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## AERONAUTIC SERVITUDES: A COMPARATIVE STUDY\*

*José Ignacio Perdomo-Escobar †*

**A**IR servitudes may be of two types: international servitudes, regulated by the law of nations, or servitudes of domestic public law, regulated by administrative law.

## I

## INTERNATIONAL SERVITUDES

1. *The Nature of International Servitudes*

According to the universally accepted definition, international servitudes

. . . are conventional and perpetual restrictions imposed on the sovereignty of states in favor of other states. . . They are regarded as constituting a permanent real right.<sup>1</sup>

Kroell criticizes the classic definition of Pradier-Fodéré, inasmuch as it leads to a permanent restriction on sovereignty. He defines international servitude as:

A restriction, voluntary or imposed on the sovereignty of states, stipulated for the benefit of another state, with temporary and limited effect.<sup>2</sup>

\* This article is part of a monograph entitled "Legal Aspects of Air Navigation in the Americas: A Comparative Study" prepared by the author in connection with the Research in Inter-American Law at the University of Michigan, described by Professor Yntema in an article in 43 MICH. L. REV. 549 (1944). The references in footnotes 7, 11 and 17 are to other parts of the monograph.

Special acknowledgment is due Mrs. Marion Frazão of the research staff for the translation of the present article.—*Ed.*

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<sup>1</sup> "En droit international il y a aussi des servitudes. Ce sont des restrictions conventionnelles et perpétuelles apportées à la souveraineté territoriale des États en faveur d'autres États. . . sont regardées comme constituant un droit réel permanent. . ." P. PRADIER-FODÉRÉ, 2 TRAITÉ DE DROIT INTERNATIONAL PUBLIC EUROPÉEN ET AMÉRICAIN (Paris, 1885) 397.

<sup>2</sup> "Une restriction volontaire, ou imposée à la souveraineté des États, stipulée au profit d'un autre État, avec effet temporaire et limité." JOSEPH KROELL, 1 TRAITÉ DE DROIT INTERNATIONAL PUBLIC AÉRIEN (Paris, 1934) 189.

Servitudes under international law have developed through extensive application of the rules of private law in the domain of public international law. The modern theory combats this notion, which involves the danger of a confusion of the ideas and concepts of public and private law.

In international law, there are no servitudes, properly speaking. Crusen terms them "contractual restrictions on sovereignty,"<sup>3</sup> because they are not, in reality, rights which encumber territory, but limitations on supreme power.

In the opinion of Bluntschli:

To the extent that, in modern states, greater value may be attached to the unity and freedom of the state, there will be a less favorable attitude to the servitudes of public law; these constitute a breach in its unity, grant certain sovereign rights to foreign powers, put fetters on the development of freedom, and prevent a state from progressing and fully realizing its rights.<sup>4</sup>

To the same effect, Clausz repeats:

And, without being pessimistic, one may perhaps express the thought that with the increasing development and consolidation of national sovereignty, not only will international servitudes, as peculiar limitations thereon, generally disappear more and more, but that more particularly the so-called international military servitudes, which by their nature impinge more acutely upon national sovereignty, will yield to servitudes of a peaceable character, such as railroad, telegraph and canal servitudes which admittedly affect the state sovereignty but are viewed by the servient state not only as a burden, restricting its sovereign power, but also as a means of promoting its economic interests.<sup>5</sup>

<sup>3</sup> GEORGE CRUSEN, "Les servitudes internationales," 22 RECUEIL DES COURS, II, 5 (1928).

<sup>4</sup> "À mesure qu'on attachait plus de valeur, dans les états modernes, à l'unité et à la liberté de l'état, on se montrait moins favorable aux servitudes de droit public; ces dernières font une brèche à l'unité, accordent certains droits de souveraineté à des puissances étrangères, mettent des entraves au développement de la liberté, et empêchent un état de progresser et de faire valoir en plein ses droits." JOHANN CASPER BLUNTSCHLI, *DRIT INTERNATIONAL CODIFIÉ* (Paris, 1881) 219.

<sup>5</sup> "Und man darf vielleicht ohne pessimistisch zu sein, den Gedanken aussprechen, dass mit der steigenden Entfaltung und Befestigung der Staatssouveränität nicht nur die Staatsservituten überhaupt als singuläre Eingriffe in dieselbe mehr und mehr verschwinden, sondern insbesondere die sog. militärischen Staatsservituten wegen ihres die Staatssouveränität besonders empfindlich treffenden Charakters denen des Friedens weichen werden z.B. Eisenbahn-, Telegraphen-, Kanal-Servituten, die zwar auch die Staatsbezwe. Gebietshoheit nicht unberührt lassen, aber dem belasteten Staat gegenüber nicht bloß als Last, als Einschränkung seiner Hoheitsrechte, sondern als Förderung wirt-

In general terms, as the study of the so-called servitudes in the law of nations is only incidentally within the scope of the present work, it may be remarked that they are always derived or established by means of a bilateral or multilateral pact. Pacts constituted between a state and an individual are acts regulated by private law.

Their object can be an act or a forbearance.

Only states which are sovereign and entitled to sovereign rights are capable of contracting them. A semi-sovereign state or a state under mandate cannot make such concessions, because this concerns restrictions on sovereignty in its absolute sense.

Up to what point can a sovereign state be encumbered without losing its independence? It is unanimously held that the fact of having renounced a specific or various sovereign rights, does not involve loss of the quality of a sovereign state. The fact that one nation grants a right of air passage to another foreign power, does not imply loss of sovereignty. Every agreement involving a restriction on a sovereign right has as its object renunciation of a sovereign right.

As a general rule, such conventions are dissolved by *mutuus consensus*. The beneficiary can renounce them by unilateral act, in the case of a right constituted in its interest.

The classical authors, taking the terminology of private law as the basis of distinction, classify international servitudes as: negative, positive, continuous, and discontinuous. An ancient doctrine also grouped them as restrictions of economic, military, or political character. Crusen divides them into useful and harmful.

## 2. *Servitudes and International Limitations in Favor of Air Navigation*

The progress of aeronautical science and the creation of great routes of international air navigation have encumbered the states with various servitudes and international aeronautic restrictions which have aroused new interest in the problems of the use and sovereignty of air space.

As examples of this type of restriction, we find: a. the international servitude of flight and passage created by the so-called Straits Convention; b. the rights of innocent passage and uninterrupted transit (*sobrevuelo*—free flight), granted to foreign aircraft in time of peace by the multilateral and bilateral conventions on air navigation; c. the servitudes, or better, the temporary limitations on state sovereignty created by the establishment of air bases, etc.

a. *Servitude Sui-Generis created by the Straits Convention.* The so-called Straits Convention creates a true international servitude of free flight and passage over the Straits of the Dardanelles, the Marmora Sea, and the Bosphorus. This convention was negotiated between Turkey and the Allied Powers at Lausanne on July 24, 1923.

"In consideration of the fact that this liberty is necessary to the general peace and commerce of the world," it grants to all nations, irrespective of flag, freedom of flight in the Straits.

The provisions that contemplate air navigation are articles 1 and 2 of the Convention and paragraph 3(c) of the Annex, which state:

"1. The High Contracting Parties agree to recognize and declare the principle of freedom of transit and of navigation by sea and by air in the Strait of the Dardanelles, the Sea of Marmora and the Bosphorus, hereinafter comprised under the general term of 'Straits.'

"2. The transit and navigation of commercial vessels and aircraft, and of war vessels and aircraft in the Straits in time of peace and in time of war shall be regulated by the provisions of the attached Annex."

"Annex, §3(c). The right of military and non-military aircraft to fly over the Straits, under the conditions laid down in the present rules, necessitates for aircraft:

"(i) Freedom to fly over a strip of territory five kilometers wide on each side of the narrow parts of the Straits;

"(ii) Liberty, in event of a forced landing, to alight on the coast or on the sea in the territorial waters of Turkey."<sup>6</sup>

This is a servitude that:

(a) Imposes a permanent restriction on Turkish sovereignty for the benefit of all the nations of the globe, whether parties to the treaty or not;

(b) Creates the "air straits," wider than the maritime straits;

(c) Contains a proclamation of freedom of innocent passage in the air space over the Straits;

<sup>6</sup> "1. The High Contracting Parties agree to recognize and declare the principle of freedom of transit and of navigation by sea and by air in the Strait of the Dardanelles, the Sea of Marmara and the Bosphorus, hereinafter comprised under the general term of 'Straits.'

"2. The transit and navigation of commercial vessels and aircraft, and of war vessels and aircraft in the Straits in time of peace and in time of war shall be regulated by the provisions of the attached Annex." 28 League of Nations Treaty Series 119 and 125 (1924).

(d) These rights of air transit and passage are not subject to denunciation on the part of the servient state. This, in other words, presupposes the creation of a permanent right and it results for this reason that a true international servitude exists.

b. *Servitude of innocent passage and transit* (Sobrevuelo—"free flight"). The Conventions of Paris and Madrid, in article 2, and the Pan American Convention in article IV, grant the contracting states, in time of peace, freedom of innocent passage across their territory, provided the rules stipulated in these conventions are observed.<sup>7</sup>

This right is of a general and reciprocal character and its enjoyment is reserved to the contracting states, among which a permanent and advantageous international relation exists.

The same is true of the right of free flight or uninterrupted passage, set forth in the Conventions of Paris and Madrid in article 15, by virtue of which every airplane of a contracting state can cross the territory of another state of the same character without landing therein.

Even though there are doubts on the point, we believe that these restrictive rights of innocent passage and transit established in favor of the contracting states constitute international servitudes of transit (*iter*). Keeping in mind the elements necessary to constitute a servitude, we see that:

(a) They represent a burden—the establishment of a right restricting the free exercise of territorial sovereignty, for the benefit of a foreign state;

(b) The territories that are involved in the servitude appertain to different states: a servient state which suffers passage through its space, and a dominant state, which receives the advantage or benefit of being able to cross, with its commercial or military air fleets, according to the provisions of the pact, the air space of another sovereign state;

(c) The limitation comes from a multilateral or bilateral convention.

(d) With respect to its extinction, it is universally accepted that a right established by contract can be terminated by *mutuus consensus*. The beneficiary can, by unilateral act, renounce a right constituted in his interest. If the obligation is bilateral, unilateral renunciation is not valid.

The right of denunciation declared by article 43 of the Convention of Paris, article 42 of that of Madrid, and article 37 of the Pan American Convention, seems incompatible with the conception of a servitude,

<sup>7</sup> See Chapter V, Nos. 49 and 50. Innocent Passage.

which forms a real and permanent right. The only means of acquiring the privilege is by adherence to the Convention, and, conversely, by withdrawing from it, a power shuts off, by this fact alone, its airspace to all the contracting states.

With regard to the bilateral conventions which mutually concede free passage to the aircraft of the states bound by conventions, it is admitted that they do not have the necessary permanence to be classified in the category of international servitudes of air traffic, since their termination can be effected, at the will of one of the contracting parties, by virtue of notice expressly given.

In this hemisphere, there are in force several of these agreements of a provisional nature. The agreement between the Argentine Republic and Uruguay, of May 18, 1922, provides for termination on one year's notice;<sup>8</sup> the agreement celebrated between Colombia and the United States of America on February 25, 1929, provides ninety days; the arrangement between Canada and the United States of August 29, 1929, provides sixty days;<sup>9</sup> and, finally, the convention between Brazil and Argentina of October 10, 1933, provides three months for denunciation.<sup>10</sup>

c. *Servitude of an air base.* A servitude limited to time of war is that of an air base, which carries a temporary restriction on the sovereignty of the servient state, imposed by the need for establishing land facilities for the repair of airplanes, provision of fuel, conveyance of wounded, etc. As a current example, the concessions of air bases made to the United States by various countries of South America in the interests of the defense of the Western Hemisphere may be cited. The arrangements extend only for the duration of the war or a short period thereafter, expressly defined.

d. *Other examples.* There may also occur restrictions on the right of administration, when a state finds itself forced to tolerate the passage of the police fleet of another foreign power over its airspace.

A last example of servitude is the creation of free zones and free ports in favor of the nation engaged in air commerce.<sup>11</sup>

<sup>8</sup> Argentina—Uruguay, Convention on aerial navigation, May 18, 1922, art. 19. Found in: Registro nacional de leyes, decretos y otros documentos (1922) 603. Buenos Aires, Argentina.

<sup>9</sup> Canada—United States, Arrangement between the United States and the Dominion of Canada, October 22, 1929. U.S. Dept. of State Executive Agreement Series, No. 2, s. 9.

<sup>10</sup> Brazil—Argentina. Convención sobre navegación aérea con el Brasil. Ley 12272, of October 9, 1935 (Argentina), art. 50.

<sup>11</sup> See Chapter V, No. 51. Free zones.

## II

## SERVIDITUDES OF DOMESTIC PUBLIC LAW

1. *The Nature of Servitudes of Domestic Public Law*

Aeronautic servitudes are servitudes of public utility. These servitudes, which involve a social interest in the exigencies of modern life, have been increasing and have left the sphere of civil law to become a part of administrative law.

Bielsa defines administrative servitude, stating that:

It is a real public right constituted by a public entity (state, province, or commune) over an immovable in private ownership, to the end that such immovable should serve the public use, as an extension or dependency of the public domain.<sup>12</sup>

The purpose of constituting servitudes in domestic public law is the interest of the community (*universitas colarum*). It has been one of the many consequences of the modern principle of the social function of law.

In the case of administrative servitudes, the author referred to points out,<sup>13</sup> public use is recognized:

1. For *continuity*: that is, there must be uninterrupted enjoyment on the part of the beneficiaries over the thing which is the object of the servitude...

2. Because the beneficiary of the use is the public: the inhabitants or neighbors of the administrative district.

Public use is conceived of as a modification of private property over which a servitude is established, but the concept of public use involves a more general and comprehensive idea, since in the abstract it also includes that which is impressed upon the property of the state, province, or commune.<sup>14</sup>

Administrative servitudes are created and extinguished by means of laws in the formal or material sense (laws properly speaking, or regulations), or by administrative acts. They can only be established by an agency of public law.

Servitudes that are established in consideration of a public interest in maintaining the use of a portion of the public domain free and

<sup>12</sup> RAFAEL BIELSA, 3 DERECHO ADMINISTRATIVO (Buenos Aires, 1939) 385, 386.

<sup>13</sup> Id. 391.

<sup>14</sup> Id. 390.

common to all the inhabitants, should be established without compensation except when giving rise to expropriation.

In accordance with more or less uniform constitutional principles, no one can be deprived of the use and full enjoyment of his property without being previously indemnified. Every expropriation for public use must be authorized by the law and be justly compensated. Expropriation converts private property into public property; there is a transfer of ownership.

It is interesting to define the scope and difference between the terms *limitation* and *restriction in the public interest*. Limitation gives rise to compensation; restriction does not.

*Limitations*, among which are included administrative servitudes and expropriation:<sup>15</sup>

Impose on the owner a particular sacrifice in favor of a correlated collective interest.

For example, the obligation not to build above a certain height implies a servitude *non altius tollendi*.

*Restrictions* involve, as expressed by Mayer, an inherent and generally imposed encumbrance on title. For example, the obligation to build in a uniform manner and at an equal height on a public street, for aesthetic reasons.

In cases where expropriation is to occur for reasons of public utility, compensation must include: the intrinsic value of the immovable and the accessory damages resulting directly from the expropriation or servitude.

## 2. *Servitudes of Domestic Public Law Created in the Interests of Air Navigation*

In the creation of these servitudes, as emphasized above, the dominant idea is the public or social utility, in this case, the safety of air navigation.

These servitudes have in view opposing needs: the security of a public service, in this case of aviation, on the one hand, and on the other the interests of the landowners, two conflicting interests difficult to reconcile.

The installation of an airdrome involves not only technical and legal problems, but also problems of town planning. It is not a question of providing for the purpose a defined area suitable for the descent and land operations of aircraft; it is necessary to eliminate existing

<sup>15</sup> Id. 354.

obstructions and to prevent future constructions that may impair free and safe access by aircraft that must maneuver therein. To secure this end, the modern state has created legal restrictions and limitations on ownership for the benefit of air navigation.

As air navigation is passing through a period of constant transformation, of incessant technical progress, the law that regulates it is also in a perpetual state of adaptation to the needs of the new means of transportation and of progress to accommodate itself to these requirements.

The majority of writers distinguish between servitudes involving public interest, those imposed on a parcel for the benefit of another tenement, which are servitudes *in the real sense*, and those that are *statutory restrictions (cargas legales)*.

Certain authors hold that public law servitudes presuppose an obligation to do or not to do, imposed on the owner, that they do not involve a dominant estate and are *extra commercium*.

Planiol, Ripert, and Picard<sup>16</sup> hold that servitudes based on public utility should not be confused with limitations on account of public interest with respect to the exercise of right of ownership. In order to have a true servitude, it is not necessary that the owner be restricted in the exercise of his right; it is necessary that there be a dominant estate.

Let us see whether the legal characteristics of predial servitudes can be applied to administrative servitudes, and in particular to those established in zones adjacent to airdromes:

(a) They are established over an estate or estates adjoining airports or air bases: *servient lands*.

(b) For the use and utility of another estate of collective interest: *dominant estate*.

(c) They are a division of ownership.

(d) The lands encumbered belong to different owners; the *predium dominans* belongs to an entity of public law; the *predium serviens* to individual proprietors.

With respect to *perpetuity*, another legal characteristic of predial servitudes, the problem arises that the ground structures of airports may be perpetual. The servitude will exist as long as the reason for its creation exists. Thus, it may be concluded that the encumbrance will stand as long as the motive of public interest which gave rise to its creation endures.

<sup>16</sup> PLANIOL, RIPERT ET PICARD, 3 TRAITÉ PRACTIQUE 836, No. 900.

Aeronautic servitudes established around airdromes may be:

(a) Those that impose on the owner of the land the obligation not to build, create obstructions, or allow plantings to grow above a fixed height (*non aedificandi*).

(b) Those that do not permit buildings or constructions to be erected beyond a designated height or the exterior form of present buildings to be altered (*non altius tollendi*).

To fix the scope of these two classes of servitudes, two systems exist:

(a) One in which *protective zones* are defined around the airports. These surrounding belts of security are usually referred to as the *aeronautic umbra* or *cone of security*. Their gradient or angle of inclination varies between 1:10 and 1:15, which means that the height of a construction near an airport cannot exceed a tenth or a fifteenth part of the distance between it and the outer limit of the airport.

(b) The second system establishes servitudes without fixing zones.

### 3. *System of Servitudes with Zones of Protection: Comparative Legislation*

This system is followed by the laws of Holland, Italy, Poland, France, Chile, Mexico, and the majority of the American countries.

The *French* law of July 4, 1935, which establishes special servitudes in the interests of air navigation, is an enactment worthy of being known in our hemisphere. Titles I and II of the law deal, the first with restrictions on exercise of the rights of ownership and of use and enjoyment over lands adjacent to certain airports (public airports and private fields open to air traffic) and certain hydroplane bases, and the second with the possibility of a prescribed system of signals over the territory concerned.

Zones of security, their extent, and means of establishment are regulated in articles 2 and 3. The following zones may be distinguished:

(a) One of *twenty* meters in length, calculated from the external limits of the airport. In this zone, obstructions may not be higher than *sixty centimeters* above the ground.

(b) A second zone of *480* meters starting from the first zone, already described. In this second zone, obstructions, constructions, or plantings cannot exceed *two* meters.

(c) Beyond *500* meters, obstructions may be erected progressively, as follows:

From 500 to	600 meters,	to 16 meters in height
From 600 to	700 meters,	to 18 meters in height
From 700 to	800 meters,	to 20 meters in height
From 800 to	900 meters,	to 22 meters in height
From 900 to	1000 meters,	to 24 meters in height

(d) And so on successively for the distance included between the first and the second kilometer (from 1,000 to 2,000 meters), in the proportion that, as the obstructions become more distant from the boundaries of the airport, two meters per hundred are added up to the point where the zones terminate.<sup>17</sup>

The maximum limit on the restricted zones is fixed in article 3; this may be extended to two or four kilometers from the outer boundaries of the airport or seaplane landing. The maximum distance of four kilometers is applied only to air navigational facilities (airports) with heavy traffic where, for example, there are centers of international traffic or the air fleets of the State assemble for formation.

The level from which the maximum heights are computed is the average level of France for landing fields, and the lowest water level for seaplane bases.

Servitudes extend to public airdromes and to private ones belonging to the community, which are open to air traffic. It is incumbent upon the Air Ministry to establish, enforce, and regulate the above servitudes.<sup>18</sup>

Article 8 contemplates the cases in which compensation or expropriation by way of public utility is involved. Whenever there is *elimination* or *reduction* of constructions or plantings, the administration must *indemnify* the owner. When the elimination or modification is applied to buildings of *durable* material, expropriation takes place so that the private property is incorporated in the public domain. The law provides that compensable damage must be *immediate* and *certain*, and limits to one year the period within which the right to demand compensation can be exercised.

The second title of the law confers on the Air Ministry the power to prescribe, over the entire extent of French territory, the day and night marking of every obstruction dangerous to air navigation. The costs of such markings shall be borne by the state, with the exception of

<sup>17</sup> See the special chart at the end of this work.

<sup>18</sup> HENRY LEMOINE, *LES SERVITUDES AÉRIENNES* (Paris, 1937) Thesis. This work was very useful in the working out of this chapter. It is a complete study of French legislation concerning aeronautic servitudes. See also: Marcel LeGoff, "Les servitudes aériennes," 4 Rev. Gen. Dr. Aér. 193 (1935).

electric transmission lines, for which the expenses are covered by their owners.

In *Brazil*, the system of zones of protection is regulated by decree No. 20,914 of January 6, 1932, article 41; by the special decree No. 1439 of February 5, 1937, which "approves the regulation establishing a zone of protection for airports," and, finally, by the Brazilian Air Code, in articles 133 to 136.

Decree No. 1439 fixes a zone of decreasing heights in a belt 1200 meters deep which surrounds the borders of the airport.

With respect to marking, the *Portaria* (administrative regulation) of the Ministry of Transportation of November 12, 1926, is in force: This regulation requires that towers and posts of great height, electric power lines, waterfalls, etc. be marked.<sup>19</sup>

In *Chile*, law No. 221 of May 15, 1931, article 37, prohibits constructions at a distance less than ten times their height from the limits of the landing area in any public or private airport.

It establishes the obligation to submit new constructions situated in the vicinity of the airport to the approval of the aviation authorities. It authorizes the demolition of existing structures, subject to compensation for damages suffered, according to the laws on this subject.

The *Proyecto de Código Aeronáutico* (draft aviation code), in articles 62 and following, regulates the topic of limitations on ownership in favor of aviation. It subjects the properties adjoining public and military airports to a servitude of a permanent or preventive character.

By regulation of law it provides that:

The lands adjoining any public or military airdrome are subject, without need of special declaration, to the servitudes established by the present code.<sup>20</sup>

It imposes preventive legal servitudes upon the lands adjacent to the site where preliminary studies for the construction of an airport are made.<sup>21</sup> Landowners, possessors, or holders of any title to lands adjacent to the site where it is proposed to construct an airport are to be duly notified.<sup>22</sup>

The prohibition against erecting or constructing buildings extends

<sup>19</sup> HUGO SIMAS, *CÓDIGO BRASILEIRO DO AR* (São Paulo, 1939) 103.

<sup>20</sup> Chile—*Código Aeronáutico*, 1943, art. 62.

<sup>21</sup> *Id.*, art. 64, pgh. 2.

<sup>22</sup> *Id.*, art. 66.

to six kilometers computed from the external limits of the airport. The maximum heights are fixed by special regulation.<sup>23</sup>

Cases where it may be necessary to establish servitudes are analyzed with minute detail in the code, leaving discretionary powers to the Aeronautical Administration.

The buildings or plantings existing in each zone which exceed the maximum heights established, must be reduced to those permitted, or be destroyed, subject to compensation.<sup>24</sup>

The proceedings in case of expropriations shall comply with the provisions of the law of June 18, 1857, concerning expropriation of lands for railroad works.<sup>25</sup>

Isolated obstructions whose removal would be very burdensome for the owners may remain standing provided they do not represent a serious danger to air navigation, authority being given by the Aeronautical Administration, but with the obligation to mark them. Such marking will be the responsibility of the owner.<sup>26</sup>

Antennas, posts, poles, and isolated trees difficult for aircraft to see, located within the restricted zone of airports, must be illuminated; likewise, antennas and high constructions which are found outside the radius of the restricted zone, but within the habitual route of commercial aircraft.<sup>27</sup>

In *Colombia*, Law 89 of 1938 creates the servitude for airports, subject to the following rules, expressed in mathematical formulas, one for distance and one for height.

*Distance.* Within the zone surrounding an airport, there shall be made no planting, construction, or work of a permanent or temporary character, without having obtained proper authorization from the government, when the periphery of such works is found to be at all points at a minimum distance of  $D$  from the limits of the airport, equal in meters to the result obtained according to the following formula, in which  $H$  represents the height of the airport itself above sea level, expressed in meters:<sup>28</sup>

$$D = 800 + \frac{H}{6}$$

<sup>23</sup> *Id.*, art. 67.

<sup>24</sup> *Id.*, art. 68.

<sup>25</sup> *Id.*, art. 61.

<sup>26</sup> *Id.*, art. 69.

<sup>27</sup> *Id.*, arts. 71 and 72.

<sup>28</sup> *Colombia*—Law 89 of May 26, 1938, art. 68, first rule.

*Height.* The government is empowered to refuse such authorizations when there are involved plantings, constructions, or works of a permanent or temporary character whose height  $h$  expressed in meters shall exceed that calculated according to the following formula, in which  $d$  represents the minimum distance that separates the constructions or works in question from the nearest point on the boundary of the airport, and  $H$  the height of the airport itself above sea level, stated in meters:<sup>29</sup>

$$h = \frac{d}{20} - \frac{H}{125} - 10.$$

For example, the height above sea level of the airport of Popayán, capital of the Department of Cauca, is 1760 meters, and the distance of a hypothetical obstacle from the site where it is located to the external limits of the airport is 500 meters. Applying these two figures to the two formulas, we find that in the first place, no constructions or plantings can be made within a zone of 1,093.33 meters and, in the second, the obstructions may not be higher than .93 centimeters. In the second case, as can be seen, the shrubs of a planting should not be higher than the normal height of a stalk of corn. A banana tree, for instance, could not be planted.<sup>30</sup>

Only the government has power to deny authorization to make plantings or constructions that exceed the maximum height when they constitute a danger to aircraft. These permits may not be granted before twelve months after the opening of the airport for public use and shall not be subject to tax on any ground.<sup>31</sup> Within a term of not more than 18 months after the airport is put into service, the government may, for reasons of public security, add to the conditions previously contemplated for lands included within the zone.<sup>32</sup>

Article 68 concludes with the following paragraph, recommended by prudence:

Airdromes or airports shall not be constructed at a distance between them less than, and with respect to their nearest boundaries, equal to 3D, in conformity with the formula of the first rule of the present article.

<sup>29</sup> *Id.*, art. 68, second rule.

<sup>30</sup> See Executive Resolution 1109 of 1939, which contemplates a real case. *Diario Oficial* No. 24,191 of October 10, 1939, page 66.

<sup>31</sup> Law 89 of May 26, 1938, art 68, third rule. See *Diario Oficial* No. 23,789 of May 30, 1938, page 742.

<sup>32</sup> *Id.*, art. 68, fourth rule.

In the example proposed, another field with air navigational facilities may not be constructed at a distance less than 3280.09 meters.

The removal of any obstruction of the type contemplated in this regulation is defined as a grave consideration of public utility.<sup>33</sup>

In *Cuba*, the *Ley de Transportes y Comunicaciones* of January 22, 1942 prohibits constructions and obstructions that extend above the level of the airport to a height greater than a *fortieth* part of the distance between the point of location of the obstacles and the nearest boundary of the airport.

The law referred to enumerates what are the obstructions contemplated and prescribes rules of procedure in case of expropriation, etc. This includes articles 25, and 27 to 33.

In the *United States of America*, the system of zones called *air safety areas* or *airport zoning* is also used. Due to delegation to municipalities and counties of the construction of their own air navigation installations, uniformity does not exist with respect to the systems used to determine zones.

Ten different systems or methods of protecting areas for access to airports have been taken into account, as follows:

1. Voluntary action by hazard owner, by means of appropriate marking.

2. Alienation of all lands appurtenant to the airport and levelling of the obstructions. This solution entails the difficulty that in general the cost of these lands is very high, if not prohibitive.

3. Acquisition of a right of servitude for air passage in all areas bordering on landing fields.

4. Purchase of lands that surround airports by means of eminent domain with the object of levelling and eliminating present and future obstructions. This solution carries with it the problem of the cost of these estates. Moreover, in order to carry it out, it is necessary to do so by judicial process, with the consequent delay of the entire proceeding and the addition of legal costs.

5. Acquisition of rights in the air space which surrounds the airports by means of eminent domain in order to level and eliminate present and future obstructions.

6. Power to expropriate all obstructions that hinder the use and free access to airports. This recourse must be brought about with tact because, although the municipalities have power to enjoin nuisances and

<sup>33</sup> Id., art. 69.

to expropriate and destroy dangers that threaten public health or security, it is necessary to notify and hear the owner of the source of such danger, and in this case, of the obstruction that interferes with air navigation.<sup>34</sup>

7. Fixing of zones to prevent and eliminate dangers near ground installations. Various municipalities have issued ordinances for such purpose.<sup>35</sup> Likewise, the states of Alabama, Connecticut, Florida, Indiana, Iowa, Idaho, Louisiana, Maine, Maryland, Michigan, Nebraska, Oregon and Pennsylvania have enacted legislation with reference to zones of protection.<sup>36</sup>

On the subject of zones there exists a leading case: *Village of Euclid v. Ambler Realty Co.*<sup>37</sup> In this decision, the Supreme Court held that an ordinance on the delimitation of zones is authorized by the exercise of the police power:

"The ordinance now under review," states the Court, "and all similar laws and regulations, must find their justification in some aspect of the police power, asserted for the public welfare."<sup>38</sup>

It adds further:

"That the ordinance in its general scope and dominant features, so far as its provisions are here involved, is a valid exercise of authority leaving other provisions to be dealt with as cases arise directly involving them."<sup>39</sup>

8. By virtue of the *power to regulate interstate commerce*, delegated by the Constitution to the federal government, it has been thought that the latter can prohibit the erection of obstructions that impede the access of aircraft to airports intended for interstate flights.

<sup>34</sup> See the following cases, in which *mandatory injunctions* were issued to remove obstructions: *Frow A. Tucker v. United Air Lines, Inc. and the City of Iowa City*, U.S. Av. R. 10 (1936); *Commonwealth of Pennsylvania ex. rel. William A. Schnader, Attorney General v. Zdzislow von Bestecki*, U.S. Av. R. 1 (1937).

<sup>35</sup> Akron; Chicago; Clifton, N.J.; Dearborn, Mich.; Fresno; Glendale, Calif.; Indianapolis; Los Angeles; Philadelphia; Oakland; San Diego. See: National Institute of Municipal Law Officers, *AIRPORTS AND AIRPLANES AND THE LEGAL PROBLEMS THEY CREATE FOR CITIES* 11, 33. Report No. 42, 1939. Appendix 3.

<sup>36</sup> *Id.*, Appendix 5.

<sup>37</sup> 272 U.S. 365, 47 S. Ct. 114 (1926).

<sup>38</sup> "The ordinance now under review, and all similar laws and regulations, must find their justification in some aspect of the police power, asserted for the public welfare." *Id.*, 387.

<sup>39</sup> "Under these circumstances, therefore, it is enough for us to determine, as we do, that the ordinance in its general scope and dominant features, so far as its provisions are here involved, is a valid exercise of authority, leaving other provisions to be dealt with as cases arise directly involving them." *Id.*, 397.

On this subject, the Civil Aeronautics Act of 1938 provides, in section 1101:

“The Authority shall, by rules and regulations, or by order where necessary, require all persons to give adequate public notice, in the form and manner prescribed by the Authority, of the construction or alteration or of the proposed construction or alteration, of any structure along or near the civil airways where notice will promote safety in air commerce.”<sup>40</sup>

9. By virtue of the power granted to the federal government by the so-called *war clause* of the United States Constitution, it has been suggested that this branch of the government can protect airports on the ground that they are constructions indispensable to national defense.

10. To the same effect as under the above two clauses, consideration has also been given to the *Postal Power*. In substance, air routes are considered as postal roads. The creation of zones of protection in the environs of the landing fields with air navigational facilities may be justified under this clause in order to facilitate the safe access of the aircraft carrying the mails.<sup>41</sup>

A bill designated as H.R. 1012 was placed before the 1st Session of the 78th Congress of the United States for the purpose of amending the Civil Aeronautics Act. This bill contemplated the creation of zones of approach to airdromes and airports. The original bill was replaced by that designated as H.R. 3420, introduced in the 2nd Session of the 78th Congress.<sup>42</sup>

Title II of the bill contemplates the fixing of zones. It grants authority to the Civil Aeronautics Administrator to fix the establishment of safety areas, to prescribe uniform rules respecting maximum altitude and site of constructions and plantings in said areas, and to determine the procedures employed to fix such standards in airports belonging to the Union and to private persons.

The procedure for expropriation is regulated by the statute designated, “An Act to expedite the construction of public buildings and works outside of the District of Columbia by enabling possession and title of sites to be taken in advance of final judgment in proceeding for

<sup>40</sup> Civil Aeronautics Act, § 1101.

<sup>41</sup> National Institute of Municipal Law Officers, *supra*, note 35, p. 33. This pamphlet, from which we extracted the foregoing, contains very important Annexes concerning the zones surrounding airports.

<sup>42</sup> H.R. Report No. 784, 78th Cong. (1943).

the acquisition thereof under the power of eminent domain," approved February 26, 1931.<sup>43</sup>

The statement of the purposes of bill H.R. 3420 declares, with respect to zones:

"Hundreds of millions of dollars are being spent on airports. But unless an airport can be approached without encountering obstructions, the investment therein becomes valueless or the airport itself becomes a death trap. To protect passengers and flight crews, and to assure that airports can be used in connection with the defense of the Nation in time of emergency, it is vital that there be adequate zoning. Unless zoning is accomplished now before airport approaches are further obstructed, the task will some day reach staggering proportions. Few steps are of such urgency. Few steps are so essential to promote safety."<sup>44</sup>

In Mexico, the *Ley de Vías Generales de Comunicación* enacted in 1940, creates a protective zone at the perimeter of airports by establishing that:

At the boundaries of any airdrome or airport, no walls, buildings or other works shall be constructed, nor shall electric transmission lines be erected nor plantings of any type be made, whose height is greater than a *twentieth* of the distance to the boundaries or which by their nature constitute a danger to the security of aircraft.<sup>45</sup>

This law doubles the distance fixed by the old *Ley de Vías* of August 29, 1932, which did not permit such obstructions to a height equal to or greater than a *tenth* of the distance to the limits of the ground installations.<sup>46</sup>

Moreover, it was provided in the second paragraph of the same article—article 456—that works, lines, and plantings made contrary to the regulations prescribed above, could be demolished or removed by the Secretary of Communications and Public Works at the expense of their owners. The Secretary makes the estimate, which serves as title to collect the value of the works destroyed. In order to execute this

<sup>43</sup> 40 U.S.C. (1940) §§ 258a to 258e inclusive.

<sup>44</sup> H.R. Report No. 784, 78th Cong. II (1943).

<sup>45</sup> Mexico—*Ley de Vías Generales de Comunicación*, of December 30, 1939. *Diario Oficial* of February 19, 1940. Article 365.

<sup>46</sup> Mexico—*Ley de Vías Generales de Comunicación*, of August 29, 1932. *Diario Oficial* of September 28, 1932. Article 456.

process, the economic-coactive procedure established by the *Ley Orgánica de la Tesorería de la Federación* is followed.<sup>47</sup>

This clause was not incorporated in the *Ley de Vías* of 1940.

Book IV of the latter law contains nothing on the subject of indemnity and expropriation of properties affected by air servitudes on the perimeter of airports. The same law has precisely and at length regulated the point in Chapter IV, articles 21 to 27, which deal with the rights of expropriation of land and constructions which are required for the establishment of means of communication.

In *Peru*, article 92 of the *Reglamento de Aviación Comercial y Civil* approved by the supreme decree of December 18, 1933, which prohibited the raising of obstructions at a distance from the boundary of airports less than *fifteen* times the height such obstacles have or might have, was amended by decree of May 10, 1942, to the following effect:

Article 92 of the *Reglamento de Aviación Comercial y Civil* is amended as follows:

Article 92. It is not permitted to construct buildings, extend electric or telephone transmission wires, plant trees, construct towers for radio service, and other obstructions that are dangerous for air navigation; at a minimum distance from the lateral boundaries of airports of the first and second category, whose ratio to the height of such obstructions is 40, that is: for one meter of height, forty meters of distance.

As can be seen, the Peruvian law creates a *cone of protection*. In the following clause, it fixes the zone of approach which, for the purposes of the law:

Is the part included between the prolongation of the two lateral lines of the field to a distance of *three kilometers*, a zone in which it is absolutely prohibited to make constructions or to place any obstruction without having previously obtained authorization or a technical report, since these are zones of entry and departure of aircraft.

In general, constructions cannot be built in the proximity of airports of the first or second category without the technical opinion of the General Authority of Civil Aviation.

By airports of the first category are meant government airports. Airports open to public use, whether constructed by a public law agency

<sup>47</sup> *Id.*, arts. 456, first sentence, and 49.

or by a natural or juridical person, are airports of the second category, but in both cases they are regulated by the state.<sup>48</sup>

It would appear from the language of the law that servitudes do not apply by extension to airports of the third category, that is, private airports.

The air legislation of *Uruguay* follows the system of zones of security and zones of approach surrounding airports.

For the purpose of determining the zones, airdromes and airports are divided into four categories.<sup>49</sup>

Airdromes of the first, second, and third categories are those in which the extent of the runways or take-offs reaches a length that varies between 750 and 1,350 meters:

- First category, more than 1300 meters;
- Second category, between 1000 and 1300 meters;
- Third category, between 750 and 1000 meters.<sup>50</sup>

In these airports, the erection or maintenance of obstructions, permanent or temporary, continuous or interrupted, whose height exceeds the *thirtieth* part of the distance of such obstructions from the perimeter of the runways is prohibited.<sup>51</sup>

Airports in the fourth category are those whose runways have a length of not more than 750 meters. In these, the zone of security cannot be raised above the *twentieth* part of the distance to the external limits of the field.<sup>52</sup>

In airports or airdromes which have runways for blind landing, the zone of security extends to the *fortieth* part.<sup>53</sup> These special zones, called zones of approach, are:

Trapezoidal zones with a base of 330 meters at the final limits of each runway, and broadening to reach 1330 meters at a distance of 3200 meters from the border of the runway, the axis being the continuation of the axis of the landing runway considered in each instance.<sup>54</sup>

<sup>48</sup> Peru—Reglamento de la Aviación Comercial y Civil, approved by Supreme Decree of December 18, 1933, art. 77. See: *Legislación Naval y de Aviación*, compiled by Capt. Leon Garaycochea (Lima, 1940) Volume 10 (1937-1938) 5.

<sup>49</sup> Uruguay—Código de Legislación Aeronáutica (Montevideo, 1942) art. 83.

<sup>50</sup> Id., art. 83 (a), (b), (c).

<sup>51</sup> Id., art. 84 (a).

<sup>52</sup> Id., arts. 83(d) and 84(b).

<sup>53</sup> Id., art. 85.

<sup>54</sup> Id., art. 86.

In the spaces comprised between these zones, the system of servitudes applicable to each case will be determined by the Executive Power.<sup>55</sup>

Articles 89 and 90 of the Code of Aeronautic Legislation contemplate the special case of high tension wires. Existing obstructions are subject to removal by the Executive Power through a decree of elimination.<sup>56</sup> In the safety zones, the installation of radio broadcasting stations is prohibited at a distance less than two and a half kilometers from the limits of the runways. The Executive Power may, subject to payment of compensation, provide by decree for the transfer of existing stations within such radius.<sup>57</sup> The control of expropriations is regulated by Article 94 of the Code in question and by decree-law No. 1496 of April 30, 1942.

The same Code also requires owners to mark obstructions which the aviation authorities consider dangerous. The costs of this work, as well as the maintenance of lights and signals, are to be borne by the licensees of the lines.<sup>58</sup>

Article 46 of *Venezuela's Ley de Aviación Civil* of 1941 fixes a zone of security and protection of 300 meters around land airports. Obstructions or lines for the transmission of electric power cannot be constructed therein. The decree implementing this law by regulations repeats the same text and prescribes no regulation in this respect.<sup>59</sup>

#### 4. *System of servitudes without the fixing of zones.* *Comparative legislation.*

Other legislations prefer the system of establishment of servitudes without the fixing of defined zones of security.

In *Europe*, the Free City of Danzig and Yugoslavia follow this system, the former in Article 15 of the law of June 9, 1926; Yugoslavia in Article 35 of the law of February 22, 1928.

In *Argentina* up to the present time no law has been enacted on aerial servitudes. The *Ante-Proyecto de Ley de Aeronáutica Civil*, in articles 63 to 69 establishes servitudes without fixing zones. It au-

<sup>55</sup> Id., art. 87.

<sup>56</sup> Id., art. 91.

<sup>57</sup> Id., arts. 92 and 93.

<sup>58</sup> Id., art. 77.

<sup>59</sup> Venezuela—Decree No. 293 of October 22, 1942, art. 132. See: I *Compilación Legislativa de Venezuela, Ley de Aviación Civil, 1694.*

thorizes demolition of existing obstructions and plantings upon the creation of the airport and prohibits the construction of obstructions erected after the promulgation of the law.

The Committee, in its statement of purpose, declares the reasons for its preference for this system, as follows:

1. Because the incessant progress of aeronautical science requires the modification of zone limits.
2. Because it is not necessary that the zone be of equal extent along the whole perimeter of the airport, even though a limitation may be established in a given direction.
3. Because the extent of the zones varies with the height of the region in which the airport is situated.<sup>60</sup>

To conclude this study of servitudes of safety for the benefit of air navigation, two problems must be kept in mind: that of populous centers and that of constantly growing cities.

The great industrial and commercial centers are in fact those most benefited by aviation. With the object of facilitating communications, it is necessary that the airports be situated in a locality with easy and quick access. In these populous cities, one runs into the difficulty that the acquisition of large, centrally located areas adequate for landing fields is difficult and costly, and that generally these are surrounded by various obstructions. The mere act of ordering the destruction of chimneys, radio broadcasting towers, etc. presumes for the State and for the community the expenditure of huge sums of money to cover compensation to the landholders.

The municipal airport of the city of Detroit, which we may without exaggeration call one of the aeronautical capitals of the world, has in the middle of the runway an immense gasoline tank, which it has not been possible to remove because practically insoluble difficulties, not so much legal as monetary, stand in the way of its removal.

On the other hand, in constantly growing cities, it is possible to provide for the prohibition of elevated structures in the neighborhood of airports by means of special laws which avoid in advance the construction of obstructions that may impede free and safe air navigation. In this case, the creation of permanent zones is justified.

<sup>60</sup> Argentina—Anteproyecto de Ley de Aeronáutica Civil, 35 *Bibl. Aer.* 36.