Reprint from
Second Colloquium on the Law of Outer Space, London 1959
Proceedings
SpringerVerlag Wien 1960

The Functional Regulation of the Extra-Atmospheric Space

By
Modesto Seara-Vázquez [1]

l. The Juridical Statute of the Extra-Atmospheric Space

The Juridical Nature of the Extra-Atmospheric Space

In order to determine the juridical nature of the space, we must, first of all, identify it, define it. But to identify a thing we must delimit it. However, we cannot find a basis for delimiting the space. In fact, where does it begin and where does it end? These are questions which we cannot answer. We should not consider the space as a delimited thing, for it is not contained but a content [2]. The space is not placed within the frame of the totality, beside other parts to which it could be brought into relation. The space is the totality in which the parts are placed.

The space can be defined only in a negative way: that which is not limited. A negative definition, however, is only an implicit recognition of incapacity. This should be frankly admitted.

We could attempt, on the other hand, a delimitation of the space or, to be more exact, of part of the space, with regard to the Earth or any other fixed point. However, the Earth is in continual movement and so is the solar system. Even the galaxy is moving. For this reason, all the delimitations which might be established would be established with regard to fixed points which, paradoxically, are moving at fantastic speeds. Even if we speak of points considered fixed, a delimitation founded on relative bases would be impossible, taking into consideration the continual change of relation in the space. Therefore a definition of the space seems to be impossible. This impossibility originates from the incapacity of human comprehension, not only for delimiting the space but even for forming a conception of it, for EINSTEIN'S conception of the space as a curved being does not seem to be very clear and, much less, simple.

If we finally admit the necessity to consider that the space cannot be defined, either with regard to the object or with regard to the phenomenon [2], we arrive at the conclusion that the space cannot be *per se* the object of a law on the part of the states [3], either singularized or integrated into the Community of Nations, because the space, which would constitute a territory, in the legal sense of limits subjects to the sovereignty, could not be delimited and we would find ourselves in front of an

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[1] Docteur en Droit International Public, College d'Italie, Cité Universitaire, Paris, France.

[2] "The space appears therefore as a non-limitad milieu (receptacle) in which the corporal objects move" [1].

[3] MAC NAIR is of another opinion: "Sovereignty does not really involve continual presence any more than possession does in prívate law" [3]. We agree upon that, but MAC NAIR is wrong when he thinks that the power of the states is exercised over the space itself and not only over navigation, over regulation, in short, over all activities, and over the natural and artificial bodies of the space.

illimited sovereignty in the dimension of space, which would be absurd[1].

Those who qualify the space as a "res nullius" and those who qualify it as a "res communis," and even those who call it a "res communis omnium [5]" render an arbitrary qualification because they proceed from the principIe that the space is a "res" and then attempt to qualify this "res" according to the effects due to this qualification itself. They díd not ask themselves whether the space is a "res."

At the beginning of this error, there is perhaps an ego-centric (or rather terra-centric) conception which makes our planet the center of the universe. The Earth, however, should be considered from a more objective point of view, Le., that the Earth is not the center of the universe but an insignificant part of it.

Only things in the juridícal sense of the word can be objects of a law. According to the above-expressed argument, the space is not a thing. Therefore it cannot be the object of a law. We may quite certainly say that the space cannot be attached to any category of things known. It pertains to another new category. There would not be admitted any objection. In fact, if we attempt to find out; whether the space is a thing [2] in order to know whether it can be the object of a law, we should not artificially create a category of things to attach the space to it and to affirm then that, since it is a thing, it can be the object of a law [3]. This would mean proceeding from the conclusion and deducting therefrom the premises, which, logically, is not admissible.

Finally, we affirm that the pretension to qualify the space as a "res" is absurd and that a definition of the space *per se* is neither essential nor indispensable. We believe that it is necessary to study it based on what is called "a íunctional delimitation," i.e., the regulation of human activities in the space. We must abstract from the space and restrict ourselves to regulate the different activities of man.

The celestial bodíes may quite certainly be objects of a law because they are things in the space.

II. The Functional Regulation of the Extra-Atmospheric Space

To well understand the problem two preliminary remarks are necessary.

1. The Earth is not the center of the cosmos but a thing in the cosmos, the position of which is continually changing.
2. One cannot speak of altitude with regard to the Earth, except within a certain range; one must rather speak of distance.

1. The Problem of Sovereignty over the Extra-Atmospheric Space

The states have the sovereignty over the air space above their territories. This is a principle admitted by all civilized nations. But this sovereignty cannot be extended to the

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[1] Although GOEDHUIS admits sovereignty over the air space, he affirms that this sovereignty is different from that which is exercised over the Earth: "if it is true that sovereignty over air is derived from posession of subjacent territory, it does not, however, follow that the content of this sovereignty is exactly the same as the content of sovereignty over the land domain" [4]. The sovereignty over the air space finds nevertheless a material basis over which it may be exercised: the air. This is not the case as to the extra-atmospheric space.

[2] "It is already a strange pretention to attribute physical reality to the space in general, and, above all, particularly to the empty space" [6].

[3] And if we arrlve at considering the space as a thing, this sovereignty would be fictious because it cannot be realized or protected, in view of the enormous distances which separate the Earth from the supra-atmospheric space [7].

extra-atmospheric space [1] for the reasons expressed in chapter one. Sovereignty may find a material basis of application to the air space which may be defined as: there where air is found. The air, therefore, would be the element enabling us to delimit the zone of exercising sovereignty. The empty space, however, has no material element which could render a basis of delimitation.

Besides, and as to the interest of the state cited in support of the sovereignty of the subjacent state [2], it should not be defended above a certain altitude. According to the distance from the Earth, the interest of the states diminishes while the interest of the Community of Nations augments, up to the point where it is so great that the particular interests of the states do no more exist or cannot be admitted. [3]

The liberty of navigation through the extra-atmospheric space is to be established in an absolute manner, and that because of the right of the states to communicate with each other [4]

The doctrine is unanimous in admitting the liberty of navigation through the extra-atmospheric space. So GUILLERME: "Sovereignty should not extend beyond the atmosphere, the limit of which is moreover still to be determined [12]."

JOHN C. COOPER limits sovereignty to the atmospheric space. The extra-atmospheric space is to be free [13]. BIN CHENG qualifies it as a "res extra-commercium" which cannot be appropriated. He calls it "outer space [14]." JOHN C. HOGAN goes much farther and reduces the extension of the air space [15]. WELF HEINRICH PRINCE OF HANOVER sustains on his part that the states may not pretend to sovereignty over the interplanetary space [16]. Mrs. BASTID notes the absence of protests against the launching of satellites and she deducts therefrom an implicit acknowledgement of the limitation of the sovereignty over the space. [5]

In the United Kingdom, the most general opinion affirms, too, the liberty of navigation in the extra.atmospheric space .[6]

LA PRADELLE believed that International Law would not suffice to solve the new situations arisen and that a new International Law of the air space is to be created to delimit the domain of the sovereignty of each state [19].

To HALEY "the outer space and the celestial bodies should be the common property of all mankind and no nation should be authorized to exercise its domination there [20]."

Professor HAROLDO VALLADAO, in our opinion, is wrong to consider the interplanetary space as a "res" (although a "res communis omnium"). This should be

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[1] The present period, in my opinion, will be characterized by the international acceptance of very precise limits of territorial sovereignty and by acknowledgement of the fact that all regions placed above these limits may be freely utilized by all the states [8].

[2] The idea of security of the subjacent state implies a unique solution: sovereignty over the entire air space which covers it [9].

[3] MATEESCO does not agree with CAVARÉ: "The interest of the states (suggested as an explanation of sovereignty) is not so supreme as that of mankind. For this reason and from a dogmatic and critical point of view, the theory of the liberty of the air is to be restrained, too, within the public domain" [10].

[4] We take as a basis that certain rule of the law of nations called primary, the sense of which is clear and unchangeable, namely: that a nation is free to address any other nation and to negotiate with the same [11].

[5] There was no protest against the launching of satellites. This seems to imply that the principIe of the exclusive competence of the states does not matter any more [17].

[6] In acoordance with the general tendencies of our era .. . all regions in the space as wellas celestial bodies are not considered capable of appropriation by any state [18].

admitted because we already said that the space is no "res." But he arrives at conclusions of a grandeur and exactitude which must be recognized. To him the interplanetary space is free and inappropriable, not only as to the habitants of the Earth but also to other possible habitants of celestial bodies [1].

Beside the jurists, the states are in favor of the liberty of navigation through the interplanetary space [2].

The United States and Russia, to speak of only two veritable protagonists of world politics, had shown their attitude in this sense on repeated occasions.

President EISENHOWER expressed that the United States was ready to sign agreements on the activities in the space [22]. A little later he took up the same question in his speech before Congress [23] on January 9, 1958 [3].

The principle of the liberty of the extra-atmospheric space is only the expression of an idea of solidarity and interest which all mankind has in common[4].

As to the Soviets, the same disposition is found [5]. So KHRUSHCHEV stresses the necessity of international cooperation in the domain of the interplanetary space. He speaks of the necessity to create a kind of Community of Satellites [6].

The Air Code of the U.S.S.R. of August 9, 1935, restricts itself to declare the sovereignty over the air space.

To Russian doctrine the air space is the atmosphere [29]. Finally, according to the position taken by the jurists of the whole world, a position supported by the states, we may affirm that, in general, there is no question as to admitting the sovereignty over the interplanetary space, either on the part of the states or on the part of the Community of Nations, and that the principle of the liberty of navigation will assert itself.

It must be underlined, however, that, although the general principles applicable might already be stated, a detailed regulation should not be established before the different problems had presented themselves. All we can say now aims at pure hypothesis [7].

2. The Delimitation of theExtra-Atmospheric Space

This problem can be split up as follows.

a) At first, the determination of its limit with regard to the air space.

b) Then, the question whether the extra-atmospheric space should be subject to a uniform rule or whether it would be convenient to distinguish two zones to be differently treated by law.

(a) As to the limit of the supra-atmospheric space with regard to the Earth, there must be underlined what was already said, and, for the purpose of information we shall review some opinions. GUILLERME [31] indicates as a limit "where the aëronefs, as at present conceived, are in a position to navigate." The problem is still to be solved.

JOHN C. COOPER is of the same opinion [32]: "The supra-atmospheric space begins where the density of the atmosphere is not sufficient to cause an aerodynamic resistance or to effect flight in another manner." He finds this limit at the altitude of 60 miles.

BIN CHENG finds it very difficult to establish a limit and he restricts himself to indicate different opinions [1].

As to JOHN C. HOGAN [34]: "When lawyers and judges have used the term air space, they have been thinking primarily of the troposphere, the lowest regíon of the atmosphere, where conventional aircraft operate." According to the temperature he distinguishes five parts of the atmosphere; the troposphere extending up to an altitude of 10 kilometers where, as it seems according to his opinion, the free space should begin. LOFTUS BECKER believes that the air space extends up to 10,000 miles where, therefore, the free space would begin [35].

To PITMAN B. POTTER [36] the limit is located at 30 miles. HALEY establishes the limit at 53 miles where the air would be so rarefied that it would offer no more support for aëronefs.

(b) As to the convenience to admit an intermediary rule between the air space and the extra-atmospheric space, the majority of jurists agree with each other. They disagree on the extent of this zone. To GUlLLERME it extends to 480 kilometers [37]. JOHN C. COOPER admits the necessity of its existence [38], but he affirms that its delimitation should be made by international agreement. However, he believes that one must take into account the margin of the field of gravitation of the Earth, i.e., 161,000 miles.

DIEFENBACHER, Canadian Prime Minister, said that the states should have a transit law covering a zone located beyond the air space and extending to an altitude of 500 kilometers [39].

For studying the legal rule of the space, there were often made comparisons with the rule of the seas[2] and although there are analogíes not to be neglected, the differences are not less fundamental. In analogy with the seas, there were established three zones in the space: the territorial or air space, the contiguous space, and the extra-atmospheric or free space. There are, however, differences of fact which do not permit us to establish for the space a rule equal to that of the seas. In fact, a boat which sinks does not produce any effects on the riparian

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[1] Ltd. D. M. DRAPER believes that the margins are between 10,000 and 18,000 miles; Mr. P. K. Roy, head of the Legal Division of the International Civil Aviation Organization, is of the view that the margins are between 1,500 and 60,000 miles [33].

[2] This conception of the nature of the space being given, the rule of the air, as necessary as the rule of the seas, resembles the latter in its exigencies and modalities; it consequently brings about the adoption of regulations comparable to those provided by marítime law for ships [40].

state, but an aëronef which falls down produces danger which must be anticipated. The interest of the states requires to admit the necessity of the existence of a zone in which they have some rights, although limited ones.

In general, the contiguous space is conceived as an attenuation of the sovereignty of the subjacent states. In our opinion, the contrary is the case. The contiguous space is a limitation to the navigation through the free space. This distinction is not a juridical subtility; to us it seems to be of great importance. Indeed, if we proceed from the principle that the contiguous space is a limitation to the sovereignty of the subjacent state, this would be the rule, the law of the community, however, being an exception, and in case of conflict the rule would be outweighed by the exception. The right of the states to their air space must be limited there. Before the interests of the community, the sovereignty of the states cannot have an expansive force, but it has to restrict itself to the air space.

In the contiguous space, the liberty of navigation is to be clearly established and limitations to this liberty should be admitted only on behalf of the more vital interests of the states. These interests should not be left to the discretion of the states themselves, but established by international agreement. This agreement could and should include the interdiction of the transit of military aeronefs and of the stationing of satellites of relative immobility above a country other than the one by which they were launched.

3. The Functional Regulation of the Extra-Atmospheric Space – Competence of the United Nations

To M. HOMBURG [41] astronautic law must include not only the regulation of the activities in the space but also of the activities on the Earth connected therewith, the substructure, regulations relating to the personnel on Earth etc. We entirely agree to it; in fact, regulation should be qualified by function rather than by the space.

The immense perspectives which navigation through the air space offers to man require participation of all mankind without admitting exceptions as to whatever state in particular.

The United Nations, an intenational organism, are most competent to direct regulation of the space. For this purpose a special organism should be created. A special committee for the pacific utilization of the cosmic space had been created at the 13th General Assembly of the United Nations to study this problem[1].

The moment has come for the states to recognize that something has changed in international life and that adaptation of the law to this new situation has become necessary. In spite of this urgent necessity to renounce part of the sovereignty of the states in favor of the Community of Nations, we ask ourselves whether or not in the space the same things would occur which we observe in the law of the seas, in the sense of restrictions imposed by the riparian countries on the liberty of passage [2].

Therefore only the United Nations are authorized to establish a regulation of space navigation in which three zones would have to be distinguished.

1. The air space, the precise limit of which has to be established by intemational agreement, within the frame of the United Nations. Any solution suggested, as to the problem of delimitation, will be of no value if not recognized by the states.

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[1] Cf. FRANZ MATSCH'S report to the 13th General Assembly of the United Nations (A/4009, Nov. 1958).

[2] Law as a rule of life must consequently fol1ow life in its evolution [42]. Any system of law must continue to develop as the circumstances of society change [43].

2. A contiguous space, the lower of which is the one to be established for the air space, while its upper limit should be at a distance of 36,000 kilometers, where satellites of relative immobility might be placed (on the Equator).

In this zone transit will be free for all non-military aëronefs, while the stationing of satellites of relative immobility will not be permitted.

3. The free space where all beings will be free to navigate, including intelligent beings different from mankind, provided that an agreement had been reached with them. The rule of this zone, in so far as there are no relations with beings of other planets, will have to be established within the frame of the UNO, which will be compentent to fix the juridical statute of the celestial bodies, of the aëronefs, and the space stations. It will be able to establish corridors to order navigation, to authorize the launching of satellites cte., in short, to take care of everything concerning navigation in the space and the activities of man in the extra-atmospheric space.

It has already become necessary to state the fundamental principles governing this regulation. The details will be established in proportion as the problems arise.

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