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PATENT POLICY FOR COMMUNICATIONS SATELLITES: A UNIQUE VARIATION

ROBERT F. ALLNUTT*

The high degree of public interest in space communications ventures of the United States has been accompanied by even greater interests among smaller groups concerned with particular facets of these programs. Radio astronomers have expressed doubt as to the wisdom of the "space needle" plans. Students of decision-making processes have questioned the efficacy of existent channels and methods for resolution of legal, technical and political issues involved in these ventures. While questions such as those just mentioned are undoubtedly of substantial importance, more basic problems, touching upon the very economic and social framework of this nation, also call for solution. Broadly, these problems call into question the respective roles of industry, individuals, and the government in owning, operating and controlling the communications satellite complex soon to come into being.

In constructing and utilizing a new facility of this type, the ownership and control of rights to patents, both domestic and foreign, covering all or part of the various components thereof conceivably may dictate many of the ultimate decisions as to the paths along which development of the system will proceed. This being so, an integral portion of


The opinions here expressed are those of the author, and do not necessarily reflect those of the National Aeronautics and Space Administration.

1 The objections to this project "WESTFORD" for scattering millions of small wires or dipoles in orbit around the earth have been based on the fear that, while the "needles" would aid communications from one point to another on earth, by serving as a reflector of radio waves, this same characteristic would hamper observation of extraterrestrial bodies. Cf: Communications Satellite Legislation, Hearings Before the Senate Committee on Aeronautical and Space Sciences, 87th Cong., 2d Sess., 15 (1962).


Questions of corporate form, stock ownership, voting rights, and general rights, and general scheme of regulation are, at present, generally unresolved, and are beyond the scope of this article.
the factors bearing on these problems is the disposition of patent rights insofar as inventions arising from current communications satellite research are concerned.

For this reason, it is interesting to investigate the governmental policy, as thus far evidenced, regarding this rights disposition. The purpose of this article is to review in detail the steps taken by the government to date in this area, and to compare these steps to normal government activity in similar areas, in an effort to provide both a frame of reference for interpretation of present policy as to patents dealing with this important new enterprise, and guidelines for future evaluation of this policy.

The agency predominantly concerned with the developmental stages in the evolution of a communications satellite is the National Aeronautics and Space Administration, established in 1958. In contracting for research and development, the patent policies of NASA are chiefly founded upon Section 305 of the Space Act, and must be considered preliminarily as a background to the NASA policy in this specific field.

Section 305(b) of the Space Act requires that each contract of the Administration contain effective provisions insuring the prompt reporting of each invention, discovery, improvement or innovation made in the performance of work under the contract. Standard clauses of this type have been promulgated for inclusion in NASA research and development contracts. By Section 305(a) of the Act, it is provided

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5 Id. at 435, 42 U.S.C. §2457 (1958).
6 Id. at 435, 42 U.S.C. §2457(b) (1958).
7 Section 305(j) (3) defines "made" as meaning the conception or first actual reduction to practice of an invention. Thus, the existence of a patent application or even of a "paper" patent is statutorily immaterial if the invention is first actually reduced to practice in the performance of work under a contract. 72 Stat. 437 (1958), 42 U.S.C. §2457(j)(3) (1958). To the extent that such a rule encourages actual reduction to practice at private expense, and thus fosters and preserves the traditional functioning of our free enterprise economy, it is certainly not unwise. Address by G. D. O'Brien, Briefing Conference on Patent Law and Administration, Washington, D.C., March 29, 1962. However, insofar as this sort of rule creates harsh results, when considered in light of the rigidity of present law regarding reduction to practice [see Elmore v. Schmitt, 47 CCPA 960, 125 USPQ 653 (1960)], it may be questioned as desirable policy. Ibid.
8 Eq., NASA Standard Forms 246, 417 (June, 1961).

(1) the person who made the invention was employed or assigned to perform research, development, or exploration work and the invention is related to the work he was employed or assigned to perform, or that it was within the scope of his employment duties, whether or not it was made during working hours, or with a contribution by the Government of the use of Government facilities, equipment, materials, allocated funds, information proprietary to the Government, or services of Government employees during working hours; or

(2) the person who made the invention was not employed or assigned to perform research, development or exploration work, but the inven-
that every invention so made becomes the exclusive property of the
Government upon a determination by the Administrator that the inven-
tion was made by a person and under the conditions specified in Sec-
tion 305(a)(1) or (2). The only exception to this provision is in cases
where the Administrator may waive the rights of the Government to
the invention.

Section 305(f) contains authority for the waiver by the Admin-
istrator of these rights upon such terms and conditions as may appear
to be in the public interest, subject to the reservation, in every case, of
a royalty-free license for Governmental purposes. Pursuant to this
authority, the Administrator has issued waiver regulations dealing
in detail with substantive and procedural rules under which waivers
may be granted. The administration of these regulations has been quite liberal and the majority of the petitions for waiver acted upon to date have been granted. However, waiver has not often been sought, most likely for several reasons. The first of these is that the rate of invention reporting has not yet reached the level which may be anticipated as the research and development activity of NASA increases and as contractors become more familiar with the policies and procedures involved. Further, little publicity has been given to the growing experi-

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10 Id. at 436, 42 U.S.C. §2457(f) (1958).

11 14 C.F.R. §1245.100 (Supp. 1962). These regulations superseded interim regu-
ence under these waiver provisions, aside from periodic reports to Congress.\textsuperscript{13} The Space Act does not require NASA to obtain any rights in contractor inventions made other than in the performance of work under its contracts, nor does it limit the discretion of the Administrator in granting waivers other than to require that his action be in the public interest.\textsuperscript{14}

From the foregoing, it will be seen that the procurement patent policy of NASA is required by statute to be more closely similar to that of the Atomic Energy Commission\textsuperscript{15} than to the more traditional and liberal policies of the Department of Defense.\textsuperscript{16} However, while NASA normally obtains title to inventions made under its contracts, the statutory discretion to waive all commercial rights to the contractor responsible for the invention has been liberally exercised. The variations introduced into this scheme in contracts dealing with communications satellites will now be discussed.

Not long after the establishment of the Space Administration, consideration of the feasibility and practicality of a global communication system utilizing orbiting relay stations began to receive increasing attention in the scientific community. Aside from improved techniques of telemetry in "routine" satellites, the first public tangible evidence that the communication satellite program produced was the orbiting, in August, 1960, of the Echo I satellite. The successes realized in reflecting radio signals from this passive satellite far surpassed expectations, and spurred interest, both among the general public and on the part of scientists, in the early development of an operational system. Contemporaneously with this passive satellite program, NASA had been investigating the design and orbiting of active communications satellites.

\textsuperscript{13} At present, waiver petition proceedings and decisions are not published. For such a report, see the Statement by John A. Johnson, General Counsel of NASA during Hearings Before the Special Subcommittee on Patents and Scientific Inventions of the House Committee on Science and Astronautics, 87th Cong., 2d Sess., No. 1, Part 2, Appendix A, pages 179-181. (1962).

\textsuperscript{14} Section 305(f), \textit{supra} note 10. A more thorough review of NASA patent practices may be found in Johnson, \textit{Rights to Inventions Under NASA Contracts}, 21 Fed. B. J. 37 (1961).

\textsuperscript{15} It seems obvious that Section 305 was patterned after the patent provisions of the Atomic Energy Act of 1954, 68 Stat. 919, 943 (1954), 42 U.S.C. §2011, 2181-2190 (1958). See Maltby, \textit{The National Aeronautics and Space Act of 1958 Patent Provisions}, 27 Geo. Wash. L. Rev. 49 (1958); the relationship is discussed in Parker, \textit{Comparison of the Patent Provisions of the NASA Act and AEC Act}, printed in Hearings Before the Subcommittee on Patents and Scientific Inventions of the House Committee on Science and Astronautics, 86th Cong., 1st Sess., No. 47, at 803 (1959). In September of 1961 the AEC Act, 42 U.S.C. §2182, was amended, by Public Law 87-206, to clarify the formerly troublesome "deemed to have been made or conceived by the Commission" provision. The original language was quite similar to that appearing in the Senate bill, S. 3609, 85th Cong., 2d Sess. (1958), initially reported out as the Senate version of the Space Act (104 Cong. Rec. 6288); the new language is more closely similar to that appearing in Section 305(a) of the Space Act.

\textsuperscript{16} See, generally, Armed Services Procurement Regulation 9-107.1(a), (b) and 9-107.2(a). These regulations and this policy are discussed more fully \textit{infra}. 
satellites. In response to a request for proposals, seven members of American industry submitted detailed plans for such a satellite, and the Radio Corporation of America received a contract for the design, fabrication, and delivery of satellites.\footnote{National Aeronautics and Space Administration News Release 61-105, May 18, 1961. The New York Times, May 19, 1961.} The patent provisions utilized in this contract were substantially identical to those normally found in NASA contracts, with one exception.

The standard NASA Property Rights in Inventions Clause\footnote{Supra note 8.} contains a lengthy section providing that inventions made in the performance of work under a contract, but not by a person or under the conditions specified in Section 305(a)(1) or (2) of the Space Act, will nevertheless be subject to a royalty-free license to the Government. The following limitation is placed on this license:

No license granted under this paragraph (g) shall convey any right to the Government to manufacture, have manufactured, or use any such invention for the purpose of providing services or supplies to the general public in competition with the Contractor or the Contractor's commercial licensees in the licensed fields.

This sentence was deleted from the RCA contract. Accordingly, any license of this type would not be so limited. However, the language of paragraphs (1) and (2) of Section 305(a) is so all-inclusive that NASA has not, as yet, found it necessary to rely upon this portion of the clause in any contract; thus, the deletion of the quoted language was unquestioned publicly and not mentioned in any news coverage.\footnote{The quoted sentence had long appeared in the Armed Services Procurement Regulations, but had been emasculated in January, 1961, without significant opposition. See ASPR 9-107.2(b), Patent Rights (License), para. (b)(1), January 31, 1961. An interesting analysis of this language appears in Staff of Subcommittee on Patents, Trademarks and Copyrights, Senate Committee on the Judiciary, 86th Cong., 1st Sess., Patent Practices of the Post Office Department iii, 5 (Comm. Print, 1959). The language has now been deleted entirely, this action being announced in Letter to Defense Contractors from the Assistant Secretary of Defense (Installations and Logistics), April 10, 1962.}

Prior to the request for proposals by NASA, the American Telephone and Telegraph Company had presented a rather novel suggestion to T. Keith Glennan, then the Administrator.\footnote{The request for proposals was made on January 4, 1961. On December 14, 1960, the AT&T suggestion was presented by letter. Hearings, supra note 3, at 397, 465. The fact that NASA would entertain proposals to furnish launching services for private concerns had been announced at least as early as October of 1960. Address of T. Keith Glennan to the Science, Engineering and New Technology Committee of the Oregon State Department of Planning and Development, October 12, 1960. See Hearings, supra note 3, at 170.} Basically, this suggestion was that AT&T would build communications satellite experimental models and prototypes at its own expense, if NASA would agree to launch the satellites, the government to be reimbursed for its "ou-
of-pocket" expenses for launching and furnishing tracking facilities and data. Free exchange of technical information was contemplated.\(^{21}\) After preliminary negotiations, AT&T was informed on May 18, 1961, that NASA would undertake to launch four of the AT&T satellites, subject to agreement upon a formal contract. Final negotiations began shortly and on July 27 the formal contract was executed. The patent provisions of this contract differ significantly from any ever before used by NASA or, to the author's knowledge, by any other Government agency. In addition, the waiver authority of NASA was utilized in a manner and upon terms and conditions unlike any previous use of this authority.

In essence, the patent provisions\(^{22}\) of this contract and of the concurrently executed instrument of waiver\(^{23}\) were quite simple. By waiver, NASA granted to AT&T title to any invention which might be made in the performance of work under the contract. This waiver was subject not only to the reservation of the license required by Section 305(f) of the Space Act, but also to the right of the Administrator "to grant licenses to others ... for the practice of (each) such invention throughout the world for any purpose whatsoever."\(^{24}\) In return, as to inventions which might be made by AT&T during the performance of the contract, but in the course of independent research relating to communications satellites,\(^{25}\) which would not normally be subject to Section 305 of the Act, AT&T granted a royalty-free license to the Government, together with the right to license to American business\(^{26}\) the right to practice these inventions throughout the world in "the design, development, manufacture, operation, maintenance, and testing of communications satellite systems, equipment, components, and ground tracking, transmitting, and receiving facilities therefor."\(^{27}\)

The contract clause established a novel mechanism for reporting and classifying those inventions to which the contract rights and waiver instrument rights apply. At the time of reporting any reportable invention, AT&T agreed, in a proper case, to designate the invention as having been made in the performance of work under the contract.\(^{28}\) Any invention so designated was contractually made subject to the instrument of waiver.\(^{29}\) Since the rights acquired by the Government

\(^{21}\) Id. at 397, 465, 469, 473.
\(^{22}\) Reproduced in Appendix A.
\(^{23}\) Reproduced in Appendix B.
\(^{24}\) App. B.
\(^{25}\) The precise language is "AT&T-sponsored research and development project which has as one of its purposes advancement of the state of the art in communications satellite systems, equipment, components, or ground tracking, transmitting, or receiving facilities therefor." App. A, art. VII (b).
\(^{26}\) See App. A, art. VII (c).
\(^{27}\) Ibid.
\(^{28}\) App. A, art. VII (c).
\(^{29}\) Ibid.
in the waiver instrument are greater than those which it obtains under
the contract, as noted above, NASA would not question the decision
by AT&T that the invention was made in performing the contract.
However, if AT&T did not so designate a reported invention, an option
would arise. NASA could abide by this decision, and thus allow the
invention to become subject to the contract rights only; but AT&T
agreed, upon request, "to furnish a statement under oath setting forth
the full facts concerning the circumstances under which such inven-
tion was made and stating the relationship (if any) of such invention
to the performance of any work" under the contract.30 Power was then
vested in the Administrator to determine whether the invention, by
virtue of the circumstances under which it was made, should be subject
to the contract rights or to the waiver instrument provisions.31

Several of the differences in this approach to the disposition of
patent rights from the normal NASA arrangements are obvious. Others
are more subtle. Initially, it should be noted that this is the only instance
in which NASA has agreed to waive rights to any invention which
might be made under a contract. On the other hand, the broad scope
of the rights reserved to the Government by the waiver instrument
reduces that which is waived to a "title" of little use aside from cross-
licensing purposes. Clearly, no exclusionary benefits were waived to
AT&T, in view of the all-inclusive "sublicensing" rights retained by
NASA.

Perhaps the most direct method for discussion of the operation of
the waiver instrument is by example, pointing out both the status of
each hypothetical under the waiver, and the probable status under nor-
mal NASA regulations. It is to be emphasized that the following ex-
amples are pure hypotheticals.

Take, first, the case of an attitude orientation device for the satellite:
a means for correctly "pointing" the space vehicle during orbit, con-
ceived by AT&T scientists and first actually reduced to practice in the
first satellite launched by NASA for AT&T. Under a normal NASA
contract, title to the invention would vest in the Government (upon the
Administrator's Section 305(a) "determination").32 Should AT&T
petition for waiver of title, the petition presumably would be denied
on the basis that the invention fell within the area normally not eligible
for waiver,33 absent any overriding consideration.34 However, under the

30 App. A, art. VII (d).
31 Ibid.
32 See note 9 supra.
33 14 CFR §1245.104(a) (Supp. 1962).
34 "Inventions not generally eligible for waivers. Pending the further de-
velopment of space technology, the interests of the United States would not
generally be served by waiver of rights of the United States with respect to
any invention which is:
(1) Primarily adapted for and especially useful in the development and
executed waiver instrument used with the actual contract, AT&T has a naked title, subject to the broad reservations previously discussed.

Consider, second, a new switching mechanism conceived by an AT&T engineer hired to invent such devices, and first successfully tested and used in receiving signals from the second satellite orbited under this agreement. Again, upon the statutory determination by the Administrator, the title would belong to the Government. As switch gear is obviously directly related to a line of commercial business of AT&T, it might well be expected to petition for waiver of title on the theory that the invention clearly did not lie in the "mortmain" area, but that, on the other hand, it was of only incidental interest to NASA and had substantial promise of commercial utility. Such a petition would appear to have an excellent chance of being granted. Thus, AT&T might have title to this invention, subject only to the statutorily required license reservation, and standard working and formal requirements.

operation of vehicles, manned or unmanned, capable of sustained flight without support from or dependence upon the atmosphere, or

(2) Of basic importance in continued research toward the solution of problems of sustained flight without support from or dependence upon the atmosphere; provided, that the foregoing shall not preclude the Administrator from granting a waiver as to such inventions under paragraph (d) of this section."
With the agreement and waiver actually in effect, AT&T still acquires title of such an invention, but, should the Government choose to exercise the broad retained rights, that which AT&T retains is title in name only.

Third, assume the invention, attributable to NASA—furnished data and information, by AT&T employees performing under the contract, of a method of soldering electrical junctions in the communications satellite transmitting circuit. In typical circumstances, the Administrator would, by his determination, vest this invention in the United States Government. Should AT&T petition for waiver of title, the proposition that the invention was not of a type not generally eligible for waiver would be easily established. Assuming, then, that AT&T has expended large sums in research in circuit terminal soldering methods, and, further, that only a small portion of the contract price or effort was directed to this type of investigation, a prima facie case for waiver could be made out.14 Were title to the invention waived, AT&T would then have broad commercial rights. Again, under the actual agreement, AT&T has only limited title to such an invention.

The foregoing analysis should serve to indicate that the advance waiver granted does not simply cut one way. While AT&T may obtain slightly greater rights than it might reasonably expect to some inventions made in the performance of work under the contract, it acquires a good deal less in the way of exclusivity probably otherwise obtainable as to other inventions so made.

A second area of departure from normal practice involves the extensive acquisition by the Government of rights to inventions unrelated to the contract save for being contemporaneously made and of similar use. In effect, the contractual rights obtained lay open the current research of this large corporation for royalty-free licensing in the field of communications satellites. Inventions not actually subject to Section 305(a) may thus be treated as though they were, through the administratively simple device of contemporaneous waiver and contract.

A third novel feature may be found in the limitation of these "sub-licensing" rights in a specific field, as provided by the contract. As has been noted, while there is an unrestricted governmental right to prac-

(2) Such special conditions applicable to the particular invention as may be required in the interests of the United States."

14 CFR §1245.104(b) (4) (Supp. 1962):
"... the Administrator considers that a prima facie case shall have been established when:...

It is shown that the invention is directed specifically to a line of business of the contractor with respect to which the contractor's previous expenditure of funds in the field of technology to which the invention pertains has been large in comparison to the amount of funds for research or development work in the same field of technology expended under the contract of the Administration in which the invention was conceived or first actually reduced to practice."
tice inventions arising from AT&T research independent of the contract, the "sublicensing" right is only in the field of communications satellites. Consider, now, the case of an amplifier or transistor, for example, developed in an AT&T project carried out during the term of the contract, which project had as a goal improved devices for calibrating communications satellite tracking equipment. AT&T would have title to the invention, as would normally be the case. The government, which normally would have no rights to the invention, would have a non-exclusive, irrevocable, royalty-free license to practice (or have practiced) the invention throughout the world for any purpose. Further, NASA could grant licenses to business entities domiciled in the United States, allowing these concerns to practice the invention throughout the world in the limited field.

It might well be asked why this great departure was made in connection with this particular contract. Obviously, the answer does not lie entirely in the unique relationship established between the parties. While it is true that AT&T obtained a significant benefit by being furnished launching services, this benefit is by no means restricted to a single, or even a few, corporations. Weighing against this possible reason for taking greater rights than usual was the fact that the research was being undertaken at private expense, and that even launching costs were to be reimbursed to the extent of "out-of-pocket" expenses. The nature of the relationship being insufficient, in and of itself, to dictate so major a variation from regular patterns, the subject matter of the agreement must be viewed as a factor.

Communications satellites are of a nature different from typical objectives of the Government. Research is being conducted with the aim of providing a global public service, similar to, but improved over, a system now in use. The necessarily complex inter-relationship between government, domestic and foreign corporations, and individuals is as yet unestablished and, to some extent, unpredictable. In such a status, necessity may be said to exist for retention of wide latitude for future action. Accordingly, an argument can be made for the propriety of securing rights which may never need to be exercised, rather than to be content with traditional relationships in the face of possibly radical

41 *Hearings, supra* note 3 at 468. It should be recognized, nevertheless, that the nature of the contract has this bearing on the agreement reached. Since AT&T was building the satellites at its own expense, and, to some extent, in accordance with its own designs and wishes, the difficulty in tracing an invention to "government" work would be great. Thus, reason would seem to suggest that the government should seek rights in all research contemporaneously undertaken for similar purposes, rather than have the parties seek to apply rules established for the normal research contract in an effort to determine rights.

42 Letter from President Kennedy to Vice-President Johnson, June 15, 1961, in *Hearings, supra* note 3 at 475.

43 *Hearings, supra* note 3, at 480.
future requirements. But if this is a justification for the course of action pursued in the initial communications satellite agreements how, if at all, can this field be satisfactorily distinguished from others now coming into prominence? Government research and other activity is burgeoning in diverse areas such as saline water conversion,\textsuperscript{44} meteorological prediction,\textsuperscript{45} and even weather control.\textsuperscript{46} While these projects differ from communications satellite programs, many similarities are obvious. Government funding of research and development, now at a level between 60 and 70 per cent of the total national expenditures for these purposes,\textsuperscript{47} may be expected to encompass an increasing number of programs designed to provide goods or services for the public, and the impact of these programs cannot and should not be restricted to national boundaries. However, in the absence of any official pronouncement as to the reason for this departure, the matter remains open for conjecture. It is not suggested that the foregoing discussion recognizes all of the possible factors leading to this decision, or that the evaluation of the recognized factors is consonent with any official position.

Of course, the NASA programs directed toward the institution of a global civil communications satellite system do not represent the entire activity in this area. The Department of Defense has been vigorously engaged, through such projects as SCORE and ADVENT, in the development of a military communications network of similar character. The TIROS satellites perform functions which are not dissimilar. While the ultimate missions differ, it is quite obvious that inventions developed in the military program might be of major importance in the civilian system. This being so, the question naturally arises whether Defense contracts for communications satellite research and development have varied from the normal patent rights pattern.

As has been mentioned, the Department of Defense typically and traditionally has asked for only a royalty-free license to inventions made in the performance of work under its contracts.\textsuperscript{48} Further, even this license acquisition is negotiable in certain cases.\textsuperscript{49} The first indication of any break with this tradition came with the promulgation, in January of 1961, of a "title" patent rights clause.\textsuperscript{50} This clause, however, has been used only sparingly.\textsuperscript{51} In the fall of 1961, a significant de-
parture from tradition occurred. This departure was with regard to communications satellites.

On October 16, 1961, the Department of Defense notified the public that future contracts for research in the space field would include provisions for sublicensing by the Government for the practice of any invention subject to the contract in the communications satellite field. By this change, the position of the government as to inventions made in the performance of work under a contract of either Defense or NASA becomes quite similar, insofar as communications satellite programs are concerned. Although the mechanics of operation and the details of the nominal rights differ, in substance the right to sublicense is present in either case. There has been no indication, however, that Defense will seek rights in inventions arising from independent research.

Thus it can be seen that research and development in this new area used in "very few contracts, perhaps 5 or 10 or a few more," for the entire Defense Department.

Letter to Defense Contractors from the Deputy Assistant Secretary of Defense (Procurement), October 16, 1961. As this letter states the reasons for the change which it announced, a portion thereof merits reproduction here.

I wish to advise that it has become necessary to make other changes in the clause with respect to national communications satellite programs. It has been determined that appropriate action should be taken to insure that no contractor emerge from doing research or development work in this or related programs with a patent position which might dominate future commercial communications or equipment therefor. Therefore, it is the intention of the Department to include a provision in the license clause which would grant to the Government the right to grant sublicenses to others, under such terms and conditions as may be prescribed, for the practice of any Subject Invention throughout the world in the design, development, manufacture, operation, maintenance and testing of communications satellite systems, and of equipment, components, ground tracking, transmitting and receiving facilities therefor. The use of this additional grant will be limited to contracts covering research and development in space fields.

The purpose of this clause is to secure the right to license others to use patented inventions derived from Government-sponsored research and development work in order that no commercial entity will be deprived of an opportunity to participate in future commercial space satellite communications programs by virtue of work done under Government sponsorship. The alternative to the use of the language as set forth above would be to use the clause set forth in ASPR 9-107.2(c) and acquire title to inventions under such programs. The above proposal thus permits the contractor to retain full commercial rights in all fields except in the satellite communications field. This requirement is urgent and therefore is not presented for comment but for information.

It should be noted that the sublicensing right in a Defense contract is limited to the field which the NASA-AT&T contract establishes for inventions not of the type normally covered by government contracts. The latter agreement secured unlimited rights in inventions arising directly from the performance of the contract, as noted previously. Nevertheless, the effect in the communications satellite field is the same.

Where the government furnishes substantial financial support for "independent" research by a contractor, see ASPR 9-107.6. However, neither Defense nor NASA normally seek rights in inventions made under these programs.
of technology is being conducted with a virtually uniform set of unique patent rights' ground rules. It is far too early to predict how these new rules will operate in practice, or what effect, if any, they will have on the "early and orderly" operational capability of a communications satellite complex. If, as we are told, a future telephone customer will not even be aware that his call has been beamed to outer space and back to earth, the public cannot be expected to become conscious of the impact of these provisions of government patent policy upon the speed or efficiency of communications satellite development. It is submitted, however, that close scrutiny of these provisions, their administration, and their effects, will reveal in the future an indication of the desirable or undesirable features of this type of policy in other and broader fields.

Thus, a fertile source of empirical data may be presented to future researchers in patent policy by these steps taken to establish a novel policy for communications satellites.

APPENDIX A
COOPERATIVE AGREEMENT
BETWEEN THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AND THE
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
FOR THE DEVELOPMENT AND EXPERIMENTAL TESTING
OF ACTIVE COMMUNICATIONS SATELLITES

WHEREAS, the achievement of an operational communications satellite system will be materially accelerated through cooperation between the United States Government and American private industry in the development and testing of experimental communications satellites; and

WHEREAS, the American Telephone and Telegraph Company (hereinafter referred to as AT&T) has proposed, and the National Aeronautics and Space Administration (hereinafter referred to as NASA) has agreed, that they should join together in a cooperative agreement (hereinafter referred to as Agreement) for the development and testing of experimental active communications satellites; and

WHEREAS, the Federal Communications Commission has granted to AT&T an experimental license and assigned the necessary frequencies for conducting experimental tests of active communications satellites;

NOW, THEREFORE, the parties to this Agreement agree that a cooperative project shall be carried out between them in accordance with the following terms and conditions: ....

Article VII—Property Rights in Inventions.
(a) As used in this clause:
(1) "Invention" includes any invention, discovery, improvement, or innovation;

55 Whether NASA will treat inventions relating to communications satellites arising in other contracts in other than the normal manner when waiver is requested has not been announced. There are no NASA regulations spelling out how this would be done, if at all. However, the right to do so is broadly reserved in present regulations. Cf. 14 CFR §1245.104(d), supra note 34, and 14 CFR §§1245.108(b)(2)(ii), 1245.108(b)(3)(i) and(iii) (Supp. 1962).
56 Hearings, supra note 3, at 466.
57 Id. at 470.
(2) "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention; and

(3) "To practice" an invention means to manufacture, use, and sell and dispose of accordance to law any article or material; or to use any method.

(b) AT&T will furnish promptly to NASA a written report containing full and complete technical information concerning any invention made in the performance of any work performed under or in anticipation of this Agreement or under any other AT&T-sponsored research and development project which has as one of its purposes advancement of the art in communications satellite systems, equipment, components, or ground tracking, transmitting, or receiving facilities therefor; Provided, that this reporting requirement shall apply only to inventions made during the period from May 18, 1961, to the expiration of one year after the last launching under this Agreement, or to the effective date of termination of this Agreement under Article VI.

(c) At the time of furnishing the written report required by (b) above, AT&T will designate in writing those of the inventions reported which resulted from any work performed under or in anticipation of this Agreement. The rights and obligations of the parties hereto respecting the inventions so designated shall be governed by the provisions of an Instrument of Waiver executed by NASA and AT&T contemporaneously with the execution of this Agreement.

(d) As to any invention required to be reported under (b) above, but not designated in accordance with (c) above, AT&T agrees, upon request of NASA, to furnish a statement executed under oath setting forth the full facts concerning the circumstances under which such invention was made and stating the relationship (if any) of such invention to the performance of any work under or in anticipation of this Agreement. The Administrator of NASA determines that any such invention was made in the performance of any work under or in anticipation of this Agreement, such invention shall become subject to the provisions of the Instrument of Waiver identified in (c) above.

(e) With respect to all other inventions required to be reported under (b) above, but which do not become subject to the provisions of the Instrument of Waiver under (c) or (d) above, AT&T agrees to and does hereby grant to the Government an irrevocable, nonexclusive, nontransferable, and royalty-free license to practice such inventions throughout the world, by or on behalf of the United States; together with the right in the Administrator to grant licenses to business entities domiciled in the United States, under such terms and conditions as the Administrator may prescribe, for the practice of such inventions throughout the world in the design, development, manufacture, operation, maintenance, and testing of communications satellite systems, equipment, components, and ground tracking, transmitting, and receiving facilities therefor.

(f) Within eighteen months after the last launching under this Agreement, or six months after any termination of this Agreement under Article VI, AT&T shall furnish to NASA a final report listing all inventions required to be reported under (b) above.

APPENDIX B

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

INSTRUMENT OF WAIVER

WHEREAS, the American Telephone and Telegraph Company (hereinafter referred to as AT&T) and the National Aeronautics and Space Administration (hereinafter referred to as the Administration or as NASA) have agreed to join together in a program of cooperation for the development and experimental testing of active communications satellites, in accordance with the terms of a Cooperative Agreement executed contemporaneously herewith (hereinafter referred to as the Agreement); and

WHEREAS, inventions may be conceived or first actually reduced to practice in the performance of work under or in anticipation of the Agreement on or after May 18, 1961, and such inventions may be regarded as being made in the performance of work under a contract of the Administration within the meaning of Section 305 of the National Aeronautics and Space Act of 1958 (hereinafter referred to as the Act), thereby entitling the United States to exclusive rights thereto; and
PATENT POLICY

WHEREAS, Section 305 (f) of the Act authorizes the Administrator of NASA (hereinafter referred to as the Administrator) to waive all or any part of the rights of the United States to inventions which may be made in the performance of work under a contract of the Administration if the Administrator determines that the interests of the United States will be served thereby; and

WHEREAS, the Administrator has determined that the interests of the United States will be served if a waiver of the rights of the United States in any inventions which may be made in the performance of work under or in anticipation of the Agreement is granted, subject to the terms and conditions hereinafter set forth which the Administrator has determined are required for the protection of the interests of the United States;

NOW, THEREFORE, the Administrator hereby waives in favor of AT&T the rights of the United States

(a) to exclusive ownership, and
(b) to apply for United States and foreign patents and to have the same issued to the Administrator on behalf of the United States with respect to any invention or inventions made or which may be made on or after May 18, 1961, by any person or persons in the performance of any work under or in anticipation of the Agreement, subject, however, to the reservation by the Administrator of an irrevocable, nonexclusive, nontransferable, royalty-free license for the practice of such invention or inventions throughout the world by or on behalf of the United States or any foreign government pursuant to any treaty or agreement with the United States, and subject further to the reservation by the Administrator of the right to grant licenses to others, under such terms and conditions as the Administrator may prescribe, for the practice of such invention or inventions throughout the world for any purpose whatsoever.

This waiver is conditioned upon AT&T's doing the following:

(a) Taking all customary measures and precautions necessary to protect the patent rights in any invention subject to this waiver, including promptly filing or causing to be filed a United States patent application therefor unless an application covering the invention has already been filed; and, on request, furnishing to the Administrator or his representative an irrevocable power to inspect and make copies of each such United States patent application.
(b) Upon receipt of the serial number and filing date, furnishing same, together with a copy of the application as filed, to the Administrator if not already so furnished.
(c) Executing and furnishing to the Administrator instruments fully confirmatory of the rights herein reserved by the Administrator.
(d) With respect to any license granted by AT&T and any sublicense granted by any licensee of AT&T,
(1) requiring that each instrument granting such license or sublicense contain a notation of the rights reserved herein by the Administrator;
(2) upon request, furnishing information to the Administrator concerning the grant of such licenses and sublicenses, together with the relevant terms and conditions thereof.
(e) In the event any United States patent application filed on such invention, or any patent issued thereon, becomes involved in interference proceedings, making no concession of priority, abandonment of contest, nor disclaimer, except with the written consent of NASA, without first obtaining an irrevocable, nonexclusive, nontransferable, royalty-free license for the practice of such invention throughout the world by or on behalf of the United States or any foreign government pursuant to any treaty or agreement with the United States; together with the right in the Administrator to grant licenses to others, under such terms and conditions as the Administrator may prescribe, for the practice of such invention throughout the world for any purpose whatsoever.
(f) In the event AT&T decides not to file a patent application on such invention, or elects not to continue prosecution of any application already filed,
(1) conveying to the United States Government as represented by the Administrator the entire right, title, and interest in the invention by delivering to the Administrator such duly executed instruments as are necessary to vest in the United States Government the right, title, and interest aforesaid, subject to the reservation to AT&T of the rights to the invention in countries other than the United States in which the Administrator does not desire to file an application for patent for the invention, and subject to the reservation to AT&T of an irrevocable, nonexclusive, royalty-free, nontransferable license to practice the invention, including the right to grant sublicenses to its subsidiaries and to operating companies of the Bell System, and subject also to licenses which were granted by AT&T or any of its subsidiaries, or which AT&T or any of its subsidiaries was committed to grant, prior to the date of this Instrument of Waiver; and

(2) informing the Administrator in writing of any act known to AT&T which constitutes a potential statutory bar to the filing of a patent application under 35 U.S.C. 102.

(g) With respect to any foreign country in which AT&T has not filed an application on such invention within

(1) nine months from the date a corresponding United States application is filed;

(2) six months from the date permission is granted to file foreign applications where such filing has been prohibited for security reasons; or

(3) such longer periods as may be approved by the Administrator;

conveying to the United States Government upon written request AT&T's entire right, title, and interest in such invention in such foreign country or countries in which an application for patent has not been filed within the times above specified, subject to the reservation to AT&T of an irrevocable, non-exclusive, royalty-free, nontransferable license to practice the invention, including the right to grant sublicenses to its subsidiaries and to operating companies of the Bell System, and subject also to licenses which were granted by AT&T or any of its subsidiaries, or which AT&T or any of its subsidiaries was committed to grant, prior to the date of this Instrument of Waiver.

Done at Washington, D.C., this 27th day of July, 1961.

/s/ James E. Webb
James E. Webb
Administrator

Accepted on behalf of the American Telephone and Telegraph Company
By /s/ F. R. Kappel
Name
President
Title
195 Broadway
New York 7, N.Y.
Address

/s/ A. G. Barry
Attest