[COMMITTEE PRINT]

GOVERNMENT PATENT POLICY

(THE OWNERSHIP OF INVENTIONS RESULTING FROM FEDERALLY FUNDED RESEARCH AND DEVELOPMENT)

SUMMARY OF HEARINGS HELD IN
94th Congress

PREPARED FOR THE

SUBCOMMITTEE ON
SCIENCE, RESEARCH AND TECHNOLOGY

OF THE

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SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
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LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, D.C., April 28, 1978.

Hon. OLIN E. TEAGUE,
Chairman, Committee on Science and Technology,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: In the 94th Congress, the jurisdiction of the Committee on Science and Technology was expanded to include special oversight over all nonmilitary research and development funded by the Federal Government. In my capacity as chairman of the Subcommittee on Domestic and International Scientific Planning and Analysis, I initiated a study of several aspects of the nation's commitment to science and technology. The significant role patent policy can play as an incentive in the innovative process was brought to the attention of our subcommittee in hearings ranging from mechanisms for the intergovernmental exchange of technology to international cooperation in energy research and development.

With our special oversight function in mind and aware that it must be exercised so as to complement and not displace the oversight responsibilities of committees with principal jurisdiction, the DISPA subcommittee concluded the 94th Congress with a series of 5 days of hearings on the general subject Government Patent Policy: The Ownership of Inventions Resulting From Federally Funded Research and Development. These hearings looked at patent policies across the Federal agencies and developed a well-rounded perspective of their impact.

The Science, Research and Technology Subcommittee has continued the study of government patent policy in the 95th Congress. Hence this summary and analysis of the DISPA hearings on this subject has been developed by Ms. Karen Guarisco of the Science Policy Research Division, Congressional Research Service. It is a concise, informative document and I believe that it will help provide a base for possible future hearings.

I commend this document to your attention and to the attention of our colleagues on the Committee on Science and Technology and in the House of Representatives.

Sincerely,

RAY THORNTON,
Chairman, Subcommittee on Science, Research, and Technology.

LETTER OF SUBMITTAL

THE LIBRARY OF CONGRESS,
CONGRESSIONAL RESEARCH SERVICE,
Washington, D.C., May 2, 1978.

Hon. RAY THORNTON,
Chairman, Subcommittee on Science, Research and Technology, Committee on Science and Technology, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: I am pleased to submit this report entitled "Government Patent Policy," which analyzes the testimony presented at hearings before the Subcommittee on Domestic and International Scientific Planning and Analysis on September 23 to October 1, 1976.

The report was prepared by Mrs. Karen J. Guarisco of the Science Policy Research Division. We believe that the report will be useful to the committee in its continuing concern with Government patent policy.

Sincerely,

GILBERT GUDE,
Director.

CONTENTS

I. INTRODUCTION

On September 23, 27, 28, 29 and October 1, 1976 the Subcommittee on Domestic and International Scientific Planning and Analysis of the House Committee on Science and Technology held hearings entitled "Government Patent Policy: The Ownership of Inventions Resulting From Federally Funded Research and Development." In his opening statement, Chairman Thornton cited reasons for the hearings and the basis for his subcommittee's interest in the topic. He noted:

> It has been brought to the attention of our subcommittee in hearings ranging from mechanisms for the intergovernmental exchange of R&D results to international cooperation in energy research and development that there is no single Government patent policy.
>
> Congress is given authority to develop patent policy by the Constitutions directive in article I, section. 8. "To promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective writings and discoveries." Notwithstanding that directive, the Federal Government has developed patent policies primarily on an agency-by-agency basis resulting in some 20 different approaches.
>
> A Presidential memorandum and statement of Government patent policy issued in 1971 does provide some cohesion. The implications of patent policies developed in this way is what our subcommittee is interested in determining.
>
> I should note the charge given to the newly formed Office of Science and Technology Policy that:
>
> > Federal patent policies should be developed, based on uniform principles, which have as their objective the preservation of incentives for technological innovation and the application of procedures which will continue to assure the full use of beneficial technology to serve the public.
>
> Thus the timeliness of our current efforts. It is appropriate for this subcommittee, established with special oversight responsibility for analysis and advanced planning studies on all nonmilitary research and development, to begin to bring together the various sources of knowledge and experience in this area. (Thornton, pp. 1-2)

In preparation for these hearings the subcommittee published two committee prints 1/ containing background materials on Government patent policies. Volume I consists of Presidential statements, Executive orders, and statutory provisions which relate to the ownership of inventions resulting from federally-funded research and development, while volume II contains reports of committees, commissions and major studies.

The subcommittee heard the testimony of ten witnesses representing both the public and private sectors. Seven of the witnesses were from the Government -- two from the Department of Commerce, Dr. Betsy Ancker-Johnson and Dr. Howard I. Forman; two from the Energy Research and Development Administration, James A. Wilderotter and James E. Denny; one from the National Aeronautics and Space Administration, S. Neil Hosenball; one from the Department of Health, Education and Welfare, Norman J. Latker; and one from the Department of the Navy, William O. Quesenberry. There were two witnesses who testified representing the industry sector, Franz O. Ohlson and Charles S. Haughey; and one witness from academia, Raymond J. Woodrow. A summary and analysis of these witnesses' testimony before the subcommittee appears below. Following an introductory section is an analysis presenting the observations and opinions of the witnesses under these major subject areas:

1/ U.S. House of Representatives. Committee on Science and Technology, Subcommittee on Domestic and International Scientific Planning and Analysis, 94th Congress, 2nd session, Serial MM; Background Materials on Government Patent Policies: The Ownership of Inventions Resulting from Federally Funded Research and Development; Volume I -- Presidential Statements, Executive Orders, and Statutory Provisions; Volume II -- Reports of Committees, Commissions, and Major Studies. Washington, U.S. Govt. Print. Off., August 1976.

The Effects of Government Patent Policy on the Utilization of Inventions and on Contractor Participation

- Aspects of Government Patent Policy Affecting the Utilization of Inventions
- The Effects of Government Patent Policy on Contractor Participation in Federally-Funded Research and Development

Elements of a Sound Government Patent Policy

- Uniform Patent Policies and Procedures
- Rights in Inventions Made Under Government Contracts
- Rights to Inventions Made by Government Employees

The analysis concludes with a summary of each witness' observations and opinions regarding the issues surrounding Government patent policy.

II. THE EFFECTS OF GOVERNMENT PATENT POLICY ON THE UTILIZATION OF INVENTIONS AND ON CONTRACTOR PARTICIPATION

A major objective of these hearings before the Subcommittee on Domestic and International Scientific Planning and Analysis was to examine the effects of present Government patent policies. This section reviews the testimony regarding the effects of Government patent policies on the utilization of inventions, and on contractor participation in federally-funded research and development.

Aspects of Government Patent Policy Affecting the Utilization of Inventions

For many years there has been debate over what the Government's policy should be concerning the ownership of inventions resulting from Government-sponsored R&D. It is generally agreed, however, that whatever the policy, it should be one that promotes the utilization of inventions. A prime concern of the Government regarding its patent policies and practices should be to ". . . foster the means for making each invention contribute as much as possible of its potential utility to the Nation's welfare." (Forman, p. 13) It is maintained that a Government patent policy that fosters the utilization of inventions protects the public's investment in research and development, serves the public's interest, and is in keeping with the constitutional directive to ". . . promote Science and the useful Arts."

But while the consensus is that ". . . the public benefits most when patents are utilized . . ." (Ohlson, p. 89), experience shows that only a small percentage of Government-owned patents has been utilized. The Government owns about 28,000 patented inventions available for licensing, but only about 5% have been subject to some type of licensing action (Forman, p. 8; Ancker-Johnson, pp. 896-897).

It has been suggested that some of the remaining 22,000 or 23,000 patents have not been utilized perhaps because they are not commercially viable -- that they are simply ". . . patents for which there is no commercial market." (Thornton, p. 528) While this may be true of some of the Government-owned inventions, a number of witnesses were concerned that aspects of Government patent policy have affected the utilization of these inventions.

Critics maintain that there are several problems with Government patent policies that contribute to their ineffectiveness in promoting the utilization of inventions and furthering the progress of the arts and sciences. Some believe that two problem areas are the title-taking policies and the nonexclusive licensing practices of some Government agencies regarding contractor inventions resulting from federally-funded R&D and that these policies are the reasons for non-utilization.

Acquisition of Patent Title. Who should retain title to inventions arising out of Government-sponsored R&D -- the Government or the contractor? Some critics of Government "title-taking" policies argue that leaving title with the Government contributes to the nonuse of these inventions. They maintain that contractor ownership of patent rights assures better commercial development and utilization of an invention. Mr. Latker of HEW, in the context of a discussion about title waivers, suggested that when in his opinion title to an invention should have been waived to the contractor, ". . . the ownership in the Government resulted in nothing ever happening." (Latker, p. 818) Mr. Ohlson, a witness representing the industry sector, also noted: "You will find that the originating inventing organization has the greatest incentives to take advantage of their inventions and get it [sic] into the commercial area." He continued, "These incentives are all lacking when the title goes into the Government." (Ohlson, p. 281)

On the other hand, however, it was pointed out ". . . that merely to leave the rights to inventions in the hands of private ownership will not, per se, guarantee their exploitation or utilization." (Forman, p. 13) Another witness corroborated this view:

> Does leaving title to inventions with the contractors move the technology to the commercial marketplace for use by the public? Each time someone looks into use made of contractor-retained inventions, the same disappointing picture appears. The most optimistic study of record found only 13 percent ever used. (Quesenberry, p. 738)

Licensing of Government-Owned Inventions. Differing views on whether Government or contractor-acquisition of title would better promote invention utilization were presented, but there was general agreement that any policy lacking provisions for the implementation of invention utilization can contribute to the nonuse of those inventions. It is contended that when the Government retains title to inventions, utilization can be provided for in the licensing of those inventions (since the Government itself is not in the practice of commercializing inventions). Yet, several witnesses expressed opinions that certain Government licensing practices suppress rather than promote use of inventions.

It is the Government's policy to grant, upon request, nonexclusive royalty-free licenses to all inventions for which it holds title. In the event that there are no takers on a nonexclusive basis, the invention may then be offered on an exclusive basis. The policy of granting nonexclusive licenses is based on the belief that inventions generated with tax dollars should be made freely available so as to benefit all taxpayers. It is often argued, however, that the public may actually benefit less from the increased availability of Government-owned inventions. The reasoning behind this argument is in the paradox: "what belongs to everyone belongs to no one." (Forman, p. 17) It is a curious paradox of economic reality that "something free for all is of little use to anyone." (Quesenberry, p. 880) Accordingly, the argument against nonexclusive

licensing of Government-owned patents claims that this practice negatively affects the utilization of inventions.

In his prepared statement before the subcommittee Dr. Howard Forman stated, "It is an erroneous concept, unfortunately held by some persons who do not understand the practical aspects of operating a business or industry, that patents can be effectively utilized even if they are made available to interested practitioners on a nonexclusive basis." (Forman, p. 15) He explained:

> It is only when a party has the right to exclude all others from practicing an invention, at least for some limited time, that it may be economically feasible for that party to make the necessary investment. The lead time furnished by the exclusive right which the patent makes possible will give the developer an opportunity to recoup his investment and possibly to make a deserved profit before the invention is opened up (by expiration of the patent's exclusive right) to its practice by competitors. Thus, if patents are to be capable of performing their intended function, they can best be utilized if they convey an exclusive right to practice the patented invention for some minimum period of time. (Forman, p. 15)

Countering the argument against exclusive licensing of Government-owned inventions Dr. Forman continued:

> It has been contended that "the people pay, the people should own," i.e., "inventions financed with public funds should inure to the benefit of all the public, and should not become a purely private monopoly under which public-financed technology may be suppressed, used restrictively, or made the basis of an exaction from the public to serve private interests" (Att'y Gen., Report and Recommendations to the President, Investigation of Government Patent Practices and Policies, Vol. III at 28 (1947)).
>
> This narrow view does not take into account what may happen to the inventions in question; it only concerns itself with the merits of leaving or not leaving any rights to the inventions with the Government contractor or employee. If the Government takes title to the inventions and presumably permits practically anyone to practice the inventions this conceivably would make for the widest possible availability of the inventions to the public at large. Will this increased availability, improve the chances that the inventions will accelerate scientific achievement, help the economy, benefit the consumer, promote competition, and give more work opportunities to everyone? Not very likely, for unless there is a strong incentive to invest in the development of the invention, merely to maximize the availability of the invention (as by granting everyone who asks a royalty-free license) rarely serves as such an incentive. If by and large the inventions are not used, then the policy of merely increasing their availability to greater numbers of people could hardly be considered in the public interest. (Forman, p. 15)

Dr. Robert Ellert, Assistant General Counsel for Science and Technology of the Department of Commerce, who accompanied Dr. Ancker-Johnson to the hearings, also discussed nonexclusive licensing as a reason for the nonuse of Government-owned patented inventions. He noted:

> . . . how can we dispose of 28,000 patents. They are just sitting there. Again, it goes back to the fact many people don't want nonexclusive licenses. They want exclusive rights. This is a problem and we are thinking of ways to get the inventions in this portfolio utilized.
>
> (Ellert, p. 899)

Mr. Quesenberry's statement supported the notion that a patent offered on a nonexclusive basis has ". . . very little interest shown by the public in licensing its use." (Quesenberry, p. 796) Mr. Quesenberry gave two examples of private industry interest in commercializing Government-owned inventions in the event that exclusivity could be assured (p. 796) and he noted, "We're [Department of the Navy] having experiences right now of considerable private sector interest in our technology if there can be exclusivity under the patent system." (Quesenberry, p. 803)

Mr. Latker, of the Department of Health, Education and Welfare testified that when the pharmaceutical industry ran a boycott of Government-owned inventions it was at a time when the department had no capability of licensing industry on an exclusive basis. He noted that as a result their entire patent portfolio was virtually dormant. (Latker, p. 723)

The above testimony of the witnesses lent support to the argument that the licensing policies and practices of the Federal Government affects the utilization of Government-owned inventions and that specifically, nonexclusive licensing practices discourage the commercialization of these inventions. In Dr. Forman's opinion these policies constitute a form of suppression of patents:

> . . . I hold that the U.S. Government, by acquiring 28,000 patents and not seeing to their utilization for the public good, is also guilty of suppression of patents. It amounts to the same thing as the charge made against corporations that acquire many patents and don't use them.

> When the Government says it will license anybody who wants it and nobody comes and takes a license, that is negative suppression. It is suppression just as much as if they refused to grant a license, or refused to exploit the patented invention. (Forman, p. 11)

The Effects of Government Patent Policy on Contractor Participation in Federally-Funded Research and Development

Several witnesses testified that Government patent policies have inhibited contractor participation and have deterred competent and qualified contractors from seeking Federal R&D contracts. The conclusions of a 1968 study conducted for the Federal Council for Science and Technology, by Harbridge House, Inc., were cited in support of this notion [the study referred to appears in Committee Print, Background Papers, Volume II, pp. 69-140]:

> The study concluded inter alia that Government patent policy had major adverse effects on industry participation in Government research programs, such as program delay, loss of participants and diversion of private funds from Government lines of research. (Orlson, p. 90)

> It has been documented that in many cases, such as those cited in the famous Harbridge House report, . . . adverse patent and data policies of a Government agency have been a major cause of companies shying away from potential contracts with that agency. (Haughey, p. 172)

While a majority of witnesses suggested that aspects of Government patent policy adversely affect contractor participation in federally-funded research and development, one witness doubted that ". . . the record shows that patent rights provisions have turned away able and capable contractors." Mr. Quesenberry explained:

> Mr. Chairman, I have heard, and I have for 30 years been listening to comments made on Government patent policy, the comment that this corporation or that corporation does turn down a contract. In my opinion, this is normally brought to the hearings in Congress by the patent lawyers. We patent lawyers like the patent system, and we want everyone to appreciate the benefits of it.
>
> But I don't think the record shows this. I think that the Congress has had comments on this by others. For example, Admiral Rickover spoke in his capacity with the Atomic Energy Commission -- and this was a title agency. As I recall in his testimony years ago, Admiral Rickover made it

> very clear that he had no problem with finding able and willing research contractors to take the research.
>
> I have many times heard the counsel of the Senate Subcommittee on Patents, Trademarks and Copyrights appear before patent professional groups and say, "The chairman of our subcommittee would like to support you. Give him evidence of such instances." There may have been a few submitted, but the last I knew it was very discouraging. The captains of industry did not come forward and say, "We turned down research and development."
>
> So I guess, Mr. Chairman, what I'm saying is that you will find we patent lawyers will raise these precautions to you frequently, but I don't think the record shows that patent rights provisions have turned away able and capable contractors. (Quesenberry, pp. 803-804)

The general consensus, however, was that there are aspects of Government patent policies that adversely affect contractor participation. Drawn from the testimony of several witnesses, the following were cited as inhibiting factors:

(1) Lack of a uniform Government patent policy and resulting administrative burdens;

(2) Government agency title-taking policies; and,

(3) Mandatory or compulsory licensing of background patents.

Lack of a Uniform Government Patent Policy. Dr. Betsy Ancker-Johnson felt that the diversity in Government agency patent policies and practices and the administrative burdens associated with this lack of uniformity deterred competent and qualified contractors. She testified that the administrative burden of deciding the type of patent rights clause to be used and the uncertainty associated with that decision, ". . . has deterred both small businesses and the most competent of our larger concerns from taking Government contracts." (Ancker-Johnson, p. 900) In an explanation of the various agency policies concerning the allocation of rights to inventions resulting from federally-funded R&D, Dr. Ancker-Johnson discussed how this diversity may be burdensome to contractors thereby inhibiting their participation:

> An examination of the Federal patent policies mentioned above discloses a significant diversity in agency practices in this important area. As you have noted, Mr. Chairman, some agencies are obligated because of statutory requirements to use a clause acquiring title to all inventions resulting from the contract. Other agencies are required to use a clause acquiring title to all inventions made under the contract, but may waive title to the contractor under certain circumstances. In addition, other agencies may use any one of several clauses, either acquiring title, acquiring only a license, or deferring the allocation of rights determination until an invention is made under the contract, as provided by the 1971 Presidential statement.
>
> As a result of the diversity in agency practices, there is an enormous and needless administrative burden placed on both the Federal agencies and their contractors as extensive negotiations occur respecting the rights to be granted the contractors and those to be retained by the Government. This administrative burden often deters the most qualified and competent contractors from seeking Federal R&D contracts, thus inhibiting competition and curtailing the widespread utilization of inventions resulting from such research. (Ancker-Johnson, p. 889)

Government Title-Taking Policies. Two witnesses cited examples to support the opinion that Government title-taking policies may discourage contractor participation. Mr. Jesse Lasken of the National Science Foundation, who accompanied Mr. Latker to the hearings, stated:

> . . . there was one large company that was doing work in geothermal, had quite a portfolio in drilling, and that sort of thing, and they wouldn't have entered into these efforts if they had thought that they were going to lose rights in patents that might arise under drilling techniques and other things that they were doing. (Lasken, p. 807)

And, as one of the representatives from the industry sector Mr. Haughey testified: "We have in many cases in our own company been discouraged from pursuing technology useful to those agencies that control the field or work in the field where there is a title policy." (Haughey, p. 379)

Mandatory Licensing of Background Patents. It was brought to the attention of the subcommittee that the issue of the Government acquiring rights to a contractor's background patents ". . . is perhaps the most controversial and emotional issue of all." (Denny, p. 433) Background patents may be defined as those patents covering inventions made by the contractor before or outside of

the contract effort which are necessary to practice the subject matter of the contract work. Under certain circumstances the Government can require mandatory or compulsory licensing of a contractor's privately-developed background patents. Mr. Ohlson, a witness from the industry sector, suggested that the mandatory licensing of background patents ". . . has not been accepted by industry and, where made applicable to Government procurements, has usually led many companies to refrain from competing in such procurements." (Ohlson, p. 90) In answer to a question posed by Chairman Thornton and in support of his above statement, Mr. Ohlson further explained:

> Take the position of a company that has a strong patent portfolio in a particular area. The Government expresses a desire for research, generally through a request for a proposal, an RFP as it is called, or invitation to bid. Such a firm has two alternatives. They can compete for that contract and should that contract contain mandatory licensing, the company puts their patent portfolio into jeopardy. On the other hand, they can refuse to bid and stand by. If the end results of the contract infringes any one of their patents, the company can bring action against the Government in the Court of Claims and recover. Actually, the only cost is legal fees.
>
> If they decide to participate in the program they jeopardize their competitive position and may have to grant a license under their patents to their toughest competitor. There is an old expression in marketing: "Macey's don't tell Gimbel's how it runs its business." And that is the same way. When you expose your background technology, it is your competitor who may benefit. (Ohlson, pp. 114-115)

Mr. Haughey, another representative from industry, when asked by Chairman Thornton what was a major factor ". . . in inhibiting a company from entering into an agreement when proprietary rights may be surrendered . . .", answered: "The loss of control of your background is obviously a major factor." (Haughey, p. 284) Dr. Ancker-Johnson also noted: "It certainly was my experience in the private sector that private companies, those for whom I worked, were very reluctant to enter into contracts with the Federal Government because of the possible loss of rights already held by the company . . ." (Ancker-Johnson, p. 905)

III. ELEMENTS OF A SOUND GOVERNMENT PATENT POLICY: OBSERVATIONS AND OPINIONS

As noted in section II of this analysis, several witnesses at the hearings suggested that Federal patent policies have adverse effects on contractor participation and invention utilization. With this notion as an underlying theme, the testimony presented throughout the five days of hearings concentrated on three main topics:

(1) The concept of a uniform Government patent policy;

(2) Rights to inventions made by Government contractors; and,

(3) Rights to inventions made by Government employees.

A sound Government patent policy would appear to be one that addresses itself to these three main topics of concern and one that best responds to the objectives of maximum invention utilization and contractor participation. Examining the issues surrounding the three above-mentioned topics, this section of the analysis will present suggestions made at the hearings for alleviating the adverse effects of Government patent policies and the witnesses' observations and opinions on the elements of a sound Government patent policy.

Uniform Patent Policies and Procedures

A study of the patent policies and practices of the various Government agencies reveals that there is significant diversity in this area. As Chairman Thornton pointed out in his opening statement: ". . . the Federal Government has developed patent policies primarily on an agency-by-agency basis resulting in some 20 different approaches." (Thornton, p. 2) While the 1971 Presidential memorandum and statement of Government patent policy does provide some cohesion, not all agencies are governed by the administrative regulation because " . . . the patent policies of some agencies are dictated by provisions of their enabling legislation . . ." (Forman, p. 18) and the policy statement does not apply to

those agencies ". . . whose patent policies have been laid down by statutes which originated them or by amendments to those statutes." (Forman, p. 13) As a result, Government patent policy was characterized as " . . . still a kaleidoscope of individual agency practices . . ." leaving the ". . . situation as muddled as ever." (Quesenberry, p. 738)

As previously noted in section II of this analysis, Dr. Ancker-Johnson testified that the diversity in agency patent practices places enormous and needless administrative burdens on both the Federal agencies and their contractors and that in turn, these administrative burdens often deter qualified and competent contractors from seeking Government R&D contracts. (Ancker-Johnson, p. 889) Several witnesses expressed the opinion that while the differing missions of the various Government agencies require different patent policies because of the varied kinds of technologies the individual agencies deal with in discharging their responsibilities, nevertheless, some degree of uniformity might be desirable. Mr. Latker of HEW stated, ". . . our scientists don't view things on a mission-oriented basis at all, and I have no difficulty in perceiving some general principles of patent management that every agency could abide by in managing their portfolio." (Latker, p. 811) Mr. Wilderotter of ERDA suggested that ". . . it would be in the public interest to have some degree of uniformity between and among Government agencies." (Wilderotter, p. 440) And Mr. Hosenball of NASA gave his opinion on the issue:

> I think generally NASA supports the concept of some degree of uniformity, and I think legislation could be drafted providing that uniformity, at the same time that provisions are in the legislation to assure that the agency -- the particular agency -- carries out its statutory mission.
>
> So I think there certainly is a case for uniformity, recognizing that you do need some degree of flexibility in that uniform policy to allow agencies to carry out their own particular missions. (Hosenball, p. 488)

While several witnesses felt that uniformity could be desirable, some witnesses expressed stronger opinions on the degrees to which uniformity in Government patent policies should be implemented. As cited above, Dr. Ancker-Johnson felt that uniformity was necessary in order to lessen the administrative burdens associated with the complex and diverse patent policies of Government agencies. She also noted that it was the desire of the [former] Federal Council for Science and Technology to formulate a uniform Federal patent policy and that the Committee on Government Patent Policy was established in 1965 for the purpose of providing a forum for developing such a position. (Ancker-Johnson, p. 861)

When Mr. Ohlson, a witness from the Aerospace Industries Association of America, Inc. (AIA), was asked if he saw a need for different patent policies he gave AIA's stand on the issue:

> We felt the time had come for the Congress to take a real hard look to see whether or not a single patent policy would not be proper at this time. Since that time, we have continually examined the question and have included it in our proposed bill. We think it is time that there is a single policy and that it be uniformly administered. (Ohlson, p. 380)

Mr. Quesenberry of the Department of the Navy expressed his opinions regarding the diversity of Government agencies' patent policies:

> The private sector is entitled to be able to deal with the many different representative agencies of the Federal Government under uniform conditions. The agencies who seek capable research assistance from the private sector to carry out programs, should not be competing with one another in terms of patent policy. Executive direction and congressional overseeing of the functioning of Government should not be subjected to a hodgepodge of agency patent policies. (Quesenberry, p. 739)

And Dr. Forman, in his prepared statement before the subcommittee, expressed his opinion:

> As long as the paramount criterion is to be the <u>utilization</u> of the invention, and if it is decided that such utilization is best done through such Government-chaperoned private activity, then <u>all</u> inventions in which the Government has an interest should be made subject to the identical treatment. (Forman, p. 16)

Notwithstanding the claims that some diversity in Government agencies' patent policies and practices is justified, the witnesses who discussed this issue generally agreed that uniformity is a desirable element of a sound Government patent policy.

The Allocation of Rights to Inventions Made by Government Contractors

A major part of the testimony focused on issues surrounding the allocation of rights to inventions made by Government contractors: title vs. license-taking policies, nonexclusive vs. exclusive licensing of inventions, waiver policies, rights to background patents, etc. In the discussion that follows, opinions on these issues will be examined relevant to existing Government patent policies and policy options or alternatives.

Rights in Inventions Made Under Government Contracts. Mr. Ohlson included as part of the hearing record an AIA document entitled "A Proposed Government Procurement Invention Incentive Act" (pp. 92-113). The document contains a synopsis of existing Federal policies with an explanation of title and license policies:

> Existing Federal policies fall within two general categories: a "title policy" under which the Government acquires title to Subject Inventions and Subject Patents and the contractor normally retains a royalty-free non-exclusive license therein, and a "license policy" under which the contractor retains title and the Government acquires a royalty-free, non-exclusive license.
>
> Actions by the Congress to formulate patent policy have resulted either in the enactment of a "title policy" or a statutory requirement that "patents . . . be fully and freely available to the general public." This latter statutory requirement has been implemented as a "title policy."
>
> In 1963, President Kennedy issued a Memorandum and Statement of Government Patent Policy to guide executive agencies, not otherwise governed by statute, in allocating rights to inventions made under Government grants and contracts. The Presidential Policy, developed after extensive interagency deliberations, seeks to accommodate the various Government policies and in essence embodies both "title" and "license" policies. The Presidential policy also includes "march in rights" under which, where the contractor

> retains title, the Government may under certain situations require the granting of licenses, either royalty-free or on other reasonable terms.
>
> Significantly, the Presidential Patent Policy was revised in 1971 to enlarge the authority of agency heads to waive title to contractors and to authorize the grant of an exclusive license under a Government-owned patent. (p. 96)

Dr. Forman pointed out in his prepared statement that "There are a variety of rights to patents and patentable inventions which the Government may obtain, and several ways in which it may administer those rights." (Forman, p. 14) Several of these ways were discussed at the hearings and are summarized as the following:

-- The Government may obtain title and offer nonexclusive licenses to all who apply;

-- The Government may obtain title and grant exclusive licenses that may be revoked or transferred to another party in the event that commercialization has not taken place in a fixed amount of time;

-- The Government may take title and conceivably engage in manufacturing or commercializing the invention itself.

or . . .

-- The Government may normally take title with provisions for the waiver of the title to the contractor, the waiver being subject to march-in rights (either requiring the licensing of others or termination of the waiver) in the event that commercialization has not taken place in a fixed amount of time;

-- The Government may leave a "defeasible title" to the inventor -- in the event that steps are not taken by the inventor to commercialize the invention, the Government can take back the title and grant it to another interested party.

There are many arguments against both Government acquisition of title to inventions made under Government contracts and nonexclusive licensing. As pointed out earlier, the policy of granting nonexclusive licenses to Government-owned inventions to any interested parties is based on the concept that inventions generated with tax dollars should be made freely available to the taxpaying public. The argument against nonexclusive licensing maintains that in reality, there are few or no takers of licenses offered on a nonexclusive basis and

what results is the non-utilization of Government-owned inventions [see section II of this report for testimony opposing the Government practice of nonexclusive licensing].

The position generally taken by most of the witnesses at the hearings was that if the Government takes title to inventions resulting from federally-funded research and development, it should permit the exclusive licensing of these patents in order to better insure the utilization of inventions. As Dr. Forman pointed out:

> It is only when a party has the right to exclude all others from practicing an invention, at least for some limited time, that it may be economically feasible for that party to make the necessary investment. The lead time furnished by the exclusive right which the patent makes possible will give the developer an opportunity to recoup his investment and possibly to make a deserved profit before the invention is opened up (by expiration of the patent's exclusive right) to its practice by competitors. Thus, if patents are to be capable of performing their intended function, they can best be utilized if they convey an exclusive right to practice the patented invention for some minimum period of time. (Forman, p. 15)

Dr. Forman, however, noted that the mere granting of exclusive licenses does not guarantee the utilization of inventions. Accordingly, he suggested that the Government oversee the utilization of inventions through the following provisions:

> To discourage disuse or non-use of inventions, there should be some requirement that the holders of rights thereto must prove that they have made reasonably satisfactory efforts to utilize them commercially within a stipulated period of time, or else yield the exclusive rights thereto. The Government's right and duty should be to see to it that if such utilization is not accomplished as described, the exclusive rights are transferred to some other party that seems likely to bring about the desired utilization. (Forman, p. 13)

In support of the exclusive licensing of Government-owned inventions, Mr. Quesenberry believed that the contractor should have automatic first option for exclusive rights to commercially develop and market inventions under the contract for a fixed period of time. He maintained that insurances may be

provided for the utilization of inventions through the revocability of the exclusive right, should the contractor not carry out its plan for commercialization. (Quesenberry, p. 739) Yet Mr. Denny suggested that in negotiating patent provisions for ERDA R&D contracts, the revocable license has presented substantial problems. He concluded, however:

> In view of the fact that experience has shown that very few exclusive licenses have been granted by the government, and in view of the several safeguards provided to the contractor prior to the revocation of such licenses, the contractor is virtually assured that his license will not be revoked in any field of use in which the contractor intends to commercialize the invention. (Denny, p. 435)

It was suggested that the Government could conceivably retain title to an invention and engage in commercializing the invention itself as has been done in Britain and Canada. (Forman, p. 20) In view of the fact that such a practice would substantially alter the ". . . entire political-economic free enterprise philosophy of the country" (Forman, p. 16), this was regarded as an interesting but not an acceptable alternative.

Another method by which the Government can administer rights to patentable inventions arising out of Government-sponsored R&D is to waive title of these inventions to the contractor. Both NASA and ERDA patent policies allow the granting of waivers. To encourage the utilization of inventions whose title is waived to the contractor, waiver rights normally carry with them Government march-in rights either requiring the licensing of others or the termination of the waiver in the event that steps toward utilization have not taken place in a fixed amount of time.

Those in favor of patent policies allowing the granting of waivers maintain that the flexibility allowed by this policy provides ". . . incentives to contract . . . and to commercialize resulting technology", and that the march-in rights are available to ". . . give others the opportunity to commercialize

inventions where the waiver recipient does not succeed." (Denny, p. 436) Speaking for ERDA, Mr. Denny observed that although ERDA is still in a policy developing mode ". . . the basic policy concepts of patent waivers has not been a problem." (Denny, p. 432) Mr. Wilderotter, also of ERDA, cited industry opinion regarding ERDA's waiver policy. He noted that although industry expressed an overwhelming preference for a policy of allowing Government contractors to retain title to inventions, industry believed that:

> . . . the flexibility in granting waivers contained in ERDA's patent policy, if properly managed and liberally applied, could be sufficient to encourage private sector participation and provide sufficient incentives to secure commercialization of the results of ERDA's research and development efforts. (Wilderotter, p. 428)

It was recognized, however, that waivers also carry with them administrative burdens associated with negotiating time and cost, which discourage competent and qualified contractor participation in federally-funded research and development. A representative of the industry sector, Mr. Haughey, noted:

> The procedures in petitioning for and obtaining the grant of waivers under agencies such as NASA and ERDA are a substantial burden on a contractor who wishes to acquire patent rights. The effort required to petition for such waivers is usually a close approximation to the effort required by technical and attorney personnel to obtain a patent, thus substantially increasing normal patent costs. The patent, when granted, is subject to revocation and is also subject to the customary nonexclusive license for use by or for the Government and often subject to more Government rights. It follows that companies are reluctant to request and acquire rights under Government contracts where waiver procedures are required because of the complexity of the procedure and the cost attendant thereto. (Haughey, p. 174)

However, in defense of ERDA's waiver policy and the associated administrative burdens, Mr. Denny explained:

> The great majority of our negotiating time is spent, not on the basic concept of a waiver, but on the detailed language of the waiver grant and on other language set forth in the patent clause. For example, it has

not been unusual for a waiver situation to be recognized and agreed upon as a result of a one-half-hour conversation, and yet the detailed language may involve 8 days of negotiation.

There are many reasons for this situation. ERDA was the first major research and development agency to actually implement the new patent language set forth in the FPR and ASPR which will be adopted Government-wide. We have, therefore, taken the brunt of industry's first contact with these policies and contract language. ERDA is also dealing with a group of contractors which in large measure have never before contracted with the Government. And finally, with almost each waiver request or waiver situation, ERDA is establishing new policy or filling out a total waiver policy with new situations for which appropriate contract language has not been established. With the finalization of ERDA's regulations, the development of more express waiver language for contract clauses, and the general familiarity with the FPR/ASPR patent language, substantial progress should be made in reducing our contract negotiation time. (Denny, p. 432)

In addition to the arguments presented against waiver policies, Mr. Ohlson, a witness from industry, presented another opposing view. He maintained that while waivers do provide some degree of incentive to the contractor community, ". . . the acquisition of rights to inventions should be based upon a firmer or more permanent base than the decision of an incumbent agency or department head or his designee." (Ohlson, p. 90) And Mr. Woodrow, a witness from academia, presented the university sector's opinions regarding waivers:

Sometimes the waiver is granted in advance for a particular grant or contract for all inventions that may be made. Sometimes the waiver is granted after an invention is identified -- after the research is well under way and the invention is made on which a waiver is desired. And my experience and that of my colleagues are not favorable in either situation. Waiver applications are complicated and costly. I believe that it costs more than $1,000 just to get all the machinery underway to get the waiver. The agency's criteria for granting waivers are difficult to satisfy and their administration demonstrates the typical bureaucratic tendency of being more stringent than necessary in order to avoid criticism. Waivers also often carry with them march-in requirements and other strings. Waivers on individual inventions after identification generally make it impossible to enter into drug testing agreements or other cooperative undertakings, such as a program we have underway right now with an industry supporting it and the Federal Government supporting it. The industrial organization will not be satisfied with a waiver system after the invention is made. Waivers put the shoe on the wrong foot. If what I have said earlier is true, there should be a very strong presumption that the country's interests are best

served by vesting title to inventions in university contractors and grantees unless there is good and sufficient reason to do otherwise.

(Woodrow, pp. 73-74)

Some witnesses felt that a Government patent policy that leaves title with the inventor is the most desirable alternative. Such a policy would be subject to march-in rights in which the Government could take back the title or require licensing in the event that steps are not taken by the inventor to commercialize the invention. Dr. Forman commented on this alternative:

> A more acceptable alternative is to leave the rights to inventions in the hands of Government contractors who conceived them in the performance of their contract. This would be much more in the public interest if it can be shown that to leave the rights with the contractors will practically guarantee maximum utilization of the inventions.
>
> A proposal has been advanced whereby such a guarantee would be provided. Either the inventions, which contractors would be able to control as their own (subject to the nonexclusive, royalty-free right for use by the Government) are acceptably worked on a commercial basis, or they might forfeit that control. This gives the contractor a chance to get a return on its own investment in the making of the invention, which it made either before or after receiving the Government contract, and assures that if the invention is not put into the commercial millstream, in a specified period of time, the Government may step in and transfer the exclusive right to practice the invention to someone else. In this way, the Government can pursue its responsibility of seeing to the development and use of the invention, without departing from the private ownership and management principles under which the country has prospered for over 200 years.
>
> (Forman, p. 16)

Mr. Ohlson, one of the witnesses from industry, expressed a preference for a policy which allows the contractor to retain title to inventions:

> Stated concisely, a policy to achieve these goals should provide for the contractor to retain title to inventions made in the performance of Government contracts with rights in the Government to practice such inventions for governmental purposes and in the public to obtain licenses thereunder in certain circumstances, for example, where the contractor is not meeting public requirements. (Ohlson, p. 91)

The witness from academia, Mr. Woodrow, also expressed a preference for such a policy:

> To summarize, I urge that the title to inventions arising from federally funded research at colleges and universities be left with the

> institutions, that this be done with the Government receiving a royalty-free nonexclusive license for Federal Government purposes, and that the Institutional Patent Agreement with reasonable and minimum requirements, as the best method so far encountered, be the method for implementation. If these objectives can be accomplished, the public interest will be advanced and the equities of university inventors and of universities themselves will be satisfied. (Woodrow, p. 75)

Mr. Woodrow briefly defined the "institutional patent agreement" and urged that it be applied to all Federal agencies in funding research and development at colleges and universities:

> Briefly, the IPA is an agreement between an agency and a college or university covering the management of all inventions arising from agency grants or contracts to the institution, unless specifically excepted. As an advance condition the institution's patent policy and program must meet certain criteria. There are limitations on how patentable inventions can be handled, and the Government may require licenses or additional licenses if adequate progress is not made toward practical application, or for purposes such as fulfillment of public health or safety needs. (Woodrow, p. 74)

Dr. Betsy Ancker-Johnson supported the concept of a policy which allows contractor retention of title. Speaking as chairwoman of the Committee on Government Patent Policy of the Federal Council for Science and Technology, she explained a draft policy proposed by the committee. She noted that this proposed policy adopted the basic concepts of the Commission on Government Procurement's "alternate approach." She explained:

> The policy concepts incorporated in the alternative approach by the Commission on Government Procurement and endorsed by the Committee on Government Patent Policy, would permit the contractor to retain title to all patents resulting from Federal contracts and grants, and require the contractor to license others in certain specified situations so as to safeguard the public interest. In particular, the contractor would be required to license others if he fails to commercialize an invention covered by the patent. Even where he commercializes his invention, the contractor would be required to license others to meet specific public interest needs such as health, safety, and welfare, or to correct a situation inconsistent with the antitrust laws. It is expected that, in these licensing situations, the contractor would generally be willing to license third parties without a Federal agency determination requiring him to do so. Should a contractor refuse to license a third party, the Federal agency itself has the right, in appropriate circumstances, to license the third party, subject to the contractor's right to a hearing and an appeal.

> The proposed policy would reduce drastically -- I can't emphasize that enough -- the administrative burden of deciding the type of patent rights clause to be used in the some 30,000 R&D contracts executed annually, and would obviate the need for processing waiver petitions. (Ancker-Johnson, p. 888)

Mr. Quesenberry, however, presented arguments against a policy that provides for contractor ownership of inventions arising out of Government-sponsored R&D. It was his opinion that the Government should own inventions, and that the contractor be allowed to obtain first option for exclusive licensing instead of retaining title. Mr. Quesenberry cited reasons why he felt the Government rather than the contractor should hold title to inventions resulting from Federal sponsorship of R&D. He suggested that if the Government does not protect its technology it may find itself in the position of having to pay royalties to patent holders who have protected their technology and ". . . we'll end up with the taxpayer paying for this new technology twice." (Quesenberry, p. 800) He believed the Government should own patents for a second reason:

> The second reason why we should own patents, I think, is exactly what I say is the bottom line, the utilization of this technology. I think you've had many witnesses, and I'm sure you knew even before these hearings, that if we take this tremendous reservoir of technology and dedicate it to the public no one wants it because of the risk capital involved. . . .
>
> So I think that the present interest in the Congress and in the executive branch of doing something with this technology reservoir, moving it back to the taxpayer on the marketplace, must have the patent system behind it or it isn't going to move to the marketplace. So who else is to protect this if it isn't the Government, who paid for it in the first place? Then use the patent system to let the originator, be it a contractor, or what, to bring it to the marketplace. If he won't, then offer it to someone else with the protection of the patent system over his risk capital. (Quesenberry, p. 800)

Mr. Quesenberry maintained that even though the record shows that the use of Government-owned inventions has been poor, the experience under contractor retention of title has not proved to be any better. He cited a study that showed ". . . less than 10 percent of the inventions retained by contractors

ever reached the commercial marketplace . . ." (Quesenberry, p. 803) It was Mr. Quesenberry's opinion that if there can be exclusivity under the patent system and that if the Government will take steps to publicize its technology and make the incentives of the patent system available to bring forth the risk capital, the ". . . 3 percent usage of the old days will rapidly disappear."

Government Policy Regarding Background Patents. Background patents are defined as those patents covering inventions made by the contractor before or outside of the contract effort which are necessary to practice the subject matter of the contract work. The subcommittee heard testimony that the Government policy of acquiring rights to contractors' background patents is a controversial policy -- one that possibly affects the participation of contractors in federally financed research and development. The controversy arises in the Government's right under certain circumstances to require licensing of a contractor's privately-developed background patents. It is the usual situation that:

> . . . a contractor qualified to perform the contract work will have a background expertise that is likely to be covered by patented technology. If the contractor is to use his best efforts under the contract, then it is also likely that this background patented technology will be included in the contract results. (Denny, p. 433)

Mr. Ohlson noted that a contractor who is competing for a Government contract demonstrates his competency and is hired accordingly because of his background. He pointed out:

> Obviously, a company brings into that competition years and years of private investment in establishing a company's technical expertise, that will permit the company to be responsive to the Government's needs. Even though there are those that say there is a use of public funds in bringing an invention into being under a Government contract, it must be remembered in many cases the invention is derived from the background and skills of the engineers and the technicians who have not in any way engaged in Government activities. Thus, it may be difficult to distinguish between an

> invention made under the Government contract and an invention that has been made patented with inclusive private funds.
>
> If they decide to participate in the program they jeopardize their competitive position and may have to grant a license under their patents to their toughest competitor. (Ohlson, p. 114)

Along the same lines Mr. Haughey noted, "The potential loss of a market position by a contractor as a result of the required licensing of its background patents is a severe handicap in pursuing and acquiring Government contract business." (Haughey, p. 174)

Mr. Denny explained ERDA's policy and practice with respect to background patents:

> I think one of the problems is that when background rights are discussed, unfortunately, the phrase is used that ERDA, or the government, "takes" the background rights, or that the contractor has to "give up" his background rights. I think this really is not the case.
>
> We have a very delicate problem here. ERDA's responsibility is to create alternative energy sources. We must do this in cooperation with industry. Industry is going to have a background position, and that background position is going to find its way into ERDA's research results. If the contractor is the only corporation in the United States that can utilize the results of this contract effort, I think we have a potential conflict between our missions: to encourage competition, and to encourage widespread utilization.
>
> What ERDA has tried to do is to define a very narrow background clause, which I might add, is not required by our legislation.
>
> We have tried to define a very narrow clause that attempts to draw a compromise between needs of the Government and the contractor, to make sure the program results are accessible to the public, and to give the contractor appropriate equity in his background. What the clause basically does is define as a background patent, what I would call a blocking patent, only those patents, the utilization of which are absolutely necessary in order to practice the subject matter of the contract.
>
> The right we take in a background patent for the Government is the free right in the Government for research, development, and demonstration purposes only. I like to paraphrase this right like this: We have asked industry to allow us to commercialize their technology on their behalf. Once the invention gets into our program, we can complete our research and development, and that is all. The Government does not obtain production rights or commercial rights.

> Second, in background patents, we ask the contractor to license others at reasonable royalties upon our request, but only in the field of use of the contract, not in other fields of use.
>
> In addition, we throw in several safeguards. The contractor can ask to be relieved of this responsibility; or, alternatively, if he can show that there is alternative technology commercially available or that he is supplying the market at reasonable prices, he does not have to license.
>
> (Denny, p. 438)

Concluding his discussion of the topic of background patents Mr. Denny pointed out:

> Although industry does not like the concept of a background patent rights clause, and views it with a great deal of suspicion, once the clause has been studied and understood, it has generally been accepted with little change. (Denny, p. 435)

However, it was Dr. Ancker-Johnson's opinion that ERDA's policy concerning background patents is ". . . probably hampering ERDA very markedly." (Ancker-Johnson, p. 905)

Chairman Thornton asked Mr. Hosenball for NASA's policy regarding background patents and Mr. Hosenball explained:

> Our policy is not to take background patents. It's done very rarely. I can remember only one or two cases in my 15 years in NASA where that's been done.
>
> The nature of our mission is to acquire products primarily for government use, and, therefore, we really don't generally require background patents to carry out our mission, so we as a matter of policy do not require background rights of any sort, and generally where it is required, or somebody thinks it's required. That decision is made in NASA headquarters. We're very, very careful in exercising the taking of any sort of background rights. (Hosenball, p. 509)

Rights to Inventions Made by Government Employees

Another area of controversy relating to Government patent policy is the Government's policy with respect to inventions made by its employees. Although this issue was not widely discussed at the hearings, some witnesses commented regarding it. Generally, rights to inventions made by Government employees are

determined by provisions of Executive Order 10096 issued by President Truman on January 23, 1950. Briefly, the policy set out in the Executive order states that the Government shall obtain the entire right, title and interest to all inventions made by Government employees (1) during working hours, (2) with a contribution by the Government of facilities, equipment, materials, funds, etc., and (3) which bear a direct relation to or are made in consequence of the official duties of the employee/inventor.

It was Dr. Forman's opinion that Executive Order 10096 may be declared unconstitutional and that on the basis of this doubt, ". . . it would be helpful to the country in the future, if we had a statute which defined these rights rather than to depend upon an administrative order, even an Executive Order." (Forman, p. 7)

As has been noted previously, it is Dr. Forman's belief that an acceptable alternative to the present Government patent policy is to ". . . leave rights to inventions in the hands of Government contractors who conceived them in the performance of their contract." (Forman, p. 16) Such a right would be subject to march-in rights allowing the Government to step in and transfer the exclusive right to practice the invention to someone else in the event that the contractor does not commercialize the invention in a specified period of time. Regarding Government employee inventions, Dr. Forman maintained that if the underlying philosophy of the above-mentioned alternative policy is accepted, ". . . there is every reason to believe that it should also be applied to inventions made by Government employees as well as by contractors." (Forman, p. 16) Dr. Forman bases this notion on his opinion that:

> As long as the paramount criterion is to be the utilization of the invention, and if it is decided that such utilization is best done through such Government-chaperoned private activity, then all inventions in which the Government has an interest should be made subject to the identical treatment. (Forman, p. 16)

Dr. Ancker-Johnson also discussed the Government employee invention issue at some length. In identifying the three salient points of the proposed policy she was introducing, she stated one of them to be the aggressive licensing of inventions made by Federal employees. (Ancker-Johnson, p. 897) She briefly discussed the draft policy's position regarding this issue:

> Now, regarding Federal employee inventions; how should the rights to inventions made by Federal employees be allocated? The committee believes that the basic policy concepts of Executive Order 10096 issued by President Truman in 1950 should be codified.
>
> Briefly, under the proposed policy, the Federal Government would retain ownership to all inventions made by Federal employees where the invention bears a relation to the duties of the employee-inventor or is made in consequence of employment. That is entirely symmetrical with the industrial situation. The policy encourages employees to invent because an incentive awards program is incorporated and income sharing is provided.
>
> The committee believes the draft policy should contain specific provisions for Federal employee inventions, especially since not all Federal employees are covered by the Executive order. (Ancker-Johnson, p. 888)

And, Dr. Ancker-Johnson explained how the proposed policy would function as an incentive for Government employee invention disclosure:

> Inventions arrived at in the course of the employee's normal work belong to his employer, the Federal Government. Any inventions that an employee may make either on his own time or not as a result of the mission of the organization to which he belongs -- those under this policy would be retained by the employee.
>
> I think it is interesting to note that individual inventors are sometimes rather reluctant to pursue or prosecute applications themselves, first of all, because it does require a front-end investment, and second, because most individuals, particularly Federal employees, have no easy way to market their inventions.
>
> If there were a really aggressive full-blown method or process in the Federal Government today for marketing federally owned inventions, I suspect that quite often an inventor would prefer to have the Federal Government prosecute a patent application, at no expense to him, and proceed to market his invention. Under our policy, the inventor would enjoy a return on his effort, a royalty return and an incentive award. This method works in the private sector and we anticipate it would work in the public sector as well.

> If we reward Government employees by returning to them part of the royalty obtained on the licensed patents, I believe we will see a decided increase in the number of inventions disclosed and also in the quantity of these, in terms of their commercial potential.
>
> (Ancker-Johnson, p. 902)

Mr. Ellert, who accompanied Dr. Ancker-Johnson to the hearings, spoke on the constitutionality of Executive Order 10096:

> The Executive order, Mr. Chairman, to which you refer takes the rights away from the employees and places them in the Government. It makes an analogy between a common law situation where the employer hires an employee and the employee's work is owned by the employer. This concept of the Executive order has been challenged as you say in a lower court and we don't know just how this will end up.
>
> Going back, however, it more or less confirms the point that the Government doesn't have to take the employees work -- product. Even now, the Executive order could be changed to leave it with the employee under suitable circumstances -- possibly with the Government retaining march-in rights if the employee doesn't develop it. We do not know what the ultimate fate of the Executive order will be. (Ellert, p. 901)

IV. GOVERNMENT PATENT POLICY: A SUMMARY OF OBSERVATIONS AND OPINIONS

This section presents a synopsis of the ten witnesses' opinions on the topic of Government patent policy and the surrounding issues. These observations and opinions are arranged by witness, in the order in which they testified at the five days of hearings.

Dr. Howard I. Forman, Department of Commerce. Dr. Forman suggested that the Presidential statements on Government patent policy ". . . need to be replaced by a properly worded statute." (Forman, p. 18) He stated that the basic objectives of this policy should be the establishment of uniform policy for all Government agencies and the fostering of the maximum utilization of inventions resulting from Government-supported R&D. (Forman, p. 18) Dr. Forman noted:

> . . . the real goal, the real objective in deciding who should hold title to Government-subsidized inventions should be to do what Article 1, Section 8 says; namely to find a way to utilize those inventions in order to promote the Nation's progress of arts and sciences.
>
> Now, it seems to me that it should be of less importance, from the Government's point of view, as to whether you leave with the inventor or the contractor, as the case may be, or how you make such decisions, so long as you follow it up with some effort, some system, whereby you can oversee the invention to see that it is utilized, overseeing the utilization of such inventions should be the Government's primary responsibility. (Forman, p. 8)

In the event that a contractor is allowed to obtain title to inventions, Dr. Forman believed the contractor's rights should be subject to "march-in" procedures. He commented:

> If the Government has invested money, it has the right to do something to oversee the patents, to the extent that it should inquire whether the patents have been developed and the inventions developed for commercial utilization. If the patent holder hasn't done it at that point, the Government should step in with what is now appropriately called "march-in" rights. (Forman, p. 20)

Dr. Forman concluded his statement before the subcommittee with his endorsement of the Commission on Government Procurement's "alternate approach."

[The "alternate approach" referred to appears in Committee Print, Background Papers, Volume II, p. 195.] Basically, the "alternate approach" urges that contractors be allowed to obtain rights to inventions, subjecting these rights to "march-in" procedures; and that uniformity in Government patent policies and procedures is desirable and practical. In support of this approach Dr. Forman concluded, "I think this approach is close enough to the scheme that I have always favored, and still favor, that it should be seriously considered as the approach to take in any new legislation." (Forman, p. 11)

Mr. Raymond Woodrow, Princeton University. As the only witness representing academia at the hearings, Mr. Woodrow spoke on behalf of the Subcommittee on Patents and Copyrights (Committee on Government Relations, National Association of College and University Business Officers) of which he is a member, and as president of the Society of University Patent Administrators. Summarizing his opinions on the treatment of inventions in grants and contracts from the Federal Government to colleges and universities, Mr. Woodrow stated:

> To summarize, I urge that the title to inventions arising from federally funded research at colleges and universities be left with the institutions, that this be done with the Government receiving a royalty-free nonexclusive license for Federal Government purposes, and that the Institutional Patent Agreement with reasonable and minimum requirements, as the best method so far encountered, be the method for implementation. If these objectives can be accomplished, the public interest will be advanced and the equities of university inventors and of universities themselves will be satisfied. (Woodrow, p. 75)

[The Institutional Patent Agreement is discussed in more detail in section III of this analysis.]

On behalf of the American Council on Education, Mr. Sheldon Elliot Steinbach, Staff Counsel of the organization, wrote a letter to the subcommittee ensorsing Mr. Woodrow's testimony. Mr. Steinbach wrote:

> On behalf of the American Council on Education, an association of 1,311 colleges and universities and 172 national and regional education

associations, and the associations noted hereunder, we are writing to support the statement of the Society of University Patent Administrators presented to the Subcommittee on Domestic and International Scientific Planning and Analysis of the House Committee on Science and Technology by Raymond J. Woodrow on September 23, 1976. (p. 76)

We would like to associate ourselves with Mr. Woodrow's detailed statement on this issue, on behalf of the Association of American Universities, the National Association of College and University Business Officers, and the National Association of State Universities and Land-Grant Colleges. (p. 77)

Mr. Franz Ohlson, Aerospace Industries Association of America, Inc. (AIA). Mr. Ohlson was one of the two witnesses from the industry sector. On behalf of of AIA (a national trade association representing the major manufacturers of aeronautical and astronautical vehicles) Mr. Ohlson submitted a proposal in the form of proposed legislation. The proposal is entitled "A Proposed Government Procurement Invention Incentive Act" and appears in the hearing record attached to Mr. Ohlson's statement (pp. 92-113). The basic concepts of the proposal were summarized by Mr. Ohlson:

Having commented on the shortcomings of current Federal patent policies, it would appear appropriate to offer AIA's concept of a policy that would make optimum use of our patent incentives and, by appropriately recognizing and balancing the equities and needs of the Government and its contractors as well as the public, would encourage privately financed research and development efforts and greater competition for Government R&D contracts.

Stated concisely, a policy to achieve these goals should provide for the contractor to retain title to inventions made in the performance of Government contracts with rights in the Government to practice such inventions for governmental purposes and in the public to obtain licenses thereunder in certain circumstances, for example, where the contractor is not meeting public requirements.

Such licenses would be royalty free or royalty bearing depending upon the equities of the situation and would include to the extent necessary a right under any privately developed background patent of the contractor necessary to reproduce the end item called for by the contract.

It should be observed that although the AIA's proposed policy includes mandatory licensing of background patents, such licensing is extremely limited in nature, that is, to reproduce the end item delivered to the Government, and in no way extends otherwise to a contractor's privately developed patents. (Ohlson, p. 91)

Mr. Ohlson also expressed the AIA opinion that the Government have a single patent policy ". . . and that it be uniformly administered." (Ohlson, p. 380)

Mr. Charles S. Haughey, Hughes Aircraft Corporation. As one of the witnesses from the industry sector, Mr. Haughey based his remarks on what he felt is a basic principle in analyzing Government patent policies. He stated this principle to be: "The balance of interest of the Government and the contractor or grantee in the rights in intellectual property should be based on their respective needs." (Haughey, p. 170) After a careful explanation of the parties involved in Government patent policy matters, their respective needs, and the effects of Government patent policies, Mr. Haughey concluded:

> It is my hope that you will analyze any proposed Government patent policy by determining whether the patent policy applicable to an agency establishes a balance that provides those rights in intellectual property that are needed to achieve its statutory function and leaves to the contractors such other rights as they need. By applying this basic policy of balance of needs, the true constitutional objectives of promotion of science and useful arts can and will be achieved while permitting the necessary functions of Government to be accomplished. (Haughey, p. 278)

Mr. James A. Wilderotter, ERDA. Mr. Wilderotter's testimony explained ERDA's patent policy regarding the ownership of inventions resulting from federally-funded R&D. He explained that ERDA's patent policy is controlled by two statutes: the Atomic Energy Act of 1954, as amended; and the Federal Nonnuclear Energy Research and Development Act of 1974. Regarding these acts, Mr. Wilderotter stated:

> To summarize, both the Atomic Energy Act and the Nonnuclear Energy R&D Act provide that normally the Administrator will take title to inventions, but both also give the Administrator the discretionary authority to waive many of these rights. As a result, ERDA has been able to harmonize its nuclear and nonnuclear patent policies into a single consistent policy. (Wilderotter, p. 428)

After briefly outlining ERDA's patent policy and discussing new patent regulations which harmonize ERDA's two statutory provisions, Mr. Wilderotter summarized public comment regarding this policy:

> During the public hearings regarding the legislative patent policies, industry representatives and trade organizations expressed an overwhelming preference for a policy of allowing government contractors to retain title to inventions, with the government getting a royalty-free, nonexclusive license for governmental purposes. Notwithstanding a preference for such a policy, the industry participants noted that the flexibility in granting waivers contained in ERDA's patent policy, if properly managed and liberally applied, could be sufficient to encourage private sector participation and provide sufficient incentives to secure commercialization of the results of ERDA's research and development efforts. The public hearings also surfaced some concern over the precontract "front end load" of ERDA's proposed regulations -- that is, the considerable administrative burdens, on the part of ERDA and the contractor, and time delays required to negotiate acceptable contract provisions.
>
> The comments by the university community on ERDA's legislative patent policies and regulations were overwhelmingly uniform in the view that ERDA's patent policies should permit universities with approved technology transfer capabilities to retain title to inventions developed under ERDA grants and contracts. (Wilderotter, p. 428)

Mr. Wilderotter also summarized ERDA's opinion regarding its policy:

> In response to the requirement for a report on ERDA's patent policies contained in section 9(n) of the Nonnuclear Act, we submitted a preliminary report "The Patent Policies Affecting ERDA Energy Programs," dated January 1976 (ERDA 76-16). This report contains our conclusions that:
>
> Our patent provisions may be satisfactorily harmonized into a single uniform patent policy and procedure;
>
> Our limited experience suggests that our patent policy is workable and will not become a major stumbling block in accomplishing our missions; and
>
> The flexibility provided by our policy permits an equitable and practical allocation of rights to accommodate most cases.
>
> (Wilderotter, p. 429)

Mr. Wilderotter concluded his prepared statement noting that ERDA is still monitoring its patent policy to assess the policy's applicability to ERDA programs.

Mr. James E. Denny, ERDA. Mr. Denny, who accompanied Mr. Wilderotter at the hearings, provided a detailed explanation of ERDA's waiver policy. He discussed the merits and limitations of the waiver policy and concluded that even with its limitations ERDA believed that it had been given ". . . what is probably

the most authoritative, detailed and useful patent policy provision that has been passed by Congress" and that such a policy enables ERDA to ". . . handle the various types of research and development situations and the various technologies that we encounter." (Denny, p. 436) He stated:

> With the above reservations, it can be said that Congress has provided to ERDA what should be the appropriate tools to create an atmosphere wherein the results of ERDA's technology can and should be commercialized. The waiver policy is flexible enough to provide incentives to contract with ERDA and to commercialize resulting technology. The "march-in" rights are available to give others the opportunity to commercialize inventions where the waiver recipient does not succeed. Where Government retains title and offers everyone the opportunity to commercialize, the authority is available to grant exclusive licenses and to revoke outstanding nonexclusive licenses where it is shown that exclusivity is necessary for commercialization. (Denny, p. 436)

However, Mr. Denny suggested that another policy might better serve the public's interest:

> In view of the experience obtained throughout the years on the Government patent policy issue, it would be difficult to justify a title with waiver policy, along with its administrative burdens, as best protecting the public interest. A policy of rights to inventions in the contractor, while placing reliance on appropriate "march in" rights to insure utilization, may equally serve the public interest while substantially reducing the contracting burden. (Denny, p. 436)

And when asked by Chairman Thornton for his preference, ERDA's present policy or one in which the contractor owns the patent with certain march-in rights, Mr. Denny responded:

> I also have a part-time job as chairman of the executive subcommittee of the Committee on Government Patent Policy, and, wearing that hat, I would say it absolutely ought to be considered. Wearing my ERDA hat, we now have that under investigation. We will be completing our report to Congress, hopefully, within the next 6 months, and from an ERDA point of view, we will come to a decision, I hope, on that point.
>
> Right now I would simply repeat that Congress has given us excellent authority. (Denny, p. 440)

Mr. S. Neil Hosenball, NASA. After an explanation of NASA's patent policy, Mr. Hosenball expressed NASA's view on the value of commercializing its inventions:

> I do not want to dwell on the mechanics of either the waiver or the licensing process, which are described in the prepared statement. I would like to emphasize, however, that these are the two basic ways in which NASA seeks early commercial use of its inventions. It is the view of NASA that commercial use of its technology through the incentives of the patent system, encourages development of new and better products and increased productivity, will create additional employment opportunities and enhance the competitive position of the United States to the overall benefit of the national economy. (Hosenball, pp. 433-444)

In discussion following his statement he continued:

> We think the patent system, if it's properly utilized, and commercial utilization takes place, does create new jobs; does create new products; and what we are searching for -- and I think what all of us in Government are searching for -- is a way to make sure that happens. We may have disagreements as to what is the best way to make it happen, but any system that will attain that objective, as well as any other objectives of the agencies, is a system that ought to be carefully considered. Whether one is slightly better than the other, I think, is immaterial as long as you do accomplish these objectives. (Hosenball, p. 529)

When asked by Chairman Thornton whether he felt there is justification for having some variation in patent policy from agency to agency, Mr. Hosenball answered that NASA generally ". . . supports the concept of some degree of uniformity, and I think that legislation could be drafted providing that uniformity." (Hosenball, p. 488) When asked for his views on an alternative non-title system, Mr. Hosenball responded:

> I also served for a short time on the Committee on Government Patent Policy of the Federal Council on Science and Technology. I'm not a patent lawyer by training, but, having lived with it in NASA as long as I have, I am fairly familiar with the practices and procedures of NASA, and when that matter was discussed I raised the question: Does it really make any difference whether the Government takes title or the Government grants title to a contractor and gets something back, gets a license back to use for government purposes?
>
> In either case, looking at it not as a patent attorney, there is a division of rights, and it makes very little difference, as I see it, whether it's a title policy in the Government or title policy in the Government contractor. The key thing is to make sure that the Government has the assurances it requires to protect the public interests and also to carry out the agency's mission, and certainly any system that does that ought to be looked at very carefully and considered, not only by NASA but by other Federal agencies. You want to see that the objectives sought will be accomplished; what is, from the point of view of administrative

> convenience, the best system; and does that policy protect and assure to the Government that it preserves the ability of a public agency to protect the public interests as well as carry out the agency mission. That is basically the way I see it as an individual who is not a patent practitioner. (Hosenball, p. 527)

Mr. Norman J. Latker, HEW. Mr. Norman J. Latker, Patent Counsel at the Department of Health, Education, and Welfare and also Chairman of the Interagency University Patent Policy Subcommittee, expressed his opinion that:

> The controversy over Government patent policy, at least in the research and development agencies, seems to me to be not as commonly stated, whether the Government should take title or license to inventive results it had funded, but when and to what extent the guarantee or patent protection should be made. (Latker, p. 555)

Following his statement, in discussion along the same lines, he elaborated:

> When do you provide that guarantee, at the time of contracting or after the invention has been made? And I think that that is probably the real issue to be determined by any kind of legislation.
>
> I point out the ERDA legislation is basically a full discretion in the agency to make a determination at any point in time as to when to make a waiver or grant a license.
>
> . . . if you do not provide certainty at the time of contracting you will have a participation problem, as I spelled out, that we noted at HEW.
>
> Secondly, you may have a utilization problem, and this, to a large extent, depends upon the kind of credibility that the particular agency has. (Latker, p. 817)

Mr. Latker devoted much of his statement to a discussion of Government agency patent dealings with universities. He summarized recommendations made by the Committee on Government Patent Policy regarding university inventions generated with Government support:

> On September 23, 1975, the Committee on Government Patent Policy recommended, on the basis of its University Subcommittee's study, that all agencies of the executive branch provide to universities a first option to substantially all future inventions generated with Federal support, subject to statute, and provided that such university is found to have a technology transfer function. This first option to ownership is subject to a number of conditions, the most important of which are the standard license to the Government, a limit on the term of any exclusive

> license granted, authority to withdraw specified projects from the option, a requirement that royalty income be utilized for educational or research purposes, with the exception of a reasonable share to the inventor, and the right of the agency to regain ownership due to public interest considerations or the universities' failure to take effective steps to commercialize the invention. (Latker, p. 556)

He noted that ". . . to a large extent the September 23 recommendations are a ratification of the practices implemented by DHEW since 1969 . . ." (Latker, p. 648) and that at DHEW:

> . . . we have an institutional patent agreement policy in which those who are deemed to have technology transfer capabilities have the first option to invention rights, so a group of inventions are in the hands of universities on the basis of their exercising that first option without coming into the Department. (Latker, p. 724)

Mr. Latker felt this was an acceptable arrangement and in expressing his opinion stated reasons why:

> . . . in the case of the university sector I think that it should be title-in the university rather than an exclusive license because, working off a sublicense from the Government doesn't give them the kind of flexibility that they need to have at the negotiating table with industry to arrive at appropriate licensing arrangements. They need the full ownership. You can put some restraints on the ownership, obviously. I mentioned in my presentation, the conditions that are attached to the ownership. But providing to them only a license with the right to sublicense someone else actually brings the Government back into the picture as a third party, and at the negotiating table I think the university is going to find that industry will not treat them as the principal because industry will look beyond the license that the university has, and want to speak to the actual owner, which would be the Government. So I don't favor the idea of merely giving license rights to universities. (Latker, pp. 724-725)

In support of the Commission on Government Procurement's "alternate approach" Mr. Latker expressed his opinion:

> I would say, speaking for myself and not the Department, I am a proponent of that approach. I hope that ultimately it becomes the means of allocating invention rights in the area of contracts. It is a disposition of rights to the contractor at the time of contract that is something less than he would get in the private sector developing the invention on his own since he will have certain responsibilities to the Government. Most of the responsibilities retained by the Government are surveillance-type responsibilities in that if the contractor doesn't move forward within certain periods of time then the Government has the right to regain the ownership of the invention.

> But the important part of the alternate approach is that it creates certainty at the very earliest time that you can as to ownership.
> (Latker, p. 811)

Mr. William O. Quesenberry, Department of the Navy. Mr. Quesenberry emphasized that his testimony should be taken as his personal views and not necessarily the position of the Department of Defense. (Quesenberry, p. 726) Mr. Quesenberry presented arguments in favor of a uniform Government patent policy. It was his opinion that such a policy should provide for Government ownership of inventions resulting from federally-funded R&D, and should be one that allows the contractor/inventor first option for exclusivity. He cited two reasons why he felt the Government should own patents:

> First of all, let's take the military departments. We should own patents because we are spending $10 to $12 billion a year to generate this technology, and in our procuring activities we buy many, many more billions of dollars worth of hardware that results from this technology. Invention parallels itself in many places. If a Government agency does not protect its technology, the first thing we will have is paying royalties to a patent holder who has protected his, and we'll end up with the taxpayer paying for this new technology twice.
>
> The second reason why we should own patents, I think, is exactly what I say is the bottom line, the utilization of this technology. I think you've had many witnesses, and I'm sure you knew even before these hearings, that if we take this tremendous reservoir of technology and dedicate it to the public no one wants it because of the risk capital involved. As the old saying goes, "Something free for all is of little use to anyone."
>
> So I think that the present interest in the Congress and in the executive branch of doing something with this technology reservoir, moving it back to the taxpayer on the marketplace, must have the patent system behind it or it isn't going to move to the marketplace. So who else is to protect this if it isn't the Government, who paid for it in the first place? Then use the patent system to let the originator, be it a contractor, or what, to bring it to the marketplace. If he won't, then offer it to someone else with the protection of the patent system over his risk capital.
> (Quesenberry, p. 800)

Mr. Quesenberry explained his position in more detail:

> I would favor a Government-wide policy which would use a uniform contract clause for a single disposition of patent rights in all instances. Legal title to all inventions generated under Government-sponsored research

and development would vest in the Government. In furtherance of the public interest at the commercial marketplace, the contractor would have an automatic first option for exclusive authorization by the Government to commercially develop and market an invention made under the contract for a fixed period of time. Such commercial authorization would be revocable by action of the Government upon failure of the contractor to carry out its plan for commercialization and supply the market in the interests of the public. Should revocation occur, the Government would be in a position to offer others the right to commercialize the invention on a nonexclusive basis or exclusively, if that be necessary to attract investment of risk capital in commercialization.

It seems to me that the Government-wide use of a single patent rights clause vesting legal title in the Government with a guarantee at the time of contracting to the contractor, who can profit by active pursuit of the commercial market, should present a policy which most nearly attains the goals of uniformity, predictability, participation, utilization, competition, administrative ease, and political viability. (Quesenberry, p. 739)

Dr. Betsy Ancker-Johnson, Department of Commerce. Speaking as Chairwoman of the Committee on Government Patent Policy of the then Federal Council for Science and Technology, Dr. Betsy Ancker-Johnson summarized the committee's suggested uniform patent policy in her testimony before the subcommittee. She noted that this proposed policy adopted the basic concepts of the Commission on Government Procurement's "alternate approach." In discussion following her formal testimony she summarized the major points of the policy:

> This policy has three salient points: first, the contractor would retain rights to the invention; second, those inventions made by Federal employees would be aggressively licensed; and, third, strong march-in rights would protect the public interest. (Ancker-Johnson, p. 897)

It was Dr. Ancker-Johnson's opinion that the present Government patent policy is an unsuccessful one and she maintained that ". . . its track record is very poor." (Ancker-Johnson, p. 908) In the concluding paragraphs of her formal statement, Dr. Ancker-Johnson cited reasons why she and the Committee on Government Patent Policy felt the proposed policy should be implemented in place of the present one:

> We believe that a policy which leaves title in the contractor subject to strong "march in" rights in favor of the Government will protect the

public interest and reduce substantially the administrative burden of both the Federal agencies and their contractors. In addition, we believe this change will stimulate more qualified and competent contractors to participate in federally sponsored R&D contracts. We believe further that this policy will be especially beneficial to individuals and small business concerns since they will no longer be obliged to cope with the existing diversity in agency practices and the uncertainty respecting rights to inventions which may result from the contracts.

In addition, such a single patent rights clause will provide the contractor with a greater incentive to invest his own funds to commercialize an invention resulting from the contract. This incentive is especially important as most inventions require a potential manufacturer to invest substantial development funds before the invention can be marketed. By granting the contractor a limited period of exclusivity, the Government improves the contractor's ability to recover development costs, thus encouraging him to commercialize his invention. Such commercialization benefits the Government, the contractor, and the general public. (Ancker-Johnson, p. 889

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