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SPACE LAW—IS THERE ANY?

SEYMOUR W. WURFEL*

TRIGGERED BY SPUTNIK

The Russians, in their usual blunt fashion, brought to our attention, on October 4, 1957, the importance of "space," by placing in orbit Sputnik I, earth's first man-made satellite. In spite of the long-continued best efforts of Buck Rogers and other worthy comic strip characters, adult Americans, until then, just didn't seem to feel that space, rockets, and satellites had any place in their lives except as cardboard or plastic hazards to be avoided in consuming their favorite breakfast food. True, Walt Kelly, the master of whimsy, was prompt to help usher in the Geophysical Year by publishing a special Pogo book entitled, *G.O. Fizzickle Pogo*.¹ Yet, pre-Sputnik, there was no great general stir within the bench and bar of the United States to push forward the frontiers of space law. Most law schools were still debating the wisdom of offering courses in air law, let alone teaching space law. Traditional legal conservatism had evaluated space, if at all, as definitely not the stuff of which either jurisprudence or law suits are made, or so it seemed.

THE FACTS

The immediate post-Sputnik scramble in all fields of endeavor, not to "miss the rocket" and even to precede it into space, as evidenced by the daily press, was at times frenetic. This jittery reaction, which has only partly subsided, tends to obscure some solid space achievements and pronouncements.

Much-needed equilibrium may be restored by a moment's pause to reflect that there is really nothing new under the sun. Olympian Zeus by means of thunderbolts, or without them, intervened from the skies in the mortal affairs of the ancient Greeks. Indian mythology of over two thousand years ago recorded in Sanskrit and paintings the valorous deeds of King Rama who, according to the Ramayana, flew through the air with his cohorts to slay the attackers of his people. Later, the book of Revelations in the New Testament records the flight of angels. Still later the western world was regaled with the exploits of "Darius Green and His Flying Machine." Disregarding eighteenth and nineteenth

* Co-Author, with William Brantley Aycock, of *MILITARY LAW UNDER THE UNIFORM CODE OF MILITARY JUSTICE* (1955). The author assumes sole personal responsibility for the views here expressed.

¹ KELLY, G.O. *FIZZICKLE POGO* (1958).

century balloon ascensions, flight moved from myth to fact in the year 1900 when Count von Zeppelin achieved it in an airship. This was followed in 1903 by the Wright brothers' heavier-than-air "first" at Kitty Hawk, North Carolina.

It daily grows more certain that the space rocket, like the horse, the automobile, and the airplane before it, has come to stay. Vanguard II, that peripatetic weather forecaster, may orbit indefinitely around the earth. Both the Soviet one-and-one-half ton Mechta and the American thirteen-pound Pioneer IV have traveled beyond the gravitational pull of the earth and are said to be in permanent orbit around the sun. No less a rocket authority than Dr. Wernher von Braun, Technical Director of the Development Operations Division, Ballistic Missile Agency at Redstone Arsenal, Huntsville, Alabama, has predicted that within ten to fifteen years a manned space expedition will land on the planet Mars and return.² Rocketman Willy Ley agrees and is quoted as saying, "within ten or twenty years, space flight will be an almost every day occurrence."³ Less restrained pronouncements emanating from Soviet Premier Nikita Khrushchev hint at earlier achievement of this objective. Rueful western world predictions are heard that it is only a matter of months before Russia will place human beings in orbit.

Dr. T. Keith Glennan, director of the National Aeronautics and Space Administration, forecasts that as part of a two billion dollar program it will develop enormous rockets weighing as much as 2250 tons and powered by a total thrust of 7,600,000 pounds. Dr. Hugh L. Dryden, deputy administrator of the same agency, stated in an address to the Western Space Age Conference in Los Angeles that man may create artificial "inhabited spheres far out in space orbiting around the sun rather than the earth or moon." Roy W. Johnson, head of the Department of Defense, Advanced Research Project Agency, reported to a Senate space subcommittee that a million dollars is going into a project to fly a one thousand ton manned platform through space by A-bomb nuclear power.⁴ While ultimate rocket capabilities are not yet determined, it is factual to say that rocket flights will extend far into outer space, will achieve planetary atmosphere re-entry without self-destruction, and may be used to establish "space stations" from which earthlings may undertake interstellar travel.

Man's recurrent difficulty in adapting himself to the machines which he creates appears in rocketry. However, the widely held scientific belief that space flights will quickly progress from pilotless robots to

² Lecture at Rollins College, February 3, 1959. The trip each way would require sixteen months.

³ Progress-Bulletin, Pomona, California, February 19, 1959, p. 1.

⁴ *Id.*, March 5, 1959, p. 2; *Astronautics*, April 1959; *Time*, April 6, 1959, p. 22.

manned expeditions is by no means idle speculation. The Air Force School of Aviation Medicine at Randolph Air Force Base, San Antonio, Texas, has completed ten years of study and research to determine, and further, man's ability to engage in high altitude flight and space travel. During all of this time it has maintained a Department of Space Medicine. The tempo of this work has quickened and its extent broadened. Typical are the experiments in weightlessness at Randolph Field conducted by the Air Force, in pilot vertigo at Tulane University conducted by psychologist Dr. Cecil W. Mann, in survival in rarified atmosphere atop Mt. Evans in Colorado carried on by physiologist Dr. Bruno Balke, and in frozen sleep at the University of California at Los Angeles undertaken by biotechnician Dr. John Lyman.⁵ The latter technique is expected to induce suspended animation, without aging, at as low as 100 degrees below Fahrenheit zero, for as long as several normal lifetimes. This would make biologically possible, trips through interstellar space to other solar systems. (It has not yet been suggested that a modification of this process might ease the pangs of the three-year student passage through law school.)

Press releases state the National Aeronautics and Space Administration has, from a group of 110 men, selected seven for intensive preparation to pilot mushroom-shaped satellite space capsules. These capsules have undergone intensive practical testing with promising results. This is known as "Project Mercury." It appears likely the ubiquitous monkey may be by-passed in this phase of space travel evolution, and that safe and reliable manned satellite capsules may be just around the corner.

Obviously the men of science have already presented to the men of law a Pandora's box of space facts with the lid ajar. The man of law is never permitted to say "it is impossible to bring order to these incredibly complicated facts," throw up his hands and walk off. He must unerringly come up with acceptable answers for every situation conjured up by the minds and deeds of men. The predicament is tersely stated by nuclear physicist Dr. James A. Van Allen: "Space is the hole that we are in."⁶

ONE MUST BE WARY OF "OLD" LAW

Long before the space age the legal maxim *Cuius est solum, eius est usque ad caelo et inferos* was firmly imbedded in the common law. At an early date it was held by an English court to be an actionable trespass to shoot over the land of another without his permission, though the only invasion was the harmless flight of a bullet through the air

⁵ *Id.*, February 23, 1959, p. 5; and March 27, 1959, p. 2.

⁶ N.Y. Herald Tribune, quoted in The Reporter, March 19, 1959, p. 4.

space above. Air space intrusions by overhanging buildings, trees, or other substances were prohibited if prescriptive rights had not vested.

The concept that a state has territorial rights above the surface of the earth dates back to Roman law which protected the air space over public highways and sacred grounds and private rights in space above a landowner's surface property. The Roman emperors regulated the height of buildings.⁷

Unfortunately, neither earth-bound Anglo-American common law property concepts nor Roman law air space precepts carry us very far into space. The daily rotation of the earth makes impossible a permanent literal application of the right of user indefinitely upward by an underlying land owner of any given point in air space, or empty space, which is not in some manner securely connected to the earth's surface. Some scientists believe it possible to put a satellite in orbit above the equator at a height of about 22,300 miles and moving in the direction of the rotation of the earth so that it would remain indefinitely above the same surface area. If this is so it would be the exception which would prove the rule. If there are creatures and laws on other planets and in other solar systems, all insisting on exclusive and unlimited application of *usque ad caelo* in this multiple-revolving universe, the impossibility of maintaining such claims is manifest. Actually, over a decade ago the Supreme Court of the United States ruled that private property owners do not have unlimited upward rights in space.⁸

Apart from the foregoing insolvable astronomical difficulties there is the comparatively picayune problem of determining precisely where in space lies the boundary of a surface property line, a coast line, or a national frontier at a height of 20,000 feet, to say nothing of an elevation of 400 miles. Do property rights in space include an area determined by radii from the earth's center piercing it along the surface boundary lines of a given land mass and projected into space? That is, do boundaries in space radiate out like a carefully cut pyramidal plug in a round watermelon, or, even more crudely put in two dimensions, are they like the prolongations of the radial edges of a flat piece of pie? This must be so since running space boundaries of a rectangular parcel of land upward parallel to each other in disregard of the earth's curvature, and repeating this process with contiguous surface rectangles would, at high elevations, leave gaps in space between such boundaries. Where this radial deviation is encountered at 1000 feet over city building lots in a practically stationary helicopter the maxim *de minimus non curat lex*

⁷ From an address by John Cobb Cooper before the Escuela Libre de Derecho, Mexico City, Jan. 5, 1951.

⁸ *United States v. Causby*, 328 U.S. 256 (1946). In this case the Court held that the doctrine of *cuius est solum, eius est usque ad coelum* has no place in the modern world.

expunges the legal problem. When presented in the context of a supersonic-speed jet aircraft 20 miles above a common international land frontier or of an 18,000 mile per hour space ship 400 miles above an unmarked territorial water three mile limit, precise determination becomes impracticable and factual disagreement inevitable. This is so at least in the absence of gigantic magic-eye equipment not yet devised.⁹

Adequate and timely warning has been given of the pitfalls encountered in trying to incorporate into space law, by means of easy analogy, established legal principles developed for the solution of other problems. This caveat has been pronounced by a notable triumvirate consisting of Justice Felix Frankfurter in *Braniff Airways v. Nebraska State Bd.*,¹⁰ Professor Emeritus of International Air Law at McGill University, John Cobb Cooper, in testimony before the House Committee on Astronautics and Space Exploration,¹¹ and Senator Kenneth B. Keating of New York in the American Bar Association Journal.¹² This means there can be no wholesale adoption of property law, either civil or common; nor of air law, either national or international; nor of admiralty law, either of the high seas or territorial waters without discriminating evaluation of the applicability of each established legal principle to a given set of facts in space.

We will not further complicate the selection of legal principles applicable to space by speculating as to the ultimate necessity of harmonizing these with legal systems of other planets or of integrating them into an interstellar law of space. Conventionally it is assumed that the repeated reports of flying saucers and little green men with rhombohedral heads are nothing but modern fantasy. Just suppose this assumption proves to be erroneous!

DEVELOPMENT TOWARD SPACE LAW

Descending, for the moment, from outer space, it is both surprising and comforting to find that here on earth for more than half a century a firm foundation of activity leading toward space law has been developing.

In 1906 Professors Westlake and Fauchille engaged in spirited debate before the Institute of International Law. The former supported

⁹ If any first year law man should find this paragraph difficult to follow, let him take solace in the thought that he is in good company. Radio news broadcasts made on March 5, 1959, reported a congressional committee meeting on that date in which Senator Kenneth B. Keating of New York stated that property boundaries, if projected into space, would overlap; that a fellow committeeman challenged this, saying they would not; and that the committee chairman expressed confusion and declared that no vote should be taken on the matter.

¹⁰ 347 U.S. 590 (1954).

¹¹ *Hearings on H.R. 11881 Before the Select Committee on Astronautics and Space Exploration*, 85th Cong., 2d Sess., p. 1313 (1958).

¹² Keating, *Reaching for the Stars*, 45 A.B.A.J. 54 (1959).

air space sovereignty, the latter contended for complete freedom of flight.¹³ At that time Westlake said:

In the air the higher one ascends, the more damage the fall of objects will cause on the earth. If there exists a limit as to the sovereignty of the state over the oceanic space, none exists for the sovereignty of the state over the airspace. The right of the subjacent state remains the same whatever may be the distance.¹⁴

This esoteric contemplation changed to vociferous French alarm in 1908 and 1909 when a number of balloons manned by German military personnel drifted into French skies from Germany. These events caused France to call an International Air Navigation Conference in Paris in 1910. The United States was not invited because it was felt it would have no interest in this problem from which it was geographically so remote. This conference did not result in agreement upon the rules of flight, but it did produce a draft convention which reached certain agreement in principal. These included consensus that each state had sovereignty in usable air space over its national land and waters and that there was no general right of international transit for aircraft of other states in the absence of international convention.¹⁵

In 1912, Professor George Grafton Wilson concisely summarized air space law in these words:

It would seem that physical safety, military necessity, the enforcement of police, revenue, and sanitary regulations justify the claim that a State has jurisdiction in aerial space above its territory. This position also seems to underlie established domestic law and regulations, the decisions of national courts, the conclusions of international conferences, and the provisions of international conventions.

It would seem wise, therefore, to start from the premise that air above the high seas and territory that is *res nullius* is free, while other air is within the jurisdiction of the subjacent State "and that the exceptions to this rule are such only as by common usage and public policy have been allowed, in order to preserve the peace and harmony of nations and to regulate their intercourse in a manner best suited to their dignity and rights," and for these exceptions to the exclusive right of aerial jurisdiction of the subjacent State, international conferences should by agreement immediately provide.¹⁶

This position had previously been supported in Italy by Anzilotti, who later became a World Court judge; in Germany by Zittlemann; by

¹³ See Cooper, *Legal Problems of Upper Space*, PROCEEDINGS OF THE AMERICAN SOCIETY OF INTERNATIONAL LAW 85-93 (1956).

¹⁴ *Hearings on H.R. 11881*, *supra* note 11, at 1328.

¹⁵ *Id.* at 1332.

¹⁶ INTERNATIONAL LAW SITUATIONS 71-72 (1956).

the Netherlands national Lycklama a Nijeholt in her treatise on "Air Sovereignty," published in 1910; and by Professor Harold D. Hazeltine in a series of three lectures on "The Law of the Air" delivered in the law school of the University of London in December 1910.¹⁷

Immediately following the failure of the Paris Conference the principle European states by national legislation asserted their right to control flight over their territory. By agreement in 1913, France and Germany limited flight across their common boundary and established restrictive zones in which no flight was permitted. In the German Declaration of War in 1914 the violation of German and Belgian air space by French military aircraft was given as a provocative reason. During that war neutral states prohibited belligerent aircraft from flying over their territories and actively enforced these prohibitions. On February 18, 1918, President Wilson issued a proclamation prohibiting flight, except pursuant to license issued by an Army and Navy joint board, if it was to pass over or near military installations or "any place or region within the jurisdiction or occupation of the United States which may be designated by the President as a zone or warlike operations or . . . preparations."

The considerable expansion of flight activities during World War I created opinion at the Paris Peace Conference that the regulation of future international flight by international convention was necessary.¹⁸ At the Peace Conference an aeronautics commission was formed and directed to prepare a convention to regulate air navigation. An American Army officer and Navy officer were members of this commission. The convention, drafted by the aeronautics commission's legal sub-commission, came into effect on October 13, 1919, as the Paris Convention of 1919 Relating to the Regulation of Aerial Navigation.¹⁹ This convention was ultimately ratified by Belgium, Bulgaria, Denmark, France, Italy, Japan, Norway, Poland, and Yugoslavia, and continues in force in these countries, except for Poland which renounced it in 1948.²⁰ This convention was not ratified by Germany, U.S.S.R., the United Kingdom, or the United States.²¹ Each of these countries,

¹⁷ See Address by John Cobb Cooper, Institute of Advanced Legal Studies, London University, Nov. 27, 1957. Professor Hazeltine's lectures were the first on the subject in English at a law school.

¹⁸ *Hearings on H.R. 11881, supra* note 11, at 1319-20.

¹⁹ 11 L.N.T.S. No. 297 (1922).

²⁰ *Hearings on H.R. 11881, supra* note 11, at 1447-54.

²¹ The primary reason ascribed by Senator Pittman of Nevada, then chairman of the Senate Foreign Relations Committee, for the United States' non-acceptance of the Paris Convention was that it delegated to an international regulatory body set up under the convention power to amend the annexes which were a part of the convention itself, and that such a delegation of legislative authority by treaty was believed to be violative of the United States Constitution. Furthermore, the Paris Convention was tied up to some extent with the League of Nations. See *Hearings on H.R. 11881, supra* note 11, at 1277.

however, by national legislation substantially adopted many of the provisions of the Paris Convention as their own national air law.²²

The Paris Convention established, and individual national laws have uniformly supported, the following legal principles:

- a. Each state has exclusive sovereignty over the airspace above its territory, including its territorial waters and territory under its mandate.
- b. Airspace over the high seas is free for use by all states.
- c. Every sovereign state has exclusive right to fly in its territorial airspace and may exclude all foreign aircraft or admit them on its own terms.

These principles were reaffirmed in the Pan American Convention on Commercial Aviation adopted at Havana, Cuba, in 1928 and by the Convention on International Civil Aviation entered into at Chicago, Illinois, in 1944, to both of which the United States is a party. They are also stated domestically in the United States in both the Air Commerce Act of 1926 and the Civil Aeronautics Act of 1938.²³ Although Russia did not participate in the formulation of, nor subscribe to, the Chicago International Civil Aviation convention, these same principles have been positively asserted by E. Korovin, a Soviet spokesman,²⁴ are embodied in Russian statutes, and have been sedulously enforced by the Soviets.²⁵

The important Chicago Convention has been ratified by at least fifty-two nations including all of the major powers except Russia. Its provisions, and those of its fifteen annexes which are not a part of the treaty, now control practically all international air travel.²⁶

At this juncture someone may hopefully ask, "Why not build on the solid foundation of the Chicago Convention?" Unfortunately the answer to this must be highly qualified. The Chicago Convention and all preceding aviation treaties and statutes have been directed only to flight in air space and not to navigation in space. Mr. Cooper has repeatedly expressed the view:

²² National acts now in force are: Law Concerning Air Traffic, Law of August 21, 1936, as amended, [1936] Reichsgesetzblatt 653 (Ger.); Air Code of September 3/13, 1935, U.S.S.R. Laws 1935, No. 34 Text 359(a); Civil Aviation Act, 1949, 1213 Geo. 6, c.67; and Air Commerce Act of 1926, 44 STAT. 568 (1926), 49 U.S.C. § 176 (1952).

²³ Air Commerce Act of 1926, 44 STAT. 568 (1926), 49 U.S.C. § 176 (1952); Civil Aeronautics Act of 1938, 52 STAT. 973 (1938), 49 U.S.C. §§ 401-81 (1952). See Lecture by John C. Cooper, U.S. Naval War College, Dec. 20, 1948, published in *Hearings on H.R. 11881*, *supra* note 11, at 1320, 1321.

²⁴ N.Y. Times, March 15, 1959, p. 33, col. 1-5 (city ed.).

²⁵ *Hearings on H.R. 11881*, *supra* note 11, at 1266.

²⁶ The convention in full is contained in *Hearings on H.R. 11881*, *supra* note 11, at 1349-80. The annexes deal with personnel licensing, rules of the air, meteorology, aeronautical charts, air-ground communications, operation of international commercial air services, aircraft nationality, registration, and air-worthiness, aeronautical telecommunications, air traffic services, search and rescue, aircraft accident inquiry, aerodromes, and aeronautical information services.

[T]hat the term airspace in the Paris convention of 1919 and the Chicago convention of 1944 was there meant to include only those parts of the atmosphere where gaseous air is sufficiently dense to provide aerodynamic lift for the only types of aircraft then in existence.²⁷

This same authority has pointed out that under the Chicago Convention aircraft, as defined by the regulations promulgated by the International Civil Aviation Organization, are "all machines which can derive support in the atmosphere from reactions of the air." From the two preceding observations he then concludes that:

[T]here are no presently enforceable international flight regulations covering the use of rockets, guided missiles, satellites or eventual space ships, while in flight beyond the territory of a sovereign state.²⁸

There appears to be no valid reason to dispute this conclusion. Thus fifty years of air law development does not in itself bridge the gap into space. This impels an appraisal of just what space law now is, but first the complicating ingredient of military considerations must be surveyed.

MILITARY CONSIDERATIONS

The global military facts of space travel developments tend to be obscured by a combination of classified handling and random public pronouncement. The line of demarcation between space facts possessing military significance and those which do not defies precise delineation. If such separation is possible, it can result only from administrative designation of specific projects and from emphasis of application. In the whole vast area of space propulsion research it appears to be a distinction without a difference.

The space program for the United States adopted by Congress contemplates the establishment of priorities by the National Space Council for the accomplishment of both scientific and military objectives. The National Aeronautics and Space Administration is responsible for the development of all non-military space activities and the Department of Defense for all military space requirements. Each is responsible to the National Space Council and to the other for co-ordination, exchange of information, and efficient planning. The Department of Defense in turn has allocated specific project responsibility to the Army, Navy, and Air Force respectively. The facilities of private industry, educational institutions, and the several military departments are employed in various combinations to conduct this research and development.

²⁷ *Hearings on H.R. 11881, supra* note 11, at 1311.

²⁸ Cooper, *Missiles and Satellites: The Law and Our National Policy*, 44 A.B.A.J. 317 (1958).

Unfortunately, in contrast to the very substantial body of air jurisprudence for times of peace, there is almost literally no law governing aerial warfare. John Cobb Cooper has said:

The fact is that no presently existing convention can be relied on as a source of international air law applicable to war conditions. I must express the gravest doubt as to whether anything developed during World War II which demonstrates that the various maritime rules applicable to sea warfare have been in fact accepted by analogy as applicable to air warfare.²⁹

No effort was made to limit air armaments at the Washington Disarmament Conference in 1921-22. The Hague Air Rules of 1923 prepared by a commission of jurists, while meriting careful consideration as rules for air warfare, were never adopted and cannot be considered to be declaratory of accepted customary usage. The same is true of the 1939 draft convention proposed by the Harvard Research in International Law for "Rights and Duties of Neutral States in Naval and Aerial War." The latter document did not purport to control actual conduct of hostilities.³⁰

Air Marshal Sir Arthur Harris who commanded the RAF Bomber Command during most of World War II has said, "[I]n this matter of the use of aircraft in war there is, it so happens, no international law at all."³¹ The Geneva Conventions of 1949, while they completely restated the rules of land and sea warfare, did not attempt to establish aerial warfare rules. The Chicago Convention expressly excludes from its control war and emergency conditions and state aircraft.³²

In the absence of a body of international law covering aerial warfare we must turn to national pronouncements on the subject. Interestingly enough this seems to be a matter on which the United States and the U.S.S.R. are in substantial accord.

Loftus Becker, legal advisor to the State Department, in an appearance before the House Astronautics and Space Exploration Committee stated that under Article 51 of the United Nations Charter each member nation reserved its inherent right to defend itself against armed attack and that, pursuant thereto, the United States is prepared to react to protect itself against an armed attack originating in a territory subject to the sovereignty of another state, originating in outer space, or

²⁹ Lecture, U.S. Naval War College, Dec. 20, 1948.

³⁰ *Hearings on H.R. 11881, supra* note 11, at 1324.

³¹ HARRIS, *BOMBER OFFENSIVE* 177 (1947).

³² Article 89 reads: "In case of war, the provisions of this Convention shall not affect the freedom of action of any of the contracting States affected, whether as belligerents or as neutrals. The same principle shall apply in the case of any contracting State which declares a state of national emergency and notifies the fact to the Council." Article 3 states: "(a) This Convention shall be applicable only to civil aircraft, and shall not be applicable to State aircraft. (b) Aircraft used in military, customs or police services shall be deemed to be state aircraft."

passing through outer space in order to reach the United States. He further stated that the United States Government has not recognized any upper limit to its sovereignty, and that by participating in and consenting to the orbiting of satellites during the International Geophysical Year it has not committed itself to consenting to continued orbiting of satellites through space above its territory.³³

These views are strikingly similar to the Soviet position expressed by E. Korovin in the semi-official magazine of the Soviet Foreign Ministry, "International Affairs." Referring to the launching of Discoverer I from the Vandenberg Air Force Base in California and reports that such reconnaissance satellites will carry cameras and will send observations back to earth by radio waves, he said:

"It is scarcely to be expected for governments to be indifferent to acts of foreign intelligence directed against them solely because they are conducted not in the air but in cosmic space." Governments over whose territory "seeing eye" satellites pass have a right to retaliate with measures "conforming to the letter and spirit of the UN Charter."

"They may undertake diplomatic representations, as well as reprisals and retaliations of a non-military nature. Retaliatory measures of this kind need not necessarily be carried out in the cosmos, since this would restrict their application solely to countries possessing space techniques. They may well be applied on the ground and in the air.

"It does not follow from the nonapplication of the concept of sovereignty to the cosmos that acts endangering the security, life and property of the people on the earth, or infringing upon the universally recognized rights of any country are permitted there."³⁴

Here we have the all-too-familiar pattern of unilateral assertions of unlimited sovereignty, claimed infringements thereof, threats of reprisals and declarations of intention to exercise the right of self-defense. It does not take a specialist in international law to detect that these are the classical steps along the legal primrose path which leads from a state of peace to a state of war.

There is also something "old hat" about the incipient controversy as to whether photography from space constitutes military reconnaissance and hence invades sovereignty. This precise point was previously raised by George J. Feldman, chief counsel to the Home Committee on Astronautics and Space Exploration. His question was:

As to the inherent right of self-defense set forth in Article 51 of the U.N. Charter, would you consider the passage of a foreign

³³ *Hearings on H.R. 11881, supra* note 11, at 1270-71.

³⁴ *N.Y. Times*, March 15, 1959, p. 33, col. 2-3 (city ed.).

reconnaissance satellite over United States territory (say, at a height of 500 miles) an armed attack on the United States?

The response of Mr. Becker, the State Department Legal Advisor, was:

This is the type of question which, in my view, should not be answered hypothetically, but rather in the light of all the facts as they exist at the time. Moreover, such a determination is one of policy as well as one of law.³⁵

So long as space exploration activities continue to be competitive and nationalistic such disagreements over specific operations will be inevitable. Each penetration of space by a national rocket can, and probably will, be characterized by some other nation as constituting a hostile act. If national space stations or platforms are placed in orbit these will surely be viewed by some nations as a threat to their security. The Russian demand that allied planes refrain from flying into Berlin at heights in excess of 10,000 feet is but a pre-game warm up for this type of claim and counterclaim.

It is high time a genuine effort is made to hew a new legal path into the space age which will avoid these ancient pitfalls. Collective space exploration under United Nations control could be the route to peace, in space *and* on earth.

WHAT SPACE LAW NOW IS

At the present time space law is more of a spes than a res. It is emergent, but great care must be taken not to strangle it in parturition nor to delay delivery until a still-birth results.

Much preparatory work has been done. A vast body of admiralty, air, and other law is at hand for selective adaptation to space. Available, too, are forms of international organization. Nationalistic opinions regarding space law are crystalizing. Nevertheless, at present the travel in space of rockets, satellites, space missiles, and space ships is not covered by any law, treaty, or agreement. Territorial laws and regulations of flight do not extend into space, nor do they expressly apply to rockets in territorial space. The vital boundary between the territorial space of states and outer space has not been drawn. There has been no collection of space law thinking into a convention or other codification, and there is no international tribunal with compulsory jurisdiction over states and individuals to adjudicate disputes regarding space and its use. This cluster of negatives adds up to the picture of a primitive space society where "might" still largely makes "right." This climate of uncertainty and confusion nurtures misunderstandings and is productive of

³⁵ *Hearings on H.R. 11881, supra* note 11, at 1309.

strongly nationalistic assertions based more upon policy than upon the rule of law.

We must not disregard national space law developments. The United States National Aeronautics and Space Act of 1958 providing for domestic agencies to deal with space constitutes significant progress. It establishes a top Space Council headed by the President, a National Aeronautical and Space Administration (NASA) to control the peaceful space effort, and a Civilian-Military Liaison Committee to facilitate consultation between NASA and the Department of Defense. By administrative action the Department of Defense had previously established its own internal co-ordinating organization for space activities known as the Advanced Research Projects Agency (ARPA). This putting of our national house in order space-wise points up the necessity that the international community do at least as well in bringing space order to the whole world and to outer space as well.

A final force which we may hopefully classify as almost present space law is the strong, consistent position taken by President Eisenhower that outer space must be used only for peaceful purposes. In his January 1957 State of the Union Message he espoused reaching agreements to control missile and satellite development and an inspection system to assure that outer space would be devoted exclusively to peaceful and scientific purposes. In a letter to Marshal Bulganin on January 12, 1958, the President proposed that "we agree that outer space should be used only for peaceful purposes."³⁶ On April 2, 1959, the President in an address to the Tenth Anniversary meeting of NATO stressed the importance of that organization supporting new proposals for disarmament and for the peaceful use of outer space.³⁷ The Assembly of the United Nations in 1957 adopted a resolution that the disarmament subcommittee should give priority to an inspection system designed to insure that objects sent through outer space be sent exclusively for peaceful and scientific purposes.

The guide lines are there. Their translation into effective international agreement remains to be achieved.

WHAT SPACE LAW MUST BECOME

There are at least two schools of thought as to what should be done to fill the substantial vacuum in the international law of space. The approach recommended by Mr. Loftus Becker is that of proceeding with caution. He states there is an international law with respect to space outside the atmosphere, based upon Article 51 of the United Nations Charter, which reserves to each member nation the inherent right to

³⁶ Cooper, *supra* note 28, at 320.

³⁷ Wall Street Journal, April 3, 1959, p. 2.

defend itself against armed attack. This seems at once to remove space from jurisprudence and to relegate it to the arbitrament of the sword. He points out that the United States has not recognized any upper limit to its sovereignty and suggests that a distance of 10,000 miles, the point to which the earth's atmosphere extends astronomically, would be a suitable basis for discussions. He does not wish to take a definitive position in defining airspace. He indicates there is no need for the United States to define its position with respect to what rights, if any, it possesses outside the earth's atmosphere until such time as mankind demonstrates a capability of existing outside the atmosphere, and that even then there is no requirement of international law that the United States make any claims of sovereignty in order to protect its rights. In this connection he points to the United States policy in Antarctica as an apt analogy. This policy is to refuse to recognize the assertions of all other nations of sovereignty over any part of Antarctica and to proceed with such explorations as the United States desires to make in that area. He feels that the participation of the United States in the exploration of space during the International Geophysical Year establishes no international legal custom regarding the continued use of its air space. In Mr. Becker's own words,

[I]t has been felt that the soundest way to progress in the [sic] extremely complex field of the law is by means of specific decisions on specific questions presented by specific fact situations.

[T]hat the law of space should be based upon the facts of space, and that there is very much more that we have to learn about the conditions existing in space before we shall be in a position to say what shall be the legal principles applicable thereto.⁸⁸

The foregoing approach appears to add up to "wait and see." It seems to bring to international law the classic common law method in civil litigation of having the judge "find" the law in a novel situation. Several obstacles impede its application here. First of all there is no judge or court as yet empowered to "find" space law when a case involving international parties arises. Partisan unilateral assertions are no substitute for a tribunal.

Even at common law, in criminal cases, offenses were not evolved after the act. The prohibition against ex post facto laws is a fundamental principle of Anglo-American jurisprudence. Space acts impinging upon security would seem to be more criminal than civil in nature. After the clamor raised by many common law lawyers that at least some of the war crimes offenses denounced by the international tribunals following World War II were ex post facto it would be prudent to establish in advance those offenses which are not to be tolerated in space.

⁸⁸ *Hearings on H.R. 11881*, *supra* note 11, at 1370-73.

The lawyer of the English-speaking world must constantly remind himself that the predominant ancestry of international law is the Roman civil law and not the common law and that the majority of nations and persons have the former heritage and not the latter. In general the civil law nations are prepared to adhere to previously established statute and treaty law rather than to judge-made law, and this is so both as to their domestic and international legal thinking. This should ever be borne in mind in seeking legal solutions to world problems.

Probably in sixteenth and seventeenth century England and even in the eighteenth and nineteenth century United States the uncertain method of the judge "finding" the law in cases of first impression was appropriately geared to those times. We do know that throughout the twentieth century the common law world has placed ever-increasing reliance on statute and treaty law and has extensively engaged in codification, and that its judges are engaged less and less in declaring the law and more and more in interpreting a body of law which is increasingly statutory in nature. This is particularly true of the law in complicated and technical fields. In the light of the essentially statutory nature of air law it is quite unlikely that an effective space law will develop from common law growth. The view that no agreement should be made for fear new facts in the way of scientific discoveries might make changes desirable, while certainly worth considering, could be carried to the point where no legal progress is ever made. The repeated revisions in the successive Hague and Geneva Conventions governing the laws of war demonstrate that international conventions are in fact changed when technological developments and experience require it. No one has seriously contended that no laws of war should have been adopted because changes were, and probably will again be, necessary. On the contrary, imperfectly enforced though they have been, the laws of war constitute a great boon to mankind.

The second point of view as to what should now be done is represented by John C. Cooper who considers it imperative that an early decision be reached as to the specific upward limit of territorial air space and that once this is accomplished the resolution of other legal problems of space will be materially simplified. He has suggested that three zones be established: (1) "territorial space" extending up to the maximum height where aircraft may be operated with full sovereignty to the subjacent state; (2) "contiguous space" up to a height of 300 miles with the sovereignty of the subjacent state subject to a right of transit through this zone for all non-military flight instrumentalities when ascending or descending; (3) all space above "contiguous space," which shall be free for passage of all instrumentalities.³⁹

³⁹ Cooper, *supra* note 28, at 320.

Mr. Cooper states that sovereignty ordinarily must be coupled with reasonably effective continued occupation and hence unlimited space sovereignty upward cannot be maintained. He considers the maximum limit of sovereignty would be that area in which it would be possible to exercise effective control to enforce national law. This control would vary depending upon the means at hand. Hence the solution of prescribing a uniform height by international agreement is much the better solution.⁴⁰

Mr. Cooper recommends that agreement be reached that outer space is open to permanent peaceful use by all members of the international community and may not be occupied as new national territory.⁴¹ If this is not done, a national "soft-landing" on the moon may well bring on a claim of sovereignty by occupation. Or some nation might even unilaterally extend its territorial airspace upward to a height of 240,000 miles and claim the moon as part of its sovereign territory without budging from earth.

Mr. Cooper feels that the practice of permitting satellite flights by individual nations during the eighteen month period of the Geophysical Year, and the absence of protest by any nation, may ripen into customary international law sanctioning such passage in territorial air space unless the matter is promptly covered by an international convention regulating such flights and precisely defining the limits of territorial air space.

Mr. Cooper states that at present the area of space beyond the atmosphere is regarded as beyond the territorial sphere of any single sovereign state, and concludes:

This should be confirmed by a formal international agreement, vesting in some international body the power to control and regulate flight in the area in question.⁴²

Numbered among those who believe action is necessary is Senator Kenneth B. Keating of New York. In January 1958 in addressing the annual meeting of the New York State Bar Association he advocated a formal international agreement that outer space is not subject to appropriation by any nation, that the use of outer space for any military purpose be barred, and that an existing, or new, international agency be used for the joint exploration of outer space.⁴³ In substance these same views have been expressed by a number of qualified persons including John G. Diefenbaker, Prime Minister of Canada, Sir Leslie Munro, New Zealand Ambassador to the United States,⁴⁴ and Andrew G. Haley, President of the International Astronautical Federation and general

⁴⁰ *Hearings on H.R. 11881, supra*, note 11, at 1310-11.

⁴¹ *Id.* at 1312-13.

⁴² Cooper, *supra* note 28, at 320.

⁴³ See Cooper, *supra* note 28, at 321.

⁴⁴ *Id.* at 320.

counsel of the American Rocket Society.⁴⁵ Space law, at the very least, must meet these minimum requirements.

DOUBTS AND DISCOURAGEMENT

Discouragement has been expressed by both Mr. Cooper⁴⁶ and Mr. Becker⁴⁷ at the prospects of achieving agreement by international convention as to the upper limit of territorial air space. This skepticism is based upon the inability of the 1958 Geneva Conference on the Law of the Sea to fix the limits of territorial waters. This experience is indeed discouraging, but is by no means insuperable. It must be pointed out that the procedural rules of this sea conference required a two-thirds vote to include each proposed item in the convention, and that the vote was 45 for and 33 against. A change of the vote of seven nations would have achieved the inclusion of a territorial waters limit in the convention. In this instance a substantial majority were in accord and there is no inexorable reason why majority rule could not be declared to prevail. Max Sorensen, legal advisor to the Danish Foreign Ministry and Professor of Public Law at the University of Aarhus, has appraised the work of the Geneva Sea Conference as follows:

The Law of the Sea as it stands today is in many respects more certain and definite than it was before the Geneva Conference. A great many rules of customary international law have been expressly confirmed and new formulas have been adopted to settle a number of issues that have given rise to doubt and controversy in recent practice. . . .

The breadth of the territorial sea is more controversial than ever. . . .

The material interests involved, whether of national economy or military security, are so considerable that governments hesitate to make concessions for the sole purpose of reaching a solution. From the national point of view, uncertainty on a point of international law is often preferable to a certainty that leaves no room for unilateral action or maneuvering. The long-term advantage that the rule of law in international relations so clearly has over international anarchy is valued regrettably and erroneously low.

Whatever happens, the International Law Commission has proved its worth. . . . In the future work of codification, the Commission will retain its key position.⁴⁸

This penetrating analysis of international conduct underscores the overriding necessity for precise definition of territorial space while there is yet time. Now that the value of fisheries and the other wealth of the seas is all too well understood and the uselessness of the three mile limit

⁴⁵ *Hearings on H.R. 11881, supra* note 11, at 1454, 1455.

⁴⁶ *Id.* at 1313.

⁴⁷ *Id.* at 1273, 1281-82.

⁴⁸ Sorensen, *Law of the Sea*, INT'L CONC. No. 520, at 253-55 (1958).

as a military defense is recognized, the cupidity of men and nations would cause even more discord over the sea than it does, were it not for the acceptance of the three-mile limit in customary international law. The existence of the customary law at least furnishes a basis for judicial determination of disputes when resort is made to judicial bodies.

The do-nothing approach to territorial and property rights in Antarctica, while it has not prevented disputes, has not yet brought on a war, and is not likely to so long as that continent continues to be nothing but one vast ice house. Let there be a gold strike in Antarctica, even in the modern "soft" money world, or let uranium ore be discovered, or let it be learned that penguin blubber has a commercial use making it worth ten dollars an ounce, and all of the detached scientific exploratory attitude toward that barren waste would disappear overnight. There would be no law or United Nations authority to prevent, or ease, the ensuing scramble.

Suppose that the first "soft" landing on the moon proves it to be made not of green cheese, but of pure platinum and radium in alternate layers. Suppose that space travel discloses that meteor particles provide a sure cure for cancer. Once consumer demand for space products exists, whether engendered by the free enterprise system or for the good of the commune, it will be too late to sit down and work out a dispassionate property law for space. The time to do it is now while the problem may still be approached as a matter of principle.

Some express doubt as to whether it is possible to determine factually what the limit of territorial air space should be. One approach has been to put it at the upper limit of jet aircraft travel; but now we are told that the X-15 Aircraft will fly at an altitude above 100 miles. It is possible that rockets and aircraft will become so blended that differentiation on this basis would be of little value. The limit of the territorial sea was not determined by how far out a man could swim or row, but by considerations of security. Today there is not enough ocean to insure security. Tomorrow there will not be enough space to insure security, in itself. Perhaps a new approach is needed. Possibly a simple arbitrary decision which will separate national jurisdiction from international jurisdiction would work as well in space as arbitrary surface boundaries do in separating the jurisdiction of the United States from that of Canada, or of Utah from Colorado.

The physicists, astronomers, and other scientists should be able to submit all pertinent facts which would be helpful in drawing this line. By present standards the stratosphere extends upward from 10 to 70 miles and the ionosphere from 70 to 400 miles. Atmospheric density tapers off gradually so that there is no magic in this classification. Four

hundred miles as a top figure would give ample room for national muscle-flexing; as little as 100 miles would not be niggardly.

Satellites may remain in orbit as low as about 125 miles. From there on up their orbit height, at least until the end of the orbital life, seems to be a matter of how much thrust is used in initial propulsion. All orbits, except for ascent and descent, could be required to be above 400 miles. Orbits at a lesser altitude, if desired, could be conducted under international license and regulation.

Surely minds which are able to achieve travel in space will be able to draw this line which needs drawing.

There are those who feel that devoting thought to developing space law is just a "beatnik" manifestation of being "far gone" and "way out." The "way outer" who is impelled to seek, in time, an effective space jurisprudence may just possibly save the earth from destruction, conserve the solar system in its present form, and make the universe a bit safer. For stakes like these many lawyers will be willing to go "way out" to expand the frontiers of jurisprudence.

The following draft resolution could conceivably receive approval in the General Assembly of the United Nations. With all its imperfections it is most deferentially offered in the hope that those better qualified will produce a more effective document and initiate surer action to establish the rule of law in space.

A DRAFT RESOLUTION

Whereas all the nations of the earth share a community of interest in the peaceful, orderly, and adequate exploration and use of all space and its contents beyond the limits of national territorial air space, and

Whereas the scientific development of rockets, missiles, satellites, and other means of traversing space and of methods to preserve human life in space has produced unmanned space travel and made human travel in space imminent, and

Whereas no nation has any sovereign or other vested rights in space and

Whereas there is no law, either national or international, which governs the use of space and its contents, and

Whereas the necessity for law to govern all nations, nationals, and persons in space is urgent, and

Whereas the United Nations is the appropriate instrumentality to undertake the promulgation of space law,

Now therefore be it resolved:

1. That the International Law Commission of the United Nations without delay formulate a draft convention of laws to govern all

aspects of exploration in, and the use of, space and its contents, beyond the limits of national territorial air space.

2. That said draft convention shall:

- (a) Establish a permanent United Nations Space Agency to regulate and control all space exploration, development, and use, including the government and control of all settlements made in space or on bodies contained in space by any nation, national, or person of earth or any combination thereof.
- (b) Specifically define the upper limits of territorial air space, and, conterminously, the lower limits of space to which this convention shall apply.
- (c) Prohibit the use of space, or objects therein, or passage there-through, for any military purpose whatsoever, including reconnaissance of earth, by any earth power excepting only duly-accredited United Nations Security Forces or national forces only when in the exercise of the right under Article 51 of the United Nations Charter to defend against armed attack.
- (d) Provide for the right of peaceful passage through national territorial air space, and air space above the high seas for space travel approved by the United Nations Space Agency.
- (e) Require that all space travel be subject to licensing by the United Nations Space Agency.
- (f) Provide traffic rules, communications regulations, procedural requirements and tort liability for space travel.
- (g) Prohibit the assertion of, or establishment of, national sovereignty by any nation of earth in any area of space.
- (h) Provide that all profits and benefits of whatsoever nature brought to earth from space shall be the property of the United Nations, and may be utilized solely for United Nations purposes.
- (i) Make all other provisions necessary and proper to compel the peaceful exploration, development, and use of space and its contents for the benefit of all the peoples of the earth and to preclude all claims of national sovereignty and/or assertions of private property rights in space or its contents.

3. That by majority action of the General Assembly of the United Nations a representative body of astronautical and other scientists be immediately designated to serve as consultants to the International Law Commission in the preparation of the draft convention herein required.

4. That said draft convention shall contain a provision that upon its ratification by a majority of the member nations of the United

Nations it shall be binding upon all the nations of earth, and all disputes arising under said Space Law Convention shall, regardless of the parties thereto, be subject to mandatory adjudication by the International Court of Justice or a panel thereof, and orders and judgments of the Court made in the exercise of this jurisdiction shall be enforced by a United Nations Security Force.

May the criticism of this effort be copious, constructive, and above all, productive of an effective body of international space law which will, among other things, preserve the peace.

CONCLUSIONS

The space age is a direct product of the endless quest for power. Space travel achievements present incredibly complicated factual relationships for regulation, adjustment, and decision. Never has the danger of conflict, and the need for an effective, peace-oriented international jurisprudence for both space and earth been greater. Mankind now has the technical skill, the legal knowledge, the procedural means, and the organizational structure to proclaim and enforce such a jurisprudence. Does mankind have the collective will to do what must be done?