THE LAW OF THE AIR

HAROLD D. HAZELTINE
LL.D.

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Faculty of Laws

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THREE LECTURES DELIVERED IN THE UNIVERSITY
OF LONDON AT THE REQUEST OF THE
FACULTY OF LAWS

BY

HAROLD D. HAZELTINE, LL.D.

FELLOW AND LAW LECTURER OF EMMANUEL COLLEGE,
AND READER IN ENGLISH LAW IN THE
UNIVERSITY OF CAMBRIDGE

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PREFACE

At the request of the Faculty of Laws of the University of London I delivered, on December 7, 12, and 14, 1910, at King's College, the three lectures here published in accordance with the terms of my appointment as lecturer. The lectures were prepared during a busy term at Cambridge; and it was my intention thoroughly to revise them before publication. I regret that there has been no time for this, and that it is necessary to publish the lectures essentially in the form in which they were delivered. If there were time for revision, not only would changes be made in form and substance, but certain additions, occasioned by the progress of legal thought since the lectures were delivered last December, would also be incorporated. Certain portions of the lectures, omitted at the time of oral delivery owing to the shortness of the lecturing-hour, are now included.

While it is believed that the lectures embody considerable original thought, my reliance upon a number of previous writers is, nevertheless, considerable. This assistance will be manifest by a perusal of the notes, and is here also gratefully acknowledged. The defects in the lectures are

entirely my own; and I can only trust that in a longer work upon the same subject, which I have in contemplation, I shall be able greatly to improve upon the present small volume.

I have great pleasure in thanking the members of the Faculty of Laws in the University of London for their kindnesses before and during the delivery of the lectures. To my friend the Rev. A. Rose, Fellow of Emmanuel College, Cambridge, my thanks are due for valuable assistance in the preparation of a large diagram used at the oral delivery of the lectures, indicating the various "zone-theories" of publicists. I wish also to thank my friends Professors Kenny and Oppenheim, and Dr. A. Pearce Higgins, of Cambridge, for kindly reading the proof-sheets in my absence from England. To Dr. Higgins I am especially indebted for his generous help in taking over the responsibility of seeing the lectures through the press.

H. D. H.

June 1911.

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FIRST LECTURE

THE FUNDAMENTAL PROBLEM: THE RIGHTS OF STATES IN THE AIR-SPACE

Early philosophers occupied themselves with the problem as to the nature of the air as one of the elements;[1] and the idea of communicating and of navigating through space goes back to a very remote period in the history of the race. The mythologies of the Greeks and of other peoples furnish evidence of the conception that the air might be conquered for the purposes of man, and the story of the flight of Daedalus and his son Icarus is but the best known of various legendary ascents. You will remember that Daedalus wisely kept close to the surface of the water, while foolish Icarus persisted in flying, with the help of his fragile wings of feathers and wax, squarely into the hot, burning rays of the setting sun, with the consequent result that the wax dissolved and Icarus made an enforced descent into the sea! So, too, there is the legend that Alexander the Great built himself a strong covered seat, with projecting rods at the corners. To these rods sixteen live griffins were tied; and then, by holding aloft a long pole with food at the end, the king

caused the griffins to flap their wings in an endeavour to get the tempting viands. After this fashion it was that the royal aviator ascended in his heavier-than-air machine and flew not only for ten days on end, but so high above all things terrestrial that he could see neither land nor sea, a record which, so far as I am aware, has not been excelled, or even approached, either as regards distance or height, by the aeroplanists of our own time! With these legends, and also with the historic efforts of Friar Lana, of Leonardo da Vinci, and of other early designers of balloons and aeroplanes, I am not now concerned; nor do I inquire whether or not these and other early designers consciously followed the analogies furnished by nature in the flying fishes, birds, lizards, squirrels, lemurs, and frogs.[2] But, although I shall not detain you with any attempt to trace the history of flight, I do wish to draw your attention to the fact that the advance in the art of aeronautics has been accompanied by the efforts of lawyers to solve at least some of the legal problems thereby presented. Although the active period of legislation and judicial decision in regard to the rights and duties of individuals and states, as regards the air, is just now beginning, legal theory has occupied itself with some of the problems of the air for a very considerable time.

In 1793, shortly after the first attempts at flight, Pütter discussed the question as to whether, in case the "air-balls," as he called them, succeeded

in becoming practically useful for public purposes, the German Emperor would be entitled to make anything out of them as *regalia*. From this time on, occasional discussions of questions of aerial law increased in number; but the attention of writers was at first devoted exclusively to questions of international law, more especially the right of espionage, the use of balloons in the Franco-Prussian War of 1870–1871 increasing the interest felt in this question. But other questions also became the subject for literary discussion. In 1891 Manduca, an Italian, wrote on criminal acts committed in the air-space. In 1897 Zitelmann drew attention to the importance of aviation in questions of private international law, and in 1901 Rosenberg delivered a lecture—which was published—on the liability of balloonists to pay damages for injuries committed by them. In this same year—1901—Pappafava, a Dalmatian lawyer, published an essay on the commissioner of oaths and his activities, in which he discussed the question from three points of view: the commissioner of oaths on the land, on the water, and in the air! We may well question with Zitelmann whether in 1901 the commissioner of oaths had many duties to perform in the air; but Pappafava's work is noteworthy as the earliest attempt to treat such a special question of aerial law in a methodical and thorough manner, with a consideration of the whole theory of an aerial international law.[3]

The recent rapid development of communication by wireless systems of telegraphy and telephony, and of aerial navigation by balloons, airships, kites and aeroplanes, has brought both subjects into the realm of practical importance as respects both public and private interests in times of peace and of war. A growing interest in the discussion of legal problems has resulted from this advance along scientific and practical lines; and the appearance in 1901 of Fauchille's important essay on *Le domaine aérien et le régime juridique des aérostats* marks the beginning of a new period in the history of the discussion and settlement of questions in aerial law. In the following year Fauchille submitted to the Institut de Droit International his draft of a code of the air, accompanied by reports on the subject by Fauchille and Nys. At Ghent in 1906 the Institut discussed, in connection with the question of wireless telegraphy, the theoretical basis of a law of the air.

The Institute of International Law has thus already devoted considerable attention to the legal problems of the air; but at its recent meeting, held last spring, the Institute concluded to present to the International Conference upon Aerial Navigation the new draft code that had been drawn up by M. Fauchille. This Conference was held in May, June and November of the present year (1910); but it adjourned—only a few days ago—without reaching any definite conclusions, and it is perhaps too early to venture a prophecy as to whether or

not the labours of the Conference are to result in an international convention regulating aerial navigation.[4] A Conference on aerial law was quite recently held at Verona, and its conclusions have already been published.[5] An international committee on the legal problems of aviation has also been formed in France, with branch committees in nearly all leading nations of the world, including England and Scotland. The chief object of the committee is to elaborate a code of the air; and it has already begun the publication of a monthly review devoted to the legal problems of aerial locomotion. The code which is in process of formation will include rules of both national and international law, and will be divided into five books; treating respectively public, private, administrative, fiscal and penal aerial law. In addition to these legal discussions in various conferences the last three years have witnessed the appearance of a good many essays and brochures, mostly in French and German, dealing with aerial questions of public and private law.

Though the beginnings of a law of the air may be traced far back in human history, not until men of our own generation have solved the scientific problems of aerial communication without the use of wires and of aerial navigation without the use of land or sea as a resting-place for the vehicles of carriage, has an aerial law been felt as a real social and economic necessity. Lawyers therefore must now follow up scientific

and economic advance and must devote themselves seriously to the legal problems that are raised. Many already established principles of law relating to land and sea will undoubtedly suffice for the settlement of some of these legal problems as to the air. But for the solution of certain of the novel and difficult questions the present law is wholly inadequate; and new conceptions and new rules of statute and case law will undoubtedly be evolved. To meet the social and economic needs of mankind the centuries of the past have slowly developed the law of the land and the law of the sea. The twentieth century seems destined to witness the development of the law of the air.

In the present course of lectures I hope to set forth a few of the many new legal problems that are concerned with the air as it is, and will be used by man for one purpose or another; and I consider that the legal questions connected with both wireless communication and aerial navigation properly fall within the compass of my subject—the law of the air. In to-day's lecture I wish to draw your attention to the most fundamental legal problem involved in my subject, namely, the problem as to the rights of states in the column of air superincumbent upon the earth's surface of land and sea. In the second lecture I shall take up the principles and problems of national—that is, municipal—law, and in the third lecture the principles and problems of inter-

national law. I think we shall find that our consideration of fundamental principles to-day will be of considerable help in the discussion of more concrete questions in the two following lectures.

There are two things which it will be necessary for us to bear in mind throughout the course. In the first place, it will be necessary to distinguish between the air as an element and the air-space that is filled by this aerial element. When one speaks of the air-space above a piece of land or above a state's territory, one means of course the air-space as it is filled at any given moment by this aerial element constantly moving, slowly or rapidly, in one or another direction in accordance with physical law. We may, if we wish, adopt the analogy of the river-bed and the space between its two shores, this space being filled at any one given moment by a constantly moving current of water. In the second place, it is well not to forget that there is, after all, only one air-space above a given tract of land or expanse of water. In that single air-space there exist the rights of both public and private law. Land-owners have private rights and states have public rights in the one and the same aerial space. Failure to observe these two important matters may easily lead us into difficulty and error.

In to-day's lecture I am concerned with the problem as to the nature and extent of the rights of states in the air-space. It is true that the view has been expressed by more than one jurist

of eminence that it is too early to formulate any general principle in regard to the rights of states in the air-space, and that, for the present, legal discussion must be devoted to practical problems. This was the position taken up by Weiss and von Bar at the meeting of the Institut de Droit International at Ghent in 1906, where they and Ullmann brought in a draft-code differing from M. Fauchille's.[6] At the very last meeting of the Institute of International Law, held at Paris in April of the present year, von Bar again expressed the view that lawyers should not concern themselves with theory, but should endeavour to lay down practical rules for the guidance of state and individual action. At the meeting in 1906, M. Edouard Rollin maintained, indeed, that the air is still something unknown to us, and that the drawing up of a body of rules in regard to it is as yet premature. He likened the air to the centre of the African continent some fifty years ago, when the maps indicated it by a great white space vaguely described by geographers as *terra incognita*.[7] But, I confess, it seems to me that much —very much—more is known to-day about the atmosphere than was known about the centre of Africa half-a-century ago; and I believe that the proper settlement of the question as to what rights states have in the column of air above their territory is of first and fundamental importance. The proper settlement of this question will render the solution of questions of detail both in

national and international law far easier and far more satisfactory. Even if states do not choose to put fundamental doctrines of this character into words in their national statutes and international conventions, still a consistent theory should actually underlie and dominate both statutes and conventions. I offer no apology, therefore, for inviting you to consider this fundamental problem at the very outset of this course of lectures.

It is universally admitted that the air-space over the high seas and over unoccupied territory is absolutely free to all states and persons desiring to use it; and we may, therefore, for the present, leave this air-space entirely out of account.

There are two great groups of theories as to the rights of states in the air-space above their territories and territorial waters. There are, first, the freedom-of-the-air theories. Of these there are two: the theory that the air is completely free, and the theory that the air is partly free. Some of those who maintain that the air is partly free give the state certain rights without restricting the exercise of those rights as far as the height of the air-space is concerned; while others restrict the exercise of rights by the state to a limited zone in the air-space, the upper regions of the air being completely free. The second group of theories may be designated the sovereignty-of-the-air theories; theories which accord the state rights of legal and political supremacy—rights of

sovereignty—in the air-space. The first of these theories concedes to the state full sovereign rights, without any restriction, up to an indefinite height above the state's territory and territorial waters. But some of the sovereignty views do not go thus far, for they concede to the state only a limited sovereignty; either a sovereignty which extends only up to a certain limited height (and this view may be compared with the zone theories of adherents of freedom), or else a sovereignty which, although unlimited in height, is yet restricted by the reservation of a servitude of innocent passage —that is, a right of innocent passage for all balloons and other air-vehicles. I do not place the ownership-of-the-air theories in a group by themselves. The view that the state has full right of ownership in the whole of the air-space above its territory, and also the view that it has only a limited right of ownership, are essentially sovereignty views expressed in terms of private law. Instead of expressing the state's right as one of sovereignty—that is, territorial supremacy—they express it as one of ownership or property, a term, strictly speaking, to be applied only to the right of the private individual in a piece of land under the private law relating to real estate.

We must now state these theories of public law somewhat more fully, and must see what legal consequences flow from them; and we must then endeavour by critical examination to arrive at a conclusion as to which view is the one now

recognized by principles of public law, and which is the one best adapted to serve the higher interests of aerial navigation, of private individuals other than those engaged in aerial flight, and of states themselves both in time of peace and time of war.

The view that the air is completely free is held by a number of publicists of distinction. Thus Wheaton says the sea is an element that, like the air, belongs to all, and for this reason no nation has a right of possessing it. Bluntschli asserts that states have no authority in the air, because they are unable to enclose it within their frontiers. Pradier-Fodéré maintains that the great currents of air are not legally under the control of the state. Stephen, too, says that without doubt the air is free. Professor Nys, of Brussels, holds that the air-space is incapable of ownership or of sovereignty, and is therefore free to all.[8]

All of those writers who defend the liberty of the air without any restriction are, with the exception of Nys, thinking of the air as one of the elements. It is important for our purposes to observe most carefully that they do not touch upon the question, which is, of course, at the present time the important one, as to the rights of states in the *air-space* as such. From this point of view the opinions of these distinguished publicists are of very little weight. Indeed, Nys alone of all the writers who favour complete freedom argues expressly with reference to the air-space; and we may therefore look upon him as

being the only publicist of note who supports this broad and sweeping doctrine that the state has no rights in the air-space above its territory.[9]

In his report to the Institut de Droit International at Brussels in 1902, upon the "régime juridique des Aérostats," M. Nys refused to accept M. Fauchille's doctrine that, although the air is free, the territorial state has, nevertheless, the right of preservation and defence. M. Nys contends that there is no real necessity for the existence of such a right or for the existence of a zone of protection, and that, if the existence of such a right were admitted, the principle of the freedom of the air would be lost in a mass of protectional rules and regulations by the territorial state.[10] At the conclusion of his report M. Nys remarks: "Let us beware lest we destroy 'the liberty of the air' or reduce it to a very slight significance. Truly, as regards the land, we are only too much the victims of laws, regulations and decrees of all sorts. We fear especially lest the science of law should be made to appear as the enemy of progress, in that she is made to impede or lessen the development of aeronautics by ill-timed provisions." [11]

The consequences flowing from the theory advocated by M. Nys are the following:[12] (1) Air-vehicles of all sorts would be able to navigate in space at whatever height they saw fit and could commit there all the acts they pleased, the territorial state having no right to interfere in

any way. (2) Air-vehicles both public and private would be subject, for acts committed on board, only to the laws and justice of the state whose flag they fly, the courts of the territorial state, if not also the state of the air-vehicles' flag, having absolutely no jurisdiction; the territorial state being subjected therefore to all such risks as espionage and contagious diseases without being able to take any action whatever. As Meurer has pointed out, M. Nys's doctrine negatives completely the existence of all rights of the territorial state in the air above it: it negatives completely the existence of the state's ownership, the state's sovereignty, and the state's right of preservation.[13]

M. Nys maintains that just as nearly all the principles and institutions of maritime law are an application of the principles and institutions of the law that had already grown up upon the land, so the law of the air consists—or is to consist—largely in the application of the principles and institutions of maritime law. As a result of this view M. Nys contends that just as the principle of the complete freedom of the sea—of *mare liberum*—holds in maritime law, so the principles of the complete freedom of the air should hold in aerial law. The theory of Nys is therefore based upon the analogy of the sea. He looks upon the air as a world-sea and upon air-vehicles as vessels sailing through this sea of air. Just as the sea itself is open and free to the maritime

trade of the world, so the air-sea is open and free to the aerial trade of the world. Just as vessels on the sea are viewed as detached portions of the homeland, so vessels in the air are to be viewed as detached portions of the homeland of the air-vessel. You will therefore observe that the theory of Nys amounts essentially to placing the high seas of water and the high seas of air upon a fully and completely equal footing.[14]

I cannot believe that this theory of the complete freedom of the air, involving, as it does, these extreme consequences, will ever be seriously considered by jurists and by states. Though the analogy of the sea is in some respects enticing, and enticing perhaps largely by reason of its picturesqueness and simplicity, enabling jurists to work out the principles of an aerial law by close analogy to the already established maritime law, we must not forget that, as Meurer has reminded us,[15] the air is not, after all, a sea, and the air-vehicle is not, after all, a ship. The conditions of the sea and the conditions of the air are not the same. The sea stands in quite a different relation to the land from that of the air to the land. The sea is not necessary to state existence, as witness the inland states, such as Switzerland; while, on the contrary, the air that fills the air-space is absolutely essential to the existence of every state, for without the air there could be no life upon the state's territory at all. We may, if we wish, express this by saying that the column

of air above a land has such a close relationship to the land that it may be looked upon as an appurtenance of the territorial state or even as a part of the territorial state; and as Professor Westlake has said,[16] the farther people go from the coast upon the sea the less and less do their acts affect the coast and the whole country, whereas the higher people go in the air, the more and more do their acts—such as the dropping or hurling of objects—affect the land that lies underneath.

Of those who maintain that the air is partly free, some give states certain rights without limiting their exercise as to height. Thus the Institut de Droit International states in its draft-code regulating the use of wireless telegraphy that the air is free, the states having in it only those rights which are necessary for their conservation. Meili in 1908 expressed himself as follows: "The air, together with the aerial space, is free, that is to say, it is at the disposition of all nations, under this reserve, that each territorial state can do that which is necessary for its own preservation." In February 1909 Meili gave it as his view that the air should be free for aerial navigation, but that each state should have certain rights, not limited horizontally, for the preservation of their interests, enabling them to defend themselves against balloons and aeroplanes.[17]

Most of the publicists who adhere to the view that the air is partly free seek to limit the exercise of the state's rights of conservation within a

limited zone of the air-space.[18] Despagnet says: "In itself the air does not seem susceptible of being the object of a right of property or of sovereignty, but each state ought to have the right of preventing such use of the air as is dangerous to its own security. The analogy of the maritime belt could be applied to the air-space above the land." Mérignhac maintains that the air is free except a territorial atmosphere, the height of which should be fixed by international agreement and should not extend too high above the earth. In another place he states it as his view that the aerial frontier of the state above its land should be placed high enough to guarantee the interests of the territorial state and low enough to respect the interests of aerial navigation. In Ferber's view the atmosphere is free except a territorial zone which if possible should not be higher than 500 metres. Meyer's view is that the air is free except a territorial zone extending as high as the state can make its authority felt directly from its own territory. The theory advanced by M. Fauchille is expressed with great clearness and precision in the seventh article of his draft-code submitted to the Institute of International Law at its Brussels meeting in 1902; and I wish to consider his views rather specially because of the prominent part they have played in legal discussions. The seventh article of M. Fauchille's draft-code reads as follows: "The air is free. States have in the air

in time of peace and in time of war only those rights which are necessary for their preservation. These rights relate to the prevention of espionage, to customs and sanitary regulations, and to the necessities of defence." [19] M. Fauchille's line of reasoning in support of this view is somewhat as follows: By its very nature the air is quite incapable of any sort of appropriation, for it cannot be actually and continuously occupied; and the necessary result of this is that the air cannot be the object of proprietary right. For the same reason it is impossible to subject the air to the sovereignty of the territorial state. Sovereignty implies the possibility of occupation; and just as the air, owing to its peculiar physical character, is incapable of being the object of proprietary right, so it is also incapable of being the object of the state's right of sovereignty. There is no doubt that space can be dominated by the cannon and by human vision; but in reality the cannon and the human vision are not means of acquiring sovereignty, they are only means of preserving a sovereignty which has already been acquired. If the cannon and the human vision could create sovereign rights over space, the consequences would ill accord with the necessities of actual practice, for sovereignty over the air would never be fixed and stable, and, where it did exist, it would place burdensome limitations upon the free circulation of air-craft. States are thus unable to have either rights of property or rights

of sovereignty over the atmosphere that envelops their territory; and, this being the case, it is necessary then to proclaim the principle of the liberty of space wherever it is found. The air is a thing which belongs to no one and whose purpose is to serve the needs of all.

This, then, is the doctrine advanced by M. Fauchille: The air is free to all. But he hastens to explain and to limit this broad doctrine. He says that the view which he advances is not meant to imply that states should have the right to do, in all parts of the atmosphere, whatever they think best. Such unlimited freedom would be full of dangers for the security and very existence of the states themselves. Indeed, to permit each state to do whatever it sees fit in all parts of the atmosphere, would be to sanction the commission of many acts that would be inimical to the proper and fundamental interests of other states.

But how, asks M. Fauchille, is this difficulty to be met short of holding that each state has the right of property or the right of sovereignty in the atmosphere above its territory? How otherwise can the free use of the atmosphere by states be kept within its proper limits? M. Fauchille finds the answer to this question in the established principle of international law that each state, by virtue of its state character, has the right—and even the duty—of preserving its own existence. The state has therefore the right to defend itself against acts that attack the constituent elements

of its state existence—its territory, its population, its material wealth; and in thus defending itself the state is permitted to take necessary measures not only upon its own territorial domain, but also upon those things that belong to no one—the *res nullius*. Now, as the air, being free to all, constitutes a *res nullius*, a state, in exercising and enforcing its right of preservation (*droit de conservation*), cannot deny to other states their right to a proper enjoyment of the air above their own territory. M. Fauchille thus reaches the conclusion that states have in the atmosphere only those rights which are indispensable to their preservation and defence. One would be led to very different results, states M. Fauchille, if one attributed to states the right of property or of sovereignty in the air above their territory, for, in this event, the states would have all the rights comprised within the idea of property or of sovereignty, even if the interests of state protection and defence should not arise. Absolute master of the air above its own territory, each state would thus be able to do all those acts in the air which it can now do upon its own territory itself.

I may summarize M. Fauchille's views upon this question by quoting to you his own latest statement. In his article on *La circulation aérienne et les droits des états en temps de paix*, which appeared in the first number of the *Revue Juridique Internationale de la Locomotion aérienne*,

last January, M. Fauchille says: "In order to give the greatest possible facility to the circulation of air-craft we believe that it is necessary to start with the principle that the air is free in all its parts. But regardful of the legitimate interests of the state below the air, we accord to this state in the atmosphere all those rights—and only those rights—which are necessary to its preservation and defence, these words being understood in their broadest sense: the right of preservation and defence comprises all those incidental rights which are essential to safeguard the integrity of the physical and moral existence of states, the right of warding off every present evil and of guarding against every danger of future injury." [20]

From his theory of the freedom of the air M. Fauchille draws certain consequences, which I may briefly summarize as follows: [21]

(1) The state has the right to take those measures which are necessary for the security of its population. The state can therefore prohibit the circulation of air-vehicles below (but not above) a certain height, except for the purpose of arrival upon the state's territory, whether that arrival be voluntary or compelled by stress of weather or circumstances, and except for the purpose of departure from the state's territory for flights to other destinations. In thus fixing a zone of air from which the traffic of air-vehicles is essentially excluded, M. Fauchille has not only greatly limited his doctrine of the freedom of the

air, but he has found no little difficulty in determining precisely the vertical extent of that zone. When he originally explained his doctrine in 1901 and 1902 he placed the limit of this zone at 1500 metres above the surface of the earth. He now thinks that owing to the advances that have been made in aeronautics since 1902 his former opinion with regard to the height of the zone must be abandoned. He accepts the proposal of Captain Ferber that this zone should extend only to 500 metres above the surface of the earth, his reasons for adopting this latter view being two in number: namely, that a mean altitude of 1500 metres is altogether excessive both for dirigibles and for aeroplanes, experience having conclusively shown that both these sorts of air-craft require a lower level for their natural and effective circulation; and secondly, that aeronautical photography having reached such a state of perfection that it is possible to photograph higher than 1500 metres from the earth, the only proper solution of that difficulty is to prohibit aerial photography except by special authorization, and that owing to such prohibition of photography, the limit of the zone may therefore properly be placed at 500 metres instead of 1500 metres. (2) The second consequence flowing from M. Fauchille's theory is that in order to protect itself against espionage the state has the right to prohibit aerial navigation in certain regions of the atmosphere, more especially those aerial regions which surround fortifications. (3) The

state also has the right to protect its own economic and sanitary interests in the aerial space, and the state can therefore enforce this right by sending its own air-vessels to visit and examine the air-vehicles circulating in the air-space above the state. (4) Both public and private air-vessels are subject for acts which take place upon them only to the laws and justice of the country whose flag they fly. In those cases, however, where the act in question infringes the territorial state's right of preservation, the air-ship is to be subject to the customs and health regulations of the territorial state. If the air-ship in question is private, then the courts of the territorial state have jurisdiction, but if the air-ship is public, then the matter is to be settled through diplomatic channels. (5) The territorial state's right of preservation allows it to prevent the passage above its soil of foreign military air-ships. The dangers to the territorial state which might arise if this right were not accorded to it would otherwise be very great, for foreign air-vessels might in times of peace minutely spy out the territory of the state for purposes of future warfare. For similar reasons M. Fauchille contends that the territorial state has the right to prevent foreign police air-vessels from circulating in the atmosphere.

Such, then, are the incidental rights which M. Fauchille accords to the territorial state by virtue of its fundamental right to preserve and defend itself. I shall refer to the significance

of these contentions of M. Fauchille in a subsequent portion of my lecture. All I wish to do now is to refer to them by way of elaborating and explaining just what M. Fauchille's theory really amounts to.

It is important to understand the scope of the doctrine of freedom, for it has found a fair number of supporters beside M. Fauchille; and some of them even go to the extent of declaring that the principle of the freedom of the air has already become a maxim of international law. This contention is, I believe, entirely without foundation.

Supporters of the partial freedom-of-the-air theory may, with reference to their advocacy of a zone of protection, be divided into two groups. The first group of scholars accept Bynkershoek's principle that the power of the territorial state extends as far as the power of its guns, and they therefore maintain that the zone of protection extends as high as the projectiles hurled from cannon can reach. Thus, Bluntschli maintains this doctrine. The second group of scholars maintain that the zone of protection extends to a definite fixed height above the surface of the earth. Unfortunately, however, they are quite unable to agree upon the exact height of this zone. Thus, as we have seen, Fauchille now maintains that the zone should be 500 metres in height; but other writers place the height of the zone higher, and even lower. Rolland, for instance, proposes that

the zone of protection should extend to 330 metres above the earth.

Like M. Nys's theory of complete freedom, these theories of partial freedom—these zone theories—are generally based on the analogy of the high sea. It is not a little remarkable that the authors who argue for the liberty of the air believe that they are arguing for a state of liberty equal to that upon the high seas; nearly all of them making a direct comparison of the air with the sea. Thus Meili says: "As in the course of the centuries the liberty of the sea has been proclaimed, it seems that now the liberty of the air is ordained to be a parallel to that earlier idea." Mérignhac, too, maintains that the principle of the freedom of the sea is to be applied to the freedom of the air. Indeed, the fundamental idea of this school of writers seems to be that as the freedom of the sea has been accepted as a principle of international law for a very long time, so now for similar reasons this grand principle of freedom is in the twentieth century to be applied to the aerial ocean. The impossibility of dominating the sea is exactly paralleled, so they seem to think, by the impossibility of dominating the air-space. Expressed in these broad general phrases, the parallel is certainly alluring. But the more one studies the exact situation, the more one is convinced that the analogy of the high sea is not satisfying, and that indeed very little is really left of the conception of freedom after supporters of the

theory have accorded the territorial state various rights to be exercised either without limit in height or within a certain fixed zone. In fact, the marking out of an aerial zone above the earth within which the state could exercise rights of conservation reduces the scope of absolute freedom to the higher region of the atmosphere only, and of course that higher region of the atmosphere is the very part of the atmosphere which, all things considered, is least adapted to the purposes of aerial navigation. And thus we see that the very adherents of the grand principle of freedom do not really succeed in giving aerial navigators that which they most desire—a state of freedom comparable to the freedom of the high seas themselves.[22]

But some of the supporters of partial freedom apply also the analogy of the three-mile maritime belt that fringes the coast-line of each state's territory. They say that just as the state has rights over the belt of territorial waters that fringes its coast so it should have rights in the air-zone that fringes its territorial surface. But—from the point of view of the freedom idea—a weak point in this reasoning is that the state has, according to the prevailing view, rights of sovereignty over this maritime belt surrounding the coast of a state. If the analogy be strictly applied to the air-space, therefore, it should be recognized that the state has also rights of sovereignty in the zone above the land. But at least Fauchille—who himself advocates a so-called zone of protection—denies

that it is possible for the state to have rights of ownership or of sovereignty in the air-space; and his rights of protection or conservation cannot therefore rest, strictly speaking, upon the analogy of coastal waters. Scholz has found a way out, however, by adhering to the view—not held by the majority of international lawyers—that the state has no right of sovereignty in the maritime belt, but only the rights necessary for the security and protection of the coast itself. If this view of the coastal belt of waters be accepted, argues Scholz, then the air-zone of protection above the land may be accepted, by analogy, without any necessity for admitting that the state's rights of protection, exercised in the air-zone, amount really to rights of sovereignty. But we should not forget that this view of the rights of the state in the maritime belt is not the prevailing view of publicists, and that indeed the prevailing view accords to the state the rights of sovereignty over these waters. The air-zone theory would receive a much firmer basis in analogy, therefore, if its adherents should admit this prevailing view of sovereignty in the territorial waters; but any sovereignty in the air-space is what at least some zone theorists most strenuously deny; and they are therefore compelled to rest their theory of a zone of protection and the rights of the territorial state in that zone upon no such firm basis of analogy. In reality, if we examine the doctrine of a zone of protection or isolation,

we find that it is a doctrine arbitrarily announced in order to proclaim the freedom of the air, while at the same time according to the territorial state certain rights which it, strictly speaking, must have, even at the expense of the unlimited freedom of aerial navigation. But Fauchille and his school give with one hand and take away with the other. They give to aerial navigation a so-called "freedom of the air," and at the same time they rob this so-called freedom of much—very much—of its significance by giving the territorial state most important rights within this protective zone, for it is precisely within the limits of such a zone—the air-space above the land up to a certain height—that aerial navigation must largely be carried on. Fauchille's theory of freedom, therefore, turns out to be not strictly a theory of complete freedom at all, but a theory of limited freedom. The whole doctrine lacks a firm basis in analogy and a consistent development in legal principle.[23]

I come now to a consideration of the sovereignty-of-the-air theories.

First in importance is the idea that the state has full sovereign rights in the entire air-space up to an indefinite height. This view is maintained by Professor von Liszt of the University of Berlin. Von Ulmann states that the aerial space as a part of the state's domain reaches as high as one can reach by human means; this view essentially being that the state's sovereignty reaches as

high as aerial navigation itself can attain unto. In Baldwin's view each nation ought to have the right of regulating the use of the air above its territory in that manner which will best serve its own public interests. Collard states the principle to be that the state ought to have imperium up to an indefinite height. In general, writers of this school give the state these full sovereign rights in the entire atmosphere above its territory because of the necessity in which the state finds itself of guarding against the dangers incident to aerial navigation.[24]

The consequences that would result from the theory that the territorial state has a complete and absolute sovereignty in the entire air-space are chiefly three in number:[25] (1) Each territorial state would have the right to close or to open its own air-space to all air-vehicles, public and private; each state being free to do what it liked. (2) If the territorial state admitted the circulation of air-vehicles it could subject them to all such measures as it liked, in order to protect itself against espionage, smuggling, and introduction of contagious diseases; it would have the full right to subject private air-vessels to visit and search. (3) The territorial state would have a right of jurisdiction over private air-vehicles; only foreign public air-vessels, representing as they do the sovereignty of their flag, would escape this jurisdiction of the territorial state on the principle of ex-territoriality.

Critics and opponents of this theory of complete and absolute sovereignty attack it on several grounds:[26] (1) They say that it is wrong to base the public doctrine of sovereignty upon the maxim of private law that the owner of land owns above and below the surface, extending indeed the meaning of the maxim—which was really contradicted by another rule of Roman law—far beyond its original meaning. (2) They say that a right of sovereignty in the atmosphere would be quite contrary to the very nature of sovereignty, for sovereignty presupposes a fixed and lasting material mastery by possession; yet it is physically impossible for a state to exercise such a power and control over the atmosphere. (3) They say that by thus giving the state this full right of sovereignty the state could completely close the atmosphere to aerial navigation and thus render it impossible to navigate in the air-space at all; and that thus the uniform and international regulation of aerial transit—a most desirable end—would be prevented.

The consequences flowing from the doctrine of state sovereignty in the air-space are undoubtedly far-reaching and of high importance; but I do not believe that the opponents of the doctrine have succeeded in producing valid objections to its acceptance. Let us look for just a moment at the three objections which I have enumerated.[27]

The first objection, namely, that it is wrong to apply the maxim of the Roman private law, does

not call for serious discussion; for whether the analogy of the Roman private law maxim be good or bad makes no real difference, if the doctrine of sovereignty be for the present day a sound one.

The second objection does not seem to me valid. A physical possession and control may well be necessary in acquiring the ownership of a *res nullius* in private law; but surely actual physical possession and control of the air-currents is not essential to the conception of sovereignty. It seems quite sufficient that the state possesses the ability, whenever it becomes necessary, to effectually enforce its rules in the air-space; and this possibility certainly exists to-day by means of the high-power Krupp air-vehicle-destroying guns and by means of the air-vehicles of the territorial state. It seems to me the error M. Fauchille and other theorists have fallen into is in assuming that actual physical possession of the air-currents is essential to the idea of sovereignty in the air-space.

The third objection comes to this: If you admit the sovereignty of the territorial state in the air-space, you will check, if not prevent, circulation of aerial vehicles; and you will certainly render impossible any uniform international regulation. But this, again, does not seem a sound objection. Even though the principle of a full and complete right of sovereignty be admitted, states will naturally refrain from prohibiting aerial traffic;

for such a prohibition in these modern days of international intercourse would be quite contrary to the self-interest of states. A uniform international agreement would not at all be rendered impossible by admitting the principle of sovereignty. Quite on the contrary! What is there to prevent the states of the world—sovereign each in its own air-space—from concluding an international convention regulating international aerial locomotion; and thus contractually—by treaty—voluntarily restricting each the exercise of its sovereign rights within certain defined limits? I am willing to predict that a uniform international regulation of aerial navigation will more readily be brought about by admitting the doctrine of full sovereignty in the air-space than by asserting the doctrine of full or even partial freedom.

But all adherents of the sovereignty idea do not take this extreme view that the state has full sovereign dominion. Some publicists assert that states have only limited sovereign rights in the air-space. In the view of some writers, sovereignty extends up to a certain limited height; and thus, as in the case of some adherents of freedom, we meet here again the idea of an aerial zone. But the school of writers to which I am now adverting give the territorial state full sovereign rights within this aerial zone, not merely certain restricted rights of conservation. Above this aerial zone adherents of the sovereignty view, as well as adherents of

the freedom doctrine, allow aerial navigation to be quite free.

The public lawyers who support the view of a sovereignty zone are very much at variance as to the upper limit of this zone. Thus von Holzendorf places the upper limit of the zone at 1000 metres from the surface of the earth, measured from the highest points of the land. Von Bar places the upper limit of the zone very much lower, only 50 or 60 metres from the surface of the earth. Von Liszt in 1902 expressed the view that the limit of the zone should be placed as high as the air-space can be actually dominated, either by ordnance or by aerial navigation. So, too, Rivier, Pietri and Hilti place the limit of this zone at the height reached by artillery upon the earth.[28]

Although there is thus great divergence in the views with reference to the extent of this zone of sovereignty, you will nevertheless see that certain lawyers prefer a definite and fixed limit of so many metres, whether it be 50 or 60 or 1000, while still other jurists prefer to rest the extent of the zone upon the capacity of artillery or of aerial navigation itself. I need only draw your attention to the fact that if you adopt the artillery view the zone of sovereignty must at the present time be fixed very high, for the latest Krupp guns, specially constructed for use in a vertical direction, are said to reach the enormous height of 7,400 and even 11,500 metres.[29] Of course, we may confidently expect further development in the construction of

high-reaching guns, so that ere long artillery shots will probably reach a far greater height even than these marvellous guns constructed by this famous German house. It is of considerable importance to bear in mind that this sovereignty zone theory, like the zone theory of exponents of the freedom view, is based largely upon the analogy of territorial coastal waters. This explains why certain writers place the limit of the zone at the point reached by the shots of artillery.

The division of the air-space into a sovereignty zone near the earth and a free zone up higher is attacked on three grounds:[30] (1) Just as the whole expanse of atmosphere is physically incapable of being subject to the sovereignty of the state, so also is a zone of the atmosphere. (2) There are the same difficulties in fixing the height of the sovereignty zone as in fixing the height of a protective zone under the partial freedom theory. Human vision and the reach of ordnance vary under different conditions and in different epochs; and, if you fall back on an arbitrary height of so many metres, determined by international agreement, this limit too, being purely arbitrary, would lack any sound and reasonable basis. (3) This system of two zones would not sufficiently ensure protection to the legitimate interests of the territorial state, for in the higher air zone, absolutely free, acts of all sorts could be done which would injure the underlying state and its inhabitants. The first of these three grounds of objection

does not seem to me to be sound, as I shall endeavour to show later on in my lecture; but the second and third points will, I believe, effectually prevent the adoption of this sovereignty zone theory.

The position that the territorial state has sovereign rights in the air-space without limit of height, but that this sovereignty is nevertheless limited by a servitude of innocent free passage for all aerial navigators, foreign as well as domestic, is maintained by a number of very distinguished publicists, chief among them perhaps being Westlake and Meurer. It will suffice if I refer you to Westlake's striking exposition of his doctrine at the meeting of the Institute of International Law at Ghent in 1906.[30a]

In opening the general discussion of M. Fauchille's report on the *régime des aérostats et de la télégraphie sans fil* at this meeting, Professor Westlake said: "I accept battle upon the base of the report, that is, upon the principle of the liberty of the air, or more exactly, of the aerial space. The air is itself something that cannot be possessed. It is transported from place to place at the will of the winds, to-day in Belgium, to-morrow in France or in Holland; that which we have around us is not air, it is aerial space. Oceanic space and aerial space are two spaces upon which the adjacent state has a 'droit de conservation' and the other states a 'droit de passage innocent.' Conservation and passage—how can these two

rights be combined ? Which of them is the rule and which the exception ? For the reporter [M. Fauchille] it is the right of passage which is first and fundamental. For me it is the right of conservation. Of two rules, that one which deserves to be the rule is the one which is the more precise; and yet the ' droit de conservation ' is much clearer than the ' droit de passage.' That is why the Institut, when it was faced with this question à propos of the oceanic space, replied that in the territorial sea the ' droit de souveraineté ' is the rule and the ' droit de passage ' the exception. If that holds good as regards the oceanic space it ought also to hold good as regards the aerial space. The only difficulty is that it is not possible to limit this solution to a certain height. On the sea the farther people go from the coast the less is the risk of their causing destruction and disturbance upon the coast. In the air the higher one ascends the greater becomes the destructive force of objects thrown from the balloon upon the earth. If there does exist a limit to the sovereignty of the state in the oceanic space, such a limit does not exist in the aerial space. The right of the territorial state remains the same whatever the distance from the earth may be. It is necessary to repeat the principle of the Roman Law: ' *cuius est solum eius est usque ad coelum.*' '' [31] At the conclusion of these remarks by Professor Westlake, he proposed to the Institut to modify the first article of the draft-code so as to read as

follows: "The state has a right of sovereignty in the aerial space above its territory, limited, however, by a right of innocent passage for balloons or other aerial craft and for wireless telegraphic communication." [32] Here again the objection is raised by the advocates of freedom that also in this modified form sovereignty of the state in the air-space is physically impossible; and that, even were it admitted to be possible, the fundamental conception being state sovereignty, and the state's sovereign right being therefore the first to prevail, in all questions of doubt as to whether a passage be innocent or not, the prohibition of the passage and not the freedom of the passage must prevail.[33]

Although there is much to be said for this doctrine so ably defended by Westlake and Meurer, one cannot help feeling that aerial navigation can be furthered and the rights of the territorial state protected without the necessity of conceding the existence of such an important limitation upon the state's sovereignty as is implied in this servitude or right of free innocent passage. It is believed that by conceding full sovereign rights to the territorial state without the limitation of an international servitude of innocent passage, the proper interests of aerial navigation can be equally well, if not even better, maintained. No one can doubt that aerial navigation is to play a most important rôle in the life of the future, and the self-interest of states will lead them naturally to enter into international agreements

whereby aerial navigation can be given its proper scope without at the same time endangering the natural and legitimate interests of the territorial state itself. Territorial states, sovereign in the air as well as on the land, will not prevent the proper development of international aerial navigation any more than they have prevented the proper development of international navigation in territorial waters. We must not, I think, forget that the interests of states themselves should hold quite as important a place in our considerations as the interests of aerial navigation, and I believe the proper safeguarding of the interests of states and their inhabitants and of aerial navigators can best be subserved by recognizing the state's full sovereign rights in the air-space above its territory and territorial waters, thus leaving the states free to enter into international agreements for the proper regulation of aerial communication both for time of peace and time of war.

I do not purpose spending much time upon the ownership-of-the-air theories, for the very reason that the adherents of this view are really to be grouped among those publicists who maintain sovereignty theories.

Dr. Grünwald's views have, however, rather special interest. Dr. Grünwald, in his work on *Das Luftschiff in völkerrechtlicher und strafrechtlicher Beziehung*,[34] advances the view that the territorial state is owner of the air-space above it. This writer is unable to accept the theories which

rest upon vertical division of the air-space into zones, and he comes to the conclusion that the air-space above a state must either be looked upon as the territorial state's sphere of ownership or sphere of interest, and as between these two alternative views he has no hesitation in adopting the former. His contention is that the air-space above a state is by nature so closely connected with the territorial state that a separation of the air-space from the state is unthinkable. He admits, however, that this proprietary right of the state in the air-space above it is subject to certain limitations in the interest of other states. Although Dr. Grünwald bases his whole doctrine of the state's ownership of the air-space upon considerations of public law he nevertheless draws attention to the analogous treatment of the air-space by the German private law which, although admitting the landowner's proprietary right in the air-space, nevertheless forbids him preventing the use of the air at a height where he has no interest to prevent the use.

In Dr. Grünwald's view, therefore, it is not illogical to maintain that the principle of private law applying to each separate piece of realty may properly be applied in public law to the whole territory of the state; and in consequence, contends Dr. Grünwald, it should be admitted that the state has the right of ownership in this air-space. Dr. Grünwald thus, by analogy to the private law rule, holds that this right of state-

ownership should be exercised so far as the state has an interest in exercising it, and that it should be limited or restricted only by the interests of other states, the interest, for example, in having air-routes kept open for purposes of international intercourse.

As regards the right of the state to the air-space above the narrow strip of sea directly surrounding the coast of a maritime state, Dr. Grünwald maintains a different view. He contends—contrary to the prevailing view—that in these coastal waters the state has no right of ownership or of full sovereignty, but only a right of employing this strip of water as a sphere of interest in protecting and using the coasts of the state; and he concludes that, similarly, the air-space above this maritime belt must be viewed not as in the ownership or under the full sovereignty of the state, but as constituting for such state only an aerial sphere of interest.

In legal theory Grünwald's doctrine of state ownership in the air-space is, I believe, untenable. Basing his view upon the maxim of the private law that a landowner owns the air-space above his land, he maintains that the sum of all the single landownerships in the country equals the landownership of the state in the whole air-space above the entire country. But this reasoning is quite unsupportable; for surely the total of one million private rights of ownership in one million separate pieces of realty and their air-spaces does

not amount to one public right of ownership! The fundamental error into which Grünwald has fallen is to apply to public law terms of private law. The idea of ownership is an idea in private law; and the only right of ownership that the state can have in land is a private right of ownership in a particular piece of realty—that is, if we leave out of account the dogma of the English system of land tenure that the king is the only owner of land and that he owns every bit of English soil, the tenants having only estates. No! the state has no public rights of ownership in the air-space, for landownership is an institution of private law. The state has public rights of sovereignty—public rights of supremacy—over every acre of the state's territory; and what Grünwald really means by his unhappy term "state ownership" of the air-space is only that the state has those public rights that belong to a sovereign state as regards its own territory and the air-space above it. The employment by Grünwald of a term of private law to indicate rights of public law is unfortunate, and has led others into the same phraseology. In so far as Grünwald's view really amounts to the sovereignty doctrine, it can be supported in substance though not in form.

It will be observed that, speaking generally, all theories both of freedom and of sovereignty (except that of full sovereignty in the entire air-space) rest in reality upon the analogies of the

high sea and the maritime belt. These theories proceed upon this line of thought. The air is comparable to the sea; just as the high sea is free to all, so the high air is free to all. Only in the fringe of sea immediately abutting on the land and called the maritime belt have states either rights of sovereignty, or at least rights less than sovereignty, rights, that is, of conservation; all the rest of the sea is free. Similarly, only in the fringe of air just above the land have states either rights of sovereignty or rights less than sovereignty, called rights of conservation; all the rest of the air belt or zone is free.

Now the part played by these analogies of the high sea and the maritime belt in the elaboration of these various theories has been so important that we must—even at the risk of repeating a few matters already discussed—spend a few moments in examining them to see whether we may safely accept them as guiding and shaping our own views; for certainly if the analogies are good we should not fail to recognize them as such and adopt them in the development of the principles of aerial law.

It is true that certain physical characteristics of the sea and the air have naturally led to a comparison of the two; the sea and the air are both natural elements immense in extent, and they are both of a fluid, mobile nature. The air, like the sea, is more difficult to dominate by human means than land. In the air as on the sea it is

impossible to establish fixed and definite boundaries, although of course this is possible upon the solid earth. But, great as is the likeness between the two, the sea of water and the sea of air, it should nevertheless not be forgotten that there are also striking differences between the two, these differences appearing very clearly when we consider the sea and the air in their respective relations to the land. And when we consider these differences it will be quite clear, I think, that it is, strictly speaking, impossible to reason from the freedom of the sea to the freedom of the air. I wish at this time merely to refer to two differences. In the first place, the sea lies off to one side of the state's territory, whereas the air lies directly over that territory. The result is, therefore, that so soon as ships pass beyond the territorial waters of the state, they become, in accordance with the increasing distance from the coast-line, of less and less danger to the state's interest, whereas the higher an air-ship sails the greater will be the danger to the state lying below, if the air-ship chooses to take advantage of the force of gravity and hurl weapons of destruction upon the state's territory. No zone of air above the land will protect the state lying below from the danger of weapons hurled from airships sailing in the higher regions. In this respect, therefore, the analogy of the sea is not a safe one to follow. In the second place, there is a marked difference between the sea and the air as regards the interests

of navigation. The utility of the sea for purposes of navigation does not decrease, but rather increases with the distance of the ship from the land, whereas in the case of aerial navigation, the utility of the air-space for purposes of aerial navigation materially decreases as the aerial navigator reaches higher and higher altitudes. In this respect again the analogy of the sea is not a safe one to follow.[35]

Although at first sight the similarity between the narrow zone of water fringing the coast-line and a zone of air fringing the surface of the earth is a striking one, nevertheless it is easily seen that there is a marked difference between this water zone and this air zone. This water zone, although of great importance to the state as regards defence, health regulations and fishing interests, is nevertheless not vitally essential to the existence and the welfare of the territorial state. Even though this narrow belt of water were to-day admittedly a part of the high seas themselves, and even if therefore the territory of the state were definitely limited by the coast-line itself, the state would nevertheless exist with full dignity and full power to defend itself. Now when you look at the air zone above the state's territory you will see that this air zone is not only of great importance to the state but that it is also absolutely essential to the very existence of the inhabitants of the state and to the very exercise of the state's rights and manifold activities. To follow the analogy of the mari-

time belt and to fix a narrow belt of air above the land within which the state has rights but beyond which the state has no rights, is therefore a course of procedure unsound in principle and dangerous to the state's interests in practice. To argue that because there exists at the present time a right of innocent passage through territorial waters, there should also exist a right of free passage through the air, is to argue by an analogy that is not logically and practically sound.[36]

In the time that remains to me I desire to give the reasons why I believe the recognition of the state's full right of sovereignty in the entire air-space above its territory and territorial waters is demanded by existing legal principles and by the interests of states themselves and mankind in general.

Contrary to the views expressed by adherents of the freedom doctrine, I believe that Lycklama à Nijeholt and other advocates of sovereignty are right in maintaining that the state's sovereignty in the air-space above its territory and territorial waters is possible on both physical and legal grounds.[37]

The state's sovereignty is exercised in the air-space itself, and it is no objection that the element filling up that air-space at any given moment is an element fluid and mobile. International law has already recognized that state sovereignty extends to territorial waters including not only the

three-mile limit but also immense bays and gulfs; and thus the element dominated by the state's sovereignty, namely, the water itself, is both fluid and mobile. Similarly, it is no objection to sovereignty in the air-space that it is impossible to mark out and define each state's aerial frontiers by solid, fixed boundary marks, as of course is possible upon the land. Already maritime frontiers are not physically indicated by fixed monuments of any sort, and yet no one doubts that a maritime frontier between territorial waters and the high seas does actually exist; in the same way the aerial frontier can also exist; and though disputes as regards the exact whereabouts of that aerial frontier will undoubtedly arise, I do not need to remind you that many similar disputes have already arisen and been settled by states as regards their territorial and maritime borders. Certainly, if desired, states could in the future send up captive balloons or even "anchor" (if I may be allowed the word in this connection) free airships at important places upon the aerial frontiers between different countries. Already many lightships and similar vessels are permanently anchored at various places in the sea, and this analogy could certainly be followed. Furthermore, it is not at all necessary to the existence of sovereign right that that right be constantly and actively asserted. I need only draw your attention to the fact that at the present time large stretches of the sea and large stretches of desert land or

forest land are fully within the sovereignty of states, and yet perhaps for months and even years no human being ever passes over those great tracts of water or land. Finally, just as on these great stretches of sea or land the state can exercise its sovereign rights by means of navies and armies, so can the state exercise its sovereign rights in the air-space by means of projectiles hurled upward from the land and by means of aerial fleets.

For these reasons it seems to me clear that sovereignty in the air-space is a physical possibility. May I now draw your attention to the fact that states already exercise sovereign rights in the lower stratum of the air-space ?

It is extremely significant for the purposes of the present argument to observe most carefully that states have all along viewed themselves as having the right of sovereignty in the air-space. It is not therefore, to-day, necessary to establish a new sovereignty, but it is necessary to recognize that states do possess an already established sovereignty. True it is that this sovereignty has been exercised only in the lower strata of the column of air, but the fact that the right of sovereignty has not been exercised in the upper strata is hardly an argument that the states have not viewed themselves as possessing sovereignty in those upper strata. It is quite clear, I think, that states exercise a right of sovereignty in the lowest stratum of the air-space, that stratum, namely, occupied

by buildings and other structures with the encircling atmosphere. If, for example, two workmen who are engaged in repairing the great dome of St. Paul's Cathedral should perchance begin to quarrel while engaged in their perilous and lofty occupation, and should in consequence lose their footing and fall to the ground, I take it that the killing of one man by the other while they are thus rapidly descending to the earth would clearly be viewed as an act falling within the jurisdiction of the territorial state. But states have by the passing of various laws clearly asserted sovereignty in regions of the air-space higher than human structures. Thus, laws passed in regard to the shooting of birds have reference clearly to the shooting of birds as they fly through the air, and some birds, such as the eagle and the falcon, fly very high above the earth. Similarly, laws enacted by the states with reference both to wire- and wireless telegraphy clearly assume the state's right of dominion in the air-space. Furthermore, the recognition by various systems of law that the owner of land owns up to the heavens is clearly a recognition that the state has the right to concede to landowners this extensive proprietary right in the air-space. Again, we should not forget that there exist already a certain number of local and national regulations of aerial traffic. A little town in Florida has already passed an ordinance relative to traffic in the air, claiming jurisdiction as high as twenty kilometres, and

asserting that it proposes to establish an aerial police! But what is far more important, some of the great powers, such as France and Germany, have put in force national regulations of traffic in the air, thus assuming that they have sovereign rights in the air-space. Indeed, the Berlin National Convention of 1906 relative to wireless telegraphy tacitly assumes that the contracting powers have sovereign rights within their own air-space. But I need not press this point further, for I feel sure that sufficient has been said to indicate that states already view themselves as sovereign within their own aerial space.[38]

This state-sovereignty, already recognized as regards the lower stratum of the air-space, should also be recognized to exist in the entire column of air superincumbent on the state's territory and territorial waters. The recognition of a sovereignty limited to a lower horizontal zone is open to serious objections. If you adopt the view that the upper frontier of this horizontal zone of air-space should be the height of buildings and structures upon the land, or the reaching-power of cannon placed upon the land, or the limit of human vision upwards, you have adopted standards of measure that are quite arbitrary, uncertain and variable. Is the highest structure in each country to be the measure for that country alone, the Eiffel Tower for France, the spire of Salisbury Cathedral for England, the high sky-scrapers of New York for America? Or, shall the

height of the world's highest structure—at present the Eiffel Tower—be taken as the measure for the zones of all states ? And, suppose a new and higher structure be erected somewhere upon the habitable globe, or suppose the Eiffel Tower itself falls to the ground, is the sovereignty zone of all states to be raised or to be lowered in consequence ? Or, should not captive balloons, which are thus attached to the land, and which have been already sent up as high as 1200 metres, be taken as the upper limit or frontier of the air zone ? If Krupp invents a gun that will hurl projectiles 20,000 metres instead of 11,500 metres as at present, is the air zone of sovereignty to be at once raised all over the world ? Similarly, the fixing of a zone of a definite number of metres (whether 50 or 60, or 330, or 500, or 1000, or 1500, or any other number) is such an arbitrary matter that no real agreement can be expected. Nor could the selection of any one such arbitrary frontier in the air-space be expected to meet the needs of all countries alike; because, besides the serious objections which I have mentioned, all zone theories are open to the difficulties inherent in the physical configuration of the earth's surface. The earth's surface is not all flat and even, but is frequently very irregular. It is, at places, low and flat, as in Holland; and it is at other places high, as in Switzerland.[39]

It should be pointed out at this point that two different methods of marking out the upper

frontier of the air zone have been suggested. According to the first method, the upper frontier should be perfectly straight, and at all places at exactly the same distance above the surface of the sea. The second method suggested is that the upper frontier of the air zone should follow everywhere the irregularities of the surface of the earth. Neither one of these solutions is at all satisfactory. Under the first method the uniform height above the sea would necessarily be extremely great in order that the heights of mountains might be brought within this zone. If the upper frontier were placed so high it would also be unfair to mountainous countries, because the upper limit of their sovereign power would naturally be much nearer to the earth than in the case of low-lying countries. So, too, the second method would result in many embarrassments and difficulties for aerial navigators, for they would be greatly perplexed to know whether they were in or out of the constantly varying zone. This second suggested solution would also work injustice to low-lying countries, for inasmuch as atmospheric conditions in high countries are less adapted to aerial navigation than the atmosphere in low-lying countries, the result would be that aeronauts and aviators would often seek lines of passage just above the aerial frontier of the low-lying countries and within the upper free zone, thus escaping from the jurisdiction of the territorial state.[40]

Just as the fixing of an air zone of sovereignty seems open to the most serious practical and legal objections, so it seems also that the restriction of sovereignty by a servitude or right of free innocent passage is at the present day premature. It is going too far in the present conditions of aerial progress and of our understanding of the far-reaching consequences of this new method of navigation, to concede at the present time as a principle of international law the right of all innocent aerial navigators, foreign as well as domestic, to fly wherever they wish. It is possible that international law in the future will recognize some such doctrine, but states must at present feel their way cautiously. The doctrine of full sovereignty—without any restriction as to height, and without this most important concession of a right of passage—safeguards the interests of states and permits each state to contract with other states, step by step, as best accords with its rights and interests, the rights and interests of its inhabitants, and the rights and interests of aerial navigators.

Indeed, recognition of each state's full right of sovereignty will not be an obstacle to the proper and legitimate development of aerial navigation, while at the same time it will safeguard state and private rights and interests. Just as states have welcomed and adopted the principle of internationalism as regards sea navigation in territorial waters, international railway and motor

traffic on land, international wireless communication, and admission of aliens to the enjoyment of the laws and privileges of the territorial state, so, too, the self-interest of states will naturally lead them to welcome and develop this new method of navigation along international as well as national lines. Furthermore, the recognition of the principle that states have full sovereignty in their own air-spaces will have other advantages beside the proper furtherance of aerial navigation itself. It will not be necessary to look for a definite horizontal limit for a lower zone of sovereignty, for the state will be sovereign in the entire air-space. So, too, there will be the great advantage of simplicity, for the entire air-space that encircles the globe will be subject to the same authority as is the surface of the earth itself; the air-space above the high seas being like the high seas themselves, free to all, and an aerial highway for all nations, while the air-space above states sovereign over their own territory and territorial waters will also come within the sovereignty of those same states. Each state will thus be able to protect its own interests—the security of the country and its inhabitants, protection against espionage and any other hostile act, the enforcement of aerial customs duties, the warding off of infectious diseases that might be brought in by aerial vessels from abroad, the proper policing of the aerial domain, the assurance of having sufficient light

and heat for the welfare of the land population, the advantageous regulation of national and international aerial commerce within the state's own aerial space.

The unequivocal and full recognition by international conventions of the doctrine for which I am contending will be a simple and solid foundation upon which to build up the future national and international law relating to the air-space.[41]

SECOND LECTURE

THE PRINCIPLES AND PROBLEMS OF NATIONAL LAW

During the present hour I desire to discuss the principles and problems of national or municipal law,[42] referring in the first instance to the private law and concluding with a few remarks on criminal law. Attention will be drawn especially to the English law, with a few references to Continental law. I may say at once that in our endeavour to arrive at fundamental principles of the private law we are not left so much to the realm of fancy as we were in considering the fundamental principles of the public law; for the private-law question as to the rights of the landowner in the air-space above his land has been already answered in part by judicial decision or by statute, in several leading countries.

It is undoubtedly a principle of law that some things are incapable of being the object of private rights. The stars and the clouds, the open sea, as well as flowing water and the great currents of air, are not in themselves subject to private ownership. They are viewed as *res communes omnium*,

and as open to the general use of mankind. Nevertheless, parts or portions of such objects of nature can be the object of proprietary right, if they are severed and brought within the actual control of man, as, for instance, water and air confined within proper receptacles.[43]

The question further arises with regard to the acquisition of an easement of light or of air. The right of one landowner to receive light across another's land is not naturally incident to his proprietary right. Such a right is only an acquired easement; and unless it has been acquired the adjoining landowner can obstruct this passage of light in any way he sees fit. Similarly, a landowner may acquire an easement of the passage of air across his neighbour's land. But it is carefully to be observed that he can thus acquire an easement of air only for the air that streams through a well-defined aperture in a building, as for instance, into a cellar through a shaft. The law allows the acquisition of no prescriptive right to the access of air to open ground. As an illustration of this I may cite the case of *Webb* v. *Bird* (1863), 13 C.B. (N.S.) 841, in which the Court held that no action would lie for obstructing the passage of wind to an ancient windmill. So, too, in *Bryant* v. *Lefever* (1879), 4 C.P.D. 172, the plaintiff, who maintained that his ancient chimneys had smoked because of the erection of a building cutting off the necessary air-draught, was not allowed to recover.[44]

The question as to the landowner's right in the air-space above his own land, as that air-space is filled at any given moment by currents of freely flowing air, is a distinct and difficult question. Has the landowner an unlimited or a limited right of property in this air-space ? If not, has he any rights less than proprietary ?

I may, in passing, remind you of the distinction which I drew in my first lecture between the air as an element and the air-space as it is filled at any one given moment by currents of air that are constantly moving and changing. It is well not to forget the analogy of a flowing stream of water. The air-space above a man's land thus constantly filled by moving air-currents is much like the bed of a stream constantly filled by running currents of water. When we speak of the air-space, therefore, we mean the air-space thus filled by moving air-currents.

If we examine the various systems of private law at present administered in leading civilized countries, and if we read the treatises of the private lawyers of those countries, we find that various views are held with reference to the nature and extent of private rights in the column of air above the land ;[45] and these various theories of private lawyers correspond in a striking manner with the various theories of public lawyers which we considered in the first lecture. In general we may divide the theories of private lawyers into two groups.

There is, first, the view that the landowner has no rights at all in the column of air above his land. This view is based upon the idea that the air is free to all and that it is incapable of being possessed and owned. As will be observed, this is an extreme view, and open to the most serious criticism. Adherents of this view really confuse two things—they confuse the air itself as an element and the air-space above the land. As we shall see later, this view is quite untenable and we may for the moment dismiss it from our consideration.

The theories of the second group are all theories which concede to the landowner rights in the column of air above his land; but there is wide divergence as to the nature and extent of the rights. Some theorists grant the owner of land true proprietary rights in the air-space, while other theorists give him merely rights of user.

If for a moment we glance at the views of those who maintain that the landowner has proprietary rights in the air-space, we find that here, too, there is a difference of opinion. In the view of some writers, the landowner has a right of property in the column of air only so high as the buildings and structures on the land reach. This is the view maintained by Naguet and Planiol; and it has also been advanced by a recent English writer, who expresses himself in the following words: "Actual ownership might be held to extend only to so much of the column of air above the land as

was necessary for the use of buildings erected on the land, whilst the owner would be entitled to restrain (as a nuisance) anything amounting to improper interference with his enjoyment of the upper part of the air." Other theorists, again, maintain that the landowner has only such rights in the air as enable him to exercise his rights of property in the land. Still a further view is that ownership in the air-space should extend only as far as effective possession extends. As will be observed, these theories all concede a right of property in the air-space to the landowner; but that right of property in the air-space is a limited one—limited, that is, either by the height of buildings on the land, or by the exercise of proprietary rights in the land, or by the principle of effective possession.

But there is still a further theory which concedes to the landowner not merely limited proprietary rights in the air-space but full proprietary rights. In accordance with this doctrine the landowner owns the entire column of air above his land even up to the heavens. This doctrine is based upon the ancient maxim derived from the Roman system of law that whoever owns the land owns all below the surface and all above the surface—*cuius est solum eius est usque ad coelum.* A great majority of modern codes of civil law are founded on this ancient maxim. Thus Article 552 of the Code Napoléon reads as follows : " Property in the land includes property above the land." Portalis well

expresses the doctrine of the French code when he says that proprietary right in the land would be imperfect if the landowner had not the dominion of all the space above his land. The German law prior to the enactment of the present civil code was based upon this ancient maxim. Nearly all writers on the modern systems of law, including many English writers, such as Coke and Blackstone, state the doctrine in this broadest form—that the owner of the soil owns everything up to the heavens.

In this connection it is important to observe that the new German civil code has somewhat modified this doctrine.[46] The code clearly states that the right of the owner of land extends to the entire air-space above the surface of the land as well as to the entire soil beneath the surface of the land; but the code immediately proceeds to limit this broad doctrine by stating that the landowner can only exclude persons from the use of the air-space above his land if he has an interest in thus prohibiting such use. The Swiss civil code lays down a similar principle in these words: "The ownership of real estate extends into the air-space above and into the soil beneath the surface of the land so far as the owner has an interest in exercising a right of ownership in such air-space or in such soil."

It will thus be seen that the present German code, and other codes that contain a similar rule, do not fix upon any horizontal limit for the exercise of

proprietary rights in the air-space, but, without fixing such limit, nevertheless restrict the exercise of the right of ownership in the air-space to the extent of the landowner's interests. The principle of restriction is simply this, that the owner of the land can prevent the use of the air-space by others only in so far as he has an interest in so doing. This new doctrine, although based upon the idea that the proprietary right of the landowner extends up to the heavens, nevertheless restricts that right in the interest of aerial navigation.

Some writers upon modern systems of law do not admit that the landowner has a proprietary right in the air-space. They concede that he has a right in the air-space, but maintain that this right is a right less than ownership. In accordance with the views of these writers the landowner either has a general right of user in the column of air, or he has a limited right of user—this right of user being limited to the exercise of such rights in the air-space as are necessary for the proper enjoyment of the land itself. Strictly speaking, writers who maintain these views would make the air-space merely appurtenant to the land.

It is not without significance to note that all of these different views are based upon two fundamental conceptions. Some of the theories are rested upon the idea that the right of the landowner in the air-space—whether that right be proprietary or something less—is unlimited. Other views rest upon the fundamental concep-

tion that the right of the landowner in the air-space —whether it be proprietary or less—is not unlimited but limited in some way or another, either by the height of structures on the land or by the proper enjoyment of the land itself. These theories that the right of the landowner in the air-space is limited we may for the present call the zone theories of private law; as distinguished from the theory of unlimited right in the air-space, which presupposes no zone at all.

I cannot discuss in any detail at the present time the various views of foreign lawyers; but it is important that we examine the doctrine advanced by many English lawyers for many centuries that in English law proprietary right in land extends upwards to the heavens and downwards to the infernos.

It is well settled that the owner or proprietor of the surface of the land owns or possesses all the strata of soil that lie beneath the surface—*usque ad inferos.* An actionable trespass is committed by any entry beneath the surface of the land at whatever depth it may be; an example of which is the case of an adjoining owner, who has a coal-mine, taking out coal from the coal strata that lie beneath the plaintiff's land. So too if a stratum of land has been sold by the owner of the surface of the land, such owner retaining the surface itself, any encroachment, by either owner, on the horizontal boundary created by the sale would be an actionable trespass. Occasions of trespass

beneath the surface, owing to the development of mining, are, as a matter of fact, of frequent occurrence at the present day.[47]

But when we come to the other side of the earth's surface we come to a realm of nature with reference to which the English lawyers are not so unanimous as they are with reference to the sub-soil. Croke, the law reporter, states (Cro. Eliz. 118) that from Edward I's time onwards it had always been a maxim of the English courts that *cuius est solum eius est summitas usque ad coelum.* The dogma does not, therefore, start with Lord Coke, and, in fact, he bases his statements on earlier authorities; but the dogma first receives its modern literary formulation in Lord Coke's writings. In Lord Coke's comment on Littleton he says: "This element of the earth (the land) is preferred before the other [natural] elements, first and principally because it is for the habitation and resting-place of man; for man cannot rest in any of the other elements, neither in the water, air nor fire . . . and lastly, the earth hath in law a great extent upwards, not only of water, as hath been said, but of air and all other things, even up to the heavens, for, *cuius est solum eius est usque ad coelum.*" [48] Blackstone, relying upon Coke, also states the doctrine in these words: "Land hath also in its legal signification a definite extent upwards as well as downwards, *cuius est solum eius est usque ad coelum* is the maxim of the law upwards, therefore no man may erect any building or assume the right to overhang

another's land; and downwards whatever is in a direct line between the surface of his own land and the centre of the earth belongs to the owner of the surface, as is every day's experience in the mining countries. So that the word land includes not only the surface of the earth, but everything under it and over it . . . by the name of land, which is *nomen generalissimum*, everything terrestrial will pass." [49] Both Coke and Blackstone thus state the doctrine, in broad and general terms, that the owner of the land owns up to the heavens; and this doctrine has found expression in the opinions of English judges and the writings of other English jurists. In *Pickering* v. *Rudd* (1815), 4 Camp. 219, Lord Ellenborough said: "But I am by no means prepared to say that firing across a field *in vacuo*, no part of the contents touching it, amounts to a *clausum fregit*. If this part overhanging the plaintiff's garden be a trespass it would follow that an aeronaut is liable to an action of trespass *quare clausum fregit* at the suit of the occupier of every field over which his balloon passes in the course of his voyage." Referring to Lord Ellenborough's words fifty years later, in 1865, Lord Blackburn, in the case of *Kenyon* v. *Hart*, 6 B. & S. 249, said: "I understand the good sense of Lord Ellenborough's view; but not the legal reason for it;" Blackburn thus adhering to the maxim that the owner of land owns up to the heavens. Again, in *Corbet* v. *Hill*, L.R. 9 Eq., 671, Sir W. M. James, V.C., said: "The ordinary rule of law is

that whoever has got the *solum* is the owner of everything up to the skies." Fry, L.J., in *Wandsworth Board of Works* v. *The United Telephone Co.*, L.R. 13 Q.B.D. 904 (p. 927), said: "As at present advised I entertain no doubt that a proprietor of land can cut and remove a wire passed at any height above his freehold;" so implying that the landowner owns the air-space up to the heavens. Similarly, Lord Esher in this same case accepted Coke's doctrine that the landowner has ownership *usque ad coelum*. Again, in this same case, Lord Bowen expressed himself as follows (p. 119): "An owner of land has the right to object to anybody putting anything over his land at any height in the sky. It is not necessary to decide how far one is to justify the principle (which I think is embodied in the law), that the man who has land has everything above or at all events is entitled to object to anything else being put above it." As late as 1903, in *Finchley Electric Lighting Co.* v. *The Urban District Council*, 1 Ch. 437, the Court recognized by way of *dictum* that an owner of land, as expressed in the words of Lord Collins, "owns the soil below, *usque ad inferos*, and the column of air above, *usque ad coelum*." [50]

It is quite clear, therefore, that this doctrine of the landowner's proprietary right in the entire air-space has been frequently repeated by writers and judges of the highest eminence. But I am reminded of the remark of Blackstone [51] himself, that "the only method of proving that this or

that maxim is a rule of the common law, is by showing that it hath been always the custom to observe it." We must therefore examine the decisions of the English courts to see whether the doctrine is actually embodied in the law.

We have already seen that as long ago as 1815 Lord Ellenborough, in *Pickering* v. *Rudd*, 4 Camp. 219, seems to have expressed the view, though *obiter*, that it was not trespass to interfere with the column of air above a piece of land. Now I take it that Lord Ellenborough has here touched upon the test as to whether or not the column of air is in the ownership of the one owning the land below it—that test being, namely, whether or not an action of trespass will lie for interference with this column of air in the space above the land. In the case before Lord Ellenborough, the defendant, a barber in Bernard Street, near Russell Square, had fixed a signboard to his house wall, which, as it turned out, did not actually reach over into the air-space of the defendant's neighbour, the plaintiff. Lord Ellenborough was not, therefore, obliged to decide the question whether an encroaching board of such description would constitute a trespass upon the plaintiff's air-space, though Ellenborough's dictum is of much interest. But Starkie's report of the case represents Ellenborough as saying: "It may be a very nice question"; and the dictum is accordingly, by reason of this doubt in the judge's mind, robbed of much of its strength. If, however, we adopt Campbell's

report of the case, Ellenborough said: "I do not think it is a trespass to interfere with the column of air superincumbent on the close. . . . I am by no means prepared to say that firing across a field *in vacuo*, no part of the contents touching it, amounts to a *clausum fregit*. Nay, if this board overhanging the plaintiff's garden be a trespass, it would follow that an aeronaut is liable to an action *quare clausum fregit* at the suit of the occupier of every field over which his balloon passes in the course of his voyage. Whether the action may be maintained would depend upon the length of time for which the superincumbent air is invaded. If any damage arises from the object which overhangs the close, the remedy is by an action on the case." [52]

It is certainly striking that Lord Ellenborough should have referred in 1815 to the very case of the aeronaut passing through the air-space over real estate. But it will be remembered that, at the time Lord Ellenborough was speaking, the British forces were carrying on the Waterloo Campaign, and that, several years before, Napoleon had been victorious over the Austrians largely by means of information that he had secured by the employment of balloons. Possibly this incident was fresh in Ellenborough's mind.[53]

Now, although Blackburn, half-a-century later, said he could not understand the legal reason for Ellenborough's doubt (Blackburn inclining to the view that the acts referred to by Ellenborough

constituted trespass), it seems nevertheless clear that Ellenborough's legal reason for hesitation was that, in the case of the bullet speeding through space and in the case of the flight of the aeronaut, he could see no interference with the possession of the *land itself*. We may well believe that Ellenborough inclined rather to the opinion that trespass could only be committed by some actual physical contact with something visible—the land itself or something attached naturally or artificially to the land. Indeed, this may properly be gathered from the opinion; for Ellenborough expressly says that if a bullet shot from a gun fall upon the field of another man, this would quite clearly be a trespass.[54] This view of Ellenborough's dictum is of some importance in connection with other cases to which I shall presently draw your attention.

So far as I am aware the English courts have not yet actually passed upon the question as to whether the passage of an air-vehicle through the air-space over real estate constitutes a trespass. But there are a number of decisions analogous to the flight of an air-vessel, and to these cases I wish to refer for just a moment.

In *Wandsworth Board of Works* v. *United Telephone Company*, 13 Q.B.D. 904, and in *Finchley Electric Co.* v. *Finchley Urban District* (1902, 1 Ch. 866; 1903, 1 Ch. 437), it was held that at a height of some thirty or forty feet above the ground the landowner has such a right of property in the

column of air that he can object to the stretching of an electric wire across his land and through the column of air. It is to be noted that both of these cases were decided by courts of first instance; and that in both cases the Court of Appeal reached a different conclusion without passing on the question that interests us, as to the rights of landowners respecting the stretching of wires through the air-space.[55] Salmond states that in the first of these cases Lord Justice Fry went so far as to hold that the owner of the land has the right to cut and remove a telegraph or other electric wire stretched through the air-space above his land, at whatever height it may have been placed, and whether or not he can show that he suffers harm or inconvenience from its being there.[56]

The case of discharging a bullet through aerial space came before the court in *Clifton* v. *Bury*, 4 Times L.R. 8. In this case a bullet was discharged over land at a height of about seventy-five feet from the surface, and the Court held that this did not constitute a trespass; the Court, therefore, to all appearances taking the view that the owner of the land has not a proprietary right in the column of air at that height above the ground.[57]

I do not need at this time to trouble you with other analogous cases.[58] It is sufficient for our present purpose to observe that, so far as we can see, the courts, in passing upon the question as to a trespass in the air-space, have been concerned with such trespass only as it related, rather, directly

to the use and enjoyment of the surface of the earth as such. The decisions, therefore, coming as they did prior to the present period of aerial flight, have related only to alleged acts of trespass at no considerable height above the ground; and certain acts interfering with this lowest stratum of the column of air have been held trespasses. It is necessary to note, in passing, that the courts have sometimes held acts committed in the lower stratum of the air-space to be nuisances, even though not technically trespasses ; the difference being that in cases of nuisance it has been necessary to show some actual damage resulting from the acts complained of.[59]

So far as we can see, therefore, the actual decisions of the courts go no further than to hold that the landowner has a proprietary right in the lower stratum of the air-space, this proprietary right giving the landowner the action of trespass. Accordingly we are confronted with this situation : the courts have expressed a far-reaching doctrine *obiter* and a more restricted doctrine in their actual decisions. In this state of the authorities we may adopt one or the other of several different positions.

We may, if we wish, follow the lead of Salmond and frankly admit that we cannot " say with any confidence what the law on this point really is." We may follow him in maintaining that the maxim *cuius est solum eius est usque ad coelum* is " doubtless true to this extent that the owner of land has the right to use for his own purposes, to the exclusion

of all other persons, the space above it *ad infinitum*. He may build the Tower of Babel if he pleases, and may remove all things situated above the surface, even though they are the property of others, and though their presence there does him no harm and is no wrong for which he has any right of action against their owners. Thus he may cut the overhanging branches of a tree growing in his neighbour's land whether they do him harm or not; yet he has no right of action against the owner of the tree unless he can show actual damage." (Thus he may cut and remove telegraph and electric wires.) "It does not follow from this, however," continues Salmond, "that an entry above the surface is in itself an actionable trespass nor is there any sufficient authority that this is so. Such an extension of the rights of a landowner would be an unreasonable restriction of the right of the public to the use of the atmospheric space above the earth's surface. It would make it an actionable wrong to fly a kite or send a message by a carrier pigeon or ascend in a balloon, or fire artillery, even in cases where no actual damage, danger or inconvenience could be proved by the subjacent landowners . . . It is submitted . . . that there can be no trespass without some physical contact with the land (including, of course, buildings, trees and other things attached to the soil), and that a mere entry into the air-space above the land is not an actionable wrong unless it causes some harm, danger or inconvenience to the occupier of

the surface. When any such harm, danger or inconvenience does exist, there is a cause of action in the nature of a nuisance." In this connection it is important to observe that in *Fay* v. *Prentiss*, 1 C.B. 828, *Baten's Case*, 9 Rep. 53, and *Penruddock's Case*, 5 Rep. 100, projections reaching over into the air-space above the plaintiff's land were treated as nuisances and not as trespasses.[60]

If we adopt this view, that there can be no trespass without a physical contact with the land and things attached to the land, we may possibly be led in the future further than we now think. Assume for a moment that the owner of a high building in London attaches a heavy cable to the top of the building and sends up a captive balloon some two or three miles for purposes of scientific investigation. Here you have something attached to the soil, even though the height be very great. Under Salmond's doctrine will trespass lie if an airship or aeroplane runs into the cable or strikes the captive balloon itself ? I do not attempt an answer, I only raise the question.

A recent writer in the *Solicitors' Journal* endeavours to solve the problem by adopting the words of Lord Justice Bowen in *Wandsworth Board of Works* v. *United Telephone Co.* : " The man who has land has everything above it, or is entitled . . . at all events, to object to anything else being put over it." It is attempted to formulate out of these words of Bowen a common principle that will include the cases of balloons, electric

wires, bullets, and other cases of the passage of foreign bodies through the air-space. This writer would like to see the landowner's right to the enjoyment of the column of air above his land no longer viewed as in the nature of a proprietary right but rather as a right analogous to the ordinary right to light and air, which would give the landowner the enjoyment of the column of air without such interference as would amount to a nuisance.[61] This writer shifts his position, however, by maintaining that the landowner's actual ownership of the air-space might well be held to extend so high as is necessary for the use of the structures erected on the land, " whilst the owner would be entitled to restrain (as a nuisance) anything amounting to an interference with his enjoyment of the upper part of the air.[62]

As you will observe, the doctrine of this writer essentially comes to the establishment of an air zone of ownership—this zone extending as high as is necessary for the use and enjoyment of structures on the land; in the higher strata of the air-space the subjacent landowner having only a vague, indefinite right analogous to the ordinary rights to light and air, permitting him to bring not the action of trespass, but an action on the ground of nuisance. Under this principle, airmen would have a full right to navigate through the upper strata of the air-space so long as they do nothing that interferes in any way with the proprietary right of the subjacent landowner and so

long as they do not render themselves liable in an action for nuisance. I do not need to remind you that the maxim embedded in English legal thought hardly seems to bear out this zone-doctrine.

Sir Frederick Pollock has suggested a further possible solution of our problem, although he does not, to all seeming, actually adopt it as his own. He suggests that the scope of possible trespass might be limited by that of effective possession; suggesting that, as regards the air-space above this stratum effectively possessed, the remedy of the landowner might well be nuisance rather than trespass.[63] Essentially this doctrine amounts to a zone theory very similar to the one which I have just referred to. In the lower stratum of the air-space—at any rate as high as structures on the land—the landowner can effectively possess, and thus actually own; above this, his right is much more vague and is protected by an action for nuisance.

This is a valuable suggestion; and I can only regret that the learned author did not further develop the idea in his work on *The Law of Torts*. One difficulty lies in the indefinite and ever varying height of the lower zone of possession and ownership. The zone of possession and ownership of one landowner would be very low and the zone of his neighbour would be very high; and, even in the case of the same landowner, his zone of possession and ownership would vary with the height of his structures on the land, and might

even be partly determined by the fact of his owning one or more air-vehicles with which to enforce his rights in that part of the air-space which is his.

In support of this view, that the landowner's right exists only so high as he can effectively possess, we might possibly invoke the doctrine of seisin in the English land law. Seisin, or feudal possession, so far as one can see, lies at the very bottom of the English system of estates in land, and the fundamental principle has been that seisin generates proprietary right; the person having the oldest and best seisin of the land succeeding as against all those who have later and inferior seisins of the land. Similarly, it might be held that, after all, just as seisin is at the basis of proprietary right in the land, so seisin—or rather, in this connection, possession—should be at the basis of any proprietary right in the air-space.

I admit that the existence of "horizontal hereditaments" in the English system of land law lends special appropriateness and significance to a theory limiting the landowner's proprietary right in the air-space to a zone of lesser or greater height. The Roman system seems to have known only a full and absolute right of ownership, and it was perhaps natural that the maxim *cuius est solum eius est usque ad coelum* should have found acceptance by civil lawyers; the Roman law permitting no ownership in a limited stratum of soil or air-space, but only allowing the landowner's full dominium or ownership to be encumbered

by certain rights less than ownership. The English law is different, permitting one man to own the surface, another to own a mining substratum, while still a third owns a horizontal flat in the structure erected upon the land. Accordingly, I say, the adoption of a zone theory would be quite in harmony with the general spirit of the English land law as regards these horizontal hereditaments. But at the same time we are confronted with the fact that the civil law maxim of a single ownership extending to the infernos and to the heavens has become firmly embodied in English legal thought. We may, if we wish, look upon this maxim as amounting, after all, to a presumption that the landowner's right is of such indefinite scope; this presumption admitting of rebuttal on proof that some other man owns a stratum below the surface or above the surface. This view, therefore, really comes only to this, that the landowner's right includes in all cases the entire subsoil and the entire air-space, unless he has sold or leased a stratum of soil or air-space to somebody else.[61]

The adoption of a limited zone of ownership would give rise to serious questions as to the exact legal character of the upper strata of the air-space. Assuming for a moment that the state has sovereignty in the entire air-space, who will be the private owner of that upper air-space, or will it be subject to no private proprietary right of any kind ? Is it to be viewed as in the private ownership of the state which is exercising sovereign

rights over it, or is it to be viewed as unoccupied space, a part of which might conceivably be appropriated by the first person who could in any way establish, by ordnance or by air-craft, an effective possession ? Or, might it possibly be viewed as a public way under the sovereignty of the state ? Or, could it be looked upon as in any sense a part of the state domain in the nature of an aerial common, in which all subjacent landowners in the country would have a right of enjoyment ? [65]

I do not attempt to answer these questions. I only raise them as showing the difficulties inherent in any view which would theoretically restrict the private right of the subjacent landowner to a mere limited zone above his land. For myself I find it difficult to adopt any zone theory as far as the present law is concerned; for I find it difficult to hold that, on the general principles of the common law as well as of the civil law, the landowner's right either below or above the surface is in any way limited. But at the same time the rigid adherence to this doctrine of full proprietary right, in the present period of aerial navigation and in view of further future developments, would lead us to embarrassing results; for, in the words of Ellenborough, which I have already quoted, it would then follow " that an aeronaut is liable to an action *quare clausum fregit* at the suit of the occupier of every field over which his balloon passed in the course of his voyage." Although the passage of a balloon or aeroplane at a great height

above the land may possibly therefore—although this is not of course quite certain—be looked upon as technically a trespass, yet the difficulty in bringing actions in such cases would be extremely great, and any general enforcement of this proprietary right would of course render aerial navigation very difficult indeed.

We may, if we wish, adopt the view that although the landowner's proprietary right does extend up to the heavens, yet this proprietary right is subject to a general right of passage for balloonists and aviators; who must, however, keep themselves strictly within their right of passage and must do no act which shall amount either to a trespass or a nuisance in the lower, or to a nuisance in the upper, stratum of the air-space. This view has already been adopted by some writers on the English law.

In essence, this last view amounts to the rule of the present German civil code and the civil code of Switzerland and one or two other countries. In the German code it is expressly stated that the landowner owns the entire air-space, but that he can object to any act in the air-space only in case he has an interest in objecting. This doctrine admits the full proprietary right in the entire air-space, but limits its exercise, in the interest of aerial navigation, to cases where the landowner actually suffers some legal detriment by the passage of aerial craft above his land. Under this view the mere passage of a balloon or aeroplane

high up would not infringe the landowner's proprietary right; unless of course something more were present beside the mere passage itself, for instance, the falling of objects overboard on to the land, or hovering, or indeed a passage too close to the ground. This principle of the German code would, I think, be a sensible one to adopt in this country; but if it be held by the courts that the landowner's right already exists up to the heavens and that any passage through that air-space, however high up, would be at present technically a trespass, then legislation would of course be necessary in order to embody the principle in our legal system.

Assuming, then, that under the existing common law the landowner has the proprietary right in the entire air-space above the land, it is rather important to observe that the landowner may conceivably subject his air-space to an easement of one description or another; for there seems to be no objection in legal principle to the granting of an easement of way through the air-space immediately above the land or even close to structures above the land. To give an illustration of what I mean, consider the case where A is the owner of an aeroplane which he shelters in his own hangar upon his own property, but where his land is so small in size, that it is, as a matter of fact, impossible for him to ascend into the air for purposes of flight without using the lower air stratum on his neighbour's land, and so close, too, to the surface

that such user of the neighbour's air-space would be, if unauthorized, quite clearly a trespass. Under these circumstances it may become necessary for the owner of the aeroplane to purchase a right of way through the air-space of his neighbour. Again, it is possible that a landowner, having a large tract of land upon which game birds live, perhaps in abundance, may wish to sell his shooting rights in the air-space to some aeronaut or aviator. If these shooting rights were thus sold, the airman would then be legally entitled to sail through the lower stratum of the landowner's air-space for the purpose of exercising his shooting rights. Indeed, I can see no legal objection to the landowner's leasing his land, including the air-space, under such terms as the parties may agree upon. It is conceivable that the lessor might restrict the lessee's use of the air-space to the lower air stratum only, reserving to himself, the lessor, the right of using the upper strata for his own purposes; for example, as an aerial approach to other adjoining land which he may own.

Leaving out of account, however, these cases where the landowner may by his own act convey legal rights in his air-space to other persons, I desire now for a few moments to consider the cases where there is an unauthorized use of the landowner's air-space.

It is quite clear, I think, from what we have already seen, that an airman sailing close to the ground, or even indeed at some height above struc-

tures on the land, may thereby commit a trespass.[66] The airman will clearly commit a trespass if he empties sandbags or if he throws bottles or other objects upon the land. An aerial picnic party might commit trespass by throwing over the paper wrappings that originally protected the sardine-boxes ! So also the airman will undoubtedly commit a trespass if he descends in his balloon, airship, or aeroplane, upon the land.

Similar to the passage in an air-vehicle close to the land is the case of the captive balloon. If a balloon be attached by means of a rope to the land without authority from the owner, this is quite clearly a trespass; and so, also, is it a trespass if the captive balloon, carried by the currents of air, drifts over into the air-space of the adjoining landowner. Of course, if the captive balloon rises to an immense height, say five to ten thousand feet, it would then be a nice question as to whether the landowner whose air-space is thus entered at this great height has, strictly speaking, an action of trespass. I can conceive of circumstances where it might be reasonably held that an action of trespass should lie. This question of captive balloons is an immediately practical one, for already in various places in England captive balloons are sent up for purposes of advertisement.[67]

An even more delicate question arises in case a balloon, airship or aeroplane hovers in the air quite close to the landowner's air-space without actually entering into it. Assuming that the airman

hovers so close to the buildings of the landowner that he can see into the landowner's private gardens, and even through the upper windows of his residence into the privacy of his home, has the airman under these circumstances committed any offence in the eye of the law ? Certainly it would be difficult to maintain that he is in any way guilty of a trespass. It is possible that it might be held a nuisance; and this would be a very reasonable view to take. But can the airman be sued upon still another ground ? Can it be said that the airman has infringed the landowner's right of privacy ? In raising this question I am raising a question somewhat novel, and upon which there is not much authority. It does not seem possible to deduce any general principle in regard to a right of privacy from the existing decisions. It has been suggested by writers, however, that the right to privacy, or in other words, the so-called right to be left alone, ought to be recognized by the law. The recognition of this right of privacy would protect a man from the publication, contrary to his wish, of his own portrait and even of details of his own private life. American and Continental law recognizes the right of privacy in these respects. Admitting the existence of a right of privacy, can we then say that the landowner's right of privacy has been infringed by the airman who thus hovers near his home ? An analogous situation has arisen as regards the building of tram-lines close to the private gardens

of a landowner in such a way that persons upon the top of the tram-car can obtain a full view of these private gardens. So far as I am aware no landowner has brought an action upon the ground that his right of privacy has been infringed. It is possible, of course, that the two cases may be distinguished; and I do not endeavour to answer the question. I merely draw your attention to it as one of the questions that may be raised in the courts in the not distant future.[68]

So far I have endeavoured to look at the matter from the point of view of trespass. It is now necessary to remark that, if the landowner be unable to reach the aeronaut in an action of trespass, he may nevertheless be able to obtain redress upon the ground of nuisance. Quite clearly hovering above the land, even at a considerable height, might well be viewed as a nuisance, even if it were not looked upon as trespass. So, too, hovering close to the landowner's air-space may under some circumstances be a nuisance to the landowner himself. I imagine that such near-by hoverers would more naturally be reached upon this ground of nuisance than upon the ground of infringement of the right of privacy—at least in the present state of the law.[69]

One of the most important questions that will soon arise in connection with aerial navigation is the liability of aeronauts and aviators for accidents. Suppose, for example, that on your departure from this lecture-room and while you are passing through

the grounds of King's College on your way home, an airship or an aeroplane, flying at that moment through the air-space over King's College, descends suddenly to the ground and injures you. There can be no question that the aeronaut or aviator will be liable in an action for trespass brought by King's College. But the wider question arises as to the liability of the aeronaut for the personal injuries which you have sustained. Is the aeronaut liable for injuries to personal property and for personal injuries to landowners and others who are not landowners ? In other words, is the aeronaut in general liable for all injuries which he causes to the property and person of other people ?

Now this question as to the liability of the aeronaut under these circumstances may be answered in one of three ways. First, it may be held that he is liable only when he may be charged with negligence or want of skill; secondly, it may be maintained that he must be held to the same degree of care now exacted of a common carrier of passengers, and in this view he would be held liable for his negligence in case he did not use the utmost care and vigilance possible, consistent with the nature of his activity; thirdly, the view might be adopted that he should be held absolutely liable for all injury caused to other persons, whether that injury be caused by intention, negligence or accident.

The first view, namely, that the aeronaut is liable only in case he is chargeable with ordinary

negligence, has been adopted by the International Juridical Congress for the Regulation of Aerial Locomotion, held at Verona last May and June. In the view of this Congress, the aeronaut should be held liable only in case he is chargeable with some fault; it being desirable, in the interest of the development of aerial science, not to subject airmen to absolute liability.[70]

The second view, placing upon the aeronaut the liability of a common carrier, might conceivably be adopted as regards those aeronauts and aviators engaged in the carriage of passengers for hire. But in the present stage of aerial development it may well be that the safety of the public will require a more stringent rule even in the case of airmen engaged as common carriers.[71]

This stricter rule is the rule which makes the aeronaut liable for all injury which he causes irrespective of his own fault, including therefore injury caused by accident. Owing to the present hazards, dangers and uncertainties attaching to aerial flight, this rule of absolute liability may be a very reasonable rule to adopt. If we consider carefully the present state of aerial science, we must frankly conclude that the man who undertakes an airship or aeroplane flight undertakes something which is undoubtedly dangerous in its character. It does not, therefore, seem unjust to exact of the airman an absolute liability for all injuries which he causes. Certainly, as between the aeronaut causing the injury and the innocent

person who suffers the injury, there can be little question in the minds of reasonable men as to who should suffer the consequences. The danger to the community underneath the flying airship or aeroplane is much like the danger caused by fireworks sent high into the air on the night of November 5th. It is, too, not unlike the danger incident to the keeping of a wild animal within the limits of a civilized community; for example, a wild hyaena placed in a taxicab for the purpose of being conveyed from one place to another! So, too, the danger incident to the flight of an airship or aeroplane is not unlike the danger incident to the keeping of water stored up in a reservoir in order that land may be irrigated. In all of these cases there is an especially great danger to the community; and, quite on general principles, it seems that the one who sends up the rocket, or the one who conveys the hyaena in a taxicab, or the one who stores up water in a reservoir, ought to be liable for all damage caused thereby. You will therefore see that the position thus arrived at is the doctrine of *Rylands* v. *Fletcher*.[72] Looked at from the point of liability, I do not see how one can really distinguish between the danger incident to the storing of water in a reservoir and the danger incident to the flight overhead of an airship or aeroplane. If anything, in the present state of aerial science, the danger in the latter case is even greater than in the former; for certainly at the present time both the airship and the aeroplane

are not yet subject to the perfect control of the man in charge. Both vehicles are largely subject to winds and other natural conditions; with the consequence that innocent people upon the land, proceeding quietly and naturally about their own business or pleasure, are at all times subject to a great risk of personal injury or loss of life either from the dropping of something from the air-vehicle or from the descent of the air-vehicle itself.

This doctrine of absolute liability seems therefore to be justified upon general principles and doctrines of the law. It was upheld by Dr. Sarfatti at the Verona Congress, and it has been adopted as the proper solution by Chief Justice (now Governor) Baldwin of the State of Connecticut in America.[73] Furthermore, as far as balloons are concerned, there is direct judicial authority for this view in the New York case of *Guille* v. *Swann*, 19 Johns. 381. This was a case where Guille went up in a balloon and came down in Swann's garden. Attracted by the descent of the balloon, a crowd of people broke through into the garden and thus damaged vegetables and flowers. The Court held that Guille was liable as a trespasser, not only for the damage by the balloon itself, but also for the damage which was done by the entry of the crowd. Spencer, the Chief Justice, said: "If his descent under such circumstances ordinarily and naturally drew a crowd of people about him, either from curiosity

or for the purpose of rescuing him from a perilous situation, all this he ought to have foreseen, and must be held responsible for." The Court in this case relied upon the well-known Squib Case. The descent of Guille in this case was not intentional; and yet, as we see, he was held to be liable, not only for the damage which he himself was guilty of, but also for the incidental damage caused by his unfortunate descent. "But," as remarked by Sir Frederick Pollock, in commenting upon this case, "a man who goes up in a balloon must know that he has to come down somewhere; and that he cannot be sure of coming down in a place which he is entitled to use for that purpose, or where his descent will cause no damage and excite no objection. Guille's liability was accordingly the same as if the balloon had been under his control and he had guided it into Swann's garden. If balloons were as manageable as vessels on the sea, and, by some accident which could not be ascribed to any fault of the traveller, the steering apparatus got out of order, and so the balloon drifted into the neighbour's garden, the result might be different."[74]

The case of *Guille* v. *Swann* was the case of a balloon. One may well be of the opinion that heavier-than-air machines, as in use at the present day, are even of greater danger to the general public, and that if the aeronaut be held liable for the natural consequences of his act, so also ought aviators to be thus held.[75]

I may mention, in concluding this matter, that

several of the Continental codes, replacing the customary law, lay it down as a rule that injury done without fault results in no liability. But apparently a very slight fault is sufficient.[76]

The question as to whether the airman should be relieved of absolute liability by reason of his possession of an official or governmental licence to fly, is one that will probably come up for decision. Certainly on principle one might well be of the opinion that this should not decrease in any way his legal liability to innocent persons who are injured by his acts. In this connection it is instructive to observe that the draft bill, prepared by the American Bar Association at its last meeting, requires the owner or charterer of an air-vehicle to file in an official place a bond to answer for all damages that may result to any person as an incident of any voyage undertaken. The draft bill provides for the proper licensing of airmen, and does not seem in any way to relieve them of legal liability for their acts.[77]

In considering this question of absolute liability we must not forget that the negligence of the persons who are injured will certainly be of moment in determining the airman's liability. Undoubtedly the general use of air-vehicles will bring about the necessity for even greater caution on the part of all persons than at present exists. In going through the crowded streets of London, for instance, it might conceivably be necessary for the pedestrian and the driver of land vehicles not only

to look in all directions to guard against accident arising from motor vehicles and all the other perils on the surface, but it will become necessary to beware lest they, by their failure to look up into the air, render themselves guilty of such negligence as will prevent their recovery in case of accident.

Although rules of the road and a code of signals in the air-space will undoubtedly be laid down by national if not by international law, it is nevertheless likely that collisions will be of fairly frequent occurrence. The legal question arises therefore as to who will be liable for any damage resulting from a collision between two air-vehicles. Of course, if only one of the air-vehicles be in fault by reason of intention or of negligence on the part of its pilot, only the owner or the pilot of that one air-vehicle will be liable. But suppose the collision is caused by the fault of both parties, the ordinary rule of the common law in regard to contributory negligence would seem to prevent recovery on the part of either air-vehicle as against the other; but the rule of the Admiralty Courts is different, permitting the resulting loss to be divided between the two parties. Certainly the Admiralty rule seems a very fair one and might conceivably be adopted by the courts. The analogy is quite close. If collisions on the sea are governed by such a fair rule, there seems no reason why the courts should not adopt the rule for the analogous case of a collision between two air-vehicles. If the collision between the two air-

vehicles takes place in the air-space above the seas, then there is even greater reason for the adoption of the Admiralty rule. But suppose the collision takes place, not owing to the fault of either one party or the other or of both, but by reason of inevitable accident: in this case the courts will probably hold that the loss shall lie where it falls.[78]

So far I have considered this question only as between the owners of the air-vehicles themselves. Suppose now that one of the air-vehicles is carrying cargo owned by an innocent third party. Against whom is he to bring his action, and what will be the rule of damages? If the collision be caused by the fault of both air-vehicles—that is, if both are to blame—it would seem reasonable to permit the innocent owner of cargo to recover his entire damages and not merely the half, from either one or the other of the air-vehicle owners. It would then be possible for that one of the air-vehicle owners who was obliged to pay for the entire damage to recover the proportionate share from the other owner.

When we come to the subject of contract, we come to a branch of aerial law which will probably be developed very much along the lines of the existing contract-law on land and sea. In some cases the courts will undoubtedly lean more to the common law, and in some cases they will lean more to the maritime law. To illustrate what I mean. In maritime law the right of salvors to

claim compensation is based upon sound sense and the special peril attaching to travel by sea; but at the same time the right of the salvor runs counter to a fundamental rule of the common law of contract, inasmuch as the salvor's act constituting, in a true sense, the offer is, in the great majority of cases, not communicated to the offeree, the owner of the ship or the cargo. Probably the courts would follow the maritime rather than the common law rule. That this question may become of practical importance there can be no doubt. I have only to draw your attention to the abandonment of Mr. Welman's air-ship *America* upon the high seas.[79]

In contract-law, insurance will undoubtedly play a conspicuous role. Already policies have been issued to airmen, and it is surprising to note that premiums charged by German companies for insurance against death are not in excess of one shilling for every hundred pounds assured. Probably this system of insurance will be extended to include all cases of possible accident.[80]

A word may be said with reference to the remedies that will be applied by the courts where rights under private aerial law are infringed. Without doubt, the chief remedies will be actions for damages, and the equitable remedies of decree for specific performance and injunction. Already actions for damages and suits for injunctions have been brought in the courts. So far the chief questions that have been raised are questions

relating to infringement of patents in relation both to air-vehicles and to systems of wireless telegraphy. I need only draw your attention to the fact that the action of *Marconi* v. *The British Radio Telegraph and Telephone Co.* is now being heard in the High Court. Of course, it may well prove a difficult matter sometimes effectively to enforce the court's injunction in the air-space!

I just wish to touch upon the question as to the jurisdiction in the matter of crime committed in the air-space above the state's territory or territorial waters. The determination of this question will largely depend upon the determination of the fundamental problem as to whether the state has full sovereignty in its entire air-space. If the view of a zone of sovereignty be adopted, then clearly all crimes committed within this air-zone will fall within the jurisdiction of the territorial state; and it would also seem to follow that crimes committed in the upper strata of the air-space—strata, that is, which do not fall within the sovereignty of the territorial state, but are free and open to all—do not fall within the jurisdiction of the subjacent state, but are to be governed by the law of that country whose flag the air-vehicle is flying. This is the view adopted by adherents of the doctrine that at any rate the upper strata of the air-space are quite free and open to all, being subject to no public right of the subjacent state. But this view is,

as I have already remarked, subject to serious objections. I believe the proper solution of the whole problem is to recognize the full sovereignty of the subjacent state in its entire air-space, thus bringing all crimes committed in that air-space within the jurisdiction of the courts of the subjacent state itself. To be sure, it is still possible to give the state of the air-vehicle's flag a concurrent jurisdiction as regards crimes committed on board which do not in any way seriously affect the subjacent state.

Already some countries have adopted national regulations of aerial navigation; but inasmuch as these regulations are to be looked upon, in part at any rate, as preparatory to international conventions, I prefer to discuss them in my next lecture.

I need only say in conclusion that, although the next few years will see many cases brought in the courts relative to aerial rights of various sorts, we should nevertheless beware lest we proceed too hastily with legislation in reference to these problems. Some questions will undoubtedly require legislation; but other questions can be, I believe, better worked out by the slower processes of judicial decision.

The settlement of some of the most important problems in municipal law, both private and criminal, will largely depend on how that fundamental question with reference to the state's rights in the air-space is determined. Questions

of jurisdiction (including, therefore, questions in private international law) will very largely depend upon whether it be recognized as a principle of national and international law, that the state has either no rights in the air-space or at least only limited ones, or that it has full rights of sovereignty in its entire air-space.

THIRD LECTURE

THE PRINCIPLES AND PROBLEMS OF INTERNATIONAL LAW

In this concluding lecture I purpose setting forth, first, the existing rules of international law in regard to both wireless telegraphy and air-vehicles; proceeding, in the second place, to a consideration of what we may reasonably expect will be the law of the future.

We may take as our starting-point in the consideration of international law as to wireless telegraphy, the principles adopted by the Institut de Droit International at its Ghent meeting on September 24, 1906. At that meeting M. Fauchille made a report to the Institute upon this subject, and a set of rules to be applied both in time of peace and in time of war was adopted by the Institute. The first article of this so-called regulation declares as follows: "The air is free. States have in the air, both in time of peace and in time of war, only those rights which are necessary for their conservation." The principle of the freedom of the air is thus explicitly adopted by the Institute, states being allowed to exercise in the air

only those rights which their own security and protection demand. The result of this principle is therefore this: Neither the private landowner nor the territorial state itself can arbitrarily prevent the passage of the herzian waves through the air, but both the private landowner and the territorial state will have the right to prevent the passage of such air-waves if such passage interferes with the exercise of the landowner's or the state's legitimate interests. If we now stop to examine the actual situation we are forced to the conclusion that, after all, the greatest interference with private or public rights caused by the passage of herzian waves is the disturbance of the existing system of wire telephones and of wire telegraphs; and the interference with private and public rights caused by wireless telegraphy is thus comparatively restricted and perhaps already quite far on the way to being substantially removed altogether.[81] It is to be hoped that, in view of the great importance of aeronautics, the Institute will reconsider its declaration in favour of freedom, and recognize the principle of the state's full sovereignty. There is an important distinction between wireless telegraphy and air-craft as regards their relation to the land and the air-space. The passage of herzian waves results in no danger to the land and no interference with anything in the air-space, whereas the passage through the air-space of great and substantial bodies, such as air-ships and aeroplanes, results in danger to the property and persons below

them. One single principle should be adopted by and recognized as the basis for international agreements of all sorts; and, in the interests of all concerned, that principle ought to be one of state sovereignty rather than one of freedom.

Articles 3 and 4 of the Institute's regulation provide for the case where a state decides, for its own security, to prohibit the passage of herzian air-waves above its own territory. "Each state," reads Article 3 of the regulation, "has the right, so far as it be necessary for its own security, to prohibit the passage of herzian waves above its own territory and territorial waters just as high above the land as may be desirable; and this right of prohibition on the part of the territorial state may be exercised whether the waves emanate from a state-owned or a private wireless station, and whether such station be upon the land itself or on board a vessel or an airship." "But," provides the next article (Article 4), "in case the communication by wireless telegraphy be thus prohibited by any state, the government ought at once to announce this to the governments of other states." [82]

Article 2 of the regulation of the Institute lays it down as a general principle that in default of special rules applicable to wireless telegraphy, the rules already applicable to the ordinary wire telegraph are to be applied also to wireless telegraphy.[83] This general principle seems a sound one, and if carried out in positive international law and prac-

tice, would do much to bring about a most desirable unification of the rules applicable to all methods of communication by telephones and telegraphs—whether they be wire or wireless.

The regulation of the Institute has of course no binding force as positive international law. It is a set of rules carefully thought out by the Institute and deemed by it worthy of adoption by the family of nations. There already exist, however, positive rules of international law upon the subject of wireless telegraphy, and to these I wish to invite your attention for a few moments.

In 1903, on the initiative of Germany, an international conference assembled at Berlin to consider the subject of wireless telegraphy. This conference was avowedly a preliminary one, and was participated in by delegates from only five countries — Germany, France, Russia, Austria-Hungary and Spain. The conference drew up a declaration which set forth the basis of a regulation, to be examined and considered by the governments; but the draft was restricted in scope, applying only to wireless communication between coast stations and ships at sea.[84]

Three years later—in 1906—a second conference was held at Berlin, participated in by representatives of twenty-seven countries, including the United States and Great Britain. As a result of the deliberations of this conference an international convention was signed at Berlin on November 3, 1906, the convention in its entirety to take

effect on July 1, 1908. I say "in its entirety," for the convention actually contained several parts, namely, the convention itself, an additional engagement (or obligation) relating to communication between ships furnished with wireless apparatus, a final protocol, and a regulation. In the month of July 1908 (the whole convention was to take effect on the 1st of July, 1908) the entire convention was ratified by ten countries, including Germany, Spain, Holland and Belgium. Three other countries—Japan, Mexico and Great Britain —ratified all but the additional obligation as to communication between ships; and it is important to add that Great Britain adhered to the convention on behalf of India and all the colonies and protectorates. France in the present year—1910 —has ratified the convention. Italy has reserved its ratification by reason of its peculiar situation as regards the Marconi Wireless Telegraph Company.[85]

On examining this important international convention in regard to wireless telegraphy we find its fundamental idea to be that wireless telegraphy exists, despite its own peculiarities caused by its wireless character, for the very same object as wire telegraphy, namely, the transmission of dispatches; and accordingly we are not surprised to observe that the convention expressly extends to wireless messages the rules laid down in the St. Petersburg international convention relative to the ordinary wire telegraph.[86]

Apart from this adoption of the rules applicable

to the analogous wire system of telegraphy, the Convention of Berlin of 1906 is noteworthy in its promulgation of the principle of internationalization and of the intercommunication between all wireless systems; communication to be *obligatory between coast stations and ships at sea*, regardless of the kind of wireless apparatus used. This principle is one of great significance; for it does away with the monopoly of any one system, such as the Marconi, and thus permits a free development of wireless telegraphy in the future without any of the hampering results that would flow from the establishment of a monopoly in the hands of any one system, however advanced and excellent such one system may actually be at the present time.[87]

It is important to note carefully that the convention itself applies only to communication between *coastal stations and ships at sea;* it does not apply to wireless messages from one ship to another ship on the high seas.[88] This sort of communication—between ships themselves at sea—is regulated, however, by the so-called "additional engagement or obligation," which applies the principles of the main convention relative to obligatory communication between coastal stations and ships at sea to communication between ship and ship at sea. Unfortunately, not all of the states represented at the Berlin Conference signed this additional international agreement. It was not signed by Persia, Portugal, Mexico, Italy,

Japan and Great Britain. Mexico has since adhered to the agreement, although it did not sign it at the conference. Probably the other Powers I have just named will also ultimately adhere to the agreement; and it is certainly very much to be hoped that they will, for unanimity among the Powers on this point is greatly to be desired. All Powers should be agreed that the principles of the main convention itself should thus be applied not only to communication between coastal stations and ships at sea, but also between ship and ship at sea, regardless of the kind of wireless system—whether Marconi or some other—used by such ships. The dangers resulting from a failure to make communication between ship and ship obligatory, regardless of the wireless system used, were forcibly brought out by Mr. Tower, the delegate of the United States at the Berlin Conference, when he drew the attention of the Conference to the most unfortunate action of the steamship *Vaderland.* "The American steamer *Lebanon* had received orders to search the Atlantic for a wrecked vessel which offered great danger to navigation. The *Lebanon* came within communicating reach of the liner *Vaderland* and inquired by wireless telegraphy whether the *Vaderland* had seen the wreck. The *Vaderland* refused to reply to this question, on the ground that she was not permitted to enter into communication with a ship provided with a wireless apparatus other than the Marconi." I need hardly say that this state

of affairs is most regrettable and should be remedied at the earliest opportunity, so that mutual assistance on the high seas—so highly desirable on grounds of humanity and even common decency—shall be prevented by no legal quibble about the kind of wireless system used by this vessel or that vessel.

As regards the Berlin Convention, it only remains to add that the Convention has created an international office for wireless telegraphy similar to the international office for the post and ordinary telegraphy already established at Berne. This International Office is charged with the duty of collecting, systematizing and publishing all information in regard to wireless telegraphy, to prepare the way for any necessary changes in the Convention, to announce any changes actually made, and in general to proceed with any administrative work which may be demanded in the interests of wireless telegraphy.[89]

The importance of this administrative Office of International Wireless Telegraphy should not be lost sight of; and in the course of a short time we may confidently look forward to the establishment by international agreement of a similar international office for aeronautics.

You will therefore see that there already exists a body of rules of international law in regard to wireless telegraphy in time of peace. I now wish to draw your attention to the international rules that apply in time of war. The history of these

rules dates from the Russo-Japanese War. As you will recall, during the progress of the war—in April 1904—the Russian admiral issued the following proclamation, which was communicated to foreign governments in the form of a circular: "In case neutral vessels having on board correspondents who may communicate news to the enemy by means of improved apparatus not yet provided for by existing conventions should be arrested off Kwantung, or within the zone of operations of the Russian fleet, such correspondents shall be regarded as spies, and the vessels provided with such apparatus shall be seized as lawful prize." This rather startling Russian proclamation was aimed at the steamer *Haimun*. This steamship had been fitted up by the London *Times* with a wireless telegraphic apparatus, and a correspondent of the *Times*, duly accredited to the Japanese headquarters and subject to the restrictions imposed on war correspondents by Japanese authorities, then proceeded to follow the operations, and to send cipher messages to a station situated on British territory at Wei-hai-Wei, whence they were dispatched overland by ordinary telegraph to London. The proclamation that Russia would treat such correspondents as *spies* caused a great deal of discussion at the time; and it clearly seems to have been a position which could hardly have been supported on principles of international law. It is going outside these principles to treat those as spies who send dispatches in the way the *Times*

correspondent did, for it is an essential element of espionage that the acts complained of must be committed clandestinely or on false pretences with a view of communicating information to the enemy. Should correspondents by means of a false pretext —for instance, the pretext of communicating with a neutral journal—then proceed to send news to the enemy, certainly this might well be considered an act of espionage; but there was no claim in the *Times* incident that this state of affairs existed.[90]

But though such acts as those of the *Times* correspondent cannot be viewed as espionage, it is possible to view them as an infraction of neutrality. In itself the act of sending newspaper messages by wireless may be quite as innocent as sending them by ordinary wire telegraphy; and yet, in the *Times* case, the wireless operator admitted that the apparatus on the *Haimun* was capable of intercepting both Russian and Japanese war messages; and thus, though the messages were in cipher, the trained ear could nevertheless draw most valuable inferences in regard to the positions, actions and even nationality of the vessels engaged in the naval war. An improper use of this valuable information might of course very substantially affect the course of the naval movements and engagements; and Japan seems to have acted wisely in withdrawing the permission to use the wireless apparatus on the *Haimun*.[91]

While I have been speaking of the Russian

admiral's proclamation declaring newspaper correspondents using wireless telegraphy to be spies, you have probably been reminded of a somewhat similar incident during the Franco-Prussian War. Prince Bismarck at that time contended that persons passing over the German lines in balloons were spies. Imprisonment only—and not death, the fate of all spies—was, however, as a matter of fact, inflicted as a punishment on balloonists actually captured by the German forces. Bismarck's extreme view was not adopted by the Brussels Conference of 1874 on the laws of war; and indeed the Prussian government itself acquiesced in the milder view adopted by the Conference.[92]

Another interesting question as to the use of wireless telegraphy in time of war arose in the great struggle between Japan and Russia. While the siege of Port Arthur was in progress, the Russians succeeded in erecting a wireless station on the Chinese—and thus neutral—side of the Gulf of Pechili; and by means of this wireless station the Russians, despite the blockade, communicated with the Russian garrison shut up in the fortress. The question thus raised is whether a neutral should permit a belligerent to establish his wireless apparatus on the neutral's own territory. On principle it certainly seems that the neutral would commit a breach of neutrality by permitting such a use of its territory for belligerent purposes; and it is interesting to recall, as an analogy, the British refusal to allow the United

States to land a cable at Hong-Kong in 1898 during the war between Spain and America.[93]

It was not long after the Russo-Japanese War that these and other questions in regard to the use of wireless telegraphy in time of war engaged the earnest consideration of international lawyers. At its Ghent meeting in 1906 the Institut de Droit International drew up a set of provisions governing the use of wireless telegraphy both in time of peace and in time of war. I have already drawn your attention to the Institute's declaration that the air is free (states having only the right of conservation) and to the Institute's conclusion as to the proper rules to be observed in time of peace. For times of war the Institute also lays down principles in its draft regulation.

In Article 6 of the regulations the Institute declares that in principle the rules applicable to the time of peace should also be applied in time of war; and then in the following articles, 6–10 inclusive, the Institute attempts to specify the rights and the duties of belligerents and of neutrals. In Article 6 it is maintained that even on that portion of the high seas which falls within the zone of naval operations the belligerents should be entitled to prohibit the emission of herzian air-waves even by neutral subjects; and Article 10 declares that as soon as a belligerent prohibits the use of wireless telegraphy neutral governments should be at once informed of this fact of prohibition.[94]

The question of spies—raised so dramatically during the Russo-Japanese War, as we have seen —is answered by the Institute in its Article 7.[95] In the view of the Institute persons who, despite the prohibition of a belligerent, engage in the transmission or the reception of wireless dispatches as between the various parts of an army or of a belligerent territory, should not, if captured, be treated as spies, but rather as prisoners of war. If, however, the communication be effected by means of false pretexts, such persons ought to be treated otherwise. Apparently in this exceptional case the Institute means to treat the person guilty of false pretexts as a spy; though this is not definitely stated.

Article 7 goes on to declare that the bearers of dispatches transmitted by wireless telegraphy are to be treated as spies if they resort to dissimulation or artifice.

The concluding paragraph of Article 7 is concerned with the use of wireless telegraphy in balloons, and is thus of a peculiar interest to us, for it lays down principles relating to both branches of our present subject—wireless telegraphy and aeronautics. In accordance with these concluding provisions of Article 7, neutral ships and balloons —if by their communications with the enemy they can be considered as being in hostile service—are to be confiscated along with their dispatches and wireless apparatus. Unless, on the other hand, it can be proven that their correspondence was

intended to furnish the enemy with information as to the conduct of hostilities, the neutral subjects, ships and balloons, thus captured, should then be expelled from the zone of war operations; but their wireless apparatus should be seized and sequestered.

Articles 8 and 9 relate to the rights and duties of neutrals.[96] In Article 8 the principle is laid down that the neutral state should not be obliged to prevent the passage above its territory of herzian waves destined to a belligerent country. There is thus no positive duty imposed on the neutral state to take measures to prevent the passage of wireless messages through the air above its own territory. But in Article 9 a duty of a positive nature is laid upon the neutral state. In this article it is declared that the neutral state has the *right and the duty* to close, or to take into its own administration any wireless stations (l'établissement) of a belligerent state that it—the neutral state—had previously authorized the present belligerent state to set up upon the neutral's territory.

The Institute thus answers in the negative the question as to whether a belligerent has the right to operate a wireless station on neutral territory. In the view of the Institute no such belligerent right exists; and the further positive right and duty are accorded to the neutral of closing any existing belligerent stations on its territory.

The Institute's regulation undoubtedly did

much to prepare the way for the Hague regulations of 1907 on wireless telegraphy; and here, as in so many other parts of international law, our debt to the careful and scientific labours of the members of the Institute is therefore something which should be gratefully acknowledged.

The Fifth Hague Convention of 1907 relates to the rights and duties of neutral powers and persons in war on land. Article 3 of this Convention contains two paragraphs. In the first paragraph belligerents are forbidden "to erect on the territory of a neutral power a wireless telegraphy station or any apparatus intended to serve as a means of communication with belligerent forces on land or sea." The second paragraph forbids belligerents "to make use of any installation of this kind established by them before the war on the territory of a neutral power, for purely military purposes and not previously opened for the service of public messages." [97]

This article was suggested by the action of the Russians—to which I referred just a moment ago—in establishing a receiving station on neutral Chinese territory; and it compels belligerents for the future to refrain from *erecting* on neutral territory any wireless station intended for military purposes, and also to refrain from *using for purely military purposes* during the war any station which might have been erected by them on neutral territory prior to the war and not yet previously opened for the service of public messages. This limitation

in the second paragraph—" and not yet previously opened "—is derived directly from the Berlin Wireless Telegraphy Convention of 1906; and was inserted in order to enable the Japanese and British delegates to abandon the reservations which they had made on Articles 3 and 9 of the Fifth Hague Convention.[98]

You will observe that Article 3 imposes a duty on *belligerents* of refraining from erecting or using wireless stations on neutral territory. Article 5 lays a corresponding duty on the *neutral* powers themselves to prevent on their own territory such erection or use of wireless stations by belligerents, and to punish any such breach of neutrality by belligerents if committed on its own neutral territory. The Japanese delegate wished to see this neutral duty extended so as to include not only the neutral's own territory, but also territory over which the neutral power had jurisdiction. But the Committee drafting the Convention thought the complex problems relating to acts done on territory that is merely " leased " or " occupied " or " administered " by a neutral power, were too great for present solution; and the Japanese suggestion was not therefore adopted.[99] If the Japanese suggestion had been adopted it would probably have meant a wide extension of British neutral duties; for Great Britain leases or occupies or administers in all parts of the world much territory that cannot be said to be her own.

Article 5 thus lays a positive duty on neutral

powers; but Articles 7 and 8 expressly relieve neutral powers from certain other duties as regards wireless telegraphy, and also, I believe, as regards air-vehicles.

It is expressly provided by Article 7 that " a neutral power is not bound to prevent the export or transit, on behalf of one or other of the belligerents, of arms, munitions of war, or, in general, of anything which can be of use to an army or fleet." Article 7 of Convention No. 13 on neutral rights and duties in maritime law contains identical provisions. In its general terms—" anything which can be of use to an army or fleet "—this article may properly be taken to include air-vehicles and wireless apparatus, for certainly they are both kinds of chattels which can be " of use to an army or fleet "; and, if this be the proper interpretation of Article 7, a neutral Power is not therefore under any duty to prevent the export or transit, on behalf of one or the other of the belligerents, of either air-vehicles or wireless apparatus. It will be observed that the article does not relate to the use of such chattels, but only to their export or transit.

In the following article—Article 8—which relates only to cables and wireless apparatus (not to air-vehicles at all), it is again expressly laid down that " a neutral Power is not bound to forbid or restrict the employment on behalf of belligerents of telegraph or telephone cables or any wireless telegraphy apparatus, whether belonging to it

[*i. e.* the neutral Power], or to companies or to private individuals."

Article 8 makes it quite clear therefore that a neutral Power is under no duty to forbid or restrict the use of cables or wireless apparatus, even though the cable or wireless apparatus belong to the neutral Power itself and not merely to companies or private individuals, and even though the use to be made of the cables or wireless instruments be on behalf of the belligerents.

But the next article—Article 9—implies that a neutral power may, if it sees fit, acting on its own discretion as to the necessity or expedience of such measures, take restrictive or prohibitive measures in regard to the subject-matter of both Article 7 and Article 8—in regard, that is, both to the export or transit of arms, munitions of war and anything of use to an army or navy, and also to the employment of cables and wireless apparatus. What Article 9 expressly insists on is this: If a neutral power does actually restrict or prohibit these acts, then such restrictive or prohibitive measures must be applied impartially by it to *all* belligerents, and the neutral is under a positive duty of seeing to it that this obligation of impartiality is observed by companies and by private owners of cables and wireless telegraphy apparatus.

We see, therefore, that though neutral Powers are under no duty to restrict or prohibit the use of cables and wireless apparatus, yet if they *do* take measures to restrict or prohibit such use,

then these measures must be impartially applied to all belligerents, no favouritism and no special harshness as to any special belligerent power being permissible to the neutral power.

Although the Declaration of London of 1909 has not yet been ratified by the Powers which took part in the London Naval Conference, yet, in view of the possibility that it may be embodied in the body of rules of International Law, it is worth while to observe that at several places the Declaration directly relates to wireless telegraphy; but as the Declaration also contains even more provisions relating to balloons and flying-machines, I shall reserve what I have to say about the Declaration of London till after I have taken up the subject of the rules of international law upon the use of air-vehicles.

We may now turn our attention for a few moments to the question as to whether there exist any rules of international law in regard to balloons and other air-vehicles.

Balloons were used during the Franco-Prussian War, and you will recall that I referred a few moments ago to Bismarck's opinion that balloonists passing over the Prussian lines should be treated as spies. This view was not adopted by the Brussels Conference of 1874, and in fact Prussia herself did not punish such balloonists with death—the punishment of spies—but only with imprisonment; thus really acquiescing in the milder view taken by the Brussels Conference.

The Brussels Draft Declaration of 1874 contains provisions in regard to balloonists and declares that "individuals sent in balloons to carry dispatches, and generally to keep up communications between the different parts of an army or of a territory" are not, if captured by the enemy, to be treated as spies.[100]

The Brussels Declaration was never ratified, one reason being that it came too soon after the passions of the Franco-Prussian War. But though it thus never became a part of International Law, it has nevertheless had a very considerable influence on thought, and on various manuals which have been prepared from time to time for the use of armies in the field. But the most important influence which it has exerted is to be seen in the fact that it was used as the basis of the "Regulations concerning the laws and customs of war on land" which were adopted at the Hague Conference of 1899 as the annex to the second Convention.[101]

The question as to whether individuals in balloons should be treated as spies thus came up for discussion at the first Hague Conference in 1899, and the annex to the second Hague Convention of 1899—the one on the laws and customs of war on land—contains provisions upon the subject. Chapter II of Section II of this annex is devoted to spies. In Article 29 a spy is defined in these words: "An individual can only be considered a spy if, acting clandestinely, or on false pretences, he

obtains, or seeks to obtain, information in the zone of operations of a belligerent, with the intention of communicating it to the hostile party." In the second paragraph of this Article 29 is an enumeration of the persons who are not to be considered as spies. "Thus, soldiers not in disguise who have penetrated into the zone of operations of a hostile army to obtain information are not considered spies. Similarly, the following are not considered spies : soldiers or civilians, carrying out their mission openly, charged with the delivery of dispatches destined either for their own army or for that of the enemy. To this class," concludes the paragraph, "belong likewise individuals sent in balloons to deliver dispatches, and generally to maintain communication between the various parts of an army or a territory." [102]

The annex to the Fourth Hague Convention of 1907 contains word for word, without change or addition, the Article 29 of the annex of 1899.[103]

It will be observed that Article 29 makes it quite clear that, in order to escape from the category of spies, both soldiers and civilians must conduct themselves without disguise and openly when they seek information, deliver dispatches, or maintain communication between the various parts of an army or territory. If these things are done clandestinely and on false pretences, the persons doing them may well be considered as spies. And thus a balloonist, if in any conceivable case he acts at any time—for instance, on landing—clandestinely

or on false pretences, might well cause himself, if captured, to be held by the enemy as a spy.

Now the words used in the annex must be rather carefully noted. Balloonists are declared not to be spies if they are sent (1) "to deliver dispatches," and (2) "generally to maintain communication between the various parts of an army or a territory."

It will thus be observed that the Hague Conferences have not passed on the question as to the character of individuals who have been sent out in balloons for the purpose of gaining information. But, as we have seen but a moment ago, the Prussian claim to view them as spies was not actually enforced by the death penalty. Certainly there is no valid ground for treating them as spies, for they operate without false pretences and without clandestinity. It is, however, a participation in the warlike operations, and Westlake contends that on this ground both civilians and soldiers may, if captured, be treated as prisoners of war, though not as spies.[104]

Another matter which has already been the subject of international regulation is the discharge of projectiles and explosives from balloons. In Count Mouravieff's circular of January 11, 1899, addressed to the Russian ministers accredited to states represented at St. Petersburg, he suggested as one of the topics for discussion by the first Hague Conference "the restriction of the explosives already existing, and the prohibition of

the discharge of projectiles or explosives of any kind from balloons or by any similar means." At the first Hague Conference the subject was considered by the First Committee, with M. Beernaert as president; and the result was the Declaration prohibiting, for a term of five years, " the discharge of projectiles and explosives from balloons or by other new methods of a similar nature." The prohibition thus lasted for only five years, and expired on September 4, 1905.[105]

The subject was again discussed at the second Hague Conference in 1907.[106] The Belgian delegate moved the renewal of the first declaration in the same terms as in 1899, *i. e.* the prohibition to last for only five years. But both the Russian and the Italian delegates moved amendments with the object of making the declaration a permanent one. Yet the Russian proposal of permanency extended only to " the discharge of projectiles or explosives against undefended towns, villages, houses or buildings "; and to this narrower proposal of Russia I shall advert again in a few moments; for, as we shall see, the Russian proposal, though not embodied in the Declaration of 1907 itself, was yet finally included in the Hague 1907 Regulations for the law of war on land.

At present I am concerned only with the fate of the proposals to make the Declaration itself a permanent one. Now, to understand the attitude of the Powers on this whole matter, it must be

carefully borne in mind that the science of aerostatics had made a very considerable advance between the time of the sitting of the first Hague Conference in 1899 and the time of the sitting of the second in 1907. The result was that the attitude of some of the Powers in 1907 was very different from their attitude in 1899. The attitude of the Belgian delegate, who had moved the renewal of the Declaration, was that the Declaration was one of a humanitarian character; that if for no other reason the Declaration should be renewed in order to refute those who maintained that the only reason the first Conference made the Declaration was merely because the matter was, after all, in the state of aerostatics then existing, in 1899, of no practical importance, because there was then no actual use of balloons for the purpose of discharging projectiles; and, urged the Belgian delegate, now that the discharge of projectiles from balloons has become, in 1907, a practical and important matter, the Conference should still assert its humanitarian spirit by a renewal of the prohibition. The attitude of the British delegate, Lord Reay, was directly connected with the problem of limitation of armaments. He argued that a beginning should now be made with regard to the instruments of the new form of warfare—warfare in the air. Nations already weighed down by the burden of constantly increasing armaments of naval and military warfare should, urged Lord Reay, seize this opportunity of prohibiting at the

very outset, and while time yet remained, this new and terrible method of warring in and from the air. It was quite enough, he maintained, that states should use land and water for settling their quarrels without adding still a third element, the air, as the field of warlike operations. The attitude of M. Renault, the French delegate, was quite different. He maintained that a distinction should be drawn between peaceful buildings, such as churches, hospitals, etc., and military buildings, such as arsenals, barracks, etc. He contended that while it was unlawful to bombard churches, hospitals, etc., whatever might be the method of firing the projectiles or explosives, whether from balloons or otherwise, it was a perfectly lawful act to destroy arsenals, barracks, etc., whether the projectiles or explosives be discharged from cannon or from balloons. M. Renault took the position, that as the whole science of aerial navigation was advancing so rapidly, he did not wish to give up the military advantages that might well result from new discoveries which did not tend, in his opinion, to lessen the humane conduct of warfare. After being discussed in Committee the whole matter came up before the fourth plenary meeting of the Conference, on the report of the Committee, on August 17, 1907. Sir Edward Fry moved to substitute for the words " for a period of five years " the words " until the termination of the Third Peace Conference." The Declaration has been signed by the Powers in the form proposed by Sir

Edward Fry, so that the Declaration will now hold good till the next Hague Conference.[107]

Out of forty-four states represented at the Second Hague Conference only twenty-seven have signed the Declaration. The progress in aerostatics between the first and second Hague Conferences led several states which had agreed to the Declaration in 1899 either to refrain from voting or to oppose the Declaration in 1907. It is very striking that, with the exception of Great Britain and Austria-Hungary, all the great military Powers of Europe have refused to sign the Declaration, and have thus declined to agree to prohibiting the discharge of projectiles and explosives from balloons in the wide sense contemplated by the Declaration. As regards the bombardment of undefended towns, etc., I shall speak presently. We may feel regret that most of the great Powers thus failed to take advantage of a fine chance to make a real and practical beginning in the restriction of armaments; for we must reckon with the fact that these Powers have reserved to themselves the full right to employ balloons and other air-vehicles for the purpose of discharging projectiles and explosives as they see fit, with the one exception—as we shall see presently—that they cannot, under the Hague Regulations of 1907 for war on land, bombard undefended towns, etc., by such means.[108]

It is furthermore important to bear in mind that the Declaration which I have been discussing

is, by its own terms, binding only on the contracting Powers, and then only in case of war between two or more of such contracting Powers themselves; and it ceases 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.[109] Thus, in a war between Germany and Great Britain the Declaration would not be in force, and balloons and other air-vehicles might be used for the discharge of projectiles and explosives. If Austria-Hungary and Great Britain should go to war, and Austria-Hungary should then be joined by Germany as an ally, or England should be joined by France as an ally, the Declaration would cease to be binding between Austria-Hungary and Great Britain, even though they were parties to the Declaration. It will thus be seen that the Declaration is bereft of much of its real vital force at the present time, owing to the abstention of so many states—especially most of the great military Powers of Europe.

I referred a moment ago to the narrower proposal by the Russian delegate. This proposal was "to replace the prohibition [of the Declaration] by a permanent restriction prohibiting the discharge from balloons of projectiles or explosives against undefended towns, villages, houses or buildings." This proposal of permanent prohibition was not therefore of a general character—*i. e.* it did not contemplate a general prohibition of discharging projectiles and explosives from balloons in warfare

—but was restricted to the case of bombardment of undefended places. Now, although, as we have seen, this proposal was not given a place in the Declaration, it was nevertheless given effect to by the Conference by its ultimate insertion in Article 25 of the Regulations for the law of war on land. Article 25 of the Regulation of 1899—based on the draft of the Brussels Conference of 1874—read as follows: "The attack or bombardment of towns, villages, habitations or buildings which are not defended, is forbidden." In 1907 this article was retained in the Regulation, but with the addition of the words "*by any means whatever*," inserted on the proposition of the French delegate. According to the Regulations now in force, therefore, the attack or bombardment of undefended places *by any means whatever* is forbidden. This essentially embodied the original Russian proposal, and was understood by the Conference to cover the case of attacking or bombarding undefended towns by means of projectiles and explosives hurled from balloons or other air-vehicles. This prohibition being contained in the Regulation is a prohibition of unlimited duration—unless, of course, changed by international agreement—and is a rule of international law at the present time, while the more general prohibition contained in the Declaration which we have discussed, lasts only till the next Hague Conference, and is not to be viewed as a rule of international law, as it holds only as between the contracting Powers, and, as we have seen, most

of the great states are not among the contracting Powers.[110]

Of course no place can as yet be said to be "defended" as against the dropping of projectiles from above out of balloons; and the Hague prohibition may perhaps be interpreted to apply to towns which are not defended in accordance with the present ordinary methods of defence. With the possession of the new powerful Krupp guns especially designed for the destruction of airships, however, any otherwise undefended place might properly be viewed as "defended" as far as the dropping of projectiles from balloons and other air-vehicles is concerned. In any future war we may indeed confidently expect many places, otherwise unprotected, to be shielded by powerful airship-destroying guns; and, if so defended, it is possible that any town may be viewed as legitimate prey for the aerial fleets of those states which are not parties to the Hague general Declaration against the launching of projectiles from balloons; for the opinion seems to be held by several leading states that what is not prohibited by usage or convention or promissory declaration is permitted. There certainly exists as yet no usage either one way or the other as to the new method of attacking a place from above by balloons; and before any such usage grows up all states should join in the general prohibition of the Hague Declaration. The hurling of projectiles from balloons is an undertaking very similar to the proposition to

subject coast towns to a ransom at the hands of a powerful fleet. Fortunately, the prohibition of the Hague Convention extends to both undertakings as far as undefended places are concerned. Owing to the peculiarly dangerous opportunity of air-vessels to attack places from above, it is really not sufficient to limit the prohibition in their case to undefended places; and we can but hope that the more general Declaration of 1907 will finally be agreed to by all the Powers. But I doubt whether it will be ![111]

In discussing the principles of international law in regard to wireless telegraphy I mentioned incidentally one or two matters in regard to air-vehicles. May I, in a word or two, refer to them here in order to include these points in my present consideration of the law regarding air-vehicles. As you will remember, at its Ghent meeting in 1906, the Institute of International Law, in its regulations as to wireless telegraphy, laid down a principle regarding the use of wireless apparatus in balloons. In the view of the Institute if neutral balloons can, by reason of their communication with the enemy by wireless telegraphy, be considered as being in hostile service, such balloons should then be confiscated along with their dispatches and wireless apparatus; but this should take place only if it be proved that the correspondence of the balloonists was intended to furnish the enemy with information as to the conduct of hostilities. If that be not proved, then the balloons, if captured,

are to be expelled from the zone of military operations, and their wireless apparatus can be seized and sequestered, not confiscated. This is, of course, being only a rule drawn up by the Institute and not resting on international agreement, not a rule of positive international law; but it is a rule adopted by a distinguished body of experts, and might well be embodied later on in an international convention, for it certainly expresses a sound principle.

It is also worthy of notice, in the present connection, that the fifth Hague Convention of 1907 relating to the rights and duties of neutral Powers and persons in war on land adopts in Article 7, rules which, as I have already said, clearly seem to apply to air-vehicles as well as to wireless telegraphy. Article 7, by expressly providing that "a neutral Power is not bound to prevent the export or transit, on behalf of one or other of the belligerents, of arms, munitions of war, or, in general, of anything which can be of use to an army or fleet," certainly seems to include in these general terms not only wireless apparatus, but also balloons and air-vehicles; for surely such chattels can be of use to an army or fleet, and they promise indeed to be of an ever increasing use. If the 7th Article does include air-vehicles of all sorts, then neutral Powers are by positive international law not under any duty to prevent the export or transit, on behalf of one or other of the belligerents, of these air-vehicles. Of course

the article does not relate to the actual use of such air-vehicles, but only to their export or transit.

The air may be used not only for the transmission of herzian waves and the flight of balloons and other air-vessels ; it may also be employed for the spread of gases. It is of some interest therefore to bear in mind that the second declaration of the first Hague Conference in 1899 prohibits " the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases." The Russian delegate expressed the view that the employment of asphyxiating gases was barbarous ; and he compared it to the poisoning of a stream of water. The American delegate, Admiral Mahan, took the opposite view, maintaining that the use of such gases was not yet a practical question, our knowledge of the effects of such gases being yet very slight, and that, any way, to use gases was not less humane than to blow up an ironclad at night, and thus cause several hundred men to be asphyxiated by water. Although all the other Powers represented at the first Hague Conference have now signed the Declaration (Great Britain signed in 1907), the American government still holds aloof. It has also not been signed by those Powers represented only at the second Hague Conference.[112]

A few moments ago I referred to the fact that the Declaration of London of 1909,[113] though not yet a part of international law, contains several

references to wireless telegraphy and air-vehicles which should not be overlooked.

The second chapter of the Declaration is concerned with the subject of contraband of war; and Article 24 gives a list of the articles of conditional contraband. These articles "susceptible of use in war as well as for purposes of peace, may, without notice, be treated as contraband of war, under the name of conditional contraband." In the seventh group of such articles the Declaration expressly mentions "material for telegraphy, wireless telegraphs, and telephones." The eighth group of articles enumerates "balloons and flying-machines and their component parts, together with accessories and articles recognizable as intended for use in connection with balloons and flying-machines." Now inasmuch as these chattels come within the designation of conditional, not absolute, contraband, it is important to bear in mind that these chattels, like other articles of conditional contraband are, according to Article 33 of the Declaration, liable to capture if it is shown that they are "destined for the use of the armed forces or of a government department of the enemy state, unless in this latter case the circumstances show that the goods cannot in fact be used for the purpose of the war in progress." But though these articles of conditional contraband may, under the provisions of the Declaration, be treated as contraband of war without notice, it is nevertheless possible

for a Power—as expressly laid down in Article 26—to waive, so far as it is concerned, the right to treat as contraband of war any article enumerated by the Declaration as conditional contraband; and if any Power does actually waive such right, this waiver is to be properly notified to other Powers.

There are various other articles in the Declaration of London—for instance, those relating to unneutral service—which have direct application to our subjects of wireless telegraphy and aerial navigation; but into these matters I must not venture at the present time. I wish merely to draw attention to the fact that the Declaration must be carefully studied from the point of view of aerial law; for, if the Declaration be adopted and thus become binding on the Powers, it will have a direct and practical significance in future wars not only for belligerents with aerial forces, but also for neutrals.

From a consideration of the present rules of international law I now pass on to a brief discussion of the problems of future international law both in times of peace and in times of war.

Although there does not exist at present an international convention relative to aerial navigation, national law is already preparing the way for such a future international agreement. Already France and Germany have established national regulations; and a draft bill has been drawn up by the American Bar Association.

The most recent regulation is that of Germany.[114]

The characteristic feature of the German national regulation is that the co-operation of the German Airship League has been legally recognized; the League thus actively assisting in maintaining the interests of public security.

The German governmental regulation lays down provisions with reference to several matters. As regards journeys by non-dirigible balloons, it is provided that the pilots must possess a certificate of competence, and that this certificate of competence is to be issued by the officials of the Airship League. Passengers may be carried only when specialists have pronounced upon the proper construction and fittings of the balloon. At every ascent with passengers there must be present either an official of an Airship Society (under the control of the League) or a representative of the local police authorities. The pilots of dirigible airships must also possess a certificate of competence issued by the German Airship League. So also must the assistants in the airship possess a certificate of competence. If desired, the conductor of an airship must give the police authorities full particulars with reference to the various parts of his airship.

The new German regulation also lays down rules with regard to flights. Attempts at flight by persons who have not yet acquired a certificate of competence can only be made at places specially selected, or at places where there will be no danger to public security. Airmen who have experience

are permitted to fly everywhere outside of inhabited places; but the police authorities can, if they think best, mark out certain places where ascents cannot be made without permission.

It is important to observe that the German regulation does not as a general principle prohibit flying over inhabited districts. Airmen are, however, warned against flying over large towns. They are prohibited from flying over places where there might be special danger of fire and over land where there are great masses of telegraph and telephone wires.

Of even greater significance is the prohibition of flight over fortresses, and indeed there is a prohibition of flying inside a zone of ten kilometres from such fortresses, in case a written permission has not been obtained from the proper governmental authorities. Should airmen infringe this prohibition of entering into this vertical zone established around fortresses, then they are, upon landing, to be looked upon as persons suspected of espionage; and the same rule holds with regard to all persons in the air-vehicle. All personal details with reference to such persons must be taken down, and an inquiry will be made whether they have suspicious photographs and sketches.

The German regulation also contains a good many provisions with regard to captive balloons which are not in military service, the chief characteristic of such provisions being the desire to ensure the security of the balloonists themselves.

Foreigners are not permitted to undertake aerial journeys in Germany except in cases where they possess a proper pilot's certificate recognized by the German Airship League.

All of these provisions of the German regulation are to be enforced by the police officials. Again I must draw your attention to the fact that the regulation also places great power in the hands of the airmen themselves through their League, and the various local aerial associations. It is possible that a future international convention will follow, in some respects, this German regulation; and in general, the confidence reposed in the airmen themselves is to be encouraged for various reasons, one of which is that the enforcement of regulations will thus lie, at least partly, in the hands of competent and skilled persons.

Important work preliminary to the adoption of an international convention on aerial law has also been accomplished by several international conferences, notably those recently held at Verona and Paris. Although the Paris Conference—at which leading Powers were represented—adjourned its sessions only a few days ago, without making public its discussions and conclusions, nevertheless an unofficial statement appeared in the *Times* of November 29 in reference to the scope of the draft convention prepared by the Conference. According to this newspaper account—which gives a summary of the draft convention—the various chapters of the convention treat of the nationality

of airships, certificates of nationality and navigation, the liberty to navigate, the rules of navigation, and public airships. Apparently the Conference concluded that the nationality of an airship might be determined by a state either by the nationality of the owner, or by his domicile on its territory. As regards liberty to navigate, the Conference seems to have laid down this rule "Each of the contracting states shall permit the navigation of the airships of the other contracting states within and above its territory under reserve of the restrictions necessary to guarantee its own safety and that of the persons and property of its inhabitants." Of course it is as yet impossible to tell whether the Conference will ever resume its sessions, and, if so, whether its sessions will ever result in the adoption of the draft convention now in question. It may well be that the future international convention is to be drawn up by an entirely new Conference of the leading Powers.

Valuable work in preparing the way for a future international convention on aerial law is also being done by the International Committee on Aerial Law, a committee composed of legal experts in various countries, with its central office in Paris. The British section of this International Committee is active and efficient under the chairmanship of Sir Frederick Pollock, with Mr. Perowne as honorary secretary.

Some of the most important problems of future

aerial international law [115] will be connected with aerial frontiers and aerial routes.

If the theory of a horizontal zone of protection or a zone of sovereignty becomes embodied in international law—and I hope it will not be!—the difficulties incident to aerial frontiers will be greatly increased, for the existence of zones will result in horizontal as well as vertical aerial frontiers. Such horizontal aerial frontiers would be especially confusing and uncertain if the zone were held to follow the irregularities of the surface of the earth. If, on the other hand, the theory be fully recognized that the territorial state has complete sovereign dominion in the entire air-space above its territory and territorial waters, then aerial international frontiers would be fewer and they would all be vertical, rising everywhere to an indefinite height in space at the very same lines of the present territorial frontiers. In the case of countries abutting on the sea the aerial frontier would naturally exist along the extreme limit of the territorial coastal waters. This simplicity in frontiers is again a further argument for the recognition of the full sovereignty of the territorial state.

Aerial frontiers will be extremely important as regards various matters, more especially customs regulations in times of peace, the establishment of blockades, and the enforcement of neutrality in times of war. Without doubt the future general use of aerial craft will give rise to a serious problem

as to the best means of preventing smuggling. Probably for this purpose and also for policing the aerial frontiers it will become necessary for the territorial state to have a fleet of aerial revenue and police air-vessels.

One does not need to be a prophet in any true sense to foresee that it will not be long before the marking out of the great aerial routes across the territories of states will become a necessity. Probably such aerial routes connecting great towns will be placed over sparsely inhabited territory and will deflect from centres of population. Routes can be marked on roofs of buildings, but probably these marks will not be seen from any height, and airmen must usually trust to air-charts and compasses. By establishing routes, life and property on the land would be rendered far more secure than if flying were allowed to take place indiscriminately. Rules of the road will have to be established not only as regards turning to the one side or the other, but also as regards dipping and rising to avoid collision with other aerial vessels coming in the opposite direction; and a system of day and night signals will be necessary. At points on the coast where foreign airmen arrive it will be necessary to establish great air-stations upon the land where customs duties will be levied and official papers examined. So, too, along the aerial routes across country it will be necessary here and there to establish aerial stations for the purpose of providing opportunities to alight for the repair of air-vehicles and the

furnishing of necessary materials of all sorts. Undoubtedly, too, it will be necessary to forbid flight over and near fortresses. Small prohibited vertical zones will thus undoubtedly exist at various places in every country.

If the theory of the territorial state's full sovereignty within its entire air-space be recognized by international agreement the question as to the nationality of private air-vehicles will be less important than under the system of zones of protection or zones of sovereignty; for under the system of full state sovereignty above each state's own territory and territorial waters, the nationality of the air-vehicle will be chiefly important as regards flight in the free air-space over the high seas.

Two principles have been suggested with regard to the determination of the nationality of an air-vehicle: first, the principle that the nationality of the air-vehicle should be the same as that of its owner; secondly, the principle that the nationality of the air-vehicle should be that of the domicile of its owner. As between these two principles I confess the first seems to me the safer and better principle both for times of peace and for times of war. The adoption of the rule that the nationality of the air-vehicle is the same as the nationality of its owner will also greatly simplify the law; and indeed in time of war the existence of a domicile rule might sometimes result in great danger to one or other of the belligerents.

For instance, an enemy subject domiciled in a neutral country might in his airship hover near the opposing belligerent fleet or army and thus obtain most valuable information with reference to the conduct of hostilities. Yet in this case his airship would be viewed as a neutral vessel subject to the international law relating to neutral vessels, whereas in greater justice the air-vehicle should clearly be viewed as an enemy air-vessel.

It has been suggested that the nationality of an airship should be determined by the nationality of the charterer as well as by that of the owner. There are difficulties in introducing this further complexity, and it seems better, at least in the present state of aerial navigation, to adopt a simpler rule, namely, that the nationality of the air-vehicle shall be determined by only one consideration, either the nationality, or the domicile of the owner, preferably, as I have just indicated, the nationality rather than the domicile of the owner.

What I have just said relates only to private air-vessels. The nationality of a public air-vessel will be, of course, the nationality of the state which owns it.

In considering the rules of international law in times of war it is important to have clear ideas as to the aerial space that can legally serve as the theatre of war and the base of warlike operations. It is admitted by all that the aerial space above the territory and territorial waters of belligerents and also the aerial space above the high seas will

in the future be legally the proper space for belligerent activities. A more difficult question arises with reference to the aerial space above the territory and territorial waters of neutrals. If the theory that the air is completely free be adopted, one would necessarily be obliged to admit that the entire aerial space above neutrals should also fall within the field of warlike operations. So, too, if one adopted the view that the territorial state has only a limited zone of protection above its territory or even if the territorial state had only a limited zone of sovereignty, the logical conclusion would be that all the upper strata of the air-space above the neutral's territory should be a legitimate field for the operations of the belligerent Powers. But, so far as I know, all the adherents of the freedom-of-the-air position do not take this last logical step in their argument. They admit that the aerial space above neutrals should not serve as a space for the carrying on of hostilities by the belligerents. This admission on the part of the adherents of the freedom doctrine is a most important one; and, strictly speaking, I cannot see in principle why they should not also admit the same considerations to apply in times of peace as in times of war. But this, of course, they do not admit! On the doctrine of the territorial state's full right of sovereignty in the entire air-space above its territory and territorial waters, it is quite clear that this entire neutral air-space could never serve as a space for actual hostilities between

belligerents. In my opinion this latter is the sound view.

But although hostilities cannot actually be carried on in neutral aerial space, a further question arises as to whether this neutral air-space should be, in other ways, open to the use of belligerents. An examination of the present rules of maritime international law will assist us to an answer. Our fundamental question will be whether present rules of maritime international law should be adopted for future aerial international law. Present maritime international law lays down certain very important provisions favouring belligerents. It is not considered a violation of neutrality if a belligerent sea war-vessel simply passes through the territorial waters of neutrals. So, too, the entry into neutral ports is not viewed as a breach of neutrality in case the entry is made for the purpose of obtaining provisions or of carrying out necessary repairs. Should these same principles apply in aerial international law ?

The fact that territorial waters are in a sense a part of the sea viewed as an international highway lies perhaps at the basis of the rule that belligerent war-vessels should have the right of passage through neutral territorial waters. Probably a distinction could be drawn between neutral territorial waters and the neutral air-space above these territorial waters; for it would undoubtedly be easy for an air-vessel to pass through this narrow stretch of neutral aerial space into the air-space

over the neutral territory itself. The coast-line itself acts as a natural and impassable barrier to sea-vessels; while the invisible aerial frontier offers no such actual check. But despite this difference as regards natural conditions belligerent air-vessels might well be permitted to pass through this narrow neutral aerial zone just above the coastal waters themselves.

If you think for a moment of the aerial space above the neutral territory itself, you will see that the rule to be applied here should be very different; probably future international law will completely prohibit any passage of belligerent air-vessels through the air-space above the neutral territory itself. Certainly the same reasons for the present rules that prohibit the passage of belligerent troops across the territory itself should apply equally to the passage of belligerent aerial craft through the air-space above that territory.

Admitting, then, that belligerent aerial craft should probably on principle be allowed passage through neutral air-space above the neutral territorial coastal belt of water, the further question arises as to whether belligerent air-vessels should be permitted actually to enter neutral harbours for purposes of asylum. Should they be permitted thus to enter for purposes of revictualling and for carrying out necessary reparations? As the sea itself is a highway for all nations, these privileges accorded to belligerent sea war-vessels in neutral ports certainly seem to be based upon sound sense.

Although one can conceive of various differences in detail as between the entry of belligerent sea-vessels and belligerent air-vessels, nevertheless it would seem just to accord the same privileges to the one class of vessels as to the other. Undoubtedly difficulties would arise in carrying out this principle ; and the matter will require the most serious attention of international lawyers. It will be necessary, for example, definitely to determine how long the air-vessel should remain in the neutral port, and it will be necessary to ensure the strict observance of impartiality on the part of the neutral state itself.

The case I have just been discussing is the case of an entry by an aerial belligerent vessel from the high seas. Consider for just a second the case where the belligerent air-vessel enters a port across an aerial frontier that does not abut on the sea itself. Assume, for instance, that the air-vessel reaches the port through air-space above land and not above the high seas. In such a case the principle applicable to a belligerent army demanding hospitality of a neutral should, it would seem, be applied. The result would be, therefore, that in this case the aerial belligerent vessel would be interned by the neutral Power until the close of the war, the belligerent aeronauts themselves not being permitted to take any further part in the war. Of course it might be well to make an exception to this general rule of severity in the case of a belligerent air-vessel forced to cross the neutral aerial

frontier above land by reason of urgent necessity, such as the necessity occasioned by a great storm.

At the present time certain portions of the land are perpetually neutralized; for example, the territory of such neutralized states as Belgium and Switzerland. On principle, all aerial space above these neutralized stretches of land should be, similarly, perpetually neutralized. The land itself is neutralized in order to prevent conflicts between adjoining states; and for the same reason the aerial space above that land should also be neutralized.

One of the greatest questions to be decided in aerial international law is the question whether the present rule of maritime international law permitting the capture of private property at sea by belligerents shall or shall not apply equally to the capture of private property in the air. Probably on this question of aerial capture opinion will be divided, just as it now is in regard to maritime capture.

In conclusion, I may be permitted to draw your attention once more to the first great and fundamental question as to whether international law is to recognize the freedom or the sovereignty view in regard to the air-space above state territory and territorial waters. What one is impressed with in studying the various doctrines is that, after all, pretty much every jurist who is devoting his attention to the subject is desirous of reaching some theoretical basis upon which the legitimate interests of all persons concerned—those engaged in

aviation as well as the state and its inhabitants—shall receive proper legal recognition and protection. It is the effort of believers in the sovereignty theories no less than believers in the freedom theories to recognize the social and economic situation, namely, to give security to the new method of locomotion in all its private and public relations. It is, of course, maintained by some that the important thing just at this period of aerial development is to lay down practical rules for the regulation of aerial navigation without paying attention to theories of any sort. But it is really impossible, in the present era of legal thought, consciously to exclude all consideration of theory from the minds of jurists, diplomats and legislators. Some will unconsciously lean to rules based on freedom, and some will unconsciously lean to rules based on sovereignty. Accordingly, it is, after all, necessary and best that diplomats and courts and legislators have a theory in mind, and that a theory be at the basis of the practical rules that are elaborated.

The doctrine of the freedom of the air—even limited by the state's so-called right of conservation—lacks historical and juristic soundness; it rests on no solid rock of past development and on no solid rock of consistent principle. I believe it may be found that the doctrines of ownership of private individuals, and of sovereignty of states in the air-space, offer a firm and solid basis for the sound and consistent growth of private and public

aerial law in the future. In saying this I do not for one minute mean to imply that aerial navigation should be prevented or even checked in its proper development. Quite the contrary. There can be no hesitancy in asserting that the social and economic situation of to-day and to-morrow—the actual existence amongst us of a new method of locomotion—must and should be legally recognized, and its proper interests protected and even furthered. But all this may best come about by limiting both the landowner's right of property and the state's right of sovereignty in the air-space by the necessary international conventions and national statutes. How this limitation of these private and public rights shall take place is, to my own mind, the second fundamental question. It should not be forgotten that the history of national law shows us the limitation of private property rights in various directions, and that the history of international law has been the history of voluntary limitation of their rights by sovereign states in the interest of the whole society of states including themselves. In international law the progress has therefore been from national to international law; and this progress has largely been effected by international agreement. The same progress will probably be witnessed in the growth of a law of the air. States will, in view of the new economic conditions, restrict by legislation and by treaty the rights of private owners of property and the rights of the states themselves. Private

proprietary rights and state-sovereignty rights in the air-space will, I believe, be recognized, but those rights will be limited, in their exercise, to the real and proper interests both of landowners and of states, leaving aerial navigation a legal opportunity for the exercise of its own legitimate and beneficial activities.

NOTES

First Lecture

[1] See, for example, the writings of Greek philosophers.

[2] Much interesting information on legendary ascents and the history of human flight will be found in *Die Eroberung der Luft : Ein Handbuch der Luftschiffahrt und Flugtechnik* (Stuttgart, 1910), 1–67, 145–177; Lougheed, *Vehicles of the Air*, 2nd ed. (1910), 66–85, 118–157. On analogies in nature see Lougheed, *op. cit.*, 124, 125, 159–167.

[3] In this sketch of the early literature of aerial law I have closely followed Zitelmann, *Luftschiffahrtsrecht*, 8, 9. See also Nys, "Droit et aérostats," *Revue de droit international et de législation comparée*, deuxième série, IV, 501–526.

[4] At its 1911 meeting in Madrid the Institute of International Law again discussed problems in aerial law. The Institute confined itself to voting some general rules to serve as guiding principles for the Reporter to enable him to prepare a more detailed draft. These principles are shortly—liberty of international aerial navigation in time of peace, recognition of the juridical fact of aerial war. The following is the text of Resolutions adopted:—

Régime juridique des Aéronefs.

1. Temps de Paix.

1. Les aéronefs se distinguent en aéronefs publics et en aéronefs privés.

2. Tout aéronef doit avoir une nationalité, et une seule. Cette nationalité sera celle du pays ou l'aéronef aura été immatriculé. Chaque aéronef doit porter des marques spéciales de reconnaissance. L'Etat auquel l'immatriculation est demandée, détermine à quelles personnes et sous quelles conditions il peut l'accorder, la suspendre ou la retirer.

L'Etat qui immatricule l'aéronef d'un propriétaire étranger ne saurait toutefois prétendre à la protection de cet aéronef, sur le territoire de l'Etat dont relève ce propriétaire, contre l'application des lois par lesquelles cet Etat aurait interdit à

ses nationaux de faire immatriculer leurs aéronefs à l'étranger.

3. La circulation aérienne internationale est libre, sauf le droit pour les Etats sous-jacents de prendre certaines mesures, à determiner, en vue de leur propre sécurité et de celle des personnes et des biens de leurs habitants.

2. Temps de guerre.

1. La guerre aérienne est permise, mais à la condition de ne pas présenter pour les personnes ou la propriété de la population pacifique de plus grands dangers que la guerre terrestre ou maritime.

[5] See A. de Valles, "Le congrès de Vérone," *Revue juridique internationale de la locomotion aérienne*, I, 1910, pp. 175–183.

[6] *Annuaire de l'institut de droit international*, XXI, 301 *seq.* Note also von Bar's remarks at this year's meeting of the Institut at Paris.

[7] *Annuaire*, XXI.

[8] See Lycklama à Nijeholt, "La souveraineté aérienne," *Revue juridique internationale de la locomotion aérienne*, I, 236; Nys (see *Annuaire*, XXI). Dr. Lycklama à Nijeholt has now published his views in English under the title of *Air-Sovereignty*.

[9] Lycklama à Nijeholt, *op. cit.*, I, 242.

[10] *Annuaire*, XIX (1902), 106–108.

[11] *Annuaire*, XXI.

[12] See Fauchille, *La Circulation aérienne et les droits des Etats en temps de paix* (1910), 3.

[13] Meurer, *Luftschiffartsrecht*, 3.

[14] For a discussion of Nys's view, see Meurer, *op. cit.*, 3, 4, 6, 11.

[15] *Op. cit.*, 5.

[16] See Westlake's remarks as quoted in a later portion of the present lecture.

[17] See Lycklama à Nijeholt, *op. cit.*, I, 236, 237.

[18] See Lycklama à Nijeholt, *op. cit.*, I, 237, 242 (note 1).

[19] *Annuaire*, XIX (1902), 32: "L'air est libre. Les Etats n'ont sur lui en temps de paix et en temps de guerre que les droits nécessaires à leur conservation. Ces droits sont relatifs à la répression de l'espionnage, à la police douanière, à la police sanitaire et aux nécessités de la défense."

[20] Fauchille, *op. cit.*, 13: "Afin de faciliter le plus possible la circulation des aérostats, nous croyons qu'il faut partir du principe que l'air est libre dans toutes ses parties. Mais, soucieux

des intérêts légitimes de l'Etat sous-jacent, nous accorderons à cet Etat, sur l'atmosphère, tous les droits—et seulement ces droits—qui sont nécessaires à sa conservation et à sa défense, en entendant ces mots dans leur sens le plus large : le droit de conservation et de défense comprend tous les droits incidents essentiels pour sauvegarder l'intégrité de l'existence tant physique que morale des Etats, le droit d'éloigner tout mal présent et de se prémunir contre tout danger de préjudice futur."

[21] For M. Fauchille's own statement see his article *La circulation aérienne et les droits des Etats en temps de paix* (1910), 6–8.

[22] This has been pointed out by Lycklama à Nijeholt, *op. cit.*, 237 *seq.*, and other writers on aerial law.

[23] See Meurer, *op. cit.*, 5–13; Gareis, "Juristische Ausblicke in die Zukunft des Luftschiffahrts-Betrieb," *Beilage der Muenchener Neuesten Nachrichten*, 1909, No. 39, pp. 321–324; Meili, "Das Luftschiff und die Rechtswissenschaft," *Blaetter der vergleichenden Rechtswissenschaft und Volkswirtschaftslehre*, IV, 250, 251.

[24] See Lycklama à Nijeholt, *op. cit.*, 239.

[25] Fauchille, *op. cit.*, 1, 2.

[26] Fauchille, *op. cit.*, 2, 3.

[27] Compare the remarks of Meurer, *op. cit.*, 4–13, and other advocates of the doctrine of sovereignty.

[28] See Lycklama à Nijeholt, *op. cit.*, 237, 238.

[29] Meurer, *op. cit.*, 11.

[30] Fauchille, *op. cit.*, 4.

[30a] Meurer explains his view in his *Luftschiffahrtsrecht.*

[31] *Annuaire*, XXI, 297, 298.

[32] *Annuaire*, XXI, 299 : "L'Etat a un droit de souveraineté sur l'espace aérieen au-dessus de son sol; sauf un droit de passage inoffensif pour les ballons ou autres machines aériennes et pour la correspondance télégraphique sans fil."

[33] Fauchille, *op. cit.*, 5, 6.

[34] See pp. 15–36.

[35] See Lycklama à Nijeholt, *op. cit.*, 245–248.

[36] See Lycklama à Nijeholt, *op. cit.*, 248, 249.

[37] Compare Lycklama à Nijeholt, *op. cit.*, 245 *seq.*

[38] See Lycklama à Nijeholt, "Relations entre l'espace aérien et le territoire," *Revue juridique internationale de la locomotion aérienne*, I (1910), 261–279.

[39] Lycklama à Nijeholt, *op. cit.*, 264–266.

[40] Lycklama à Nijeholt, *op. cit.*, 266, 267.

[41] In delivering the present lecture I referred to the draft code of the air as approved by the Comité Directeur of the Comité juridique internationale de l'aviation, which contains the following article : " La circulation aérienne est libre. Les Etats n'ont sur l'espace situé au-dessus de leur territoire y compris les mers cotières que les droits nécessaires pour garantir la securité nationale et l'exercice des droits privés." At the same time I drew attention to a forthcoming meeting of the British section of this International Legal Committee of Aviation at which the doctrines of freedom and sovereignty were to be discussed. This meeting adopted the following principle as one which should replace the formulation of the Comité Directeur : " States have full sovereign dominion over the aerial space above their own territories and territorial waters. Each State has the right to make such police, revenue, and other regulations for aerial navigation as it thinks fit." It is greatly to be hoped that this doctrine of the British section will ultimately be adopted by the International Committee as a whole.

Second Lecture

[42] The following footnotes will indicate a partial bibliography of this subject.

[43] Gierke, *Deutsches Privatrecht*, I, 37.

[44] See Salmond, *Law of Torts*, 244–251.

[45] See thereon Meurer, *op. cit.*, 8, 12–14; Zitelmann, *op. cit.*, 8, 20, 24; Lycklama à Nijeholt, *op. cit.*, 269–271; Kausen, *Die Radiotélégraphie im Völkerrecht*, 27, 28; Meili, *op. cit.*, 251; Gruenwald, *Das Luftschiff in voelkerrechtlicher und strafrechtlicher Beziehung*, 32 *seq.*; Warschauer, *Luftrecht*, 20 *seq.*; Gareis, *op. cit.*, 323, 324; Baldwin, " Law of the Air-Ship," *American Journal of International Law*, IV, 109 *seq.*; Kuhn, " Beginnings of an Aërial Law," *American Journal of International Law*, IV, 122–128; Valentine, " The Air—A Realm of Law," *Juridical Review*, XXII, 85–104; Kenny, *The Law of the Air* (reprinted from *Zeitschrift für Völkerrecht und Bundesstaatsrecht*, vol. IV, 1910), 473–481.

[46] Some French lawyers are also thinking that the rule of French law should now, in the interest of aerial navigation, be somewhat relaxed.

[47] Salmond, *op. cit.*, 162, 163.

[48] Co. Lit., 4a.

[49] Blackstone, *Commentaries*, II (3rd ed.), 18.

[50] See further on the above views Kenny, *op. cit.*, 475, 476; Kuhn, *op. cit.*, 123, 124, 127.

[51] *Commentaries*, I (3rd ed.), 68.

[52] See further Valentine, *op. cit.*, 91, 92; Kenny, *op. cit.*, 473–475; Kuhn, *op. cit.*, 123, 124.

[53] Kuhn, *op. cit.*, 124.

[54] Kuhn, *op. cit.*, 124; Kenny, *op. cit.*, 474.

[55] See *Solicitors' Journal*, vol. 51 (1907), 772

[56] Salmond, *op. cit.*, 163.

[57] See *Solicitors' Journal*, vol. 51 (1907), 772.

[58] For a discussion of such cases see the essays by Valentine, Kuhn, and Kenny, to which reference has already been made.

[59] Of course the encroachments, either under or above the surface of land, caused by the natural growth of the branches or roots of trees standing upon an adjacent piece of land, are not trespasses; but they may nevertheless result in actions for the nuisance ensuing. See Pollock, *Law of Torts*, 8th ed., 349.

[60] Salmond, *op. cit.*, 163, 164.

[61] This view, that the landowner has rights less than the right of ownership in the air-space above his land, may be compared with the doctrine of Fauchille and other publicists that the territorial state has only rights of conservation in the air-space, not rights of sovereignty.

[62] *Solicitors' Journal*, vol. 51 (1907), 772.

[63] Pollock, *op. cit.*, 348.

[64] See further on this the *Solicitors' Journal*, vol. 51 (1907), 771.

[65] "Village greens" still exist in England, and may be viewed as a remnant of old unappropriated common land (see Pollock, *Land Laws*, 3rd ed., 40). Would the inhabitants of England similarly have rights in what we might perhaps call an immense "country blue" (or "country grey!") made up of the air-space above the private zones of ownership?

[66] Looked at purely from a theoretical point of view, I find it difficult to distinguish the technical trespass of a man who merely walks along a footpath across my land, perhaps when no one sees him, and the technical trespass of an airman who sails his vehicle through the air-space, even very high up. If anything, the disturbance of my air-currents by the passage of an aeroplane is more of a displacement of atoms than the disturbance caused by the mere act of walking on land, where I assume there is no substantial damage.

There would seem to be no question that the use of the

landowner's air-space by aeronauts for the purpose of witnessing games on adjoining land, and even for the purpose of making scientific investigations as to the atmosphere, would be, if unauthorized, a trespass. See Valentine, *op. cit.*, 97, 98.

[67] Compare Valentine, *op. cit.*, 98, 99. A further point in connection with captive balloons is discussed in *The Justice of the Peace*, LXXIV (1910), 299.

[68] See further Valentine, *op. cit.*, 97, 98; Kenny, *op. cit.*, 480; Holland, *Jurisprudence*, 10th ed., 183 (note 3).

The late case of *Brown* v. *Flower*, decided by Mr. Justice Parker, seems to show that the owner of a flat cannot recover damages, or secure an injunction, merely on the ground of interference with the privacy of the flat occasioned by a staircase outside the flat. See the *Solicitors' Journal* for December 10, 1910.

[69] See Valentine, *op. cit.*, 97 *seq.*; Kenny, *op. cit.*, 473 *seq.*; Pollock, *op. cit.*, 347, 348.

[70] See A. de Valles, "Le congrès de Vérone," *Revue juridique internationale de la locomotion aérienne*, I (1910), 175–183. Compare also Valentine, *op. cit.*, 99, 100; Baldwin, "Liability for Accidents in Aerial Navigation," *Michigan Law Review*, IX (1910), 21, 22.

[71] See Baldwin, *op. cit.*, 24.

[72] Although it is thus possible to view *Fletcher* v. *Rylands* as covering the case of an accident caused by an airman, I am nevertheless reminded of Sir Frederick Pollock's words in his work on *The Law of Torts* (p. 490): "Doubtless it is possible to consider *Rylands* v. *Fletcher* as having only fixed a special rule about adjacent landowners, but it was certainly intended to enuntiate something much wider." That "something much wider" seems to be the maxim of the common law *sic utere tuo ut alienum non laedas*.

[73] I am greatly indebted to Governor Baldwin's article (see *op. cit.*, 20–24).

[74] Pollock, *op. cit.*, 38, 39; Valentine, *op. cit.*, 102.

[75] Baldwin, *op. cit.*, 21.

[76] References to the codes are given by Baldwin, *op. cit.*, 21.

[77] See Baldwin, *op. cit.*, 23–28, where the text of the draft bill will be found.

[78] Valentine, *op. cit.*, 102.

[79] So, too, probably maritime law will be followed with reference to such matters as liens.

[80] See further Kenny, *op. cit.*, 481.

THIRD LECTURE

[81] See Despagnet, *Droit international public* (ed. 1910), 669 *seq.*
[82] Despagnet, *op. cit.*, 670.
[83] Despagnet, *op. cit.*, 670.
[84] Despagnet, *op. cit.*, 670.
[85] Bonfils-Fauchille, *Droit international public* (ed. 1908), 317; Despagnet, *op. cit.*, 670.
[86] Despagnet, *op. cit.*, 671 *seq.*
[87] Compare Despagnet, *op. cit.*, 672.
[88] See Despagnet, *op. cit.*, 672.
[89] See Despagnet, *op. cit.*, 672.
[90] See Hall, *International Law* (6th ed.), 536, 537; Phillipson, *Two Studies in International Law*, 104 *seq.*; Bonfils-Fauchille, *op. cit.*, 677.
[91] See Hall, *op. cit.*, 537.
[92] See Phillipson, *op. cit.*, 106.
[93] See Phillipson, *op. cit.*, 109, 110. See also E. J. Benton, *International Law and Diplomacy of the Spanish-American War*, pp. 212, 213.
[94] See Phillipson, *op. cit.*, 112.
[95] See Phillipson, *op. cit.*, 112.
[96] See Phillipson, *op. cit.*, 113.
[97] Higgins, *The Hague Peace Conferences*, 281, 292. See also Phillipson, *op. cit.*, 114–117. There is a similar provision to paragraph (*a*) of Article 3 in Article 5 of Convention, No. 13, relating to neutral rights and duties in maritime warfare. See Higgins, *op. cit.*, pp. 447, 464.
[98] Higgins, *op. cit.*, 291.
[99] Higgins, *op. cit.*, 291.
[100] Higgins, *op. cit.*, 276.
[101] Higgins, *op. cit.*, 257, 258.
[102] Higgins, *op. cit.*, 239.
[103] Higgins, *op. cit.*, 239.
[104] Westlake, *International Law*, II, 80.
[105] Higgins, *op. cit.*, 40, 484–491.
[106] See Higgins, *op. cit.*, 488.
[107] Higgins, *op. cit.*, 489, 490.
[108] Higgins, *op. cit.*, 489, 491.
[109] Higgins, *op. cit.*, 485.
[110] Higgins, *op. cit.*, 237, 269, 270, 275, 488.
[111] See Davis, "Launching of Projectiles from Balloons, *American Journal of International Law*, July 1908, pp. 528, 529; Higgins, *op. cit.*, 347.

[112] See Higgins, *op. cit.*, 491 *seq.*

[113] For the text of the Declaration of London and the General Report on the Declaration presented to the Naval Conference on behalf of its Drafting Committee, see Higgins, *op. cit.*, 540–613.

[114] Not having the official text of the Regulation at hand, I am obliged to rely upon the German press accounts of it.

[115] On some of the matters discussed in the next few pages see further the aerial law writings of Valentine, Kenny, Kuhn, Baldwin and other lawyers noted in the preceding notes.

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