

Race into Space

earth-bound lawyers face problems
familiar to every comic strip fan



Mortimer D. Schwartz

EVERYONE who reads the Sunday newspaper has seen the colorful "Buck Rogers" comic strip with its story plots built around space flight situations which, until very recently, were thought to be fantasy.

But aside from the entertainment value of these tales of space adventure, Buck and the other space comic heroes sometime deal with problems of interplanetary law and order.

"Hecuban law requires that invaders from outer space be shot when captured," declares Buzz Corry, Commander of the Space Patrol.

The "invaders from outer space" in this case were Earthmen seeking to land on Hecuba, a newly discovered planet near the Sun.

"Sure, I saw their flag," explains Alley Oop, "but that doesn't make the Moon Russian property, even if they did plant it there first!"

Alley and the Russians compromise by agreeing to split the Moon into quarters—the first and last quarters going to the U.S.S.R. and the rest of the Moon to the United States.

Arrested for flying with a revoked space pilot's license, Gregg is told by IPPY: "You'll be lucky to get off with 20 years suspended animation!"

Note that a suspended sentence in space does not mean the same thing as a suspended sentence on earth! (Incidentally, the IPPY is comic book slang for "Interplanetary Police.")

THE AUTHORS—Mortimer D. Schwartz, O.U. law professor, is fast becoming an authority in the pioneer field of space law. Author of many articles and founder of O.U.'s unique space law collection (publications related to proposed legal rules for space), Schwartz is a founding member of the International Institute of Space Law, division of the International Astronautical Federation. John C. Hogan is employed by the RAND Corporation of Santa Monica, California, a top-secret, non-profit institution which serves as the "Air Force's think factory," a versatile group of 500 scientists ready to tackle any problem of human survival—including the race into space.



Hogan

Years ago, before there was very much interest among lawyers in space, the writers and artists for the comics were predicting many of today's technological developments in space—and they also had something to say about juridical developments in space.

What are some of the legal problems that the comic book writers say are likely to arise in interplanetary space 40 to 50 years in the future?

A favorite legal theme of those who write for the space comics is "criminology." But the crimes they dramatize are not always the violent or the gruesome kind. Good is made to triumph over evil, and the offender of the law generally receives just punishment for his misdeeds.

Interplanetary politics is another theme used in the space comics. It is associated with a super political body that maintains law and order throughout the Universe. The leaders of this political body are dedicated to the achievement of justice, whether through a court of law or by some extra-judicial means.

The space comic writers have a long list of law enforcement situations which they tell us are possible within the lifetime of our own children:

—Escape-proof prisons and reform schools for criminals, located on isolated satellites that orbit eternally in interplanetary space.

—An Interplanetary Police Force that co-operates with a Military Solar Guard to maintain law and order throughout the Universe.

—An outlaw colony, located on a lonely planet, where men "warred" for law

may hide out, and where the Interplanetary Police may not enter.

—A "hermit" planet that refuses to associate with the rest of the Universe, and that defies the legal authority of the super political body.

—Legal contests between Earth powers and space powers over ownership of planets.

—A "circuit" court (with a judge and jury) located on a satellite that orbits from planet to planet handling cases involving interplanetary crimes.

The science of criminology, apparently, will occupy much of the time of the people who live in space, if we can believe what we read in the comic books.

Space law has in it both an element of fantasy and an element of fact. Factually we are confronted with the vital problem of how will man control space? Will it be by a struggle for political power among nations, or will it be by co-operation and by lawful means?

Since the end of World War II, some lawyers have had a serious interest in the legal problems of space. Scholarly articles on this subject have been published in law journals both in this country and abroad. The immediate problem is state sovereignty in the upper atmosphere. But some attention has also been given to a system of jurisprudence for all activities in space.

The surface of the Earth is merely one guide to the extent of a state's sovereignty. The territory of a state is three dimensional, including not only the surface of the Earth, but the area below the surface—sometimes divided into "horizontal strata," especially in: mining districts—and the area above the surface, commonly referred to as the "air-

space" and anciently believed by lawyers and judges to extend upwards *ad infinitum*.

The projection of state sovereignty to some point in the upper atmosphere is necessary. Yet any projection beyond the atmosphere itself is inconsistent with basic astronomical facts.

"The revolution of the earth on its own axis, its rotation around the sun, and the motions of the sun and the planets through the galaxy, all require that the relationship of particular sovereignties on the surface of the earth to space beyond the atmosphere is never constant for the smallest conceivable fraction of time," declares Sir C. Wilfred Jenks, British international law scholar, and he adds: "Such a projection into space of sovereignties based on particular areas of the earth's surface would give us a series of adjacent, irregularly shaped cones, with a constantly changing content. Celestial bodies would move in and out of these cones all the time."

Several theories have been proposed by lawyers for defining and delimiting state sovereignty in the upper atmosphere:

1. The "cone" concept of sovereignty (just described), projects state boundaries upwards—like a giant ice cream cone, either all-the-way or up to a predetermined height.

2. The "zone" theory divides the upper atmosphere into compartments at, say, 150, 300 or 500 miles. Everything below a certain zone is under the control of the subjacent state. Everything above and beyond the zone is "free" space.

3. The "gravitational" theory extends state sovereignty upwards to the farthest

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point where an object, if dropped free in space, would fall to the Earth, not away from the Earth.

4. The "air" theory gives a state absolute sovereignty over the "air-space" above its territory, but that sovereignty terminates where there is no longer any measurable molecules of air present.

5. In the "parallel lines" theory, instead of a cone with ever widening lines projected into space, parallel lines are drawn upwards from each state's borders. The area between these lines is free space.

6. Finally, the "Karman line" terminates state sovereignty at that point where aerodynamic lift ceases and centrifugal force takes over in the course of a flight into outer space.

Lawyers have struggled with the sovereignty question for over five years now, and they still are not able to agree on its solution.

THE limitation of state sovereignty, however, is only one of many questions to be answered. Who is responsible for damage caused by the accidental falling of a satellite? How do we regulate radio frequencies and signals emitted by missiles launched into space? Has anyone the exclusive right to radio signals and weather forecasts made possible by satellites? How do we regulate movements in space in order to avoid collisions of satellites? What are the rights of states that have first reached the surface of the Moon or other space bodies?

Fortunately, at the moment, only unmanned machines are whirling through space—sputniks, satellites and rockets. But men will come later, and then the legal problems will increase.

After the Moon has been reached and other worlds have been discovered, questions involving real property will arise. And still later, with the introduction of private property into space, will come some interesting legal situations:

—For purposes of taxation, is a privately-owned space platform a "chattel" or is it "real property"? A difference in taxation rates will depend upon the answer to this question. And by that time the tax collectors will be with us out in space, too!

—To transfer title to "Moonacre" (a privately owned space platform) from A to B would a lawyer use a "bill of sale" or would he prepare a "deed"?

—Will the governments someday recognize squatter's rights in unoccupied and less desirable areas of space?

From the point of view of people who live on Earth, the operation of such devices as rocket ships and space platforms must be viewed as an extra-hazardous activity for which there is strict liability for harm to person or damage to property. From the point of view of people who live in space, however, these will be normal everyday activities, and spacemen will be presumed to have "assumed the risk" in law.

Perhaps the concept of the "reasonable spaceman" will come to be applied to cases of negligence in the "law of space-torts."

You should know, that these are not legal problems suggested by the comic books. These are actual situations discussed in the serious law review literature.

An interesting down-to-earth note appeared in a recent issue of the *Harvard Law Review* involving an injunction against a cloud-seeding operation, granted by the Texas court on the ground that this was an act that interfered with "the natural condition of the atmosphere over the plaintiff's land."

The *Harvard Law Review* comments that the cloud seeder might argue that he has outright ownership of the clouds because he manipulates them. However, the courts are not likely to recognize such ownership, since the clouds are formless and are constantly changing their positions, and hence are not subject to physical control.

The subjacent landowner, on the other hand, might argue that he is entitled to all the natural rainfall from the clouds over his property because he owns the air-space above his land.

THE question of the ownership of the air-space above land has frequently been litigated in cases involving airplanes. (There has not yet been a case involving a missile or satellite, either American or Russian.) The courts are not agreed on how to decide air-space disputes, with some states subscribing to one theory of space ownership, other states to another theory. But all the theories seem to have this in common—namely, they hold that public aviation is beneficial and that it will be curtailed only when it unduly interferes with the landowner's use of the land.

When you purchased that lot on which your house is built, you had the surface boundaries surveyed and marked out, and perhaps you were careful to acquire the rights to the minerals beneath the land. But what did you do about title to the air-space above the land?

When the Moon is high and directly over your property, get out your "grant deed" and read what it says about ownership of the air-space above your land, and ask yourself who has title to the heavenly objects in your air-space? Who knows, if you had a smart lawyer draft this document, it may be you who have legal title up to the Moon.

ALREADY, we have some very real "space" laws on the books. They are not generally recognized as such. For example, there are the provisions of the Atomic Energy Act and the National Aeronautics and Space Act concerning inventions and discoveries useful in space.

Moreover, it is a fact that "customary" law applicable to space is developing, before our eyes, when one country allows—or permits without objection—another country to do some new act in space in order that the non-objecting country may itself at some later date do the same or similar act in space. Much of the common law of England evolved in this manner.

With many people from the different countries of the world living and traveling in space—some in space ships, others in space suits—some special rules for traffic regulation may be required—legal space codes—such as standard measurements (time zones, directional standards, etc.), granting of passports, import-export licenses, landing and take-off rules, traffic control, allocation of radio and television frequencies, identification marks on spacecraft, citizenship of a child born in space, right of discovery and occupation, pollution of space by improper discharge of waste, and exploitation and preservation of natural resources found in space.

Actually, all of this is not as far in the future as it seems and sounds. The United States and the U.S.S.R. are now racing to land objects on the Moon—and this to be followed soon thereafter by a man in space. In the not too distant future, lawyers can expect clients to appear at their offices with problems involving some aspect of space law.

Will the law in these cases be any different if the client is a spaceman from Pluto, rather than an Earthman from Oklahoma City? Where will the lawyer look for authority in advising this man as to his legal right and duties in space? In the absence of a good legal text on space law—which is yet to be written—he might begin by consulting the comic pages of the Sunday newspaper.