

IV - INTELLECTUAL PROPERTY IN SPACE

A. Patent Law Issues

Congress is currently considering two patent law issues that could have an important impact on space station activities: 1) how to protect the intellectual property rights of private sector firms and individuals working with the government in space; and 2) how to ensure that U.S. patent law protections apply to space activities.

1) Intellectual Property Rights in Government/Private Sector Space Activities

Section 305 of the 1958 National Aeronautics and Space Act (NAS Act) states that "whenever any invention is made in the performance of any work under any contract of [NASA] , such invention becomes the exclusive property of the United States unless [NASA] waives rights thereto. . ." ⁶⁰ Over the last two and-a-half decades NASA has interpreted section 305 to apply only to activities which have as their main purpose the development of some new product or process for NASA. With respect to NASA/private sector joint ventures, it has been NASA's position that neither party assumes any obligation to perform inventive work for the other, and accordingly, each party retains the rights to any invention that may be made in the course of the venture .⁶¹

One of the most significant ways in which the U.S. Government has sought to encourage private sector materials processing activities in space has been NASA's Joint Endeavor Agreements (JEAs). The intellectual property rights of the private participant of a JEA have, to date, been protected by the contract provisions of the individual JEAs. For example, in the first JEA, NASA and the McDonnell Douglas Corp. (MDAC) agreed that NASA would not acquire rights in inventions made by MDAC or its associates in the course of the joint endeavor unless MDAC failed to exploit the inventions or terminated

⁶⁰ 42 U.S.C. 2451, et seq.

⁶¹ Space Industrialization Act of 1979," statement of Robert A. Frosch; Hearings on H.R. 2337 before the Subcommittee on Space Science and Applications of the House Committee on Science and Technology (96th Cong., 1st sess., 1979).

the agreement, or unless the NASA Administrator determined that a national emergency existed involving a serious threat to public health.

Although individually negotiated contracts may solve the problems associated with NASA's JEA program, some Members of Congress felt that U.S. laws could be used to encourage commercial space activities. In 1985, Congressman Manuel Lujan introduced a bill⁶² that would use the patent system to promote space commercialization by guaranteeing that inventions made in space with Federal assistance or under Federal contract would be the exclusive property of the inventor. The bill would allow Federal agencies to reserve a nonexclusive, nontransferable, royalty-free license to use the invention on behalf of the United States.⁶³

As a proposal for domestic law designed to promote space commercialization, H.R. 3112 is somewhat beyond the scope of this paper. It is important to note, however, that there has been a great deal of recent interest in government patent policy that may well affect space station operations. One recently enacted law (Public Law 96-517) provides uniform Federal patent procedures for small businesses and nonprofit organizations, including universities. These entities, among other things, may elect to retain title to inventions resulting from Federally funded research and development. On February 18, 1983, President Reagan signed a memorandum that directed executive agencies to revise Federal policy for all R&D contractors to be consistent with Public Law 96-517. NASA and the Department of Energy, which operate under statutes that are inconsistent with the memorandum, are expected to make maximum use of the flexibility available to them to comply with the spirit of the memorandum.

In the 99th Congress, S. 64 was introduced by Senator Robert Dole--a principal sponsor of Public Law 96-517--to extend Public Law 96-517 to all Federal contractors and to create uniform policy and procedures concerning patent rights in inventions developed with Federal assistance. Should S. 64 be successful, it might resolve some of the concerns expressed in the Lujan bill.

2) U.S. Patent Law and Space Activities

This section discusses how new legislation designed to extend U.S. patent law to space has caused a reexamination of some old and fundamental patent law issues. Resolving some of these issues--such as limitations on the

⁶² H. R., 3112 (99th Congress).

⁶³ section 222 of H.R. 3112 states:

"(a) In any case where an invention is made by a person in the course of activities of any kind in outer space, whether made with assistance from one or more Federal agencies or in the course of work performed under contract with one or more Federal agencies or otherwise, such invention shall be the exclusive property of that person. . ."

extraterritorial application of U.S. patent law, the status of inventions reduced to practice in foreign countries, and the status of foreign patents and patent applications--may require changes in existing laws. This section also examines how these issues are influenced by the different ways space stations could be owned and operated.

Before examining the specific details of these issues, it is useful to review a few basic principles of U.S. patent law.

In the United States, a patent may be obtained for a useful product or process only if it meets the standards of "novelty" and "nonobviousness" when compared with the "prior art."⁶⁵ When two or more persons independently claim a U.S. patent on the same subject matter, U.S. law awards the patent to the first person to invent. Most other countries maintain that the first person to apply for the patent--not the first person to invent--is entitled to receive the patent. Priority of invention under U.S. law is determined by reference to certain key events such as when the invention was conceived and when it was first reduced to practice. U.S. patent law does not allow these events to be established by reference to activities in foreign countries. Obviously then, how one characterizes space objects and how jurisdiction is defined in space are critical patent law questions. An invention reduced to practice on a foreign space station module--that might be regarded as a foreign country--would be insufficient under U.S. law.

In an attempt to ensure that U.S. patent protection was available for inventions in space, Representative Robert W. Kastenmeier introduced H.R. 2725 in the 99th Congress.⁶⁶ This bill would amend the current U.S. patent law and the NAS Act to state: "any invention made or used in outer space on an aeronautical and space vehicle [as defined in the NAS Act⁶⁷] under the jurisdiction or control of the United States shall be considered made or used within the United States for the purposes of this title."

The Kastenmeier bill is designed to prevent the type of problem that

64 See generally: Barbara Luxenberg, "Protecting Intellectual Property in Space: Policy Options and Implications for the United States, " Georgia Institute of Technology Conference; Atlanta, GA, May 16, 1985; Donald S. Chisum, "Statement on H.R. 2725," Hearing Before the Subcommittee on Courts, Civil Liberties, and the Administration of Justice, House Committee on the Judiciary, June 13, 1985.

65 35 U.S.C. 102, 103.

66 The current bill number is H.R. 4316.

67 Section 103 (2) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451), states:

. . the term "aeronautical and space vehicles" means aircraft, missiles, satellites, and other space vehicles, manned and unmanned, together with related equipment, devices, components, and parts.

arose in the *Cordova* case.⁶⁸ Given the uncomplicated form and intentions of H.R. 2724, the drafters and other concerned individuals anticipated that the bill would engender little opposition or controversy. Asked to comment on the effect of H.R. 2725 on current patent law, Gerald Mossinghoff, President of the Pharmaceutical Manufacturers Association and former Commissioner of Patents, stated: "the proposed amendment does not alter current patent law but rather clarifies what would be a logical interpretation or extrapolation of the current law."⁶⁹ With respect to the question of whether current patent law already covers space activities, Mr. Mossinghoff responded: "one could logically reach a conclusion that activities aboard a U.S. spacecraft are tantamount to activities in the United States."⁷⁰

Responding to the same questions, Herbert C. Wamsley, Executive Director of Intellectual Property Owners, Inc., stated: "It is our impression that many or most people believe U.S. patent law already extends to "outer space. . . under the jurisdiction and control of the United States. . . ."⁷¹

The U.S. Department of Justice took a different position from that of either Mr. Mossinghoff or Mr. Wamsley. In a letter to Neil Hosenball, NASA's then General Counsel, Robert A. McConnell, Assistant General Counsel of the Justice Department, argued that it was not at all clear whether activities on a U.S. spacecraft could be viewed as activities in the territorial United States, and therefore, U.S. patent laws might not apply to such spacecraft. McConnell noted that the legislation would "effect a substantial amendment to [the U.S. Patent Code] Title 35."⁷² Mr. McConnell stated the Justice Department's position that: "The patent laws do not currently have any effect outside the territorial limits of the United States," and that "the United States is not liable for patent infringement arising in a foreign country."⁷³ Although admitting that older cases (involving ships on the high seas and U.S.

68 As mentioned above (note 44) such comparisons can be difficult since criminal statutes are strictly construed.

69 Letter to the Honorable Robert W. Kastenmeier, Chairman, Subcommittee on Courts, Civil Liberties and the Administration of Justice, House Committee on the Judiciary, from Gerald J. Mossinghoff, President, Pharmaceutical Manufacturers Association, May 8, 1985.

70 Ibid.

71 Letter to the Honorable Robert W. Kastenmeier, Chairman, Subcommittee on Courts, Civil Liberties and the Administration of Justice, House Committee on the Judiciary, from Herbert C. Wamsley, Executive Director of Intellectual Property Owners, Inc., June 11, 1985.

72 Letter to the Honorable S. Neil Hosenball, General Counsel, NASA, from Robert A. McConnell, Assistant Attorney General, U.S. Department of Justice, Oct. 11, 1984.

73 Ibid.

embassies in foreign lands) could be found on both sides of the extraterritoriality issue, the Justice Department took the position that recent court decisions express a clear intention to restrict the application of the Patent Code to U.S. territory.

Mr. McConnell warned that in addition to amending the Patent Code, the new legislation would also "expand the Government's liability" because "both the Navy and the Air Force have space programs which may be affected if NASA's proposal is adopted." More specifically, Mr. McConnell pointed out that the United States is currently being sued by the Hughes Aircraft Co. for infringing on one of its satellite patents.⁷⁴ In this case, the United States plans "to argue with respect to about a dozen satellites that the patented invention was never used in the United States" (emphasis added). If the U.S. Government did not use the patent in the territorial United States, and if the Justice Department interpretation of the Patent Code is correct, then the U.S. Government could not be held liable on the infringement charge.

"If the Administration decides to support this proposal," Mr. McConnell urged that it "be limited to that prospective application only." The current legislation, H.R. 2725, responds to the Justice Department's concern and limits the effect of the legislation.

Asked by the House Judiciary Committee to respond to the Justice Department's comments, the American Law Division of the Congressional Research Service (CRS) took a slightly different position: "our review of the 'state of the law' reveals that such an assertion. . . [that U.S. patent law would not protect an invention made or used in outer space because those laws do not have any effect outside the territorial limits of the United States] . . . is not as clearly defined or applicable as. . . [the Justice Department's]. . . comment would lead one to believe. The CRS memorandum goes on to say that, with respect to the principal case cited by the Justice Department: "It would appear that all the Court was saying was that it is not at all clear whether

⁷⁴ Hughes Aircraft Company v. United States (Ct. Cl. No. 426-73).

⁷⁵ Mr. McConnell was responding to an early draft of the legislation. The Kastenmeier bill was amended to read:

(b) AMENDMENTS NOT TO AFFECT PRIOR DECISIONS. - The amendments made by section 1 shall not affect any final decision made by a court or the Patent and Trademark Office before the date of the enactment of this Act with respect to a patent or an application for a patent, if no appeal from such a decision is pending and the time for filing an appeal has expired.

(c) AMENDMENTS NOT TO AFFECT CERTAIN PENDING CASES. - The amendments made by section 1 shall not affect the right of any party in any case pending in a court on the date of the enactment of this Act to have the party's rights determined on the basis of the substantive law in effect before such date of enactment.

⁷⁶ Letter to David Beier, House Judiciary Committee, from Daniel Hill Zafren, American Law Division, Congressional Research Service, Apr. 9, 1985.

Congress intended the patent laws to apply to a United States flag vessel or plane, [and] that the patent bar might want to invite Congress to consider such a possible 'loophole' ..."

The CRS memorandum concluded: "If a case can be made that the patent laws could apply to an invention made or used on a United States' flag vessel on the high seas.. the contention would seem to be even more convincing regarding a United States' space vehicle in outer space." This view was bolstered, in CRS's view, by the U.S. participation in the 1976 Registration Convention which was "designed to facilitate the exercise of jurisdiction and control by a launching state over its space objects."

In light of the case authority and the opinions of the majority of legal scholars, the Department of Justice's position on H.R., 2725 may not be supportable.

Even disregarding the objections of the Department of Justice, there are several important lessons to be learned from the debate over H.R. 2725. The first is to recognize that when applying a body of terrestrial law *in toto* to space activities, all the ambiguities and contradictions currently existing in that body of law are also transferred. With respect to the extraterritorial application of **U.S.** patent law, unresolved questions concerning the nature of U.S. jurisdiction over its flag ships and the status of ships as "U.S. territory" must now be faced with respect to space objects. Although the intent of H.R. 2725 is clear--to apply U.S. patent protections to inventions made or used in outer space on space vehicles under the jurisdiction and control of the United States--the fact that this issue has never been clearly resolved with respect to maritime law causes unforeseen problems.

A second important lesson is to strive for functional consistency in new legislation relating to space activities. As written, H.R. 2725 applies to "space vehicle[s] under the jurisdiction or control of the United States." This differs slightly from the scope of the "special maritime and territorial jurisdiction"⁷⁷ which applies U.S. criminal law to "Any vehicle used or designed for flight or navigation in space and on the registry of the United States pursuant to the [1967 Outer Space Treaty] . . . and the [1976 Registration Convention]. . ."⁷⁸ H.R. 2725's "jurisdiction= control" also differs slightly from the Outer Space Treaty's article VIII which speaks of nations retaining "jurisdiction and control" over their space objects.

It is not clear that the space objects described here--those under the "jurisdiction and *control*" of the United States (1967 Outer Space Treaty), those under the "jurisdiction or control of the United States (H.R. 2725), and those registered under the 1976 Registration Convention--are identical sets. This is particularly true when one considers that article II of the

⁷⁷ Discussed *supra*, p. 27.

⁷⁸ 18 U.S.C.A. Sec. 7.

Registration Convention allows countries to enter into separate agreements regarding jurisdiction and control, thereby creating a situation where someone could have jurisdiction and control over a space object without having registered it. Minor discrepancies in this and other space legislation could result in unforeseen problems.

In addition to general jurisdictional questions, a number of specific patent law issues must be addressed. For example, under current U.S. law, when there are conflicting claims to an invention, the person who invented first has the valid claim. An applicant may not establish the date of invention by reference to activity in a foreign country. H.R. 2725, if passed into law, would allow an applicant to use activity aboard a U.S. spacecraft--considered under the terms of the legislation to be "in the United States"--in an interference proceeding to prove priority of invention. Activities on foreign spacecraft would, presumably, be regarded as activities in a foreign country. This might be the case even where the "foreign spacecraft" was attached to an otherwise completely U.S. space station.

This report examined the four different ways in which a space station could be owned, registered, and operated. With the exception of the U.S. registry and, perhaps, those U.S. modules of a separate registry, H.R. 2725 might not apply to other jurisdictional regimes.

Another problem arises from the uncertain effect of H.R. 2725 on the Inventions Secrecy Act.⁸⁰ The Inventions Secrecy Act states that, with respect to inventions made in the United States, a person may not file an application for a patent in a foreign country unless that person has already: 1) filed in the United States and waited 6 months; or 2) obtained a license to file abroad from the Commissioner of Patents and Trademarks. Any patent obtained in violation of the Inventions Secrecy Act is considered by the United States to be invalid, although the Commissioner may grant a retroactive license upon a showing of "inadvertence."

The Inventions Secrecy Act presents some difficult problems for foreign nationals working on a U.S. or jointly owned space station. For example, a French astronaut who reduces an idea to practice on a U.S. space station would be forced to file for a U.S. patent or an exemption from the Act, or risk having the patent being declared invalid in the United States.⁸¹ To the extent that such problems could limit the success of the space station, every effort must be made to achieve some type of international coordination.

79 35 U.S.C. 104.

80 35 U.S.C. 181-188.

81 Letter t. The Honorable Robert W. Kastenmeier, Chairman, Subcommittee on Courts, Civil Liberties and the Administration of Justice, House Committee on the Judiciary, from Donald S. Chisum, Professor of Law, University of Washington, June 18, 1985.