

***PERSISTENCE PAYS OFF:
THE CASE OF HUGHES AIRCRAFT COMPANY v. USA, 1976-1999***

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Abstract

At a time when globalization has become a preponderant theme, entailing rapid and significant scientific and technological innovation, law and the legal process have continued in most instances to move at a respectable but leisurely pace.

In 1976 Hughes Aircraft Company sued the United States stating that patent rights had been and were being violated by the United States. The patent related to a spin-control system which enabled a space object to maintain a velocity and orientation required for successful operation.

On March 12, 1999, pursuant to a stipulation on the part of Hughes Electronics Corporation, the successor to Hughes Aircraft Company, and the U.S. Department of Justice, an order was made by the United States Court of Claims awarding the plaintiff

\$154,438,324.82 plus an additional sum of \$60,000.00 as a discovery sanction, and costs in the sum of \$154,732.99. It has been estimated after payment of taxes on the award that the Company would net \$94,300,000.00.

In the thirteen decisions produced by this litigation reference was made to the legal status of outer space, to the number and manner of governmental infringements of the Hughes' patent, to the patent doctrine of equivalents, to the calculation of damages, and to the 1990 statutory revision by the United States of the meaning of "inventions in outer space."

Background to the Litigation

In 1959 Donald T. Williams, a scientist employed by Hughes Aircraft received a patent entitled "Velocity Control and Orientation of a Spin Stabilized Body." Title was transferred to his employer on September 11, 1973. The patent was employed by every U.S. space object placed in a geosynchronous orbital position employing a solid fuel motor between 1963 and 1982. One

hundred and eight launches, involving the United States, Germany, and the United Kingdom, as well as the European Space Research Organization (later European Space Agency) used the patented object. The United States was the launching State.¹

The United States used the patent without the consent of Hughes Aircraft. The United States, through NASA, entered into memorandums of understanding (MOU) with Germany, the United Kingdom, and ESRO. All of the MOUs called for the United States to provide the launch vehicle and to launch the satellite. Other common terms related to the principal role of the United States with respect to instrumentation, design, fabrication, testing, integration, and preparation of a vehicle for launching.

The Hughes Company relied on the provisions of Section 1498(a) of title 28, United States Code, which provides in part:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be an action against the United States . . . for the recovery of his reasonable and entire compensation for such use and manufacture.

For the purposes of this section the use or manufacture of an invention described in and covered by a patent of

the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use and manufacture for the United States.²

For Hughes to prevail it was obliged to show that the United States had violated its patent rights in the United States. Since NASA's activities occurred within the United States and since the MOUs had been entered into in the United States, Hughes was able to negate the government's argument that patents granted by the United States offered no protection in areas outside of the United States.

Important Rulings of the 1993 Case

In 1993 for the first time the United States Court of Claims, which subsequently became the United States Court of Federal Claims, had before it litigation involving the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies.³ Article II of the treaty provides that States do not exercise national sovereignty over outer space, the Moon, and other celestial bodies. It was the government's contention that the use of the Hughes' patent occurred outside the United States and that Hughes had no protection under the foregoing Section 1498(a). In response to the position taken by Hughes that the patent had been used in the United States the government urged the inapplicability of this statutory provision on the ground that it did not apply to 'claims arising in

outer space relating to non-United States registered spacecraft."⁴

It is established law that, unless other considerations create identified rights, patents granted in one State afford no protection to the owner of the patent in another country. This outlook finds its source in the view that the extraterritorial implementation of an enacting State's legislation should not collide with the territorial sovereignty of a foreign country, even though this results in the violation of patent rights accorded elsewhere. In order to attempt to ameliorate such a situation the national of the State that has granted the patent can record the patent in foreign countries.⁵

At the time the United States appropriated the Hughes' patent there was no federal legislation, nor any international agreement, having specific reference to the application of U.S. patent law to national space objects or their component parts in an area beyond the territorial limits of the United States.

On this point the Court states:

We do not decide whether international law prohibits the extension of our patent laws to activities in outer space or foreign spacecraft because we conclude that Congress has not extended #1498 to cover those activities.⁶

In arriving at this conclusion the Court referred to the decision of the United States Supreme Court in the case of *Deepsouth Packing Co. v. Laitram Corp.*⁷ in which it was held that the

patent laws of the United States do not have extraterritorial effect. The Court observed that this decision bolstered its view that Section 1498 "in its entirety should be construed consistently with title 35 as limited in application to United States territory and thus as not applying in outer space (absent a specific enactment extending the reach of patent laws to uses in space.)"⁸

Thus, in holding in favor of the claims advanced by Hughes Aircraft Company the deciding factor was the use by the United States in the United States of the patent. The MOUs were entered into in the United States and the foreign parties to these agreements also used the patents by and for the benefit of the United States.⁹

In an oblique observation the Court upheld the authority of Article II of the 1967 Principles Treaty. In accepting the *res communis* principle the Court observed that "outer space is not a 'foreign country' in the ordinary meaning of that phrase."¹⁰

The Issue of Damages

In its June 17, 1994 decision the Court of Federal Claims awarded Hughes Aircraft \$114,000,000 in damages.¹¹ Hughes appealed on the ground that the sum awarded was neither fair nor just compensation. Its contention was grounded on the payment of royalties for governmental use of the patent, and for "delay compensation," namely, loss of the use of the money constituting unpaid royalties.

The full measure of damages was subject to reduction if the patent doctrine of equivalents were not available, as contended by the government. This relates to the existence of a so-called "accused," i.e., a similar device to the one patented, which performs substantially the same function in substantially the same way to obtain the same result as the patented device.¹² In the words of the Court: "The doctrine of equivalents permits the protection according to the patent to exceed the scope of the patent's literal claim language where the accused device is essentially the same as the patented device."¹³

Thus, Hughes sought damages when separate spin control devices not literally covered by the Hughes' patent were employed by the United States in connection with a Galileo launch to explore Jupiter. In 1993 the Claims Court found that in this launch the spin control device used was sufficiently different from the Williams' patent so as to exclude application of the equivalents doctrine. The Court concluded that the type of commands transmitted by ground control "substantially distinguished" the functions of the Galileo satellites from those carrying the Hughes' device.¹⁴

This doctrine, which required clarification, extended the litigation. An early judicial approach required a comparison of an invention as a whole in determining its applicability. Alternatively, it was perceived that it was necessary to make an element-by-element comparison of the patentable concept. This issue was resolved by the

United States Supreme Court in another case on March 3, 1997.¹⁵

Underlying the doctrine is the concern that a patent should not be allowed to extend substantially or unnecessarily beyond its claimed scope. The doctrine has been applied to a product or a process which does not literally infringe upon the express terms of another patent. But, it also allows for a finding of infringement if there is an "equivalence" between the elements of the accused product or process and the claimed elements of the patented invention. Critics of the doctrine consider that it can create mischief in the operation of the patent system.¹⁶

The Warner-Jenkinson case held that an element-by-element approach should be employed in applying the equivalence doctrine. With this hurdle out of the way the contending parties in the Hughes cases were in a position to negotiate a final settlement of their litigation.

To resolve their differences they were required to agree on the formula for fixing the royalty and delay compensation to be paid. Although the 1994 ruling awarded damages of \$114,000,000 the parties agreed to settle for "the amount of \$112,560,069.00 together with interest on said sum calculated pursuant to 26 U.S.C. §§ 6621(a)(1) and 6622 (the tax overpayment rate compounded daily) from march 31, 1994, until paid."¹⁷ The foregoing statute called for an interest rate composed of the Federal short-term rate plus 2 percentage points. By March 31, 1999, the sum due plaintiff as royalty

and delay compensation had reached \$154,438,324.82.¹⁸ In addition plaintiff was awarded \$60,000.00 as a discovery sanction, and \$154,732.99 as costs, bringing the whole recovery to \$154,593,057.81.¹⁹ This payment was received by Hughes Electronics Co. on March 30, 1999. This can be compared with the initial demand for \$1.2 billion, with speculation suggesting, based on the formula adopted by the Court, that the plaintiff's damages could reach \$6.0 billion. On a practical basis the case stands for the proposition that the concept of "just compensation" remains an illusive one.²⁰

Influence of Hughes Case on Development of Space Law

The case focused on the use, manufacture, and launching in the United States of a patented component of a national space object. It also served to emphasize the fact that patentable inventions might occur in or become an instrument of commerce in outer space. This led to the adoption in 1990 of the United States "Inventions in Outer Space" statute.²¹ This statute made reference to the 1975 "Convention of Registration of Objects Launched into Outer Space."²² Its key purpose was to identify when and if an invention was to be considered to be made, used, or sold within the United States. Specific exceptions were identified with regard to such making, using, or selling.

The statute provided:

(a) Any invention made, used or sold in outer space on a space object or component thereof under

the jurisdiction shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.

(b) Any invention made, used or sold in outer space on a space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space, shall be considered to be made, used or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry.

Since this statute had no retroactive force it was not applicable to the claim of Hughes Aircraft Company. In any event the Hughes patent had expired on September 11, 1990 shortly before this statute was adopted.

The controlling language of the 1990 statute was "an invention made, used, or sold . . ." which followed the basic terminology of the 1948 statute. It used the terms "used or manufactured."²³

The novelty of the 1990 statute was its extraterritorial application to "in outer space on a space object or component thereof under the jurisdiction or control of the United States. . . ." ²⁴

Each paragraph took into account the prospect that inventions might occur on space objects or component parts which were not under the exclusive jurisdiction and control of the United States. This was based on the reality that the United States would engage in co-operative international operations where suitable international agreements would define the respective rights of the parties. Each paragraph also allowed for the application of the 1975 Registration Convention or its non-application pursuant to a new agreement to that effect. ²⁵

Although the Hughes' litigation had no direct impact on an important 1988 international space agreement, yet the litigation identified the need for establishing general rules for protecting intellectual property. Those engaged in the creation of a permanently manned civil space station in their agreement of September 29, 1988 dealt at some length with this subject. ²⁶

The terms of the agreement were modified in 1998 when the Russian Federation became a part of the multinational operation. The provisions of Article 21 were not changed. ²⁷

Article 21 of the Agreement followed the territorial approach regarding activities occurring "in or on a Space Station flight element . . ." as identified in that "element's registry." An

exception was made for ESA registered elements allowing such States to "deem the activity to have occurred within its territory." ²⁸ An interesting provision related to national secrecy laws. If a non-national were to invent something the territorial law of the State where the invention occurred was not to prevent the filing of a patent application in the State of the inventor's nationality. ²⁹ If a European inventor's patent were to be protected in more than one European State, patent infringement claims were only to be heard in one such State. ³⁰ There were additional provisions. They all attest to the fact that nationals of many countries will be engaged in innovative activity in cooperative international undertakings and that the rights of such persons and the places where disputes are to be resolved has taken on a heightened importance.

Conclusion

Intellectual property law is based on the socially desirable objective of encouraging creative inquiry and investigation. Patents and copyrights are legally established means for assuring to the successful inventor that innovative property rights will be protected.

Accompanying this governmental procedure is the right of a grantor government to exercise the right of eminent domain. This in turn calls for a fair determination of the just and reasonable value of the property which has been taken for public purposes.

The Hughes' case represents the application of the eminent domain power with respect to a patented device

needed for the efficient operation of government satellites in outer space. However, the Court of Federal Claims placed emphasis on the earth-based activities, including the launching of the satellites from the territory of the United States, in applying the relevant patent law of the United States.

In the 1993 decision, the Court accepted the provision of Article II of the 1967 Principles Treaty, namely that States do not have sovereignty in outer space. This did not prevent the United States from exercising jurisdiction and control over national satellites in outer space. The fact that the patented device was employed in outer space without the consent of the holder of the patent, did not excuse the United States from paying damages to the owner of the patent for its unauthorized use.

The patent doctrine of equivalents, which was followed by the Court of Claims in 1993, was at that time subject to several interpretations. The doctrine affected the amount of the prospective recovery to be paid to the Hughes Company particularly with respect to the Galileo launches. The doctrine was clarified in a 1997 U.S. Supreme Court case which called for a step-by-step examination of the elements of competing procedures and practices. When this issue had been clarified the two litigants arrived at a stipulated judgment as to the precise sum due the plaintiff. The formula was fixed by the trial Court. It was less than the Company had asked for initially. Even so, it was the largest award ever made for a violation of patent rights in the United States. The case called attention

to the need to protect inventions occurring in outer space, as well as commerce in such intellectual property. The 1990 statute was adopted to afford such protections.

NOTES

1. Judicial Protection of Intellectual Property: Hughes Aircraft vs. USA, *Proceedings of the 37th Colloquium of the Law of Outer Space* 145 (1995), and Carl Q. Christol, *Judicial Damages and Intellectual Property: An Up-Date on Hughes Aircraft Company vs. USA, Proceedings of the 39th Colloquium of the Law of Outer Space* 210 (1997). I wish to thank Victor G. Savikas, Esq., of the Los Angeles Office of Jones, Day, Reavis & Pogue, who served as counsel for Hughes Aircraft Company and for Hughes Electronic Corporation, for providing current information concerning the final disposition of the case.
2. 62. Stat. 941, June 25, 1948. These provisions were retained in the Oct. 19, 1996 amendment. Pub. L. 104-308, 110 Stat. 3814.
3. 18 UST 2419; TIAS 6347; 610 UNTS 205. Done at Washington, London, and Moscow January 27, 1967. Entered into force for the United States October 10, 1967.
4. 29 Fed. Cl. 197, 229 (1993).
5. The United States is a party to the June 19, 1970 Patent Cooperation treaty. It entered into force for the United States on Jan. 24, 1978, except for Chapter II. 28 UST 7645; TIAS

8733. The United States has adopted legislation implementing the agreement. Pub. L. 94-131, 89 Stat. 685, 35 U.S.C., #351-376, 1975 *U.S. Code Cong. and Adm. News* 1220.
6. *Supra*, note 4 at 229-230.
 7. 406 U.S. 518, 531, 92 S. Ct. 1700, 1708 (1972).
 8. *Supra*, note 4 at 231.
 9. Carl Q. Christol, Judicial Protection of Intellectual Property: Hughes Aircraft vs. USA; *Supra*, note 1 at 150.
 10. *Supra*, note 4 at 230. This suggests that outer space is neither a foreign country or a country but rather an area in which national sovereignty does not exist. While this view has long been accepted as a leading principle of international space law, it is desirable to have, as in this situation, confirming national judicial approval of the principle.
 11. 31 Fed. Cl. 481 (1994), *Supra*, note 1 "Update" at p. 211.
 12. *Supra*, note 4 at 203.
 13. *Id.* at 208.
 14. *Supra*, note 4 at 212.
 15. Warner-Jenkinson Co. v. Hilton Davis Chemical Ct., 117 S. Ct. 1040.
 16. For a brief commentary on the Hughes and Warner-Jenkinson cases see T. Carter, *The Energizer Case?*, 83 *ABA Journal* 22 (July 1997).
 17. Stipulation for Entry of Final Judgment," in the United States Court of Federal Claims, Case No. 426-63C, March 12, 1999.
 18. *Id.* at Table A, p. 1.
 19. It has also been reported that Hughes in 1983 entered into an agreement with Ford Motor Company for an estimated Seventy-Five million dollars as damages for Ford's unauthorized use of the Hughes' patent.
 20. COPUOS, in exploring space-related proprietary rights relating to intellectual property, has also adopted the standards of fairness and reasonableness. General Assembly Official Records, 51st Sess., Supp. No. 20, U.N. Doc. A/51/21, para. 2 (1996).
 21. S. Rep. No. 266, 101st Cong., 2d. Sess. (1990), Pub. L. 101-580, 140 Stat. 2863, 35 U.S.C. Sec. 105, November 15, 1990. For commentary see G.H. Reynolds. *The Patents in Space Act*, 3 *Harv. J. L. & Tech* 13 (1990), D.L. Burk, *Protection of Trade Secrets in Outer Space: A Study in Federal Preemption*, 23 *Seton Hall L. Rev.* 560 (1993).
 22. 28 UST 695; TIAS 8480. Done at New York January 14, 1975. Entered into force for the United States September 15, 1976. See Carl Q. Christol, *Protection of Intellectual*

- Property Rights in Outer Space, in V.S. MANI, S. BHATT AND V.B. REDDY, RECENT TRENDS IN INTERNATIONAL LAW AND POLICY, 364-367 (1997); Dennis Helfman, Patents in Space, Encouraging and Protecting Out-of-This-World Investments, in 3 *American Enterprise, the Law, and the Commercial Use of Space* 135 (1987); Raymond Vickery, The Laws and Outer Space: Intellectual Property, 4 *Journal of Law and Technology* 9 (1990).
23. *Supra*, note 21.
24. *Ibid.*
25. Convention on Registration of Objects Launched into Outer Space. *Supra*, note 22.
26. Agreement Among the Government of the United States, the Governments of Member States of the European Space Agency, the Government of Japan, and the Government of Canada on Cooperation in the Detailed Design, Development, Operation, and Utilization of the Permanently Manned Civil Space Station. The agreement entered into force on January 30, 1992. Printed in K.H. BOCKSTIEGEL AND M. BENKO, SPACE LAW, BASIC LEGAL DOCUMENTS (1993) and 16 *J. Space L.*, No. 2, at 220 (1988).
27. Printed in S GOROVE, UNITED STATES SPACE LAW - NATIONAL AND INTERNATIONAL REGULATION (1998) and 26 *J. Space L.*, No. 1, at 96-97 (1998). For a general commentary on the 1998 agreement see A. Yakovenko, The Intergovernmental Agreement on the International Space Station, 15 *Space Policy*, No. 2, at 79 (May 1998).
28. 26 *J. Space L.* at 96.
29. *Ibid.*
30. *Id.* See A.M. Balsano, Industrial Property Rights in Outer Space: The Space Station International Governmental Agreement (IGA) and the European Partner, *Proceedings of the 35 Colloquium on the Law of Outer Space* 217 (1993); R. Osterlink, "The Intergovernmental Space Station Agreement and Intellectual Property Rights, 17 *J. Space L.* 27 (1989).