

1963

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### Recommended Citation

John Cobb Cooper, *Aerospace Law - Subject Matter and Terminology*, 29 J. AIR L. & COM. 89 (1963)  
<https://scholar.smu.edu/jalc/vol29/iss2/2>

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## AEROSPACE LAW — SUBJECT MATTER AND TERMINOLOGY

BY JOHN COBB COOPER†

AS THE terms *Air Law* and *Space Law* are now used, they represent nothing more than phases of the law directly and indirectly applicable to man-made flight. To avoid existing and future confusion, both should be included in a single branch of the law. This might be termed *Aerospace Law*.

*Aerospace* was defined in a glossary published in 1959 by the Research Studies Institute at Maxwell Air Force Base as follows: "The earth's envelope of air and the space above it, the two considered as a single realm for activity in the flight of air vehicles and in the launching, guidance, and control of ballistic missiles, earth satellites, dirigible space vehicles, and the like." The terms *aerospace engineering* and *aerospace sciences* are now widely used to indicate the indivisible and inclusive character of engineering and scientific actions and functions related to flight at any altitude. The term *aerospace power* was also used in the same glossary as representing the "power of man, derived from his ability to fly vehicles in the air and in space." The official journal of the Air Force Association, *Air Force and Space Digest*, is designated by its publishers as *The Magazine of Aerospace Power*.

The proposal that a single branch of the law should include all rules and regulations applicable to flight, is not new. My own views were expressed in a memorandum prepared for the opening of The Institute of International Air Law at McGill University in 1951, several years prior to the launching of Sputnik 1. These views were repeated and expanded in an article entitled "Air Law—a Field of International Thinking," published in 1951, in *Transport and Communications Review* (Vol. IV No. 4 p. 1), issued by the Transport and Communications Division, Department of Economic Affairs, United Nations. I then urged that the term *Air Law* be used in a broadened sense.

Discussing Article 1 of the Chicago Convention of 1944 and its recognition that "every State has complete and exclusive sovereignty over the airspace above its territory," I said:

Each State has, under this rule, exclusive sovereignty over whatever area above the surface of the State may, under any given circumstances, be included in the term *airspace*. But no international decision has yet been made as to the legal status of those areas of space above this *airspace* even though such areas are today usable for such flight instrumentalities as rockets or guided missiles. International legal thinking must solve the resulting difficulties.

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After asserting that "it seems obvious that we must agree that there is an upper boundary in space to the territory of subjacent States," the statement continued:

The entire question as to the proper construction of Article 1 of the Convention is still open. If and when agreement is reached, the rules to be applied in both the areas where gaseous air is present and in the areas beyond should be included in a single branch of the law. This, for convenience, we can still designate as *Air Law*. Its rules will include provisions as to the right of each State to control space up to the agreed altitude as well as the rights of all States in the outer space beyond. The law cannot ignore any form of human activity, particularly if such activity affects the relations between nation-states as well as between individuals. If Air Law is to present an adequate, complete and well-rounded body of rules for the government of all forms of human activity relating to what may properly be termed *flight*, then the rules of Air Law should include regulatory provisions applicable to every form of instrumentality which produces man-made or man-controlled flight through space above and beyond the surface of the earth. If this broad view of the scope of Air Law be not accepted, arbitrary and illogical distinctions must be made between various types of flight instrumentalities with resulting practical and legal confusion.

I then urged that the terms *flight*, *flight-space* and *flight instrumentality* should be used where the terms *air navigation*, *airspace* and *aircraft* were customarily used, suggesting the following two basic definitions:

Flight includes any movement through space of man-operated or man-controlled devices or instrumentalities (to be known as *flight instrumentalities*) such as balloons, dirigibles, airplanes, rockets, guided missiles, or space ships.

Flight-space means so much of universal space above and beyond the surface of the earth as is now used or may hereafter be used as the area in which flight takes place.

It would appear that the present widely used term *aerospace* is practically identical in meaning with the term *flight-space* suggested in 1951. But the possible suggested broad use of the term *Air Law* to cover all flight and related activities was not widely accepted. Instead most writers still use the term *Air Law* in the narrow sense as the equivalent of aeronautical law. *Aeronautics* has been defined as the "art, science, or business of designing, manufacturing and operating vehicles that move through the air." In this sense McNair said in opening the first edition of his *Law of the Air* in 1932; "The aim of this book is to state the aeronautical law of England."

Since orbital flight became a fact, the new term *Space Law* has been widely used, but without exact analysis or definition. One thing is, however, very clear—if *Air Law* and *Space Law* are to be treated as separate branches of the law, overlapping will certainly result, even dangerous contradiction. Confusion already exists. In the mushrooming literature of official and academic statements, conferences, addresses and learned papers, it is quite impossible to determine the exact extent of *Space Law* subject matter. At times it seems limited to those rules geographically applicable in areas of usable space beyond the airspace—admittedly an uncertain boundary. At other times the term *Space Law* seems to include any regulation of those flight instrumentalities capable of outer space flight, wherever they are, even while in the airspace or on the ground.

This is not a healthy situation. The rules of law should be clear and their application unquestioned.

Some of the difficulties which must arise in treating space law as a subject apart from air law, are illustrated in the recently published *Draft Code of Rules on the Exploration and Uses of Outer Space*, prepared by a Study Group of the David Davies Memorial Institute of International Studies, London. The Chairman of the Study Group was Professor R. Y. Jennings, Whewell Professor of International Law at Cambridge, and the reporter was Mr. J. E. S. Fawcett, Fellow of All Souls College, Oxford. The Group included many other highly qualified experts. The publication is perhaps the best and most useful which has thus far appeared dealing with the assigned subject matter. The introduction states that the Study Group "concluded that this is a good time to publish a document bringing together what appear to be the basic principles of the developing space law." An examination of the resulting rules discloses, however, that the able authors found it necessary to include rules which are certainly within the historic and logical province of air law, even in its limited sense of aeronautical law. For example, the draft code includes a definition of *aircraft*. Also it proposes the following: "Air Space means the volume of space between the surface of the earth at sea level and an altitude of 80,000 meters above it." This definition is in substance an addition to or modification of Article 1 of the Chicago Convention of 1944. The altitude of the absolute and unilateral sovereign rights of the subjacent State in the air space is an integral part of one of the primary rules of any complete statement of air law subject matter.

Also particularly noteworthy is paragraph 2.4 of the *David Davies Memorial Institute Proposed Rules*, reading as follows: "No State or international body shall put the airspace, outer space or the celestial bodies, to uses which cause, or are likely to cause, modifications of the environment of mankind unless the prior agreement of the appropriate international body has been obtained that such modifications are acceptable." Clearly this rule would be applicable to aircraft in the airspace if the use came within the prohibited categories. Paragraph 4.1 seems also designed, at least in part, to state new rules applicable to the use of airspace, perhaps requiring a modification of the Chicago Convention of 1944 to become effective. The suggested rule is as follows:

No spacecraft launched from the territory of any State may at any state of its flight enter the airspace of another State without the consent of that State: provided that

- a. such consent shall not be withheld if prior notice has been given to that State of the intended flight, and it has been shown to its satisfaction that the flight is solely for scientific and peaceful purposes and shall be so controlled as to obviate danger to aircraft;
- b. any craft capable of operating both as a spacecraft and as an aircraft shall for the purpose of its use of the airspace be deemed to be an aircraft;
- c. a manned spacecraft may enter the airspace without prior consent for the purpose of making an emergency landing, but shall be subject to the provisions of Section b.

Paragraph 6.1 deals with liability, stating:

The State or States or international body responsible for the launching of a spacecraft shall be liable for any breach of this Draft Code in which it may

- be involved, for any injury or loss caused by the spacecraft, or any part of it
- a. by physical impact, contamination, or otherwise, to any person or property whatsoever outside the territory of the State responsible for the flight of the spacecraft;
  - b. as a result of collision or navigational interference, to any aircraft,
    1. in the airspace of another State; or
    2. of a nationality other than that of the spacecraft, without proof of negligence in the operation of the spacecraft being required.

The rules thus proposed appear to be applicable in outer space, and also under certain circumstances, in the airspace and on the surface of the earth. These rules would require the modification of present aeronautical rules, or the adoption of new rules applicable on the earth and in the airspace, and would affect flight instrumentalities other than spacecraft.

Careful examination of the entire group of rules as proposed by the Study Group headed by Professor Jennings shows clearly that it is not possible to consider *Space Law* except as a part of a wide general branch of the law dealing with flight and flight instrumentalities of all kinds. Any more narrow approach must lead to incomplete and inaccurate results, or to contradiction with existing rules applicable to airspace flight.

Much more important than any academic or theoretical efforts are the separate and apparently uncoordinated programs of the International Civil Aviation Organization (ICAO) and the United Nations (through its Committee on the Peaceful Uses of Outer Space). A brief statement of the present situation would appear to be useful. ICAO was created by the Chicago Convention on International Civil Aviation of 1944, referred to above. The convention repeatedly uses the terms *airspace* and *aircraft*. ICAO has the power under the convention to adopt international standards and procedures dealing with matters concerned with the safety, regularity and efficiency of air navigation. Pursuant to this authority it has, in an annex to the convention, defined *aircraft* as "any machine which can derive support in the atmosphere from reactions of the air." This is substantially the same definition adopted over forty years ago in an annex to the Paris Convention of 1919. ICAO has also the power to adopt *rules of the air*. Article 12 of the convention specifically provides that each contracting State undertakes to keep its own regulation in these respects uniform to the greatest possible extent with those established under the convention, and that over the high seas the rules enforced shall be those established under the convention. Thus far ICAO does not appear to have taken any action recognizing the use of the airspace by flight instrumentalities other than *aircraft*. Nor has it directly or indirectly sought to determine or state the extent of the area above the surface of the earth in which its *rules of the air* may be deemed valid.

ICAO has, however, through its Legal Committee sponsored various international conventions including the Rome Convention on liability for damage caused by aircraft to third persons and property on the surface of the earth. It is also engaged in drafting a convention dealing with collisions between aircraft. Assuming the continued use of the forty year-old definition of aircraft, it would appear that neither the ICAO rules of the air, nor the Rome Convention on liability for surface damage, nor the draft convention on collisions can be construed to cover activities related to flight instrumentalities designed primarily for flight above and

beyond the airspace, even though such instrumentalities may pass through the airspace when ascending to or descending from outer space.

Man-made flight is a unique phenomenon, involving a very particular form of human activity. Types of flight instrumentalities may differ. Strata of space in use may vary. But the identity of the basic human effort remains constant. It is obvious that the aggregate of the legal rules applicable to flight should cover all of its phases, but, at the same time should represent, where practical, a single solution for each separable problem. This desirable result may not follow the present separate efforts of ICAO to develop *Air Law* and those of the United Nations as to *Space Law*. ICAO seems concerned solely with the regulation of the flight of *aircraft* and the United Nations with *spacecraft*. Grave danger exists that unrelated, or even contradictory, rules may result. The present situation is confused.

In December 1961 the General Assembly of the United Nations adopted the much discussed Resolution 1721 (XVI) in which it commended to States for their guidance in the exploration and use of outer space the principles that international law, including the U. N. Charter, applies to outer space and celestial bodies and that outer space and celestial bodies are free for exploration and use by all States in conformity with international law and are not subject to national appropriation. The resolution then invited the Committee on the Peaceful Uses of Outer Space, "to study and report on the legal problems which may arise from the exploration and use of outer space."

When the Legal Sub-Committee of the United Nations Committee met in 1962, regulatory proposals were put before it by the U.S.S.R. and by the U.S.A. dealing with the rescue and return of astronauts and spacecraft in case of accidental or emergency landings. Also the U.S.A. made a proposal on liability for damage or loss caused by spacecraft. No final recommendations were made by the Legal Sub-Committee, nor by the main committee. At the 1962 meeting of the General Assembly all of these proposals were referred back to the Committee on Peaceful Uses of Outer Space for further consideration.

It is noteworthy that both the U.S.S.R. and the U.S.A. proposals as to assistance to astronauts and the return of space vehicles and personnel in case of accidental or emergency landing dealt solely with occurrences taking place on the earth's surface and with actions which should follow. The U.S.A. proposal as to liability dealt with injury or damage caused by a space vehicle "on land, on the sea, or in the air." No proposal was made as to what rule of liability should be adopted in case of collisions between space vehicles in outer space. So far as the records disclose, ICAO took no part in the formulation of these proposals nor was it represented by an observer at the United Nations Committee meetings. The apparent difficulty is that the U.S.S.R. is not a member of ICAO. Any views which ICAO might have as to space flight would not be binding upon the U.S.S.R. Obviously at this stage in the political-legal formulation of flight rules the agreement of the U.S.S.R. is necessary if they are to become effective, because only the U.S.S.R. and the U.S.A. are actively involved in flight in outer space. But it does seem unfortunate, that the proposals made in the United Nations Committee regarding accidental landing of space vehicles seem to have taken no direct account of Articles 25 and 26

of the Chicago Convention dealing with aircraft in distress and with the investigation of accidents. If the proposals before the United Nations should mature into an international agreement, then problems will arise as to whether such new agreement, or the Chicago Convention provisions, will apply, dependent only on the type of flight instrumentalities involved. These problems would be particularly difficult if such flight instrumentality could be used in the airspace and also in outer space.

The proposals as to liability placed before the United Nations Committee covered in part the same subject matter as the Rome Convention dealing with damage to third parties or property on the surface of the earth and in part the subject matter of collisions between flight instrumentalities. These proposals do not seem to have been correlated with the Rome Convention nor the ICAO Draft Convention on collisions. We are thus faced with the possibility of varying, or even contradictory sets of rules depending for their application on a factual determination of the type of flight instrumentalities in use. It is apparent that the United Nations approach to *Space Law* is that it should be the aggregate of the rules applicable to flight instrumentalities capable of outer space flight, wherever they are. But no definition of outer space has been offered.

As I have long argued, a single branch of the law must eventually be accepted to govern all man-made flight, and the rules finally adopted should be as uniform as can be found practical. This branch of the law, as suggested in the opening of this article, might be termed *Aerospace Law*. Its subject matter might be thus stated:

Aerospace Law comprises the body of legal principles and rules, from time to time effective, which govern and regulate:

First:

- (a) Aerospace, being the earth's envelope of air and the space above it, the two considered as a single realm for activity in the flight of air vehicles and in the launching, guidance, and control of ballistic missiles, earth satellites, dirigible space vehicles, and the like;
- (b) Its relationship to land and water areas on the surface of the earth;
- (c) The extent and character of the rights of individuals and States to use or control such space, or parts thereof, or celestial bodies therein, for flight or other purposes;

Second:

- (a) Flight;
- (b) The instrumentalities with which flight is effected, including their nationality, ownership, use or control;
- (c) The surface facilities used in connexion with flight, such as airports, other launching or landing areas, navigation facilities and airways;

Third:

- (a) The relationships of every kind affecting or between individuals, communities or States arising from the existence or use of the area of flight (aerospace), or the instrumentalities or facilities used in connexion therewith or to make flight effective.

Careful consideration will demonstrate that this definition includes within its terms those parts of *Aerospace Law* which might fall within such arbitrary classification as public or private law, also municipal, state or international law. A single definition is deemed preferable. But the major objective must never be lost sight of—the necessity of accepting a single branch of the law to cover all phases of man-made flight.