⁸ In 1893 the Conference on Aerial Navigation, meeting in Chicago, devoted much of its time to the subject of dirigibles, the possibility of applying the dirigible to warfare being considered practical and possible in the next war.⁶⁹ The Congrès International d'Aéronautique, at

aérienne, formed in 1872 and made up of scientists and experimenters in aeronautics.

⁶⁶ See *Ill. Aëro. Mitt.*, 15 July, 1908, p. 379.

⁶⁷ *United States Consular Reports*, July, 1907, No. 322, pp. 188-192.

⁶⁸ Wilhelm stated that the great destructive capacity of power-driven dirigibles made necessary some study of the legal questions involved. See his article, "De La Situation juridique des aéronauts en droit international," *J. D. I. P.*, vol. 18, 1891, pp. 440-52.

⁶⁹ *Proceedings of the International Conference on Aerial Navigation*, Chicago, 1893; pp. 5-11, for opening address of Mr. O. Chanute, and pp. 12-15 for paper of Mr. C. W. Hastings.

its 1899 meeting in Paris, had also discussed in detail the dirigible problem and the application of the dirigible to aerial bombardment. As already mentioned, successful flights of power-driven dirigibles had long been on record, and actual dirigible construction was under way when the 1899 Hague Conference convened.⁷⁰ It can hardly be said, therefore, that the dirigible was totally unknown in 1899 or deemed hopelessly impracticable, and that this caused the acceptance of the prohibition. As will be seen, however, it was the fact that the dirigible was still unperfected as a practical war weapon, and that no progress in aeronautics, no matter how energetically pursued, could materially affect the military status of the various Powers within the brief period of five years, which led to the acceptance of the five-year prohibition of aerial bombardment. X

The vote of the sub-commission in favor of the permanent interdiction of aerial bombardment in the face of the rapid advance of aeronautics can only be understood in view of the fact that aerial bombing from mechanical flying machines had never taken place, this new means of warfare still appearing fanciful and impracticable. With mechanical flight, by airship or airplane, still confined to experimental stations, the Russian proposal must have appeared anticipatory, if not fantastic, to the great majority of the civilian delegates to the conference.⁷¹ At the same time, the disquieting consequences

⁷⁰ See above, pp. 15, 16, 17. See also Major Gross, *Die Entwicklung der Motor-Luftschiffahrt*, 1906, p. 1, who states that in the work of Giffard (1852-5), Dupuy de Lôme (1872), Hänleins (1872-4), the Tissandier brothers (1883), and chiefly in the work of Renard (1884), the dirigible problem had been solved.

⁷¹ The attitude of the general public toward dirigibles was demonstrated during the early trials of Count Zeppelin. Hearne, *ibid.*, p. 41, says that "He was derided by many rival aeronauts, and his early failures were humorous themes to writers and experts in other countries." See also Zeppelin, *Erfahrungen beim Bau von Luftschiffen*; also Major Gross, *op. cit.*, p. 1; also *supra*, note 15. J. Bouret-Aubertot, *op. cit.*, states that the States were quite willing to renounce the use of aircraft, whose character then seemed chimerical. Paul Boidin,

of an indiscriminate aerial bombardment, endangering not only the active forces of the belligerents but threatening as well the non-combatant population far behind the zone of operations, aroused a resentment against this new, if dubious, method of warfare.⁷² The smaller nations, furthermore, opposed as they were to new armament burdens, were willing to eliminate in advance the use of a new bombing weapon which would enhance the military superiority of the large Powers and add to the existing armaments and military budgets.⁷³ Even some of the military delegates were opposed to aerial bombardment.⁷⁴ Accustomed to the traditional tactics of

ibid., pp. 101-102, says: "L'impossibilité d'aboutir nous paraît si évidente que nous avons peine à comprendre comment les délégués à la première conférence ont pu discuter sérieusement et longuement de pareilles questions. Ils l'ont fait pour satisfaire à l'opinion publique égarée par quelques publicistes, mais n'ont en très probablement eux-mêmes aucune espérance de succès." See also Scott, *Hague Conferences*, vol. 1, p. 650, and John Bassett Moore, *op. cit.*, p. 102.

⁷² See speech of General Poortugael, Scott, *Proceedings*, 1899, p. 6; also notes 18, 19, and 20. A. Mérignhac speaks of the great destruction which an aerial fleet is capable of carrying out, with no available means for defense against such attack, and he adds: "Le jour où résolve la question des ballons dirigeables, la prohibition de la Déclaration de la Haye constituera peut-être un bienfait inappréciable." *Les lois et coutumes de la Guerre sur Terre*, 1903, p. 155. See also the *Revue des Revues*, 1899, p. 440, in which the view is held that the prohibition carries a real meaning in its prohibition of a weapon of destruction against which there is no defense.

⁷³ Mr. Théodore Ruyssen, President, in 1899, of the Association de la Paix par le Droit, refutes the statement of Mr. de Constant, French delegate to both Hague Conferences, that aircraft would result in greater defense capacity for the small nations. In supporting the small nations in their opposition to aerial warfare, Mr. Ruyssen says: "Et les délégués des petites puissances ont eu raison. Ils se sont dit sans doute, que, modifier les conditions de la guerre, ballons et aéroplanes n'en coûteraient pas moins des millions en appareils, en arsenaux, en écoles spéciales et, qu'en définitive la prépondérance reviendrait toujours à cette forme déguisée de la brutalité qu'est la supériorité du nombre et des ressources budgétaires." "Pour L'Aviation," *Bulletin Conciliation Internationale*, p. 195. For de Constant's argument, that the courage and expertness of aviators would make up for small armaments, see *ibid.*, p. 206. See also Scott, *Texts of the Peace Conferences*, p. 339, for votes on the 1907 balloon proposal, in which most of the large powers voted against the prohibition, whereas nearly all of the small nations voted in favor of the prohibition.

⁷⁴ See statement of General Poortugael, Scott, *Proceedings*, 1899, p.

warfare, in which strategy played an important rôle, they resented the introduction of a weapon of which they were ignorant and which, if it should prove effective, would threaten the established military formulæ or vested military interests.⁷⁵

In the face of such opposition to aerial bombardment a permanent prohibition might have been accepted except for the fact that the airship in 1899 already had been made dirigible and that the large Powers were actively interested if not actively engaged in encouraging the work. Captain Crozier, the American military delegate, has been pointed out by writers as responsible chiefly for bringing about the five-year probational period in place of the permanent prohibition, but it should be noted that none of the larger Powers, with the exception of Russia, interposed any objections to Captain Crozier's proposal. On the contrary, such Powers as France and Great Britain openly supported him. If Germany refrained from taking an active part in the

6; also *supra*, note 18. The Prussians during the war of 1870 with France viewed aeronauts as spies and treated those who were captured with undue severity, although no executions were made. The German attitude was condemned by most writers. See Hall, *op. cit.*, pp. 535-536; Taylor, *International Public Law*, p. 493; Halleck, *International Law*, 3rd edition; Calvo, *International Law*, vol. 3, pp. 158, 201; also Wheaton, *International Law*, 3rd edition, p. 465. Both the Brussels Conference of 1874 and the 1899 Hague Conference repudiated the attitude of Bismarck. See Christian Meurer, *Haager Konferenzen*, vol. 2, pp. 175-179.

⁷⁵ For the conservative spirit of the British military authorities see Hearne, *op. cit.*, p. 61; also General Sykes, *op. cit.*, who states that the authorities had their eyes closed to continental development as late as 1911. Major W. C. Sherman, *Air Warfare*, p. 95, writes that General von Kluck of the German Army is said to have "heatedly damned the invention of the airplane for having disclosed the movement of troops, and so rendered abortive some of the strokes of generalship which might have otherwise resulted in brilliant victories" in 1914. For the controversy over the effect of aerial bombs on battleships during the trials of 1921 off the Virginia Capes, see the official report of Captain W. D. Leahy to the Secretary of the Navy. Also the views of Senators Jones and Borah who observed the trial against the former German battleship "Ostfriesland," which was sunk by a 2000-pound bomb twenty minutes after the ship was struck. For details see chapter 3, *Aircraft Year Book*, 1922.

discussions on the five-year proposal, her attitude, nevertheless, could not have been that of a disinterested neutral since she had already subsidized dirigible work and was at that time watching the Zeppelin I nearing completion. It should also be remembered that the German military delegate, Colonel von Schwarzhoff, had in fact made a suggestion for a five-year period even before Captain Crozier had made his proposal.⁷⁶

The 1899 balloon prohibition, in its adopted form, provided essentially for a five-year *status quo* in aerial warfare. Aerial armaments, as other weapons, had been left untouched. The motives underlying the Declaration were entirely without humanitarian sentiment;⁷⁷ primarily the prohibition is based on utility. It provided for a probational period during which time the effectiveness of aircraft may be determined. If during this period mechanical flight, in lighter or heavier-than-air craft, could be proven practicable, there would be no further need, as pointed out in the discussions, of a prohibition on aerial bombing since such a weapon might even bring victory "and thus partake of the quality possessed by all perfected arms of localizing at important points the destruction of life and property."⁷⁸ The question of the danger of aerial bombing to civilian populations was also answered in that an airship under the full control of its crew would assure the immunity

⁷⁶ Scott, *Proceedings*, 1899, p. 342. Meili states that the five-year limitation was accepted because of the belief that within this period the airship would have been far enough developed to be employed in military operations. *Das Luftschiff im internen Recht und Völkerrecht*, 1908, p. 49, note 10.

⁷⁷ Some believed that the Balloon Declaration was passed in a spirit of humanitarianism, following the spirit of the St. Petersburg Convention. See Enrico Catellani, *Le Droit Aérien*, 1912, p. 180; Meurer, *op. cit.*, p. 153; A. K. Kuhn, *Proceedings of the American Political Science Association*, 1909, p. 90; Holls, *Peace Conference*, p. 95. Cf. speeches of Colonel Gilinsky, Scott, *Proceedings*, 1899, pp. 280, 342; Van den Heuvel, *ibid.*, p. 153; Poortugael, *ibid.*, p. 342; Crozier, *ibid.*, p. 354; also Mounier, *ibid.*, p. 280.

⁷⁸ Crozier's statement. See *ibid.*, p. 354.

of non-combatants from haphazard aerial bombardment to the same degree as artillery fire gave such assurance.⁷⁹ The brief interdicted period was thus in fact a probational period, imposed at a time when the interdiction had no material effect upon any effective weapon, and limited to five years in anticipation of the rapid improvement of aircraft and its possible military use in the near future.

⁷⁹ See *infra*, pp. 170-172.

CHAPTER III

AERIAL BOMBARDMENT—THE SECOND HAGUE CONFERENCE

THE First Hague Conference had adopted the Balloon Declaration principally because, as has been shown, aircraft in 1899 were considered "too imperfect to be of any practical use in warfare."¹ The Second Conference, on the other hand, found itself confronted with the dirigible, a weapon already incorporated into the military establishments of two great powers, with proved military capacities and with unlimited possibilities for further development. The Second Conference, furthermore, found itself less restricted in dealing with this new weapon or with weapons of war in general since, in contrast to the 1899 conference, the Second Hague Conference was not called primarily to consider the limitation of armaments or to prohibit the use of new weapons and it was not bound by any moral obligation even to discuss the question. The limiting of armaments, which had been formally declared as the chief motive for the calling of the First Conference,² was not included in the program for the Second Conference. The Resolution, adopted in 1899, calling for future consideration of armaments,³ was in fact eliminated from the program before the Second Conference met. In commenting on this preliminary exchange of views, Mr. Root

¹ Lawrence, *Principles of International Law*, p. 527.

² See page 7 and notes. Also speech of M. de Nelidow at the Second Hague Conference, *La Deuxième Conférence*, 1907, *Actes et Documents*, vol. 1, p. 93; also the speech of M. Bourgeois, Halls, *Peace Conference*, pp. 76-80.

³ Scott, *Texts*, pp. 19, 20.

said: "There is, however, reason to believe not only that there has not been the examination by the respective Governments for which the First Conference expressed a wish but the discussion of its results has been forestalled by a process of direct communication between a majority of the Governments having the greatest interests in the subject. These communications have been going on actively among the different Governments for nearly a year, and as a result at least four of the European Powers have announced their unwillingness to continue the discussion in the Conference. We regret that the discussion should have taken place in this way rather than at the Conference, for we are satisfied that a discussion at the Conference would have afforded a greater probability of progress towards the desired result. The fact, however, cannot be ignored."⁴ No armaments provision, moreover, was included in the resolutions presented in 1904 by the Interparliamentary Union to President Roosevelt,⁵ nor in the letter later addressed by him to the American diplomatic officers abroad.⁶ Russia, in calling the Second Conference, formally disavowed all intentions of touching upon the question of the limitation of military or naval forces. The total elimination of the armament question was made necessary, according to M. de Nelidow, the Russian delegate, by the wars, Colonial struggles and political difficulties which had

⁴ *Senate Document*, No. 444, 60th Congress, 1st Session, p. 9. It was even understood that several powers would refuse to take part in the Conference if the subject should be included. Scott, *Hague Peace Conferences*, vol. 1, p. 662. See Wehberg, *op. cit.*, p. 31, in regard to the unsuccessful visit of the Russian Councillor of State, de Martens, to the European Cabinets before the Conference met.

⁵ Moore, *Digest*, vol. 7, pp. 95-97.

⁶ President Roosevelt did not include the armaments question as "among the broader general questions affecting the right and justice of the relation of sovereign states which were then (1899) relegated to a future conference." Mr. Hay, Secretary of State, to the American Diplomatic Officers accredited to the signatories of the Acts of the First Hague Conference, October 21, 1904, *Foreign Relations*, 1904, vol. 10; Moore, *Digest*, vol. 7, p. 98.

arisen since the First Hague Conference.⁷ Not all the Powers, however, were opposed to the reconsideration of the armament questions. A committee, including such men as Lord Courtney, Lord Reay, Major-General Sir Alfred Turner and Professor Westlake, had assembled at London in 1906 in preparation for the Second Hague Conference and had drawn up a program for general disarmament.⁸ Before the opening of the Conference, Campbell-Bannerman, speaking before the Interparliamentary Union at London, July, 1906, had said: "Insist in the name of humanity, that you should go to this Conference at the Hague, as we ourselves hope to attend, for the purpose of decreasing the burdens of the war and naval budgets."⁹ Such Powers as the United States, Great Britain and Spain reserved to themselves the right of submitting the armament question for consideration at the coming Second Conference.¹⁰ No action on the subject, however, was taken by the Conference, except for the following renewed resolution calling for consideration of the problem at some future time: X

⁷ Scott, *op. cit.*, vol. 1, p. 668. See also letter of the Russian Ambassador, Baron Rosen, to the American Secretary of State, April 12, 1906. Scott, *Texts*, p. 104.

⁸ See Hans Wehberg, *The Limitation of Armaments*, pp. 29-30, for the program.

⁹ Wehberg, *ibid.*, p. 29. The British Delegation to the 1907 Conference, headed by Sir Edward Fry, was instructed to bring the subject up before the Conference by the Premier, Sir Henry Campbell-Bannerman. See Scott, *ibid.*, vol. 1, p. 662. Elihu Root, in his instructions to the American Delegates, states: "Under these circumstances this Government has been and still is of the opinion that this subject should be regarded as unfinished business, and that the Second Conference should ascertain and give full consideration to the results of such examination as the Governments may have given to the possibility of an agreement pursuant to the wish expressed by the First Conference." Instructions to the American Delegates to the Hague see *Parliamentary Papers*, Miscellaneous No. 1 (1908), April 19, 1907, *Senate Document*, No. 444, 60th Congress, 1st Session, p. 9.

¹⁰ Instructions to American Delegates, *ibid.*, p. 9, making reference also to the Spanish and British reservations. For British reservations see *Parliamentary Papers*, Miscellaneous No. 1 (1908), April 19, 1907, p. 12.

"The Second Peace Conference confirms the resolution adopted by the Conference of 1899 in regard to the limitation of military expenditure; and inasmuch as military expenditure has considerably increased in almost every country since that time, the Conference declares that it is eminently desirable that the Governments should resume examination of this question."¹¹

There was thus a fundamental difference in the nature of the two conferences. The First Hague Conference, under the great wave of popular enthusiasm which followed the Russian Emperor's call for a "Disarmament Conference," was practically compelled to consider the limitation of armaments and means of warfare. Popular opinion throughout the civilized world insisted upon a "Disarmament Conference"¹² when most of the states, at best, desired but a certain humanizing of warfare where such humanizing would not in any way diminish military effectiveness.¹³ The popular impression of the real motives of the conference was so strong, however, that the final negative result on this point was widely condemned.¹⁴ The Second Hague Conference, on the other hand, met under conditions that permitted the

¹¹ Scott, *Texts*, p. 138. The Report of the American Delegates states that "the Second Conference was equally unprepared to limit armaments, to place a restriction upon military or naval forces, or to bind the nations not to increase the budgets pertaining thereto." *Senate Document*, *op. cit.*, p. 55.

¹² Holls states that, "The word 'disarmament' does not occur in any of the official documents of the Conference, but the idea was immediately seized upon almost unconsciously by the public at large, as the ultimate goal toward which the entire movement must inevitably tend." *Peace Conference*, p. 66.

¹³ The proposals for the humanizing of war were embodied in the second, third and fourth clauses of the Russian Circular of January 11, 1899. Scott, *Texts*, p. 4.

¹⁴ See Holls, who says that it was "a matter of history that immediately after the adjournment of the Conference this alleged failure to agree, even upon a limitation of present armaments, was made the text of innumerable unfavorable observations upon the Conference as a whole, and its positive results in other directions, far-reaching and momentous as they are, were almost entirely forgotten, or mentioned only with patronizing condescension." *Op. cit.*, pp. 66-67.

discarding of any pretense at attempting to cut down effective armaments. No restriction in the way of a prearranged armaments program was imposed upon the delegates.¹⁵ Popular opinion no longer expected nor insisted upon a "disarmament" conference. The world, in fact, had been notified beforehand by the Russian Emperor that arms and armaments would not be the subject of discussion at the coming conference.¹⁶ The delegates, reflecting the views of their governments, thus at once eliminated all discussion of such effectives as powder, explosives, firearms, guns, and submarines.¹⁷ Only upon the insistence of the British delegation, supported by the American and Spanish delegates, and in a mild way by the French, was the question of general military and naval budgets permitted to come up before the conference, and then only in the form of a resolution calling for consideration of the problem at some future time.¹⁸ It was thus before a conference characterized by an anti-limitation temper, unembarrassed by an expectant public or a superimposed armaments program, and free to follow its inclination, that the 1899 Balloon Declaration was brought up for renewal. Under such circumstances the final rejection of the proposal, and the refusal to renew the earlier agreement were inevitable.

The Balloon Declaration of 1899 having expired in 1904, the Russian Government included a proposal for

¹⁵ The delegates to the First Hague Conference had to face the arms-limitation program outlined in the January 11, 1899, Circular of the Russian Emperor. The points included for consideration were: 1. Non-augmentation of the present military naval forces and budgets; 2. Interdiction of new firearms and explosives, or more powerful powders; 3. Limitation of the use of explosives, and the prohibition of aerial bombardment; 4. The prohibition of submarine warfare. See Scott, *Texts*, p. 4.

¹⁶ See note addressed by Baron Rosen to the American Secretary of State, April 12, 1907. *Ibid.*, p. 104.

¹⁷ All these effectives had to be met and disposed of by the 1899 Conference. For program see note 15.

¹⁸ For resolution see *supra*, p. 54.

its renewal in the program for the Second Conference.¹⁹ The capacity of the weapon which fell within the scope of this proposal had undergone a vast change. The dirigible, with its comparatively large carrying capacity, wide cruising radius, and with its ability to hover indefinitely over a spot while practically immune from ground fire by its altitude capacity, was a weapon which would obviously not be readily discarded. The airplane, although still of uncertain military value, was undergoing a rapid development in the year preceding the 1907 conference. Each month saw increases in speed, altitude and range. By October, 1907, although Germany was still concentrating on the dirigible, France was rapidly developing its heavier-than-air facilities.

No bombing from airships was carried on in the wars which occurred in the interval between the First and Second Hague Conferences. The reason for this abstention could not, however, be attributed to the 1899 Balloon Declaration. Neither France nor England was bound by the declaration in their colonial wars of 1900, since the declaration was binding only in a war between contracting parties.²⁰ In the Russo-Japanese War the Balloon Declaration was indeed binding as both Powers were parties to it. Had either Power, however, wanted to violate this convention they would have found it difficult to do so since the non-dirigible balloon, the only type employed in the war, could be sent over the enemy lines only at the risk of almost certain capture.²¹ So long as non-dirigible balloons, dependent for their movement upon the wind, were used in warfare, their

¹⁹ Article 2, the Russian program, *Senate Document*, No. 444, *op. cit.*, p. 5.

²⁰ For the Balloon Declaration see *ibid.*, p. 154. The provision reads: "The present Declaration is only binding on the Contracting Powers in case of war between two or more of them. It shall cease to be binding from the time when, in a war between the Contracting Powers, one of the belligerents is joined by a Non-Contracting Power."

²¹ See *infra*, pp. 54-55, for balloon operations in the Russo-Japanese War.

only practical military function was that of observation.

Somewhat of a precedent in regard to aerial bombardment may be said to have been established by the time the 1907 Conference convened, since balloons had been used in actual warfare for observation without violating the provisions of the Balloon Declaration. Such a precedent, under normal conditions, would have helped in bringing about a renewal of the declaration. The 1907 Conference, as already mentioned, had the dirigible with which to deal.²² By 1907 there were three distinct types of dirigibles, the rigid, the semi-rigid and non-rigid, each of which was suitable for certain military functions. The steadily increasing weight-carrying and distance capacities, and the potentiality for destruction gave rise to the "air peril" fear which was already well developed in Europe, especially in England, by June, 1907.²³ Already at that time the dirigible may be said to have reached its full development. France and Germany had already experimented with all the types that were later accepted as standard military airships. Other European Powers were either using these types as models, or purchasing dirigibles outright from Germany and France.

Along with the rapid development of the dirigible came a widening of its military functions. The work of reconnaissance and observation was still accepted by many military writers as the prime function of an airship. Its ability to maneuver long distances over enemy territory, at an altitude beyond effective ground fire, to hover over a spot, to remain in the air for extended

²² Jean Bellenger states that in the period between the two conferences the dirigible had made great progress, permitting certain Powers a perfected means of destruction "destined to give them an overwhelming superiority in a war against an adversary less advanced." *La Guerre Aérienne*, 1912, p. 63.

²³ Mr. Du Cros, in the House of Commons, said that much sensational "stuff" had been published on the air menace, but that nevertheless the need for a British aerial fleet was true. *Parliamentary Debates*, August 2, 1909, p. 1598.

periods and to carry a crew large enough for effective work, made it the new "eye" of the army. Military writers, however, had early pointed out the offensive value of the dirigible. If it could actually cover long distances while out of reach of enemy ground fire, and if it could carry a crew of six persons with ballast, it could also be effectively employed for bombardment.²⁴ The dirigible might thus be termed twentieth-century artillery—a type of weapon which would ultimately extend the present-day (1907) miniature twelve-mile range of the cannon to hundreds of miles. It was natural to assume that aerial bombardments would not be restricted solely to enemy troops in the advance zone of operations. There was no reason to believe that dirigibles would not be used as well against enemy arsenals, depots, railroad centers, supply centers in general and other objects of military value located far behind the front lines in territory which in the past had been accepted as outside the traditional zone of operations.²⁵ The French bombing trials of 1905 demonstrated that bombing from airships was practicable. At least France and Germany were unwilling to forego any military utility which the airship might offer. It had often been pointed out that Germany was willing to accept the renewal of the 1899 Balloon Declaration on the provi-

²⁴ See Wilhelm Schön, *Grundzüge eines Luftrecht*, 1909, p. 41; Christian Meurer, "Luftschiffahrtsrecht," *Annalen des Deutschen Reichs*, vol. 42, 1909, pp. 181, 216. See especially H. W. L. Moedebeck, *Die Luftschiffahrt*, 1906, pp. 110-122; Captain Neumann, *Die Verwendbarkeit von Ballon und Motorluftschiff in der Marine*, 1908, pp. 15, 34. Among the French writers see Émile Berrubé, *Flottes Aériennes*, 1910, pp. 31-46; Lt. Archen, *Les Ballons Dirigeables*, 1908, pp. 20-22; Jean Bellenger, *op. cit.*, pp. 63-4; J. Challéat, *Armées Modernes et Flottes Aériennes*, 1911, pp. 44-48. Enrico Catellani, *Le Droit Aérien*, pp. 162-3, says that although aerial bombardment had a moral effect at that time, it was nevertheless of little material value due to the small load capacity and uncertainty of hitting the target.

²⁵ This is Julliot's view, as cited in Moedebeck, *op. cit.*, pp. 115-118. Bellenger points out, in reference to the airship, that a Power will not readily accept the idea of depriving itself of the superior weapon. *La Guerre Aérienne*, p. 71.

sion that all the great Powers did likewise, and that Germany was forced to reject the proposal because of its rejection by certain other Powers, such as France and Russia, but the German authority, Christian Meurer, declared that the qualified assent of Germany, based on unanimity, was in truth a refusal which at the beginning was diplomatically veiled.²⁶ It was said that the Germans had been conducting secret bombing trials, such as those which had been carried out in October, 1905, near Metz.²⁷ German military writers point out that Germany already at this time was appreciative of the value of the "military objective" in regard to air bombardment.²⁸ The employment of the airship in reconnaissance, for some writers implied its inevitable use as an offensive weapon, since such aircraft would of necessity be armed for the purpose of retaliating against ground fire.²⁹

Perhaps for the first time earnest consideration was given by the different governments to the question of aerial bombardment. Thus at the 1907 Hague Conference, when the renewal of the Balloon Declaration was under discussion, two distinct attitudes were in evidence: first, the fear of aerial bombardment on the part of Great Britain and the smaller states; second, the attitude assumed by some of the larger Powers that the new weapon differed in no material respect from other means of bombardment and that it should be given the same treatment and be subject to no harsher regulations than the practice of bombardment in general.³⁰

The final vote on the proposal for renewing the Bal-

²⁶ *Annalen*, vol. 42, 1909, p. 217.

²⁷ Berrubé, *Flottes Aériennes*, 1910, p. 31.

²⁸ Edgar Daus, *Die Luftschiffahrt in Staats-und Völkerrechtlicher Hinsicht*, 1908, p. 34.

²⁹ D'Hooghe, *Droit Aérien*, p. 30.

³⁰ See speech of Lord Reay, who supported the Belgian proposal for renewal of the 1899 Declaration on the grounds that it was enough to have two elements for belligerent action without adding the third. *La Deuxième Conférence*, vol. 3, p. 153; also Scott, *Hague Conferences*,

loon Declaration shows the attitude of the different governments on this new method of warfare.³¹

vol. 1, pp. 653-4. Lord Reay followed the instruction of the British Government in supporting the renewal of the Declaration. See note of Sir Edward Grey to Sir Edward Fry, April 19, 1917, *Parliamentary Papers*, Miscellaneous No. 1, 1908, p. 14. For views that the attitude of Great Britain was based on fear of the new weapon, see Enrico Catellani, *Le Droit Aérien*, 1912, (translated from the Italian by Bouteloup), pp. 160-161; Staël-Holstein, *op. cit.*, p. 39; Christian Meurer, "Luftschiffahrtsrecht," *Annalen*, vol. 42, 1909, p. 218, doubts whether the attitude of Great Britain is to be attributed for certain to the "invasion" tales; see also Arthur K. Kuhn, *Proceedings of the American Political Science Association*, 1909, p. 91, that Great Britain, as a great naval power, wanted the prohibition, since aerial bombardment menaced her military isolation, with her powerful navy unable to act against aircraft.

The French supported the view that aerial bombardment should be brought within the provisions of Article 25, prohibiting bombardment of undefended towns by any means whatever. See the official French report, *Documents Diplomatique, Deuxième Conférence internationale de la Paix*, 1907, p. 78; also speeches of Renault and General Amourel. Scott, *Proceedings*, 1907 Conference, vol. 3, pp. 147, 150.

For official German attitude see *Weissbuch*, 1907, on the Hague Conferences, printed in Niemeyer's *Zeitschrift für Internationales Privat-und Öffentliches Recht*, vol. 17, 1907, p. 414. But see also Christian Meurer, *op. cit.*, who states that the official German claim of calling for unanimity on the Belgian proposal before accepting it was in fact a diplomatic refusal.

For Russian view, accepting principle that aerial bombardment should be permitted but limited to undefended towns, see proposal of M. Tcharykow, *La Deuxième Conférence*, vol. 3, p. 16; also Scott, *Hague Conferences*, vol. 1, p. 652.

For Italian amendment of same nature see Scott, *ibid.*, p. 652, also speech of de Robilant, *Proceedings*, 1907, vol. 3, pp. 149-150.

For an interpretation of the Japanese attitude, that Japan was willing to forego the utility of the new weapon, providing all the large Powers accepted the prohibition, see Albéric Rolin, *Le Droit Moderne de la Guerre*, 1920, t. II, p. 402; Heinrich Pohl, *Luftkriegsrecht*, 1924, p. 10.

No instructions were issued by the American Government on the question of aerial bombardment, but Choate, the chief delegate, supported the British view. Choate, *Hague Conferences*, p. 14.

For view that Great Britain opposed aerial bombardment because it threatened the military *status quo* and her superiority in sea power, see *Air Power*, C. Graham-White and H. Harper, 1917, pp. 125-129. For French and German opposition to the prohibition on grounds of the military utility of the improved aircraft, see *ibid.*, pp. 197-8. See also F. W. Lanchester, *Aircraft in Warfare*, 1916, p. 148. See Note 153 for view that utility of aircraft shuts out its prohibition in warfare, regardless of the fear of certain Powers.

³¹ See *Senate Document No. 444, op. cit.*, p. 211. Among the non-signatory states were France, Germany, Italy, Russia, Japan and Spain.

No application to warfare of motor-driven aircraft had as yet been made when the Second Hague Conference assembled on the 15th of June, 1907, nor had any known attempt at aerial bombardment been made in the wars which occurred in the period intervening between the two Hague conferences. The Brazilian, Santos-Dumont, had already flown his motor-powered airship in France by the outbreak of the Boer War, but only the traditional captive balloon was used by the British in the South African campaigns. A balloon section had been introduced into the British army as a unit of the Royal Engineers in 1890. By the outbreak of the Boer War the peace-time balloon strength in Great Britain was made up of a small detachment, including two officers, 33 aeronauts and six carriages. Provision was made, in case of mobilization, for an increase to three officers, 58 men and nine wagons. Four balloon sections, however, were built up and used against the Boers. The captive balloon used at Ladysmith performed valuable service, especially in observing the Boers' *laagers* and positions behind the heights surrounding the town, a view that would not otherwise have been obtainable.³² At another time balloonists were said to have prevented the forces of General Buller, marching to relieve the forces at Ladysmith, from falling into a trap set by the enemy.³³ In addition to reconnaissance work the balloons were used in directing artillery fire, especially in the attack on Cronje's *laager*. The balloons, however, were not used for bombing, and not always to the fullest

³² See "Memorandum," *Aeronautical Journal*, London, January, 1902, p. 15; also article, *ibid.*, January, 1900, pp. 96-98.

³³ *Aerial Journal*, April, 1900, p. 124. Hildebrandt, *Airships Past and Present*, pp. 163-165; also Bulletin No. 32, 1901, p. 112, *Military Information Division*, War Department, General Staff, General Sykes, *op. cit.*, pp. 19-20, cites Colonel Lynch, who spoke of the moral value of the balloons which "were the symbol of a scientific superiority of the English which seriously disquieted them [the Boers]." For the statement of Commandant Cronje, of the Boer Army, see *Aeronautical Journal*, London, January, 1900, p. 98.

advantage for observation work, as they were usually stationed very far from the enemy's front. At the battle of Magersfontein the balloon was posted four miles from the Boer trenches, whereas the British troops were as close as 800 yards from the same trenches.³⁴

No attempt to use the small dirigible was made by the French in their 1900 colonial campaigns.³⁵ As late as 1904 only captive balloons were used in the Russo-Japanese War. No bombardment from the air was carried on, nor were any free flights made. The only function of the balloon detachments during the war was that of observation from captive balloons. In April, 1904, Russia created a balloon company for the Siberian campaigns. The company was composed of five officers and 193 men, equipped with four balloons, a complete balloon and gas equipment, and 138 horses. In June, another company was formed, both companies making up the East Siberian Balloon Corps, which reached the front in September, 1904. The delay in moving the detachments to a needed point, due to the heavy equipment, bad roads and poor transportation, was the chief obstacle the detachments had to face. The Siberian companies, operating chiefly with the Tenth Army, managed to get in some effective service in spite of the poor

³⁴ Major B. Baden-Powell, "The War Balloon in South Africa," *Aeronautical Journal*, January, 1902, pp. 14-15. Major Baden-Powell adds that the South African War was unfavorable for military ballooning as the country in general was flat, open country, and that an officer on a hill-top could see as far as was necessary. Another cause was the unfavorable weather conditions, such as strong winds and frequent whirlwinds. For early strength of British balloon detachment, at outbreak of Boer War, see Commandant Bornecque, *Journal des Sciences Militaires*, 1899, Série X, vol. 3, p. 237. For review of work done at Magersfontein, Pretoria, Ladysmith, Tugela, Spionskop and at Fourteen Streams, see also *Schweizerische Monatschrift f. Offiziere aller Waffen*, No. 8, p. 373.

³⁵ For the French use of balloons, especially at Taku and Hong-hoa, see Hildebrandt, *Die Luftschiffahrt*, 1907, p. 177; also Staël-Holstein, *op. cit.*, p. 29; also an article by "von. B.," "Der Heutige Stand der Militär-Luftschiffahrt und die Haager Konferenz," *Schweizerische Monatschrift*, No. 8, 1907, p. 373.

transportation facilities, but other Russian balloon detachments, with their heavier equipment, including the complete outfit for manufacturing gas, and requiring a train of 76 wagons, rarely managed to reach a battle in time for service. A company despatched to Port Arthur reached there too late, the city already being invested. The Russians also experimented with a marine aerial observation unit, the steamship *Russ* being converted into a balloon carrier and equipped with drachen balloons. The experiment proved unsuccessful. The Japanese on their part made little use of balloons. Some were employed before Port Arthur, but they were practically of no service as they were stationed some five miles distant and could observe only fleet movements.³⁶

Count Zeppelin, in 1904, had already flown his second

³⁶ For details see "Les Tendances Actuelles des sapeurs dans l'armée Russe," in the *Revue du Génie Militaire*, 1906, vol. 31, pp. 152-4; "De l'emploi des ballons dans la guerre russo-japonaise," in *Der Militärluftschiffahrt*, Supplement 95, pp. 83-85 (made up of extracts from "Radzvjedschik" No. 744, 1905), also Captain Neuman, *Die Verwendbarkeit von Ballon und Motorluftschiff in der Marine*, 1908, pp. 37-38; also "Militärluftschiffahrt," in the *Internationale Revue ü d. gesamten Armeen und Flotten*, vol. 25, 1907, Beiheft 88, p. 2. Slight mention is made of balloon activities in the reports of foreign military observers. No balloon citations appear in the reports of the American observers, Lieutenant Colonel W. S. Schuyler, Captain J. F. Morrison, Captain Peyton C. March. Major Kuhn merely states that the balloons in both the Japanese and Russian armies did not have favorable opportunities to show their usefulness. See report of Major J. E. Kuhn, United States Military Observer, attached to the armies in Manchuria. *War Department General Staff*, 2d., Military Information Division, Bulletin No. 8, December, 1906, p. 196. Captain Judson, attached to the Russian armies in Manchuria, states that weather and snow made artillery directing by balloon impossible. On the other hand, good marine service was rendered by the Russians before Vladivostok where submarine mines and Japanese vessels were daily observed from the air. See report of Captain W. U. Judson, *War Department, General Staff*, Bulletin No. 8, March 1, 1907, 2d., Military Information Division, pp. 184-186. Ariga says: "that during the siege of Port Arthur we tried indeed to utilize military balloons but that unfortunately we could not succeed on this point. Only on the occasion of the first assault did we [Japanese] raise a captive balloon, outside the range of the cannons of the advance positions of the enemy, but we discovered that it was of little value." Nagao Ariga, *La Guerre Russo-Japonaise au point de vue Continental et le Droit International*, 1908, p. 286.

dirigible and Santos-Dumont had flown his airship No. 10 and had long since won the Deutsch Prize for first circling the Eiffel Tower. In fact in the year preceding the Russo-Japanese War, a French semi-rigid dirigible, the Lebaudy, which was shortly afterwards to become the standard type of military airship in France, had made its 29th flight, and the second of this type had already made fifty flights before hostilities had commenced between the Russians and Japanese. In the period following the Russo-Japanese War, and up to the Second Hague Conference, no other wars took place. Had hostilities broken out in Europe, where the dirigible was already a familiar object, this new weapon would have been employed in the campaigns, possibly as an offensive weapon, since bombing trials had already been successfully carried out.³⁷ France had already launched its aerial program, including a fleet of dirigibles stationed at the various major fortresses along the eastern border,³⁸ and a reorganized air force.³⁹ Germany, on its part, was rapidly developing its airship power, although in June 1907 still behind France in air strength.⁴⁰ It is true that only in France and Ger-

³⁷ See Lieutenant Archen, *Les Ballons Dirigeables*, 1908, pp. 20-23; also *Revue d'Artillerie*, vol. 70, p. 289; Lieutenant de Boisricheux, *Les Aéroplanes dans la Guerre d'aujourd'hui*, 1912, pp. 18-19. See also Captain von Krogh, "Die Mitnahme und Verwendung von Explosivgeschossen und -stoffen in Luftkriegsschiffen," in *Zeitschrift f. d. Gesamte Schiess- und Sprengstoffwesen*, April 1, 1907, pp. 121-23; the article, "Haager Konferenz und das Schleudern von Geschossen aus Luftballons," *op. cit.*, March 15, 1907, p. 118; also Émile Berubbé, *Flottes Aériennes*, 1910, p. 31, in which reference is made to the secret bombing trials of the Germans at Metz, October, 1905.

³⁸ See *Parliamentary Debates*, House of Commons, 1909, August 3, pp. 1789-1790.

³⁹ See *Decret*, 13 February, 1903, for the reorganization of the French military air service under Minister of War, Brun; also report of Minister of War, Brun, April 19, 1910, *Journal Officiel*, 21 April, 1910, p. 3681.

⁴⁰ See Captain Ferber, *Transactions of the Junior Institute of Engineers*, London, vol. 18, 1907-8, p. 304; also Graham-White, *op. cit.*, pp. 12-13. De Fonvielle seems to give great military value to the Gross and Parseval airships of Germany, and the secrecy surrounding

many were dirigibles being produced, but other countries were profiting by the experience of France and Germany and equipping themselves gradually with either French or German types.⁴¹

Air strength served as the basis for either supporting or opposing the renewal of the 1899 Balloon Declaration. The term "air strength," as applied to the various Powers at the time of the 1907 Conference, may be defined as the entire aeronautical capacity of any one country, including the following: airships already incorporated in the military service and those under construction for the military service, privately owned airships, aircraft factories, both military and civil, the military air service proper, trained civil personnel, hangars and airdromes, and allied industries capable of producing aircraft material.⁴² The smaller states possessing little aeronautical equipment or facilities, faced with an additional burden in their military budgets and aware of the futility of competing in this new arm with their more powerful neighbors, were opposed to its introduction in warfare, as they were opposed to the introduction in general of new weapons of warfare. The great majority of them, therefore, supported the proposal for the renewal of the 1899 Balloon Declaration. The proposal was made originally by Belgium

their activity. *Notre Flotte Aérienne*, W. de Fonvielle and G. Besancon, pp. 172-175.

⁴¹ See Jane, *All the World's Aircraft*, Section E, pp. 95-103, listing most of the military airships up to 1909 as of German or French model.

⁴² The following definition of air power is given by Flight-Lieutenant C. J. Mackay: "The ability to strike at an enemy's resources, industrial or otherwise, the ability to influence the morale of a nation by striking at the government and the people themselves, in carrying the war to the cities and industrial centers of the enemy country which the army and navy are unable to reach." *Journal of the Royal United Service Institute*, February-November, 1922, p. 280. Major W. C. Sherman, *Air Warfare*, 1926, p. 23, uses the term "Air Force," defining it simply as a "true combatant arm." See specially Spaight, *Air Power and War Rights*, 1924, p. 1; and his later work, the *Beginnings of Organized Air Power*, pp. 7-8.

and supported by China, Greece, Portugal and Turkey, as well as by the large Powers, Austria and Great Britain. Among the small Powers only Argentine, Montenegro and Persia voted against. On the final proposal, made by the British delegation, extending the balloon prohibition to the end of the Third Hague Conference, 12 of the small continental states voted in favor, with only five votes against. On the American continent, 12 of the Latin American states voted in favor, with six against. Thus in contrast to the attitude taken by the larger Powers, only three, Austria, Great Britain and the United States, voted in favor of, while six states rejected the proposal, including France, Germany, Italy, Spain and Russia.⁴³

Other states, also lacking aeronautical strength but well armed with the traditional sea or land arms, viewed the airship as a potential destroyer—to their own disadvantage—of the military *status quo*, and on this basis supported the proposal for prohibiting aerial bombardment. Great Britain and Austria fell into this class. The principal state, however, was Great Britain, whose isolation appeared to many writers to have been swept away by the airship.⁴⁴

⁴³ For signatures see *Senate Document, op. cit.*, p. 210. Baron Estournelles de Constant, the French delegate, declared that he favored the legalizing of aerial warfare, precisely because it protected the small nation against the large offender of international justice. According to him, the small powers, not having the means to compete in land or naval armaments, should be given the right to defend themselves with the new weapons, the submarine and the airship. *Pour l'Aviation*, 1909, pp. 201-207. The attitude of the small states, however, as indicated by their votes on the proposal, hardly bears out the statement of de Constant.

⁴⁴ Cf. Clemente Ader, *L'Aviation Militaire*, 1909, pp. 134-143; also the *Internationale Revue*, vol. 25, 1907, Supplement 88, for a German view of England's vulnerability to air attack, in spite of her great fleet. Choate, although agreeing with the British view, that belligerency should be restricted to the earth and the sea, adds, however, that this may not be desired if at some future time warships should be made obsolete by airships. Choate, *op. cit.*, p. 15. See also Hearne, *op. cit.*, p. xxx and chapter 12, who states that "the rapid development of

The states most advanced in aeronautics, such as France and Germany, were opposed either to any renewal of the declaration or insisted upon its unanimous acceptance by the larger Powers. France, the most consistent opponent to the renewal of the 1899 Balloon Declaration, was in 1907 the leading air power. The birthplace of the balloon and later of the dirigible, France never relinquished her leadership in the development of aeronautics. Before the sessions of the First Hague Conference had ended, in 1899, Santos-Dumont in France had already flown his third motor-driven airship.⁴⁵ In 1901 he had constructed his sixth airship, in that year winning the Deutsch Prize for first circling the Eiffel Tower in an airship.⁴⁶ By the end of 1907 he had built and flown fourteen motor-driven dirigible airships.⁴⁷ None of his designs was of a type adapted to meet the qualifications required for a military airship by the French military authorities, but the French in-

Germany's aerial power may be a serious menace to England if efforts are not made to keep pace with it." For British attitude see the debates of August 2 and August 3, 1909, including the speeches of Haldane, Tell, Lee, Du Cros, Dundas White, Cox, Mond and Lord Balcarrès. *Parliamentary Debates*, August 2, 1909, pp. 1564-1614; August 3, 1909, pp. 1789-90.

⁴⁵ In September, 1898, Santos-Dumont flew his first dirigible airship. It was a small, cigar-shaped balloon, 25 meters long, fitted with a light 1.75 h.p. gas engine. On his first flight he was able to reach an altitude of 500 feet and a speed of sixteen miles an hour. His airship No. 2 collapsed during flight over Paris, May 11, 1899. His No. 3, in early November, 1899, made a flight at 15 miles an hour. See Girard and Rouville, "Les Ballons Dirigeables," in *Revue du Génie Militaire*, vol. 32, 1906, pp. 14-26; also Commandant Borneque, "L'Aérostation Militaire en France à L'Étranger," in the *Journal des Sciences Militaires*, 1899, Série 10, vol. 2, p. 70; also Santos-Dumont, *Dans l'air*, *passim*, 1904, in regard to his flights since 1898.

⁴⁶ See *Pour L'Aviation*, pp. 22, 92; E. P. Lyle, Jr., *Annual Report of the Smithsonian Institution*, 1901, pp. 575-593; also *Ill. Aëro. Mitt.*, 1903, pp. 338-41.

⁴⁷ For a table of Santos-Dumont's airships see A. Hildebrandt, *Die Luftschiffahrt*, 1907, p. 77. For details, see Girard and Rouville, *op. cit.*, pp. 20-26; *Publication* No. 38, 1903, *Military Information Division*, United States Army, pp. 158-60; also W. de Fonvielle and G. Besançon, *Notre Flotte Aérienne*, pp. 47-78, for full discussion.

terest in dirigibles was aroused by remarkable output and frequent flights.

Non-rigid dirigibles—elongated balloons with the motor and controls located in a suspended car—were also built in France by Severo and de Bradsky, but in 1902 both airships were destroyed while in flight.⁴⁸ The “Ville de Paris,” a dirigible of the non-rigid type, also appeared in 1902. It was the largest French dirigible which had as yet appeared. Nearly 200 feet long, it was fitted with a 60 h.p. engine, with a maximum speed of 16 miles an hour. Great expectations were aroused but structural defects prevented any successful flights.⁴⁹ A new type, however, made its appearance at this time. This was the semi-rigid airship, the metal frame-work of which was calculated to give greater stability and far greater strength than heretofore obtained, permitting great increases in size and carrying capacity.⁵⁰

⁴⁸ Severo d'Albuquerque, a Brazilian like Santos-Dumont, had constructed a dirigible in Brazil as early as 1894, a large airship, 195 feet in length. It is said to have flown successfully. In 1902 he completed at Paris his latest model, some 95 feet in length, equipped with two motors. While high over Paris, the airship exploded, presumably from motor sparks. Severo and his mechanic were killed. See Girard and Rouville, *op. cit.*, pp. 26-27; also table of Hermann Hoernes, in his *Lenkbare Ballons*; de Fonvielle, *op. cit.*, pp. 80-88. The airship of Baron de Bradsky, somewhat larger than that of Severo's, but equipped with only a single motor, collapsed in mid-air. Both occupants, including de Bradsky, were killed. The accidents of Severo and de Bradsky would have meant a great discouragement for aeronautics had not the very successful flights of the Lebaudy semi-rigid taken place shortly thereafter. See Girard and Rouville, *op. cit.*, p. 33. For an account of Severo's machine and accident see also G. Espitallier's article in *Ill. Aéro. Mitt.*, February, 1903, pp. 30-36; and for his account of the de Bradsky affair, *ibid.*, January, 1903, pp. 1-7.

⁴⁹ See Girard and Rouville, *op. cit.*, p. 32; General Bahn, *op. cit.*, p. 488; Major George O. Squiers, “The Present Status of Military Aeronautics,” in the *Annual Report of the Smithsonian Institution*, 1908, p. 123. The non-rigid “Ville de Paris,” as well as the airship of Count de la Vaulx, was of military importance, but, as General Bahn writes, it was overshadowed by the much more efficient Lebaudy type. See also *Schweizerische Zeitschrift f. Artillerie u. Genie*, No. 8, 1907, p. 385.

⁵⁰ For an account of the rigid, semi-rigid and non-rigid airships see Commandant Bouttieaux, *Pour l'Aviation*, pp. 90-95; also A. L. Rotch, *New Conquest of the Air*, 1918, pp. 110-114.

The Lebaudy semi-rigid was the first French dirigible of pronounced military capacity. Its speed, range and load capacity brought it readily within the requirements at that time considered essential for a military airship. The Lebaudy voyages of 1902-3, covering 60-mile stretches in a single flight, with a speed of nearly 25 miles an hour, made a profound impression upon the French as well as on the rest of Europe. Its flights were pointed to as proof that the dirigible had become one of the weapons which were vital to the national defense.⁵¹ It was apparent that an airship of this type could be used for reconnaissances behind the enemy lines, and that aerial bombardment had finally become practicable. Military writers, even in Germany, conceded that the Lebaudy airship had given France the lead in military aeronautics.⁵² Over a period of one year thirty-three flights were made under varying conditions of wind and weather and only in two instances did the airship fail to reach its goal.⁵³ The Lebaudy II, com-

⁵¹ *La Guerre Aérienne*, 1912, p. 64, Major Gross, one of the leading German authorities, believed the Lebaudy type to be the most practicable at that time for military use. *Die Entwicklung der Motor-Luftschiffahrt*, 1906, pp. 6-7; see also *Internationale Revue*, vol. 25, 1907, Beiheft 88, p. 6; *Schweizerische Monatschrift*, No. 8, 1907, pp. 362-363. General Sykes states that the Lebaudy airship's flights, in 1903, resulted in the incorporation of airships into the French military establishment. *Aviation in Peace and War*, p. 15.

⁵² See *Schweizerische Zeitschrift f. Artillerie und Genie*, 1907, p. 378; also Major Gross, *supra*, note 51; Commandant Allard, *Histoire de la Navigation Aérienne*, 1909, p. 11, who called the Lebaudy the first full-controlled dirigible. Hearne, *op. cit.*, p. 43, calls 1902, the first year of the Lebaudy flights, the "Year One" in aerial navigation. Commandant Bouttiaux, Director of the "Établissement central d'aérostation militaire de Chalais-Meudon," in a speech delivered in the French Parliament, referred to the Lebaudy airship as the first dirigible capable of executing real voyages with full guaranty of security. *L'Aviation*, p. 93.

⁵³ See Espitallier, *op. cit.*, 1903, pp. 76-78, 342-343; 1904, p. 341. In the Lebaudy semi-rigid type the gas envelope was attached rigidly to a metal framework, the strains of bending and buckling being thus transferred from the envelope to the comparatively strong metal framework. The gondola containing the engine, fuel and crew was attached directly under the framework by rigid tubing. Horizontal and vertical surfaces provided the means for maneuvering the air-

pleted in 1904, gave France its first military airship, completing successfully the series of test flights demanded by the French War Ministry. The military tests included a flight from Moissons to Châlons, a distance of 130 miles, with military officers aboard, and the voyage was declared entirely successful except for the bad landing which nearly wrecked the ship. Landing difficulties were attributed to the lack of hangars at that time. Its later maneuvers included bombing trials.⁵⁴ Military circles in France, with the help of the technical journals, had been requesting two dirigibles for each main fortress, including Besançon and Lyon, and four for Paris, making a total of 16 dirigibles for the fortresses, with 12 additional airships for field use with the army, with still additional ones for coast patrol and for the marine service.⁵⁵ That the aerial program of the government was being carried out, to some extent, may be noted in the information laid before the British Parliament that at Meaux, 40 miles from Paris, on the main road to Germany, three enormous hangars were being constructed, one already being completed (1908). Three such sets of hangars, totaling nine, were either ready, or nearly ready for use, on the roads between Paris and the German border.⁵⁶ The remarkable performances of the Lebaudy II, with its 79 completed flights and its successful performance of the

ship, and a specially devised ballonnet took care of the gas expansion caused by increased altitude, permitting heights of 6250 feet. A 40-h.p. engine, driving two double-bladed propellers, gave a speed of 24 miles an hour. See, for details, Rotch, *op. cit.*, pp. 79-83; Wilfred de Fonvielle, *Histoire de la Navigation Aérienne*, 1907, pp. 243-4; also Commandant Bouttiaux, *Pour l'Aviation*, pp. 92-95; Moedebeck, *Die Luftschiffahrt*, 1906, pp. 77-79; Girard and Rouville, *op. cit.*, pp. 341-344.

⁵⁴ See General Bahn, *op. cit.*, pp. 485-6. During the trials the airship had been officially taken over by the French Government, the first airship to be commissioned by any government. See Bouttiaux, *op. cit.*, pp. 94-5; W. de Fonvielle, *op. cit.*, pp. 109-124.

⁵⁵ General Bahn, *op. cit.*, p. 619.

⁵⁶ *Parliamentary Debates*, August 3, 1909, pp. 1789-90.

military tests, were well noted throughout Europe. In Germany, Major Gross established the Lebaudy model as the third type of dirigible for military use in the Prussian army.⁵⁷

A definite airship program was now instituted by the French War Ministry. According to French military writers this was to take the form of a series of airships modeled after the Lebaudy semi-rigid airship.⁵⁸ But according to German military writers, the French Government planned to equip the army and the major fortresses along the eastern border with dirigibles, with the ultimate object of building a complete airship squadron. The first airship completed under this program was to be stationed at Verdun. Other airships were to be stationed at the other major fortresses along the German border: No. 2 was proposed for Toul, No. 3 for Epinal, No. 4 for Belfort. Paris was to have its own airships, and out of the first airships thus produced a dirigible squadron, No. 1 would be formed. In addition, each of the six French armies was to have a dirigible assigned to it.⁵⁹ The first dirigible to be launched under this program was the "Patrie" in 1906. All previous airship records were surpassed by this dirigible. A speed of 28 miles an hour was attained, with an altitude capacity of 3,000 feet. Many long cruises were made, members of the Government and ranking military officers being carried on some of the voyages.⁶⁰ A pronounced effect was produced by these flights. News of the "Patrie," carrying Clemenceau and other members of the French Government, and of the success of the

⁵⁷ See *infra*, note 91, for the Gross model of the semi-rigid airship.

⁵⁸ See Commandant Bouttieaux, *op. cit.*, p. 95.

⁵⁹ See the *Schweizerische Monatschrift*, No. 8, 1907, p. 366; also the *Internationale Revue*, xxv, pp. 20-21; Captain Krogh, *op. cit.*, p. 121.

⁶⁰ Premier Clemenceau and Minister of War, Picquart, were among the state officials who were taken on flights. See Bouttieaux, *op. cit.*, pp. 95-96; Allard, *op. cit.*, pp. 12-13, for active participation of civil officials and members of the French Parliament in the dirigible activities.

airship in the maneuvers of July 14, 1907, had been broadcast throughout Europe. In France this was pointed to as proof of the stability of the semi-rigid airship and of its great value as the latest means of national defense.⁶¹ Even the Germans, in spite of their Zeppelin and Parseval airships, were impressed, and the Prussian War Ministry gave orders to build a dirigible of the French type.⁶²

The success of the French dirigibles and the active participation by the French Government created a great impression on the French people.⁶³ The sight of dirigibles at the great maneuvers had been hailed as proof of the French aerial supremacy, but some uneasiness was still felt at the performances of the Zeppelin and Parseval airships in Germany and demands were made for a French aerial fleet which would surpass the aerial forces of any foreign power. This program was taken as being directed at Germany, since in 1907 the only competitor to France in military aeronautics was Germany. Great Britain at that time possessed but one airship, an experimental dirigible of little importance compared to the airships of Germany and France. Furthermore, Great Britain had little aeronautical facilities in 1907, with hardly any trained personnel.⁶⁴ The

⁶¹ See "Der Heutige Stand der Militär-Luftschiff und der Haager Konferenz," *op. cit.*, p. 418; also the comment in the *Schweizerische Zeitschrift*, No. 8, 1907, pp. 388-9. See, also, the speech of M. Louis Barthou, Minister of Public Works, before the French Senate, November 5, 1908, p. 59. Herr von Böhlendorf, in a speech in the Reichstag, called for a more active aerial program by the German Government, in view of the eager and successful French activities. It would be preferable, he stated, to see a million marks taken from the 5-million marks' submarine appropriation and turned over to aeronautics. *Ill. Aero. Mitt.*, 1906.

⁶² For the attitude and action of the Prussian War Ministry see the *Internationale Revue*, xxv, p. 6.

⁶³ See speech of M. Louis Barthou before the French Senate, *Pour l'Aviation*, p. 59; also the article by Charles Malo, *Journal des Débats*, August 1, 1909.

⁶⁴ See General Sir F. H. Sykes, *op. cit.*, pp. 20-21, also speeches of Lord Roberts and Major B. Baden-Powell, *Journal of the Royal United*

French Government, on its part, did not confine itself to any single type of airship but actively encouraged all aeronautical experiments.⁶⁵ At this time only military significance was attached to aeronautical experiments. Groups of the Deputies and Senators had been formed for the purpose of actively supporting aeronautics, although not until 1908 did these groups formally declare themselves.⁶⁶ Civil aviation had been projected in Germany, chiefly as an auxiliary for military aeronautics, but in France no commercial significance was placed on aeronautics. The most important aeronautical works, the Lebaudy factories, were occupied exclusively with airships for the French army, and the other airships then under construction were under the close surveillance of the French military.⁶⁷

Outside of France reports were current that the French were energetically sponsoring the newest type of air craft, the heavier-than-air craft. Certainly at this

Service Institute, December, 1909, pp. 556-7. See also the speech of A. P. Du Cros, *Parliamentary Debates*, August 2, 1909, p. 1591, who declared that Great Britain was the only large Power not possessing an airship, its sole airship proving a failure. The United States in 1907 was still without airships or aerial program.

⁶⁵ See parliamentary speech of Barthou, *op. cit.*, p. 59; also Bouttieaux, *op. cit.*, pp. 95-97; General Bahn, *op. cit.*, p. 618, states that when the French War Ministry asked for 300,000 francs with which to build the third military airship, it received instead 650,000 francs, so great was French enthusiasm for this new arm, permitting the building of a fourth military airship, the *Démocratique*. For French expenditures see the account given by Lord Crew, *Parliamentary Papers*, House of Lords, vol. 1, March 16, 1909, also letter of M. Ch. de Freycinet, December 4, 1908, to M. de Constant, President of the Groupe de l'Aviation in the Senate. *Pour l'Aviation*, p. 79; also the speech of M. de Constant, in the French Senate, November 5, 1908.

⁶⁶ See *ibid.*, pp. 73-78.

⁶⁷ Thus at the trial flight, in December, 1906, of the new "Ville de Paris" representatives of the War Ministry were present. The new airship being constructed by Count de la Vaulx was under observation of military officers, and the airship of Saint-Chaffrey was to be tested at the Chalais-Meudon military aeronautical establishment. See Commandant Allard, *op. cit.*, p. 15. Santos-Dumont had already, in 1903, been subject to military tests. One of his airships, the No. XII, was bought by the War Ministry for instructional and experimental purposes. See Santos-Dumont, *My Airships*, notes of 31 July, 1903.

time the French military authorities were very much interested in the work of Santos-Dumont who had given up his lighter-than-air work and turned to airplanes. This was as early as 1906, before any actual flights had been recorded except for the flights of the Wright brothers. Others were also experimenting in France, the Voisin brothers and Bleriot, and their work was already well advanced before the actual flight of Santos-Dumont in 1906.⁶⁸ The airplane was still in its embryo stage when the Second Conference met, with no military importance being even remotely attached to it by the general public or by civil officials and members of parliament. Nevertheless, France already possessed a number of machines capable of leaving the ground, technical men had long discussed the value of the heavier-than-air craft in warfare, and the military authorities in France were not blind to the military advantages of the airplane, with its speed capacity, apparent independence of wind, and its comparative cheapness. Reports were current that France had offered a substantial sum to the Wright brothers for a machine which could meet their requirements, but that the qualifications were too high. Such a machine would have given the airplane, even at that time, military value but the requirements were so rigid that few machines even as late as 1910 could have passed the required tests.⁶⁹ In 1907 France

⁶⁸ Since the trial flight of Clement Ader in 1897, the French had not stopped experimenting in heavier-than-air craft. In America, Langley, Chanute, Herring, and later the Wright brothers, had continued to work in this direction, and in France, Captain Ferber carried on experiments. The Voisin brothers, with the first airplane factory in France, were already busy with plane surfaces in 1904. Ferber, as early as 1905, was already experimenting with a Voisin machine. Later, Bleriot built his own machines, having constructed four biplanes by 1906. His first practical airplane was completed in March, 1907, and by October of that year he had made flights, including a turn. See *L'Aviation*, by Paul Painlevé and Émile Borel, 1923, pp. 19-20; Vivian, *A History of Aeronautics*, 1923, pp. 180-185; A. E. Berriman, *Aviation*, 1913, pp. 132-138.

⁶⁹ See Olszewski u. Elgott, *Das Flugzeug in Heer u. Marine*, 1912,

started supporting its own men. The French Government thus accepted the project of Captain Dorand and permitted him to build his machine in the military shops at Chalais-Meudon. This machine turned out to be a failure, as well as those of the sponsored machines of Gérardville and Lieutenant Dardelet.⁷⁰ By July, 1907, Voisin and Bleriot machines were making short flights, Henri Farman having made many flights, in October flying the then European record of a quarter-mile distance, and Delagrangé having created great interest by making his first short flight of 200 feet. Another machine had been built by Captain Ferber and Levavasseur and other machines were being constructed by different experimenters.⁷¹

Thus when the Second Hague Conference took up the question of aerial bombardment it found France, if not leading in air strength, at least second to no other Power and unwilling to surrender this new arm. The airship in 1907 had as yet no enemy to fear. It was practically immune from ship or ground fire, and the airplane, which later proved so effective an opponent of the dirigible, was still an unknown factor in military operations. The French semi-rigid had become part of the equipment of the national defense, calculated to prove of great service with its distance and carrying capacities. There were already at that time experiments in

p. 158. See Vivian, *op. cit.*, p. 177, in regard to Captain Ferber of the French Army being sent to the United States to negotiate for the French rights to the Wright patents. For some time after the reported flights of the Wright brothers Europe doubted that actual flights had been made in an airplane. In 1906 the representative of a German technical journal reported that two Governments were already negotiating for the patent rights in the spring of 1907. *Ill. Aéro. Mitt.*, 1907, pp. 50-54; 1907, pp. 173-174.

⁷⁰ See Olszewski, *op. cit.*, p. 159.

⁷¹ For the assumed military value of these types see *Pour l'Aviation*, pp. 166-174. For details on types and flights see Vivian, *op. cit.*, pp. 177-184; Berriman, *op. cit.*, pp. 133-138; *L'Aviation*, Painlevé and Borel, pp. 19-24; Allard, *op. cit.*, pp. 22-24. See also the reports in the *Ill. Aéro. Mitt.*, 1907, pp. 176, 252.

equipping the airship with wireless and the bombing value of the airship had been demonstrated two years earlier.⁷² By the middle of 1907 France possessed two dirigibles in active service with another nearly completed and with a fourth under construction. Her military aeronautical center at Chalais-Meudon was equipped to handle an entire fleet of airships; the aeronautical industry had developed to a point where it was capable of turning out a half dozen serviceable airships a year.⁷³ Her air personnel, from mechanics to officers, was rapidly being built up, and airdromes were being installed at most of the fortresses and the large maneuvering grounds. In heavier-than-air strength France unquestionably led the world.⁷⁴ On the continent France alone was engaged with airplanes. In England engineers were interesting themselves in aeronautics, but the government had taken no part in this work.⁷⁵ By the summer of 1907 the airplane was of no practical military use, but France already could count over half

⁷² Military writers in 1907 saw the airplane chiefly as a scouting machine, as a new means for observations. See Major Sherman, *Air Warfare*, p. 38. Other writers saw the airplane as superseding the dirigible. Thus the Austrian, William Kress, was quoted as saying that France, recognizing the advantage of airplanes over airships, is feverishly pushing heavier-than-air craft work. *Schweizerische Monatsschrift*, 1907, p. 364.

⁷³ For an account of the Lebaudy Aeronautical Works see G. Espitalier, "La compagnie du Lebaudy," in the *Ill. Aéro. Mitt.*, 1904, pp. 1-3; 1906, pp. 84-88, 127-135.

⁷⁴ In addition to the French writers, Croft was accepted by foreign critics. See General Sykes, *op. cit.*, p. 16; *Schweizerische Zeitschrift*, 1907, p. 385; Olszewski und von Elgott, *op. cit.*, pp. 153-4. No mention is to be found of German activity in airplanes before 1908; nor had any machine been built in Germany or flown by that time.

⁷⁵ The first airplane to be built and flown in England was the machine of Cody in 1909. A. V. Roe was already active in 1907. But no machine succeeded in taking the air before Cody's flight in 1909. See Vivian, *op. cit.*, pp. 190, 195. In November, 1906, the *Daily Mail* had offered its \$50,000 prize for the first airplane flight from London to Manchester. No Government support or encouragement was at this time to be noted, the British Minister of War, Haldane, in January, 1907, refusing to negotiate further with the Wright brothers for the purchase of their machine. See C. C. Turner, *Aircraft of To-day*, 1918, p. 80.

a dozen different types of machines which were being experimented with and flown, with advances continually being made. The half-mile flight of Farman, the flight of Delagrangé, were great improvements on the short gliding flights of the year previous.

The position of France at the opening of the 1907 Hague Conference was that of a country in predominant possession of new and undetermined weapons, the prohibition of which would react chiefly on her, to her own disadvantage. With the exception of Germany, only France would find her offensive power affected materially by the interdiction of aerial bombardment.⁷⁶ Since the disastrous Franco-Prussian War France seemed determined to apply all modern developments to her national defense, and so at the opening of the Second Hague Conference France was sponsoring not only the airship but also heavier-than-air craft. It was with such a national defense policy that France took up the question of aerial bombardment at the 1907 Hague Conference.

The position of Germany at the conference was somewhat analogous to that of France. Together they made up the only air powers then existent. Heavier-than-air craft, in 1907, were still totally foreign to Germany, but in lighter-than-air craft Germany was concentrating on all types whereas France was equipping herself with only the semi-rigid airship. The Zeppelin rigid type possessed military capacities which might even tend to neutralize the immense sea power of Great Britain. Her semi-rigid and non-rigid types possessed military qualities which made them specially adapted to field service. The French were still first in total performances. But the Germans, since 1906, had produced a variety of airships which together seemed capable of meeting the

⁷⁶ See *infra*, pp. 81-82, for the air strengths of the large Powers at the time of the Second Hague Conference.

various needs of the military services, and which indicated the probability of German airship supremacy in the near future.⁷⁷ At the Conference Germany was thus faced with the French air strength, but also with the knowledge that German aeronautics, at least in lighter-than-air craft, might soon lead the world.

It was in 1900, shortly after the close of the First Hague Conference, that Zeppelin made his first flight and demonstrated that mechanical control of a power-driven airship was practicable. The dirigible project of Count Zeppelin had been completed before the First Hague Conference met. In 1894 a special committee of German scientists had judged the project impracticable, and the German Government had refused the necessary financial support. In 1898, however, he formed his private organization, the *Aktiengesellschaft zur Förderung der Motorluftschiffahrt*. Having been given a site on Lake Constance by the King of Württemberg a great floating shed was built in 1898 to serve as a hangar. During the course of constructing the dirigible interest had been aroused throughout the world. The huge proportions of the projected airship gave it an importance which far surpassed the flights of the small motored balloons of Santos-Dumont.⁷⁸ His giant aluminum dirigible could navigate like a ship, in spite of its enormous proportions. Its performance had fallen short of the most sanguine expectations, but it had nevertheless shown a maximum speed of 19 miles an hour, which indicated that it could make headway in a fresh

⁷⁷ Commandant Paul Renard, writing more than a year later, said: "France is in no danger, as has been frequently loudly announced, of losing the empire of the air." *Annual Report of the Smithsonian Institution*, 1909, p. 156.

⁷⁸ The first flight of the "Zeppelin I" was made on July 2, 1900, but the first successful flight took place in October, in which the record speed of 19 miles an hour was made. See 1899 *Annual Report of the Smithsonian Institution*, pp. 563-4; R. Nimführ, *Die Luftfahrt*, pp. 76-77; H. W. L. Moedebeck, *Die Luftschiffahrt*, pp. 81-84.

breeze. It also proved that in addition to the crew of three men, ballast and fuel, it was possible to carry some two hundred pounds of useful load. In fair weather it could be expected to proceed in any direction under its own power and under the complete control of its crew.⁷⁹ Although Count Zeppelin soon started plans for a new dirigible, his first one proved to some degree that huge rigid dirigibles were capable of speed, distance and carrying capacities to give them military value.⁸⁰ The Zeppelin II, built five years later, equipped with more power and stronger controls, was destroyed at night by a strong wind while the airship was on the ground. Only one successful flight was made with this airship.⁸¹ The Zeppelin III made its first flights in October, 1906, demonstrating its capacity for flight, and by its dirigibility and stability, in spite of its great dimensions, finally vindicating Count Zeppelin.⁸² The advent of this huge airship, with its eight-hour continuous flight, carrying eight persons and some five-thousand

⁷⁹ The Zeppelin I was 410 feet in length with a diameter of 35 feet. An aluminum envelope covered the metal framework, with 17 separate compartments each containing a bag, so that a leak in any one bag would not materially affect the buoyancy of the airship. Two gondolas were attached to the framework, immediately below the envelope, each containing a 16-h.p. gas engine. The average speed, under full load, was some 8 miles an hour. For details see Zeppelin, *Erfahrungen beim Bau von Luftschiffen*, 1908; also Nimführ, *op. cit.*, p. 77; Baden-Powell, 1902, *Annual Report of the Smithsonian Institution*, pp. 121-3.

⁸⁰ For a list of essentials required for a military airship see Neumann, *op. cit.*, pp. 5-12.

⁸¹ For details of the Zeppelin II see General Bahn, *op. cit.*, p. 489; Major Gross, *op. cit.*, p. 19; Vivian, *op. cit.*, p. 353; Nimführ, *op. cit.*, pp. 77-78. After the failure of his first airship, Count Zeppelin found himself unable to raise funds for the building of a new one. The necessary support was finally obtained with the help of King William of Württemberg.

⁸² Much adverse criticism had been directed at the Zeppelin type, chiefly against the impracticability of navigating an airship of such large dimensions and weight. The flights of Zeppelin III demonstrated that the airship responded as readily to the controls as the much smaller semi-rigid types. Pitching, yawing and rolling were eliminated as fully from the huge Zeppelins as from the smaller types. For details see General Bahn, *op. cit.*, p. 493; Moedebeck, *op. cit.*, p. 87; Girard, *op. cit.*, pp. 12-14.

five-hundred pounds of ballast, indicated the military capacities of the German rigid type, especially for long voyages.

English interest, for the time being, was diverted from the French aerial activities to that of the Germans. Lord Montague, in the House of Lords, pointed out that England was no longer an island, that it had lost its insular security, that London was only ten hours away from Emden by dirigible, and that English fortifications were protected chiefly against horizontal attacks, not vertical.⁸³ The 1907 voyages indicated the immense capacity of the German airship, a fact which British military experts considered more important than the numerous performances of the French airships.⁸⁴ The long flight of the Zeppelin III showed how far in advance Germany was of England. While the Zeppelin III was making its long flights at the rate of 27 miles an hour, with its immense loads, the English airship, after making a short run to London, on a favorable breeze, had been unable to return in the face of the medium-strong breeze.⁸⁵ The French, also, took careful note of these German performances.⁸⁶ It was recognized that the size of the Zeppelin gave Germany a radius of action which might far surpass that of France.⁸⁷ It was

⁸³ *Debates*, House of Lords, vol. I, March 16, 1909.

⁸⁴ Sykes, *op. cit.*, p. 16.

⁸⁵ Turner speaks of the flight of the Zeppelin III around Lake Constance, in 1907, as having "electrified the world." *Aircraft of Today*, 1918, p. 73. See also Major-General F. H. Sykes, *op. cit.*, pp. 16-17.

⁸⁶ See Émile Berrubé, *Flottes Aériennes*, pp. 1, 31; Clemente Ader, *L'Aviation Militaire*, 1909, pp. 134-143, speaks of England's vulnerability to German air raids. In regard to French safety, he adds that "although France is safe from German aerial attack for the present (1908), this security will not last if Germany emphasizes her aerial strength and France remains indifferent." Renard, *op. cit.*, p. 156, speaks of the frequent announcements that France was losing its aerial supremacy.

⁸⁷ The 1906 flight of the Zeppelin, carrying 11 persons over a 67-mile stretch in two hours 17 minutes, was said to have passed the performance of the French military airship. Rotch, *op. cit.*, pp. 91-92. The later flight, in October, 1907, lasted 8 hours and 30 minutes, and,

known, furthermore, that the German Government was now supporting Zeppelin in his work and that a building program had already been launched.⁸⁸

The non-rigid Parseval dirigible, avoiding rigid structure and braces of any kind, gave Germany its second type of military airship. The airship had been designed by a military officer purely for military use, featuring rapid demounting and setting-up, a compact form for transportation over rail or road.⁸⁹ The military value of this type was at once recognized by the Germans. The German Emperor was so impressed with its military qualities that he publicly urged the formation of a so-

according to General Bahn, the airship could have stayed aloft another eight hours. General Bahn, *op. cit.*, p. 492. General Bahn gives the Zeppelin a radius-of-action of 2880 miles as against the "Patrie's" (French) 336 miles. *Ibid.*, p. 604. Captain Neumann, another German, gives the Zeppelin a flight-endurance capacity of 48 hours as against the French airship's 12 hours. *Op. cit.*, p. 27. The radius-of-action of the later Zeppelin, then being designed, was placed at 1426 miles, a distance far surpassing that of any French airship. See 1908 report of the United States Military Attaché at Berlin, *Congressional Record, House*, January 29, 1909.

⁸⁸ See Rotch, *op. cit.*, p. 91; also F. A. Talbot, *Aeroplanes and Dirigibles of War*, p. 35, who states that at the direct instigation of the German Emperor the Prussian Government made a state lottery for Zeppelin. The Government also offered to take over his Zeppelin IV, then under construction, if he could pass a performance test including 24 hours of uninterrupted flight and a distance covered of 450 miles. *Ibid.*, p. 35. A German Association was being formed with the object of providing a fleet of dirigibles and 50 hangars for housing the airships. The Zeppelin Society, which a year later was formed to expend the sum raised by public subscription, expected to build 8 Zeppelins in the coming year, in addition to purchasing land for aerodromes and shops. See Major George O. Squiers, *The Present Status of Military Aeronautics*, pp. 130-140. The United States Military Attaché, *op. cit.*, p. 1619, reported that two Zeppelins, III and IV, were to be taken over by the Government, while No. V was being modeled. Six Zeppelins of the No. V type were also to be built for the German Government. This was an early 1908 program.

⁸⁹ The Parseval non-rigid, when unmounted, could be transported in one railroad car or in two military wagons. When inflated the airship was 160 feet long, equipped with a 90-horsepower engine, which drove the airship at the speed of 30 miles an hour. For details see D. Kürchhoff, "Parseval Dirigible," *Schweizerische Militaire Blätter*, vol. 19, 1907, pp. 66-70; A. von Parseval, *Motorballon und Flugmaschine*, 1908, p. 22; 1908 Report of the United States Military Attaché, *op. cit.*

ciety to undertake the building of it.⁹⁰ The first Parseval non-rigid made a series of flights in 1906 which were acclaimed by German military writers as a complete military success.⁹¹ Regular flights thereafter followed, the usual load being four persons with ballast, with a possible maximum of five persons with 660 pounds of ballast or useful load. The Parseval, much smaller in size and capacity than the Zeppelin, was even considered more practical for ordinary field use than the larger dirigible, because of its ease of transportation, no need of housing, and the ease with which it could be handled in landing and general maneuvering.

Germany, unlike France, had developed all three types of dirigibles by the end of 1907. During the year Major Gross, commanding the military air detachment in Germany, completed his semi-rigid dirigible, a close model of the French type.⁹² The first flight took place

⁹⁰ The Motorluftschiff-Studiengesellschaft, composed of bankers, industrialists and technical men, was formed, as Major Squier says, practically at the command of the Emperor. Squier, *op. cit.*, p. 128. In 1907, with a capital of one million marks, it bought the airship already constructed and took over all the Parseval rights. A comprehensive aeronautical program was laid down and the members of the society divided into four groups: 1. the meteorological branch; 2. the dynamical branch; 3. the construction branch; 4. the engineering branch. The construction of another airship was started and a prize offered for an airship motor. For a detailed account of these activities see Rear-Admiral R. H. Bacon, Report No. 1, 12 May, 1909, *Report of the Advisory Committee for Aeronautics, 1909-1910*. See also *Internationale Revue*, 1907, Beiheft 88, p. 5.

⁹¹ See General Bahn, *op. cit.*, p. 495, who in 1907 spoke more enthusiastically of the military utility of the Parseval non-rigid than of the Zeppelin; also Major Gross and Captain Hildebrandt, quoted by General Bahn, p. 494; Neumann, *op. cit.*, p. 24; also the United States Military Attaché, in his 1908 report, *op. cit.*, p. 1619.

⁹² Major Gross believed that the Zeppelin rigid and the Parseval non-rigid had greater possibilities in a military way than the semi-rigid French type of airship, but in building his semi-rigid and closely following the French model, he gave as his reason that all three types would each have their special use in warfare, the Zeppelin type being employed against distant points with fortresses as their bases, the smaller Parseval and Gross types for field work, the Gross type for longer patrols, the Parseval for close-contact work with the troops. See Major Gross, *op. cit.*, pp. 6-7. The Gross airship was built under the supervision of the Prussian Ministry of War, the work being done at

in July, 1907, followed by a series of regular flights, including an endurance flight of three hours twenty-seven minutes. The Gross semi-rigid, like the Parseval type, was designed for field work. Because of their comparatively small cost the Government projected an entire fleet of them.⁹³ Already in 1907 Major Gross had started work on his second machine, which in 1908 made a record trip of 175 miles in which the airship remained aloft 13½ hours and reached an altitude of 3,900 feet.⁹⁴ Thus Germany, although behind France in actual performances, in the number of flights made, miles covered and in the successful carrying out of flights, was preparing a much broader airship program, including all the proven types of airships. A function or series of functions was assigned by the German military authorities to each type.⁹⁵ The rigid was to be employed over the entire theater of war, reaching back to the enemy bases of supply. The semi-rigid, smaller than the rigid, more mobile and more easily assembled and housed, would be employed in longer reconnaissances within the more immediate zone of operations. The Gross airship, although officially not adopted by the War Ministry until 1908, was for practical purposes already included in the military tactics of the General Staff. With its facility in demounting and its ease of transportation, by wagon as well as by rail, the airship was supposed to be particularly suited to the demands made for contact

the Prussian Army Airship Works. See Rotch, *op. cit.*, pp. 97-98. The airship measured 131 feet in length, with a volume of 63,576 cu. ft., and was equipped with a 30-h.p. engine. For details see R. Nimführ, *op. cit.*, pp. 80-90; A. Basenach, *Wir Luftschiffer*, 1909, p. 240; Major Squier, pp. 127-128, *op. cit.*

⁹³ See the 1908 report of the United States Military Attaché, *op. cit.*, p. 1620.

⁹⁴ See *ibid.*, p. 1620. The airship was equipped with two 75-h.p. engines, with a speed of thirty miles an hour. Flights were made by General von Moltke and the Crown Prince.

⁹⁵ See the view of Major Gross, *supra*, note 91; also that of General Bahn, *op. cit.*, p. 496.

work with the troops in the advance zone of operations.⁹⁶ By the time the 1907 Hague Conference met, the Zeppelin had become a national institution.⁹⁷ Germany was already aware of the military value of its airships. Airship construction was in the hands of military officers who had retired from active service only for this purpose. Aeronautical societies were already established throughout Germany, all of them, as in France, including in their program the training of skilled personnel.⁹⁸ Although training of pilots and ground personnel was in great measure taken care of by the army, in 1907 a school for training pilots and aeronautical engineers was to be opened at Chemnitz.⁹⁹ Germany was thus rapidly developing its airship facilities and personnel and by 1907 had nearly caught up with France in air personnel and airship facilities. It was only in heavier-than-air craft that Germany found herself wanting, a need much questioned at the time and advocated only by a few military men. Germany thus proceeded to concentrate on the airship, and by the opening of the Second Hague Conference had established herself as one of the two existent air powers.

Following is a table showing the comparative

⁹⁶ See the 1908 report of the United States Military Attaché, *op. cit.*, pp. 1620-1621.

⁹⁷ See speech of Mr. Hull, Chairman of the Committee on Foreign Affairs, *Congressional Record, House*, January 29, 1909, p. 1618; also Major Squier, *op. cit.*, p. 127. Mr. Haldane, Secretary of State for War, states that in addition to the £300,000 raised for the new Zeppelin, another £265,000 was raised through private subscription. *Parliamentary Debates*, August 2, 1909, p. 1572. Mr. Lee, M.P., also refers to this raising of private funds and the expenditure of it on the airship factory at Friedrichshaven which was to have an output of 8 to 10 Zeppelins a year. *Ibid.*, p. 1577. Mr. Du Cros points out that this enthusiasm was perhaps partly due to the fact that the Germans hoped for an aerial fleet which would help nullify the British sea power. *Ibid.*, p. 1596; see also General Sykes, *op. cit.*, p. 16.

⁹⁸ Eleven aeronautical societies in Germany can be listed as against the four French societies.

⁹⁹ See *United States Consular Reports*, 1907, July, No. 322, pp. 187-193.

strengths of French and German airships. The figures represent performances and not maximum capacity, the Zeppelin altitude capacity, for instance, being perhaps a thousand meters above its actual performance. Based on the above figures, the radius of action—the distance capacity plus the weight-carrying capacity—would be: Patrie 560 kms.; Zeppelin 432 kms.; Parseval 360 kms.; Gross 320 kms.; Ville de Paris 387 kms. The real capacities, however, are much greater. General Bahn lists the Zeppelin with 3,000 kms., the Parseval at 560 kms. Most authorities agree that the 1907 Zeppelin, Parseval and the Patrie were all capable of a radius of action of 300 miles, which means a minimum striking range of 150 miles.¹⁰⁰ Thus in 1907, the dirigible already presented a formidable weapon. France still led Germany in actual performances; but as the following tables show, German airships totaled greater capacity.¹⁰¹

Airship	Patrie (Fr.)	Parseval (Ger.)	No. III Zeppelin (Ger.)	Gross (Ger.)	Ville de Paris (Fr.)
Type	Semi- rigid	Non- rigid	Rigid	Semi- rigid	Non- rigid
Capacity (Cu.M.)	3150	2300	12,000	1800	3200
Length (Meters)	60	48	128	40	62
Motor Power (h.p.)	70	90	180	30	70
Useful Load (kg.)	1260	1400	1400	850	1000
Speed per Hour (kms.) ..	46.8	40	36	46	43
Altitude (Meters)	1280	1000	450	900	900
Flight Endurance (hours)	12	9	12	7	9

¹⁰⁰ See Commandant Paul Renard, *Annual Report of the Smithsonian Institution*, 1909, p. 153, who gives the initial velocity and carrying capacity as the two fundamental properties of an airship. This, if true, would give a greater value to the French airship with its greater velocity.

¹⁰¹ In compiling this table, French, German, English, American and Swiss sources have been used, including Captain Neumann, *op. cit.*, pp. 25-26, General Bahn, *op. cit.*, vol. 2, 1907, p. 603; Extracts from the report of the American military attaché at Berlin, *Congressional Record*, House, January 29, 1909, pp. 1618-19; Major George O. Squier, Signal Corps, U. S. Army, *op. cit.*, pp. 117-144; Captain Sazerac de Forge, 1907, pp. 178-199, 256-279, 218-318. In addition such journals as *L'Aérophile*, *Ill. Aero. Mitt.*, *La Nature*, *Mitteilungen des Artillerie*, *Engineering News and Automotor Journal*, contain material for 1907 on airship capacities.

Great Britain at this time was still without an air program. Her one small airship had been acknowledged in Parliament as a failure.¹⁰² Although rumors of the coming "air menace" had become common in England, little action seems to have resulted on the part of the Government or of the military authorities. The British Secretary for War had refused to accept the offer of the Wright brothers for their machine.¹⁰³ At the time the 1907 Conference met the only aeronautical activity was that of reconstructing the small airship which had proved a failure, and which was again to prove a failure.¹⁰⁴ Although criticism was being directed at the Government for its apparent laxness, no discussion over aeronautics took place in Parliament until 1909.¹⁰⁵ Captive balloons, of the non-dirigible type, had been employed in the Boer War,¹⁰⁶ and although excellent service was performed by the balloon detachments, a single dirigible, it is claimed, might have changed the campaigns and averted many disasters.¹⁰⁷ Unlike France and Germany, Great Britain by means of the old established

¹⁰² See Mr. Lee, *Parliamentary Debates*, August 2, 1909, p. 1576. In reference to England's one airship he said that "one toy airship at Aldershot and an airplane which will not fly make up the national equipment to-day." General Sykes says: "In 1905 we had one very small airship." Vivian states that after the failure of the Nulli Secundus, the English airship, in 1907, "stagnation followed until early in 1909." *Op. cit.*, p. 361. Rotch states that England was forced to go abroad for models and have the foreign designs copied. *Op. cit.*, p. 100.

¹⁰³ General Sykes states that the Wright machine of 1905 had been offered to the British Government three times and refused. *Op. cit.*, p. 13. See also C. C. Turner, *Aircraft of To-day*, 1918, p. 80.

¹⁰⁴ Mr. A. P. Du Cros, *Parliamentary Debates*, August 2, 1909, p. 1591, declared that Great Britain was the only Power not possessing an airship, and the only power not engaged on a definite constructive program; and that the small airship which had been launched in 1907 had proved a failure. Sykes points out that where the airship had made its one flight of an hour, on a favorable breeze, the Zeppelin in Germany had made a trip of 200 miles from Friedrichshaven to Frankfurt. *Op. cit.*, pp. 20-21.

¹⁰⁵ See statement by Mr. Lee, *Parliamentary Debates*, 1909, p. 1574.

¹⁰⁶ See *supra*, p. 61, for details on balloons in Boer War.

¹⁰⁷ See Hearne, *Aerial Warfare*, p. 61.

weapons had already achieved a military position which was satisfactory in terms of traditional power. The weapon then at hand had made her the greatest sea power¹⁰⁸ and had also maintained for her a military *status quo*. The introduction of a new arm of revolutionary potentiality in military strategy was therefore opposed not only by the older military and naval officers on the grounds that the airship was a failure,¹⁰⁹ but also by the government which was reluctant to admit the need for a new arm and additional military expenditures.¹¹⁰ Great Britain remained without a standard airship until after 1909, although experimental work was under way on heavier-than-air craft. Thus at the opening of the Second Hague Conference Great Britain possessed a small unsuccessful airship and an "airplane that would not fly," with a corresponding lack of aeronautical equipment, with no air program or building

¹⁰⁸ For a discussion of the *Two-Power Fleet* policy of Great Britain see an anonymous article in the *Nineteenth Century Magazine*, March, 1908, pp. 485-500.

¹⁰⁹ Lord Montague, in the House of Lords, declared that the War Office was still opposed to aeronautics in 1909, that there was a natural dislike for anything new. The War Office had long hesitated, he said, before examining the torpedo, smokeless powder and the breech-loading rifle. In its claim that there was sufficient time to deal with aeronautics, the War Office was wrong, he declared, since military aviation was far advanced in other countries, as in France and Germany. *Parliamentary Debates*, House of Lords, March 16, 1909. Hearne, *op. cit.*, p. 78, quotes in full a semi-official pronouncement which appeared in the *Daily Mail* of July 23, 1908: "In the highest military circles it is accepted that so far airships are a failure." See also Neumann, *op. cit.*, p. 39, for the opposition by the British Admiralty.

¹¹⁰ As late as 1910 Lord Lucas, Under-Secretary of State for War, spoke of the doubt still prevalent in England of the worth of the dirigible and airplane as weapons of offense. *Debates*, House of Lords, April 13, 1910. This was in reply to Lord Montague's statement that Great Britain's lack of air strength was a source of anxiety in the face of what foreign Powers were accomplishing. Lord Roberts, in a speech before the Royal United Service Institute, in 1909, accused the Government of waiting to benefit from the work done by other Powers. *Journal, R.U.S.I.*, 1910, pp. 555-6. For a sharp criticism of British air attitude see Graham-White, *op. cit.*, pp. 126-129. For total aeronautic expenditures for 1907-8 see *Parliamentary Debates*, August 2, 1909, p. 1572; also *Army Estimates*, House of Commons, *Accounts and Papers*, 1908, Vol. 63, pp. 35, 76.

schedule.¹¹¹ The elimination of air power, by an international interdiction on aerial bombardment, would thus in 1907 have had no disadvantageous effect on Great Britain's military establishment while at the same time it would have benefited her national defense by eliminating the employment of this new arm by foreign Powers. In the discussions which arose at the Hague Conference the delegates of Great Britain must always have had in mind the fact that, while Great Britain completely lacked air power, such foreign Powers as France and Germany were already far advanced in air strength.

The position of Russia at the opening of the Second Hague Conference had changed since 1899. In the reorganization of its military forces, after the disastrous war with Japan, Russia gave aeronautics a place which by 1910 had made it second only to France in airplane strength.¹¹² As early as 1905 a project had been proposed for the replacement of the old aeronautical centers which had proved inadequate, with the dirigible being included in the new equipment.¹¹³ Already in

¹¹¹ Haldane, *op. cit.*, p. 1569, as late as 1909 summed up the building program as consisting of the reorganization of the single balloon factory at Aldershot, and the building of a large dirigible shed. Aeronautical expenditures for the period surrounding the Second Hague Conference were as follows: 1905-6, £12,600; 1906-7, £13,153; 1907-8, £10,710; 1908-9, £9,522. See *Army Estimates, House of Commons, Accounts and Papers*, vol. 66, pp. 33, 66, 71; vol. 48, pp. 35, 68; vol. 63, pp. 35, 76. For the production of the balloon factory, which is listed separately, see *Great Britain, Army Appropriation Accounts*, vol. 49, p. 153; vol. 44, p. 151; vol. 52, p. 143. The total expenditures, as listed by some of the aeronautical papers, are somewhat larger. See the journal, *Aeronautics*, September, 1908. See also the Interim Report of the Advisory Committee for Aeronautics, 1909, for the technical work. *Reports, Commissioners, etc., House of Commons*, 1909, vol. 10.

¹¹² The Russian air strength was reported in 1910, by the American Secretary of War, Mr. H. L. Stimson, that "from the point of view of airplanes it is Russia which should be classed in the first rank after France." *House Documents*, 62d Congress, 2d Session, 1911-1912, No. 141, p. 48. See also Hildebrandt, *Die Luftfahrt*, 1907, p. 191.

¹¹³ For Captain Bolchev's project see *Revue du Génie Militaire*, 1906, vol. 31, p. 356. For the military reforms in Russia after the war with Japan see the *Schweizerische Monatschrift*, 1907, p. 565.

1906 Russia possessed its institute of aerodynamics, given over to experimental work in heavier-than-air craft, a privately endowed institution but subsidized by the government.¹¹⁴ The total air strength of Russia, which in 1910 ranked second only to that of Germany and France, was the result of an active policy toward aeronautics since the war with Japan. Aeronautics in 1908 had so far expanded in the Russian military establishment that a million dollars was needed for the 1909 appropriation, for dirigibles alone, as compared with the total British expenditure for aeronautics in 1909 of 390,000 dollars.¹¹⁵ By 1908 Russia had an air force of 79 officers and 3255 men, as compared with the American total air personnel of 21 officers, 80 enlisted men. Although no definite building program was laid down before the 1907 Hague Conference, yet by 1908 Russia already possessed two dirigibles, with a third one ordered. The first dirigible was modeled after the French semi-rigid, a small airship with a speed of hardly 13 miles an hour. A larger dirigible, of the same model, was to be at once begun which would have a carrying capacity of over 2500 pounds. An order was also placed in France for a large dirigible of the "Republique" type to be ready June, 1909.¹¹⁶ It may be assumed that the aviation development which resulted in the Russian air power of 1910 was the outcome of the policy adopted after the Russo-Japanese War, with an air program already well launched by the time the Second Hague Conference met.¹¹⁷

¹¹⁴ See the *Revue du Génie Militaire*, 1906, vol. 31, p. 83.

¹¹⁵ See report of the United States Military Attaché at St. Petersburg, *Cong. Record, House*, Jan. 29, 1909, pp. 1618-1620. For British expenditure see Haldane, *Parliamentary Debates*, 1909, p. 1572.

¹¹⁶ Report of the United States Military Attaché, Dec. 15, 1908, *op. cit.*, pp. 1619-1620. For airship strength see Jane, *All the World's Aircraft*, 1918, Section E, p. 103. Captain N. K. Averill, American Attaché at St. Petersburg, speaks of the dirigible policy which was started shortly after this period. See *Congressional Record, House*, 1909, pp. 48-49.

¹¹⁷ For the changed aeronautical policy of Russia, started in 1905,

Italy had just started to develop her air strength in 1907. The airplane was still confined to France but Italy had already built a successful type of airship in 1905. Great enthusiasm had been aroused by the news that Italy was to have a dirigible of its own, and the list of subscribers, in raising funds, included the King of Italy, all the ministers and high administrators, the principal cities, and many of the lesser officials and private citizens throughout Italy. The first flight, on June 21, 1905, was a short one. In July two more flights were made, but a too sudden descent resulted in some minor damages after which the airship was deflated and work started on a larger airship.¹¹⁸ The 1908 Italian airship was but a modified model of the earlier type.¹¹⁹ One authority states that Italy, working on an airship of its own in 1907 was the only other power, outside of France and Germany, which had seriously taken up airship construction.¹²⁰ Writers attached military importance to this active industry.¹²¹ The Italian Government is said to have subsidized the early 1905 airship experiment because of the great success of the French dirigibles.¹²² It is certain that the Government had appropriated funds for military aeronautics even be-

see Captain Neumann, *Die Verwendbarkeit von Ballon und Motorluftschiff der Marine*, 1908, p. 38. Olszewski also speaks of the Russian interest in aeronautics since 1905, with frequent subsidizing of unsuccessful experiments—and says that in 1907 at Gatschina an airplane was already completed and ready to take the air. *Das Flugzeug in Heer und Marine*, 1912, pp. 208-9.

¹¹⁸ See W. de Fonvielle & G. Besançon, *op. cit.*, pp. 175-178; also *L'Aérophile*, July 1, 1908, p. 249; General Bahn, *op. cit.* p. 601.

¹¹⁹ For the 1908 airship, which was an enlarged model of the 1905 airship, with motor-power increased from 12 h.p. to 50 h.p., see *L'Aérophile*, July 1, 1908, p. 249; Fonvielle, *op. cit.*, p. 178; also Jane, *op. cit.*, p. 103.

¹²⁰ *Ibid.*, p. 93.

¹²¹ See General Bahn, *op. cit.*, p. 601; also Fonvielle, *op. cit.*, p. 178.

¹²² See General Bahn, *op. cit.*, p. 601. No appropriation is to be found listed as an aeronautical fund, but funds may have been drawn from any of the listed items, such as from the fund for "new material."

fore the 1907 Hague Conference had ended its sessions. The law of 1910, appropriating \$2,000,000 for military aeronautics, specifies that this grant is in addition to the sums authorized in 1907 and in 1909.¹²³ Thus, although the heavier-than-air craft industry in Italy began only after the Italian flights of the Wright brothers and the Frenchman Delegrange in 1908, airship work had already been taken up by the government. Italy was thus actively engaged in military aeronautics by the time of the Second Hague Conference.

Of the other large Powers Austria may be mentioned, with its early experiments in heavier-than-air craft, and its interest in airships before the end of 1907. Vienna was a center of experimental aeronautics perhaps as early as Paris, and practical work was produced as early as 1902, although it was not until 1908 that the first flight was made in an Austrian airplane.¹²⁴ In 1907 a group of military officers had interested themselves in supporting an airplane project, and although no results were obtained until a year later, the work

¹²³ Act No. 422, July 10, 1910, reads:

"Article 1. In addition to the sums authorized in Article 1, law of July 14, 1907, No. 496, and Article 2, law of June 30, 1909, No. 404, there is approved the greater extraordinary allowance of 10,000,000 lire (\$2,000,000) from those provided in the expenses of the ministry of war for the fiscal year 1909-1910, Chapter 71,—to serve for the construction of dirigibles, aeroplanes, the necessary working plants, etc." See *House Document, Congressional Records*, 62d Congress, 2d Session, No. 141, p. 63. Article 1, Law of July 14, 1907, No. 496, provides for the expenditure of 5,000,000 lire (\$1,000,000), on construction of new means of warfare, without specifying aircraft material as such. *Italy, Raccolta Ufficiale Delli Leggi*, 1907, vol. 5, p. 4080. Article 2, Law of June 30, 1909, No. 404, provides 1,000,000 lire for the same item—construction of new means of warfare, etc., *ibid.*, 1909, vol. 3, p. 2450.

¹²⁴ For the machines of Wilhelm Kress, who experimented in Vienna in the period 1897-1903, building several full-sized machines, see Hermann Hoernes, *Die Luftschiffahrt der Gegenwart*, 1903. Among the group of early workers were such well-known men as Kress, Hoernes, Silberer, Pischoff, Wels and Etrich, the machine built by the latter two finally evolving into the well-known Etrich machine of later years. See Olszewski and Elgott, *op. cit.*, p. 137. For details of the Etrich-Wels airplane of 1908 see Jane, *op. cit.*, p. 15. This was the first machine of Austrian or German make to be flown.

was well under way by the summer of 1907. The aeronautical strength of Austria, however, was small when compared to such powers as France, Germany, Russia and Italy.¹²⁵ Its appropriations were negligible and its personnel and equipment were not really organized into an established unit until after 1910. The total expenditure of Austria for aeronautics over the five-year period beginning with 1908, including the comparatively heavy expenditures of 1911-13, was approximately one-sixth that of Germany, one-fifth that of France, one-third that of Russia, and 60 per cent that of Italy.¹²⁶ Austria, therefore, came to the Second Hague Conference comparatively weak in air strength, in air personnel and equipment, even though far advanced in experimental aerodynamics. The policy of the military authorities, and of the Government, seems to have been opposed to any changes in the military establishment, and slight support was given to aeronautics up to 1909-1910.¹²⁷

¹²⁵ A dirigible is listed for Austria as early as 1901, the Military Airship, "M. H." (1901), with a length of 230 feet, a volume of 144,790 cu. ft., a motor of 100 h.p. and a speed of 23 miles per hour. See *Aircraft of Belligerents in the year 1914*, published by the United States Navy Gas Engine School, Lieutenant Commander C. E. Lucke, editor, p. 64. General Bahn, *op. cit.*, p. 600, speaks of several dirigibles taking the air at one time in maneuvers at Krakow in 1907. Jane, *op. cit.*, p. 102, however, lists Austrian military ships from 1909 only. Rotch, *op. cit.*, p. 101, states that the Austrian airships were small ones of no special significance. The American Secretary of War, in his report to the House Committee on Military Affairs, *op. cit.*, 1912, p. 66, states that Austria possessed no well-developed service until 1912, although at that time indicating a more active interest in aeronautics. Haldane, *Parliamentary Debates*, 1909, p. 1572, gave the aeronautical expenditure of Austria for 1908 as approximately as low as that of Great Britain.

¹²⁶ See *Hearings, Committee on Military Affairs*, House, 63rd Congress, 1st Session, 1913, p. 267.

¹²⁷ The first military airship of Austria after the experimental "M.H.," 1901, was the "M.I.," 1909, a small airship with a $2\frac{3}{4}$ gross tonnage lift and a speed of 26 miles per hour. By 1911 two more airships were added, of larger capacity. No dirigibles are listed for 1907 or 1908. The only airplane listed as of Austrian manufacture is the Etrich machine. See Jane, *op. cit.*, p. 102. Also, *Aircraft of Belligerents*, pp. 64, 179. Major Samuel Reber omits Austria in his listing of airplane strengths. *Hearings*, 1913, House, *op. cit.*, p. 257.

Japan in 1907 was inferior to all the other larger Powers in air strength. A dirigible had been acquired early, before the war with Russia, but lack of experience and trained personnel had resulted in the dirigible being employed during the war solely as an ordinary captive balloon.¹²⁸ The great zeal with which Russia, after the Russo-Japanese War, had reorganized its army and taken up aeronautics was not found in Japan. As late as 1910 Japan was still a minor air power,¹²⁹ although after that time rapid progress in military aeronautics is to be noted. Military authorities admit ignorance of the exact status of Japanese military aeronautics before 1910, but the available data indicates that Japan, at the opening of the 1907 Hague Conference, was not actively engaged in aeronautical development, that military aeronautics had not been accepted enthusiastically by the military authorities, and that no policy had been formulated in regard to air power.¹³⁰

The United States, in 1907, possessed no aeronautical equipment other than balloon material. The Langley Appropriation had produced no immediate material results,¹³¹ and no other public funds had been expended

¹²⁸ Jane, *op. cit.*, 1918, p. 94.

¹²⁹ As late as 1913 Japan is credited with only two dirigibles, twenty-three airplanes and twenty military aviators. *Hearings before the Committee on Military Affairs*, House, *op. cit.*, p. 264.

¹³⁰ The entire aeronautical expenditures that the Government allotted for the five-year period 1908-1913 was \$1,500,000, which is less than the expenditures of either Great Britain or Belgium for the same period. *Hearings*, 1913, *ibid.*, p. 267. No airships are listed for Japan before 1911. See Jane, *op. cit.*, p. 103; also *Aircraft of Belligerents*, p. 18. General George P. Scriven, Chief Signal Officer, United States Army, states: "I do not believe that Japan has done very much, however. I rather think that they are at sea." *Hearings, Committee on Military Affairs*, 1913, *op. cit.*, p. 7.

¹³¹ The funds awarded to Professor Langley were not a direct appropriation, but rather part of the funds at the disposal of the Board of Ordnance and Fortifications. This Board has made the grant of \$50,000 to Professor Langley in 1898, after a board of army and navy officials had examined and approved the models and plans of the Langley machine. The grant was made under the Act of May 7, 1898,

on aeronautical experiments and material.¹³² Aeronautics at that time was merely one of the experiments being conducted by the Signal Corps. By the end of 1907 the flying personnel of the United States Army was made up of three officers, with about 60 men making up the ground personnel, all part of the Signal Corps. By the time the Second Hague Conference met flying was still unknown except for the balloon and the Wright experiments. No direct appropriations for aeronautics had ever been made by Congress, and from the only discussions which arose in Congress before 1907 the attitude of the Government appeared to be opposed to public support of aeronautical work.¹³³ Even as late as 1904, after the flights of the Wright brothers had proved to the world that flights in heavier-

which provided funds to the Board of Ordnance and Fortifications "to enable the Board to make all needful and proper purchases, experiments and tests to ascertain, with a view to their utilization by the Government, the most effective guns, etc., and other implements and engines of war." See *8th Report, Board of Ordnance and Fortifications*, 55th Congress, 3d Session, *Document 21*; also *Senate Documents*, vol. 1, 55th Congress, 3d Session, 1898-9, pp. 5, 6. For details on the Langley machine, which was wrecked in launching, and over which a continued controversy has been carried on as to whether it was the first practical flying machine, see Octave Chanute, *Smithsonian Institution, Miscellaneous Collections*, vol. XLIX, December 3, 1906, pp. 33-4. For Professor Langley's statement see *Annual Report of the Smithsonian Institution*, 1904, pp. 113-125. For the official report of the two trials of the Langley machine see *14th Annual Report of the Board of Ordnance and Fortifications*, October 6, 1904, pp. 444-445.

¹³² The funds with which aeronautical equipment was acquired in 1908 came from the general budget at the disposal again of the Board of Ordnance and Fortifications—a total of \$30,000 being expended then on aeronautics. See *Hearings, Committee on Military Affairs*, House, 63d Congress, 1st Session, 1913, p. 68. The first direct appropriation by Congress for aeronautics was in 1911, when \$125,000 were voted. General Scriven, *Hearings, ibid.*, p. 9.

¹³³ Mr. Hull, Chairman of the House Committee on Military Affairs, admitted, in 1909, that he had opposed the original Langley appropriations on the grounds that such expenditure was for mere foolishness, but that "in the light of investigation and what the world is doing [1909] I have a different opinion on the question." *House Debates*, January 29, 1909, *Congressional Record*, 1909, vol. 43, part 2, p. 1620. See also Major S. Reber, Signal Corps, United States Army, for severe criticism of the American passiveness toward aeronautics. *Hearings, Committee on Military Affairs*, 1913, pp. 254-258.

than-air craft were possible, the military authorities, as in England, were still skeptical of their military value. The attitude of the authorities is apparent in the vehement criticism in Congress of any public support of aeronautics. Mr. G. H. Hitchcock, on January 27, 1904, speaking in the House of Representatives, on the Langley appropriation, denounced governmental support of aeronautics as "ridiculous and unwarranted expenditures." He said, "This is a problem worse than the problem of Ann's age, and if it is going to cost us \$73,000 to construct a mud duck that will not fly 50 feet, how much is it going to cost to construct a real flying machine?"¹³⁴ Mr. Robinson, in the same debates, said: "We should stay the hand of wasteful adventure and strike down such costly bubbles as Langley's airships and air castles and rescue the innocent public from such dreams."¹³⁵ Mr. O. Chanute writes that the "United States Government having neglected aeronautics until quite lately," it was only the "public interest, together with the reports of the great progress and activity of the European Governments that spurred the United States Signal Corps to issue invitations on December 17, 1907, for proposals for dirigibles."¹³⁶ No attempt had been made by 1907 to make use of the dirigible, although the airship had been demonstrating its worth in France and Germany for four years. Following its traditional policy, the United States was not directly concerned with the problem of land armaments in Europe and its restricted and comparatively small military establishment offered little opportunity for experiments with new and costly weapons of warfare.

¹³⁴ *Congressional Record*, 58th Congress, 2d Session, January 21, 1904, vol. 38, part 2, pp. 1259-1260.

¹³⁵ *Ibid.*, p. 1261. See also Adverse Report (602), reported by Mr. Hemenway. *House Reports*, vol. 2, *Miscellaneous*, 58th Congress, 1st and 2d Sessions, 1903-4.

¹³⁶ See *Aeronautical Journal*, July, 1908, p. 52.

Thus when the Second Conference at the Hague convened, the United States was completely without dirigible or airplane, with a negligible personnel in military aeronautics and with no appropriations out of which funds for aeronautical work would be available. Nor was the Government actively interested in a means of warfare, as yet undetermined, which at best could threaten only European powers. Heavier-than-air work, in America, had nevertheless progressed beyond that of any other country. By 1907 the flights of the Wright brothers had at least indicated that the airplane was capable of sustained flight over fairly long distances, great enough to be of military value. In 1904 the number of flights made was 105, including a number of circular flights. The two longest flights were three miles, each made in five minutes. The motor power was 17 h.p., and the speed attained was 34 miles per hour. In 1905, with their new machine, 49 flights were made. In September a ten-mile flight was made; the longest flight covering 24 miles, including 30 circular flights over a course. The motor power for this machine was 19 h.p., with a speed attained of 38 miles per hour. The flight of 24 miles was terminated only by the lack of fuel.¹³⁷ Although the American Government did not interest itself formally in the Wright machine until 1908, the military expert, if not the

¹³⁷ See an article by the Wright brothers, "The Relations of Weight, Speed and Powers of Flight," published in the Aero Club publication, 1907, *Navigating the Air*, pp. 6-8; also an article by O. Chanute, "The Wright Brothers' Motor Flyer," *Ibid.*, pp. 3-5. Enough authentic reports of the flights reached Europe by 1906 to have Great Britain, France, Germany, and Russia negotiating with the Wright brothers. See *Ill. Aero. Mitt.*, 1906, pp. 50-54; 1907, pp. 173-4, for European attitude toward flights of the Wright brothers during 1903-1906. The French refused officially to recognize the flights but the flights are accepted by all authorities. Hirschauer, *L'Aviation de Transport*, 1920, pp. 72-73. The military value of the airplane was pointed out by the Wright brothers: "Even in the existing state of the art it is easy to design a practical and durable flyer that will carry an operator and supplies of fuel for a flight of over 500 miles at a speed of fifty miles an hour." *Op. cit.*, p. 8.

civilian delegates to the 1907 Hague Conference, undoubtedly was familiar with the new developments. The attitude of any American delegation toward the permanent interdiction of this new means of warfare must, therefore, to some degree, have been influenced by the startling progress of the Wright brothers. Although no great concern over the question of aerial bombardment was to be expected from the American delegation, due to its negligible air strength and the remoteness of any possible danger from the air, nevertheless opposition might have been anticipated from the American delegates to any permanent categorical prohibition.

At the opening of the Second Hague Conference it was thus already possible, at least to some extent, to classify the powers according to their air strength instead of solely by the traditional land or naval armaments. It is true that in 1907 the very basis of air power, aeronautics itself, was still an undetermined and unproven means of warfare, that the dirigible had never been employed in actual warfare and that there was no assurance that it could even complete a military mission under war conditions.¹³⁸ It is also a fact that the airplane was still practically unknown in most countries. By 1907 actual flights had been made only in the following countries: Denmark, France and the United States, although airplanes had already been built in England and Austria. On the other hand two major Powers such as France and Germany had al-

¹³⁸ See Wilbur Wright, "Some Aeronautical Experiments," *Annual Report of the Smithsonian Institution*, 1902, p. 133, who refers to the "odium" attached to even a study of aerial navigation. See also Professor S. P. Langley, *Experiments in Aerodynamics*, 1902 edition, p. 3, who says: "Schemes for mechanical flight have been so generally associated in the past with other methods than those of science that it is commonly supposed the long record of failures has left such practical demonstration of the futility of all such hopes for the future that no one of scientific training will be found to give them countenance."

ready equipped themselves with airships and air personnel and were already actively engaged in carrying out their building programs.¹³⁹ Competition in air armaments had in fact already begun. Major George O. Squier, speaking in 1908, pointed out that "France, Germany and England are in a state of frenzied interest in this subject, and each period of a single month sees some new step accomplished in the march of progress."¹⁴⁰ Air appropriations increased everywhere after 1907, and by 1914 they form a considerable portion of the national defense budgets.¹⁴¹

The attitude of the various Governments toward aerial warfare, in 1907, and the position taken by their delegates at the Second Hague Conference is intimately correlated to air strength. Opposition to any prohibition on aerial warfare is to be noted where air strength already existed, or where it was in the building, or where the value of the new weapons in the national defense scheme was recognized. On the other hand, where the new weapon was still undeveloped, or where its use threatened to upset the military or naval *status quo*

¹³⁹ See Jane, *op. cit.*, pp. 3-5, 10, also Captain Ferber, *Transactions of Junior Institute of England*, vol. 28, 1907-8, p. 292. See also pages 25-29, *infra*.

¹⁴⁰ *Annual Report of the Smithsonian Institution*, 1908, p. 117. See also J. S. Fanciulli, *Aeronautics* (New York), September, 1908, p. 15.

¹⁴¹ The total air expenditures covering a period of five years, up to 1913, as estimated by the United States military authorities, are as follows:

Germany	\$28,000,000	Chile	\$700,000
France	22,000,000	Bulgaria	600,000
Russia	12,000,000	Greece	600,000
Italy	8,000,000	Spain	550,000
Austria	5,000,000	Brazil	500,000
Great Britain	3,000,000	United States	435,000
Belgium	2,000,000	Roumania	200,000
Japan	1,500,000	Turkey	90,000

Private subscriptions are listed as: Germany, \$3,500,000; France, \$2,500,000; Italy, \$1,000,000; Russia, \$100,000.

See Hearings before the Committee on Military Affairs, 1913, *op. cit.*, p. 267. For earlier expenditures see Report of the Secretary of War, of April 20, 1912, *Congressional Record*, 62d Congress, 2d Session, 1911-1912, *House Documents*, No. 141, *op. cit.*, pp. 5-8, 61, 62-63, 73.

support of a prohibition on aerial warfare is to be noted. In other States, lacking air strength but remote from any "air menace," the attitude toward the prohibition of aerial bombardment is chiefly that of disinterest, at times leaning to restriction, but again opposed to it, as shown by the votes on the various proposals.

At the time of the Second Hague Conference air power was already in existence. The States in possession of air power, or then engaged in the development of air strength, were France, Germany, Italy and Russia. France was generally credited with 10 airships available for war purposes in 1909, with 4 additional ones available before the end of that year. This program had been started early in 1907. For the same period Germany was credited with 7 war dirigibles ready for service, with 8 more under construction and with 5 more to be completed within six months. Italy, during that period, was credited with 4 dirigibles, and Russia with 2.¹⁴² In hangar strength France was credited with 24, seven of which had been constructed before June, 1907. Germany possessed 22 hangars, some, as at Cologne and along the French border, being large enough to hold a Zeppelin. Italy at this time had 11 hangars, two of which had been constructed by the summer of 1907. Russia, in spite of its weakness in airship strength, possessed 18 hangars at this time, four of which were of 1907 construction.¹⁴³ It may also be noted that the colonies were not neglected. French military hangars are listed for Casablanca, Fez, Biskra, Senegal, Indo-China, Madagascar.¹⁴⁴ Actual strength

¹⁴² See Major Baden-Powell's list of airship strengths for 1909, *Journal, R.U.S.I.*, January, 1910, p. 570; also list compiled up to 1913 by the Signal Corps, United States Army, *Committee on Military Affairs*, House, 63d Congress, 1st Session, 1913; also Jane, *op. cit.*, Section E.

¹⁴³ See Alphonse Berget, *Conquest of the Air*, 1911, pp. 88-89.

¹⁴⁴ Jacques Mortane, "The Evolution of Military Aeronautics in France," published in *Congressional Record*, House, 63d Congress, 1st Session, 1913.

of air personnel in 1907 is not available in detail, but the 1909 figures give some indication of air strength in personnel during that period. Thus Russia is credited with 79 officers, 3255 men in military aeronautics; Germany with 20 officers, 465 men; France with 24 officers, 432 men; Austria with 15 officers, 186 men; Italy with 5 officers, 60 men; Great Britain with 5 officers, 40 men; and the United States with 3 officers, 10 men.¹⁴⁵ Air budgets in 1907 were not listed, but the expenditures for 1908, proposed in 1907, were: Germany, approximately, \$670,000, government fund, with an additional \$2,825,000 acquired from private subscription. The official allotment for France was \$237,000, with another round million dollars invested in the private construction of airships which were later turned over to the Government.¹⁴⁶ In contrast to these air expenditures Great Britain's budget, according to Parliamentary figures, was \$26,350. Austria spent \$27,500 on its aeronautical work.¹⁴⁷ The attitudes of the various Powers at the Second Hague Conference followed closely this activity in aeronautics. Air strength at home was the basis upon which the delegates acted when the different proposals for the prohibition and regulation of aircraft came up for discussion.

Although in favor of prohibiting aerial bombardment in 1899 and although signatories to the 1899 Balloon Declaration, the leading air Powers now wanted aerial bombardment legitimized. In place of a sweeping interdiction, as embodied in the Belgian proposal for the renewal of the 1899 declaration, they proposed to substitute regulations similar to those governing bombard-

¹⁴⁵ See statements of Brigadier General Allen, Major G. O. Squiers and Lieutenant Lahm, *Congressional Record*, House, January 29, 1909, pp. 1618-1620.

¹⁴⁶ *House Documents*, No. 141, *op. cit.*, pp. 5-8, 61, for estimates by United States Secretary of War.

¹⁴⁷ See *Parliamentary Debates, Commons*, 1909, p. 1572; also *House of Lords*, vol. 1, March 16, 1909.

ment on land. As already pointed out, aeronautics, in the interval between the two Hague Conferences, had acquired distinct military significance and had found a place in the national defense schemes of these Powers, and as such had taken on the immunity of the other weapons already established.¹⁴⁸

In other words, aeronautics for these Powers could no longer be arbitrarily eliminated by international agreement, but must be accorded the same treatment received by the traditional weapons and means of warfare.

The grounds for this change of attitude, a complete reversal in the case of Russia, are strictly utilitarian. The French delegation made little effort to conceal the motive for its opposition to prohibition. Aeronautics, in their judgment, had advanced to a point where its offensive use in military operations could be reasonably anticipated. Aerial bombardment, with the advent of the dirigible, was now practicable. M. Julliot, the builder of the French military airship, claimed that

¹⁴⁸ Most writers attribute the change of attitude on the part of the large continental Powers to the rapid development of aeronautics during this period. For French writers see de Lapradelle, "La Guerre Aérienne et le droit," *Correspondant*, vol. 271, New Series 235, 1918, pp. 586-588; Albéric Rolin, *op. cit.*, p. 399; L. Rolland, *op. cit.*, pp. 11-12; also Jean Bellenger, *La Guerre Aérienne*, pp. 63-64, who states that the progress of the dirigible gave a new weapon to certain Powers "destined to give them an overwhelming superiority in a war against an adversary less advanced." See also Pierre La Croix, *Le Domaine Aérien et la Guerre*, p. 80; Le Moyne, *op. cit.*, pp. 180-181. Among the German writers are Meurer, *Annalen*, vol. 42, 1909, p. 181; Meili, *op. cit.*, p. 5, quoting also L. Sazerac de Forge; Alex Meyer, *Die Luftschiffahrt in kriegsrechtlicher Beleuchtung*, p. 13; O. Nippold, *Die Zweite Haager Friedenskonferenz*, 1911, Part II, pp. 13-14; J. Kohler, *Luftfahrt und Wissenschaft*, p. 26. Among the British writers are Lawrence, *op. cit.*, p. 527; Hazeltine, *The Law of the Air*, pp. 117-118, 120. Among the Americans are Choate, *The Two Hague Conferences*, p. 14, who says that while the Second Conference was in session news of German and French dirigible flights was current, with predictions that in four or five years the air would be as full of airships as the streets then were full of automobiles. Garner, *op. cit.*, p. 166. See also Staël-Holstein, *op. cit.*, p. 27; also Catellani, *op. cit.*, pp. 179-180, 182-183; Graham-White, *Air Power*, pp. 197-8.

his airship could carry nearly 1500 pounds of bombs at a speed of 26 miles an hour and operate within a radius of 150 miles.¹⁴⁹ At this time there was also some opinion that guns and mitrailleuses could be operated from airships.¹⁵⁰ It was also known that General Picquart, French Minister of War, had appointed a commission in 1907 to test various bombing methods.¹⁵¹ The essence of the French attitude was that the renewal of the absolute prohibition on aerial bombardment could not be accepted since it deprived them of a potentially effective weapon. Mr. Louis Renault, French delegate, expressed the French view in the following words:¹⁵² "The problem of aerial navigation is progressing so rapidly that it is impossible to foresee what the future holds for us in this regard. One cannot, therefore, legislate with a thorough knowledge of the question. One cannot forbid in advance the right to profit by new discoveries which would not in any way affect the more or less humanitarian character of war and which would permit a belligerent to take effective action against his adversary while respecting the requirements of the

¹⁴⁹ "Les Dirigeables Militaires," *L'Aérophile*, 1908, pp. 66-69.

¹⁵⁰ See *Ibid.*, p. 69.

¹⁵¹ See Émile Berrubé, *Flottes Aériennes*, 1910, p. 45. Catellani, *op. cit.*, pp. 160-162, states that possibilities of air invasions had gained moderate credit on the Continent and aroused some agitation in England. See also F. Mallet, *La Conquête de l'air*, 1910, pp. 40-52; Ader, *L'Aviation militaire*, 1909, pp. 134-143, for possibility of air raids, especially on England by the Germans; Moedebeck, *Die Luftschiffahrt*, pp. 108-109, for favorable comment on the Toul trials. Captain von Krogh, *op. cit.*, p. 121, accepts the French trials as evidence of something already accepted. Major General Bahn, *Jahrbucher f. d. deutsche Armee und Marine*, 1907, states that the French trials were very favorable, especially when it is remembered that fifty years were required to bring artillery to its present state of efficiency, and that France plans to use airships for bombing in spite of all official denials. See also the *Internationale Revue*, 1907, Beiheft 88. For British views see speeches of Lord Montague, House of Lords, March 16, 1909, April 13, 1910; also *Parliamentary Debates*, House of Commons, August 3, 1909, pp. 1789-1790.

¹⁵² Scott, *Proceedings*, 1907, vol. 3, p. 147.

Hague Regulations. The French delegation therefore refuses its adhesion to the Belgian proposition."

Other reasons were also advanced. The Balloon Declaration, it was alleged, added nothing to humanitarianism in warfare, and in this respect it was superfluous since bombardment was already sufficiently covered by the Hague rules on land warfare.¹⁵³ The French also indicated that it is not the means of bombardment but rather the target, the objective, that required the protection of humane regulations.¹⁵⁴ These considerations, however, were at best subsidiary to the main proposition advanced by the French, that an effective means of warfare could not be abolished. As one of the French delegates, Baron Estournelles de Constant, later pointed out, it was national defense with which the French delegation was concerned and which determined their opposition to the renewal of the balloon declaration. The progress of aeronautics, in his view, directly involved national security, and the prohibition of aerial bombardment would amount to vehement denunciation of the right of national defense.¹⁵⁵ Aerial

¹⁵³ See Louis Renault, French delegate, *Proceedings*, 1907, vol. 3, p. 147; General Amourel, French military delegate, *ibid.*, vol. 1, p. 14; also Léon Bourgeois, *ibid.*, vol. 1, p. 85, who in Plenary Conference, 4th Meeting of August 17, 1907, said that the French could not support the proposal for prohibition because "It considers that the humanity object is fully attained by the general provision of the Regulations of 1899 on bombardment, especially since, upon our proposal, the words, 'by any means whatever,' have been added."

¹⁵⁴ The French in this respect anticipated the attitude later accepted toward bombardment, and later adopted in 1923 by The Hague Commission of Jurists. Louis Renault, *ibid.*, vol. 3, p. 147, said: "The method of discharging the projectiles makes little difference. It is lawful to try to destroy an arsenal or barracks whether the projectiles used for this purpose come from a cannon or from a balloon; it is unlawful to try to destroy a hospital by either method. That, in our minds, is the essential idea to be considered." The same reasoning was laid before the Plenary Conference as the official reason for refusing to renew the 1899 prohibition. See *ibid.*, vol. 1, p. 103.

¹⁵⁵ Bulletin, *Conciliation Internationale*, October, 1908, pp. 71-72. M. de Constant announced himself opposed to prohibition for the reason that aerial bombardment might be the only means of defense for small nations against the battleships and great armies of the large

bombardment thus held an interest for the French in so far as it offered an effective means of defense. It would be supported in direct proportion to its effectiveness as against any attempt at its prohibition.¹⁵⁶

The German delegation, although not openly opposed to the renewal of the 1899 prohibition, nevertheless maintained a consistent acquiescence in the French attitude. Colonel Rogolla von Bieberstein, before the Conference met, had intimated that Germany would refuse to renew the declaration due to the great development of military aeronautics as a means of bombardment, and to the fact that France would oppose further prohibition of aerial bombardment.¹⁵⁷ Captain von Krogh, writing also before the meeting of the Conference, believed it impossible that the Powers would permit such a weapon to be taken from them, especially since France had introduced airships into its military establishment, and other Powers, especially Germany, were about to do the same.¹⁵⁸ Other writers asserted that Germany, because of her progress and great expenditures on aeronautics, was forced to abstain from supporting any prohibition, while others claimed that Germany found itself unable to accept a renewal of the 1899 balloon declaration because of French opposition to such prohibition.¹⁵⁹ Staël-Holstein declared that neither France nor Germany, with regard to air bombardment, made any effort to hide its opposition to the "new orienta-

Powers. M. de Constant, however, was accused in his country of attempting to build up a great military air strength. See *L'Almanach de la Paix*, p. 70, demanding to know why de Constant had appealed to the War Minister in August, 1907, and why the War Minister should be asked to subsidize aeronautics.

¹⁵⁶ For view disparaging the 1907 balloon declaration, see Mérignhac, "Le Domaine Aérien," *E.G.D.I.P.*, vol. 21, pp. 226-7; Rolland, "Les Pratiques de la Guerre Aérienne," *ibid.*, vol. 23, p. 505.

¹⁵⁷ *Deuxième Conférence de la Haye*, Publications de l'Institut International de la Paix, 1907, pp. 65-70.

¹⁵⁸ *Zeitschrift f. d. Gesamte Schiess-und-Sprengstoffwesen*, April, 1907, p. 123.

¹⁵⁹ H. Pohl, *Luftkriegsrecht*, p. 10.

tion in the regulation of warfare," begun by the Hague Conference of 1899.¹⁶⁰ The German writer, Kohler, frankly asserted that with the coming of air power the reason for limitation had ceased and that restrictions should be recalled and avoided.¹⁶¹ None of the German delegates took part in the discussions on the Belgian proposal, but in the subcommission vote the proposal was accepted by the German delegation only on the condition of its unanimous acceptance.¹⁶² The German reservation, as a leading German critic has pointed out, was in substance a direct refusal of the Belgian proposal.¹⁶³ The French, in fact, had already expressed their opposition to the renewal of the prohibition, and the Russians and Italians had interposed their amendments to it.¹⁶⁴ Germany was also unwilling to relinquish a superiority in air power which it shared only with France, and in which it ultimately hoped to exceed. The German delegation, therefore, readily fell into line with the other delegations demanding regulation in place of prohibition.¹⁶⁵ In the discussions on the

¹⁶⁰ Staël-Holstein, *op. cit.*, pp. 38-39.

¹⁶¹ "Die Luftschiffahrt in Völkerrecht," *Zeitschrift f. Völkerrecht und Bundesstaatsrecht*, vol. 4, 1910, p. 594.

¹⁶² The German Government, in its *Weissbuch* of 1907, states that it had been willing to accept the renewal of the 1899 declaration on condition of unanimity, but that this unanimity had been defeated by the refusal of certain Powers. See also *Niemeyer's Zeitschrift*, vol. 17, 1907, p. 414.

¹⁶³ Meurer, *Luftschiffahrtsrecht*, p. 216.

¹⁶⁴ General de Robilant, the Italian military delegate, anticipated opposition to the Belgian proposal. He said "the Powers which have realized the greatest progress in the art of managing balloons will not easily give up the right to use them at a time when their progress in this difficult work gives them an undoubted advantage over the others." Scott, *Proceedings*, 1907, vol. 3, p. 150.

¹⁶⁵ For writers supporting the German view see Alex Meyer, *op. cit.*, pp. 13-14; Maxim Fleischmann, *Grundgedanken eines Luftrechts*, 1910, p. 41. Germany was also most active in developing its anti-aircraft artillery. Krupps are said to have designed a gun for high-angle fire against balloons during the Franco-Prussian War. By 1907 the French and Austrians were also experimenting, but interest was centered in the capacities of the German Krupp guns, the first one of 6.5 caliber, being credited with an altitude range of 5500 meters within a distance

Italian proposal, the German military delegate, General von Gündell, declared he would reject the provisions for prohibition and accept only that part dealing with regulation.¹⁶⁶ In the votes on the Italian and Russian proposals, and by its final vote against the renewal of the 1899 prohibition, the German delegation made clear its opposition to the prohibition of aerial bombardment.¹⁶⁷

The Italian delegation, while formally accepting the renewal of the 1899 declaration, was in reality eager to abandon the principle of absolute prohibition for that of regulation. The great advance in aeronautics seemed, for the Italians, to preclude its outright prohibition.¹⁶⁸ The Powers then in possession of this new weapon would, in their view, under no circumstances surrender any advantage accruing from the use of this weapon. That Italy considered itself one of these Powers may be assumed from the Italian military delegate's declaration that "Under these conditions, in case it is not possible to forbid absolutely the use of balloons for certain acts of war, it is better to restrict and regulate their

of 8000 meters. A later model, of 7.5 cm., was supposed to reach a 7,400-meter altitude. For details see the *Internationale Revue*, vol. 25, 1907, Beiheft 88, p. 15; also *ibid.*, Supplement 96, "Canons Contre les Aerostats," pp. 154-156; A. Hoenig, *Illustrierte Zeitung*, December 31, 1908, pp. 1245-6; Lieutenant General H. Rohne, *Die Woche*, February 27, 1909, pp. 375-379; *Schweizerische Mil. Blätter*, vol. 19, 1907, p. 260; also *Debates, House of Lords*, vol. 1, 1909, p. 460.

¹⁶⁶ Scott, *Proceedings*, 1907, vol. 3, p. 152.

¹⁶⁷ For German negative vote in full commission on first part of the Italian proposal, see *ibid.*, 1907, vol. 3, p. 152. For affirmative vote on second part of the Italian proposal and on the combined Italian-Russian proposal, providing for the application of the general bombardment rules, see *ibid.*, vol. 3, p. 15. For German vote, in plenary session of the conference, against the Belgian proposal, see *ibid.*, vol. 1, p. 86.

¹⁶⁸ The Italian delegate, General de Robilant, said: "A great Power, whose industry has always been at the head of all progress, has solved the problem which so long occupied the attention of scientists. . . . The other Powers are following it very closely, their engineers are laboring without interruption to find solutions perhaps better than those already existing, and it is probable that they will succeed." *Ibid.*, vol. 3, p. 150.

use for all time.”¹⁶⁹ The Italian delegate, accordingly, proposed the following amendment:

(1) “It is forbidden to discharge projectiles and explosives from balloons that are not dirigible and manned by a military crew.

(2) “Bombardment by military balloons is subject to the same restrictions accepted for land and sea warfare, in so far as this is compatible with the new method of fighting.”

It should be noted, however, that the Italians wanted regulation only for dirigible and manned aircraft. They would still absolutely prohibit bombardment from non-dirigible and unmanned balloons. To understand this apparent divergence in attitude it should be remembered that Italy was then the fourth most active state in aeronautics, and that the dirigible aircraft was well adapted for taking part in the national defense scheme of a country surrounded by high mountains and seas. The protection afforded Italy by its northern mountains, from the Maritime Alps facing France, the Swiss Alps to the north, with the Dolomite range and the Carnac and Julian Alps cutting off Austrian Trieste from Austria proper, and by the Mediterranean to the west, gave Italy a good measure of security from dirigible invasion. The bombload capacity of an airship was in direct proportion not only to the distance at which the objective lay, but also to the altitude necessary for reaching the objective. In the case of the non-rigid and semi-rigid types of airships great altitude, at that time, was considered technically impossible. Airships were dependent for their shape and control upon the internal pressure. It was necessary to provide for the expansion and contraction of gas with the change of altitude.¹⁷⁰ This affected both the altitude and load

¹⁶⁹ *Ibid.*, vol. 3, p. 150.

¹⁷⁰ This is done by means of a ballonnet, an air partition within an

capacity of an airship. Distance also decreased the bombing load, protecting Italy against attack from French territory by way of the sea.¹⁷¹ In passing over the Alps, an attacking airship would not only have to surmount the ranges but rise several thousand feet above them in order to escape ground fire. Such an altitude was not even considered in 1907.¹⁷² The Italian military delegate could therefore maintain with equanimity that dirigible airships were not specially to be feared above all other weapons; that they could never be as formidable as warships nor as effective as artillery; that for neutrals they were not so dangerous as anchored and floating contact mines, and therefore "this new engine of war is no more terrible than those already in use."¹⁷³ On the other hand, bombardment

airship into which air is either pumped or drawn out. This provides for a constant pressure without loss of gas.

¹⁷¹ Nice would probably be the closest spot for an airport. By the time an airship had reached an Italian city its bombload capacity would have been practically negligible because of the amount of fuel necessary to make the round trip.

¹⁷² Following is a chart showing the military capacity of the 1907 airship; with its radius of action and altitude capacity when loaded with bombs:

Airship	Speed	Useful Load	Radius of Action	Bombs, lbs.	Crew	Max. Altitude
"Patrie" (French)	28 m.p.h.	2,772 lbs.	140 m.	1,000	3	4,160 ft.
"Zeppelin III" (German)	26 "	3,000 "	130 "	760	3	1,500 "
"Parseval"	24 "	3,000 "	120 "	640	3	3,300 "

¹⁷³ See Robilant, *Proceedings*, vol. 3, p. 151; Amourel, *ibid.*, vol. 3, p. 152, who concedes it possible that "one can perhaps direct a balloon from a point on the ground." The use of propaganda balloons during the World War by the Germans suggests a method of bombing which may have been already planned in 1907. In the propaganda balloons an automatic release dropped batches of circulars at predetermined intervals, not only distributing the circulars over an extended area but also keeping the balloon afloat, the circulars taking the place of ballast. On the same principle a large free balloon could scatter bombs in enemy territory. A balloon of this type, if not shot down, could travel several hundred miles. By means of a timing device the first bomb could be dropped at a predetermined time, the others following at regular intervals on the principle of a repeating alarm clock. To insure against a reverse wind blowing the balloons back into friendly

by non-dirigible or by unmanned balloons was a different matter. Opposition was made to such bombing weapons in order to prevent a recurrence of the 1849 episode when the Austrians attempted to bombard Venice with small balloon carrying bombs.¹⁷⁴ It was based on the supposition that free, unmanned balloons could be set off in a favorable breeze and directed by wind or by mechanical means, possibly wireless, to a designated objective and its bombs released.¹⁷⁵ The motive underlying this opposition was thus purely that of expediency or national security. The Italian delegation was not only willing to concede a point in its otherwise strict adherence to regulation but demanded prohibition where such prohibition contributed to its national security.

Free unmanned balloons, forming a possible menace to the security of the northern Italian cities, a weapon still undeveloped but nevertheless disquieting, were thus to be banned as bombing weapons.¹⁷⁶ Whereas legiti-

territory, as happened at Venice in 1849, a device for automatic valving could be attached which would prevent the balloon from rising into unknown air strata. Thus the balloons could be sent off in a known favorable wind and maintained in it. Thousands of these balloons could be made of cheap material, even paper, with almost the certainty of landing in enemy territory. By this time Marconi had established his transatlantic wireless, and wireless control of unmanned balloons may have been in the minds of Germans as well as the Italians. For the action of balloons in air currents see *Report 13, 1927, National Advisory Committee for Aeronautics*.

¹⁷⁴ See *supra*, p. 41.

¹⁷⁵ See Amourel, *Proceedings*, vol. 3, p. 152; also Robilant, *ibid.*, p. 151. The statements of General von Gündell, in opposing the first article of the Italian proposal, indicate a desire on the part of Germany to avoid prohibition on lighter-than-air craft. In answer to the Italian contention that balloons must be dirigible if used for bombing, the German delegate stated that it was difficult to determine when a balloon was dirigible, as in a high wind, and that free balloons could be used since it was only necessary "to await a favorable wind which would direct it toward the fortress." The term "dirigible," however, was well established as applying to mechanically driven airships. Free balloons had never been successfully used for bombing, and the method suggested by the German delegate could be applied so rarely as to be negligible. See *ibid.*, vol. 3, p. 152.

¹⁷⁶ Opposition, however, by most of the large continental Powers

mate air power, made up of manned dirigible aircraft, an arm which Italy was then energetically developing, found a staunch protector in Italy. Although voting in favor of the Belgian proposal for the renewal of the 1899 prohibition, the Italian delegation was nevertheless opposed to renewal even for a period of five years.¹⁷⁷ The final declaration was in fact never signed.¹⁷⁸

As has already been pointed out, Russia at the Second Hague Conference assumed a complete reversal of attitude. Her formally declared policy of humanitarianism at the First Hague Conference, her arms-limitation projects, and her officially pronounced opposition to the introduction of new weapons or means of warfare, had also at that time been applied to aerial bombardment. Russia had not only proposed the 1899 balloon declaration but had gone further and urged permanent prohibition. Mr. Beernaert, President of the sub-commission dealing with aeronautics, correctly declared that the 1899 declaration had "emanated from Russia, that Russia wished to give it a permanent character."¹⁷⁹

The reasons advanced by Russia in opposing the renewal of the Balloon Declaration, her own product, indicate little more than a desire to be free of the earlier restriction. In the interval between the two conferences her fleet had been destroyed and her army re-organized and increased.¹⁸⁰ Her earlier pacific attitude had been abandoned along with the projects for limita-

induced Italy to withdraw its proposal for prohibiting the use of free, unmanned balloons. Voting against were Germany, Spain, France, Roumania, Sweden. Abstaining were Austria-Hungary, Japan, and Russia. The only large European Power voting for it was Great Britain.

¹⁷⁷ See speech of General de Robilant, *Proceedings*, 1907, vol. 3, pp. 150-151.

¹⁷⁸ See Scott, *Hague Conferences*, vol. 1, p. 653, note 1.

¹⁷⁹ *Proceedings*, vol. 3, p. 146.

¹⁸⁰ A. K. Kuhn, *Proceedings of the American Political Science Association*, 1909, p. 9, attributes the change of attitude on the part of Russia to the loss of her fleet since the First Hague Conference.

tion of arms and restriction of means of warfare. The Balloon Declaration, however, could hardly be peremptorily eliminated from the 1907 program since at the First Hague Conference it had been unanimously accepted. Russia, therefore, was virtually compelled to place it on the agenda. But having once discharged this duty, Russia then proceeded to nullify it by means of the following amendment:¹⁸¹

“It is forbidden to bombard or attack by artillery or by throwing projectiles or explosives from balloons or by the aid of other new methods of a similar nature, towns, villages, dwellings or buildings that are not defended and do not contain establishments or depots that can be utilized by the enemy for purposes of the war.”

Russia had a practical reason for shifting from prohibition to regulation. Her air strength had been developed to where it was second only to that of France and Germany, with an air program which assured her that position, and her work in heavier-than-air craft was at least equal to that of Great Britain and in advance of other Powers with the exception of France.¹⁸² But no mention of this was made in the debates. The Russian delegates, in fact, entirely omitted the question of air armaments. In discounting the importance of aeronautics, which he declared had not advanced since 1899, the Russian delegate not only disregarded the actual situation but admitted that Russia was no longer interested in prohibiting the introduction of new means of warfare. It is a full contradiction of the arguments advanced by Colonel Gilinsky, the Russian military delegate to the First Hague Conference, who, it will be remembered, was the consistent opponent to any time-limitation on the balloon prohibition, and who de-

¹⁸¹ *Proceedings*, vol. 3, p. 146.

¹⁸² For Russian aeronautics, see *supra*, pp. 73-74.

manded prohibition on the grounds that there were already enough means of warfare.¹⁸³ The attempt of the Russian delegate, Mr. Tcharykow, to square himself with the unqualified stand of his country in 1899 led him into such analogies as that between artillery and aerial bombing, declaring that the damage done by aerial bombardment would probably be no greater than that done by artillery. Mr. Tcharykow said: "We do not know, and the years which have passed since the Declaration of 1899 have given us very little information on this point, what military aviation, or, if you will, aerial artillery, may have in store for us. In any case it would seem that in the actual state of the technical development of those services the ability to damage the enemy by the aid of projectiles or explosives launched from balloons or by other similar means would scarcely be more formidable or more effective than it is by modern artillery on land or sea."¹⁸⁴

This, however, is an obvious evasion of the 1899 issue, since at that time Russia's opposition was not concerned with the degree of destruction but rather with new means of destruction. In other words, Russia in 1899 wanted no additions whatsoever to the existent means for injuring the enemy. Committed to another policy in 1907, with a vigorous air program, but still in some measure bound to her commitment of 1899, Russia avoided direct repudiation of her earlier humanitarian doctrines by shifting over to regulation, in this way legitimatizing a vigorous infant arm under the pretense of restricting its employment.¹⁸⁵

As amended, Article 25, of the Hague land warfare rules, changed so as to include aerial bombing, would have sufficed for Russia.¹⁸⁶ Aerial bombardment was

¹⁸³ Scott, *Proceedings*, 1899, p. 342.

¹⁸⁴ *Proceedings*, 1907, vol. 3, pp. 145-146.

¹⁸⁵ See Tcharykow, *ibid.*, p. 146.

¹⁸⁶ See Russian proposal, 1st Subcommission, *ibid.*, vol. 3, p. 14.

to be accepted as one of the regular and accepted means of injuring the enemy with only the traditional restriction against attacking undefended towns and places. Since the Italian proposal in part contained the same object the Russian delegate suggested that the two proposals be combined and presented as a Russian-Italian proposal. The text of this combined proposal reads as follows:¹⁸⁷

“ARTICLE XXV

“It is forbidden to attack or bombard, with artillery or by throwing projectiles and explosives from balloons, or by other new methods of a similar nature, towns, villages, dwellings or buildings which are not defended, and not to observe, when throwing the above-mentioned projectiles or explosives, the accepted restrictions for bombardments in land or sea warfare, so far as those restrictions are compatible with this new method of fighting.”

Russia was thus the most active sponsor for the legitimizing of aerial bombardment, a situation which could hardly have been forecast in 1899 with Russia then the most active sponsor of prohibition.¹⁸⁸ To eliminate any undue accentuation of aerial bombardment, as apart from other methods of bombardment, France offered another proposal, which while containing the object of the Russian-Italian proposal, still left the old Article 25 practically intact, adding merely the words “by any

¹⁸⁷ See Tcharykow's proposal, *ibid.*, p. 14.

¹⁸⁸ Russia virtually forced a vote on her proposal. Mr. Beernaert, President of the Commission, had declared that the large vote for the Belgian proposal had rendered useless a vote on another proposal. The Russian delegate, however, declared that the Belgian proposal had not been accepted unanimously and that it was therefore necessary to vote on his proposal. *Ibid.*, p. 149. He next pointed out that since there was a divided opinion on the first part of the Italian proposal, it would be better to vote on each part separately. This was done, Russia abstaining from voting on the first part. The road was then cleared for a combined Russian-Italian proposal. See *Proceedings*, 1907, vol. 3, pp. 152-153.

means whatever." This proposal, which was accepted by the conference as the amended Article 25, reads as follows:¹⁸⁹

"The attack or bombardment, by whatever means, of town, villages, dwellings or buildings which are undefended is prohibited."

The four leading air powers, France, Germany, Italy and Russia, had thus managed to attain their object: to legitimatize aerial warfare and to bring the new means of warfare within the ordinary restrictions imposed on bombardment. As in the 1899 Conference, no discussion occurred on the limitation of aerial armaments. In regard to the 1899 prohibition, proposed for renewal by Belgium, these Powers could point to the revised Article 25 as sufficient protection from unrestricted aerial bombardment.

The great majority of states, however, still wanted prohibition on aerial bombardment. Among these were the smaller nations, lacking almost completely aeronautical equipment, and nearly as a unit opposed to the legitimatizing of the new weapon.¹⁹⁰ Belgium, through its chief delegate, Mr. Beernaert, resisted Russia's continued effort to nullify the 1899 prohibition which Belgium had proposed for renewal.¹⁹¹ Bombing from the air called for stricter measures of protection than that required for land and sea bombardment, and the attempt on the part of the large Powers to give it the same status as artillery would bring about undue danger to non-combatants and inoffensive objects.¹⁹² Another

¹⁸⁹ This proposal was unanimously accepted in Commission. *Ibid.*, p. 15. See *Senate Document No. 444, op. cit.*, p. 107.

¹⁹⁰ Belgium, with one airship, was virtually the only small Power possessing air equipment. Spain, one of the larger Powers, was supposed to have had a two-motored airship. See General Bahn, *op. cit.*, p. 602; also Lieutenant Archen, *Les Ballons Dirigeables*, p. 36, for Belgian trials.

¹⁹¹ See Scott, *Proceedings*, 1907, vol. 3, pp. 146, 149.

¹⁹² *Ibid.*, p. 148.

Belgian delegate, Mr. Van den Heuvel, challenged the conference to disprove the insinuations that the 1899 prohibition had been accepted only because it was of no importance. "Some morose spirits," he said, "have stated that the First Conference had adopted the Declaration on balloons only because many believed it without real effect in view of the slight advance in the science of aerostatics. These are harmful criticisms and injurious insinuations."¹⁹³ The Swiss delegate, Colonel Borel, pointed out that although the large Powers were adroitly shifting the issue to the question of undefended towns, the 1899 declaration was concerned rather with the prohibition of aerial warfare in general. The Swiss delegate further insisted that the Italian amendment, as the Russian, did not fill a gap in the 1899 regulations for land warfare; that "the general and absolute terms of this Article 25 seem to him to forbid, now and with no exception, the use of all projectiles or similar methods whatsoever, either from balloons or in other ways, against towns, villages, dwellings or buildings which are not defended."¹⁹⁴ The delegates of Turkey, Greece, Portugal and China also declared themselves in favor of the Belgian proposal.¹⁹⁵ None of the smaller states were misled into accepting the amendments of Italy and Russia as additions to Article 25 of the 1899 regulations. The Swiss delegate drew attention to the fact that they merely confirmed Article 25, "a confirmation which cannot, either in purpose or effect, restrict or call in question the integral force of the present text of Article 25."¹⁹⁶ It is to be noted that although the small nations accepted the amendments to Article 25, they nevertheless accepted the renewal of the prohibition on aerial bombardment.¹⁹⁷

¹⁹³ *Ibid.*, p. 148.

¹⁹⁵ *Ibid.*, pp. 148-149.

¹⁹⁴ *Ibid.*, p. 153.

¹⁹⁶ *Ibid.*, p. 153.

¹⁹⁷ Voting for the Belgian proposal in the 1st Subcommission of the Second Commission were: Belgium, Bulgaria, Chile, China, Cuba, Den-

Among the larger Powers that appeared favorably inclined toward prohibition was Japan, nearly completely lacking in air strength but too remote from Europe to fear the effect of the new weapon.¹⁹⁸ Following the example of Great Britain, Japan had based its national defense on sea power. Aeronautics, even as late as 1910, played no rôle, not even a minor rôle, in the scheme of defense. The Japanese delegation could therefore accept, in 1907, a prohibition of aerial bombardment for a period of five years. Opposition, however, by the large military powers to the renewal of the prohibition so affected the delegates of Japan that in the final vote on the proposal they abstained from voting. Japan thus refused to relinquish the use of a means of warfare, which although not at her own disposal had become an established arm on the continent, unless those Powers possessing air strength also accepted the prohibition.¹⁹⁹

Austria-Hungary, also weak in air strength and lacking an air policy, on the other hand accepted the

mark, Dominican Republic, Great Britain, Greece, Haiti, Italy, Japan, Mexico, Norway, Panama, Paraguay, Netherlands, Portugal, Roumania (under reservation of unanimity), Salvador, Siam, Sweden, Switzerland, Turkey, Germany (with reservation of unanimity), United States, Austria-Hungary. The only small Powers voting against were Montenegro, Argentina and Persia. *Ibid.*, 1907, vol. 3, p. 149. In the Second Commission no vote was taken, the proposal being accepted without a vote. *Ibid.*, vol. 3, p. 15. In the vote in plenary session of the conference, voting against were Germany, Argentina, Spain, France, Montenegro, Persia, Roumania, Russia; not voting were Chile, Colombia, Japan, Mexico, Peru, Sweden, Venezuela. On the last day for signing the declaration, June 30, 1908, the following States failed to sign: Germany, Chile, Denmark, Spain, France, Guatemala, Italy, Japan, Mexico, Montenegro, Nicaragua, Paraguay, Roumania, Russia, Servia, Sweden, Venezuela. See Senate Document No. 444, *op. cit.*, p. 210-213.

¹⁹⁸ See *supra*, p. 93, for aeronautics in Japan.

¹⁹⁹ Mr. Taudzuki, the Japanese delegate, said: "Owing to the lack of unanimity between the great military Powers, the delegation of Japan sees no advantage to be gained by pledging itself to several Powers, while with regard to others it would be forced to continue to study and improve this means of warfare. It will, therefore, abstain from voting on the question." Scott, *Proceedings*, vol. 1, p. 86.

Belgian proposal.²⁰⁰ Austria's neighbors were at the time energetically developing their aerial arm. As already pointed out, Germany, Italy and Russia were then, except for France, the leading air powers. Austria's position was therefore that of a state practically surrounded by neighbors in possession of a new means of warfare which she lacked. Its abolition for a limited number of years, consequently, could hardly be considered inimical to Austria. The Austrian delegate could therefore plead for prohibition on the grounds that the weapon was not indispensable, that the tactical results to be obtained from the use of this weapon could not justify the damage and expense involved in their use. The Austrian delegate, in calling for prohibition, considered it necessary to base his plea on practical grounds, declaring:²⁰¹

"We do not wish to hinder the progress of science, but we would not encourage an application of it, which, without offering sufficient tactical advantage, would increase the cruelties of war."

Great Britain also found itself at a disadvantage in air power. Her negligible air strength and the vulnerability of her territory to air attack, the possible loss of her isolation from the continent, made her a warm supporter of the Belgian proposal.²⁰² London and most of the industrial sections of England lay within reach of the French and German dirigibles, making British territory insecure in spite of the British navy. To accept aerial bombardment would have meant the augmentation of armaments and military expenditures without bringing that security which sea power had long maintained for Great Britain. The legitimatizing

²⁰⁰ See *supra*, p. 92, for aeronautics in Austria-Hungary.

²⁰¹ Mr. Szilassy, Scott, *Proceedings*, 1907, vol. 3, p. 147.

²⁰² For British aeronautics see *supra*, pp. 86-88.

of aerial warfare, with its resultant competition in the new arm, would thus have increased the military budgets without the guarantee of air supremacy and without the assurance of security from air attack. Such a situation would in ordinary circumstances have caused opposition to the introduction of the new weapon. It was even more certain to bring about opposition at this particular time when Great Britain was seriously concerned over the increasing armament burdens and was prepared to support disarmament programs at the Second Hague Conference.²⁰³ It was Great Britain, in fact, that started the movement to include the armaments question in the program of the Second Conference, after it had been omitted by Russia.²⁰⁴ After other Powers had agreed not to bring the matter up for discussion at the coming conference, it was Great Britain that came prepared to press the matter of armaments reduction.²⁰⁵ In line with this attitude toward armaments in general, it is reasonable to assume that Great Britain would oppose the introduction of a new weapon which not only increased military budgets when the reverse was hoped for but actually threatened the entire military *status quo*. The attitude of Great Britain on this question may be noted in the letter of Sir Edward Grey, then Secretary of State for Foreign Affairs, to the British delegate, Sir Edward Fry: "The declara-

²⁰³ See letter of Sir Edward Grey to Sir Edward Fry, *Parliamentary Papers, Miscellaneous*, No. 1 (1908), April 19, 1907, p. 12; also *supra*, note 10; see also Wehberg, *Limitation of Armaments*, p. 29.

²⁰⁴ See resolution introduced into the House of Commons on May 19, 1906, urging the "inclusion of the question of the reduction of armaments by international agreement in the agenda of the forthcoming Hague Conference." See also Sir Edward Grey's endorsement of the resolution. *Parliamentary Debates*, 4th Series, vol. 156, pp. 1383-1416.

²⁰⁵ See Spender, *The Life of the Right Honorable Campbell-Bannerman*, vol. 2, p. 332, for Prime Minister Campbell-Bannerman's determination to press the matter of armaments reduction. Also, Hosono, *International Disarmament*, 1926, p. 101. See Wehberg, *op. cit.*, p. 29, for Campbell-Bannerman's declaration to the interparliamentary delegates, meeting in London.

tions referred to in the Russian note were the agreements to abstain from . . . (3) the use of projectiles and explosives from balloons for a term of five years, that were signed by a majority of the Powers at the last Hague Conference. Should these questions be raised at the Conference, His Majesty's Government thinks with regards to . . . (3) you should support any proposal for the renewal of this prohibition."²⁰⁶ The British delegate, both in commission and in the plenary sessions of the conference consistently supported all proposals and amendments either prohibiting or restricting the use of aircraft in warfare.²⁰⁷ In urging prohibition, Lord Reay asked "if it is not enough to have two elements in which the nations may give free scope to their animosities and settle their quarrels without adding a third."²⁰⁸ It may further be noted that where all the large continental Powers refused to give up the new weapon for even a period of five years, Great Britain not only supported the five-year prohibition but demanded indefinite security, until a third conference had decided the matter.²⁰⁹ It was the British delegate, Sir Edward Fry, who changed the Belgian proposal, substituting for the words, "for a term of five years," the words "to the close of the Third Peace Conference."²¹⁰

The American delegation, in 1899 perhaps the most

²⁰⁶ *Parliamentary Papers, Miscellaneous*, No. 1, 1908, p. 14.

²⁰⁷ Scott, *Proceedings*, 1907, vol. 3, p. 149; *ibid.*, pp. 152, 153; *ibid.*, p. 86.

²⁰⁸ *Ibid.*, p. 148. Lord Reay believed that competition in air armaments could still be stopped since it was not far enough advanced. "In addition, financial considerations require us to do our utmost to check an increase of military and naval expenses which will not fail to be felt if it become necessary to add to the budgets an item for the development of aerostatics . . . of what use will our efforts be to lessen the suffering caused by war if we call into being a new scourge, more terrible in its effects than the instruments whose field of action we seek to limit."

²⁰⁹ Mérignhac, "Le Domaine Aérien," *R.G.D.I.P.*, vol. 21, p. 227, points out that fear of invasion probably motivated Great Britain.

²¹⁰ Scott, *Proceedings*, 1907, vol. 1, p. 85.

active in opposing permanent prohibition of aerial bombardment, at the Second Hague Conference abstained from taking part in the discussions. Its votes on the various proposals indicate a passive interest in the question. Proposals for prohibition were accepted, indicating complete accord with those states opposed to the legitimatizing of aerial warfare; at the same time, the Italian and Russian proposals, seeking to substitute regulation for prohibition, were also accepted by the American delegation.²¹¹ In other words, America was so little concerned with air power, or the menace of air power, that it was willing to accept either prohibition or regulation, or both. In the official report of the delegation there is no indication of an issue over the question of aeronautics;²¹² and it is only in the later works of some of the delegates that expressions are found on the question. Mr. Choate, although skeptical of the effectiveness of international regulation of any weapon or means of warfare by large conferences, supports the view of Lord Reay that the air should be kept as a medium for peace and belligerency shut out from it.²¹³ Mr. Scott, strongly in favor of prohibition despairs of success in that direction, stating:²¹⁴

"The slaughter of our kind proceeds by land and sea, and the Conference opened up a new element, the air, so that the bowels of the earth, unless infected by mines, are the only refuge of peace."

The Second Hague Conference thus discarded the restriction on aerial bombardment, a restriction which the First Hague Conference only seven years previously

²¹¹ See *ibid.*, vol. 3, pp. 152, 153, 15; also *ibid.*, vol. 1, p. 86, for affirmative votes of the American delegation on the various proposals.

²¹² *Senate Document*, No. 444, pp. 36, 53-54; also pp. 154-155 for the Senate Confirmation of the 1907 Declaration.

²¹³ Joseph H. Choate, *The Two Hague Conferences*, 1913, p. 14.

²¹⁴ Scott, *Hague Peace Conferences*, vol. 1, p. 654.

had unanimously accepted.²¹⁵ This occurred in spite of the fact that the Second Conference was called not to repudiate restrictions on warfare but rather to renew the 1899 restrictions and to add new ones where possible. The action of the Second Conference, however, can hardly be condemned as a breach of faith on the part of the Powers, or a step backward in the international regulation of warfare. On the contrary, it is generally accepted that the Second Conference, as well as the First, was a genuine effort at limiting armaments and lessening the rigors of war. The repudiation of the 1899 Balloon Declaration indicates, rather, the practical limits of such an effort. The Balloon Declaration involved a weapon which in 1899 was still immature, with some doubt as to its application in warfare and with no doubt as to its immediate impracticability. The military potentiality of aeronautics in 1899 was negligible. Not even the enthusiast hoped for its practical military application within the five years following the conference. No vital weapon, therefore, was interdicted or even restricted by the Balloon Declaration. No attempt, moreover, was made to prohibit experimentation, even by the military. The Balloon Declaration thus restricted action where no vital action was possible, whereas it did not limit the experimentation work, which was the vital part of aeronautics in 1899, nor did it extend to a period where its application might interfere with an instrument of military importance.²¹⁶ The same consideration, that of military effectiveness, restricted the Second Hague Conference. A

²¹⁵ See Fauchille, "Le Bombardement Aérien," *R.G.D.I.P.*, vol. 24, pp. 65-66.

²¹⁶ For the qualifying phrases, making the Balloon Declarations of 1899 and 1907 not applicable in a war where non-signatories take part, see Scott, *Texts*, pp. 79-80, 332. For comment on this "loophole" see Hyde, *op. cit.*, p. 188. John Bassett Moore, in a paper, "The Hague Conventions," *Political Science Quarterly*, December, 1914, vol. 27, p. 25, speaks of these as "broad exits."

weapon of undetermined but great potential strength was now involved, the dirigible, and possibly the airplane. Even had an effort as great as that of 1899 been made to prohibit the use of this new means of warfare, the result would nevertheless have been repudiation of any restriction. The same practical limitations, which restricted the 1899 effort to a probational period, of an immature weapon, would have prevented any action being taken against the same weapon once it had become effective.

CHAPTER IV

INTERNATIONAL REGULATION OF WARFARE

THE treatment accorded aerial bombardment by the two Hague Peace Conferences clearly indicates, as shown by the preceding chapter, a utilitarian basis. In considering the present status of aerial bombardment, as an issue still unsolved, the utilitarian action of the Hague Conferences will be used as a gauge, pointing out in a general way the restrictions or limitations which have already been placed on warfare and the direction which future international regulation may take. The results produced by these conferences in regard to limitation of armaments and restriction of means of warfare will be considered as definitive of the present-day scope of international congresses in the sphere of national defense.

Arms-limitation projects have indeed been proposed ever since the "Grand Design" of Henry IV in 1603.¹

¹ For project of Henry IV see Edwin D. Mead's translation from the *Memoirs of the Duke of Sully*, 1909; also the note of the Abbé de l'Écluse, given in the introduction, pp. xi-xiv. The "Projet de paix perpétuelle," 1713, of the Abbé de Saint-Pierre would have limited armaments by means of a perpetual union. Coulet, *La Limitation des Armements*, pp. 20-46; also for text see Duggan, *The League of Nations*, Appendix I. William Penn's project of 1693, inspired by that of Henry IV, was based on a diet of European states. Kant's *Eternal Peace*, 1795, proposed a world congress and ultimate elimination of standing armies. Translation by W. Hastie, pp. 71-72. Bentham's "Plan for an Universal and Perpetual Peace," 1843, pointed out the need for general disarmament. Coulet, *op. cit.*, pp. 31-32. Ladd's "Essay on a Congress of Nations," 1840, p. 16, includes a project for world peace organization by a Congress of Nations, and the restriction of warfare. For Ladd's project see also Scott, *Hague Conferences*, vol. 1, pp. 27-30. See also Novicow, *Die Föderation Europas*, 1901, and William Stead, *The United States of Europe*, 1899. These early writers are primarily interested in world peace organization, with armaments limitation following as a natural consequence.

At different times since the middle of the last century international conferences have also considered rules of war.² Actual disarmament precedents, however, are almost invariably the result of peace conferences dealing mainly with the dismantling or razing of fortifications and the demilitarization and neutralization of places. In some, the disarmament provisions were imposed by force, rather than by agreements entered into voluntarily.³ In others they were the result of bilateral compromises.⁴ In still other peace conferences the dis-

² Paris Conference, 1856; the Geneva Conferences of 1864, 1868; the St. Petersburg Conference of 1868; the Brussels Conference of 1874.

³ For examples see Simeon E. Baldwin's list of international congresses of the last century in which he includes fourteen conferences dealing with armaments and warfare. *American Journal*, 1907, vol. 1, pp. 808-813. Among the many cases of forced temporary limitation of armaments resulting from peace treaties is the Treaty of Tilsit, where Prussia bound herself to limit her troops, and that of 1830 in which the Pasha of Turkey was forced to reduce naval armaments by France. Wehberg, *Limitation of Armaments*, p. 7. For the Turkish treaties limiting fortifications, as a result of conquest, see Hosono, *International Disarmament*, pp. 22-25. For the prohibition of fortifications on the Aaland Islands, following the Crimean War, and forced upon Russia by the Powers at the Paris Conference of 1856, see Hertslet, *Map of Europe by Treaty*, vol. 2, No. 264. After the fall of Sebastopol, and on the resumption of negotiations Russia finally accepted the demands of the Powers for the neutralization of the Black Sea. Phillipson and Bouxton, *The Question of the Bosphorus and Dardanelles*, 1917, pp. 43-44. For neutralization of the delta islands of the Danube, see J. P. Chamberlain, *The Régime of the International Rivers*, p. 45. See *ibid.*, p. 67, for Russia's compelling Turkey to raze all the fortresses on the Danube.

⁴ For examples see Austrian proposal of 1766 for a reduction of troops by Austria and Prussia. Frederick the Great rejected the offer. A later proposal, 1769, was again rejected by Prussia. Wehberg, *op. cit.*, p. 5. In 1787, England and France made a temporary agreement not to increase armaments above a peace footing. Hosono, *op. cit.*, pp. 16-17. Limitation of fortifications was often the result of a peace treaty, such as that of April 11, 1713, between France and England, France agreeing to demolish the fortifications of Dunkirk. Hosono, *op. cit.*, p. 19. For other treaties of this nature see Hosono, *op. cit.*, p. 20. For the Danube agreements, such as the one between Russia and Turkey, after the Russo-Turkish War of 1829, see Hertslet, *op. cit.*; for Treaty of Adrianople, 1829, *op. cit.*, vol. 2, p. 145. The naval disarmament on the Great Lakes affords an example of a bilateral agreement of this nature. For a review of the negotiations see Moore, *Digest*, vol. 1, pp. 691-698; also Callahan, *The Neutrality of the American Lakes* (1898), *passim*.

armament provisions were the product of multilateral agreements.⁵ These latter conventions invariably take the form of military pacts, arrived at after a war, through the common medium of barter and trade, with national security as the primary object.⁶

The conventions dealing with rules of warfare, on the other hand, are for the most part not the product of conferences for the termination of war but rather the results of peace-time congresses expressly called for the purpose of considering either specific methods of warfare or rules of warfare in general. With the exception of the Paris Conference of 1856, at the conclusion of the Crimean War, which produced several rules of naval warfare,⁷ these congresses were called together not for adjusting the differences of belligerents, but for the expressed purpose of formulating rules governing warfare.

⁵ Multilateral agreements limiting fortifications have been common since the Peace of Westphalia. Growing out of that peace was the demilitarization of Münster. See Article 58, Jenkinson, *A Collection of the Treaties of Peace, 1648-1783* (London, 1785), vol. 1, p. 24. For demilitarization of Nancy, see *ibid.*, Articles 62, 63, 64, vol. 1, p. 120. For neutralization of such states as Belgium, Ionian Isles, Savoy and Switzerland, see Moore, *Digest*, vol. 1, p. 26; for Luxemburg and Congo, see *ibid.*, vol. 1, pp. 26-27; for Free City of Cracow, see *ibid.*, vol. 2, p. 20. For the question of the Panama Canal neutralization see Hyde, *op. cit.*, vol. 1, pp. 341-346, a bilateral arrangement, but following the practice of the earlier multilateral conferences, such as the Congress of Vienna. For neutralization of Black Sea at Paris Conference, 1856, see Moore, *Digest*, vol. 2, p. 19; for the Danube see *ibid.*, p. 20; also Hertslet, *op. cit.*, vol. 3, p. 1892, for provisions of treaty; and Chamberlain, *op. cit.*, pp. 63-65, for application in Russo-Turkish War of 1877. For violations on Danube during World War see *ibid.*, pp. 122-126. For the Convention of 1888, neutralizing the Suez Canal, signed by the Great Powers of Europe and three of the Small Powers, see Lawrence, *op. cit.*, p. 40. Article 1 of the convention provides that the canal shall always be open and free, in war or in peace, to all vessels, war vessels included; that the contracting Powers shall not in any way interfere with the free use of the canal, in war as in peace; and that the canal shall never be subject to blockade. See Moore, *Digest*, vol. 3, p. 369, for convention and history.

⁶ See Maine, *International Law*, p. 173, for an opinion that post-war times are not suited for anchoring international law.

⁷ For the text of this Declaration see Moore, *Digest*, vol. 7, p. 573. See also *supra*, ch. I.

Such were the Geneva Conferences of 1864,⁸ 1868 and 1906, the St. Petersburg Conference of 1868⁹ and the Brussels Conference of 1874.¹⁰ These conferences produced distinct contributions to the codification of rules of warfare,¹¹ and were accepted as precedents for the Hague Conferences. As a gauge, however, for measuring the scope of international conferences in formulating rules of warfare, only the Geneva rules will be included with those of the Hague regulations since the conventions drawn up by the other conferences were included in the program of the First Hague Conference and adopted in revised form.¹² The Hague Conferences, therefore, have been used as a gauge not only because they include in conventional form the results of the

⁸ Garner, *Int. Law*, p. 45, calls the convention of 1864 the first attempt to formulate, by a general conference, a set of warfare rules. P. Bordwell, *Law of War*, p. 86, states that the convention for the most part, crystallized in written form usages already recognized. Garner's assertion should be qualified in that the warfare rules are not applicable to active troops, but rather to those already *hors de combat*, that is, wounded and prisoners.

⁹ Lawrence, *Int. Law*, 7th edition, p. 530, says this conference marks the first appearance of rules based on the principle that the illegality of weapons should be measured by the amount of unnecessary suffering they inflict.

¹⁰ For the work of the Brussels Conference see Bordwell, *op. cit.*, pp. 104-112.

¹¹ *e.g.*, the Red Cross Regulations of the Geneva Conferences. The St. Petersburg Conference prohibited the use of explosive projectiles weighing less than fourteen ounces. See Higgins, *Hague Peace Conferences*, pp. 6-7; the Brussels Conference of 1874 dealt with rules of war which formed the basis, along with Dr. Lieber's Code, of the Hague rules of war. See Lawrence, *International Law*, 7th edition, pp. 372-3; also Scott, *Hague Conferences*, pp. 18-19.

¹² Garner, *International Law*, 1925, p. 45, calls the St. Petersburg Declaration, prohibiting the use of explosive bullets, the "first formal international act restricting the use by belligerents of the instruments which they may employ to injure the enemy." This was incorporated, by references, in Article 23 of the Hague regulations respecting the laws and customs of war on land. See also Lawrence, *op. cit.*, p. 530. The Russian Circular of December 30, 1898, provides for the "Revision of the declaration concerning the laws and customs of war elaborated in 1874 by the conference of Brussels and not yet ratified." Article 7, Scott, *Treaties*, p. 4. The 1899 Convention respecting the laws and customs of war on land refers in its preamble to the Brussels conference of 1874. *Ibid.*, p. 47. See also Moore, *Digest*, vol. 7, p. 339.

earlier conferences but because they represent the first general attempt among nations at peace to limit the armed forces and military power of individual states.¹³ They also represent the first general attempt, in times of peace, to restrict the use of the basic elements of warfare, the vital weapons of the military establishments.¹⁴ What had been essentially "book law," founded on existing customary law and practice, was here crystallized into a conventional code of rules.¹⁵

The First Hague Conference met under conditions which were most propitious to the success of such an undertaking. The Czar's program was received throughout the world with great interest, even with great enthusiasm, in spite of the fact that some of the Powers were skeptical and hesitated to accept the Czar's invi-

¹³ Twenty-six Powers were represented at the 1899 conference, including all the Great Powers of the world. Invitations were issued, with a few exceptions, to those Powers maintaining diplomatic relations with Russia. See Hull, *The Two Hague Conferences*, p. 10. All the States of Europe were represented, four Asiatic Powers, and two American States (the United States and Mexico). At the 1907 conference 44 states were represented, out of a total of the 57 States of the world claiming to be sovereign. See *Senate Document*, No. 444, *op. cit.*, pp. 210-213. For a discussion of the equality of States at the Hague Conferences, see Dickinson, *The Equality of States*, pp. 180-184, and Garner, *op. cit.*, p. 51, note 3.

¹⁴ The Brussels Conference of 1874 had considered the very backbone of the military establishment—the individual and his status during hostilities—but it produced a negative result. The St. Petersburg Declaration, in prohibiting the use of an explosive or incendiary bullet, was not dealing with a vital weapon of the time. Holland, *Laws of War on Land*, 1908, p. 78, gives the history of the explosive bullet, in which he says that the bullet was introduced into the Russian army in 1863, to be used for exploding ammunition wagons, and that in 1867 the bullet had been developed so that it could be exploded without a cap on contact even with a soft substance. It was the fear of the Russian Government, that this type of bullet might be used against troops, which is said to have caused the Russian Government to call a conference. The bullet, as yet, had never been employed in warfare, and was not, in a technical sense, an efficient means for use against troops. The Prussian Government did propose the consideration of new applications of science to warfare, but Great Britain and other Powers opposed this. Only the above-mentioned bullet was therefore considered.

¹⁵ Oppenheim, *Future of Int. Law*, p. 56. Lawrence, *op. cit.*, p. 40, calls the Hague Conferences "rudimentary legislatures."

tation.¹⁶ The press caught up the idea of arms limitation and carried it even beyond the original intentions of the Czar. Before the conference convened world opinion was expectant of a "peace" conference.¹⁷ The delegates to the conference were virtually embarrassed by the pressure of a world opinion for peace and disarmament. Had public opinion at this time been able to direct the action of the conference, some limitation of armaments or even temporary disarmament might have followed. At any rate the delegates were certain of a general support throughout the civilized world. Under such conditions some positive results might have been expected, even if a general reduction of armaments

¹⁶ The American chief delegate, Andrew D. White, was so skeptical of the Czar's motives and ability that his feelings at first "were strongly against accepting such a post." White, *First Hague Conference*, p. 2. He adds, "Of course, among all these delegates acquainted with public men and measures in Europe, there is considerable distrust of the intentions of Russia; and, naturally, the weakness of the Russian Emperor is well understood, though all are reticent regarding it." *Ibid.*, p. 8. For this early distrust see the speeches of Ashmead-Bartlett, *Parl. Debates*, 13 April, 1899, 4th series, vol. lxxix, p. 1005; also the speech of Lord Beresford at the same time, pointing to the Russian imperialistic acts in China. See also, Zorn, *Deutschland und die beiden Haager Friedenskonferenzen*, 1920, p. 14; H. Lammasch (Austrian) "Rückblicke auf die Haager Friedenskonferenzen," *Niemeyers Zeitschrift*, 1916, Bd. xxvi, p. 156, who says the delegates met with the idea that "das Ganze eine Komödie war"; Alfred H. Fried, *Die Haager Konferenzen*, pp. 14-16, for attitude of Germans. For a skeptical view expressed by the German Emperor and his Chancellor, Prince v. Hohenlohe, and by the German ambassador to Russia, von Rodolin, see *Die Grosse Politik der Europäischen Kabinette*, 1771-1914, vol. 15, pp. 141-144. For the amount of popular enthusiasm, as apart from official skepticism, see White, *op. cit.*, p. 3, who writes: "Soon came evidences of an interest in the conference more earnest and widespread than anything I had dreamed. Books, documents, letters, wise and unwise, thoughtful and crankish, shrewd and childish, poured in upon me; in all classes of society there seemed fermenting a mixture of hope and doubt."

¹⁷ President de Staal, of Russia, in his address to the conference, May 20, 1899, said: "The name 'Peace Conference,' which the instinct of the peoples, outstripping in this respect the decision taken by the governments, has given to our reunion, well indicate the essential object of our labors. The Peace Conference cannot fail in the mission incumbent upon it; its deliberations must lead to a tangible result which the whole human race confidently expects." Scott, 1899 *Conference*, p. 17.

and drastic restrictions on warfare in general were improbable. At least a pause, an armistice, in the arms race might have been looked for.

The results of the 1899 conference, however, as expressed in the conventions, included neither provisions for disarmament, nor partial limitation of armaments, nor a temporary halt in the building programs.¹⁸ Neither was any effective weapon or method of warfare touched by restrictions. Thus an international conference, called for the express purpose of limiting armaments and restricting means of warfare, in spite of a world-wide approbation, produced a negative result.¹⁹ At the conclusion of this peace conference the military establishments were still intact, still free of any material restrictions. Nations could still increase their armies and navies at will and employ all efficient means of warfare in carrying out their programs for national defense. In time of war they could still proceed directly in attaining their military objectives.²⁰

¹⁸ For the resolution adopted see Scott, *Texts*, p. 19.

¹⁹ Positive results were obtained in the treatment of wounded, but the Red Cross Regulations are not restrictions on armaments or on active means of warfare.

²⁰ Some results were obtained in restricting warfare, but only in conduct involving neutrals. Thus the Third Convention leaves a question of formal declaration of war to the discretion of the prospective belligerents but safeguards neutral rights by absolving neutrals from the burdens of war until they have been notified or are reasonably aware that war exists. The Fifth Convention defines previously accepted rights and duties of neutrals in case of land warfare. The Eighth Convention, in some measure, protects neutrals from anchored and unanchored automatic contact mines, imposing on neutrals the same duty toward belligerent ships. Chapter 3 of the Eleventh Convention relating to the right of capture in maritime war, exempts the neutral members of the crew of an enemy merchant vessel from capture. See Diplomatic Correspondence between the United States and Belligerent Governments Relating to Neutral Rights and Commerce. *American Journal Supplement*, vol. 9, July, 1915; vol. 10, October, 1916; vol. 11, 1917. Maine says that a great amount of law grew out of the naval wars of the seventeenth and eighteenth centuries and that the one chief reason why, on the whole, naval usages are reasonable is that belligerents were checked by neutrals, and that from the first belligerents were checked by prize courts. *International Law*, p. 127.

The work of the First Hague Conference is said to have been but the starting point in international regulation of war.²¹ The actual results, however, comprised in this beginning illustrate the limitations of international conferences in dealing with military power. Called to bring about a "possible reduction of the excessive armaments," it produced only a resolution that Governments should "examine the possibility of an agreement as to the limitation of armed forces."²²

As previously pointed out, the consideration of armaments no longer appeared as a primary object of the 1907 conference, Russia omitting the armament question from the program on the grounds that "there is at the present occasion only to examine questions that demand special attention as being the outcome of the experience of recent years without touching upon those that might have reference to the limitation of military or naval forces."²³ The Second Conference, in fact, produced only the same results as had the First. The total of its work on armaments is summed up in another *vœu* confirming the resolution adopted at the 1899 conference, "that it is eminently desirable that Governments should resume the serious examination of this question."²⁴ No vital or effective weapon had been touched by restrictions, no reduction of armaments had been achieved. The military establishments remained intact, in numerical strength as well as in means and methods of carrying on war.²⁵

²¹ Scott, *Texts*, p. 19.

²² See *supra*, ch. II.

²³ Letter of Baron Rosen, April 12, 1906, to the American Secretary of State, Scott, *Texts*, p. 104; also *supra*, pp. 52-53. For statement of Premier Sarrien, in the Chamber of Deputies, June 12, 1906, see Barclay, *Problems of International Law and Practice*, p. 127. For statement of the Italian Foreign Minister, Tittoni, in the Chamber of Deputies, see *ibid.*, p. 127.

²⁴ Scott, *Proceedings*, 1907, vol. 1, p. 90. For "vœu" see *Senate Document*, No. 444, *op. cit.*, p. 197.

²⁵ Hyde says: "The State that anticipates recourse to the sword as

The Hague Conferences offer no proof of an absolute formula for international regulation of warfare, nor do they conclusively demonstrate the existence of any constant principle underlying such regulation, or of a criterion that may serve as a guide.²⁶ Instead of straining for a working formula, it may be well to point out again that the two great peace conferences of modern times, along with their lesser predecessors, did not succeed in reducing armaments, or in restricting the development and improvement of weapons, or in prohibiting or restricting the use of any effective weapon or method of warfare. Such destructive weapons, for instance, as the high explosive shell, the shrapnel, mines or torpedoes, were retained as legitimate means of warfare, whereas the inefficient expanding and explosive bullets were condemned along with the perfectly useless free balloons.²⁷ The proceedings of the

the normal method of adjusting its differences of gravest kind must anticipate also participation in conflicts characterized by the use of hideously cruel instrumentalities, and in which the victory may be denied that belligerent which hesitates long to adopt them. For that reason there seems to be little hope of amelioration of present practices or of certain existing abuses. The prospect of better things seems to lie in the success of a different endeavor, through the attempt by concerted action to allay causes of international controversies, and to insure the just solution by amicable means of those which threaten the general peace." *Int. Law*, vol. 2, pp. 314-315.

²⁶ Joseph H. Choate viewed the subject of limitation of armaments by international conference as a "question that never can be settled, that can only be determined by treaties or agreements between the individual nations who maintain the armaments, either two by two, or all together, and that to subject such a question to determination by a conference which now consists of 44 nations, of which only ten or eight have armaments worth speaking of, and all the rest are without any considerable armaments, is practically an impossibility." *The Two Hague Conferences*, 1913, p. 11. See also report of the United States delegates, July 31, 1899, *Foreign Relations*, 1899, pp. 513, 515; Moore, *Digest*, vol. 7, p. 206. "The restriction of means of warfare, while earnestly desired by the delegation, was found to be impracticable. The difference in regard to some details was found to be irreconcilable. We feared falling into evils worse than those from which we sought to escape."

²⁷ No. 185, *American Rules of Land Warfare*, quoted in Hyde, *op. cit.*, vol. 2, p. 313, note 2, states that the prohibition "is not intended to apply to the use of explosives contained in artillery projectiles, mines,

Hague Conference demonstrate rather that a weapon will be restricted in inverse proportion, more or less, to its effectiveness; that the more efficient a weapon or method of warfare the less likelihood there is of its being restricted in action by rules of war.²⁸ This is well illustrated by the treatment given the explosive bullet. Condemned by the St. Petersburg Declaration of 1868 at a time when it was not in use, the prohibition was characterized by some writers as one of the few conventions possessing the rare quality and sanction of an international "statute."²⁹ In 1923, however, after the World War had demonstrated the unquestionable utility of explosive bullets in aerial warfare, the condemned bullet was brought up for reconsideration and legitimized.³⁰

Some broad general principles, already established in the customary law of nations, were, however, confirmed by the Hague Conferences. Of prime importance was the general principle covering "needless suffering," which had gained popularity during the latter half of the last century, and which was reasserted in the Hague conventions on land warfare by prohibiting the "employment of arms, projectiles, or material of a nature to cause superfluous injury."³¹ Previous to this, at the St. Petersburg Conference of 1868, the

aerial torpedoes, or hand grenades, but it does include the use of lances with barbed heads, irregular-shaped bullets, projectiles filled with glass, etc., and the use of any substance on these bullets that would tend to unnecessarily inflame a wound inflicted by them, and the scoring of the surface or filing off the ends of the hard case of such bullets."

²⁸ Cf. Hall's statement that weapons may be used so long as their destructive capacity is commensurate to the military object. *International Law*, 1917, pp. 568-569. Cf. *supra*, note 9; also Report of Captain Mahon, Scott, *Hague Conferences*, vol. 2, p. 37.

²⁹ See Lawrence, *op. cit.*, p. 40. Cf. *supra*, note 9.

³⁰ *Rules of Aerial Warfare*, Hague, 1923, Article 18. See *infra*, ch. VI, for details.

³¹ Article 23, 1899 and 1907 Conventions, Scott, *Texts*, pp. 59, 218. Article 22 declares that "the right of belligerents to adopt means of injuring the enemy is not unlimited."

same general condemnation of weapons inflicting superfluous injury was first asserted.³² In a general sense, all types of violence against persons and property of the enemy necessary for victory would be permissible, and as Hall says, "Prima facie therefore all forms of violence are permissible."³³ Legitimate warfare would thus be restricted to those means and methods which do not cause superfluous injury or needless suffering, but as Hyde says, "the value of approval of this principle depends upon the agreement of military authorities as to what implements or materials possess such a character. Unhappily such authorities have not been of one mind."³⁴ These conventional declarations, however, point out a general direction toward which international opinion was headed, namely, that war operations were to be directed against the combatant forces, with the least number of casualties and destruction necessary for gaining the military objective.³⁵

³² The St. Petersburg Declaration states that "the only legitimate object which States should set before themselves during war is to weaken the military forces of the enemy. For this reason it is sufficient to disable the greatest possible of men. This object would be exceeded by the employment of arms which would uselessly aggravate the sufferings of disabled men or render their death inevitable." *Holland, op. cit.*, p. 41.

³³ Hall, *op. cit.*, p. 567. See also Martin and Baker, *Laws of Maritime Warfare*, 1918, p. 12.

³⁴ Hyde, *op. cit.*, p. 313. Higgins, *Peace Conferences*, says that no circumstances can justify violating fundamental principles by inflicting needless suffering or wanton destruction of property. See also Westlake, *War*, p. 15; Oppenheim, *Int. Law*, vol. 2, p. 69. Holland, *op. cit.*, p. 13, is of the same opinion, but holds (p. 11) "that too narrow a view has, however, been taken of the object of war by those who, by way of protest against the severities countenanced by early writers, would restrict it to a struggle between the armed forces of states." Lawrence, *op. cit.*, p. 529, and Garner, *Int. Law*, p. 326, would measure the legality of a weapon not by its destructive power but by the amount of unnecessary suffering it would inflict. See also Bordwell, *Law of War*, p. 2.

³⁵ Hall, *op. cit.*, p. 568. For a list of lawful war operations see Spaight, *War Rights on Land*, Chapter IV; Pillet, *Les Lois Actuelles de la Guerre*, Ch. 4, 5. For manuals see *American Rules*, Art. 172; *French Manuel*, Art. 56; *British Manual*, Edmonds and Oppenheim, Art. 39, which states: "The first principle of war is that the enemy's

A different attitude was assumed by many German writers of the post Franco-Prussian War period. The object of war, they maintained, is victory, and all methods essential to victory must be employed. To attain this object the struggle must be carried beyond the mere armed forces of the enemy directly to the State itself; the mere weakening of the combatant forces proper must be supplemented by attacking the economic and industrial resources of the enemy.³⁶ As Marshal von Moltke said, "the greatest kindness in war is to bring it to a speedy conclusion. . . . I can by no means profess agreement with the Declaration of St. Petersburg when it asserts that the 'weakening of the military forces of the enemy' is the only lawful procedure in war. No, you must attack all the resources of the enemy's Government; its finances, its railways, its stores, and even its prestige."³⁷

powers of resistance must be weakened and destroyed. The means that may be employed to inflict injury on him are not, however, unlimited." For the conventional rules on conduct of warfare see the list compiled by Holland, *Letters on War and Neutrality*, pp. 22-23; see also Hyde, *op. cit.*, pp. 299-300.

³⁶ The chief exponents of this view are von Clausewitz, *Vom Krieg*, 1831; Lueder, whose views are expressed in Holtzendorff, *Handbuch des Völkerrechts*, vol. 4, Sec. 65, 66; also his *Das Landkriegsrecht*, 1888; also the manual of the Prussian General Staff, 1902, *Kriegsbrauch im Landkriege*. See also Garner, *Int. Law and the World War*, vol. 1, pp. 278-281, for opinion of German military writers. In regard to the German view, Bordwell, *op. cit.*, p. 5, says: "Confined to certain extraordinary cases this doctrine is not objectionable, but if given a liberal interpretation it would soon usurp the place of the laws of war altogether. Would it not be better if such an extraordinary occasion should arise to violate the law and plead justification, than by announcing such a principle in advance, sanction it almost as law itself?" See also Westlake, *Collected Papers*, pp. 243, 247.

³⁷ Letter of Count von Moltke on the laws of warfare as adopted by the Institute of International Law at its 1880 Oxford session; Holland, *Letters on War and Neutrality*, pp. 24-25. For a less martial attitude see Bluntschli's reply to von Moltke, *ibid.*, pp. 26-27. The German theory of "Notrecht," which places the military object over law itself, is illustrated by the statement of the German Chancellor, von Bethmann-Hollweg, of August 4, 1914: "Necessity knows no law. Our troops have occupied Luxemburg, and perhaps have already entered Belgian territory. Gentlemen, that is a breach of international law. . . . We have been obliged to refuse to pay attention to the reasonable protests

The extent of permissible violence by belligerents offers, at first glance, an opportunity for laying down a broad working principle, a principle which would be of inestimable value in defining the rights of aircraft in warfare. In applying such a principle, however, an international congress would be confronted with the vague but broad exception of "military necessity." In the face of military necessity, the accepted restrictions on means and methods of warfare become so vague as to lead to the conclusion that means and methods of warfare are restricted only by the accepted usages of the time. The war right of destruction and devastation is confirmed in the Hague regulations and in the various military manuals as well as being admitted by writers.³⁸ The statement by Hall, that "the amount of destruction or of suffering which may be caused is immaterial if the result obtained is conceived to be proportionate,"³⁹ has been confirmed, rather than repudiated, by most jurists.⁴⁰ The United States Rules of Land Warfare of

of Belgium and Luxembourg. The wrong—I speak openly—the wrong we are thereby committing we will try to make good as soon as our military aims have been attained. He who is menaced, as we are, and is fighting for his all can only consider how he is to hack his way through." Quoted in Hyde, *op. cit.*, vol. 2, p. 301, note 1.

³⁸ See Article 23 (g), Hague Rules, 1899 and 1907, Scott, *Texts*, pp. 60, 219. For manuals see *Rules of Land Warfare*, War Dept., Washington, D. C., sec. 12; *Land Warfare* (Edmonds and Oppenheim), sec. 407-408. For writers see Hall, *op. cit.*, p. 567; Holland, *Laws of War on Land*, pp. 43-44; Hyde, *op. cit.*, p. 306; Fauchille-Bonfils, *op. cit.*, vol. 2, secs. 1155, 1198; Oppenheim, *op. cit.*, vol. 2, secs. 149, 154.

³⁹ Hall, *op. cit.*, pp. 568-569.

⁴⁰ See authorities cited in note 30; see also Instructions for the Government of Armies of the United States, *General Orders*, No. 100, April 24, 1863, in Moore, *Digest*, Vol. 7, pp. 178-179; Lawrence, pp. 535-536, *op. cit.*; Westlake, vol. 2, pp. 32-38, *Int. Law*; Spaight, *op. cit.*, p. 112; Oppenheim, *Int. Law*, No. 150; Calvo, *Le droit int. théorique et pratique*, 1906 ed., vol. 4, No. 2215; Pradier-Fodéré, *Traité de dr. int. pub.*, vol. 6, No. 2770-2274; see De Martens, on the American Revolutionary War, in Bordwell, *op. cit.*, pp. 50-51. Bordwell states that such acts of destruction as those of Sheridan and Sherman in the American Civil War, can be understood only "in the light of the circumstances that occasioned them. Any theory which would condemn the essential features of either would need strong arguments in its favor." *Ibid.*, p. 79.

1917, following the principle that "military necessity justifies a resort to all measures which are indispensable to bring about the complete submission of the enemy by means of regulated violence and which are not forbidden by the modern laws and customs of war,"⁴¹ permit, in addition to objects in the immediate zone of operations, the destruction of means of traffic and communication and supply.⁴² The normal restrictions on violence in warfare are thus released by military necessity, just as long as a real necessity exists, as, for example, where destruction is essential in gaining a military objective or in strengthening a defensive position or in case of self-preservation after defeat. A village may thus be destroyed to clear the line of fire on a military objective. The use of poisoned projectiles, such as poisoned darts, or shrapnel if that were possible, in destroying the same village would, however, be unlawful and could not be condoned on the plea of necessity. On the other hand, even general devastation is in some cases lawful, providing it fulfills some immediate military need, such as, for example, the devastation in the Shenandoah Valley by General Sheridan.⁴³ No plea of military necessity, however, is said to sanction devastation as an end in itself or as an independent means of forcing the submission of an enemy.⁴⁴ In

⁴¹ Hyde, *op. cit.*, pp. 299-300, on Nos. 10 and 11, Rules of Land Warfare.

⁴² No. 12, Rules of Land Warfare, Hyde, *ibid.*, p. 300.

⁴³ See Bordwell, *op. cit.*, pp. 77-79, for Sherman's and Sheridan's views, and his own opinion; also Sheridan, *Memoirs*, vol. 1, p. 486; Sherman, *Memoirs*, vol. 2, p. 227. Hershey, *Int. Law and Organization*, 1927, p. 598, note 42, states that the denial of the right of general devastation under any circumstances can "scarcely be reconciled with modern practice." The destruction by Sheridan and Sherman, and the devastation during the Boer War by the British, can be upheld, according to Hershey. But see Lawrence, who doubts the sufficiency of the need for the above acts on the grounds that the devastated territory was the granary of the enemy. *Int. Law*, p. 536.

⁴⁴ The Hague rules, see Article 23 (g), do not make a direct declaration on general devastation as an independent means of conquest. The words, "unless such destruction or seizure be imperatively demanded

general, therefore, no specific meaning can be given to the question of permissible violence. If an act is essential, if the destruction is effective and not wanton, and if the results to be gained by such an act are not grossly disproportionate to the extent of destruction, then the act can hardly be condemned regardless of the amount of suffering and violence. This view has already been applied to aerial warfare, and, as will later be shown, opens the way to direct attack by aircraft upon civilian centers far behind the immediate zone of operations.⁴⁵

A practice of war, based on firm utilitarian grounds, may even violate the conventional standards of permissible violence, providing it conforms to another standard—that of world opinion. Recognized since the time of Grotius as a check on the practices of war, world opinion, better expressed as “social sanction,” has in the past half-century developed into the only material external, though still somewhat intangible, check on means and methods of warfare.⁴⁶ Effectiveness as a gauge for

by the necessities of war,” have, however, been interpreted as barring such independent destruction. See the American Instructions of 1863, given in Moore, *Digest*, vol. 7, p. 178, and Hyde *op. cit.*, p. 307, note 2, for No. 332, Rules of Land Warfare. For the British view see their *Land Warfare*, p. 93, article 434, which states: “General devastation of enemy territory is, as a rule, absolutely prohibited, and only permitted very exceptionally, when ‘it is imperatively demanded by the necessities of war.’ The question in what circumstances a necessity arises cannot be decided by any hard and fast rule.” Bordwell says: “It is no longer considered proper as an independent military operation.” *Op. cit.*, p. 284.

⁴⁵ Some modern writers, chiefly military men, are inclined to deny the need of occupation of enemy territory as a mark of conquest; destruction, say by aerial bombardment, can be so severe as to force the enemy to submit without any necessity for a territorial invasion. For a clear statement of this view see Bombardment Aviation, a lecture given at the Marine Corps School, Quantico, Virginia, by Lieutenant H. L. George. See Spaight, *Air Power and War Rights*, 1914, p. 244, for view that devastation is legitimate, such as is prophesied for aerial warfare, providing no excessive loss of life will result.

⁴⁶ In addition there is always a check in the threat of reprisals. The various official documents published by the different belligerents during the World War are attempts to vindicate acts of war before world opinion. See, for instance, the *German White Book* of 1915; also *Commission d'enquête sur les violations des règles, Rapports et*

regulation of warfare is in some measure qualified by the force of this social sanction, since most notions of effectiveness are merely products of the common culture of the time, and to a certain extent bound by it.⁴⁷ A weapon of indiscriminate destructive capacity might even be withheld for a time if its use violently shocked neutral nations or violated the minimum standards of the existing civilization.⁴⁸ In any civilization there are

documents, Belgium, 1921-23; also O. P. Bland's (French) translation, *Germany's Violation of the Laws of War*, 1914-15; also Great Britain, Committee on Alleged German Outrages, 1915, of which Lord Bryce was Chairman; Report of the Russian Commission on German Atrocities; German White Book (Auswärtiges Amt.), on the armed merchantmen, with facsimiles of secret orders of the British Admiralty, 1916; *Official Book of German Atrocities*, Reports of Belgian, French and Russian Commissions of Inquiry; and the Austrian official publication, *Collective Evidence on Violations of Int. Law*, 1915. See also Westlake, *Principles of Int. Law*, p. 18, for public opinion and international rules. See also note (47) following.

⁴⁷ Even Count von Moltke recognizes the force of social sanction. He says: "It is necessary to recognize also that increased humanity in the mode of making war has in reality followed upon the gradual softening of manners. Only compare the horrors of the Thirty Years' War with the struggle of modern times." Holland, *Letters*, p. 24.

For a discussion of the relationship between a culture and law see Pound, *Introduction to the Philosophy of Law*, pp. 92-94; for the elements of a developed legal system, see his *Spirit of the Common Law*, in which he also points out that "nature will take her inexorable course," and that "legislator or judge is merely bringing about 'conformity to the *de facto* wishes of the dominant forces of the community.'" See also Vinogradoff, *Historical Jurisprudence*, pp. 8, 152, for rules of war and the popular will; Maine, *International Law*, pp. 33, 41-42 (quoting from the Queen v. Keyn case), 45-47; Westlake, *op. cit.*, p. 16, says: "The consent of the international society to the rules prevailing in it is the consent of the men who are the ultimate members of that society." See also Oppenheim, *Future of International Law*, p. 3. Austin recognized the force of the general public, saying: "But the governed, collectively or in mass, are also the superior of the monarch, who is checked in the abuse of his might by fear of exciting their anger and of arousing to active resistance the might which slumbers in the multitude." *The Province of Jurisprudence Determined*, 1861, p. 14. See also Lieber, *Political Ethics*, section 65, for the place of the community in the legal systems; also Lawrence, *op. cit.*, p. 8; Westlake, *Collected Papers*, pp. 271-277.

⁴⁸ Thus the French say that they abstained from bombing the Rhine-land until after the Germans had dropped bombs, beginning Aug. 30, 1914, on French towns, and Paris on Oct. 11. Clunet, "Emploi Abusif des Aérostats," *Journal du Dr. Int. Privé*, vol. 47, 1916, p. 385; but see report of Germans, claiming Dusseldorf and Cologne-Ehrenfeld had

what may be termed minimum standards of conduct, which to some degree limit even the conduct of warfare. Enslaving, looting, extermination, piracy, the killing of wounded and prisoners, are acts which not only are ineffective but which to-day fall below the minimum standards of conduct.⁴⁹

been bombed respectively on Sept. 22 and on Oct. 8. *Aircraft Attacks on the Homeland Area*, Der Kommandeur des Heimatluftschutzes. The Germans contend that the unrestricted submarine campaign came only as a result of the British blockade. For detailed review of means and methods of warfare in history see Maine, *op. cit.*, pp. 124-142; for ancient customs in India see Armour, W. S., *Grotius Society Transactions*, vol. 8.

⁴⁹ For the evolution of slavery up to the modern period, see Maine, *op. cit.*, pp. 7-9. A certain amount of pillage probably continues in all wars, *ibid.*, p. 199, but a general license, practiced against non-combatants, no longer obtains. For a list of the important pieces of art taken by Napoleon from Berlin, also his plunderings in Italy, see Otto von Stülpmagel, *Die Wahrheit über die deutschen kriegsverbrechen*, 1921. For massacre of townspeople in Roman times see B. H. Littell Hart, *Scipio Africanus*, p. 37; also Flaubert, *Salammbô*, *passim*, who quotes many sources for his descriptions of the wars of extermination about Carthage. For excesses of Greeks and Romans see *Grotius*, Book III, chapter IV. For extermination wars of Hebrew times see Deuteronomy, chapter 3, v. 6: "And we utterly destroyed them, as we did unto Sihon king of Heshbon, utterly destroying the men, women and children of every city." For prisoners of war see also Bordwell, *op. cit.*, p. 1013; Moore, *Digest*, vol. 7, pp. 215-226; Hyde says: "Widespread consciousness that a prisoner of war is a public rather than a private foe, . . . has served to mitigate the fate that once surely awaited children and women as well as men who fell into the clutches of the enemy." *Op. cit.*, vol. 2, p. 330. See Moore, *op. cit.*, section 1126, for American attitude toward the harsh concentration policy of Spain in Cuba. For charges and countercharges of violation of conventional and customary laws of war during the World War, see compilation of Pamphlets, Library of the Carnegie Foundation for International Peace, Washington. A review of this literature reveals little proof of any general or widespread disregard of accepted practices in warfare. For an improvement over the times of Grotius see his customary rules of warfare, Book III, Whewell translation, 1853. Whewell, in his introduction, pp. 15-16, says Grotius did not sanction the many savage war customs, as some critics find, but merely stated the customary rules with which wars were carried on. The old English statute on punishment for high treason provides a good example of minimum standards, one that would not be accepted to-day. Punishment consisted of being dragged to the gallows, cutting the body down before dead, disemboweling the living man, taking out the heart (supposedly while still alive), throwing it in a fire, and finally ending the process with quartering. The statute was not enforced after 1740. See *The Philanthropist*, anonymous, vol. 3, 1813, p. 267 (in Columbia University Main Library).

It is, on the other hand, necessary to proceed with great caution in evaluating the force of these minimum standards on effective weapons of war. They are elastic and are stretched sometimes at will by the use of propaganda. War mania, for a time, may condone acts which violate minimum standards.⁵⁰ The force of such standards, however, through a long period of time over the international community in general, appears to be the only restraining force, however slight, which war recognizes.⁵¹ With the exception of this, at best limited restraining force, however, the question of permissible violence is closely coördinated with that of effectiveness. Destruction by aerial bombardment, for example, will not only be legitimatized as it was in 1907, but it may even be broadened to include independent devastation, as an end in itself, through military necessity. Social sanction may check an indiscriminate independent devastation, but it may operate at most only against the

⁵⁰ See the various official books published by the different belligerents during the World War; also above, note 38. Social drag, according to Morris R. Cohen, at best operates only as a deterring force. A determined State can break down the inertia of habit among its populations and through propaganda ignore the *mores* generally in force. Unpublished Lectures, 1926.

⁵¹ Not even this rather slight check is admitted by M. R. Cohen, *ibid.* For him, not even rules based on wide acceptance will hold merely because they reflect the feelings of civilized populations. Only convenience and utility measure the use of methods of warfare. Should rules of warfare, due to invention or innovations in weapons, become inconvenient or disadvantageous, no popular morale will be able to prevent their elimination or violation. The term, "humanitarianism," it may be noted, has been replaced here by the technical expression, cultural or social sanction. Whatever genuine feelings of humanitarianism have found their way into international conferences have carried weight in so far as they have conformed to deep-rooted notions current at the particular time. These notions are mere expressions of the prevailing culture and together make up an international force which has here been termed social sanction. See F. H. Giddings, *Studies in the Theories of Human Society*, chapter 11; also W. G. Sumner, *Folkways*, *passim*; also E. M. Borchard, "Political Theory and International Law," in *Political Theories*; Merriam, Barnes, pp. 130-131; Roscoe Pound, on "The Limits of Effective Legal Action," in *The History and Prospects of the Social Sciences*, 1925, edited by H. E. Barnes, pp. 474-476, saying: "Law can do no more than preserve a social order."

indiscriminate and excessive loss of lives, hardly against the destruction of property.

The conventions produced by the two Hague conferences of 1899 and 1907, thus seem to have established two general working principles applicable to bombardment: the indefinite principle of permissible violence, and the even more vague principle of social sanction. A third principle, however, may be noted, that of utility. On the basis of utility, or effectiveness, rules of warfare would operate against means and methods of warfare only under the following circumstances:

1. When a weapon or method has grown obsolete.
2. When the rule does not have the effect of placing one or more States at a disadvantage.
3. When the weapon or method of warfare is not vital to the military establishments of one or more States.

1. *Obsolescence*: No effective weapon or means of warfare had been restricted or eliminated by international regulation.⁵² On the other hand, obsolete means of warfare had been dealt with, such as the expanding or dumdummy bullet,⁵³ poisoned weapons such as the

⁵² For the Paris Conference of 1856 see *supra*, pp. 11-12. For the Brussels Conference of 1874, see *supra*, pp. 12-13. For the St. Petersburg Conference of 1868 see Holland, *The Laws of War on Land*, Appendix III, pp. 121-122, giving the original prohibition of the use of projectiles under 400 grammes (equivalent to the army regulation bullet) which are either explosive or inflammable. See also *supra*, chapter 4, notes 6, 7, 8, 9.

⁵³ Only Great Britain and the United States delegation opposed the proposal prohibiting the dumdummy bullet. The British delegate, General Sir John Ardagh, said: "In civilized war a soldier penetrated by a small projectile is wounded, withdraws to the ambulance, and does not advance any further. It is very different with a savage. Even though pierced two or three times, he does not cease to march forward, does not call upon the hospital attendants, but continues on." Scott, *Proceedings*, 1899, p. 343. Sir John Ardagh would continue the use of such bullets against savages, but was willing to prohibit their use in European warfare, where they were no longer effective because of inaccuracy at battle ranges. See *ibid.*, p. 286. See especially the remarks of the American military delegate, Captain Crozier, *ibid.*, pp.

poisoned arrow,⁵⁴ terrorization by means of pillage, looting and personal violence to non-combatants.⁵⁵ International regulation did not put a stop to these practices, but rather codified the common usage which had long discarded those methods of warfare.⁵⁶ Enslaving the conquered followed the older practice of extermination, and was in turn replaced by the practice of hostages whereby economic gains were obtained after the practice of slavery had died out.⁵⁷ The use of chain-shot and red-hot shot was replaced by the much more efficient shell long before any question of legitimacy arose over their use.⁵⁸

80-81, criticizing the proposal in that it confined the prohibition to a single class, *viz.*: bullets which expand or flatten, without really preventing the use of effective small-caliber bullets equally cruel in their effect. "A technical officer could spend an indefinite time suggesting designs of bullets, desperately cruel in their effects, which, forbidden by my amendment, would be permitted under the article as it comes from the Commission." General R. L. Bullard says that the development of arms had brought armies farther apart, and that in the increased battle range the inaccurate dum dum bullet was naturally discarded for the far more accurate steel-nosed bullet which rendered the injured man equally *hors de combat*. Expanding and notched bullets also were injurious to the rifle barrel.

⁵⁴ Art. 23, Hague Rules, Scott, *Texts*, p. 59.

⁵⁵ Article 23, Hague Rules. General Bullard says that looting troops cease to be effective; that looting turns an organized army into a mob; that the troops waste time in pillage and looting and burden themselves with unnecessary loads; and that looting is, therefore, prohibited from a military point of view. The formation of national armies, taking the place of irregular troops relying for pay upon pillage and loot, also operated against the mediæval practices. For a similar view in regard to looting see Admiral W. L. Rodgers, U. S. N., Technical Advisor to the American Delegation to the Commission of Jurists, *American Journal*, vol. 17, 1923, p. 633.

⁵⁶ Lord Derby, expressing the attitude of Great Britain toward the Brussels Conference proposals, stated that the Articles respecting sieges and bombardments only proposed to record existing military practice. The Earl of Derby to Lord Loftus, Foreign Office, January 20, 1875, *British and Foreign State Papers*, 1874-75, vol. 66, p. 450.

⁵⁷ For the full account of the development of treatment accorded prisoners of war, from slavery to ransom, to exchange, see Bynkershoek, *A Treatise on the Law of War*, Du Ponceau 1810 edition, pp. 2-21. See also Bordwell, *Law of War*, *passim.*; also Westlake, *Int. Law*, II, 1913 edition, pp. 67-72.

⁵⁸ Hall, *Int. Law*, 1917 ed., p. 568, note 1.

2. *Disadvantageous acts*: No restrictions, adversely affecting a Power or group of Powers, had ever been placed on warfare. Thus the only restrictions, affecting the hostile action of belligerents, were limited to practices of equal convenience to both belligerents, such as the rules dealing with sick, wounded and prisoners of war,⁵⁹ the rule banning live-mines loose upon the high sea, the rule prohibiting "no quarter,"⁶⁰ the rule safeguarding hospitals and hospital ships,⁶¹ and the

⁵⁹ Geneva Conventions, 1864, 1906. See Holland, *op. cit.*, pp. 27-40; Holls, *Peace Conference*, pp. 126-130; Bordwell, *op. cit.*, *passim*. For Hague Conventions see Scott, *Texts*, pp. 71-79, pp. 267-281.

⁶⁰ Hague Conference, 1907, Convention Relative to the Laying of Automatic Submarine Contact Mines, Art. 1, Scott, *op. cit.*, p. 253. Art. 2 forbids the use of such mines "with the sole object of intercepting commercial shipping." Art. 3 provides for notification of danger zones, "as military exigencies permit." Hall says of Art. 2 that it is "in fact futile, for a belligerent has only to allege a different object than that of 'intercepting commercial shipping' to make it illusory. The reservation in Art. 3 in favor of military exigencies renders the article to a great extent nugatory." *Op. cit.*, p. 570. English writers are in general opposed to the laying of mines in the open seas. See Lawrence, *War and Neutrality in the Far East*, p. 10; Letter of Admiral Horsey, *London Times*, May 23, 1904; Holland, *War and Neutrality*, pp. 164-165. These writers seem to have been opposed to the laying of a mine-blockade by powers such, for instance, as France and Germany, who had declined to accept Articles 2 and 3. In the report of the American delegates, Art. 2 is interpreted as follows: "A blockade may not be established and maintained by the sole use of submarine mines." This accounts, perhaps, for the British support of this article and the French and German opposition to it. The floating mines in the China Sea, after the close of hostilities in the Russo-Japanese War, caused enormous loss of life and property. See report of American delegates, *Senate Document*, No. 444, 60th Congress, 1st Session, p. 41.

Rules prohibiting "no quarter" are Art. 13, sec. d, *Brussels Project*, 1874; Hague, 1899, Art. 23, sec. d; same for 1907 regulations. It is to be noted that the provision in the Brussels Project dealing with quarter in cases of extreme necessity was omitted from the final declaration. The *Oxford Manual* and the German and French official manuals are silent on this point, although in the American Instructions, Art. 60, and in the *Kriegsbrauch im Landkriege*, p. 16, the refusal of quarter in cases of extreme necessity is admitted. Holland questions the point at which a combatant may be disentitled to quarter. *Laws of War on Land*, p. 43. See Hall, *op. cit.*, p. 416, note 2, for a detailed review of practices in regard to the giving of quarter; also Spaight, *op. cit.*, pp. 89-91.

⁶¹ Geneva Conventions, 1864, 1906; Hague Convention, 1899, for the Adaptation to Maritime Warfare of the Principles of the Geneva Con-

rule dealing with flags of truce and military uniforms.⁶² It should be here noted that no effective operations of the military establishments were touched. The rules deal rather with matters of convenience affecting both belligerents alike. They provide a set of rules commensurate with the cultural or civilized notions of the time, again conventionalizing practices long before enforced by customary usage.

3. *Non-vital weapons*: Where restricted means of warfare have not been obsolete, or where regulation has not been a matter of convenience, then the restrictions have been applied only to non-vital means of warfare. Thus the declaration forbidding the use of explosive bullets lasted only until aerial warfare gave them an importance previously lacking.⁶³ The balloon declara-

vention; and Hague 1907 Convention for the Adaptation to Naval War, etc.

⁶² Hague 1899 Regulations, Articles 32-4; same for 1907 Hague Regulations; also American Instructions, Articles 111-114, Scott, *Texts*, Appendix, pp. 368-369. See also Holland, *Laws of War on Land*, Articles 88-91.

⁶³ Article 18, Rules of Aerial Warfare, The Hague, 1923, reads: "The use of tracer, incendiary or explosive projectiles by or against aircraft is not prohibited. This provision applies equally to States which are parties to the Declaration of St. Petersburg, 1868, and to those which are not." *Report of the Commission of Jurists*, National Printing Office, The Hague, 1923, p. 284. No provision, dealing with incendiary or explosive bullets, appears in the American draft proposal. The provision is, however, to be found in the British draft code. Article 3 of the British proposed code reads: "Nothing in the Declaration of St. Petersburg, 1868, or the Land Warfare Regulations, 1907, shall be regarded as forbidding the use by sea, land or air forces of incendiary projectiles fired at the fabric of lighter-than-air craft, or of tracer bullets fired at aircraft." *Ibid.*, Annex 5, p. 160. The British proposal, restricting the use of the bullets, as above stated, was later changed into a broad proposal, as it finally appeared in the adopted rules. The grounds given for the broad proposal were that it was difficult to change ammunition in air operations. See general discussion, *ibid.*, p. 79. Referring to the apparent repudiation of the St. Petersburg Declaration, the French delegate, de Lapradelle, said: "It could be held that the Declaration of St. Petersburg in no way referred to air warfare." The President, John Bassett Moore, in view of the report of the Sub-Committee, that "The Declaration of St. Petersburg, 1868, shall not be regarded as extending to aerial warfare," suggested that only incendiary projectiles be specified as not prohibited. See *ibid.*, p. 79; also statement of the American delegate, Washburn, supporting

tion, as described in detail in previous chapters, banned the non-existing aerial bombing, but the restriction was lifted once aerial bombardment became practicable.⁶⁴ Mines were prohibited, when no longer effective such as when afloat on the high seas, endangering neutral shipping.⁶⁵ Bombardment was restricted to defended places, if military necessity did not call for drastic action.⁶⁶ Later, when the range of artillery fire made possible the reaching of so-called military objectives in non-defended centers of populations, the earlier restriction was removed.⁶⁷ Asphyxiating gas shells were restricted at a time when, as Mahan says, no use had ever been made of such a weapon, and when the use of gas was of no value in the military establishments.⁶⁸ In the same way, the practice of poisoning wells, by usage long abolished because of the danger to both belligerents, was not vital in warfare, and may even be said to have grown obsolete.⁶⁹ Regulations on this means of warfare restrict themselves to non-essentials. Wherever

that of Moore. The American view, however, was passed over for the final broad provision.

⁶⁴ See *supra*, chapters 2 and 3.

⁶⁵ *Cf. supra*, note 52.

⁶⁶ *Cf. infra*, ch. 5; p. 13 for exceptions.

⁶⁷ *Cf. infra*, ch. 5, pp. 13-14.

⁶⁸ Scott, *Proceedings*, 1899, p. 283. Captain Mahan said that the question of asphyxiating gases was still intangible, since such projectiles did not exist. See also Report of Captain Mahan, Scott, *Hague Conferences*, vol. 2, p. 37, in which he gives his reasons for opposing the proposal: that no gas shell was in practical use; that "the reproach of cruelty and perfidy, addressed against these supposed shells, was equally uttered formerly against firearms and torpedoes, both of which are now employed without scruple." The United States and Great Britain did not vote for this declaration.

⁶⁹ See American Instruction, *op. cit.*, Article 70, which states: "The use of poison in any manner, be it to poison wells, or food, or arms, is wholly excluded from modern warfare. He that uses it puts himself out of the pale of the law and usages of war." It is pointed out by military men that an effective weapon is one that is at all times controllable; and that such methods as poisoning wells and streams, and the spreading of infectious diseases, are not controllable by the user, and may spread beyond all control, with danger to the user. For list of instances in late times, where poisoning resulted from indirect methods, see Spaight, *op. cit.*, pp. 83-85.

progress has produced a vital weapon from among these non-essentials then legitimization has followed.

Although rules of warfare recognize the doctrine of permissible violence and the force of social sanction, they are based primarily on the principle of utility or effectiveness. This latter principle seems to have dominated international conferences, as displayed at the two Hague Conferences.⁷⁰ The history of the regulation of aerial bombardment, discussed at length in previous chapters, shows utilitarianism as the predominating motive.⁷¹ The same motivating force seems to underlie the development of the rules of bombardment, from the Brussels Conference of 1874 to the Hague Commission of 1923.

⁷⁰ See *supra*, chapters 1-3.

⁷¹ See *supra*, chapters 2-3; and conclusion, pp. 78-9.

CHAPTER V

RULES OF BOMBARDMENT

AT no time in the history of bombardment were effective artillery operations interfered with. Bombardment, on the contrary, was considered a legitimate means of warfare.¹ Only its application under specific circumstances had been questioned by writers. Bombardment by some was considered to be an exceptional measure resorted to only in case of imperative necessity. As such it was "a violation of that great law of reason which sanctions such injury only being inflicted as is necessitated by the object of the war."² By others it was held to be a regular measure of warfare and a perfectly legitimate means of attack, allowed under the same circumstances and conditions as force in general.³ For this school there was nothing objectionable in bombardment under any circumstances. Reasoning by analogy, they saw no difference between bombardment and the reduction of a fortified place by starvation.⁴

The history of bombardment regulation shows a distinct utilitarian development, in which the idea of military effectiveness dominates, and in which the doctrines of permissible violence and social sanction are of secondary importance as checks or influences. At no time

¹ See Hyde, II, p. 302, and footnote 1; Oppenheim, 4th ed., vol. 2, p. 281; Phillimore, *Bombardments*, Grotius Society, vol. 1, p. 61. Some writers as Pillet, pp. 104-107, and Mérignhac, 111^a, p. 273, would first have the attackers attempt to starve the besieged before undertaking bombardment. Spaight says: "However illogical it may be, the right to bombard a defended town is admitted by all practice, by all jurists and by the official manuals." *War Rights on Land*, p. 158.

² A. Pillet, *Les Lois Actuelles de la Guerre*, p. 102.

³ Oppenheim, vol. 2, p. 281.

⁴ Despagnet, *Droit International Public*, 3rd ed., pp. 650-653.

since their introduction into warfare were effective artillery operations restricted. International regulation, when it later appeared, followed rather than preceded the technical development in artillery. This absence of external restraint persists throughout the history of artillery. From the ancient use of a catapult down to modern gun fire, bombardment was limited by its own capacity. The early opposition to the use of the cross-bow, gunpowder, and muskets was futile.⁵ The range of fire and the destructive capacity of the projectile was determined solely by its propelling force and the strength of explosives.

The limited capacity of artillery, extending nearly to the twentieth century, localized military operations, restricting them to the immediate ground occupied by the military forces.⁶ Out of this grew the idea of an operational zone, or theater of war, within which active

⁵ Cf. *supra*, p. 15.

⁶ Artillery as a siege weapon was supposedly used first under Charles VIII of France. Cannon had been used already under Henry V, in 1413, but it was a small piece, weighing 100 pounds, and maneuvered by hand. Sully's cannon were said to be the most powerful weapons used in the reduction of places. Count Fuentes is said to have had 70 pieces before Cambrai in 1562. But cannon could be made only with great difficulty. Even in Elizabeth's time the strength of the English army still lay in its archers. A century later, in 1680, the making of cannon was still a cumbersome process. The large pieces of this period were huge guns, weighing often 8,000 pounds, shooting 60-100-lb. balls for a distance of three hundred yards. French cannon at this time were known as "the most terrible weapon that assailants can employ." Pointblank range of a 9-lb. shot was 175 yards. In 1700 the effective range of 12-pounders against troops was 400 yards. Under Frederick the Great, 1750, solid shot could be fired at 1500 yards. Effective artillery against fortifications could be conducted only at very short ranges, 100 yards being the range for reducing heavy walls, even in Napoleon's time. In the War with Mexico, cannon shot fired by the Mexicans could be observed bounding over the ground toward the American forces. General Grant states that the troops by parting rank could avoid the enemy's shot. For works on the history and development of artillery see Louis Napoleon Bonaparte and Colonel Fové, *Études sur le passé et l'avenir de l'artillerie*, 1846; Max Jähns, *Geschichte der Kriegswissenschaften*, 1889; Col. de Vernon, *Science of War*, 1805, translated from the French by O'Connor, 1817; also U. S. Artillery School Publications.

combat was supposed to be conducted. It was this operational zone, based on technical performances, and delimited solely by the range of gun fire, which served as a basis for legal speculation and finally led to attempts at legal definition and regulation. Even in the Napoleonic Wars, hostilities, except for sieges, directly affected only the armed forces in the field.⁷ Nothing in this sphere was permitted to interfere with the work of attaining the military objective. It was the range of gun fire which determined the extent of the battlefield, or, as it is termed to-day, the advance zone of operations. Whatever came within range of that fire was a legitimate target. Villages, churches and schools in this zone could be wiped out for any tactical or strategic purpose, as to clear a line of fire, or to prevent the concealment of enemy movements, or even to impede the enemy at some future time. As the range of gun fire increased, the operational zone expanded.⁸ Wherever the armies fought, and whatever terrain they could control by the existent weapons, was accepted as a legitimate zone of operations. In this zone only one principle governed, that of utility or military effectiveness. No-

⁷ Vernon, *op. cit.*, p. 168: "Reason, confirmed by experience, should induce us to receive it as an invariable rule, *Never to make use of fire, but within the distances established for effective ranges.* We have personally witnessed in many battles the grossest mistakes in this respect, that the importance of this rule cannot be too deeply impressed. In the attack on Spires, the artillery of a whole column uselessly expended all their ammunition before they were within 800 meters (860 yards) of the enemy drawn up in order of battle in front of the ditches of the town."

⁸ For a comparison between the artillery of the 17th century with that of the 19th century see Spaulding, Nickerson and Wright, *Warfare*, 1925, p. 498. In Napoleon's time the effective range of 24-pounders was 1,000 yards; 12-pounders, 900 yards; field howitzers, 500 yards. Vernon, *op. cit.*, p. 169. In 1884, however, a Krupp 40 cm. gun, firing a 15.75-inch projectile weighing 2,082 lbs., had an effective range of 4,000 yards. At Mappen, German proving grounds, a mean range of 7.5 miles was attained before the end of the 19th century. Various English types in this period could penetrate 16 inches of solid wrought iron armor at 3,500 yards. For details see Noble and Abel, *Researches on Explosives*, 1888, pp. 26, 28, 31, 50, 58, 68, 81.

tions of permissible violence and social sanction had an influence only in so far as they coincided with notions of utility. An exclusive military sphere, the zone of operations, thus existed throughout modern history, and in this zone the dominant force was that of military effectiveness.

Rules governing sieges and bombardment of fortified towns followed as a consequence, it seems, of this exclusively military sphere. Within the sphere only military considerations prevailed, and rules shaped themselves around the customary bombardment practices. It was in this manner that the doctrine of non-combatant immunity developed. The civilian sections of fortified towns having been, up to the nineteenth century, outside the effective range of the besieger's fire, a sense of general civilian immunity arose, developing later into the idea that civilian areas were immune by right. As long as artillery fire, through mechanical deficiencies, was restricted to very short ranges, this notion of general immunity was not contested. Thus legal restrictions arose from the mechanical nature of artillery fire, and in time hardened into a basic principle of conduct in warfare, "to attack only those who can defend themselves."⁹ Expressed in other words, non-combatant population and non-military objects, under ordinary circumstances, were generally immune from bombardment. To say, however, that the distinction between combatant and non-combatant populations was imposed upon artillery operations by international agreement is to ignore, it seems, the historical development of bombardment regulations.

In the development of international regulation of bombardment three distinct stages may be noted, all centering about the objective subject to bombardment, and each growing out of and based upon the technical

⁹ Pillet, *op. cit.*, p. 102.

requirements of its period. In the early stage bombardments were directed chiefly against besieged places. The military objective in the warfare of the time was either a fortress or a town surrounded by forts. Military commanders anchored their systems of defense to central and outlying fortifications. "In the seventeenth century, field operations were always dependent upon fortifications. The army was based upon a fortress; there were fortresses in its way which it could not mask and leave behind. Battles usually resulted from a siege and an effort to raise it."¹⁰ The remaining territory was of tactical value only as a source of supply. Bombardment here was unnecessary since the country was open. General Mitchell says, "The one reason that unfortified cities had not been so attacked was because they had had no means of resistance; the hostile armies merely walked in and took charge."¹¹ The practice of bombardment, in this early period, lasting into the nineteenth century, was thus associated only with sieges.¹² The fact that fortified places were alone subject to siege and therefore to bombardment led in time to the fixed notion that only fortified places could be bombarded. This notion of bombardment, however, restricted in no way the available means for gaining the objective. "One of the best means at the disposal of the besieging army was to reduce the place by bombardment."¹³ Elaborate methods for gaining access to the town were evolved, such as the Vauban systems of the seventeenth and eighteenth centuries.¹⁴ The object of these systems, however, was to advance

¹⁰ Spaulding, *op. cit.*, p. 516.

¹¹ General Wm. Mitchell, unpublished correspondence, 1927; see also Westlake, vol. 2, p. 77, for similar view; also Rolin, *Le Droit Moderne de la Guerre*, I, pp. 348-349.

¹² See Wilkinson, *Engines of War, Ancient and Modern*, 1848, p. 1; also Rolin, *op. cit.*, p. 353.

¹³ Rolin, *ibid.*, vol. 1, p. 348; also Pillet, *op. cit.*, p. 106.

¹⁴ Vernon, *op. cit.*, vol. 2, p. 106.

the attacking forces to within striking distance of the fortress, with least loss of personnel, so that the artillery of the time could be used effectively in opening the walls.¹⁵ The fortifications of a town, or the defended walls, were thus the objective.¹⁶ It was the most effective way of the time for attaining victory, and the French had developed a system of siege attack to so high a degree as to enable them to plan in advance the exact day on which the fortress would be taken.¹⁷ In this plan of attack there was no room for the slow and uncertain method of destroying a town by shelling with bombs and red-hot balls.¹⁸

Another notion, therefore, grew up among some writers, that the town itself should be spared as much as possible and only the fortifications and walls attacked. Vattel writes that eighteenth century practice was content "with battering the ramparts and defenses of a place."¹⁹ Under ordinary circumstances firing upon towns was said to be justified only when it was restricted to fortifications and fortified places. Bombardment of the residential portions of a fortified town was at times resorted to, but, as Hall says, it was "not only

¹⁵ In Vauban's time, up to the 18th century, heavy guns, firing balls weighing 60-100 pounds were used as siege artillery. Firing was a very slow process, which made the damage done to residential quarters negligible, whereas a few shots directed at close range against the walls might open breaches. Wilkinson, *op. cit.*, p. 19; Spaulding, *op. cit.*, p. 498.

¹⁶ See Vernon, vol. 2, *op. cit.*, p. 37, showing that the bombardment of the town itself would bring little tactical results whereas the opening of the walls would cause the capitulation of the town.

¹⁷ Cf. *ibid.*, p. 185, vol. 2: "On the 44th day the breach in the intrenchment of the bastion will be practicable, when the capitulation will take place."

¹⁸ Cf. *ibid.*, ch. v, in which the work of the attackers on each day of the siege was carefully laid out with the object of advancing to within range necessary to open the walls of the defending place.

¹⁹ *Op. cit.*, Bk. 3, ch. 9, par. 169. It may be noted that the range of artillery, at the time in which Vattel wrote, was mechanically limited, for effective results, to the walls of a town. Cf. *supra*, p. 1, note 6.

unnecessary, but more often than not unsuccessful.”²⁰ The general rule, that only forts and fortified towns were to be fired upon, thus grew out of the technical limitations of artillery and centuries of bombardment practices. Provision was always made, however, for military necessity. Where more drastic measures were required, they were employed. Thus a town could always be reduced by starvation. Bombs and red-hot shots could be employed in destroying a town.²¹ Useless mouths, including women and children, could be prevented from leaving shelled towns.²² Commanders could dispense with the customary practice of giving notice before bombardment, in case of necessity;²³ and even residential sections of fortified towns could be shelled.²⁴ As already shown, devastation itself when really necessary was permissible.²⁵ The general principle of bombardment, up to the Brussels Conference of 1874, therefore, provided for the safeguarding of civilian populations only where military necessity permitted. Effective artillery operations were not touched, either in the field or when directed against fortified

²⁰ *Op. cit.*, p. 575.

²¹ Vattel admits the legitimacy of this: “To destroy a town with bombs and red-hot balls is an extremity to which we do not proceed without cogent reasons.” Bk. 3, ch. 9, par. 169. Hall, *op. cit.*, p. 568, note 1, doubts whether any prohibition of red-hot shot really existed. He suggests that such writers as Heffter, Section 124, and Bluntchli, Section 560, conjured a prohibition up out of the remarks of Klüber and De Martens, Section 273, who doubted the legitimacy of such methods because of some agreements in naval wars not to use the weapon.

²² Rules of Land Warfare, No. 222; U. S. Instructions, General Orders, No. 100, April 24, 1863, quoted in Moore, *Digest*, vol. vii, p. 179. See also General Scott on the bombardment of Vera Cruz, March, 1847. Autobiography, vol. 2, pp. 426-428, quoted in Moore, *ibid.*, pp. 180-181. For Germans at Paris, in the Franco-Prussian War, see Lawrence, *Int. Law*, p. 573.

²³ Article 16, Brussels Regulations, *Actes de la Conférence de Bruxelles*, 1874, p. 300. See also Bordwell, *op. cit.*, p. 89.

²⁴ Bordwell, *op. cit.*, p. 89.

²⁵ Cf. *supra*, p. 106. Also Art. 23, Hague rules; also Oppenheim, *op. cit.*, 279.

places. Only wanton destruction or pure waste was condemned.

The rules proposed at the Brussels Conference crystallized into conventional form practices which had grown out of centuries of artillery operations. Thus in the *Projet*, artillery fire was still closely associated with sieges and fortified places, as it had been since the sixteenth century.²⁶ Chapter four of the Russian proposal, submitted as a basis for discussion, was entitled, "Sieges and Bombardments," and the first sentence of Article 15 of the same draft stipulated that fortresses and fortified places alone could be besieged and therefore bombarded.²⁷ The conference made only minor changes in the Russian proposal, the final declaration providing that "fortified places alone could be besieged. Towns, agglomerations of houses or villages, which are open and undefended, cannot be attacked or bombarded."²⁸ The Brussels rules restricted no effective means of warfare. Artillery operations, at this time, were still operative only on the actual battlefield, or at comparatively short ranges against the old systems of fortifications still maintained as anchorages in the national defense. In these two spheres artillery operations were still left intact. The open towns, protected by the Brussels rules, were in general of no tactical importance. Wherever open towns did assume military importance, such as when they participated in the defense of a fortified town, they were considered to be defended and therefore liable to bombardment. The Brussels rules, for example, provide that "Every open town which is situated near a fortress and coöperates in its defense is subject to bombardment."²⁹

²⁶ Nys, *Droit International*, 1912 ed., vol. 3, p. 152.

²⁷ *Actes de la Conférence de Bruxelles*, 1874, p. 268.

²⁸ Art. 15. See *ibid.*, p. 299; also *Am. J.*, Official Documents, April, 1907.

²⁹ *Parliamentary Papers*, 1875, Brussels Conference Blue Book, p. 196.

In this first stage of regulation of bombardment, expressed in the Brussels Declaration, the doctrine of non-combatant immunity was subordinated to the doctrine of military necessity. The general immunity of open towns and undefended populations, although partly established by 1874 as part of the law of nations, was rather the product of a period covering a particular system of warfare based upon fortifications. Success in the field brought final victory only when key fortresses or fortified towns were taken. The remainder of the country, including its population, offered no primary military objective. In general, therefore, these non-essential places with their non-combatant populations were left unmolested except for the levying of contributions and supplies. The notion of general immunity thus developed during the period lasting from the seventeenth into the nineteenth centuries. Already in Vattel's time the distinction between combatants and non-combatants was in some measure recognized.³⁰ In the latter half of the nineteenth century Maine could state as a general principle of warfare, "that in the mode of carrying on war no greater harm shall be done to the enemy than necessity requires for the purpose of bringing him to terms."³¹ It was a particular system of warfare of the pre-Brussels period, which brought immunity under ordinary circumstances to non-combatants. At no time, however, was immunity assured even under ordinary circumstances. Thus, Hall states that the exceptional practice of bombarding the residential section of a besieged town was sanctioned by usage and was largely resorted to in the Franco-

Also *Parliamentary Papers*, LXXII (cd. 1120) 1874, and 1875 (cd. 1129, 1136). Also Spaight, *War Rights on Land*, p. 160.

³⁰ "Destruction of towns without absolute necessity or at least very cogent reasons is an odious and detestable measure." Vattel, *op. cit.*, Bk. 3, ch. 9, par. 173.

³¹ Maine, *International Law*, p. 137.

Prussian War of 1870.³² The draft regulations laid down at Brussels conventionalized an accepted practice, but it should be noted again that this practice was a product of a military period in which the available means and methods of warfare could produce no distinct tactical or strategic advantages from attacks on civilian centers. It remains to be seen whether the walled city as a test for bombardment was to endure in the face of a new military period calling for different methods of warfare.

The Hague Conferences of 1899 and 1907 indicate a change of attitude toward bombardment. They substitute the "defended place" for the old "fortified place," by stipulating that the attack or bombardment of towns, villages, habitations or buildings which are not defended is forbidden.³³ The former test, based on fortifications or fortified cities, was thus discarded. The Brussels provision, that only fortified places could be besieged, was replaced by the 1899 Conference on the motion of the German military delegate, on the grounds that not only was it superfluous but that it ignored the fact that strong defenses and field works might make it necessary to shell an unfortified place.³⁴ Warfare toward the end of the nineteenth century was no longer centered about fortified cities. The new development in ordnance had brought great increases in the range and destructive power of artillery fire.³⁵ The old for-

³² Hall, *op. cit.*, p. 575.

³³ Art. 25, Hague regulations.

³⁴ Col. Gross v. Schwarzhoff, Scott, *Proceedings*, 1899, p. 494.

³⁵ "We now approach a period during which immense strides have been made in ordnance constructions. Indeed, it is not too much to say that the last 25 years have been more prolific in improvements in gunnery than the several centuries which immediately succeeded the introduction of gunpowder as a projecting agent. And this progress has been mainly due to four causes, viz: 1, the application of the principle of rifling to cannon; 2, the invention of breechloading mechanisms; 3, the discovery of slow burning powder, and 4, the employment of wrought-iron and finally of steel in gun constructions." Henry R. Lemly, *U. S. Artillery School Publications*, vol. 3, p. 4.

tified unit gave way to an extended line of forts, a system in which fortified towns no longer played a primary military rôle.³⁶ Field tactics assumed the primary rôle in warfare. The old basis, that of the walled or fortified town, no longer existed, once the old system of warfare had been discarded. Towns and places which had been of no tactical importance under the old warfare now assumed military importance.

This changed system of national defense was reflected in the 1899 Hague regulations.³⁷ The walled city as a basis for regulation gave way to the test of defense. Towns, villages, and buildings which were defended could be attacked and bombarded even if unfortified. The question was raised at the Hague Conference as to what constituted a defended place. No definite criteria, however, were given for determining whether a place was defended or undefended. A fortified place was assumed to be defended, also a place containing troops.³⁸ A place, however, possessing fortifications but not defended was supposed to be immune from bombardment.³⁹ A place was also assumed to be defended if the inhabitants took up arms and defended themselves.⁴⁰ Some writers assumed that a place was defended even if

³⁶ "The adoption of the extended order," says Major Lloyd, R.E., "which is the most marked change in tactical formations during the present century, is the most marked change in fortifications also. Just as the thin veil of skirmishers has grown by degrees into the fighting line of infantry, so small advance works have gradually developed into detached forts, and became the true fighting line of a fortress." *Ibid.*, p. 14.

"The fortress of the present day has ceased to be an indivisible whole cased in a rigid ring of continuous strength, which is composed of a certain number of fronts of fortification. . . . With the vast perimeter thus occupied by the forts, the gaps between them are necessarily left open until the expectation arises of hostile aggression; . . . thus the fortress in its permanent parts, represents only the skeleton of what it should become when threatened with attack." Colonel Smyth, R.A., *ibid.*, p. 19.

³⁷ Art. 25, 1899, Hague regulations.

³⁸ Spaight, *War Rights on Land*, p. 159.

³⁹ See Spaight, *op. cit.*, pp. 159-160, for town not "seriously fortified."

⁴⁰ *Ibid.*, pp. 158-159; also Hyde, *op. cit.*, p. 305.

troops were merely passing through it.⁴¹ The United States War Manual defines a defended place as: first, a fort or fortified place; secondly, a town surrounded by detached forts; thirdly, a place that is occupied by a military force or through which such force was passing.⁴² The status of a town, on the other hand, in the presence of a warship seemed undetermined; although some writers classified such a town as undefended, since the expressed permission to fire on ships of war in a harbor would otherwise be superfluous.⁴³ Another controversial point was whether a town should be deemed defended simply because it possessed ammunition, war material, factories producing war material, depots, empty barracks, and public administration buildings. Some writers assume that the mere presence of such works, if no serious effort was made to safeguard them from attack, would not "transform an open town into a defended place and expose it to treatment as such."⁴⁴

In general the Hague rules covering bombardment did not restrict effective artillery operations. As in the case of the destruction of property, and of devastation, wanton destruction was condemned, but wantonness was associated wholly with unnecessary destruction, a notion which in no way interfered with regular artillery operations. Thus Article 27 stipulated that in sieges and bombardments all necessary steps should be taken to spare as far as possible buildings devoted to religion, art, science and charity, hospitals and places where the sick and wounded were collected, provided they were not used at the same time for military purposes.⁴⁵ These exceptions to unlimited bombardment of defended

⁴¹ Oppenheim, vol. 2, p. 282, note 2.

⁴² *Rules of Land Warfare*, 1914, No. 214.

⁴³ Baty and Morgan, *War: Its Conduct and Legal Results*, 1915, p. 217.

⁴⁴ Hyde, *op. cit.*, par. 656; also Anderson, *War Manual*, 1916, vol. 1, p. 64.

⁴⁵ Scott, *Texts*, pp. 61, 220.

places were indeed limitations of the right of unlimited and indiscriminate bombardment, but they were checks on pure viciousness and wanton destruction serving no direct military purpose, and not checks on effective artillery operations.

Widespread destruction was admitted by some writers even when it involved the bombardment of a residential section. No legal duty, according to this view, compelled the attacking forces to restrict bombardment to fortifications only, but, on the contrary, destruction of public and private buildings through bombardment had always been and was still considered lawful as one of the means of impressing upon the authorities the advisability of surrendering.⁴⁶ This school of writers held that the usage of war allowed a commander to range his guns over the whole of a defended city, except where military needs permitted his sparing of the buildings mentioned in Article 27 of the Hague rules. In 1870, at Strassburg, Paris, Soissons, Verdun, Montmédy, Longwy, and Peronne, the towns themselves were shelled, producing great damage to the lives and property of the civilian inhabitants.⁴⁷ The German practice, however, went but little beyond that followed in most nineteenth century wars.⁴⁸ Some writers held that the solidarity between the troops and inhabitants of a fortified or defended town might almost be said to deprive the latter temporarily of their non-combatant character.⁴⁹ Others justified bombardment on the grounds

⁴⁶ Oppenheim, 4th ed., vol. 2, p. 285; Spaight, *op. cit.*, p. 161; also Anderson, *op. cit.*, No. 122.

⁴⁷ Fauchille, *Droit International*, vol. 2, par. 10982. See also Spaight, *War Rights on Land*, who gives the following damage done to Strassburg: 448 houses destroyed completely; nearly 3,000 (out of a total of 5,150 houses) were partly injured; 1,700 civilians were killed and wounded; 10,000 persons made homeless; total damage to city estimated at nearly £8,000,000. See also Hozier, *Franco-Prussian War*, vol. 2, p. 71.

⁴⁸ Halleck, *International Law*, 4th ed., vol. 2, p. 74, note 1. For practices during the nineteenth century see Fauchille, *op. cit.*, par. 10982.

⁴⁹ Risley, *The Law of War*, 1897, p. 117. Spaight, *op. cit.*, p. 164,

that it was impossible to separate the fortified or defended town from its inhabitants.⁵⁰ Another reason given in favor of bombardment was that the fortresses were too near to a town, and that "the fortress is now an entrenched camp whose perimeter tends constantly to increase."⁵¹ Strassburg thus suffered in 1870 for the alleged reason that there were no detached forts around the town and that the ramparts were too close to the residential sections of the town. Metz, on the other hand, suffered very little because its girdle of detached forts made the town itself safe from the besieger's fire. During the American Civil War, General Hood protested that Sherman's men resorted to indiscriminate bombardment of Atlanta, in spite of the fact that the men were perfectly well trained gunners. General Sherman replied that General Hood defended the city at too close a proximity, which accounted for the shelling of the city.⁵²

Not all writers upheld general indiscriminate bombardment.⁵³ Some insisted that the bombardment of residential quarters was illegal, that if the belligerents deliberately turned their guns upon the dwelling houses of the bombarded town they would justly be accused of illegal barbarity.⁵⁴

who also gives a list of towns in which damage was done to non-combatants.

⁵⁰ *Ibid.*, p. 158, in which Spaight says: "There is a certain solidarity between the garrison and the residents which makes them, as it were, brothers in misfortune when the enemy is at the gates. The usage of the war simulates a city which is defended to a fortress and so allows an assailant to hurl his shells into it to the possible injury of non-combatant populations."

⁵¹ See a paper, "The Crisis in Fortifications," in the *R. E. Journal*, Sept., 1907, translated from the French.

⁵² Sherman's *Memoirs*, vol. 2, pp. 120-122.

⁵³ Fauchille, "Le Bombardement Aérien," 24, *Rev. Gén. de Droit Int. Pub.*, 1917, p. 56, would spare buildings devoted to religion, art, science, hospitals, etc. Few writers, however, believe that bombardment must be restricted to the fortifications. See Garner, *Int. Law and the World War*, vol. 1, p. 422, note 2, for list of writers.

⁵⁴ Lawrence, *op. cit.*, p. 417; Pillet, pp. 104-7; Bluntchli, par. 554; Mérignhac, vol. 3, sec. a, pp. 280-284; Calvo, Part 11, Bk. IV, par. 2070.

The great improvement of artillery in the latter part of the nineteenth century made possible bombardment for psychological reasons, as a means of destroying the morale of a nation. This doctrine was defended by German military writers.⁵⁵ In general, however, publicists were opposed to this,⁵⁶ and writers even in Germany objected to general bombardment on the grounds that it was an "absolutely immoral psychological pressure."⁵⁷ The Institute of International Law condemned bombardments that were "destined solely to bring about the submission of the country by the destruction of peaceable inhabitants or of their properties otherwise not motivated."⁵⁸ The Hague regulations were silent on this type of operation, but some writers pointed out that since these regulations embodied customary law they therefore forbade the bombardment of the town itself.⁵⁹ Hall held this view. For him the bombardment of the residential section of a defended place, for the purpose of placing an indirect pressure on the commander, was a measure of a peculiar cruelty not only

⁵⁵ Spaight says that both Sutherland Edwards and Rolin Jacquemyns approved of the Prussian policy of reducing towns by bombardment. *Op. cit.*, p. 162. See *ibid.*, p. 163, for Prussian attitude that a serious general bombardment of Strassburg might "probably induce the inhabitants to compel the governor to surrender the fortress." See also *German Official History*, Part I, vol. ii, p. 446. The German manual provides that "bombardment will not limit itself to the actual fortifications, but will and must extend over the whole town." Carpentier's translation, p. 43.

⁵⁶ Fauchille, vol. 2, par. 1097; De Martens, vol. 3, pp. 220-221.

⁵⁷ Bluntchli, *Codified*, par. 454. Farrer, *Military Manners and Customs*, p. 106, follows Bluntchli. Fiore says: "Bombardment of a closed and defended city shall be deemed an unfair means of attack when practiced for the sole purpose of causing damage and intimidating the inhabitants and not for the direct purpose of compelling the enemy to surrender. This should be true especially when the occupation of the defended locality cannot have a serious influence on the ultimate issue of the war, and when circumstances clearly indicate that the belligerent has merely utilized the defense of the city as a pretext to bombard it and does injure and terrify the peaceful citizens therein." *Op. cit.*, par. 1529.

⁵⁸ *Tableau Général*, by Albéric Rolin, p. 195; also Rolin, vol. 1, pp. 358-9; Bluntchli, par. 154.

⁵⁹ Rolin, 6, pp. 359-360.

unnecessary but more often than not unsuccessful. As such it could not be excused.⁶⁰ At the Brussels Conference the city of Antwerp submitted a petition asking the delegates to provide for the non-bombardment of residential quarters and private houses and property. In the discussions which followed, the German delegate held that such bombardment, being an effective means for compelling the defenders to surrender, was a legitimate means of warfare. The committee inclined toward the immunity of residential quarters. The final declaration, however, made no provision for non-combatant immunity, although it was supposed to be understood that commanders would refrain from indiscriminate bombardment and spare the peaceful inhabitants of a place.⁶¹

Under the Hague regulations open towns, as well as fortified towns not defended, were declared exempt "from bombardment or attack by any means whatever."⁶² Prohibition was based on the supposed fact that an army could occupy an undefended place without firing a shot and then carry out the necessary destruction. Bombardment would in such cases be a waste of time and ammunition. The law therefore forbade bombardment of open towns. But important exceptions were made. Thus, if the military objective could not be reached by other means, the commanding officer was allowed to bombard it even in open towns. Where a military force was prevented from entering a town by fire from a near-by fortress or defended place, the town itself could be classed as a defended place.⁶³ The

⁶⁰ Hall, 7th ed., p. 575.

⁶¹ British State Papers, 1874-75; Brussels Blue Book, p. 14.

⁶² Hague rules, 1907, Article 25.

⁶³ Hyde, II, p. 304; also see Spaight, *op. cit.*, p. 161, citing the French Manual's provision admitting the right of bombardment "if the fire of the neighboring fort prevents the attacker entering the town and maintaining himself there." French Official Manuel à l'Usage, p. 20; also *Kriegsbrauch im Landkriege*, p. 21, for similar provision.

three grounds commonly given for the bombardment of undefended towns were as follows:

1. The destruction of military stores, factories, etc.
If the army for some reason or other could not or did not want to occupy a town.
2. To secure compliance with legitimate requisitions. If a town did not want to comply with the demand of an army for requisitions the general was at liberty to threaten or actually to bombard it.
3. A doubtful case. To inflict punishment by means of reprisal, for infractions of the laws of war. Holland thinks it is too cruel a measure, and reprisals for bombarding undefended towns might lay waste an entire territory while acting on a principle which was very vague to say the least.⁶⁴

The Hague rules of land warfare governing bombardment were thus based essentially on the military practices of the time, in which the test of defense operated solely against inefficient, wasteful or wanton destruction of lives and property. The Hague naval regulations of 1907, based on the same principle of effectiveness, permitted bombardment of even a more general nature. Where naval operations permitted, the land warfare rules were to be followed, as in the case of undefended places, the sparing of churches, works of art, science, etc., provided they were not used for military purposes.⁶⁵ A new provision, however, appeared in the

⁶⁴ Holland, *Studies in International Law*, p. 110, giving the provision drawn up by Holland and Beer Poortugael acting as a committee of the Institute of Int. Law. For undefended towns near a fortress, as subject to bombardment, see Protocol 2, Brussels Blue Book, p. 196. For case of Charleville, near the fortress of Mézières, during the Franco-Prussian War of 1870, see *German Official History*, Part II, vol. 2, pp. 123-127.

⁶⁵ 1907 regulations, Article 5; Scott, *Texts*, p. 262. No agreement was reached on the question of naval bombardment at the First Hague

naval regulations, conventionalizing the practice of firing on military objectives regardless of where the objective lay. The 1899 test of defense was thus discarded for naval bombardment. Under the Hague regulations of 1907, even an undefended place could be shelled. Article 2 stipulated that military works, military or naval establishments, depots of arms or war material, workshops or plants utilized for military purposes, and ships of war in a harbor were subject to bombardment.⁶⁶ The reason given for this departure from the land warfare rules was that naval forces could not land forces and take possession of a place in order to carry out the necessary destruction. Bombardment without landing forces might thus be essential.⁶⁷ The nature of naval operations, furthermore, made the landing of forces impracticable at times when provisions or supplies were wanted. Article 3 accordingly permitted the shelling of an open coast town in case it declined to comply with requisitions for provisions or supplies.

The warship, in a legal sense, thus became a floating battlefield carrying with it the same immunity from restrictions as attended land operations in the actual combat zone. The exclusive military sphere characterizing land operations, in which the principle of utility or effectiveness dominated, became similarly operative in any zone occupied by a belligerent naval vessel. This sphere may be said to have followed the warship through all waters in all its war operations. Whatever restrictions obtained were concerned, as in land operations, with wanton destruction and terrorization. Effective artillery operations were left unrestricted.⁶⁸

Conference. A resolution was passed and inserted in the Final Act, that the question be referred to "a subsequent conference for consideration." Higgins, *The Hague Peace Conferences*, pp. 70, 71.

⁶⁶ Scott, *Texts*, pp. 260-261.

⁶⁷ Cf. Spaight, *op. cit.*, p. 169.

⁶⁸ Lawrence, *op. cit.*, p. 525. The prohibition laid down in Article 4 of the 1907 naval regulations, that "Undefended ports, towns, villages,

The projectile, as an effective weapon, was thus left untouched by the Hague Conferences. Land and naval forces could still range their guns at will, limited only by the range of the projectile.⁶⁹ Wherever land or naval guns could penetrate there the zone of operations was established, carrying with it the freedom of action always accorded the battle field. Opposition to the use of efficient new weapons expressed itself in a general way, without checking the use of such innovations.⁷⁰ Thus, as previously shown, the Hague attempts to restrict the traditional freedom of action in the military sphere by proscribing the use of the submarine, torpedo and aerial bomb, were fruitless.⁷¹ In pre-powder times effective innovations in artillery operations were bitterly con-

dwellings or buildings may not be bombarded on account of failure to pay money contributions," appears to be a distinct limitation on the right to bombard. In the report of the United States delegation to the conference this provision is designated as "a wise and salutary provision." *Senate Document*, No. 444, 60th Congress, 1st Session, p. 42. The two instances cited in Spaight, *op. cit.*, p. 169, of the burning of Chambersburg, Pennsylvania, by the Confederate general, Early, because of the non-compliance with his demands for \$600,000 ransom (see also H. A. White, *Lee and the Southern Confederacy*), and the bombardment of Puente in 1880 by the Chilean naval forces for a similar reason, are exceptional practices rarely applied in modern times, and as Spaight, *ibid.*, p. 169, says, the non-practice of such methods may be "accepted as a usage obtaining in land no less than naval war." For the opposite view, that naval ships could enforce contributions from coast towns, see Admiral Aube of France, in the *Revue des Deux Mondes*, 1882, vol. 1, p. 331. See Hall, 7th ed., p. 454, note 2, for statement of the French Government, dissociating itself from Aube's view, but, nevertheless, at the same time appointing Aube as Minister of Marine and laying down a building program in accordance with his view. For the protests of Professor Holland against the maneuvers of the British fleet in 1888, in which ransom was theoretically demanded and unnecessary devastation applied, see his *Letters on War and Neutrality*, 1921, pp. 113-120.

⁶⁹ "Defended localities may be bombarded alike from sea and from land. And in such localities, on sea as on land, the bombardment may be brought to bear without discrimination on all their parts, even on those inhabited by the civilian population." Fauchille, "Le Bombardement Aérien," in the *Revue de Droit Int.*, 1917, p. 56; cited also by Spaight, *Air Power and War Rights*, p. 206. See also Hyde, vol. 2, p. 305.

⁷⁰ Maine, *op. cit.*, pp. 138, 146.

⁷¹ See above, chapters 1 and 2.

demned, but without affecting the further employment and development of such weapons.⁷² This happened in the 12th century with the crossbow. Its introduction into warfare had played havoc among the mailed knights who, until its introduction had enjoyed nearly complete immunity from the light arrows of the infantry.⁷³ It is said, for instance, that previous to the use of the crossbow, as in the time of James I, not a single knight would be killed in a battle, due to the heavy protecting armor.⁷⁴ The use of this new weapon, slaughtering knight and serf alike, was in 1139 anathematized by the Latern Council as a "weapon hateful to God and unfit for Christians."⁷⁵ Later in the century Pope Innocent III confirmed this condemnation;⁷⁶ and at times some princes, as Conrad III of Germany, forbade its use.⁷⁷ In spite of the anathema the crossbow remained in general use.⁷⁸ It was discarded only when gunfire on the

⁷² For missiles used by the Greeks, Romans, Gauls and Germans, see Vernon, *Science of War*, 1805, O'Connor translation, vol. 1, pp. 12-13; also H. Wilkinson, *Engines of War*, 1841, pp. 3-7.

⁷³ The shaft from the ordinary bow could not penetrate the heavy armor of the knight. Thus at the battle of Fournane, the Italian knights were unable to move after being unhorsed, but battle axes had to be used to break open their armor-plate. Wilkinson, *op. cit.*, p. 62. The crossbow shot bullets, darts, arrows and metal darts, and was said to kill point blank at 60 yards, and if elevated, at 150 yards. A heavily mailed knight could thus be killed by the arrow or dart of a crossbow, where he was otherwise immune from the ordinary arrow. *Ibid.*, p. 25. Sir R. B. Gallwey, "The Crossbow," *Athenaeum*, 1903, 2:356-7, says that he was able to shoot an old siege crossbow for a distance of 440 yards.

⁷⁴ Wilkinson, *op. cit.*, p. 62.

⁷⁵ Gallwey, *op. cit.*, p. 356; Maine, p. 139.

⁷⁶ Wilkinson, *op. cit.*, p. 25.

⁷⁷ Gallwey, *op. cit.*, p. 357. Richard I of England continued to use the crossbow. His death, in 1199, by a crossbow bolt, at the siege of the castle of Chaluz in Normandy, was considered a judgment from Heaven punishing his disobedience. See also Wilkinson, *op. cit.*, p. 25.

⁷⁸ Vernon writes: "Towards the year 1150 this weapon began to be used by both cavalry and infantry, and soon became of such general use that there was a 'grand master of the crossbows.'" *Op. cit.*, 1, p. 14. For centuries thereafter the crossbow was used. See C. A. Bennett, "An Historical Account of the Development of Small Arms," 1886, p. 4, *U. S. Artillery School Publications*, vol. 3. Gallwey, *op. cit.*, p. 357, says that "notwithstanding these fulminations against this

continent and the longbow in England made the cumbersome crossbow obsolete.⁷⁹ Powder and firearms in early times were also cursed as the devil's implements, and the Chevalier Bayard, fatally wounded in 1524 by a bullet, found some satisfaction in the thought that he had never given quarter to a musketeer.⁸⁰ There was no pause, however, in the use of explosives and firearms.⁸¹

Up to the World War, rules of bombardment had not

arm in warfare its employment became common in Christian armies. Crossbows were the usual and favorite weapons up to the middle of the fifteenth century. See also Wilkinson, *op. cit.*, p. 25, who says that the crossbow was used by the English as late as 1572, when Queen Elizabeth engaged to furnish Charles IX of France with 6,000 men, longbow and crossbow.

⁷⁹ Bennett, *op. cit.*, p. 4, says that the English longbow at 220 yards could pierce an inch oak plank, and that it could be fired rapidly, as much as twelve arrows a minute. In the battle of Homildon, 1402, against the Scots, the men-at-arms and knights never drew sword or lance, the armor-piercing longbow shaft deciding the battle. The English archers had previously won distinction with their longbows, at Crécy in 1346 and Poitiers in 1356, and later at Agincourt in 1417. Spaulding, *Warfare*, p. 372, says that the longbow was as powerful as the crossbow, "and was far superior to that weapon in range and in rapidity of fire." The crossbow competed for a long time with firearms; hand cannon, bombards and culverins being used for nearly two hundred years before the crossbow was given up. See Vernon, *op. cit.*, pp. 18-19.

⁸⁰ See Percy H. Winfield, *Law Magazine and Review*, vol. 40, 5th series, pp. 258-9. Montluc, about the middle of the sixteenth century, is supposed to have said: "I wonder, however, that it could have been the will of Providence that this unlucky instrument should have been invented. I myself still bear about me marks that it has left which, even now, cause me to suffer much weakness; and have seen brave and valiant men killed with it in such sad numbers. . . . All this is very clearly one of those artifices which the devil employs to induce us human beings to kill one another." Bennett, *op. cit.*, p. 5. See *ibid.*, for Montaigne's opposition to firearms, p. 5.

⁸¹ The introduction of firearms into warfare not only "modified essentially the attack and defense of places," but by some military writers is said to have, with the help of printing, brought to an end the Middle Ages. J. R. Williams, "Defensive and Offensive Weapons and Engines of the Ancients and of the Middle Ages," 1886, p. 26, in the *U. S. Artillery School Publication*, vol. 3. See also Vernon, *op. cit.*, 1, pp. 24-25; also Spaulding, *op. cit.*, pp. 448-450. See Wilkinson, *op. cit.*, p. 55 *et seq.*, for early history of firearms in England. For general historical account of firearms see Bennett, *op. cit.*, pp. 1-8, who shows a steady development based on mechanical invention, with a general increased use throughout Europe.

been applied to the use of effective projectiles in the military sphere. Bombardment from the free balloon, as already shown, was prohibited at a time when aerial bombing was wholly impracticable, but legitimized after the dirigible had made aerial bombing effective.⁸² Mines and torpedoes had been regulated, but, as already shown, only after they had become ineffective by missing their target or floating beyond the blockaded zone.⁸³ Gas shells were prohibited at a time when they were non-effective.⁸⁴ The artillery shell, however, was never checked by restrictions.⁸⁵ Only its goal, or objective, had been touched by custom and convention, and then only as far as military necessity permitted. The range of the projectile had never been curtailed. As powder and artillery improved the range increased. With the exception of the attempt made at the First Hague Conference, no opposition was raised to such increased artillery range; and, as previously shown, the Russian proposal at the Hague was dismissed without discussion.⁸⁶ Artillery fire thus increased in range, from the short half-mile trajectory of Napoleon's time to the 15-mile range of the Second Hague Conference period, with the equivalent expansion of the military sphere or ad-

⁸² Cf. *supra*, ch. 1 and 2.

⁸³ Cf. *supra*, ch. 4, p. 11, note 52.

⁸⁴ Cf. *supra*, ch. 4, p. 12, note 60. On the other hand, no objection was made to the revival of hand grenades in the Russo-Japanese War. Lawrence, 7th ed., p. 530. For the use of liquid fire during the late war, see Garner, *Int. Law and the World War*, vol. 1, No. 189. The use of a liquid fire projector was not prohibited by the Hague conventions, except, as Garner says, as a weapon producing superfluous injury. The flame was thrown about thirty-two yards and used for a while in trench operations. Its effect was deadly to those struck, but its use was not widespread, although the Germans were for a time active with this weapon. Danger to the user, as, for instance, when his tank was struck by a bullet, operated against the wide use of this weapon.

⁸⁵ For Hague attempts see *supra*, ch. 1.

⁸⁶ Cf. *supra*, ch. 1. For Gilinsky proposal see *Protocols*, II, 33, 1899 Conference. For Captain Scheine's draft proposal see *ibid.*; also *supra*, ch. 1, pp. 7-8.

vance zone of operations. At the outbreak of the World War the range of heavy artillery had increased to approximately twenty-five miles.⁸⁷ Again no known opposition was raised to such increases, nor was the right to bombard from such distances questioned.⁸⁸ The Allied warships, shelling by indirect fire, at the Dardanelles, were firing at an objective over twenty miles away.⁸⁹ No legal questioning, however, arose from such practices.⁹⁰

The long-distance shelling of Paris during the World War, with a supposed trajectory of 70 miles, was condemned by some jurists, of the Allied countries, on the grounds that such bombardment could not conform to the Hague regulations.⁹¹ It was supposed to render war more cruel, in contrast to the tendency, since the Hague Conferences, of limiting the cruelties of war as far as possible. It was also condemned because of its obvious purpose, that of psychological pressure.⁹² The

⁸⁷ For the bombardment of Dunkirk by the Germans, from a distance of 25 to 35 kilometers, see Rolin, *op. cit.*, p. 356.

⁸⁸ Fauchille, "Le Bombardement Aérien," *R.G.D.I.P.*, vol 24, pp. 60-61, points out the great development in artillery range with 40-km. trajectories during the World War and with no occupation in mind.

⁸⁹ See the Dardanelles Campaign, 1918, H. W. Nevinston, pp. 53-54.

⁹⁰ For protests of the Central Committee of the Turkish Red Crescent to Geneva, see the *Bulletin International des Sociétés de la Croix-Rouge*, Genève, 1916, p. 321, *et seq.*; but these complaints were concerned with the bombarding of hospitals, not with the technical nature of the Allied artillery fire.

⁹¹ Garner, *op. cit.*, vol. 1, p. 418, note 3, calls it "one of the most frightful cases of bombardment," referring to the destruction of the church of Saint-Gervais on Good Friday, March 29, 1918; Rolin, *op. cit.*, pp. 356-7; see also Report of Ambassador Sharp to Secretary of State, April 3, 1918, in *Great Events of the Great War*, edited by Horne & Austin, 1920, vol. 6, pp. 93-4.

⁹² Cf. *ibid.*, p. 357. This was practically admitted by German commanders. General Rohne said: "The damage done to the French fortifications was not large, but the damage to the city itself was considerable, and the damage to the enemy morale extreme." Horne and Austin, *op. cit.*, vol. 6, p. 96. Marshal v. Hindenburg said: "At times the political atmosphere of Paris seemed to be heavily charged. Our shells and attacks from the air had hitherto not produced the explosion, but we had reason to hope that there would be an explosion if we advanced our lines nearer to the city." *Out of My Life*, 1921, vol 2,

main reason for the opposition was the alleged inaccuracies of such haphazard shelling, that it was impossible to take accurate aim, and that therefore the restrictions laid down in the Hague regulations, in regard to immunities of schools, churches, etc., could not be observed, and that it would result in indiscriminate bombardment.⁹³

The question of indiscriminate bombardment, however, raises another question, whether such shelling is intentionally indiscriminate or whether the long range results in such an end. The objection to the German bombardment of Paris was based partly on the latter ground. To condemn bombardment, however, on the grounds of possible spreading of shot, due to distance, is to condemn more or less all heavy bombardment. Devia-

p. 172. Ludendorff said: "The bombardment made a great impression on Paris and on all France. Part of the population left the capital and so increased the alarm caused by our successes. The same effect was intended to be produced by the great activity displayed by our airmen." *Ludendorff's Own History*, 1919, vol. 2, p. 237.

⁹³ Rolin, *op. cit.*, p. 357. The bombardment of Paris from the forests of Crépy, west of Laon, about seventy-two miles from Paris, and about eight miles behind the German lines, was timed to open with the great military attack of the Kaiserbattle, of March, 1918, with the purpose of demoralizing further the French. The shelling commenced on March 23rd, and continued thereafter. Three pieces, of 21-mm. caliber, were employed, the shells weighing 330 pounds with a bursting charge of 33 pounds. French airmen are supposed to have silenced two of these guns. In all 400 shells are said to have been fired, with a casualty list of some 85 killed and 200 wounded. That the Germans intended to use the same type of guns on England may be noted from Hindenburg's statement, *op. cit.*, vol. 2, p. 171: "The mysterious marvel of the technical science, which was even now sending its shells into the French capital, could be employed against England also. The marvel need only be a little greater to get the heart of the English commercial and political world within its range from the coast near Calais. That would be a serious prospect for Great Britain, not only for the moment but for her whole future." General Rohne said: "If completed earlier it could have been directed against England also, and might have proved the deciding factor in forcing peace." *Op. cit.*, vol. 6, p. 96. For details, see also *The Great War*, Allen, Sims, McAndrew and Wiley, 1921, vol. 5, pp. 286-7; *History of the World War*, Frank H. Simonds, 1920, vol. 5, pp. 62-63; C. J. H. Hayes, *Brief History of the Great War*, 1920, p. 304, note 1; Captain Frothingham, *Guide to the Military History of the World War*, p. 257; and *Literary Digest*, "History of the World War," 1919, vol. 5, pp. 15-19.

tion in range and direction, even in modern times under the most improved methods and ideal conditions, results in a scattering of shots, or dispersion, which is always broad.⁹⁴ A fair estimate of the dispersion in a twenty-five mile trajectory would be anywhere from 1000 to 4000 yards. In other words, artillery fire at that range, once the target was "straddled," or "bracketed," would cause a zone fire covering an area two and a half miles in length and a half mile in width. Railroad artillery in the World War is known to have operated at times with a "probable error" of a mile or more. A French artillery officer, in his lectures on field artillery (guns of medium caliber), said that "especially during a long continued fire for effect, in a few hours firing, data may be rendered inaccurate to the extent of several hundred meters."⁹⁵ In shelling an objective twenty-five miles distant, the shot might thus fall within an elliptic area encompassing the greater residential portion of a small city, without including the preliminary "wild" shots employed in "bracketing" or locating the exact range.

All long-range fire employed during the last war might thus be termed indiscriminate bombardment. The shelling at the Dardanelles, however, by the Allies

⁹⁴ Dispersion is described by the French Field Artillery School Lectures as follows: "Several projectiles fired with the same gun under conditions which are as identical as possible do not fall at the same point." Saumur, *Lectures*, February 25, 1918. The scattering of shot is caused by the following: 1. Differences in propelling charges; 2. Differences in the projectile; 3. Changes in atmospheric conditions; 4. Differences in the setting of gun and instruments. Most of these variations are unavoidable and cannot be compensated for. No matter how accurate the firing data may be, the shots will spread around the target. Conditions of fire will differ at each shot. Variation, however, tends to spread itself around a target in the form of an ellipse, some eight points in length and one in width, with the pin-point target falling in the center, the size of this area depending upon the range of the trajectory.

⁹⁵ Saumur, *Lectures*, *op. cit.*, p. 3. Spaight, *op. cit.*, p. 165, points out the very great difficulty encountered in confining the effects of long-distance shell-fire to a circumscribed area.

was not condemned. Neither the shelling of Belgrade and Memel by the Germans, nor the shelling of Venice by the Austrians was condemned on the grounds of indiscriminate fire due to unduly long range.⁹⁶ Indiscriminate bombardment, as already shown, has rarely been used as a cause for legal opposition, except for that type of bombardment which was primarily intended as a psychological pressure. For centuries all gun fire resulted in indiscriminate bombardment. It was only toward the end of the last century that the telescopic sight was adopted for artillery fire, and hardly a generation before that that the rifled gun was introduced into the military systems;⁹⁷ and it has been stated, as a generalization, that the "probable error" was hardly less than one-fifth that of the trajectory of a shell. "It is no longer admissible," said an artillery expert in lecturing before a group of officers during the last war, "for the battery commander to calculate his deflection approximately to within 30 or 40 miles, or to measure or estimate his range to within 200 or 400 yards, upon the assumption that he will be able to sense his first salvo and make corrections accordingly."⁹⁸ No artillery officer will guarantee to group his shots, fired at a distance of 15 miles, within a thousand-yard radius. The Hague rules, permitting the shelling of military objectives in civilian areas, thus permit, in reality, a

⁹⁶ For World War bombardment see Garner, *op. cit.*, pp. 418-457; for Gallipoli see Nevinson, *op. cit.*, pp. 53-54.

⁹⁷ Capt. Noble, in discussing the crude firing calculation governing artillery practices up to 1886, states that nothing in English had been written on the deviation in artillery fire. Noble and Abel, *Researches on Explosives*, p. 152. For the accuracy and range of artillery in this period, the last quarter of the nineteenth century, during which great improvement took place, see A. D. Schenck, "Comparisons of the Armament of European Nations," 1886, *Artillery School Publications*, vol. 3; see also G. N. Whistler, "Coefficients of Deviation," *op. cit.*, vol. 3; also H. R. Lemly, "Changes Wrought in Artillery in the 19th Century," *op. cit.*, vol. 3.

⁹⁸ Major V. S. Sturgill, D. A., *Lectures*, Artillery Instructional School, France, Feb. 28, 1918.

certain degree of indiscriminate bombardment, since a gun ranged perfectly on the target would still scatter its shots over a wide area surrounding the target. The only essential difference between the bombardment of Paris during the late war, and other artillery operations, was one of degree, with the former having a longer range and therefore a wider "probable error" in firing. To condemn the former on the grounds of indiscriminate fire due to long range would also mean condemnation of the latter.

The effective projectile has as yet remained unrestricted by international conference or by usage. Whether projected through the air by means of explosives, such as the artillery shell, or by mechanical means, such as the torpedo, or by gravity, such as the aerial bomb, no conventional limitations restrict or limit the efficient projectile.⁹⁹ A distinction, however, was laid down by the International Commission of Jurists at the Hague in 1923, differentiating the aerial bomb from other projectiles. For the first time in modern history an attempt has been made by international conference, even if by a limited conference, to restrict the use of a proven effective projectile, the aerial bomb, and to limit an effective, even vital, means of warfare, that of aerial bombardment.¹⁰⁰

⁹⁹ Powder-missiles to-day in use are cannon shot, bullets, bombs, mines, grenades, torpedoes, aerial bombs. None of these missiles can be said to possess such distinctive properties as to set any one of them off from the others or to put it outside of the classification of projectiles. All the explosives are projected toward an object for the purpose of destroying it, with only the means and medium of propulsion varying. A rule attempting to regulate or to limit one without affecting the others, might establish an artificial distinction which would hardly be observed in warfare. Of the above named missiles, the bullet and the mine and torpedo have been limited, but not, as already shown, in their effective operation. Once a projectile strikes its target, however, some limitations apply, as in the case already mentioned of devastation and undefended places. But here it is the objective which has been subject to regulation, not the projectile itself.

¹⁰⁰ Articles 22-26, *Rules of Aerial Warfare*, Hague, 1923.

CHAPTER VI

THE PRESENT STATUS OF AERIAL BOMBARDMENT

THE Commission of Jurists which met at the Hague from December 11, 1922, until February 18, 1923, in so far as it dealt with the subject of aerial bombardment, was confronted with the task of restricting the use of the most effective means of warfare of modern times. Unlike most of the preceding conferences on rules of warfare, with their declared purpose of merely formulating and conventionalizing usages and customs of war long established, the Commission of Jurists seems to have had as its object the restriction, indeed the anticipation, of the use of a new and powerful means of war, that of air power. The difficulty facing the Jurist Commission was further increased by the dominant and pressing nature of the question. Here was no detached meeting for a general discussion of an obsolete or non-vital weapon, such as characterized the Hague Peace Conferences after the arms-limitation provisions had been eliminated from consideration. The issue involved rather the most fundamental principle in the regulation of warfare, the immunity of civilian populations and the traditional distinction between combatants and non-combatants. This hitherto accepted principle had been given a broad interpretation in the World War. To condemn an established principle of war solely on the basis of the practices of a recent war would lead to the blunder which Judge Moore warns against as follows:

“All wars tend, in proportion to their duration, extent and intensity, to unsettle existing conditions and subvert accepted beliefs. This is one of the

necessary results of that intense preoccupation with immediate exigencies which war necessarily entails.

"Heretofore this disturbing influence has been distinctly perceived and taken into account in estimating the effect of war on previously established rules, but it seems to have been reserved for the present time and for certain environments to accept the view that the international law of the future is to be found in the infringements of its rules committed under the stress of war."¹

Military practice and programs since the World War, however, have proceeded in the same direction, in part at least challenging the dictum laid down in 1863 by Lieber in his General Orders, No. 100, for the regulation of the United States military forces in the field, which declares that "as civilization has advanced during the last centuries, so has likewise steadily advanced, especially in war on land, the distinction between the private individual belonging to a hostile country and the hostile country itself, with its men in arms."²

The practices of the late war indicate a tendency, at least, toward general bombardment and the elimination of the distinction between combatants and non-combatants. Aerial bombardment of cities began, in a desultory manner, in the very first month of the war with the German raid on Antwerp. Bombs fell in the heart of the city, apparently dropped without careful aim at any military objective.³ Air raids of this nature continued thereafter, resulting generally in civilian casualties.⁴

¹ *International Law and Some Current Illusions*, p. vii.

² *Ibid.*, pp. viii-ix.

³ See *London Times*, August 7, 1914, for aerial bombing of Namur. For the attack on Antwerp see E. Clunet, "De l'emploi abusif des aérostats de guerre par les Allemands," *Journal du Droit International* (1916), vol. 43, pp. 385-386; also *London Times*, August 26, 1914.

⁴ See Clunet, *op. cit.*, pp. 292-293; also *New York Times*, September 26, 1914, October 9, 1914. See also *Rapport sur la violation du Droit des Gens en Belgique*, vol. 1, p. 105.

The bombed cities were for the most part outside the immediate zone of operations.⁵ Paris received its first shelling by air craft on August 30, 1914. The bombs fell in the center of the city, some near the Gare de l'Est, one near Notre Dame, others near the Ponteur and the Quai Valmy, and one near the Gare Saint-Lazare. Casualties from this raid and the succeeding raids of September 1 and 2 numbered nine, among which six women were listed.⁶ By the middle of October casualties numbered 41, almost wholly civilians. The bombing was general, with shots widely scattered over the city without regard to military objectives. Raids on Paris, however, were almost entirely discontinued after the autumn of 1914, hardly six raids being carried out in the three years following. Not until the winter of 1918 were they renewed again, after which they were carried out with concentrated effort.⁷ Paris thus suffered comparatively little from air raids. In 1914 the total number of bombs dropped on the city was 15, in 1916 the bombs dropped numbered 61, in 1917, 14, and in 1918, with the renewed attempts, 396 bombs were dropped.⁸ Casualties for the whole period of the war numbered 1211, including 402 killed.⁹ By 1915 most of the northern French cities were being subjected to systematic raids. Nancy, removed from any direct military operations or fortifications, was bombed repeatedly, and as early as the 1st of September, 1914, heavy casualties had resulted from an air raid on Lunéville.¹⁰ Other

⁵ See *ibid.*, p. 105. Antwerp, for instance, at the time of the bombing was beyond the zone of operations.

⁶ See Clunet, *op. cit.*, p. 386; *London Times*, August 31, 1914.

⁷ For the attack of October 12, 1914, on Paris see *Temps*, October 12, 1914. For the first Zeppelin attack see *ibid.*, January 30, 31, 1916, in which a list of principal air attacks on Paris is given. For total number of raids, up to April 5, 1918, see *J. D. I. P.*, vol. 45, p. 910.

⁸ See J. Bouruet-Aubertot, *Les Bombardements Aériens*, 1923, p. 84.

⁹ See *Journal des Débats*, December 19, 1918.

¹⁰ See Clunet, *op. cit.*, p. 386. For Nancy see *Rapports et procès-verbaux de la Commission d'enquête*, vol. 1, p. 108. For Lunéville see

cities bombed were Belfort, Besançon, Dunkirk, Toul and Verdun. It can hardly be said that these cities were open towns in the sense of being undefended by troops, but raids were made regardless of the presence of troops, and resulted chiefly in civilian casualties. Calais, for example, was reported to have been bombed 220 times, with 549 civilian casualties, among which 185 were killed.¹¹ The bombardment was general in its effect, churches, hospitals and market places being struck by bombs.¹² Troops, or military supplies, were to be found in most of the towns, but the raids were carried out irrespective of troops or military supplies, the objective being strategic, that is, directed against the general will of the French people.¹³ The raids, for instance, on Bar-le-Duc, Amiens, Châlons-sur-Marne, Lunéville and La Panne, and particularly Calais, were chiefly psychological in their effect, aimed at the morale of the townspeople.¹⁴ The amount of destruction of military objectives, such as military stores, munition plants, military depots and means of communication and transportation, was hardly worth the cost of the bombs dropped, not counting the cost of personnel and equipment. Most of the raids, it should be remembered, were carried on at night, with only a river or lake to indicate in a general way the city underneath. Even in bright moonlight single objects were undistinguishable in the black mass of the city. Objectives, when aimed at, could only be vaguely determined. Even so clear an objective as the buildings of Parliament, lying along the Thames

ibid., vol. 5, p. 37; also for later bombing of the towns see *Temps*, September 8, 1915, also *Communiqué officiel français*, July 7, 1916; *N. Y. Times*, Sept. 17, 1915.

¹¹ *Le Journal*, August 13, 1918. Also *J. D. I. P.*, vol. 45, p. 1554.

¹² See Bouruet-Aubertot, *op. cit.*, p. 83; also Pierre Lacroix, *Le Domaine Aérien et la Guerre*, pp. 270-271.

¹³ See Hindenburg, *Out of My Life*, vol. 2, p. 172.

¹⁴ See *supra*, note 14, for reference to Calais; also *Communiqué officiel*, July 7, 1916; also *ibid.*, June 17, 1916; also *Journal officiel*, June 26, 1916, p. 5585.

at an easily marked spot, or the Quai d'Orsay on the Seine, remained untouched by the raiders' bombs.

The first air raid on England occurred on December 21, 1914, when the Germans dropped bombs off Dover. On December 24, bombs struck Dover, and by the 25th of the month aircraft had reached the outskirts of London.¹⁵ The first Zeppelin raid took place on January 19, 1915. In this raid the "L-3" bombed Yarmouth, injuring five, and the "L-4" dropped bombs along the coast towns, killing two and injuring thirteen civilians.¹⁶ These raids were carried out by smaller naval airships. The army dirigibles started their raids on England at the end of April of 1915. By the summer of 1915 the eastern sections of England were, like the French towns, suffering from systematic raids. The first attempt to bomb London occurred on May 31, 1915. On this occasion the "LZ-38" dropped 89 incendiary bombs and 30 grenades. The casualties numbered 7 dead, 35 injured.¹⁷

No airship raids had been launched on England during 1914 because of the lack of airships. At the outbreak of the war some 22 dirigibles were supposed to have been available for war use. But of these, four crashed during the month of August, two were destroyed in their sheds by allied airmen and seven were appropriated by the navy for fleet operations. The remaining airships were not equipped for long voyages and the navy, taking charge of air-raids, commandeered all available material and personnel during this first year.¹⁸ In September, 1914, the "Ostend Carrier Pigeon

¹⁵ See Joseph Morris, *The German Air Raids on Great Britain, 1914-1918* (1925), p. 12. For Dover attack, see *New York Times*, December 25, 1914.

¹⁶ See Morris, *op. cit.*, p. 12; also O. Groos, *Nord See*, vol. 3, p. 148; also G. P. Neumann, *The German Air Force in the Great War*, p. 114.

¹⁷ See Morris, *op. cit.*, p. 57. For air raids on England see Neumann, *op. cit.*, pp. 114 *et seq.*

¹⁸ Cf. Morris, *op. cit.*, p. 12; also records of the dirigible war flights, German Official Archives, Berlin.

Squadrons" had been organized by the Germans solely for bombing raids. The original objective was England, but England at that time was too distant for the airplane of 1914 with its small radius of action.¹⁹ It was these squadrons which then turned to raiding French towns.²⁰ Aircraft reached London by the end of May, 1915, after which repeated attacks were made on the town. On June 6, 20 people were killed and 40 injured; on October 13, Zeppelins killed 56 and injured 114. The nature of the damage is given in an official statement of the British Home Office, September 17, 1915: ²¹ "In every case where damage has been caused it was private property which suffered, and in most cases this has been of the small residential kind. Almost all the unfortunate people who have been killed were not only non-combatants, but non-combatants of a class who hitherto, in the honorable practice of civilized warfare, have been exempt from attack (women, children, small shopkeepers, working men), the sacrifice of whose lives serves no military purpose, either morally or materially."

Zeppelin raids continued against London and the east section of England well into 1916, causing casualties numbering into the hundreds.²² During these operations an unquestionable effect was produced upon the population, to some extent interfering with the

¹⁹ See Neumann, *op. cit.*, p. 157. The airplane in 1914 had a radius of action of approximately 175 miles carrying a bomb-load of not over 500 pounds. Few airplanes, however, were capable of this performance in 1914.

²⁰ See Neumann, *ibid.*, p. 157. Germany in August, 1914, is reported by this writer as having had 49 flying units, with 15 training centers, with a flying personnel of 550 men and with a production capacity of 50 aircraft a month.

²¹ See *New York Times*, September 18, 1915.

²² For raid of January 31, 1916, in which 72 were killed and 117 injured, see *London Times*, March 10, 1916; also report of the War Office of February 25, 1916. Casualties resulting from the 44 air raids, up to June 1916, numbered 409 killed, 1,005 injured. *London Times*, June 2, 1916.

normal life of the town, but outside of this psychological effect no military objectives were damaged. The raids were carried on at night, with only a general notion by the raiders of the objectives beneath, and with no possibility for accurate sighting. In addition, the airships were not left free to hover deliberately over a place in order to drop their bombs, had they desired to do so. Airships were driven from the 3000-foot altitude, originally used for bombing, to 9000 feet altitude. Even at that height airships would be caught by the searchlights and shot down, either by aircraft or anti-aircraft guns. Anti-aircraft defenses had been built about London very early in the war. On October 1 of 1914 London had been dimmed, and by 1917 English defense against aircraft was said to include some 300,000 men.²³ Lookout posts were established on the east and southeast coasts. After the summer of 1916 losses to the Germans were so heavy that air-raids were temporarily discontinued. In March, 1917, however, an improved type of aircraft was launched by the Germans. This model was able to reach 18,500 feet, where searchlights were practically useless. Anti-aircraft, as well as defense squadrons, were thus forced to work in the dark, a defense which proved ineffectual. Raids occurred, such as that of May, in which 250 casualties resulted, that of June, with 534 casualties. The high altitude not only led to a wide scattering of shots, instead of the desired concentration in one zone, but, of greater interest to the Germans, weakened the airship's crew. On the May raid, for example, over Harwich, so many of the crew were affected by air sickness, due to rarefied air, that the ship drifted over the town completely out of control, and it was not until the ship had drifted out over the North

²³ For the London defenses see Morris, *op. cit.*, p. 111. Also *Bulletin*, Air Corps Tactical School, Langley Field, Va., Jan. 1, 1928, p. 18.

Sea that the crew was able to function again.²⁴ These high altitudes, at which the Germans were forced to operate, finally led to the employment of airplanes for raids. The Gotha bombing machine had been produced in 1917. This was a powerful three-seater, two-engine machine with a bomb-load capacity of 850 pounds.²⁵ The first great Gotha raid on England occurred on May 25, 1927, resulting in 200 casualties, including 95 killed. In the month following, a great raid of 20 machines reached London, dropping 126 bombs and causing 600 casualties, including 162 killed.²⁶ On July 7, 72 bombs were dropped in the heart of London, injuring another 250 people.²⁷ High-flying daylight raids were soon stopped, however, because of the heavy losses. Moonlight raids thereafter were chiefly resorted to, but in 1918 even these night raids became rare. In all, England suffered 51 airship raids and 52 airplane attacks. London itself was bombed 12 times by airship and 19 times by airplane. London casualties were 2,722, of which 670 were killed. The total casualties for England were 3,408 wounded, and 1,413 dead.²⁸ Among these casualties were very few combatants or workers in war-material plants. The objective, as openly stated by the Chief of the German Naval Staff, was the demoralization of the people.²⁹ Even with the increased capacity of air-

²⁴ See Neumann's account, *op. cit.*, p. 125, for this experience of the "L-44."

²⁵ See Morris, *op. cit.*, pp. 217-218.

²⁶ See the report of the British Admiralty of May 26, 1917, in regard to the Gotha raid of May 25. For June raid see *N. Y. Times*, June 14, 1917.

²⁷ See Morris, *op. cit.*, p. 230; see also the *Daily Express*, July 25, 1917, for figures on the same raid.

²⁸ See Morris, *op. cit.*, p. 8.

²⁹ See von Tirpitz, *My Memoirs*, 1919, translation, pp. 487-502. The Chief of the German Naval Staff said: "I hold the view that we should leave no means untried to crush England, and that successful air raids on London, in view of the already existing nervousness of the people, would prove a valuable means to an end." See also General von Hoeppner, *Deutschland's Krieg in der Luft*, 1921, p. 113, in which

craft in the last years of the war, it was recognized that air bombardment could not materially damage military supplies, industries, communication and transportation systems. Aircraft were still too light and underpowered for the long-distance raids to England with the heavy bombs and bomb-loads essential for military demolition. As will be shown, aerial bombs and sighting devices were crude and inaccurate, more or less precluding the effectual destruction of individual objectives. This was known to the Germans as well as to the Allies. The only effective result expected from the raids on England was that of general demoralization and the possible weakening of the British will to continue the war.

The same policy is to be noted in the attacks on the Italian cities, in Poland and in the Balkans. Italian cities, such as Venice, Verona, Milan, Brescia, Rimini, Ravenna and Padua, were bombed.³⁰ Destruction included that of such non-military objects as churches and monumental works.³¹ At Ravenna, for example, the basilica of Sainte-Apollinaire was partly destroyed.³² The Pope protested against the bombing of open and undefended towns and the destruction of historic and sacred monuments, and his Nuncio in Vienna protested against the bombing of Bari and Rimini.³³ The number of casualties, however, from the Austrian raids were small.³⁴ In Russian Poland such towns as Warsaw,

he points out that German air attacks on England forced England "to retain a large portion of her air strength at home."

³⁰ For details, up to February, 1916, see Clunet, *op. cit.*, pp. 385-388; also pp. 403-404.

³¹ See *Le Temps*, January 7, 1915; *ibid.*, July 30 and October 31, 1915; *ibid.*, February 12 and May 19, 1916, also November 16, 1916.

³² See *Le Temps*, February 12, 22, 1916; also *Journal de Genève*, February 15, 1916.

³³ *New York Times*, October 30, 1915; also Rolland, *op. cit.*, p. 547. For a bitter criticism of the Austro-German raids, see the *Diario della Guerra d'Italia*, vol. 3, p. 1924; also Spaight, *Air Power*, p. 266.

³⁴ See Clunet, *op. cit.*, pp. 386-388, 402-404.

Lodz and Sochaczew suffered air raids with some casualties.³⁵ Riga was attacked once by dirigible; an attempt was also made to reach the Russian naval center at Reval.³⁶ For the most part, however, bombing behind the East Front was rare. Even cities serving as concentration points, railroad centers and headquarters escaped aerial attack, even when within bombing range, such as Kovno, Vilna, Minsk, Brest-Litovsk and Kiev.³⁷ The Germans were concentrating their air attacks behind the West Front, where the desired result, demoralization, could best be produced.³⁸

Allied aerial bombardment of German towns commenced in September, 1914, with the raid of Dusseldorf.³⁹ In November of that year Cologne had been raided. Freiburg received its first shelling in December of the same year. By the end of 1914 eight raids had been carried out, with a total casualty of 11 dead and 41 wounded.⁴⁰ Three of these attacks had been directed against Freiburg.⁴¹ In 1915 approximately 40 raids on German cities were made, with a casualty of

³⁵ Polish cities, such as Warsaw and Lodz, suffered very little, due to the fact that they were occupied very early by the Germans. See *Le Temps*, October 26, December 21, 1914. For raids on hospitals on the Eastern Front, at Radom, Yaslo, Voilia, Rzendzinska and Ostrolenka, see *Rapport de la Commission d'enquête sur les atrocités allemandes*, Report 3. For raids on Roumania, see *London Times*, October 13, 1916.

³⁶ See General Staff Files, Reval, Esthonia; also Historical Division, War Ministry, War Records, Riga, Latvia. For attempt on Libau, see Mortane and Decay, *La Guerre aérienne*, April 4, 1918, p. 343.

³⁷ See Neumann, *op. cit.*, p. 157, for the special air-force trains which shifted squadrons from one front to another. Bombing operations, however, were restricted nearly entirely to the West Front.

³⁸ See *Ludendorff's Own History*, vol. 2, p. 237.

³⁹ On September 22, 1914, an airplane dropped three bombs, with a casualty of one killed. For earlier raid on the Zeppelin sheds at Metz, see *London Times*, August 17, 1914.

⁴⁰ *Aircraft Attacks on the Homeland Area*, Der Kommandeur des Heimatluftschutzes, Frankfurt a/Main, compiled by the Commander of the Homeland Air Defense "on the basis of telegrams, reports and plans."

⁴¹ See compilation, "Air Attacks," *ibid.*, for attacks on Freiburg-in-Breisgau. For French assertion that the city contained barracks, see Lacroix, *op. cit.*, p. 277.

109 dead and 343 wounded.⁴² In 1916 41 raids were made by allied fliers, causing 151 killed and 237 wounded.⁴³ There was a great increase of raids in 1917, with a total of 148 attacks. During the latter half of the year 1916 French and British raiders had suffered such heavy losses that not until the advent of the night-bomber was systematic raiding renewed. Freiburg was bombed 8 times in 1917, but by this time most of the attacks were being concentrated on the industrial districts of the Rhineland, 57 raids being made on the Lorraine-Luxembourg region and 24 raids on the Saar district.⁴⁴ In 1918, up to the end of the war, raids increased rapidly in number, the total number of attacks on German cities being 305.⁴⁵

It was only the Armistice which prevented the carrying out of general, widespread destruction by allied aerial operations. The great preparations by the Allies for concentrated bombing operations were put into force only toward the close of hostilities, and were interrupted only by the termination of the war. General Haig's plans were just nearing completion in 1918, increasing the British air forces from 86 squadrons, of which only 10 were for long-distance bombardment, to 179 squadrons, including 66 long-distance bombardment squadrons.⁴⁶ French, British and American air forces,

⁴² See compilation, "Air Attacks," *op. cit.*, for list of towns bombed and casualties and damages caused.

⁴³ *Ibid.*, Munich was reached in this year, a flier dropping six bombs into the town on November 17, 1916.

⁴⁴ *Ibid.*, Freiburg casualties were fifteen dead, eighteen wounded. For comment on these raids, see C. Lafon, *La France ailée en Guerre*, p. 121.

⁴⁵ See "Air Attacks," *op. cit.*; the attacked places including Stuttgart, Freiburg, Coblenz, Karlsruhe, Cologne, Bonn, the Saar District, Lorraine-Luxembourg region (including twenty towns). Bombing throughout the Rhineland districts was nearly entirely night bombardment. Where industrial plants were the objectives the entire town would be subject to bombardment by raiding parties sometimes as large as fifty aircraft, the result nearly always being general, widespread shelling.

⁴⁶ For the work of this specialized air force, the "Independent Air Force," see J. Mortane, *Histoire illustrée de la Guerre Aérienne*, vol. 1,

in the summer and fall of 1918, were carrying on almost continuous air raids on the Rhineland sections. Had the war continued, the following spring would have seen a six-fold increase in bombing operations.⁴⁷

The technical development of aerial bombing during the war period was such that indiscriminate bombardment was inevitable. The early bombs were the fragmentation shells which had been rejected by the artillery, chiefly 90-mm. caliber cast-steel shells, and 75-mm. and 90-mm. caliber steel projectiles. In converting these shells into aerial bombs merely a tail-group was added. This attachment was often defective and the fins were often torn off in handling the shell or during its fall.⁴⁸ Later 90-mm. bombs were made for aviation purposes. This type was an improvement upon the converted artillery shells.⁴⁹ It was only late in the war that special steel-cast bombs were produced for aerial bombing.⁵⁰

p. 473, in which he adds that this force grew to be "one of the most potent factors affecting, at first, the enemy's military organization, and then the morale of Germany." For Mortane's statement, see also Spaight, *Air Power*, p. 12. See also General Sykes, *op. cit.*, pp. 88-92. See also Sherman, *Air Warfare*, pp. 210-211, for the indiscriminate nature of the Rhineland raids.

⁴⁷ General Sykes, *op. cit.*, gives the Royal Air Force strength at the end of the war as 22,000 machines provided for. See especially Spaight, *op. cit.*, for the increased size and capacity of the 1918 airplane, still unemployed at the signing of the Armistice, and M. Perceron, *Les Aéroplanes de 1916 à 1920*, 1920, pp. 16, 45. American bombing squadrons were just beginning to reach France at the signing of the Armistice, with nearly 70 per cent of the pilots still in America awaiting sailing orders. As Lieutenant R. H. Reece, R.A.F., says: "The hundreds of bombing machines which the English airplane factories were turning out at the time hostilities ceased, and the thousands of men being trained for bombing, make one wonder what would have happened to the German industries if the war had continued through the spring of 1919." *Night Bombing with the Bedouins*, 1919, p. 10. The Americans were as active in their production by the end of the war, and the French were maintaining their high production. American airplanes were just beginning to arrive in France by the summer of 1918, and up to the end of hostilities French and British aircraft were used by the American air forces.

⁴⁸ See Captain Dagnaux, *Lecture*, Centre d'études de l'Aéronautique, May, 1922, translated by Major C. A. Wash, U.S.A., p. 39.

⁴⁹ *Ibid.*, pp. 39-40.

⁵⁰ See the French military document, *Résumé de l'Emploi de l'Aéro-*

Sighting devices were unknown early in the war. Bombs were merely thrown into the fuselage and thrown overboard when over the target. Bomb racks and sights were already put into use in 1915, but the mechanics of aerial bombing were still crude up to 1918. Deviation was corrected for only by flying parallel to the wind. Such causes of error as crude releases, and the tumbling of the shells upon release were not compensated for; and the range sight was hardly more than a crude triangle device which in a general way indicated the time for releasing a bomb.⁵¹ The probable error of aerial bombing during the first three years of the World War was not even calculable. Bombs might miss their goal by a thousand yards when dropped from a ten-thousand foot altitude. In French and English towns, as well as in the Rhineland towns, shots were scattered over areas of several square miles, when the only military objectives were perhaps grouped within an area of a half mile.⁵²

Hostile aircraft further increased the inaccuracy of aerial bombardment. Early in the war, bombs were carried merely incidentally to the work of reconnaissance or combat. Bombardment aviation, as a special branch of the military air force, was begun only in 1915.⁵³ Bombing in this period was carried out by

nautique, published by the Centre d'Études de l'Aéronautique, April, 1924, p. 28.

⁵¹ See Captain Dagnaux, *op. cit.*, p. 32, for the mechanical causes of aerial bombing; also *Résumé de l'Emploi de l'Aéronautique*, *op. cit.*, pp. 29-30.

⁵² See Morris, *op. cit.*, p. 57, for statements of the German commanders of the LZ-38 and the Z-13 that the London anti-aircraft defense prevented the dirigibles from searching for objectives. On the night of March 24, 1918, several allied squadrons were reported to have raided the Lorraine-Luxembourg region, with the result that twenty towns and villages were struck. Two hundred and eighty-two bombs were reported as having been dropped during the raid, for the most part falling harmless outside of the towns, but some falling within populated districts. The damage done to industrial plants was more psychological than physical.

⁵³ In December, 1914, the first Bombardment Group was formed,

single machines, in daylight, with no need for fearing enemy opposition. The French call this period the "golden age" of bombardment, when a pilot could carry out deliberately his bombing mission without interference of enemy combat planes. Toward the end of 1915, however, the Germans placed their best pursuit squadrons against the bombing units, effectively stopping allied daylight air raids by 1916.⁵⁴ It was during this period that German airships were being driven to higher altitudes with a resulting wider dispersion of shots. Night bombardment next came into use. The raiding squadrons were secure from hostile aerial attack, but with the advent of night bombardment aerial fire became practically indiscriminate. At best, the objective was an entire district. An industrial town, as a unit, was made the objective, such as in the Rhineland regions.⁵⁵ It was obviously impossible to single out individual plants. Most of the bombardment units were turned into night groups. A new program was laid down by the Allies in aircraft construction, emphasizing large load-capacity and wide radius-of-action.⁵⁶ During

consisting of three squadrons equipped with Voisin machines. During 1915 three more groups were created. See *Résumé de l'Emploi de l'Aéronautique*, op. cit., p. 28. See also *Aerial Bombardments* by Colonel de Vaulgrenant, translation by D. M. Miner, 1920, p. 3, for the First Bombardment Group.

⁵⁴ Colonel de Vaulgrenant says of the heavy losses suffered by Allied aircraft toward the end of 1915: "The losses sustained by our bombardment groups became terrible. The expedition of August 9, over Saarbrücken, was particularly disastrous. It became necessary to abandon large and distant expeditions . . . and the different bombardment groups were divided between the armies operating in Artois and Champagne." *Op. cit.*, pp. 4-5.

⁵⁵ For the high altitudes at which the German dirigibles operated, at times up to 18,000 feet, see Neumann, *The German Air Forces in the Great War*, p. 125. With the sighting instruments then in use having an average dispersion of roughly 5 degrees, subtending an error on the ground of 1,000 feet from 10,000 feet altitude, an increase in altitude to 18,000 feet would extend the error on the ground to 1,800 feet. See Major A. H. Hobley and H. B. Inglis, *Aerial Bombing* (a paper read before The American Society of Mechanical Engineers, May 26, 1924), p. 2, for a technical discussion of aerial bombing.

⁵⁶ See *supra*, p. 139, for Rhineland raids; for raids on England and

1917 night operations were carried out by Farmans, Voisins, Schmidts and Capronis, with the smaller Sopwith machine retained for short day raids. The complete operational program, which the Allies had hoped to launch in the spring of 1918, was interrupted only by the breaking of the Anglo-French line in late March. Improved machines protected by large pursuit groups, were to have carried out daylight raids with the object of producing a continuous bombardment of the German cities within range. Group formations were expected to lay down zone fire which would devastate the territory surrounding an objective, in this way insuring the destruction of any objective. By the time hostilities ceased operations of this nature had already been carried out against the German industrial sections, producing, however, a dispersion which often covered the entire town.⁵⁷ The raiding squadrons of the Germans, late in the war, were always well scattered by the time they had reached their objective, due to the heavy anti-aircraft defense. German raids were thus characterized by a scattering of shot without regard to any individual objectives. Air bombardment, in the last half-year of the war, was thus in reality directed against places, against cities and towns rather than against individual

France see *supra*, pp. 132-138. For night raids on England see also Morris, *op. cit.*, p. 232. In the raids on England 81 tons of bombs were dropped by the dirigibles, mostly at night. See the Air Corps bulletin, *The Use of Airships in the World War*, Air Corps Tactical School, Langley Field, Va., January 1, 1928. For Allied night bombing see Mortane, *op. cit.*, vol. 1, p. 272, vol. 2, p. 448. Of the 550 tons dropped by the Independent Air Force, during the five months in which it operated, 390 tons were disposed of at night. See Dispatch of the G. O. C. Independent Air Force, in the *London Gazette*, January 1, 1919. For view that night bombing is at least as accurate as day bombing see Spaight, *op. cit.*, pp. 248-252, a view hardly accepted by men in the service. Major Sherman, *op. cit.*, speaks of night bombing being effective when carried out by large numbers. "The effect of mass should always be sought" for moral and destructive effects. See Captain Dagnaux, *op. cit.*, pp. 62-63, for difficulty of locating objectives in night bombing.

⁵⁷ See *Résumé d l'Emploi de l'Aéronautique*, *op. cit.*, p. 28, for details.

objects. The attacks were not directed altogether against personnel, but the circumstances under which bombing operations were conducted, either at night or in the face of strong ground and air defense, resulted in the actual wiping out of the traditional distinction between civilian populations and combatants.

Bombardment operations during the war thus show a tendency toward general, indiscriminate bombardment. The attitude of the British Government, officially, appears to have been opposed to any total disregard of civilian populations and property, that is, when such objects were located beyond the immediate zone of operations. The *Admiralty communiqué* of February 16, 1915, state that instructions were always issued to confine aerial attacks to military objects, and to avoid residential sections wherever possible.⁵⁸ The French Government officially sanctioned indiscriminate bombardment only as retaliation for the German raids.⁵⁹ The German Government, on its part, claimed that its air attacks had originally been directed against objec-

⁵⁸ In the 82 attacks on the Lorraine-Luxembourg districts, during 1918, groups of aircraft, ranging from 10 to 50 machines were reported, a single attack covering ten villages; in the Saar district, towns such as Saarbrücken, Neunkirchen, Spittal, Busendorf, Sillingen, etc., were virtually inundated with bombs. See compilation "Air Attacks," *op. cit.*

⁵⁹ Quoted in Spaight, *Air Power*, p. 198. The Admiralty communiqué had been issued after the raid of 40 R. N. A. S. aircraft on the district around Bruges, Zeebrugge and Ostend. See W. A. Robson, *Aircraft in War and Peace*, 1916, p. 60. Writers before the war had already adopted the doctrine of the military objective for aerial bombardment. See Fauchille, "Le Bombardement Aérien," *R. G. D. I. P.*, vol. 24, p. 73. A number, however, were opposed to aerial bombardment, including Holland, Westlake, Albéric Rolin, Fiore and von Bar. For the expression of this view at the Madrid (1911) meeting of the Institute of International Law, see the *Annuaire de l'Institut de droit international*, vol. 24, pp. 134-155. Others, such as Fauchille, Clunet, Meili, Renault, Edouard Rolin and Kaufmann, were in favor of aerial bombardment. *Ibid.*, pp. 127-130. For a similar view by Spaight, see *Aircraft in War*, 1914, p. 16. The Institute adopted the view that aerial bombardment was legitimate providing it did not expose civilian populations and property to greater dangers than exposure by land or naval warfare. *Annuaire*, vol. 24, p. 346.

tives within the field of operations, and that the later bombardments were carried out in retaliation for the allied attacks on the Rhineland towns.⁶⁰ The fact, however, remains that aerial bombardment increased in direct proportion to the mechanical capacities of the aircraft. The German raids on England were stopped only when British defense became effective.⁶¹ The allied bombardment groups were starting operations in earnest in 1918, but in the two preceding years objectives had been bombed regardless of the danger to residential sections of the towns. As early as 1915 the French Bombardment Group, No. 1, had bombed the

⁶⁰ See the French official communiqué of June 29, 1916, in Clunet, *J. D. I. P.*, vol. 43, p. 1460; see also French proclamation dropped upon Sofia in September, 1915, Mortane, *op. cit.*, vol. 2, p. 38, quoted by Spaight, *Air Power*, p. 199. The military objective appears in the instructions by the French G. H. Q., signed Petain, of March 1918. The instructions read: "Bombardment aviation is, above all, an offensive action. . . . At all times, it wears the enemy down by attacks upon objectives of a military or industrial character (usually located very far behind the front). "See *Instruction sur l'Organisation et l'emploi de l'Aéronautique aux Armées, Titre III, Aviation de Bombardement*, translated by G. H. Q., A. E. F., July 1, 1918, by command of General Pershing. See also Article 18 of the same instructions, *ibid.*, p. 3, which states: "As regards both day and night bombardment, the moral effect produced and the tactical results obtained are almost always more important than the actual damage done, but they are a consequence of this damage, and are proportionate to the destructive and deadly effects of the bombs. A great amount of material damage is consequently the main result to be sought in every case."

⁶¹ In permitting the air raids, the Kaiser, on January, 1915, is said to have stipulated that the raids be "expressly restricted to military shipyards, arsenals, docks, in general military establishments, and that London itself was not to be bombed." See *Der Krieg Zur See—1914-1918* (Official Naval History), vol. 3, p. 182. But see *supra*, p. 135, for the German squadrons organized in September, 1914, for raiding England. Official communiqués in the first two years of the war announced adherence to the principle of the military objective and the restriction, where possible, of attack within the immediate zone of operations. See the official note published by the Wolff Agency on the raiding of Karlsruhe, on June 15, 1915, *Journal de Genève*, June 19, 1915; also the communiqués of the German G. H. Q., of July 20, 1916, in regard to the Rhineland raids; and of August 19, 1915, in regard to the raid on the Saar district. An official communiqué of January 31, 1916, announced that Paris had been bombed in reprisal for the French attack upon Freiburg, an open town outside of the zone of operations. For a general statement see also General von Hoeppner, *Deutschlands Krieg in der Luft*, 1921, p. 21.

town of Ludwigshafen,⁶² and a French military writer speaks of the great enthusiasm which followed the raid on Karlsruhe, "a grand success," although the Germans reported that 19 civilians had been killed in the raid.⁶³ The 1916 raid on Karlsruhe resulting in 257 casualties, with 117 dead, may have been carried out as a reprisal, as the French claimed.⁶⁴ The 1918 allied raids on the Rhineland industrial sections, however, were regular operations, carried on in the last few months of the war almost incessantly and chiefly at night.⁶⁵

Throughout the war, particularly in the last year of the war when long-distance bombardment was made practicable by improved machines, no attempt was made to restrict bombardment operations within the immediate zone of operations. The German raids, the work of the British Independent Air Force, designed specially for long-distance raids, and the operations of the French bombardment groups, all point to the elimination in

⁶² General Sykes writes that in addition to the ground defenses, there was a Home Defense air force made up of 14 service squadrons and 8 night-training squadrons. *Op. cit.*, pp. 77-80. See also *Bulletin* of the Air Corps Tactical School, Langley Field, Va., January 1, 1928, p. 18, which states that the London defenses were made up of approximately 189 anti-aircraft cannon and more than 300 aircraft, with searchlights and balloon aprons. See Vissering, *Zeppelin, The Story of a Great Achievement*, 1922, pp. 17-20, for the great effort of the Germans to improve the altitude-capacity of the dirigibles in order to avoid the anti-aircraft defenses of England. The "L-30" type, with a "ceiling" of approximately 13,000 feet, could no longer be used after the summer of 1916 in the raids on England. The later models had a "ceiling" of 19,500 feet, with special altitude engines which did not start functioning until the altitude of 10,000 feet was reached. Airship raids were finally abandoned by the summer of 1917, due to the heavy losses suffered. See Neumann, *op. cit.*, p. 21.

⁶³ See Colonel de Vaulgrenant, *op. cit.*, p. 4.

⁶⁴ *Ibid.*, p. 4. For German report of Karlsruhe see *Die Deutsche Kriegführung und das Völkerrecht*, Kriegsministerium und der Obersten Heersleitung, 1919, Part 2, Der Luftkrieg. For a full discussion of reprisals in the World War from the French point of view see Pierre Lacroix, *op. cit.*, pp. 320-348.

⁶⁵ For detailed description of the operations during 1918 see Colonel de Vaulgrenant, *op. cit.*, pp. 7-11; also the official document *Résumé de l'Emploi de l'Aéronautique*, *op. cit.*, p. 28. See also Mortane, *op. cit.*, vol. 1, pp. 322-327; also *supra*, pp. 139-140 and notes.

aerial operations of any combat or advance zone based on land operations.⁶⁶ The doctrine of the military objective, defined as the right to bombard objects of a military character wherever such objects were to be found, became the official basis for air attack, although, as already pointed out, the mechanical deficiencies of aerial bombing resulted in practically indiscriminate bombardment.⁶⁷ Towns and cities far beyond the immediate zone of operations were attacked on the grounds that they contained military objectives against which the attacks were directed.

The right of general devastation for political or psychological ends, on the other hand, was not officially claimed by any of the belligerents in the late war. Demoralization of the enemy by means of aerial bombardment was accepted as part of the functions of the bombardment groups, but technical equipment during the World War had not advanced to the point where sufficient destruction could be carried out by aircraft.⁶⁸

⁶⁶ See General Sir Frederick Sykes, *op. cit.*, pp. 88-92, for the work of the Independent Air Force; also E. C. Vivian, *History Aeronautics*, pp. 252-262. See also the statement of Mr. Bonar Law, in the House of Commons, October 16, 1917, in regard to the employment of the air forces "in Germany and over German towns so far as the military need renders them free." *Parliamentary Debates, House of Commons*, 1917, vol. 98, 5th Series, p. 28. For German raids see Joseph Morris, *op. cit.*, pp. 114 *et seq.* For the French operations against the Rhineland see Mortane, *op. cit.*, vol. 1, pp. 306-12; also Lieut. H. L. George, *Lecture on Bombardment Aviation*, 1926, pp. 2, 4; also the official document published by the Kriegsministerium, *op. cit.*, Part 2, *passim*.

⁶⁷ For the technical development of aerial bombardment see *supra*, pp. 140-141.

⁶⁸ The present-day bomber, with its bomb-load of 9,000 pounds, together with its crew of six, and mountings for ten machine guns, with racks capable of carrying one 4,000-pound bomb and two 2,000-pound bombs, with a "ceiling" of 16,000 feet when fully loaded, dwarfs the machine of the late war. The maximum load as late as September, 1916, was 1,136 pounds; and by 1918 it was not more than 1,500 pounds. The largest machine did not have an engine of over 260-h.p. strength. For the performances of British airplanes and airships see *Technical Report of the Advisory Committee for Aeronautics*, Great Britain, 1918, vol. 1, Tables 1 and 2, pp. 72-73. For present-day bombers see the American Journal, *Aviation*, February 8, 1926, p. 184, for the French type; for the Italian type see *ibid.*, June 28, 1926, pp. 980-

The question was thus left unanswered. In general one principle seems to have been followed in the war: that military objectives could be bombed wherever found, regardless of their location, and, it seems, regardless of the injury to non-combatants and private property.

The doctrine of the military objective which was fully established by the practices of the World War in no way interfered with, or was permitted to interfere with military effectiveness. The development of military aeronautics since the war has been even greater than during the four years of the war itself. By the time the 1922 Hague Commission of Jurists met to draw up rules of aerial warfare, the destructive power of aircraft had increased greatly. Speed and range of aircraft had nearly doubled. Non-stop flights of nearly 2000 miles had been made. An altitude of approximately 40,000 feet had been reached.⁶⁹ There were reports that governments were experimenting with four and ten-ton bombs.⁷⁰

The work of the Hague Commission was further complicated by the rise of air power. Air power, however, differed from traditional military or naval power in that its unit, the airplane, was not only a military weapon but a civilian vehicle. Air power thus was based not only on military aviation but also on commercial aeronautics. Prohibition, as pointed out at the 1922 Washington Conference, was obviously impossible.⁷¹

The International Air Navigation Convention, drawn up at Paris on October 13, 1919, was restricted solely

981; for the Dutch type see *ibid.*, August 29, 1927, p. 473; and for the American and British types see *ibid.*, February 14, 1927, and March 1, 1928.

⁶⁹ For chronological list of developments in aeronautics, see *Aircraft Year Book*, New York, 1922, pp. 233-245.

⁷⁰ See author in the *Nation*, New York, May 9, 1923, p. 537.

⁷¹ See the recommendation of the sub-committee on aircraft, *Conference on the Limitation of Armament* (State Department), 1922, p. 790. This was accepted by the Conference. *Ibid.*, p. 800.

to civil aeronautics. The only military significance of the Convention was in the article declaring that states retain complete sovereignty over their air space.⁷² The Treaty of Versailles stripped Germany of her air power for the period immediately following the signing of peace. Article 198 of the treaty forbids outright the inclusion of military or naval air forces in the armed forces of Germany.⁷³ Article 201 forbids, during the six months following the coming into force of the treaty, all aircraft manufacturing and importation.⁷⁴ This pro-

⁷² Article 1 of the Convention reads: "The High Contracting Parties recognize that every Power has complete and exclusive sovereignty over the air space above its territory." *Bulletin of the International Commission for Air Navigation*, Paris, July, 1927, p. 1. The long controversies over the problem of air sovereignty had been definitely terminated at the outbreak of the World War by the closing of the neutral air frontiers. Official acts and decrees in Great Britain, France and Germany had already declared, before 1914, full sovereignty over the air space. Post-war treaties were all based upon the air-sovereignty principle. For a complete discussion and bibliography, see such works as *Law of the Air*, 1927, Carl Zollmann, chapter 1; *Le Droit Aérien*, Enrico Catellani, pp. 3-44; *International Law* (Tagore Law Lectures), 1925, J. W. Garner, pp. 141-164; *Das Völkerrecht*, 1925, Franz von Liszt, especially p. 140, for comprehensive bibliography; Lacroix, *op. cit.*, pp. 25-67; Lycklama a Nijeholt, *Air Sovereignty*, 1910; Meili, *Das Luftschiff im internen Recht und Völkerrecht*, 1908; Sir H. Erle Richards, *Sovereignty Over the Air*, 1913; Hazeltine, *The Law of the Air*, 1913; Fauchille, *R.G.D.I.P.*, vol. 8, 1901, pp. 414, *et seq.*; also author, in *Law Memoranda Upon Civil Aeronautics*, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, January 31, 1923, pp. 86-98.

⁷³ This article has been accepted as prohibiting the construction of aircraft for military purposes until definite permission is granted by the Allies. Franz von Liszt, *op. cit.*, p. 337, states that the 1922 provision of the Inter-Allied Control Committee, allowing construction of aircraft in Germany, did not include military aircraft. See also E. P. Warner, *op. cit.*, p. 281.

⁷⁴ Article 202 supplements this by providing for the delivery of aeronautical equipment to the Allies within three months after the concluding of the treaty. The delivery was to include aircraft, used and unused, parts, hangars and sheds, plants, engines, aeronautical instruments and aeronautical armament. Provisions similar to the German air clauses were also incorporated in the treaties of peace with Hungary, Austria, Bulgaria and Turkey. Articles 320, 324 and 325 of the treaty with Turkey, however, provide for special servitudes. Thus airdromes are to be established at points designated by the Powers within one year from the treaty signing; the "most favored nation" treatment is not to be granted to her former allies, Germany and

hibition was later extended and it was not until 1922 that the restriction was removed and Germany was permitted complete freedom in the manufacturing of commercial airplanes.⁷⁵ Other provisions of the treaty opened German territory to Allied air traffic, without, however, opening Allied territory to German aircraft.⁷⁶ In spite of the treaty provisions, however, Germany managed to develop her commercial air lines and by 1922 a foundation had been laid for future air power.⁷⁷ Allied attempts to restrict the development of German aeronautics by a series of regulations known as the Nine Rules, retarded but did not prevent the rapid development of German aeronautics.⁷⁸

Austria, until they have become members of the League of Nations; and "no aerial concessions or rights are to be granted by Turkey to her former allies without consent of the Allied Powers, and without becoming members of the League."

⁷⁵ See Franz von Liszt, *op. cit.*, pp. 336-337. For the machinery set up by the Peace Treaty, the provisions being drafted by the Aeronautical Commission of the Peace Conference, see Articles 313 to 320.

⁷⁶ Thus Article 313 grants to the Allied and Associated Powers "full liberty of passage and landing over and in the territory and territorial waters of Germany." Article 314 gives full rights of transit to Allied aircraft, subject to German regulation "which shall be applicable equally to the aircraft of Germany and to those of the Allied and Associated Countries." Article 315 grants equal privileges of German airdromes. Article 317 assures Allied aircraft the right of traffic in German territory by providing that the certificates of airworthiness issued by any of the Allied Powers shall be recognized as valid in Germany. Article 318 provides that Allied Powers shall enjoy in Germany the most favored nation treatment as regards internal commercial air traffic. These obligations, according to Article 320, were to remain in force until January 1, 1923.

⁷⁷ See *Aircraft Year Book*, 1922, pp. 77-84; also author, *op. cit.*, p. 538; also E. P. Warner, "International Air Transport," *Foreign Affairs*, January, 1926, p. 290.

⁷⁸ The Council of Ambassadors in April, 1922, had laid down nine rules which limited the size, engine power, fuel capacity and speed of German aircraft. No airplane was to be convertible, and all new construction was to be reported to Inter-Allied Control Committee. Also, engines and stores and the number of flying students were to be restricted to the "ordinary requirement of commercial aviation." See the editorial in the *New Statesman*, London, July 4, 1925. For the great military value of the German commercial airlines, in spite of Allied restrictions, see E. P. Warner, *op. cit.*, pp. 286-292; also *Aircraft Year Book*, 1922, pp. 77-84; Captain René Fonck, *Revue des Deux*

The French Government did not stop with merely checking German air power. Her air policy not only provided for a rapidly increasing air power at home but also for the building up of the air forces of Poland, Czecho-Slovakia, Roumania and Yugo-Slavia.⁷⁹ French air power became the greatest in the world, with a strength in 1922 estimated by members of the British Parliament as six times that of Great Britain.⁸⁰ The attacking arm made up of bombardment groups was the basis for this power. A brief review of the French bombardment force in 1922, will explain the difficult problem facing the Commission of Jurists. The bombardment regiment, in addition to non-combatant sections, was made up of three bombardment groups of four squadrons each. The night bombardment regiments consisted of three squadrons each. With each regiment there was also a "park," a unit of supply. The regimental staff followed the regular staff composition, with group staffs for each four squadrons. The day bombardment group consisted of three squadrons of bombardment planes, with one squadron of protection planes. The entire unit, in its operations against an objective, was comparable to the ground artillery units. Each bombardment regiment had a wartime capacity of 180 machines equipped to participate in operations.⁸¹

Mondes, May 1, 1924, pp. 37-54, in an article, "Le Danger Aérien Allemand."

⁷⁹ French air officers were in charge of aeronautics in Poland and Czecho-Slovakia, with French military instructors assisting in the building up of the Roumanian and Yugo-Slavian air forces. See author, *The Nation*, New York, May 9, 1923, p. 538. The program of these countries called for air strengths as follows: Poland, 36 squadrons; Czecho-Slovakia, 35 squadrons. Air development in the other two countries was much slower, each having the equivalent of a half-dozen squadrons equipped with French machines. Cf. *Armaments Year Book*, League of Nations, First Year, 1924, pp. 662-663, 670.

⁸⁰ For French organization, see the official document, *Résumé de l'Emploi de l'Aéronautique*, *op. cit.*, pp. 2-4; also Captain Dagnaux, *op. cit.*, p. 59.

⁸¹ See preceding footnote for citations; also Colonel de Vaulgrenant, *op. cit.*, Appendix I, p. 45.

The French air program called for the concentration of the air forces in two principal areas. One division was to be located near the German border with headquarters at Metz, the other near Paris. Total bombing strength was made up of eight regiments, distributed in the Metz area at Toul, Nancy, Epinal and Metz; in the Paris area at Rheims, Dreux, Chartres, Châteaudon and Montargis. Pursuit regiments were stationed at Amiens and Douai, each within short distance of the French Coast and located so as to intercept bombing formations from the west.⁸² The function of the bombardment group was to strike immediately at enemy airdromes, bomb industrial plants and destroy lines of communication. Comparatively light bomb-loads of about 700 pounds were provided for with a 300-mile radius-of-action and an altitude of 19,000 feet.⁸³ Heavy bombing planes with a bomb-load capacity of 13,000 pounds were being experimented with at the time. The French emphasis on bombing is indicated by the fact that bombardment regiments constitute 46 per cent of the air force. By 1922 French air power comprised 152 squad-

⁸² For French air power, see the debates in the British House of Commons, March 21, 1922, *Parliamentary Debates, Commons*, vol. 152, pp. 286-382. Various ratios, in the existing air strengths of Great Britain and France, were advanced. An average ratio would have given France six times the air strength of Great Britain. See also Brigadier General Groves, in the *London Times*, March 21, 1922, whose figures on air strength were affirmed by Major General Seely, former Under-Secretary for Air, as "perfectly accurate." *Parliamentary Debates, Commons*, vol. 52, p. 316.

⁸³ See Jane, *All the World's Aircraft*, 1922, 1923. For the work of the light-bomber, see Air Vice Marshal H.R.M. Brooke-Popham, in *The Study of War*, 1927, by Major General Sir George Aston, p. 152. For the French air program, started in 1921, see *Armaments Year Book*, First Year, 1924, pp. 444-445, 462. The figures given in this report are as follows: Officers, 1,352; total air strength in personnel, 33,715. See also Major General Seely's figures of 126 squadrons as the existent French air strength, with 220 squadrons called for, as against the British total air strength of 31 squadrons. *Parliamentary Debates, Commons*, vol. 152, pp. 314-315.

rons, with a huge reserve.⁸⁴ The building program called for a total of 258 squadrons.⁸⁵

In addition to the official military air units, commercial air lines, heavily subsidized by the government, made up a not inconsiderable part of the French air power. French air lines made direct connections with the countries of the Little Entente. Regular services operated between Paris, Vienna, Warsaw, Belgrade and Bucharest. The air lines to Africa brought the French colonies under more effective control.⁸⁶ By means of these subsidized air lines a great reserve of machines and pilots was built up and the aircraft industry expanded.⁸⁷ French air power in 1922 was supreme. Including the air forces of her allies, Belgium, Czechoslovakia and Poland, France commanded approximately

⁸⁴ For estimates on French air strength in 1923, see the data submitted before the Select Committee of Inquiry into the operations of the United States Air Service, 68th Congress, House of Representatives; also see the data submitted by Brigadier General William Mitchell, *President's Aircraft Board*, Appendix, p. 620, also p. 117, for figures by Major General Patrick.

⁸⁵ Lieutenant Colonel Moore-Brabazon estimated the strength of the French Air Force as 240 squadrons, compared to Great Britain's 12 squadrons. He said: "France, a friendly Power, can put within twenty miles of our coast 240 squadrons. . . . What could our first-line of defense, the Navy, do against that?" *Parliamentary Debates, Commons*, 1922, vol. 152, pp. 320, 322. See also Sir W. Joynson-Hicks, *ibid.*, pp. 324-325.

⁸⁶ For detailed account of the French commercial air lines, see *Aircraft Year Book*, 1922, pp. 72-77; also Earl Elhart, *The Nation*, New York, February 24, 1926; also E. P. Warner, *op. cit.*, pp. 284-289; also J. M. Scammell, "Politics and the New Armament Competition," *North American Review*, October, 1923, in which it is said that 3,300 machines were built in France in 1922; also Howard Mingos, "The Menace of Aircraft," *The Forum*, July, 1924, for the same figures; also Colonel Mitchell, *op. cit.*, p. 620, for the following data: France possesses 32 factories and 10 engine factories, all in good financial condition. The production is 500 machines a month, with a possible production in case of need, on six months' notice, of 3,000 machines a month. In 1922, 3,000 machines were produced. Cf. estimate of Major General Seely, *op. cit.*, p. 316, *i.e.*, 150 machines produced each month, with a total of 1,800 machines for the year 1921.

⁸⁷ Following are the government subsidies granted for civil aviation in France: 1919, 1,640,267 francs; 1920, 8,000,000 francs; 1921, 31,700,000 francs; 1922, 45,382,000 francs. See *Aircraft Year Book*, 1922, p. 197.

260 squadrons. The combined forces of the rest of Europe made up hardly half of this air strength.⁸⁸

The attitude of France, therefore, toward any restrictions on air power would obviously be one of opposition. At the same time it could be assumed that Great Britain would favor any proposal restricting air power. The traditional defense of Great Britain had been based chiefly on her isolation from the Continent and on the maintenance of open sea lanes. Until the arrival of the military airplane and the submarine, the Grand Fleet insured security. The airplane along with the submarine deprived Great Britain of her isolation. In the strategy and tactics of air warfare Great Britain became a part of the Continent. In time of war the airplane and the submarine threatened the effective maintenance of overseas communication.⁸⁹ Great Britain had adopted her fleet policy to the new conditions. Seven aircraft carriers were being added to the fleet. The two latest battleships, the "Nelson" and "Rodney," were each to carry forty planes. Eleven squadrons were assigned to duty with the fleet. In Great Britain's post-war program the air arm was made the first line of defense. The "one power" air standard was adopted, defined later as a home defense air force of sufficient strength to give adequate protection against air attack by the strongest air force within striking distance.⁹⁰

⁸⁸ For list of air strengths submitted to the Washington Conference of 1922, see *Conference on the Limitation of Armament*, State Department, Appendix to the report by the Sub-Committee on Aircraft.

⁸⁹ See Brigadier General P. R. C. Groves, Director of Flying Operations, British Air Ministry, in 1918, *Atlantic Monthly*, February, 1924, pp. 145-148, for air force as the supreme power. See also Spaight, *Aircraft and Commerce in War*, 1926, pp. 2-3.

⁹⁰ See Admiral Degony in the *Revue des Deux Mondes*, December 15, 1924, in an article entitled "La Force Aéro-Navale Anglaise et Notre Sécurité." Captain Gest, Secretary of State for Air, gave the following figures for the Royal Air Force: 1,938 machines, of which 773 were actually in active use and supposed to be serviceable. Of the 773 machines about 70% could be reckoned upon as actually serviceable. *Parliamentary Debates, Commons*, 1922, vol. 150, p. 2243. See

The control of the air forces had already been placed in a separate ministry co-equal with the army and navy. The traditional defense policy was in part discarded and an air officer was made responsible in time of war for the home defense of the British Isles with the power to command not only air forces but fleets and armies.⁹¹

By 1922 no building program had as yet been laid down, although numerous discussions had taken place in Parliament and severe criticism directed against the government for its apparent laxity in the national defense.⁹² It was only in the year following that the new building program was launched, providing for a home defense force of 52 squadrons by 1930. It was not until the Commission of Jurists had ended their work at the Hague that the first part of this building program was completed. Sir Samuel Hoare, Secretary of State for Air, in his report to Parliament, estimated that the proportionate strength of the air force of Great Britain to that of France was in the ratio of one to ten.⁹³ The negligible strength of the British air force at the time of the Hague Conference of 1922 can be noted in the air appropriation for that year, the combined civil and military list forming only eight per cent of the total defense appropriation.⁹⁴ The British delegation to the Con-

also the speech of Prime Minister Baldwin in the House of Commons on June 26, 1923, in which he recommended a Home Defense Force of 52 squadrons to be created as soon as possible.

⁹¹ See General William Mitchell, Assistant Chief of the United Air Service, in the *Saturday Evening Post*, December 20, 1924. See also Captain Gest, Secretary of State for Air, to the effect that in October, 1922, the command of the forces in Iraq would pass from the General Officer Commanding to the Air Officer Commanding. *Parliamentary Debates, Commons*, 1922, vol. 152, p. 296. The defense of Palestine was also to be placed under the command of the Air Force.

⁹² For discussions in Parliament see especially those of March 21, 1922, in the House of Commons, *ibid.*, pp. 286-382; also the discussions of June 20, 1922, vol. 155, p. 1036, vol. 154, p. 1915.

⁹³ See the *Outlook*, London, March 15, 1924, for an editorial quoting Sir S. Hoare. For the earlier ratio of air strengths see *supra*, note 82.

⁹⁴ The following data are given in the *Statistical Abstract for the United Kingdom*, Board of Trade, No. 70, pp. 110-111:

ference of Jurists at the Hague was fully aware of French air power and British weakness, and of the fact that the vital spots of Great Britain, London and the industrial sections, lay within easy bombing range of foreign territory.⁹⁵ Great Britain's demobilization policy, carried out immediately after the war, reduced her air forces to 21 squadrons. By December, 1922, the Royal Air Force comprised 32 squadrons, 15 of which were on temporary duty abroad.⁹⁶ British air weakness at this time was to be noted further in the aircraft industry, the 1922 output of machines for Great Britain being reported as 200, whereas the French output for the same year was reported as being 3300 machines.⁹⁷ British concern over air power finally led to an energetic building program but this development began in 1923 in the year following the Hague Conference of Jurists.

Military aeronautics in Italy by the end of 1922 had practically superseded naval power. Under the direction of Mussolini the army had been decreased and the navy appropriations were diverted in large measure to submarines and destroyers. By 1925 Italian air appropriations had multiplied ten times since 1920.⁹⁸ The

	(Figures given in Pounds)			
	1921-2	1922-3	1923-4	1924-5
Army	95,110,000	45,400,000	43,600,000	44,765,000
Navy	80,770,000	56,200,000	52,600,000	55,625,000
Air Force	13,560,000	9,400,000	9,600,000	14,310,000

⁹⁵ See Sir W. Joynson-Hicks, *Parliamentary Debates, Commons*, 1922, vol. 152, p. 324-325; also Lieut. Colonel Moore-Brabazon, *ibid.*, pp. 320-322; also Mr. Churchill, Secretary of State for the Colonies, *ibid.*, p. 382.

⁹⁶ See figures given by Captain Gest, Secretary of State for Air, giving disposition of Air Force as follows: India, 6 squadrons; Iraq, 8; Egypt, 3; Palestine, 1; Fleet work in the Mediterranean, 1½. Twelve squadrons remained at home, engaged in miscellaneous work. See *ibid.*, pp. 286-7.

⁹⁷ See Brigadier General Groves, *op. cit.*, pp. 149-150.

⁹⁸ For the fiscal year ending June 30, 1922, the sum of 42,700,000 lire had been appropriated for the Army Air Service. The total appropriation for aeronautics, military and civil, for the year 1924 was 461,708,566 lire. All aeronautics in Italy, military, civil and commercial, is under the War Department. The Headquarters of the Army Air

air program of Italy provided for a fleet of 100 squadrons, and by 1925 this program had been three-fourths completed.⁹⁹ The Italian air force, following that of the French, was essentially an army for offense. Approximately half of its total number of squadrons were for bombardment. Italian air power was supplemented by a powerful aircraft industry, inferior only to that of France in production.¹⁰⁰ On the other hand, the security problem of Italy was made comparatively light by the advent of air power. The Alps, in some measure, still served as protection in the north. Aircraft, submarines and destroyers, aided by mine fields, protected her long shore line. By means of these auxiliary weapons Gibraltar had been made obsolete and Mediterranean traffic brought under Italian control. The Italian delegates to the Conference of Jurists came to the Hague as representatives of a military Power which at the time was rapidly developing its air strength as the best means of national defense.

Air power in Japan had developed only since the World War. Military aeronautics was still divided between the Army and Navy, with all civil aviation controlled by an Aviation Bureau under the Minister of War.¹⁰¹ In the years since the war the Japanese Gov-

Service directs all aeronautics, including technical and industrial developments. In the year ending June 30, 1921, 27,000,000 lire were appropriated for civil aviators; in 1922 a total of 22,060,000 was appropriated. See *Aircraft Year Book*, 1922, pp. 86-87; *ibid.*, 1926, p. 302. For a description of the Italian Air Board and the units and services of the Air Force see *Armament Year-Book*, 1924, pp. 537-542.

⁹⁹ Major General Patrick, *op. cit.*, p. 117, credits Italy with 11,410 officers and men, with a total of 1860 aircraft. See also Jane, *op. cit.*, for Italian air strength.

¹⁰⁰ See figures of General Mitchell before the President's Aircraft Board, *op. cit.*, p. 620; also see author, "Survey of Commercial Aviation in Italy," *Aviation*, March 5, 1923, pp. 262-265.

¹⁰¹ The United States Military Attaché at Tokio reported that the army air service was made up of 6 aviation battalions, a balloon corps and an aviation school. See *Aircraft Year Book*, 1922, pp. 87-88, for report. The *Armament Year-Book*, 1924, p. 568, gives a total air per-

ernment had been active in strengthening both military and naval aviation. French methods were followed in military aviation and British methods in naval aviation. The air force of the army consisted of six aviation battalions, a balloon corps, an aviation school and eight military airdromes. An officer with the rank of Lieutenant-General commanded the force. The naval program called for 15 squadrons of six machines each. These were to be based at the naval stations in Formosa. The Government by Imperial ordinances, had also created Aviation Technical Institutes and an Aviation Council under the Minister of Education.¹⁰² At the time of the Washington Conference of 1921-22 Japan possessed two aircraft carriers, one being a converted freight steamer and the other, a modern airplane carrier then under construction.¹⁰³ Japan in 1922 was not vitally concerned in the question of aerial bombardment. There was no neighboring air power to threaten her national security. On the other hand, military aeronautics in Japan was being expanded. The isolation of Japan, as will later be shown, was partly responsible, perhaps, for the tolerant attitude of the Japanese delegates to the Conference of Jurists toward restrictions on air warfare.

The same attitude was evident on the part of the American delegation, and perhaps for the same reason. Up to 1922 aeronautics in the United States was supposed to have lagged behind that of the Continental Powers. There was an absence in civil aeronautics of government subsidy and regulation.¹⁰⁴ Military aeronautics of 6156. The total number of aircraft listed is 548, excluding training machines. See *ibid.*, p. 565.

¹⁰² See *ibid.*, p. 564.

¹⁰³ See Report of the United States Attaché at Tokio, *op. cit.*, p. 87.

¹⁰⁴ There were no government subsidies, except for the sum of \$3,550,000 spent on the Air Mail up to 1922. Federal regulation of aeronautics was not brought about until 1926 when the Air Commerce Act came into effect. See Carl Zollmann, *Law of the Air*, 1927, pp. 192-203; also R. W. Fixel, *The Law of Aviation*, 1927, pp. 116-125.

navitics, however, was hardly inferior to the air strength of European Powers, excepting French air power.¹⁰⁵ Appropriations were still small, compared to the air appropriations of European Powers, but under the reorganization of 1921 the Army Air Service became a complete air unit capable of rapid expansion.¹⁰⁶ Military aeronautics had been turned into a Congressional issue in the year preceding the Washington Conference. In the middle of October, 1920, naval seaplanes had experimented in bombing an obsolete battleship, the "Indiana." Naval experts had reported the results of this test as pointing "to the improbability of a modern battleship being either destroyed or completely put out of action by aerial bombs."¹⁰⁷ In January, 1921, however, the Assistant Chief of the Air Service, General William Mitchell, had appeared before the House Appropriations Committee and declared that the battleship, costing \$50,000,000, was as obsolete under aerial attack as the "plumed knight in armor," when gunpowder was introduced.¹⁰⁸ At this time the Army Air Service was asking for an appropriation of \$60,000,000, the equivalent of less than two battleships.¹⁰⁹ The General

¹⁰⁵ Strength, in personnel, of the United States Air Forces, on January 1, 1922, was: Army, 8320; Navy, 5544; Marine Corps, 816. The total strength was 14,680, with 1197 officers. See *Aircraft Year Book*, 1922, p. 175. Following is the comparative air strengths as estimated by Major General Patrick, Chief of the United States Air Service, *op. cit.*, p. 117: Great Britain, total personnel strength, 32,000, aircraft, 1000; France, 36,000, aircraft, 1900; Italy, 1100, aircraft, 800; Japan, 8800, aircraft, 800; The United States, 15,000, aircraft, 1025. Cf. comparative air strengths, in aircraft, of France, Great Britain and Italy, by Brigadier General Groves, *op. cit.*, p. 149. For comparative air strengths at the end of the World War, see Spaight, *The Beginnings of Organized Air Power*, 1927, chapter 16.

¹⁰⁶ Under this reorganization of the Office of the Chief of Air Service, December 1, 1921, five divisions are provided embracing all the services necessary to a unified army. See *Aircraft Year Book*, 1922, p. 167.

¹⁰⁷ Official Report to the Secretary of the Navy by Captain W. D. Leahy, Director of Naval Gunnery. See *ibid.*, p. 47.

¹⁰⁸ See *ibid.*, p. 47.

¹⁰⁹ Sixty million dollars was asked, and \$19,200,000 was granted and

Board of the Navy, in 1919, had reaffirmed the 1916 naval building program of \$640,000,000. In view of the possible relative superiority of aircraft over battleships, opposition arose in Congress to the proposed building program. Finally, on February 7, 1921, the Secretaries of the Navy and Army agreed to carry out bombing tests. War vessels taken over from the Germans were selected as targets and on June 21 the tests were carried out. The "U-117" was sunk in 16 minutes, demolished by twelve 163-pound bombs.¹¹⁰ On June 29 the "Frankfurt," a light cruiser, was sunk after 21 bombs had been dropped. The "Ostfriesland," a German dreadnaught of the latest type, was bombed first with smaller shells weighing up to 600 pounds. On the following day the ship was quickly sunk by five 2,000-pound bombs, the ship disappeared within 22 minutes after the first heavy bomb had been dropped.¹¹¹ Military, naval and civil officials had observed the trials. Members of Congress returned to Washington impressed by the success of the aircraft. Senator Borah declared in the Senate that the battleship was "practically obsolete. . . . We are building sixteen battleships, costing from \$40,000,000 to \$42,000,000 apiece, and in less than thirty minutes, as General Mitchell told us he would, they sunk the ship which von Tirpitz said was an unsinkable ship. Yet the airplane development is just beginning."¹¹² The bombing trials not only reacted against the large naval building program proposed at the time, but created for the first time an active Congressional support of military aeronautics. At the time of the Washington Con-

\$13,413,431 for the Naval Air Service, making a total of \$33,613,431. In 1920 the appropriation was \$55,000,000; in 1921, \$53,000,000

¹¹⁰ See Table of Aerial Bombing Exercises, *Aircraft Year Book*, 1922, p. 59.

¹¹¹ See Table, *ibid.*, p. 59.

¹¹² See *Congressional Record*, August 5, pp. 5051-5054, for debates in the Senate by Senators Borah, Nicholson, King, Stanley and Jones of Washington.

ference, which followed shortly after these trials, the effectiveness of aerial bombardment had become fairly well established, even in operations against the battle-fleet. The situation in which the United States found itself, similar to that of Japan in its isolation and comparative security against air attack, however, enabled the American delegation to support the idea of the regulation of aerial warfare.

At the Washington Conference an effort was made to determine whether it was possible to impose limitations upon aircraft, either civil or military. The sub-committee on aircraft, after considering the question, reported 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."¹¹³ The question of limiting commercial aeronautics was first considered and rejected on the grounds that any limitation placed upon commercial aeronautics would have the effect of limiting a means of transportation and communication. Another cause for this rejection was the close relationship between commercial and military aeronautics. The committee reported on this point as follows: "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."¹¹⁴ The committee pointed out that all aircraft would possess some military value regardless of

¹¹³ *Conference on the Limitation of Armament, Washington, 1921-1922* (State Department), 1922, p. 752.

¹¹⁴ *Ibid.*, p. 754.

the technical restrictions placed upon their character. Commercial aircraft could be converted into military aircraft with few changes necessary and others could be so designed that with "major or minor alterations, or even with none at all," they could be employed for military purposes.¹¹⁵ The uses of aircraft in war were acknowledged to be so diversified that use could be found in warfare for most of the efficient commercial machines.¹¹⁶ The characteristics essential to a military aircraft could also be profitably incorporated into commercial machines. Such qualities as carrying capacity, speed, altitude capacity, radius-of-action, and the capacity for offensive and defensive equipment, so requisite for military aircraft, were not altogether foreign to commercial aircraft, and in many types of craft were more inclined to be identical with the needs of commercial aircraft.¹¹⁷ Radius-of-action, it was pointed out, was necessary for commercial air lines, such as on any future transatlantic routes. Speed was essential for competition with other means of transportation. Carrying capacity, in passengers and goods, alone made commercial aviation possible. Altitude might be essential for future air transportation, as, for instance, when special mechanical means would permit the utilization of the rarefied higher altitudes.¹¹⁸ Had there been an attempt to make a distinction between certain types of military aircraft and those engaged in commercial aviation, the attempt would probably have been as futile as the attempt by the Allies to restrict German aeronautics, in the period following the war, to strictly commercial machines. The French Government was never satisfied that these machines, operating in great numbers over the German air lines, were not the elements

¹¹⁵ *Ibid.*, p. 756.

¹¹⁶ *Ibid.*, p. 756.

¹¹⁷ *Ibid.*, p. 756.

¹¹⁸ *Ibid.*, p. 758.

of air power and the preparations for possible future bombardment operations.¹¹⁹

The possibility of limiting military aircraft was next considered. A study had been made of the relative air strengths of the nations represented at the conference, but the sub-committee in its report pointed out that it was "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."¹²⁰ There were also differences in organization and administration of the various national air forces, which was a further obstacle to accurate comparison. The possible limitation of numerical strength in air power, of limiting the numbers of military aircraft, was first considered by the sub-committee. Great difficulty, however, was encountered in finding some reasonable basis on which air strengths could be allotted. It was discovered that the *status quo* could not serve as a basis, since the status of the various air services differed widely. The French air strength, as has already been shown, equaled nearly that of the combined air power of the rest of Western Europe. The size of the traditional military power, that of the army and navy, was next considered on the ground that aircraft were essentially auxiliaries to the older services.¹²¹ An allotment on this latter basis, however, would hardly have met with French approval. The proposal was not acted upon. Further difficulties

¹¹⁹ See E. P. Warner, *Foreign Affairs*, January, 1926, pp. 281-282. For French views see Captain René Fonck, "Le danger aérien allemand," *Rev. des Deux Mondes*, May 1, 1924, pp. 37-54; General Hirschauer, "Le danger aérien," *Rev. des Deux Mondes*, May 15, 1921; also Admiral Delgony, *Rev. des Deux Mondes*, December 15, 1924, in an article, "La force aéro-navale anglaise et notre sécurité," in which he points out that by 1930, or before, German power will be equal to a new struggle.

¹²⁰ *Conference on the Limitation of Armament, Washington, 1921-1922*, p. 766.

¹²¹ *Ibid.*, p. 766.

were found in the security policies of the various nations. Some States, for instance, preferred the older methods of defense while others preferred to rely upon air power.¹²² There were also problems of geographical position, national compulsory service and the aircraft industry itself. The difficulty of forming some basis for allotment was further increased by the character of aircraft. The limiting of numbers, for instance, as pointed out by the sub-committee, "would only result in competitive building of aircraft of greater and greater power and size."¹²³ Effective limitation would have involved the limitation on both numbers and character, a situation which would have made necessary again the consideration of commercial aviation. An attempt was made by the sub-committee to lay down some general criteria as a basis for limitation, but in addition to the ordinary objections to such criteria as tonnage, horsepower, types of craft and engines, personnel and military aircraft budgets, there remained the "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."¹²⁴ Any attempt at limiting air power would obviously be inadequate unless commercial aviation, including the aircraft industry, was considered as part of the air power of a State and limited along with the military air strength proper. The conclusion of

¹²² The sub-committee reported that "National policy will differ as between nations; some nations, for example, will wish to have large air forces for coast defense, 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." See *ibid.*, p. 766.

¹²³ *Ibid.*, p. 768.

¹²⁴ *Ibid.*, p. 772, in which the sub-committee adds that "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."

the sub-committee was therefore as follows: "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."¹²⁵

The question of the use of military aircraft was also considered at the Conference. The representatives of Japan and the United States declared themselves prepared to discuss the draft code of "Rules for aircraft in war," which had been submitted for remarks by the Committee on the Laws of War. The representatives of Great Britain, France and Italy, however, were not prepared to discuss the matter. The Japanese and American delegates, as already shown, represented States to a great degree still protected from air attack by their isolation. Air power in Europe, on the other hand, could already be applied, by striking at a nation's economic and industrial centers. Air supremacy in Europe practically meant military supremacy.¹²⁶ The representatives of these European States accordingly refused to consider the draft code, and the committee finally recommended that it be postponed for some future conference.¹²⁷ The attempt at limiting the numbers and characteristics of aircraft, as the basis of air power, and the further attempt to restrict the use of aircraft was therefore fruitless. Air strengths remained untouched. The only result was the resolution adopted by the Conference providing for the future setting up of a commission to consider: "(1) whether existing rules of international law adequately covered 'new

¹²⁵ *Ibid.*, p. 774. The reasons given were as follows: (1) The difficulty of finding a basis for the proportion of aircraft to be allotted to the various nations. (2) The difficulty of devising technical methods to impose such limitation. (3) The difficulty of enforcing such methods. (4) The interdependence between air power and a commercial aircraft industry which it is not practicable to limit.

¹²⁶ For the reason given by the representatives of Great Britain, France and Italy for not discussing the Rules submitted by the Sub-committee on the Laws of War, see *ibid.*, p. 776.

¹²⁷ See *ibid.*, p. 776, for the recommendation of the sub-committee.

methods of attack or defense resulting from the introduction or development, since the Hague Conference of 1907, of new agencies of warfare'; and, if they did not, (2) 'what changes in the existing rules' ought in consequence to be adopted as a part of the laws of nations."¹²⁸

The legal status of aerial bombardment, as established by the Commission of Jurists at the Hague in 1923, seems at first glance to set up a new precedent in the regulation of warfare.¹²⁹ It appears to lay down a distinct limitation on the most effective weapon of modern times, the aircraft. As already shown, the use of effective weapons in the "combat zone," in the immediate zone of military operations, have never before been checked by regulations.¹³⁰ In this zone all other considerations were subordinated to the demands of military effectiveness; and it was the range of artillery fire which at any one time established the extent of the advance or combat zone. Underlying all regulation of warfare was the principle of military effectiveness or

¹²⁸ For the entire resolution see *ibid.*, 814-816. For the Italian note attached to the Resolution see *ibid.*, p. 782, which points out that it would be possible to limit the air power of a nation by placing a limit upon the number of pilots in the permanent military establishment. It may be pointed out here that the Italians were the first to employ aerial bombardment. For the Italian bombing of Arab villages in the Turko-Italian War of 1911 see *House Documents*, vol. 141, 62nd Congress, Second Session, 1911-1912; M. A. Rapisardi-Mirabelli, "La Guerre Italo-Turque et le Droit des Gens," *Revue de Droit Int. et de Législation Comparée*, 2nd Series, tome XV, pp. 565-568; also *Revue Juridique Int. de la Locomotion Aérienne*, 1912, p. 212; also *ibid.*, 1911, pp. 325-326. For Turkish protests see *Le Journal de Genève*, 14 August, 1912.

¹²⁹ The Commission of Jurists, including their Military and Naval Advisors, met in conference at the Hague from December 11, 1922, to February 19, 1923, "for the purpose of formulating a code of rules for the regulation of the use of aircraft and of radio in time of war." Moore, *International Law and Some Current Illusions*, p. 182. Taking part were the original five Powers at the Washington 1921-22 Conference on Limitation of Armament: France, Great Britain, Italy, Japan and the United States. Holland was also invited to participate. For the personnel of the delegations see the Commission's *Report*, The Hague, 1923, pp. 2-4; also Moore, *op. cit.*, pp. 182-183.

¹³⁰ See *supra*, pp. 109-111.

utility. Where military necessity demanded, as previously shown, even devastation was accepted as legitimate.¹³¹ The question may be asked, Do the Hague rules of 1923 challenge this hitherto unrestricted right of effective military action, even when such operations are of distinct tactical and strategic importance?

In general the same principle, that of military effectiveness, underlies the 1923 rules of aerial warfare. The significance of aerial bombardment, impressed upon the world by events so recent and by the enormous capacity for destruction of post-war aircraft, prevented at the conference the outright application of the principle of military effectiveness. There was evident a particular concern over the immunity of non-combatants and private property, the natural consequence of the first real threat to the very existence of hitherto immune populations and institutions.¹³² Some assurance was sought that future wars would not result in the elimination of the traditional distinction between combatants and non-combatants. The result, as will be shown, was a compromise which in some measure operated against the employment to the full of aircraft. It may be due to this fact that the Rules, after years, still lack the formal approval of any government. This check on a highly effective weapon expressed an attempt to ward off unrestricted aerial bombardment. It was, in fact, an attempted blow at a new means of warfare, at a weapon which ignored the traditional combat zone, operating in hitherto inaccessible rear areas, attacking objects

¹³¹ See *supra*, pp. 120-121.

¹³² Judge John Bassett Moore, President of the Commission, said: "Not only did the preservation of the distinction between combatants and non-combatants, especially as affected by aerial bombardment, loom larger in the public mind than any other question before the Commission, but it had occupied a similar position in the proceedings of the Washington Conference, the work of which Conference the Commission had been appointed to continue and complete." *Report, Commission of Jurists, The Hague, 1923*, p. 122.

which were previously immune from attack and which therefore in time had come to be considered immune by some inherent right.¹³³

The rules which govern aerial bombardment, in the 1923 Rules of Air Warfare, are as follows:¹³⁴

Article 22: Aerial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of military character, or of injuring non-combatants is prohibited.

Article 23: Aerial bombardment for the purpose of enforcing compliance with requisitions in kind or payment of contributions in money is prohibited.

Article 24: (1) Aerial bombardment is legitimate only when directed at a military objective, that is to say, an object of which the destruction or injury would constitute a distinct military advantage to the belligerent.

(2) Such bombardment is legitimate only when directed exclusively at the following objectives: military forces; military works; military establishments or depots; factories constituting important and well-known centers engaged in the manufacture of arms, ammunition or distinctively military supplies; lines of communication or transportation used for military purposes.

(3) The bombardment of cities, towns, villages, dwellings or buildings not in the immediate neighborhood of the operations of land forces is prohibited. In cases where the objectives specified in paragraph 2 are so situated that they cannot be

¹³³ A British jurist describes this new weapon as follows: "The advance of science has transformed, or will within a brief period transform, warfare in such a fashion as to make the experiences of 1914-1918 mere child's play. The public do not realize at all the significance of November 11, 1918, in respect to air warfare. It was only beginning to become really terrible towards the end of the late war." E. G. de Montmorency, "The Washington Conference and Air-Law in Disarmament," *Grotius Society, Transactions*, vol. 7, 1922, p. 111.

¹³⁴ *Report of the Commission of Jurists*, The Hague, 1923, p. 285.

bombarded without the indiscriminate bombardment of the civilian population, the aircraft must abstain from bombardment.

(4) In the immediate neighborhood of the operations of land forces, the bombardment of cities, towns, villages, dwellings or buildings is legitimate provided that there exists a reasonable presumption that the military concentration is sufficiently important to justify such bombardment, having regard to the danger thus caused to the civilian population.

(5) A belligerent State is liable to pay compensation for injuries to person or to property caused by the violation by any of its officers or forces of the provisions of this article.

The Commission in its report stated that no difficulty was found in reaching an agreement on Article 22.¹³⁵ Terrorization of civilian populations had already been prohibited by the Hague conventions. Terrorization, however, was formerly associated with devastation, and devastation was interpreted as wanton destruction. The question therefore arises in regard to Article 22 whether destruction for purposes of moral pressure or effect will hereafter be considered pure wanton destruction. The German High Command, in spite of official pronouncements, in the last war employed aerial bombardment for psychological purposes, as openly stated by both Hindenburg and Ludendorf.¹³⁶ The French official instructions of March, 1918, which were also translated for the use of American forces by command of General Pershing, read: "As regards both day and night bombardment, the moral effect produced and the tactical results obtained are almost always more important than the actual damage done, but they are a consequence of

¹³⁵ See *ibid.*, p. 250.

¹³⁶ See *supra*, chapter 5, note 88.

this damage, and are proportionate to the destructive and deadly effects of the bombs. A great amount of material damage is consequently the main result to be sought in every case.”¹³⁷ Following are some of the official definitions, issued since 1923, of the mission of bombardment. The French statement reads that “Aerial bombardment does not act only through its material processes, but it also seeks moral effects of surprise, intimidation and interdiction which it excels in producing. In order that these effects may be important, it is necessary that bombardment aviation not only operate in mass but that it attain continuity in its mission, maintain its destructions and the presistence of its menace.”¹³⁸ The bulletin issued by the United States Air Service Tactical School reads that “at the beginning of a campaign bombardment is an efficient weapon to retard the enemy’s concentration of troops, to hamper the manufacturing of war *matériel*, ammunition, etc., and to weaken the morale of the enemy people by attacks on centers of population.”¹³⁹ And later it states that “The bombing of political centers is prohibited by the laws of warfare. However, since they are the nerve centers of the nation, they are apt to be important targets for bombardment in reprisal for attacks made by the enemy on such centers in our own country, especially since they are apt to contain important factories or stores of war *matériel*. Nevertheless, such employment is purely strategical.”¹⁴⁰ One of the members of the British delegation to the Conference of Jurists at

¹³⁷ *Instruction sur l'Organisation et l'emploi de l'Aéronautique aux Armées, Titre III, Aviation de Bombardement*, G. H. Q., by order of Petain, translated July 1, 1918, by command of General Pershing, p. 3.

¹³⁸ See Captain Dagnaux, of the Centre d'Etudes de l'Aéronautique, Versailles (translated by Major C. H. Wash, Assistant Military Attaché for Aviation, Paris), *Conference on Bombing and Bombardment Aviation*, p. 61.

¹³⁹ See *Bombardment*, Air Service Tactical School, Langley Field, Va., 1926, p. 62.

¹⁴⁰ See *ibid.*, pp. 63-64.

the Hague writes of aerial bombardment that "it is because of the tremendous moral effect of air attacks that they are at once likely to be carried out against objectives in the heart of an enemy country and to be effective in their purpose of breaking down the enemy's will to resist. Conservation of energy prompts the employment of any instrument or method in the manner or at the point which will give the maximum results."¹⁴¹

The doctrine of the military objective would tend to operate against terrorization as a means of moral pressure upon civilian populations, but perhaps the most effective deterrent will be that of the conservation of energy, a purely utilitarian check. As the technical expert of the American delegation points out, the bomber will be utilized in an effort to paralyze every sensitive point in the system of supply, but that indiscriminate bombardment will result in "dispersion and a consequent decrease in the effect of the bombing as a whole."¹⁴² This applies, however, only to the use of explosives. The principle of the conservation of military energy would not operate against chemical warfare directed from the air. It is also unlikely that the doctrine of the military objective will serve as a deterrent on gas attack on civilian populations. In the light of these two formidable weapons it even seems probable that the doctrine of the military objective, defined as the right to attack and destroy objects of a military character wherever such objects are located, will need a recasting.

The introduction of chemical-aerial operations into warfare, commonly termed chemical warfare, may in the next war eliminate the old distinction between combatants and non-combatants and bring about a terrorization of civilian populations such as has in modern

¹⁴¹ Spaight, *Air Power*, p. 5.

¹⁴² See Major Sherman, *Air Warfare*, p. 217.

times been unknown. Major Victor Lefebure views chemical warfare as "the most important problem in the future reconstruction of the world."¹⁴³ General William Mitchell of the United States Air Service stated before the House Committee of Appropriations that "a few planes could visit New York as the central point of a territory 100 miles square, every eight days, and drop enough gas to keep the entire area inundated. . . . Two hundred tons of phosgene gas could be laid every eight days, and would be enough to kill every inhabitant."¹⁴⁴ General Amos A. Fries, Chief of the United States Chemical Warfare Service, states that Lewisite gas will be employed in the next war. "The burns from a quantity [of this gas] equal to three drops will usually cause death. The material can be made up by hundreds and even thousands of tons per month."¹⁴⁵ Speaking of the same chemical base, perhaps, an American scientist stated that a single airplane could besprinkle the decks of a ship with a liquid so corrosive as to make the ship uninhabitable for days.¹⁴⁶ General P. R. C. Groves, Director of Air Operations for the British Air Force, in 1918, states that chemical warfare from the air might cause the loss of millions of lives within a few hours after an attack upon such centers as Paris and London and that it would be impossible to devise means for protecting the population against such attack.¹⁴⁷

Wholesale destruction of lives and terrorization of civilian populations would result from chemical warfare if used in the future. The Hague Declaration forbids the use of projectiles whose sole purpose is the

¹⁴³ *The Riddle of the Rhine*, p. 232.

¹⁴⁴ Cited by Noel Baker, *Disarmament*, 1926, pp. 277-278.

¹⁴⁵ Fries and West, *Chemical Warfare*, p. 380.

¹⁴⁶ Edwin E. Slosson. *An Exhibit under the Auspices of National Research Council*, prepared by the Chemical Warfare Service, Washington, D. C., 1921, cited in Hyde, *International Law*, vol. 2, p. 319, note 2.

¹⁴⁷ *L. N. Document, C.T.A.*, 210, 1923, cited in Baker, *op. cit.*, p. 277.

diffusion of gases, but the practices of the World War, in which all belligerents employed poison gas, prove the need for further agreements on the use of gas in warfare.¹⁴⁸ At the Washington Conference the question of poisonous gases was considered by the sub-committee made up of the technical experts of the participating Powers, and the conclusion was reached that types of gases and their effects upon human beings could not be taken as a basis for limitation. The report stated that "the only limitation practicable is to wholly prohibit the uses of gases against cities and other bodies of non-combatants in the same manner as high explosives may be limited, but that there could be no limitation on their use against the armed forces of the enemy, ashore or afloat."¹⁴⁹ This conclusion, that poisonous gases were legitimate means of warfare, was opposed by the Advisory Committee of the American Delegation. The report of the sub-committee dealing with the new agencies of war stated that the "American representatives would not be doing their duty in expressing the conscience of the American people were they to fail in insisting upon the total abolition of chemical warfare, whether in the Army or the Navy, whether against combatant or non-combatant."¹⁵⁰ This sub-committee proposed the outlawing of chemical warfare. Another sub-committee, dealing with land armament, headed by General Pershing, also proposed the outlawing of gas warfare, urging that "Chemical warfare should be abolished among nations, as abhorrent to civilization. It is a cruel, unfair and improper use of science. It is fraught with the

¹⁴⁸ The Hague Declaration prohibits the use of projectiles whose sole object is the diffusion of asphyxiating or deleterious gases. It has been debated whether the declaration forbids the use of any particular means whether it applies to means other than projectiles. See Garner, *International Law and the World War*, vol. 1, p. 278, who would apply the Declaration only to the instruments then in use.

¹⁴⁹ See Report of the Sub-committee on Poisonous Gases, *Senate Document, op. cit.*, No. 126, pp. 384-388.

¹⁵⁰ See *ibid.*, p. 386.

gravest danger to non-combatants and demoralizes the better instincts of humanity.”¹⁵¹ The General Board, in its report to the American delegation, also proposed the prohibition of gas warfare “in every form and against every objective.”¹⁵² The American delegation in their proposal to the Conference rejected the views of the technical committee and accepted instead the views of the other sub-committees which had favored prohibition. The following resolution was proposed and accepted by the Conference on January 11, 1922:¹⁵³

“The use in war of asphyxiating, poisonous, or analogous liquids or other gases and all materials or devices having been justly condemned by the general opinion of the civilized world and a prohibition of such use having been declared in treaties to which a majority of the civilized powers are parties;

Now to the end that this prohibition shall be universally accepted as a part of international law, binding alike the conscience and practice of nations, the signatory powers declare their assent to such prohibition, agree to be bound thereby between themselves, and invite all other civilized nations to adhere thereto.”

Article 22 of the air warfare rules is thus supplementary to the Washington convention on poisonous gases. The terrorization of civilian populations by means of chemical warfare directed from the air is banned by treaty, although limited to the five contracting Powers. The convention on poisonous gases is indeed being disregarded to-day, in spirit at least, by the development of great chemical warfare services. It has been said that such treaties as the Washington and

¹⁵¹ *Ibid.*, p. 386.

¹⁵² *Ibid.*, p. 387.

¹⁵³ *Ibid.*, p. 394.

Geneva Conventions can only be made effective by another agreement preventing the preparation of poisonous gases.¹⁵⁴ This, however, involves the same difficulty, or even a greater difficulty, than the restriction or limitation of commercial aircraft. Large-scale production of commercial gas means an equivalent capacity for poisonous gas production. As Major Lefebure says, the German dye factories were mobilized for poison-gas production with great ease and rapidity.¹⁵⁵ The preparations in chemical warfare have produced a lack of confidence in the holding-power of the poison-gas convention, a fact which at present is leading nations away from disarmament in chemical warfare.¹⁵⁶ Present-day doubt, however, as to whether the poison-gas convention will be observed in case of war in no way alters the actual character of the convention. As ratified by the Powers represented at the Washington Conference it remains fully in force and to some extent may operate against such indiscriminate gas attacks upon civilian centers as to-day play a chief rôle in the tactics of the different chemical warfare services. This treaty, apparently, has not been based upon utilitarian needs. Social sanction appears to have been foremost as a motivating force. But it should be remembered that the treaty is limited to five Powers and not applicable in a general war. The threat of such attacks remains, and with it the threat that terrorization of civilian populations will take place in the future.¹⁵⁷

It remains for the future to determine the full meaning of terrorization as produced by aerial bombardment and to define more strictly the limitations to be placed

¹⁵⁴ See Noel Baker, *op. cit.*, p. 279.

¹⁵⁵ Major Lefebure, *op. cit.*, pp. 250-251.

¹⁵⁶ See Hyde, *op. cit.*, vol. 2, p. 319, citing also *The Annual Report of the Chief of the Chemical Warfare Service*, Brig. Gen. Amos A. Fries, for the fiscal year ending June 30, 1920, pp. 41-42.

¹⁵⁷ See Noel Baker, *op. cit.*, pp. 280-281.

upon such practices. Article 22 as it stands to-day expresses, perhaps, world opinion, but at best it is only an expression of a general desire rather than a genuine world-wide social sanction. A revised Article 22 will be necessary for sufficient protection to civilian populations against terrorization.¹⁵⁸ In the same way the general prohibition on the destruction of private property not of a military character will need detailed revision if it is to prove effective. As it is, the qualifying clause *not of a military character*, leaves the question wide open as to what constitutes private property not of a military character in aerial bombardment.

Article 23, prohibiting aerial bombardment for the purpose of enforcing contributions, anticipates an application of aircraft to the more or less obsolete custom of ransom. Whether aircraft will be used for this purpose remains for the future to determine. The question of contributions has hardly been an issue in modern times. The discussions which followed the British naval maneuvers of 1888, during which British war vessels theoretically "bombed" open coast towns for the purpose of levying contributions, demonstrated that such practices were more or less opposed to established customs.¹⁵⁹ The Hague Naval Bombardment Convention of 1907, No. IX, allows bombardment for enforcing payment of requisitions for necessary supplies of the navy forces, but not for enforcing payment of money contributions.¹⁶⁰ The Commission of Jurists, however, decided that "For aerial warfare it has been decided to

¹⁵⁸ The Sub-committee on Aircraft, of the Commission of Jurists, expressed itself against terrorization, but not definitely. "No delegation is in favor of adopting rules which would authorize the repetition of the bombardments from the air of great masses of civilian population, as such, without any attempt to attack particular objects of which the destruction would bring some distinct military advantage to the belligerent." See Moore, *International Law and Some Current Illusions*, p. 196. Cf. *op. cit.*, vol. 2, p. 321.

¹⁵⁹ See Holland, *War and Neutrality*, pp. 112-123.

¹⁶⁰ Articles 3 and 4, Hague Convention, No. IX, 1907.

adopt the more stringent rule of the Land Warfare Regulations.”¹⁶¹ The Land Warfare Rules of 1907 imply, by limiting bombardment to defended towns, that contributions cannot be enforced by bombardment. As has been pointed out by some writers, the prohibition is an unwritten law of land warfare.¹⁶² It should be noted that bombardment for the purpose of enforcing contributions is hardly necessary for an army since military forces can occupy a place and take possession. It is not altogether unlikely that attempts may be made in the future to levy contributions by threat of aerial bombardment, but as yet no precedent exists. Should an air force, however, take possession of a place “by air,” that is, by gaining control of the air space, it would be difficult to say that contributions could not be enforced in the same way that an army on land enforces contributions when it takes possession of a place.¹⁶³

In Article 24 an attempt has been made to define legitimate targets for aerial bombardment. The doctrine of the military objective serves as the basis for this group of rules. The British draft code contained the general provision that “aerial bombardment is legitimate only when directed at a military objective.”¹⁶⁴ The draft submitted by the American delegation, however, relied more upon specific mention of the objectives liable to bombardment. The adopted article (paragraph 2) retains the enumeration of the specific groups of objectives liable to aerial attack.

In general Article 24 does not conflict with the principle of military effectiveness. The old test of “defense”

¹⁶¹ *Report of the Commission of Jurists, The Hague, 1923*, p. 198.

¹⁶² See Spaight, *Air Power and War Rights*, p. 213.

¹⁶³ See *ibid.*, pp. 361-362, for the hypothetical rights of an airman to enforce contributions; also see Oppenheim, *International Law*, 1921, vol. 2, Sec. 167, for the general rights of enforcing contributions; also Westlake, *International Law*, Part 2, pp. 183-184.

¹⁶⁴ See the *Report of the Commission of Jurists*, p. 168.

was discarded in prescribing the legitimate objects of aerial bombardment. Objects of a distinct military character falling within the list of enumerated objectives, could be bombed regardless of where such objects were located. Such objectives as military forces, military works (fortifications) military establishments or depots and factories engaged in the manufacturing of war material were all subject to bombardment. The term "military establishments or depots" was intended to cover "all collections of supplies for military use which have passed into the possession of the military authorities and are ready for delivery to the forces."¹⁶⁵ This latter restriction, however, was more nominal than real, since factories producing war material could be bombed, thus destroying the material at its source. The fifth category of permissible objectives, lines of communications and transportation used for military purposes, furthermore, affords another opportunity to destroy the material.

The essentially utilitarian nature of these categories of permissible objectives can best be shown by a brief description of the "vitals," or supply system, of a modern army in active operation. The industrial establishments are the sources of supply. The collection of raw material culminates in the factory. The finished product is next transported and collected in the base depots of the army. From the base depots supplies go by rail again to the military forces, and this supply must be constant. There are also intermediate depots of smaller capacity, in which working reserves are on hand for immediate distribution, but these depots are mostly within the zone of actual operations, or nearby, and so come under the category of objectives within the zone of operations. This brief outline of the supply system of the military force is sufficient for the purpose of

¹⁶⁵ See General Report of the Commission, *ibid.*, p. 251.

showing the non-restrictive nature of the categories of permissible objectives. The source of supply, the factory producing war material, can be bombed and destroyed. During the World War, as already shown, factories were bombed regardless of the nature of their product. But military instructions to-day point out that although general bombardment of industrial sections may be strategically important, such as in disrupting the economic stability of a nation, nevertheless bombardment must be conserved for the vital points.¹⁶⁶ Devastation by means of aerial bombardment would be a waste of energy and ammunition, even if it were possible. It is "efficient bombardment" which military instructions emphasize.¹⁶⁷ The provision, restricting bombardment to factories producing *distinctively military supplies*, is therefore in harmony with the general principle of conserving the military energy, while at the same time it is broad enough to permit a generous interpretation of the term *military supplies*.

The implied prohibition against the bombing of raw material is also in harmony with military needs, since it would be more or less a waste of energy to seek to destroy raw material scattered about a district, when a single attack on a factory, after the raw material had been collected, could produce the same result. In the same way, the provision limiting the bombing of depots to those containing military material gives the belligerent the right to bomb the base supplies of the enemy. And in the movement of material, from the very source of the raw product to the intermediate base of supplies in the actual zone of operations, the belligerent is again afforded the opportunity for aerial attack by the clause permitting bombardment of *lines of communication or*

¹⁶⁶ See *Bombardment*, Air Service Tactical School, Langley Field, Virginia, 1926, pp. 61-64.

¹⁶⁷ See Captain Dagnaux, *op. cit.*, 1923, Lectures, p. 71.

transportation used for military purposes. This last provision is so general and so inclusive in its nature as to permit, practically, general bombardment. Official military instructions read that operations will be directed not only against the trunk lines, but also against the sensitive points or links in the entire rail system. Sensitive points in any rail system are listed as "regulating stations, railroad yards, division terminals, concentration of rolling stock, junctions of main lines and bridges and trestles."¹⁶⁸ Since no city or town of any size would remain permanently free of rolling stock containing military stores, and since most of them would probably contain yards or regulating stations, centers of population might everywhere be exposed to legitimate aerial attack. One writer concludes that this broad provision renders the prior restrictions nugatory.¹⁶⁹ This view, however, disregards two elements: first, that the rules, after all, were laid down for warfare, and that lines of communication and transportation, along with junctions and terminals have always been, and are to-day considered vital military objectives; secondly, that the right to bombard such objects will not necessarily lead to devastation. Major Sherman, the military expert of the American delegation, would concentrate attack upon the sensitive points of the rail systems; "as in the case of industries, it is idle to attempt to destroy all: it is sufficient to destroy certain parts only, for the system is not vital in all its members. In particular, the attacks must be so directed that it will be impossible to divert traffic over parallel lines, and so attain the same end."¹⁷⁰ The provision, in fact, assures belligerent freedom in the destruction of the enemy supply system. Where the key industries

¹⁶⁸ See *Bombardment*, *op. cit.*, p. 62.

¹⁶⁹ See Spaight, *op. cit.*, p. 228.

¹⁷⁰ Major Sherman, *Air Warfare*, p. 221.

or bases of the enemy are out of range the system of supply could still be disrupted by destroying the rail system. The right of such attack and destruction is, however, only the acknowledgment of a right always exercised by belligerents in their operations against each other.

In general, the category of permissible objectives is in harmony with the demands of military effectiveness. A question arises, however, as to whether such vital material as mineral products are to be excluded from the list of permissible objectives. It should be remembered that in the list of objectives of the British Independent Air Force during its operations upon the Rhineland sections the first item was "iron and coal mines."¹⁷¹ It has also been pointed out that the Italian raid of July 8, 1917, was upon the mercury mines at Idria.¹⁷² It is difficult to characterize a mine as a purely military establishment or its products as purely military material. Under the Hague Rules it appears, therefore, that mines and oil wells, as well as gas works, electric power stations and factories engaged in producing unfinished products, such as the pig-iron produced by blast furnaces, will not constitute military objectives. Such objectives however, form tempting targets for the military forces. Military economy will mark such objects for destruction since they not only constitute a basic element in war material but can be destroyed at the minimum expenditure of energy and personnel. It remains to be seen whether such objectives will be spared in actual warfare. Too great emphasis, however, cannot be laid on the importance of the category of military objectives as laid down in Article 24. It is a distinct attempt to preserve the old

¹⁷¹ See Paper by A. A. Walser, "The Independent Air Force in the War," *Cavalry Journal*, January, 1922, p. 389; cited by Spaight, *op. cit.*, p. 231.

¹⁷² *Ibid.*, p. 231.

distinction between combatants and non-combatants and to spare as much as possible non-military private property. The very essence of aerial warfare leads rather in an opposite direction. The listed permissible objectives are the result, perhaps, of a compromise which gives headway to this new direction in warfare, but the omissions constitute checks upon what may be considered vital military operations in aerial warfare. World War operations and present-day military tactics include objectives which were eliminated by the Rules. Only time can tell whether States will be willing to conform to these restrictions.

The provision which may meet with greatest opposition is paragraph 3 of Article 24 delimiting zones of operations and differentiating between permissible objectives according to the zone. This represents an attempt to protect as far as possible the non-combatant population and private property of a non-military character. A distinction is made between the immediate zone of operations, or, as it is termed, the "combat area," and the territory outside of that zone. Within the combat area the non-combatant population would still be subject to the rigors of land warfare. Within this area all objects, except those specially immune, such as hospitals, churches, historic monuments, etc., would be subject to ordinary combatant treatment and subject to attack. With the exception of these privileged "spots" unlimited aerial bombardment could be practiced. That part of the civilian population remaining in the zone would be subject to the risks generally falling to the lot of combatants.¹⁷³ Some writers have criticized this right of unrestricted aerial bombardment in the combat area as subjecting non-combatants to undue suffering,

¹⁷³ Judge John Bassett Moore states that in the immediate neighborhood of the operations of land forces the "civilian population would have been removed by its government or put in a place of safety." *Op. cit.*, p. 199.

since in many cases, such as in large cities within the combat area, a great portion of the population would be forced of necessity to remain.¹⁷⁴ Land Warfare Rules, however, subject non-combatants under the same conditions to similar treatment and the Rules of Aerial Warfare conform in this respect to the customary practices of war.

Paragraph 3 appears to be an extension of the Hague rule on naval bombardment. The Convention of 1907 respecting Bombardment by Naval Forces, however, permits the shelling of certain objectives regardless of where these objectives are located and regardless of the damage done to non-combatants. The commander of a ship "incurs no responsibility for any unavoidable damage which may be caused by a bombardment."¹⁷⁵ The only restriction on the freedom of the commander to bombard military objectives is a mild request that "the commander shall take all due measures in order that the town may suffer as little harm as possible."¹⁷⁶ In contrast to this naval rule, Article 24 of the Air Warfare Rules definitely restricts aerial bombardment, outside the zone of operations, only to those permissible objectives which can be "bombarded without the indiscriminate bombardment of the civilian population."

The question at once arises as to what is meant by "indiscriminate bombardment." As one writer has pointed out, the provision cannot refer to a "mere prohibition of the indiscriminate bombardment of the city or town as a whole," since paragraph one of the same Article already implicitly prohibits such practice.¹⁷⁷ The meaning of indiscriminate bombardment appears rather to be based upon the amount of destruction pro-

¹⁷⁴ See Spaight, *op. cit.*, pp. 214-215.

¹⁷⁵ See Scott, *Texts of the Peace Conferences at the Hague, 1899 and 1907*, p. 261.

¹⁷⁶ *Ibid.*, p. 261.

¹⁷⁷ See Spaight, *op. cit.*, p. 217.

duced upon civilian populations when operating against military objectives. In other words, aerial attack upon a permissible objective would be prohibited if such bombardment involved considerable damage to the non-combatant population. As the same writer has said, this provision "makes the legitimacy of a bombardment depend upon its results."¹⁷⁸

The right of bombardment permitted in naval operations has here been narrowed down. It may be noted again that a naval commander can range his guns at will over a town defended by forts, and that military objectives in an open town may be bombarded regardless of the amount of incidental damage. In the preceding chapter it has been pointed out that long-range bombardment inevitably results in indiscriminate bombardment due to dispersion. That is, incidental damage over a widespread area occurs even after a target has been perfectly ranged and "bracketed."¹⁷⁹ Firing at a military objective twelve miles away, no naval commander can guarantee that his shells will not fall a half-mile from his target. The Hague Rule of 1907, relieving a naval commander and, by implication, his country from responsibility for the incidental damage done, is more or less an acknowledgment of the inevitable natural dispersion which is inherent in long-range bombardment.

To base the legitimacy of a means of warfare upon the extent of the incidental damage to civilian populations which it produces is an innovation in the regulation of warfare on land. In maritime warfare this standard has been applied but only in practices involving incidental operations, such, for instance, as the obligation to provide for the safety of the personnel of a

¹⁷⁸ *Ibid.*, p. 217. See also H. F. Manisty, "Aerial Warfare and the Laws of War," *Grotius Society Transactions*, vol. 7, 1922, p. 33.

¹⁷⁹ See *supra*, p. 171.

destroyed vessel. The imposition of such a standard upon aerial warfare by differentiating between decreed zones of operations, however, would in effect eliminate its vital element, namely, aerial bombardment. A brief review of aerial bombardment practice, as it is being taught to-day, will indicate the amount of probable destruction involved in such operations.

Aerial bombs to-day are a great improvement, in terms of destructive capacity, over the bombs used during the World War. Bombs weighing from 100 pounds to 4000 pounds make up the ammunition of aerial operations. The effect of the more commonly used bombs are as follows:¹⁸⁰

Weight of Bomb, in Pounds	Diameter of Crater, in Feet	Depth of Crater, in Feet	Diameter of Danger Space to Personnel, in Feet
100	12	6	200
300	20	6	300
600	25	7	400
1100	30	7	2400
2000	40	14	1200
4000	65	16	2400

Judging from this table a 4000-pound bomb, dropped on an objective surrounded by non-combatant population, would create a danger zone 2400 feet in diameter even if a direct hit were made. In other words, a direct hit on a railroad station with a 4000-pound demolition bomb would sweep the entire neighborhood. Direct hits, however, are rare, even in light artillery fire. In aerial bombing tests, from an altitude of 8000 feet, with the latest improved sighting devices, under the most favorable conditions, the radial error has not measured less than 152 feet. This means that with the greatest accuracy yet attained, an accuracy surpassing that of long-range cannon, a bomb might fall any-

¹⁸⁰ This table was drawn up by Major William C. Sherman, Military Adviser to the American Delegation. See his *Air Warfare*, p. 199.

where within 76 feet of the center of the target. In recent bombing experiments, not under war conditions, the scattering of shot was not over 200 yards from the target, a grouping which might be called creditable for medium-caliber cannon. Yet this radial error would result in the demolition of residential sections if the target were located in a populated district.

To make certain that the objective is destroyed aerial tactics involve what is known as "zone fire." In artillery operations, when a preliminary fire adjustment is not possible, either because of necessary haste or on account of limited view, zone fire is resorted to. A large number of shells are distributed as quickly as possible into a convenient zone around the objective with sufficient density of fire to cover the entire ground.¹⁸¹ This system of zone fire has been accepted to-day by all military air services, the zone fire to be produced by the use of squadrons or by groups of squadrons. An American expert on bombing gives the following description of a single bombing squadron: "The weight of bombs carried by the normal bombardment formation totals 21,600 pounds, and of this weight between fifty and sixty per cent is 'T.N.T.' In other words, a bombardment formation carries over six tons of high explosive, or as much as is contained in about 7000 3-inch H. E. shells."¹⁸² The French base their aerial bombardment tactics on orderly mass action, each airplane having its special position in the group so as to assure a regular and dense distribution of shots upon the ground. Each group forms a firing unit which bombards in mass, in this way attaining zone fire. The smallest group suited for such mass action is given as the "flight," containing from 6 to 10 airplanes echeloned

¹⁸¹ See Captain Dagnaux, *op. cit.*, p. 33.

¹⁸² See *Bombardment Aviation*, A Lecture Delivered by Lieut. H. L. George, U. S. Army Air Corps, at the Marine Corps School, Quantico, Virginia, 1927, p. 1.

from front to rear in altitude and flying in the common "V" formation. This elementary formation can cover with its bombs a rectangle from 250 to 320 feet wide and from 320 to 800 feet long.¹⁸³ Under war conditions this area would be increased. The flight, however, is considered insufficient to assure a good density of fire. Consequently flights are grouped into larger firing units known as "groups," the flights passing over the target in succession and about 1600 feet apart from each other.¹⁸⁴ At times bombardment tactics include an entire bombardment regiment, made up of three groups of three bombardment squadrons each or a total of nine flights. The regiment may divide into three groups and attack three different objectives, or it may remain intact as a unit and direct its fire upon a single objective. As a French expert writes: "The bombardment group is not only a tactical group, but it is also a firing unit. Since, on account of the sources of error we have studied, it is necessary to use about 800 projectiles in order to produce the desired effect on a target, the presence in the bombardment group of three bombardment squadrons is thereby justified."¹⁸⁵ In cases where the regiment as a unit would be employed, the number of shells dropped would amount to nearly 2400, with the zone fire covering a correspondingly increased area.

To interpret "indiscriminate bombardment," as laid down in paragraph 3 of Article 24, on the basis of incidental damage to non-combatant populations, would thus, in effect, eliminate aerial bombardment. In present-day society the permissible objectives, listed in paragraph 2 of the same Article, would almost invari-

¹⁸³ See Captain Dagnaux, *op. cit.*, p. 65; also *Résumé de l'Emploi de l'Aéronautique*, Centre d'études de l'Aéronautique, April, 1924, p. 32.

¹⁸⁴ See Captain Dagnaux, *op. cit.*, p. 65.

¹⁸⁵ *Aerial Bombardment*, Colonel de Vaulgrenant, Commander of the First Aerial Division (translation by D. M. Miner, Air Service, U. S. Army), July, 1920, p. 22.

ably be found surrounded by non-combatant populations, and a strict interpretation of paragraph 3 would invariably eliminate such objectives from the category of permissible targets. The World War practices would be condemned and present-day tactics prohibited in case of war.

Paragraph 3 would thus tend to confine aerial bombardment to the area occupied by land forces, an area defined as the combat zone, since only in that area could aerial bombardment be conducted regardless of the incidental damage to civilian populations. This attempt, however, at confining the effective operation of a dominant weapon within artificial areas conflicts with the principle of military effectiveness. At no time, as previously pointed out, has the effective operation of vital weapons been limited by international regulations. It is therefore hardly likely that air power will be so restricted. It may be said, rather, that if an objective is of such a character as to be properly designated a military objective, no artificially created zones will prevent its bombardment.

The provision embodied in Paragraph 3 was not readily agreed upon by the Commission of Jurists. As the chairman, Judge John Bassett Moore, points out, "what proved to be so difficult was the determination of the conditions under which the bombardment of objects, intrinsically liable to attack, was to be forbidden, when they were found in centers of population."¹⁸⁶ The provision was not included in the original drafts submitted by the American and British delegations.¹⁸⁷ Neither was it incorporated in the Revised American Proposal.¹⁸⁸ The Netherlands and Japanese delega-

¹⁸⁶ J. B. Moore, *op. cit.*, p. 197.

¹⁸⁷ For the drafts submitted by the American and British Delegations see the *Report of the Commission of Jurists*, pp. 157, 167.

¹⁸⁸ See J. B. Moore, *op. cit.*, pp. 197-198, for the Revised American Proposal.

tions, however, were in favor, as stated in the report of the sub-committee, "of the utmost restriction possible and advocated a general prohibition of aerial bombardment of towns and villages outside the immediate area of military operations, whatever the nature of the object to be attacked."¹⁸⁹ The Italian draft incorporated the provision which was finally adopted. Article 2 of the Italian draft was as follows:¹⁹⁰

"The bombardment of towns, villages and civil habitations of any kind outside the immediate neighborhood of the operations of land forces and naval or military bases, is absolutely prohibited.

In cases where the objectives which are liable to bombardment, in accordance with the provisions of paragraph 1 above, are in proximity to towns, villages or civil habitations of any kind, bombardment of such objectives can only be carried out on condition that no hurt is suffered by the civilian population.

In the event of absolute observance of this condition being impossible the aircraft must abstain from bombardment."

The motives underlying the attitudes of the Netherlands and Japanese delegations, as well as the Italian proposal, can only be surmised. A suggestion may be found in the statement of the American Naval Adviser, Admiral William L. Rodgers, that "in the formulation of the rules of war for these new agencies each nation seemed chiefly guided by the principle of promoting its own national policies and its position in the world, neglecting neither the point of view of neutral nor of belligerent. Each national delegation was a unit in standing for a code which should favor its national

¹⁸⁹ Report of the sub-committee, *Report of the Commission of Jurists*, p. 199.

¹⁹⁰ See J. B. Moore, *op. cit.*, p. 198.

situation."¹⁹¹ It may be recalled that Holland, during the World War, was constantly exchanging notes with both belligerents over the repeated crossing of her territory by belligerent aircraft.¹⁹² It was only with difficulty that Holland was able to maintain her neutrality. In case of a general war on the Continent, Dutch cities would be open to air attack with hardly the means of repelling an invasion of this type. In the same manner, Japan, immune from the east, may nevertheless see a threat from a reconstructed China. Japanese "nerve centers" lie concentrated in comparatively few spots and within reasonable range of the Chinese coasts; whereas the industrial and political centers of China lie scattered over great distances, for the most part out of present-day aircraft range. Italy has not forgotten the raids upon her treasured cities. Her industrial centers, as well as her classical treasures, lie just under the Alps, and although her northern boundary has been pushed northward to a point where she dominates the Alps on the Austrian border there still remains the western coast, and the Alps themselves may not always serve as an obstacle. Whatever the motives were which brought about the adoption at the Hague of the Rules of Aerial Warfare, they have not availed to bring about the ratification of the Rules. National defense polices still play a prime rôle in international affairs. As long as governments persist in the possession and employment of effective weapons it hardly seems likely that ratification will soon follow. The American military adviser

¹⁹¹ "The Laws of War Concerning Aviation and Radio," *Am. J.*, vol. 17, 1923, p. 633.

¹⁹² For a list of notes and their contents exchanged between the Dutch Government and the belligerents see *Seekriegsrecht im Weltkrieg*, Sammlung diplomatischer Noten und anderer Urkunden. Zusammengestellt im Auftrage des Staatssekretärs des Reichs-Marine-Amts, pp. 1192, 1251, 1252, 1445, 1493, 1500, 1488, 1502, 1511-1513, 1520, 1548, 1550, 1560, 1647; also see *Jahrbuch des Völkerrechts*, vol. 7, p. 47 et seq.

for aviation, Major William C. Sherman, expressed, perhaps, the real reason why ratification failed. He writes:¹⁹³

"The bomber now stands forth as the supreme air arm of destruction, with vastly enhanced power. When nations of to-day look with apprehension on the air policy of a neighbor, it is the bomber they dread. It is this heavy artillery of the air, which drives home to combatants on the ground the importance of air power. When Marshal Foch foresaw the possibility of terminating a war by air attack on civilian populations alone, it was undoubtedly the bomber he had in mind."

¹⁹³ Major Sherman, *op. cit.*, p. 197.

CONCLUSION

AERIAL bombardment possesses the same status to-day as that of any other powerful and vital means of warfare. As in land and sea bombardment its prime functions remain untouched by international restrictions. The 1923 Hague Rules of Aerial Warfare sought to impose, indeed, distinct limitations upon the right of aerial bombardment. Had they been adopted, they would have substantially curbed air power itself. But air power to-day is a dominant military force, perhaps predominant. Those nations equipped with air power have followed the practice of the ages in seeking to retain the full use of such power. The Rules of Aerial Warfare, therefore, have not been ratified by a single Power, and little or nothing appears to have been done to secure their ratification in their present form.

The only conventional restrictions in force applying directly to aerial bombardment are the Balloon Declaration of the Second Peace Conference at the Hague, of 1907, and Article 25 of the Rules on Land Warfare adopted at the same Conference. The Balloon Declaration prohibits, until the close of the Third Peace Conference which was expected to take place in 1914, the discharge of projectiles and explosives from balloons or by other new methods. The United States and Great Britain are, however, the only Great Powers which have ratified it, and as it applies by its terms exclusively to wars in which all its participants are signatories, its practical effect as a restraining force in future hostilities may be disregarded. By Article 25 of the Rules on Land Warfare the bombardment *by what-*

ever means of undefended places is prohibited. The prohibition, however, is based on the test of "defense," an obsolete test which was disregarded by the Commission of Jurists and replaced by the principle of the "military objective."

There are thus no conventional rules in actual force which directly affect aerial bombardment. At the present time the only restrictions bearing on such operations are those general and rather vague limitations known as the customary practices of war. These customary practices, however, are based upon the old traditional means of warfare. They are the products of centuries of military and naval operations and have been built up around the land and sea forces. It may even be said that originally they were off-shoots of special methods of warfare, the methods themselves being based upon the weapons and technical equipment of the period. These military practices were in time accepted as customary and were nurtured by the clergy and by the jurists. It was in this way, as already shown, that the idea of a "zone of military operations" developed, an idea originally growing out of the technical limitations on artillery fire. The cannon shot could reach but a short distance. Beyond its range objects were safe. As the range of cannon increased the zone of safety was pushed back, but this increase was slow and limited. In time the idea became prevalent that beyond the range of cannon or beyond the zone where cannon and troops maneuvered, the civilian population was to be safe from fire. Thus there was a technical basis for the accepted practice. But the zone of military operations was already more or less mobile, according to the technical equipment of the times. The zone created by the modern cannon with its railroad and motor equipment represented a palpable increase over the isolated battlegrounds of even the

agile Napoleonic campaigns with their horse artillery; but so long as the increase was comparatively gradual, the zone of operations was accepted, like war itself, as an unavoidable evil. It was when, as the result of technical progress and invention, the range of fire was suddenly, unexpectedly and startlingly increased, that the innovation, such as the long-range German gun, shelling Paris from a distance of seventy miles, aroused resentment. The unorthodox characteristic of this weapon was its range, the fact that it sent its shells 70 miles instead of 24 miles. Had the belligerents been able to produce a great number of these cannon, the result might have been but another extension of the accepted zone of operations.

Fundamental in the regulation of warfare is the fact that the employment of each major weapon brings about the restrictions or limitations upon its use. To apply the set of customs or usages which have grown up around one group of weapons, such as those used in land warfare or in naval warfare, to another group of weapons and another type of warfare, is to raise a question as to the very force of such customs or usages since they bear an inherent and inseparable relation to the particular kind of warfare which they regulate. Thus, to attempt to regulate aerial bombardment by the customary practices which have grown out of land or naval warfare is to lay down a set of artificial regulations which will hardly stand the strain of war. Underlying the rules which have developed in a natural way is the principle of military effectiveness, or utility. The rules, as already shown, do not restrict this utility. The same rules, however, applied to a new type of warfare, may come into direct conflict with the effective use of the new weapons, and inevitably be ignored. Should the exact rules governing the older types of warfare be imposed on aerial warfare without regard to their har-

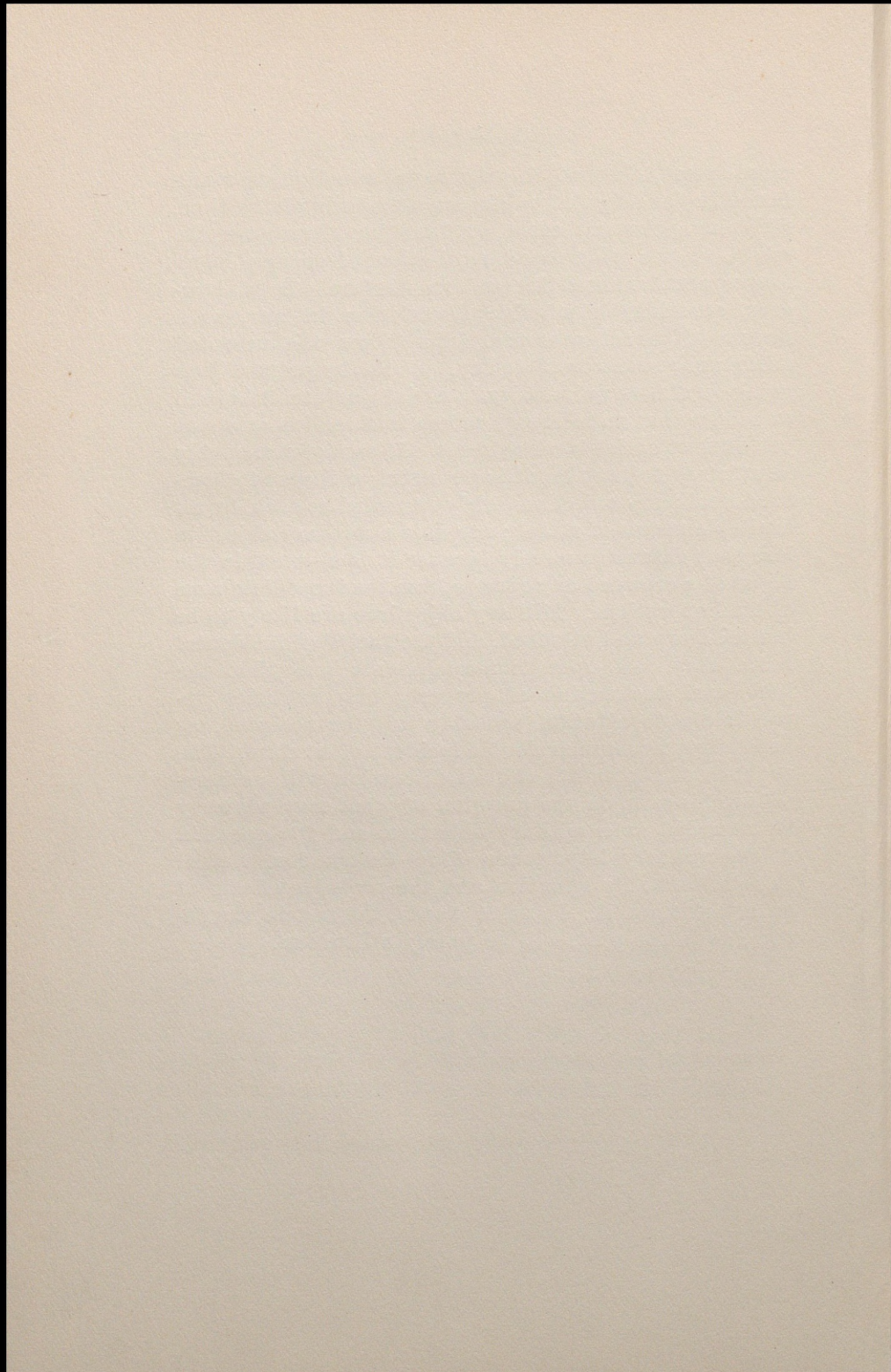
monizing with the basic principle of its effective operation, the rules would break with the outbreak of war.

Regulations governing aerial warfare relate to the use of a weapon which has hardly passed out of its embryonic stage. No scientist can safely predict the aircraft of 1940. The Atlantic has been crossed. Who can deny the possibility of uninterrupted world flight, with vastly increased speed and carrying-capacity? Gunpowder is supposed to have revolutionized warfare. The advent of mechanical flight may be the beginning of another period in warfare. Sweepingly to apply the standards of the older period to the "aerial age" might be equivalent to reenacting again the futile gesture of the Chevalier Bayard who, after being fatally shot by a musketeer, still boasted of the fact that he had never shown quarter to an enemy found with a musket.

The difficulty or uncertainty of prophetic regulations, however, does not eliminate all regulation. Some restrictive force runs continuously through all time, in spite of changes in means and methods of warfare. This is the force of social sanction, a force made up the *mores* of a period and crystallized into a world opinion. Social sanction defines and limits permissible violence and remains the only provision for enforcing observance of the minimum standards of a society or civilization. A check against ruthless practices is said to lie in the fear of reprisals. The deterrent effect of reprisals or the threat of reprisals is at best doubtful, and the practice opens wide the road to legitimized savagery. Whatever its value, the practice of reprisals also rests ultimately upon social sanction, since the only tenable pretext for carrying out reprisal measures is the violation by the enemy of some minimum standard of conduct.

Nations will employ an effective weapon to its ut-

most extent, checked only by social sanction as manifested in the accepted minimum standards of the time. Skinning prisoners alive, or breaking them over the wheel, or the widespread mutilation of corpses is no longer countenanced in western warfare. It is, however, questionable whether devastation in war, as a means of moral pressure, falls below the accepted minimum standards of to-day. With the preparations going on almost universally in aerial warfare, it is hard to believe that an international social sanction exists as yet against aerial bombardment. It cannot reasonably be affirmed to-day that it is wrongful or illegal to bombard a military objective, fairly regarded as such, by all available means of attack; nor does a military objective lose that character merely because it is situated in the midst of a crowded city remote from the immediate zone of land operations. Military objectives are likely to be hunted down and attacked, and the fact that incidental harm may fall upon non-combatants and that the incidental destruction of property may at times approximate devastation probably will be accepted, as heretofore, as an unavoidable incident of warfare. The problem of regulation and its discussion will, as heretofore, hinge upon the question of what may properly be regarded as a military objective, and the question of the military importance of its destruction, viewed in relation to its situation and the probable effects of an attack upon it. In other words, the test in the future, as in the past, will be purely utilitarian.



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