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CZECHOSLOVAK DISCUSSION ON ASTRONAUTICS AND  
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CZECHOSLOVAK DISCUSSION ON ASTRONAUTICS AND INTERNATIONAL LAW

[Following is the translation of an article by Vladimir Kopal in Veda a Zivot, (Science and Life), No 2, Prague, February 1961, pages 83-88.]

If we organized a poll of opinion, not only among scientists but also among, say, the readers of this magazine on the topic: which far-reaching discoveries of science and technology characterize our time most emphatically, most people would no doubt answer without long hesitation as follows: nuclear fission, the replacement of human thinking by machines, and the rockets' capacity to overcome earth gravitation. The importance of these discoveries isn't only based on their founding new trends of scientific research, but above all on their immense impact on social life, at home and internationally. This fact could be documented in detail for all three discoveries, but today we shall only deal with the third and last.

Only about three years ago astronautics transgressed the boundaries of theoretical research and entered the field of practical use by the launching of the first Soviet satellite. Since then many rockets and living beings have been sent into space. The time when a human being will be sent out is approaching. Even today many scientific disciplines share in the further development of astronautics. Not only new scientific disciplines, but also old ones, existing tens or hundreds of years, which have to more or less widened their capacity in order to deal with astronautics or sometimes revise their hypotheses on account of new discoveries made by astronautics. This is the case not only in the natural and technical, but also in social sciences. Rocket technology and astronautics have become important factors of social development, as is so far best apparent from international relations where they become involved in the most important problems and their settlement. On the other hand, astronautics passes in its development through stages

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of social conditions which influence its future orientation. At present, astronautics is carried out by the Soviet Union and the United States, the leading powers of two groups of countries diametrically opposed to each other by their types of society. The Soviet Union's astronautical program, as that of the leading power of socialism, has a clearly peaceful character -- it aims at the penetration of space in the interest of all mankind. By its successes the Soviet Union does not threaten the existence and integrity of other countries and does not derive from it special, selfish claims. Whereas, on the other hand, astronautics in the United States, the leading imperialist power, has been from the outset the target of speculation of aggressive circles who think that by dominating space, the US could seize that "control" of earth which they have been unable to obtain by economic pressure and a past monopoly of atomic arms.

The decisive part of the American program of satellite launching pursues spying. They are to replace the thus far used intelligence planes whose use has become impossible since the failed U-2 flight in May 1960. Various American military experts and journalists wrote last year quite frankly about that mission which is to be pursued by the satellites "Samos" and "Midas."

According to American plans, in 1962 the Samos satellite constellations are to be launched on a cross-polar orbit. They would also fly over Socialist countries, take pictures and transmit them in flight to earth at the time of flying over the US. The aim of "midas" satellites whose launching is planned for this year would be seizing control of Soviet satellites launched from bases discovered by the "Samos" satellites. The well-known "Discoverer," serves primarily for belligerent purposes, aimed at recovery of containers from orbit in order to secure intelligence information therefrom. It is interesting to know -- as was pointed out some time ago by the chief scientific secretary of the USSR Academy of Sciences, Academician E. K. Fjodorov -- that American scientists did not communicate data on the observation of these satellites and that they replied to Soviet questions that these satellites allegedly are not part of the International Geophysical Year program. The danger of such plans which today already are at the stage of experimental preparation and whose materialization is accompanied by the distribution of bases with rockets destined for use against socialist countries, leads these states to look for protection and defense and, if necessary, effective counter measures against all those threats of war.

From this close connection with and influence of the developments on international relations of rockets it is evident under what conditions we approach international legal problems of astronautics to which we want to draw the reader's attention. For among the social sciences affected by the development of astronautics one of the first places belongs to law and above all, international law.

### The Nature of Legal Astronautical Problems

From what we have said it is clear that the nature of legal astronautical problems is in all its complexity considerably different from technical or biological questions and that their solution does not only depend on the researcher's capacities and on the lawyer's skill. Another important circumstance has been added. The objective of every legal settlement is to put order into some activity, to secure conduct and progress according to certain rules which then are to be valid for a certain period. These rules must be such that they do not hinder possibilities of further development; regulation is only to prevent dangerous deviations. Such must also be the objective of legal settlements in astronautics. Can we say, however, that sufficiently broad and firm scientific knowledge has been obtained to channel it into clear legal avenues? We think that hardly any scientist dealing in his field with astronautical problems could say this quite unreservedly.

We also have to reach this conclusion on the basis of the study of legal treatises which have been published in great numbers over the last years, as well as the opinions voiced at many international and national legal conferences devoted to the fundamentals of astronautical or, as said sometimes, "cosmic" law.

Some lawyers from capitalist countries have already worked out detailed drafts of international treaties concerning the legal regime in cosmic space. They tried to solve all contemporary main astronautical problems, among which is usually mentioned: the definition of the term cosmic space, the right of launching rockets with crews or with apparatus into space, the status of cosmic space and of cosmic vehicles, the status of reached cosmic bodies. Further on there are various questions of a technical nature, such as the elimination of damage caused by astronautics, the identification and registration of launched cosmic vehicles, etc. Finally, here belongs also the wide problem of national activities in launching rockets, observing them and use of obtained data, involving also the founding of competent agencies or organizations, independently or controlled by the government.

Although scores of such studies have been published, and though on some points opinions seem to converge, one cannot overlook how the outlook of some authors has developed in a comparatively short time and often has changed considerably. This is quite natural and we do not want to claim that it lowers the authors' ability to deal with such problems. But it confirms that a premature legal settlement could be out of date within a short time and thus become an obstacle.

We shall illustrate these conclusions with three important questions which often interest the general public.

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National Sovereignty and Cosmic Space.

Let us begin by defining the term cosmic space and by setting an upper boundary of state territorial sovereignty. Until recently this problem never occurred in practice in international law; it only solved questions of the legal status of space in which aeronautics have been developed for more than half a century. This was solved on the basis of state sovereignty over the particular part of air-space above its territory, including the territorial waters. This principle was incorporated into international treaties on civil aviation (particularly those of Paris, 1919 and Chicago, 1944), as well as into states' legislation. The principle of sovereignty in the corresponding part of air-space offers to each country the right of complete control of all flights in that space. This means practically that those countries have the exclusive right to control all air-channels as they wish, to prohibit access by foreign planes of any kind and to use measures against violation of their sovereignty. The flight through another country's space and landing on its territory are, therefore, possible only with that country's consent -- whether given for a concrete case, or, usually, expressed in aviation treaties.

It is quite obvious that the insistence on territorial sovereignty in cosmic space would be absurd and would hinder the further development of astronautics. There can be no doubt that the cosmic space regime must issue from different principles than that of aerial space and that it will be necessary to coordinate both regimes in space. The question is now where the boundaries ought to be legally established and what criteria to use to that end. Many such criteria have been put forward and there is no agreement on their interpretation. A considerable number of experts identify the term air-space with the atmosphere surrounding earth, according to Air Law. Such an interpretation was accepted for instance, at the 48th Conference of the Committee on international Law in the fall of 1958 in New York. Other authors believe that the natural boundary between state sovereignty and cosmic space, which would not be subject to that sovereignty, should conform to the extent of earth gravitation. Against such criteria of natural or physical character some other authors rather have recourse to technical ones, e.g. effective control -- a rather flexible boundary. The foremost American expert of Air Law, Prof J. Cobb Cooper who has devoted considerable attention to these problems in his writings, suggested at the Third Symposium on Astronautical Law, organized at the International Astronautical Congress in Stockholm, August 1960, a definition of cosmic space, according to which its upper boundary represents the inner boundary of the solar system and whose lower or interior one forms the lowest altitude on the surface of the earth from which a satellite can be launched into orbit.

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To judge this question according to already mentioned criteria means to consider it detached from the reality of today's international relations. That reality, however, requires the unconditional observance of security. It is for that reason that nations insist on their full sovereignty over air space, not because it is filled with air or earth gravitation. Justified fear that space above national territory could be used against its security, independence, integrity and prosperity is a serious reason which ought to be borne in mind when facing the whole question. If we think, however, of how to safeguard a country's security, we have to come to the conclusion that a mere drawing of a horizontal borderline between aerial and cosmic space will not suffice. This would only lead countries to try to extend their sovereignty as far as possible into space, which would again hinder the requirements of astronautical development. This is proved by the proclamation of the US Secretary of State's legal adviser, Lotfus Becker, that for the US "... it would be quite reasonable to claim that according to the Chicago Treaty (on international civil aviation), US sovereignty extends 10,000 miles from the surface of earth ..."

On the other hand, it would be unnecessary to make such far-reaching demands if the purpose of astronautics was subordinated to security, i.e., if it were possible to develop only such kinds of activity in cosmic space as cannot damage or menace countries. It is quite clear that the launching of a satellite for the exploration of cosmic radiation or the effects of pressure on living beings, does not aim against any other country. On the other hand, attempts to ascertain the distribution of defense installations or industrial centers clearly aim at the collection of data required by an aggressor preparing to attack the country against which he spies. Such activity pursues aims outlawed by international law in force now, undertaken by means of whatever kind, i.e., artificial satellites.

A Cosmic Space Statute

We can see that the solution of the question of cosmic space boundaries is impossible without being accompanied by the drawing up of a statute. This brings us to the next important problem which we want to focus upon today. For astronautical development it would be best if cosmic space remained in the future freely accessible under equal conditions for peaceful exploration and use by all countries. Like the open seas, cosmic space ought to be ruled by the principle of free navigation. However, we certainly are well aware of the fact that rocket technology does not serve today exclusively as a means of launching satellites and other cosmic vehicles, just as fission material is not used by any means only for peaceful purposes. We know that in conjunction with nuclear

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warheads, rockets are a very effective arm. They embody the progress made by technology in armaments since the world war II, developing means known already at its close.

The interests of mankind would, therefore, demand that cosmic space never becomes the accessory of war rockets, that its access be limited to rockets of peaceful purposes. Such an end could be achieved by the conclusion of a treaty which would prohibit military activity in cosmic space as well as the establishment there of objects of warlike character. Such a treaty would also eliminate the cosmic space as a battleground, as far as it could be used directly for clashes or for shots directed at other countries. In other words, cosmic space would thus be completely demilitarized and would remain neutral territory in the event of a conflict.

Perhaps some readers will remember the suggestion made to the Soviet government by the then President Eisenhower in 1958, "... that cosmic space be not used for experiments with missiles used for purposes of war." It seemed, therefore, that a solution was at hand and that nothing was simpler than to conclude such a treaty. But would such a treaty on prohibition of experiments with directed missiles in cosmic space bring what nations expect? Would it eliminate threats of war and possibilities of mass annihilation? Would it safeguard the coexistence in peace of all countries without regard to their social systems?

Let us remember that the US government made these suggestions when the Soviet Union showed considerable success in the development of rocket technology, whereas the US had numerous failures, and when it thus became evident that the USSR had a considerable head start in rocketry. We shall immediately see why the government which simultaneously foiled the slightest progress in disarmament negotiations and refused to consent to outlawing nuclear experiments was ready to accede to such a partial measure. It is clear that the aim of such a suggestion was in reality an attempt to change a situation unfavorable to American armaments. The US refused to eliminate its bases abroad in countries surrounding the socialist countries, from where it would be possible to direct nuclear missiles in the usual manner.

It is, therefore, obvious that the question of demilitarization and neutralization of cosmic space (which, by the way, was not even fully mentioned in the above American proposal) has to be considered as an inseparable part of the entire disarmament problem. And the latter can be solved in our time only by common and complete disarmament, involving within the complex of measures also the complete prohibition of nuclear weapons and of all their carriers. Its realization would not only eliminate the danger of military use of astronomical objects and data and free means for the support of its further development, but would also considerably facilitate the solution of such problems as the setting of boundaries and establishing a statute for cosmic space. For the criterion of a country's

security, which is of primary importance in these questions, is the result of the state of relations between countries and that not only at a specific time of history but also in a given situation. The latter is quite different at times of feverish armament on the one hand and complete disarmament on the other.

#### To Whom does Cosmic Space belong?

We shall touch upon the third problem only lightly, though many opinions and ideas have been voiced on it. It is a question which is simplest but by the words: To whom will cosmic space and the acquired cosmic bodies belong? This question, too, has been answered by lawyers of various countries, at different times, and from various points of view. Many Western experts who expected that not the Soviet Union but the United States would be first to penetrate outer space first considered this question by means of the old theories of taking possession of territory belonging to nobody (res nullus). These rules were used by advanced capitalist countries at the time of their seizing overseas territories and the founding of colonial empires. The simple discovery of a territory was first considered a recognized and sufficient claim for such occupation. But during numerous quarrels between aggressors the most powerful among them began to coin a new requirement of so-called effective occupation, requiring the real occupation of the country taken, and also the capacity to maintain it. This theory was fully applied by imperialist countries, particularly during the second half of the 19th century, when the colonization of the world came to a climax and acute conflicts between old colonial powers and new pretenders who were still dissatisfied arose.

Significantly, some American lawyers still use these theories today. They also try thus to weaken Soviet successes in outer space, particularly the fact that the Soviet Lunik first reached the moon and secured data for the mapping of its reverse side. At the same time, they do not want to give up the idea of obtaining "control" of cosmic space and the possibility of their exclusive rights, hoping that the US will succeed in catching up or even overtaking the Soviet Union. The demand to use "the rules and precedents referring to obtaining sovereignty over res nullus" for the case of cosmic space, was, among others, also used by the already quoted American expert, L. Becker.

Another section of the bourgeois world very decisively advocates the "internationalization" of cosmic space, which would eliminate claims of individual states. They are, however, not quite consistent, as proved, for instance, the deputy director of the UN legal section, Oscar Schächter, who proposed that these regions be "considered as though they belonged to all mankind and no nation had any greater rights to any part than it now has the right to claim parts of the open seas ..." by which, allegedly, the whole

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idea of national sovereignty beyond Earth would be eliminated. However, Schachter simultaneously admitted the possibility of ownership of the moon's mineral resources by the country which discovered them and showed intentions of exploiting them. The principle of freedom was said to be combined with the principle of common interest, requiring "disciplined exploitation of all resources which were found."

The Soviet expert, Corresponding Member of the Soviet Academy of Sciences, E. A. Korovin, who is also chairman of a group dealing with legal astronomical problems at the State and Law Institute of the Academy of Sciences, pointed to the correct solution of this problem. From two possible conceptions, that cosmic space will not belong to anybody or that it will be everybody's in common, Korovin spoke up for the latter, provided other countries acceded. The forms and methods of common use of cosmic space, however, can only be adopted by an agreement of all "users," i.e. an international treaty of all states interested in penetrating cosmic space and to exploit it.

That such a solution is possible and an agreement on such difficult questions is feasible has been proved by the Antarctic Treaty, concluded on 1 December 1959 by twelve countries sharing in the exploration of that continent. The treaty left completely aside the question of rights and claims of countries to territorial sovereignty (raised by eight capitalist countries), without confirming or violating it. On the other hand, it confirmed the liberty of scientific exploration and peaceful activity in the Antarctic and also the demilitarization of that land. The Antarctic precedent is thus an important example for the future solution of the question of a cosmic space statute and that of acquired cosmic bodies.

Dealing with influences of international relations on astronautics we often encounter the contention that the very existence of sovereign countries, or even more clearly, the existence of two different social systems, are impeding its development and that astronautics would require the world's integration into a single community.

It is true that astronautics would develop much faster but for those profound social divergencies which are a left-over from the time when space-flight of humans appeared a mere utopia. These divergencies cannot be eliminated at once and we have to count with them at present. It is a fact that people penetrate into space during coexistence of socialism and capitalism, that astronautics is and will be considerably influenced by that state of things. But it is possible and necessary under those conditions to strive for astronautics not being abused to mankind's detriment, for its annihilation and destruction.

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As in other sectors of relations between countries of different social systems it is also possible to develop international cooperation in the field of astronautics, without which it could hardly be practically exploited. Scientists from various countries have advocated it at various international meetings, among them also top representatives of Soviet and American astronautics. At the same time, it must be borne in mind that the development of rocketry and astronautics -- if fully and profitably used -- will trigger powerful further development of forces of production, creating the conditions for the culmination of revolutionary changes within productive relations, and thus another step forward in international relations.

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