subcommittee may lie in this matter of the Government's original intent. We hasten to add that we think the title policy bad for other reasons which we shall detail later, but if it is the judgment of the subcommittee that title must be taken by the Government under certain circumstances, then this distinction may be useful in achieving some necessary administrative flexibility.

But let us continue with our analysis of the argument that the Government should get what it pays for. The record is replete with assertions that a defense contractor is fully paid for all research and development work and one might properly infer from certain of the testimony that he is, in fact, overpaid since the work is done, in Assistant Attorney General Loevinger's words, "on a low-risk, cost-plus basis."

This is an assertion and an assumption with which we take strong issue. In nearly every case the capital goods and allied product manufacturing companies which we represent bring to Government research and development work a very considerable amount of background know-how developed largely at private expense. Most such contracts are performed on a cost-reimbursement basis, and, in some cases, on a cost-sharing basis. Even in a fixed-fee situation the maximum allowable fixed fee is set by statute. Moreover, the reimbursement of the contractor's costs under cost reimbursment contracts is made in accordance with a set of administrative cost principles which arbitrarily deny reimbursement for certain expenses which are customarily considered legitimate costs of doing business, and are fully deductible for Federal tax purposes. Included among such disallowances, for example, is such an ordinary business expense as interest on borrowings. The Atomic Energy Commission has gone considerably further than most other Federal agencies in its specific disallowance of customary business expenses, including among such disallowances bidding expense, personal compensation based on profit-sharing formulas, and home-office overhead, to mention a few.

In very many cases a research and development contractor is fortunate indeed if a fixed fee is sufficient to offset the losses resulting from administrative disallowance of legitimate business costs. In short, Government research and development work is not the highly profitable undertaking that it is sometimes made out to be; it is, in fact, low profit work and there is testimony in this record to indicate that such profit as is made is at a considerably lower margin than could be made on the contractor's ordinary commercial work.

2. *A license policy tends toward monopolistic concentrations of economic power.*—This assertion represents the main thrust of testimony offered by Assistant Attorney General Loevinger, and the suggestion that the patent license policy of the Department of Defense would tend toward this result is found in certain of the testimony offered in support of the bills now before the subcommittee.

In reiterating the recommendation by the Attorney General in 1947 that the public interest requires retention by the Government of all inventions resulting from the Government-financed research and development, Mr. Loevinger declares that "Government-financed research has made a heavy impact on the structure of industrial competition * * *. Not surprisingly, the industries most directly involved in military production show indications of permanent concentration in a few dominant giants."

At another point Mr. Loevinger states that the 1956 Defense Production Act Report of the Attorney General indicated that research contracting up to that time was overwhelmingly with the largest companies in the industries involved. We have no doubt this is true and for the very practical reason that the Department of Defense and other agencies necessarily place research and development work with those companies whose experience, personnel, and facilities make most likely a favorable result in a research and development undertaking.

Despite the fact that a large proportion of Government research and development has gone to larger companies, we suggest that Government-sponsored research and development has also been a most fruitful incubator of small businesses devoted largely to such work. Indeed, it should be noted this growth of new and successful small business firms devoted largely to Government research and development work would have been inhibited if the Department of Defense had not followed the policy of granting to such contractors the right to exploit commercially patent rights resulting from the contract work.

Perhaps the best statement on the subject is provided by Dr. Edwin H. Land, founder of the Polaroid Corp., an eminent scientist, and member of the President's ad hoc Committee on Space, chaired by Dr. Jerome Wiesner. He said in April 1951:

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If S. 1084 were adopted, several possibilities suggest themselves. The Government may dedicate such patent rights to the public, making them available to all citizens on a royalty-free basis. This seems the most likely possibility and thus deserves first consideration.

Reservation to the Government of all patent rights destroys immediately any possibility of an individual firm obtaining for itself the right to exclude others from manufacture. Thus the potential licensee undertakes the commercial exploitation of the Government-owned patent right with the foreknowledge that it may face unlimited competition from other licensees of the Government. Since in many cases it will have available other and potentially more profitable investment opportunities any manufacture based on Government-owned patents would be likely to receive an extremely low priority.

If the company is of sufficient size and possessed of ample financial resources, sizable and modern production facilities, and the vast reservoir of manufacturing know-how customarily found in the larger companies, it may consider the invention of such value as to justify its investment regardless of possible competition. We think it very doubtful, however, that any small business would be inclined to undertake manufacture in this situation with the odds so stacked against it at the outset.

Suppose, on the other hand, that the Government undertakes limited licensing, including the exclusive licensing of a single manufacturer as has been suggested to the National Aeronautics and Space Agency by Dr. Archie Palmer in his recent contract study on administration and utilization of Government-owned patent property. We may assume that any such licensing arrangement would involve payment of a royalty to the Government for the right to use the invention and in that respect is made to seem attractive because it is argued it would afford a means for the Government to recoup some portion of its research and development expenditures. Such license is not apparently contemplated by S. 1176, although it might be possible under S. 1084. While we shall have more to say on the subject later, the possibility of a political agency of Government choosing as between one contractor or another for the commercial exploitation of new inventions raises the most serious possibilities of abuse and should, we think, be rejected out of hand.

There is, of course, the further possibility of the Government undertaking the manufacture and distribution of items covered by the patents in question. This we think such an unlikely possibility that we shall not comment on it further.

Under the second of the two proposals, S. 1176, the Administrator of the proposed Federal Inventions Administration would apparently be required to license to any person on a "nonexclusive, royalty-free" basis the use of the patent held by the Administration. It seems to us that the Government would be confronted with the situation already described in which only the largest companies might have sufficient economic advantages of a nonpatent character to make it worth their while to exploit the invention. In the absence of this situation—which we do not think a particularly salutary one in terms of the public interest—the patent may go wholly undeveloped because no firm is willing to undertake its exploitation.

As in the case of the whole problem of Government patent policy, objective data on the utilization of Government-owned patents are sketchy and, in some measure, inconclusive. However, there are at least three authoritative sources of information which shed some light on the matter.

During the 1959 hearings on this subject before the Senate Small Business Subcommittee on Monopoly, an AEC witness indicated that his agency then held 2,225 U.S. patents. Further testimony in those hearings, supplemented by the same witness' testimony in 1959 before the Inventions Subcommittee of the House Science and Astronautics Committee, indicates that 780 nonexclusive, royalty-free licenses for use of such patents have been issued involving about 400 individual patents in all. Thus, in a new and developing technology which is almost wholly controlled by the Government less than one-fifth of the patents held have been licensed for commercial use.

The Palmer report to the National Aeronautics and Space Administration indicates that patents held by other Government agencies are no more attractive to industry than are those of the Atomic Energy Commission. We venture the opinion than they are generally less attractive in view of the relative novelty of nuclear technology.

A very practical example of Government-owned patents lying fallow is provided by the testimony of Mr. W. D. Maclay, Assistant Administrator, Agri-

and the public that wants to get cheaper vegetables. It seems to me that those people, both the farmer and the public that is going to buy the farm produce, get protected only if the new insecticide gets into large-scale production at a price which permits it to be bought on the large scale, and which enables the manufacturer to distribute it widely over the farm-growing areas. It is not really a question of who ought to own the patent, but what kind of policies will get a chemical into widespread use at a reasonable price and on an available basis to the widest possible number of users. This may be quite contrary to the apparently obvious question of who should own the patent.

It is not obvious that having the Government own the patent is the best way to do this. It is just a question of attracting competent assistance and next a problem in securing widespread use.

Mr. WRIGHT. You say, I assume, that whether or not that is or is not the best way would depend to a very large extent on what that invention was and the nature of the patent, would it not?

Mr. HOLST. I suppose so.

Mr. WRIGHT. Now, I have just a couple of questions on the question of incentive and enlisting these contractors. We have had some testimony here to the effect that in certain situations, the contractors' interest in doing what the Government wanted done, and this is referring specifically to the Defense Department, no rights could be requested in the invention. The situations that were brought to our attention—I would like to have your views on this—was, one example where the contractor has, himself, already brought an invention to the point where he has an application on file, or maybe even an issued patent, but he has not actually made it practical. He has a technical reduction to practice, of course, when he filed the application and got the patent. But all he has is a piece of paper which says he has made an invention, but he has not yet got something that works and is useful, and the Government puts up the additional money needed to actually reduce that invention to practice in fact.

Now, under those circumstances, according to the defense witnesses, if the Government feels its contribution, its final money that it gives is relatively small compared to what the contractor has already put in, that they will go ahead and put the money in necessary to develop and perfect the invention and receive no rights.

Now, is it your position that that is a necessary procedure in order to get these contractors that you say are the best, that in some instances, the Government has to give them money for that final development and receive no rights in return?

Mr. HOLST. Mr. Wright, I think the chairman and I agreed that it was a complicated matter, and I think that what you are dealing with here is this question: If an organization is in the habit of trying to promote developments at its own expense, which it can then go and offer to the Government, which developments are in various stages of development—some fully developed, requiring no further investment on the part of the Government; some not so fully developed—you are simply dealing with an organization which would like to feel that its total product output can pay for and support a substantial research program. You are able to choose instances, sometimes, where the contractor's investment is relatively minor and the Government's investment is going to be relatively major. That would be a

policy. Even greater significance attaches to the disincentive effects of the title policy.

The effects of imposing upon defense contracts the title policy embodied in these two proposals can be decidedly dangerous so far as our national defense program is concerned. Obviously, patent incentive would be gone. The quality of work might suffer, the cost would be no less and quite possibly more, and the character of performance might be something less than the enthusiastic and total commitment to the work which our defense program demands.

The incentive features of the license policy and the disincentive features of the title policy are summed up in the GWU Foundation study, referred to above, which asserts "there is * * * scarcely any basis for the charge that the license policy results in a giveaway. * * * In general than and with many qualifications, the license policy in operation advances technology while it helps to procure the best available results for research and development. Even though the bait held out by the license policy is in fact small, industry firmly believes that the bait is attractive. Hence, Government is the gainer."

2. *A removal of the incentive which makes possible the prompt and efficient exploitation of inventions having commercial value.*—We have no desire to reiterate arguments already advanced, but the point is worthy of reemphasis. The possession of a patent right, particularly by a smaller firm, provides the security by which it may obtain funds to undertake the commercial exploitation of the right.

Lacking the security afforded by a patent right, it is extremely doubtful if most firms would consider undertaking the investment necessary to make generally available to the public whatever commercial benefits any such patent might have, and insofar as any firm might be willing to undertake the risk of unlimited competition necessarily resulting from a nonexclusive, royalty-free licensing of Government-owned patents, it seems probable that only the very largest firms would be inclined to do so. Thus, by depriving smaller firms of patent rights through adoption of S. 1176 and creation of a Federal Inventions Administration, the Government may itself achieve the paradoxical and unintended result of making big business bigger and small business smaller.

3. *The possible creation of a political agency whose powers—coupled with the rising volume of Government research and development—might lead to basic alterations of our economic system.*—The adoption of a uniform patent title policy raises immediately the question of how such patent rights are to be administered in the public interest. One of the bills before the subcommittee, S. 1176, would create a Federal Inventions Administration and would authorize the Administrator thereof to license on a nonexclusive, royalty-free basis the use of publicly-owned patents by any person. The determination once having been made to establish a uniform title policy, S. 1176 would provide perhaps as fair a system of administering such patent rights as could be devised.

We do not think, however, that its operations would result in any widespread licensing of publicly owned patents for all of the reasons which we have outlined above. And once having created such as Administration, we would presently be confronted with a clamor for "an active and aggressive program designed to obtain wide commercial and industrial utilization of the Government-owned patent property," as suggested in the Palmer report referred to above.

We suggest that this result is very nearly inevitable if the proponents of the legislation here under consideration desire to carry out their objective of distributing as widely and promptly as possible the fruits of technological advance resulting from Government-sponsored research and development work. To accomplish this objective the Federal Inventions Administration would require statutory authority to license on a limited or exclusive basis.

As we have already indicated we feel reasonably certain that an exclusive licensing policy is the only one that would make most licenses to manufacture under Government-owned patents an attractive investment opportunity for the ordinary business. And when we have reached that point we shall have created a political agency with the power to alter substantially our economic system and through it the very structure of our society. We will have placed in the hands of a political agency an economic weapon by which an Administrator can reward or punish, cajole or threaten, grant or withhold. Moreover, this power will extend to inventions—and perhaps whole industries—not yet in existence.

We have no desire to overstate the matter, but the results we envision is a readily predictable possibility if this legislation is adopted. Certainly it would be an unintended result, but its unintentional character would in no wise lessen the gravity of its potential. If it is our national desire to subject the

Senator McCLELLAN. In other words, you have 6 months to decide whether you want to take all the rights without any consideration.

Mr. SEEGRIST. That is correct.

Senator McCLELLAN. That is a part of the original contract. And so far you haven't deemed it necessary to take any.

Mr. SEEGRIST. We haven't had a single one; no.

Senator McCLELLAN. So this change—you say this change wouldn't make any difference to you?

Mr. MACLAY. We would have no objection to it.

Senator McCLELLAN. In other words, you just get title to all of it to begin with, and then——

Maybe getting something you don't want or don't need only in very, very rare exceptional instances, because you have never found it necessary or desirable to exercise the options you have had in all these years.

Mr. MACLAY. Dr. Newton, in the report previously referred to, brings out the disadvantages to allowing these foreign rights to revert to the employees. We believe that the Government pays for this research and that it should have the complete rights.

Senator McCLELLAN. Well, if you believe that, why haven't you exercised all those options?

Mr. MACLAY. I don't believe we have had the money to do it.

Senator McCLELLAN. I didn't understand it took any money.

Mr. MACLAY. You have to have money in order to go in and take foreign rights in these various countries.

Senator McCLELLAN. You mean the cost, the processing of those rights and getting the patents?

Mr. MACLAY. That is right. We have approximately 100 patents a year, and if you would go into 20 or 30 countries, it would take a sizable organization to do this.

Senator McCLELLAN. Is it going to take it now, anyhow, if we do this, if we give it all to you? It is going to take it?

Mr. MACLAY. Well, if we had these rights we wouldn't process probably many of them. It would take——

Senator McCLELLAN. I am trying to get at what we are talking about. We seem to be talking about nothing of any value.

You never exercised an option heretofore. You say one reason is you didn't have the money.

Suppose you get them. It will take a lot of money, and you say we probably wouldn't use them. I am lost here.

Are we talking about anything of much value or not? Apparently it has very little value. There might be a rare exception where some patents would have value. Is that——

Mr. MACLAY. There is probably a few percent of these patents that would have value foreignwise.

Senator McCLELLAN. Most of them do not? They are not worth the cost of processing. Is that correct?

Mr. MACLAY. That is correct.

Senator McCLELLAN. Very good. All right, let us move on.

Mr. MACLAY. Section 3(b) relates to acquisition by the Government of title rights in inventions resulting from contracts, leases, or grants. Under this provision the worldwide title rights to inventions arising out of such Government-sponsored activities would be obtained by the

For example, there is the question of whether or not the Government is receiving for its research and development dollar all that it has paid for; there is the question of whether or not the license policy tends to inhibit the prompt and complete dissemination of new scientific and technological information; there is the question of how best to insure that the general public will most promptly and fully receive the economic benefits of inventions resulting from Government-financed research and development; and there is the question of whether or not the license policy contributes toward monopolistic concentrations of economic power.

Further, there is the question of how best to advance the national defense effort of the United States. This last point assumes special importance in view of the gravity of our national defense position and the suggestion that the patent license policy of the Department of Defense be abandoned or substantially changed.

Certainly all the objectives raised by these questions are important. They are not, however, necessarily consistent one with another. The problem then is to arrive at some solution while giving due weight to their relative importance.

I shall not spend time on the proposals before the subcommittee. I shall go instead to a summary of our recommendations and then discuss them in brief detail.

1. We recommend a Government-wide license policy. It logically follows that we oppose the adoption of S. 1084, S. 1176, and the subcommittee's recommendation that the Department of Defense patent policy be made to conform with that of civilian agencies where both are investigating a single field of knowledge with the same contractor.

2. Any legislation which may be considered necessary should require as a general rule that patent rights be granted to R. & D. contractors with an irrevocable, royalty-free, nonexclusive license to the Government to practice or have practiced for it the invention involved. If in the judgment of Congress it is necessary to reserve expressly a right for Government to take title in unusual situations, any exercise of such right should be conditioned upon a justification of such acquisition in accordance with such criteria as may seem appropriate to the Congress.

Finally, in no event should legislation be adopted until a further and more comprehensive study has been made of the effects of procurement patent policy both on the accomplishment of governmental objectives in research and development programs and on our national economy.

We have suggested for the subcommittee's consideration certain guidelines which we hope would conduce toward serving the public interest. I shall not take the time to read them at this point.

The proponents of this legislation have consistently depended upon a series of assumptions or conclusions which are regularly argued in support of such legislation. We have thought it desirable to consider certain of these assumptions and for the moment, I should like to examine those assumptions and our consideration of their validity.

There is, first of all, the argument that the Government should get what it pays for. Obviously, no one can disagree with this proposition. The question is, just what does the Government pay for? We suggest that it pays for the performance of research and development work and that any invention which may result is, in the majority

Mr. MACLAY. Of course, I think there is a difference in the type of material covered by the Department of Agriculture patents. Ours is not a procurement-type patent.

I think the procurement rights, as far as the Government in our type of patented process or product is concerned, is not too important. If you develop frozen orange concentrate, it is purchased by the public. It is not purchased by the Government.

Mr. WRIGHT. I wasn't referring to procurement. I was thinking more in terms of what you might call basic research in biological sciences, and I wanted to ask you whether, in your view, to the extent that you have two or more Government agencies contracting for that kind of research in the biological sciences, do you have any opinion as to whether it is or is not harmful to have conflicting patent policies?

Mr. MACLAY. We do basic research on our agricultural commodities and it would seem that, for the agricultural products with which we are concerned, we would be in a good position to sponsor that type of an effort. But I am not well enough acquainted with the defense agency's research in the agricultural field to state that there is overlapping.

Mr. WRIGHT. Let me put this question to you.

To the extent there is an overlap, would it, in your opinion, be desirable to have legislation which would establish a single policy which would eliminate the existing conflict?

Mr. MACLAY. I think that is a very difficult question for me to answer because there are so many ramifications to what the defense organization's ultimate objectives are as against our ultimate objectives, and maybe sometimes the same type of basic information would be necessary for their particular approach, and the same type would be necessary for ours. Whether or not their would be any duplication in that so-called basic research I couldn't say.

Mr. WRIGHT. I wasn't talking about duplication. My question presupposes that you have the same research objective in the same field. Do you see any reason why there should not be legislation requiring that in those instances there be just one policy with respect to the disposition of the inventions that come out of that research?

Mr. MACLAY. I see no reason why there shouldn't be one policy.

Mr. WRIGHT. The other thing I wanted to ask you about is this question of how long has the Department of Agriculture itself been engaged in this scientific research and development field.

Mr. MACLAY. It goes back to just about a century. The beginning of the Department was in 1862.

Mr. WRIGHT. That is probably earlier, I suppose, than any other agency.

Mr. MACLAY. And I believe it even goes back to the original Patent Office in 1836. That organization started to work in the field of agriculture, and then, when the Department was created in 1862, the Division of Agriculture at that time in the Patent Office provided the nucleus for the present Department of Agriculture.

Mr. WRIGHT. During this long period of time you have been engaged in this scientific research have you had different policies? Have you always had this policy that you describe to us today, or have there been periods or times when you allowed your contractors or employees to retain title to inventions coming out of research?

pany has in any great degree and all of which the large company has in considerable degree.

Senator McCLELLAN. Legislation is not going to remedy that on either side of the issue, because if small companies would find it difficult to compete with a free license of a patent of the Government, it would find it harder to compete and make use of the license if it had to pay a royalty to the original inventor.

Mr. DERR. Well, sir, let me attempt to answer that if I may.

Senator McCLELLAN. I am just talking out loud. If you can answer it, go ahead.

Mr. DERR. I am suggesting this, sir: As you said to Dr. Forman, if the Government takes all patent rights and makes them freely available to all people.

Any company is reluctant to undertake the exploitation of a patent where the possibility of unlimited competition is immediately present, as you suggested so well.

Senator McCLELLAN. But would not the small fellow come nearer to trying to take it free than he would if he had to pay a royalty?

Mr. DERR. With the patent and the exclusive right under that patent, he would have the right to exclude others from competition. To him, lacking the facilities, money, experience, the know-how, this inability to exclude others, stacks the cards against him in the beginning.

To the large company, which has all of these other assets, patent protection, and with it the right to exclude others from competition, is not nearly so important. So I think it would be willing to take a chance more frequently than would the small company.

As a result, I am suggesting that you might get a paradoxical result from a Government-wide title policy, in that the larger companies are the only ones so situated that they could regularly take advantage of these royalty-free licenses to Government patents. It is a point, I think, that deserves some further elaboration.

Senator McCLELLAN. It is hard for me to calculate the difference, where the advantage would be. Here is the original patentee, or inventor, who has the patent, and he can make it available to a small businessman or a big businessman on the basis of a royalty. The contractor, assuming he contracted with him on about the same percentage or fee basis, royalty basis, still every obstacle that appears in the way of the small man, if that situation continues, where the Government has the license and vice versa. I just do not—I am unable at the moment to unravel it or come to the end of the string.

Mr. DERR. Well, I hope that I have made my argument clear, Senator, that is my only point.

Senator McCLELLAN. I will read it again. I just did not quite understand it. Go ahead.

Mr. DERR. I should add this, as one bit of evidence, which I admit is not conclusive. I examined recently a list of licensees prepared for the Joint Committee on Atomic Energy by the AEC. It is the only published list of licensees of Government patents that I have dug up. It would seem to me that large companies do in fact predominate. Now, I suggest this is not conclusive evidence.

Senator McCLELLAN. Getting license for Government use of patents?

Mr. DERR. Yes, sir.

Senator McCLELLAN. Of course, they may fail and the Government would get nothing.

Mr. HOLST. That is right.

Senator McCLELLAN. But I still feel and still maintain, notwithstanding those benefits to the Government, there is an equity where the Government at least puts in a substantial amount; there is an equity that the Government should be protected in.

Mr. HOLST. I agree with you.

Senator McCLELLAN. As you say, you can carry it to the ridiculous. But in the first place, the Government is not going to put in money, it is not going to give money except where it has an interest in the results.

Mr. HOLST. In the results.

Senator McCLELLAN. A result that will benefit the Government two ways: First, by expediting making the thing applicable to where its practical use will benefit the Government, No. 1; and 2, the Government would benefit by the continuing acquisition of those benefits without paying a royalty.

Mr. HOLST. That is right.

Senator McCLELLAN. But where the Government puts in a substantial amount, I think then the question of title also enters in, to whom should the title belong?

Now, you argue, and I am not disputing you now, that while actually, after all, the Government will get the greatest benefit because the public will get the greatest benefit by leaving it in private enterprise and letting it be distributed from that source, rather than from the Government taking title and distributing it from that source.

Mr. HOLST. I do not think any point would be served, but I am perfectly willing to continue the argument, by running the argument out to ad nauseam. If you are going to say that because the Government shares in a contractor's overhead and indirect cost to some degree, therefore, it should own 1 square foot of the front office, and 2 square feet of the back office, and so forth, I do not think there is any point in that. As you said, Mr. Chairman, what the Government wanted was the best solution to some problem and the right to use that solution.

Senator McCLELLAN. It gets some return and benefit from the two sources; in other words, it will bring about the results quicker and make the process or patent applicable where it can be applied or apply benefits.

I am becoming more and more convinced that we have to have some flexibility. Whether it should be placed in a new agency of government, as provided in S. 1176, or how to do it, I am not sure.

Mr. HOLST. Let me put in my plug for the third party, namely, the public, not just the two contracting parties.

Senator HART. I shall not ask how a firm such as your develops its bid but——

Mr. HOLST. You may ask it if you wish.

Senator HART. I probably would not understand it if you replied. But I would like to get through my noodle just this: Let us assume that by law, the title to inventions that develop under a Government contract came to some Government agency—that was the law. This is to your point of, would competent contractors be available? Let us assume that was the law. None of these firms would go out of

covered by Government-held patents for the reason that some inventions require further development to make them economically feasible as well as requiring the usual cost of promotion, and that the results of such further development would be available to competitors.

In short, we suggest that such factual information as is available would indicate that the fruits of Government-owned patents are not as promptly and efficiently brought to the general public as they might be under a system of private patents.

I shan't comment on the next point. We think that if the proposals are adopted, it might have a serious and immediate impact on our national defense program. We believe the cost would increase. We think the quality might decrease. The quality might decrease simply because if a person is near the point of developing a completely new invention, he is not likely to take a research and development contract with the possibility that all his background know-how and his development up to this point will be taken from him. He would be more inclined to decline the contract, to complete the development, perfect and patent the invention, during which, of course, the Department of Defense or the Government is kept from having his services.

I think it is important to suggest one observation, that this is not wholly a matter of incentive policy, of the incentive aspects of the license policy. It is equally or perhaps more important on the disincentive aspect of the title policy which is here urged by this legislation.

We have already said we think a removal of incentive would make possible a slow and generally inefficient exploitation for commercial purposes of Government-owned patents, and finally and perhaps most important we are gravely concerned at the potentiality implicit in the creation of a Federal Inventions Administration.

So long as it licensed the patents held by the Government—and we must remember the rising volume of Government spending—on a nonexclusive royalty-free basis, it would probably encounter no great difficulty although we do think that Government ownership would have the same deadening effect on commercial exploitation that we have already described.

With this probable result in view, we suggest that the proponents of this legislation presently would demand statutory power for exclusive licensing such as the Department of Agriculture has been doing for some years past.

I would interpolate at this point to say that S. 1176 may permit exclusive licensing although I am not entirely certain after having read its provisions. And such a development would be a logical extension of the arguments advanced in support of this legislation. If and when we reach that stage, we shall have created a Federal agency exercising virtual monopoly power over a very broad segment, perhaps even the majority of new technology being produced.

Undoubtedly, Congress will undertake to develop appropriate safeguards in connection with any license activities sufficient to prevent improprieties. None of the present regulatory agencies has been confronted with a situation which is precisely that in which the Federal Inventions Administration would find itself. Its power would be sufficient not only to pick and choose between individual contractors, an open invitation to abuse, but it would be sufficient to shape, direct, and control the development of much of the industry of the future.

Senator McCLELLAN. Thank you very much, Mr. Cohen.
Senator Hart, any questions?
Senator HART. No.
Senator McCLELLAN. Mr. Counsel?
Mr. WRIGHT. Mr. Chairman, I would like to ask the witness about this compulsory licensing procedure.
If I understood you, you say you have by contract some agreements whereby the contractor says that he will license the invention for a reasonable royalty to whoever may be interested in it.
Mr. COHEN. Yes, sir.
Mr. WRIGHT. And what procedure do you have for enforcing that kind of arrangement?
Mr. COHEN. Well, basically, we view that as a third-party beneficiary contract. The member of the public would be a third-party beneficiary, and should the contractor refuse to issue a license, he would have his remedy in court.
Mr. WRIGHT. Well, this is what I am not clear about. Suppose somebody wants a license and negotiates with the patent owner, and they can't agree on what a reasonable royalty is. Then what happens? How does that problem get resolved? Do you have any part in that? Or what is the procedure by which a reasonable royalty would ultimately be determined and a license granted?
Mr. COHEN. We are currently revising our contracts, and that is one of the points that we will take care of. We propose to have a provision included that where the parties cannot agree as to what a reasonable royalty is, the Secretary shall make the determination, the Secretary of Interior.
Mr. WRIGHT. In other words, the Secretary would act as the arbitrator in the matter?
Mr. COHEN. That is right.
Mr. WRIGHT. Are you familiar with the report issued by this subcommittee on the experience of the Justice Department in connection with compulsory licensing of patents under antitrust decrees?
Mr. COHEN. No, sir.
Mr. WRIGHT. I simply call your attention to the fact that this matter of determining a reasonable royalty has not proved simple or expeditious in judicial proceedings that the Department has had to resort to. But I gather in your case, under your regulations, you now propose administrative determination by the Secretary which would not necessarily involve you in any litigation at all.
Mr. COHEN. Yes, sir.
Senator McCLELLAN. All right. Thank you, sir.
Senator McCLELLAN. Mr. Holst, please, sir.
Be seated, please, and identify yourself for the record.

STATEMENT OF HELGE HOLST, TREASURER, ARTHUR D. LITTLE CO., CAMBRIDGE, MASS.; ACCOMPANIED BY CHARLES W. COLSON, COUNSEL, THE NEW ENGLAND COUNCIL, WASHINGTON, D.C.

Mr. COLSON. I am Charles W. Colson, counsel for the New England Council, and I would like to briefly explain——
Senator McCLELLAN. What is the New England Council?

of Government income, and upon the patent problems of individual Government agencies.

We agree that these and related matters deserve a far more thorough investigation before we consider the adoption of such far-reaching legislation.

That completes our principal statement, sir.

Senator McCLELLAN. Thank you, Mr. Derr.

Does your associate care to make any comment?

Mr. HEALEY. There is only one comment which I think I would like to venture, with your permission, Senator.

One of the questions I understand that has been of considerable concern to you, and to which you addressed yourself was the question of whether or not there would be adequate protection for small business in the event that royalty-free, nonexclusive licenses to practice inventions are not available to such small business.

If I may, Senator, I would like to suggest that the point you are raising is quite important. But I submit that the central point with regard to small business, the terribly important point when you are considering Federal patent policy, is the encouragement of the creative small business, the company which has a small number of employees who perhaps have a great deal of creativity, I think somewhat along the lines of the witness this morning and the company that he represented.

I think that when you look at the problem in these terms, the central problem becomes apparent. The question is whether the Government is providing the proper incentives to bring out the inventions, to bring out the technology that this country needs in a time of great crisis. I suggest that the primary small business issue in terms of Federal patent policy really centers on the inventive small business contractor rather than the small company which wants to use technology or know-how developed by someone else.

Senator McCLELLAN. Thank you, sir.

Any questions?

All right, gentlemen, thank you.

Senator McCLELLAN. Mr. Mackenzie. Is he present? Mr. H. F. Mackenzie?

Is there anyone here representing the American Society of Inventors?

All right, is Mr. Rabinow present?

Very well. Thank you, sir. Have a seat and identify yourself for the record, and tell us if you have a prepared statement.

STATEMENT OF J. RABINOW, RABINOW ENGINEERING CO., TAKOMA PARK, MD.

Mr. RABINOW. My name is Jacob Rabinow. I am president of the Rabinow Engineering Co. in Tacoma Park, Md. I have a prepared statement. I would rather not read it if you don't mind. I would rather talk extemporaneously.

Senator McCLELLAN. It may be inserted in the record at this point in full. You may highlight it.

Senator HART. That this might be an instrument of Government policy aimed to meet that asserted desirable social end?

Mr. HOLST. Yes; but——

Senator HART. Is it because of that that you also oppose the creation of the agency?

Mr. HOLST. No; it is not. I did not deal with that originally, and my attitude toward that is this: Let us have the diagnosis of the unknown disease made by the most competent organization. Allow that organization, if you will, to retain whatever inventions may flow from it, but grant to the Government a right to use the invention or the patents for governmental purposes. If, now, this leads the Government to feel that it should have a second source, the license will be such that they can turn to a second source, the problem having been solved in the first instance.

But along the lines of first things first, the most important function is to get the problem solved in the first instance. I would like to have a policy that enlists the most capable organizations, because this will give you the largest likelihood of success and the most advanced progress in the shortest time and at the lowest costs. What you do from that point on, I think, is a secondary matter.

Senator HART. So that the record may be clear, do you feel that in the area that we are discussing, unlike the role of the physician, services would be withheld by the most experienced source, for a perfectly justifiable economic reason—I am not arguing this—if there was not the assurance of exploitation to follow?

Mr. HOLST. We may not like this, but it is a fact.

Senator HART. So the analogy with respect to the medical diagnosis is not on all fours.

Mr. HOLST. I think it applies in the medical field, too. There are very fine doctors who do not answer emergency calls.

Senator HART. They are always reluctant to make comments with respect to their professions to the Congress.

Mr. HOLST. That is right.

Senator HART. I see you are freer than most.

Senator MCCLELLAN. Mr. Wright?

Mr. WRIGHT. I would like to ask a few questions.

I gather from what you say that you believe that any statutory solution of this problem ought to have maximum flexibility, and I gather further that you think that flexibility should be such that you can treat the question of who gets title differently, depending upon the particular circumstances under which an invention is made, and the nature of the invention itself?

Mr. HOLST. That is true.

Mr. WRIGHT. And it is a fact, is it not, that whether or not you would need, for example, these exclusive privileges to make further commercial investment and development of the invention worthwhile depends, does it not, to a great extent on the nature of the invention itself?

Mr. HOLST. The extent of the further investment varies. But there is no question whatever that to take something from the laboratory or from a report and get it into—to debug it and get it into large-scale production, and to introduce it to the market, will call for further investments.

the origin, is made free to everyone, it is made free to no one, and such inventions usually die. Or, what sometimes happens, is that some company takes an interest in the basic idea and develops secondary inventions which give it the industrial position in the field and, in effect, supersede the free invention. This company finally gets into a strong enough position to pay for the development costs. What happens then in such a case is that patent rights become strongly held by one or two companies and the original inventor or his parent company are left out in the cold. The public is no better served by such an outcome than if the invention were covered by a strong private patent in the first place.

I would like to cite the example of the magnetic fluid clutch which I invented when I was a member of the National Bureau of Standards. It received a basic patent and the U.S. patent rights were completely assigned to the Government. No one in the United States really put a major effort into this device, as would have been done if it were privately held, but many people developed improvements which were patented and a few companies ended by doing most of the business manufacturing such devices. The U.S. Government also retained foreign rights in a few countries but because there was no way of paying for foreign patent protection and because the Congress does not want to pay the taxes that are levied on patents in many foreign countries, I was able to recover these foreign rights, and, together with other foreign rights that I was permitted to retain, I covered the world with patents. This cost my brother, who financed me, some $37,000 before we sold my rights. How much more this patent coverage cost in total I do not know. The interesting thing is that the foreign development proceeded at a high rate so that my magnetic clutch is now used in the automatic transmissions of several European automobiles. I think it is fair to say that if the American rights were privately owned, one would not have to buy a Peugeot or a Hillman to have an automatic electromagnetic transmission using my clutch.

Another example I could cite is a magnetic disk memory that I developed at the National Bureau of Standards. Again the patent was available free to anyone, and even though this was the first of the large capacity random access memories, much needed by American computer industry, this device was never commercialized. The development work on this machine would probably cost of the order of one-half million dollars and no one would undertake such an expense without considerable patent protection.

I do not wish, at this point, to belabor you with arguments and statistics on the value of a patent system. All of the important industrial nations have very strong patent systems, and, in all cases the interest is to give the originators protection of some sort for a short time in exchange for which the public gets the full and free use of the device after this protection period. For the U.S. Government to reverse this trend is, to say the least, ill advised and dangerous.

Now I would like to take up the relationship of the Government and the specific inventor and his organization. This is the matter of justice to the inventor, or the inventing company, and the effect of the proposed policy on the generation of inventions and on their development. I have no doubt that if the Government retains all patent rights on inventions made as a result of its sponsored work, that many companies would still work on Government contracts, but the question is, what kind of companies and what kind of work could one expect? If a company has a strong development staff which produces many inventions in the company's line of work, such as my staff, for example, it would think very hard before it would accept any contract from the Government which would relate to its field of work, since it is impossible to decide where one invention ends and another begins. We, in our company, would make every effort, it seems to me, to make sure that we would make and patent as many inventions as possible before any work for the Government was undertaken. And we would be very careful about the wording of the contract to make sure that the Government receives no more than its exact due under the patent clauses of such contracts. This is not a good way to operate.

It is entirely right for the Government to get rights to any patent for its own use or any invention made during a research and development project paid for by it. It is quite another matter for the Government to take rights which it does not need and which may serve to destroy some of the incentive to invent, or which can have the net result of actually reducing or destroying the patent protection which the Government is seeking to obtain. Let me explain: obtaining a patent is an expensive business. It costs us an average of about $1,000 to obtain a patent. In case of interference, litigation, or any special

the standpoint of the Department and submit that as a recommendation.

Mr. GUDEMAN. As a recommendation from the Department of Commerce, yes, sir.

Senator MCCLELLAN. So you are going to hold that when? The latter part of June?

Mr. GUDEMAN. Well, we are tentatively setting it up for June 27 and 28. Those dates have not been firmed.

Senator MCCLELLAN. I am not trying to put pressure on you. I am trying to get the picture.

Mr. GUDEMAN. No. We are very——

Senator MCCLELLAN. We don't want to delay it indefinitely. At the same time I think it is a problem that doesn't yield to solutions easily.

Mr. GUDEMAN. No question.

Senator MCCLELLAN. We have got to search for information that may help us, but I just didn't want us to get in an attitude here, oh, well, this thing is a problem; just keep deferring it, talking about it and never do anything about it.

We ought to get some action sometime.

Mr. GUDEMAN. As a matter of fact, our conference would have been held earlier except that Commissioner Ladd had to go to Europe, and that is the only reason it is late in the month.

Senator MCCLELLAN. Well, he has only been in a short time; only about 2 months, isn't it?

Mr. LADD. That is correct.

Senator MCCLELLAN. Anyway, let us get to the conference and get it over with and see if we can come to some conclusion.

Mr. GUDEMAN. That is exactly it.

Senator MCCLELLAN. I think it is going to take a while even when we conclude these hearings to study this record. We can't do it overnight.

I am interested in this thing. I kind of inherited this from my predecessor, the Honorable Senator O'Mahoney from Wyoming. I kind of inherited this problem from him. It was his committee. He was doing a good job in handling it. I have had to take it over.

I have come to the conclusion there is something here that needs attention, and I want to move toward that objective.

Mr. GUDEMAN. Yes. We wholeheartedly agree with you on that. There is no difference of opinion at all.

Senator MCCLELLAN. I trust then as soon as you have that meeting, promptly thereafter you will report to us that either you have come to a conclusion or you need a little further time and more information or something.

I don't know that we can get legislative action at this session, but I think we should be able to get legislative action during this Congress.

Mr. GUDEMAN. We would like to go further than that with you, sir. You are going to have hearings over the next several days.

Senator MCCLELLAN. Not that soon; not immediately at least. Someday we might have to have some more hearings, but tomorrow and the next day is about as far as we are going.

Mr. GUDEMAN. Well, we would like, of course, to go over those, and then if there is something in those hearings that could lead to a

It should be noted that the patent systems of the world are getting stronger and are being brought more into line with ours. Russia, for example, has introduced a new and stronger patent system where inventors get many rights and rewards. In some ways their system is broader than our. Since they do not have a competitive economy, comparisons would be very difficult to make, but it is interesting to note that to promote inventions they are going our way and it doesn't make sense for us to go back to the "public domain" philosophy that even they have abandoned.

It is my considered opinion that passage of either of these two laws will mean that many inventions will simply be thrown to the wolves to be devoured or to die of starvation in the cold.

Mr. RABINOW. Thank you very much.

Is it permissible for a witness to criticize other witnesses?

Senator MCCLELLAN. What is that?

Mr. RABINOW. Is it permissible to disagree with other witnesses here?

Senator MCCLELLAN. Disagree?

Well, if you didn't I wouldn't need but one man here. We would just take the first witness that testifies, and, if no one disagreed with him, I would be wasting a lot of time.

Mr. RABINOW. Permit me first to state my qualifications.

I came out of college in 1933 at the bottom of the great depression, and in 1938 I got my first good job, a P–1 at the Bureau of Standards. This was when $2,000 was a lot of money.

I worked at the Bureau of Standards for 16 years, until 1954. I rose to the position of a division chief and headed one of the three ordnance divisions which were broken off in 1953 and became the Diamond Ordnance Fuze Laboratories. I opposed this move into the Army Ordnance Department. Even though I worked for 16 years for them, I left the Government and became president of my own company.

I am still employed by the Diamond Ordnance Laboratory as a consultant, and also as a consultant to the Under Secretary for Research and Development at the Department of Defense.

I have 72 issued patents in the United States. I hold something like that number in foreign countries, and I have some 50 pending here.

Senator MCCLELLAN. You have been and are an inventor?

Mr. RABINOW. I am, very briefly, an inventor. I started to invent when I was 8, and I hope to continue for some time to come.

Senator MCCLELLAN. Off the record.

(Discussion off the record.)

Mr. RABINOW. Of the 72 patents I hold, 40 are assigned to the Government of the United States, totally and completely. Of the other 32, I hold most of the rights and I have sold some patents. Some of these have value; most of them have not.

I have been honored very highly by the Government. I hold a certificate of commendation from President Truman. I have been honored by the Army, by the Navy, by various departments of the Government, and, frankly, I think that these honors are as good compensation as money.

I don't want to repeat a defense of the patent system. I don't think I have to here. I don't agree with all the alarms that I have heard this morning about the inventiveness of the United States suffering if the Government does or doesn't take all rights to the patents under discussion.

Mr. LADD. I have a rough draft of the statement. I did not realize until this morning that I was coming up to testify.

Senator MCCLELLAN. That is all right.

Go ahead and give us the highlights of it, please, sir.

Mr. LADD. Reference is usually made to the Government Patents Board. Executive Order 10096, dated January 23, 1950, in effect did three things: First, it established a basic policy to be followed by Government agencies with respect to inventions made by Government employees; second, it established a Government Patents Board, but the functions of the Board as such were merely to act in an advisory capacity to the Chairman; and, third, it established the position of the Chairman of the Government Patents Board having certain functions and duties.

The recent Executive Order 10930, dated March 24, 1961, abolished the Government Patents Board and transferred the functions of the Chairman thereof to the Secretary of Commerce with authority in the Secretary to provide for the performance of the transferred functions by such officers as the Secretary might designate.

In accordance with this Executive order, the Secretary of Commerce has designated the Commisioner of Patents to carry on these functions. At the time of the transfer the functions and operations under the Executive order consisted of the following:

First, the individual agencies made their own determinations of the respective rights to an invention made by an employee in accordance with the basic policy established by the Executive order.

Second, certain ones of these determinations; namely, those in which the title to the patent was left in the employee, required the approval of the Chairman. Reports of these determinations were periodically forwarded to the Chairman who took action approving and in a few instances disapproving or modifying the agency determination.

The third step in this procedure is that the Chairman also had the duty of deciding appeals from the agency determination which might be taken by an agency employee who was dissatisfied with the ruling. Such appeals have been very few in number. The number of cases brought up to the Chairman of the Government Patents Board was running roughly 400 a year. At the time that the duties of the Government Patent Office were transfered to the Department of Commerce there was pending a total number of cases of around 259. Since the transfer there has been a total of 90 decisions rendered, and those decisions have been forwarded to the agencies. An additional 30 will go out within the coming week, and since the function of the Government Patents Board has been transferred to the Department of Commerce and, thence, to the Patent Office, a total of 10 additional cases have been received.

The functions which have been mentioned are those now transferred to the Commissioner of Patents and are being continued by him and appropriate officers in the Patent Office. At the present moment, besides carrying on the work at hand—and that is the caseload remaining—the Commissioner of Patents and his staff are engaged in a study of the regulations under the Executive order with a view to their modification toward simplification of the procedure.

Senator McCLELLAN. And that goal, that development you succeeded in attaining would be patentable. I think in those instances that should belong to the Government.

Mr. RABINOW. Well, that depends on what the Government wants to do with it. In a case of a private company there is the clear intention that they will sell the product they are getting because they are not getting it just for fun. If the Government needs the device which we develop—and I will get to cases of Government work in our company—there is no doubt that the Government should get whatever it needs for its own use, it should take whatever it can do something useful with; no question about that.

Senator McCLELLAN. This is true of anyone, but here we go to a project——

Mr. RABINOW. Can I take some experiences from my company?

Senator McCLELLAN. Somebody illustrated this morning about taking ocean water, desalination of water. Suppose the Government contracted with some laboratory or chemical company to engage in that project. It wants it for a special purpose. It seems that if they are successful in that research program and they find the formula, a way to do that, it seems to me that that formula should belong to the Government exclusively if they were engaged for the purpose of accomplishing a specific end or objective for the Government and they do it, that they are paid for it and the Government ought to get the fruits of their work, wouldn't you think?

Mr. RABINOW. Yes and no, Senator.

Senator McCLELLAN. Well, I declare.

Mr. RABINOW. Let me answer this, please. Take this case of removing salt from water. If the Government is going to be the only agency that is going to use this invention—that is, they will set up a plant to take ocean water and make it fresh—and if the Government intends to do this and has an agency to do it and nobody else has any use for this, or at least not likely, then I think the Government should get the entire title and right. But suppose the Government, which is doing the contracting, does not intend to set up a plant. Suppose the Government, in fact, wants to support this development and then would like private utility companies—I am just supposing—to do the actual work, and suppose it would like various companies such as General Electric and Westinghouse to do the work in various cities on a contract basis. In other words, assign the actual physical work to these corporations. Then it might be quite another story. It might then pay the Government to receive a license where it itself is involved and let the rest go and let the development be competitive, let people bid on what they will do.

Or take the case of foreign patents in such cases. If the Government intends, as a national policy, to set up plants in various desert countries of the world, then the Government should certainly take the rights. But suppose the Government has no intention of setting up a plant in northern Africa. Then it would be better to let the inventor or his company have the patent rights, and let them set up a plant in Africa because they will do it faster and do more good that way.

Senator McCLELLAN. Why doesn't the Government take the right and then license it out? I am not saying that it actually would be the only one to use the formula.

As to appeals taken by employees from agency determinations, we will continue a case-to-case review, and the employee will have an appeal as a matter of right.

As to the vast majority of cases which involve decisions in which both the agency and the employee are satisfied and the surveillance or review of the Patent Office, the Commissioner, is required, simply I would say as a routine matter and as an effort to maintain uniformity, my suggestion as to these, which constitute the vast majority of the cases which are brought to the Commissioner now, some kind of sampling review possibly could be submitted without sacrificing the purposes and intent of the Executive order.

In any event, we are investigating this area now. I mention this to you not because we have come to any conclusion but because this is the area of our present investigation.

Mr. WRIGHT. I had, Mr. Chairman, some questions I wanted to ask Mr. Gudeman, too.

Senator MCCLELLAN. Proceed.

Mr. WRIGHT. Under this question of urgency here, as to whether or not Congress should act, if I understood you correctly, you are of the view that Congress should not take any action at this point with respect to this problem.

Mr. GUDEMAN. Well, we are of the opinion that Congress should not take action until your hearings are held, and until we see what alternative recommendations are made there, and until a meeting that we are organizing is held with representatives of industry, both large and small business, to see what we can work out, possibly some middle ground that will be satisfactory to all concerned.

Mr. WRIGHT. Well, you are aware, are you not, that during the history of this Government Patents Board even the Government agencies themselves over a long period of time weren't able to work out an agreement as to what any statute ought to say? Is that correct?

Mr. GUDEMAN. Yes, sir; I am aware of that.

Mr. WRIGHT. I am just curious as to why you think there is any prospect in the foreseeable future of an agreement not only among the Government agencies involved but between them and the contractors and other private interests involved as to what the policy ought to be.

Mr. GUDEMAN. Well, I think there are several different answers to that. One of them is—and now I am speaking for myself—in the Department of Commerce our own newness to this problem. I haven't been saturated in it enough to draw a conclusion at this time.

Whether any conclusion can be drawn after such a meeting as I have stated I do not know. But I certainly think that it is worth holding to see whether some conclusion can be drawn.

There are various groups in industry that have worked on this problem. I personally do not know their viewpoint but I would like to know their viewpoint before taking a stand for the Department of Commerce.

Mr. WRIGHT. Well, let me get back to the history of this thing.

As I understand it, as a result of the Government agencies' inability to agree among themselves, the General Services Administration hired the George Washington University Foundation to make a study; did they not?

Mr. GUDEMAN. That is correct, sir.

I used to be on the Government side. I now work as a consultant to the Government. I do a great deal of work for the post office.

I think there is no question about this. The question is whether this is a good thing to do, and not whether you have the right. I think you have the right, and every speaker that contradicts this is contradicting the law. I think the Supreme Court said many years ago if an inventor is hired to invent and the Government pays him for this, it can take all the patent rights. I gave up all my rights to the Government when I worked for it. I think that was the right thing to do. That policy is correct.

There are times when the Government may release the rights when it sees fit.

Now I don't like the two bills, S. 1084 and S. 1176. S. 1084 has a name of Mr. McClellan attached to it, and I hope you don't think it is disrespectful when I say the bill is much too short and too simple.

Senator McCLELLAN. Well, let Senator McClellan tell you that he introduced the bill simply to serve as a base for these hearings.

Mr. RABINOW. Well, I withdraw my remarks.

Senator McCLELLAN. I am not committed to it. My predecessor, the chairman of this subcommittee, had introduced the identical bill, and some hearings had been held on it. I introduced it simply to continue the hearings so that it might serve as a base for these hearings. I am not committed to it. I don't know that I would ever vote for it.

I might with certain modifications, at least. But frequently in the legislative process we introduce something to give us a starting point, and most bills that finally become law have gone through the hearings and been modified and often improved from the time they were originally introduced.

Mr. RABINOW. Thank you very much.

Now there are other things said today which I disagree with.

Senator McCLELLAN. It is like the fellow who says "My remarks don't necessarily express the views of my sponsor. Whatever I may do now may be different from the sponsor."

Mr. RABINOW. I'd like to discuss the second bill. There was a statement made here that the Government may support perhaps 60 percent of American research and development work; therefore, it will own 60 percent of the patents.

I think this is quite fictitious.

I think the Government supports very extensive research and development, but the number of patents doesn't come out proportional to the dollars spent.

If you develop an Atlas missile and fire a dozen Atlases, the number of inventions has nothing to do with the billions you spent. In other words, I don't think the dollars mean much.

Today, the fact is that the Government probably owns, or gets title to, about 1,000 patents a year. Mr. Archie Palmer just showed me the figures. And there are about 50,000 issued a year. So it is something like 2 percent that are now being assigned to the Government. I do not think the Government is going to swallow all the inventions if any of these bills become law. I don't think it will make a revolution in the United States. I think that the tragedies are much exaggerated.

the Congress thought it might be desirable to protect them in some instances?

Mr. LADD. I cannot give you an opinion at this time. I can make a couple of comments, however.

I raise the question on the basis of past experience whether it is desirable to provide for such a program. I am not saying that we should not necessarily. I am simply saying that the past experience would raise serious questions as to whether we should undertake it.

Secondly, the prosecution of foreign applications would introduce a kind of work into the Patent Office which is different from the kind of work which we are now doing; namely, the examination and adjudication of patent applications.

Mr. WRIGHT. That is all.

Senator MCCLELLAN. All right.

Anything, Senator Hart?

Senator HART. No, sir.

Senator MCCLELLAN. Gentlemen, thank you very much.

The Chair will direct that a statement and letter of Chairman Vogel of the Tennessee Valley Authority be printed in the record at this point. Also a statement of Dr. Robert E. Stewart representing the Veterans' Administration will be printed in the record at this point. And a statement of Max B. Paglin, General Counsel, Federal Communications Commission, will be printed in the record at this point.

(The documents referred to follow:)

TENNESSEE VALLEY AUTHORITY,
OFFICE OF THE BOARD OF DIRECTORS,
Knoxville, Tenn., April 18, 1961.

HON. JOHN L. MCCLELLAN,
Chairman, Subcommittee on Patents, Trademarks, and Copyrights, Committee on the Judiciary, U.S. Senate, Washington, D.C.

DEAR SENATOR MCCLELLAN: In accordance with a recent conversation between Miss Marguerite Owen, our Washington representative and the clerk of the committee, we are transmitting herewith 50 copies of a statement by TVA with respect to S. 1084 and S. 1176 in lieu of presenting a witness.

If you need any further information as to TVA's patent policy and practice or if there is any other way in which we can assist the committee, please let us know.

Sincerely yours,

HERBERT D. VOGEL, *Chairman.*

STATEMENT OF TENNESSEE VALLEY AUTHORITY ON SENATE BILLS 1176 AND 1084 (87TH CONG.)

S. 1176

S. 1176 would establish a uniform governmentwide policy with respect to the ownership and disposition of inventions made in the performance of their duties by employees of the Federal Government and employees of firms doing work for the Government under contract. The bill provides in general that the United States shall have title to all such inventions, but that its proprietary interest can be waived under certain conditions. A new independent establishment, the Federal Inventions Administration, would be created in the executive branch to administer the policy.

Under the bill, all actions in connection with the disposition of such inventions, including the acquisition of patents or the granting of licenses, would be taken by the Administrator of the Federal Inventions Administration. Thus, the Administrator would determine for all departments and agencies of the Government (1) whether the Government shall acquire title to an invention made by a Government employee or the employee of a Government contractor, (2) whether the Government shall waive its proprietary rights, (3) whether application for a patent shall be made, (4) to whom and under what conditions licenses for the

I don't think it is fair to Dr. McLean, who invented the Sidewinder missile, to give him an award of $27,000 and then take back half of that in taxes. Incidentally, that is the highest award the Navy ever gave. I think Dr. McLean, who was my boss back in the Bureau, is a very brilliant scientist and should be paid much more money.

It is not true that inventors in industry don't get paid for their patents. This is a fiction. I know many people who have risen to high positions in industry and Government because they are inventors. The fact is that the man who produces inventions consistently gets paid for it. I have several people who work for me, in my small company, who get paid more than the directors of several bureaus of the U.S. Government. They are very productive inventors.

You don't have to award a man a prize for each individual invention. One should consider the total productivity of a man and his relationship to his group. This is generally done in industry, and the inventors do very well indeed. I myself have a company that does very well. We have 90 people now, and most of our original growth was based on my ability to invent, and, I assure you, not on my ability as a manager. My rise at the Bureau of Standards was also due to my ability to invent and on my ability to get along with my coworkers and my boss, of course.

I think, therefore, that it is not necessary and the law should not be changed to say that an individual inventor—that is, an individual inventor working for the Government—should receive any patent rights. I think the Government should do something useful with his patents, and if these are put into the public domain—which is usually a kiss of death—it should at least give him an award of some kind. I think many people have proposed this.

I think that when it comes to the U.S. Government working with a contractor, however, the picture changes very radically. Here we are in private business. As a result of the first contract I ever had from the Post Office we developed a letter-sorting machine which is not standard for the American post office. We spent our own money on the first model and accepted the first contract without a fee because I wanted to get the commercial patent rights and the foreign patent rights. These have earned us some money. The Post Office has a completely free license to use this machinery for any purposes, and these machines are now being built by Burroughs Corp., the Ex-Cello Corp., and the Pitney-Bowes Co. In other words, there we made a deal by which the Government would get the rights it needed for its post office work, and I would get whatever residual rights were left.

This was a fair deal and we did a great deal of inventing for the Post Office. I believe we have obtained more patents for the Post Office than any other contractor the Post Office has. We are by no means the largest contractor to the Post Office, in dollars.

We are a small contractor. I think that since we can do something with these patents, since we have a way of exploiting them, since we can sell them or license them or use them for other purposes, it makes sense for us to have them. If the Post Office took the total rights to these patents, I see no earthly reason why they should do anything except use them for post office machinery. This they can do now.

Not only that, but now we spend a great deal of money in patent fees to protect these patents, and this is not a simple matter. As Mr. Forman pointed out, as Mr. Derr pointed out, these are expensive

STATEMENT OF DR. ROBERT E. STEWART, REPRESENTING THE VETERANS' ADMINISTRATION

Mr. Chairman and members of the committee, we are glad to have the opportunity of explaining the patent policy of the Veterans' Administration, both as to research contracts and as to employees. Also we appreciate the opportunity of commenting on S. 1084 and S. 1176. Our comments on these bills must necessarily take into consideration the specialized situation in which the VA finds itself with respect to research.

The VA received an appropriation of $22,500,000 for research in the current fiscal year (Public Law 86-626), exclusively in the medical field. Of this sum, $1 million is for prosthetics. All research in the VA is therefore centralized in the Department of Medicine and Surgery. This has always been so.

Research and development contracts are a minor factor monetarily in our research. Out of the $22,500,000 appropriated, approximately $617,000 is being spent on such contracts. The rest is being spent in intra-VA research, i.e., in our own facilities, by our own employees, in approved projects.

Contracts for research and development only concern prosthetic and sensory aids. This specialized research is carried out predominantly through actual cost-reimbursable-type contracts with universities and nonprofit institutions. In 1956, the VA established a prosthetics center in New York City, and there has been a trend toward intra-VA prosthetic research. The principal emphasis in both extramural and intramural research on prosthetic and sensory aids has been on artificial limbs, which altogether has required approximately three-quarters of the total effort in prosthetic and sensory aids since the Veterans' Administration began support of work in these fields in 1946. This great emphasis was necessary because of the lack of fundamental research in locomotion and motions of the upper extremity compared with the fundamental knowledge available in other fields and because of the inadequate appliances available at the end of World War II. In recent years increasing emphasis has been given to aids for the blind and to hearing aids.

VA research in prosthetics is intended to benefit all disabled persons. Section 216(b) of title 38 provides:

"In order that the unique investigative materials and research data in the possession of the Government may result in improved prosthetic appliances for all disabled persons, the Administrator may make available to any person the results of his research."

In World War II, there were estimated to be three times as many amputations due to accidents in war plants as there were due to military service.

VA research in medicine is accomplished under 38 USC 4101 which authorizes the Chief Medical Director to engage in research. This research, entirely intramural, is for veterans but its nature is bound to help other human beings. There are contracts supported by medical research funds, usually with nonprofit organizations, for services in support of intra-VA research activities. In fiscal year 1961 these were:

1. National Academy of Sciences—National Research Council (3 contracts):	
(a) Statistical services (for analysis of veterans' clinical records and publication of findings as VA monograph)	$165,300
(b) Pathology, in support of cancer research	25,000
(c) Publication of Atlas of Tumor Pathology	6,500
2. Sciences Information Exchange (partial support of this agency)	30,000
3. University of North Carolina (statistical services in support of a cooperative study)	8,165
4. Georgetown University (laboratory facilities and animal care for research in pulmonary diseases)	5,000
5. Bureau of Standards (testing of dental prosthetic materials)	5,000

Research funds are also used in support of a VA contract with System Development Corp. of Santa Monica, Calif., which calls for a long-range study of hospital design, operation and administration at the VA Center, Los Angeles. The phase applicable to study of research activities amounts to $68,877 in fiscal year 1961.

With respect to inventions by employees, the bills now under consideration do not change the criteria established by Executive Order 10096 respecting ownership of inventions, as we see it. There are changes of procedure. VA Regu-

don't have any exclusivity. All they can get is a reasonable royalty. We don't have to license them. We are not bound by "consent decrees" or "monopoly practices," thus we can protect ourselves very well. We can come out with a special product for a few years until they get around to us. This way we can sell some things. Otherwise, we would be out in the cold.

We wouldn't dream of spending $100,000 or a quarter of a million dollars on something that we couldn't protect by patents. The first thing we worry about is, Can we get good patent protection? If the answer is "yes," then we spend money on it.

Let me tell you about some experience I had with a Government license. I invented the magnetic fluid clutch. It now boasts some 300 secondary patents issued to other people. First the Government wanted all rights, but then it found that it had no way of protecting the patents in foreign countries, it had no money to spend in foreign countries. So, the foreign rights were given to me. The American rights were free and public.

The result is that the clutch has been developed here rather slowly. Nobody is going to spend millions of dollars on something that the competitors can pick up. The clutch is used only in a few special devices, such as in a few computer gadgets and in a few very special custom-made machines. In connection with the European rights which were mine, my brother gave me some help. We obtained patents in 22 countries, some 40 patents in toto, I believe. We sold them to a company that eventually licensed Smith of England, and Smith administers the European rights. The clutch is now used in the Peugeot automobile and the Hillman car and in many devices. If you want to use one of the American clutches developed in the United States on Government money, and want to drive a car with that clutch, you have to buy a European car. The American rights just weren't exploited as intensely.

I do not say I should have received the private rights. I think in this case the Government could have done something else. But I say that if a patent is made free to everyone, it is made free to no one. Nobody picks it up.

This also happened to a disk memory I invented at the Bureau of Standards, a memory device for computers. The patent was again made free to everybody. Nobody picked it up. Nobody did anything with it.

IBM invented a different disk memory using some of the features, but it didn't want to develop my device. Nobody did a thing.

If that disk memory patent were a private patent, if somebody had spent some money on it, something would have happened. My experience with this sort of thing clearly indicates that a patent which takes a lot of development money and which is free to everyone just doesn't get developed.

On the other hand, I invented an automatic clock regulator in 1945. I finally sold it and it is used in all the automobiles today. Several million clocks that are built today have my regulators in them. I am wearing a Benrus self-regulating watch.

I think before the Government takes complete patent rights, even if it has the complete right to do so, it should consider what will happen to the invention, what the Government will do with it.

practice of the invention may be granted, (5) the form of provision to be included in Government contracts to protect the Government's proprietary interest, and (6) awards to be made to persons on account of scientific, technical, or medical contributions of significant value to national defense, public health, or any program administered by a Government agency.

We understand that one of the primary objectives of the proposed legislation is to preserve for public use and benefit the inventions or discoveries which are made through public-financed research and development work and to avoid the windfalls which have sometimes accrued in the past to those engaged in such research and development work under contract with the Government. This is a commendable purpose and one with which we fully sympathize. There is no such problem, however, with respect to inventions made in connection with TVA's activities. TVA's policy on inventions, which was established many years ago pursuant to the provisions of the TVA Act, provides for ownership by TVA of all inventions made by its employees or contractors in the course of their services for TVA. This policy has been commended not only for its protection of the public investment in TVA's research and its fairness to TVA employees but also for its effectiveness as an aid in carrying out the TVA program. We believe that a system involving transfer of all authority and responsibility with respect to the disposition of inventions made as the result of TVA research and development from TVA to a central agency in Washington would be administratively unsound and would impair the conduct of TVA program activities of which the making and use of inventions are an integral part.

TVA conducts a program of research and development designed to discover new and better fertilizers and to find better and cheaper methods of fertilizer production. The ultimate objective, of course, is to make it possible for the farmers to fertilize their lands more effectively and economically. It seems evident that when new discoveries or improvements are made as the result of such research and development, TVA is in better position to determine how and on what terms they should be made available to the fertilizer industry than an agency in Washington with no responsibility for the program and presumably with no special interest or experience in it. TVA is also in a better position to determine whether any invention developed in the program is of such character or importance as to warrant seeking patent protection on it.

Putting the invention to productive and beneficial use, which is the ultimate objective, cannot be achieved simply by giving notice of the invention's existence to people or firms having a possible interest in it. The technical staff of TVA's Chemical Engineering Office spends a great deal of time and effort in acquainting people in the fertilizer industry with the developments made in TVA's laboratory and experimental plants. Some of this educational work is done through technical publications and trade journals, press releases, conferences or demonstrations; but a great part of it is done through correspondence with the fertilizer industry and through visits by industry representatives to TVA's chemical plants and laboratory at Muscle Shoals, Ala., where they view TVA's developments and discuss with TVA technicians the problems of practical industrial application. For example, in fiscal year 1960, nearly 800 persons having a technical interest in TVA's fertilizer research and developments visited our plants. We answered more than 1,300 direct written inquiries in this field during the same period.

TVA's inventions policy has been successful in getting the results of its fertilizer research and developmental work into use. This is demonstrated by the attached chart which shows the location of the many plants in the United States which have obtained licenses to use TVA developed processes or equipment. It also shows that as of July 1, 1960, a total of 221 licenses had been granted to 167 firms for use of such developments in 233 plants. Since World War II the average analysis of fertilizer produced in this country has increased from 21.7 percent to 30.2 percent available plant food. While TVA does not claim that this remarkable improvement in quality is due entirely to its activities, TVA's substantial contribution to the advance in fertilizer technology is evidenced by the fact that approximately two-thirds of the granular fertilizer made each year in the United States is produced under TVA licenses. Thus TVA's research and developmental work, of which the patenting and licensing of resulting inventions is an integral part, is helping TVA to achieve the objectives set out in the TVA Act of improving and cheapening the production of fertilizer for the benefit of the farmers. Assignment of the control and disposition of such inventions to another agency inevitably would hinder the accomplishment of these objectives.

ments to it and the proposed bill submitted by the witness may be printed in the appendix.

(The statement referred to follows. The supporting documents and proposed bill appear in the appendix commencing on p. 595.)

STATEMENT OF T. L. BOWES, GENERAL PATENT COUNSEL, WESTINGHOUSE ELECTRIC CORP.

Mr. Chairman and members of the subcommittee, my name is T. L. Bowes. I am general patent counsel of Westinghouse Electric Corp., and I am speaking for that corporation.

It is our view that—

(1) a uniform policy concerning the disposition of rights to inventions resulting from Government-sponsored research and development contracts is desirable and feasible;

(2) such policy should be supported by suitable legislation;

(3) the public interest should be paramount in the drafting of such policy and legislation; and

(4) the public interest is best protected by permitting retention of title by contractors in all cases.

Our reasons for the above conclusion were first set forth in a memorandum mailed to the predecessor of this subcommittee on June 23, 1960, as part of the response of this company to a questionnaire sent out by that predecessor subcommittee. An amplified and updated draft of that memorandum is attached hereto.

That policy will be best for the Nation which will best and most rapidly put new inventions, new technology, on the market and into the homes of the public or into the service of our people.

It is important to understand the effects of the several incentives provided by patents.

The incentive to invent is important in disclosing new inventions, but mere invention does little to reward the inventor or satisfy the needs and desires of the public for better products and services.

The incentive to invest and market (to innovate) is often the key factor. When substantial development is still required to make an invention marketable, when no established market exists and one must be developed, when tooling up for production is costly, the exclusive right authorized by the Constitution of the United States is exceedingly important. This principle is equally applicable whether the work is self-financed or carried out under Government contract and there still remains expensive further work to adapt the work done under Government contract to a commercial product or use.

Whenever the Government strips a contractor of his exclusive right in the commercial field, the likelihood that the contractor will invest large sums is diminished—perhaps extinguished—if a competitor can more cheaply enter the market developed by another by copying the engineering of the innovator at much less cost. The copier, in such a case, is apt to profit while the innovator faces financial trouble because he can't recoup his large entry fee and compete in price with the imitator. Since the imitator does not enter the field if there is nothing to copy, the public is the loser if the inventor does not have sufficient incentive to enter the market. If [note the emphasis]—*if there may be in a few cases* instances when title acquisition by Government might be justifiable, this is a small price to pay for maximizing the pace of technology.

Now who gains the most from the adoption across the board of a license policy? In our opinion, the answer is small business. Hundreds—perhaps thousands—of our suppliers are small businesses. Similarly thousands of our customers are small businesses. Our success depend upon their success. The same principle applies in greater or lesser degree to every Government contractor.

In view of these beliefs, we oppose both S. 1084 and S. 1176 on the principal ground that both would be disadvantageous to the growth of technology in this country and, therefore, would not be in the public interest inasmuch as both are basically "take title" bills.

S. 1084 is further opposed because no provision is made in any case for retention of title by contractors, because research is not defined and hence the conditions under which title is taken are indefinite, because no compensation is paid for the taking of property, because no provision is made for payment

The change in the latter type of contracts would put title to inventions in the Administrator of Federal Inventions instead of leaving naked title in the contractor, subject to the irrevocable and exclusive right in the VA to designate licensees without payment of royalty. We do not know how this change would affect our prosthetics research program. It may not have any appreciable effect if our experience of the current fiscal year is indicative. In this period, all new research contracts included our short form except that with the University of California, contract V1005M–2075. The patent clause in this contract is being renegotiated. The short form was unacceptable to the board of regents of the University. As a compromise, they have tentatively agreed to a patent clause which gives the Government an irrevocable royalty-free and exclusive right to all patents in prosthetic devices for Government use or otherwise. The university retains the rights for all commercial applications, if any, for purposes other than prosthetics. The amount of funds obligated under this contract during fiscal year 1961 is $204,209.

Section 7 of S. 1176 is probably more significant with regard to the VA. With respect to research in prosthetic and sensory aids, the greatest emphasis in the United States is probably in the Veterans' Administration. It spends far more for such research than any other agency, and its efforts to enlarge the field of knowledge in prosthetic and sensory aids are in proportion. This is not a field of great commercial potential. It is small and specialized, even as to the businesses which manufacture the items.

There now exist established scientific indexes, including the unique prosthetic reference collection and exhibit in New York City. These are so closely related to the research that any change as to the depository of this knowledge and indexes would either impair the continuation of the research, or duplicate work. The continuation of the research, and the currency of knowledge as to the state of the art are very closely tied together. We believe it would be a disservice to the disabled veteran, and to all disabled persons, to separate responsibility for maintaining and disseminating knowledge in this very limited field from the responsibility for research. The VA and its contractors have actively disseminated new results through publications in scientific and technical journals, books, intensive courses, and widespread distribution of reports to those concerned.

Therefore, we believe that retaining the present system is preferable, and the VA would continue to make the data available to all disabled persons pursuant to 38 U.S.C. 216(b) supra.

Section 8 of S. 1176 would put administration of patents under the Administrator of Federal Inventions, and allow issuance of licenses under certain conditions, either for royalty or royalty-free. We believe that royalty-free licenses should be revocable by the Government. Since 1946, when the first appropriation for reesearch in the field of prosthetic and sensory aid was made, there has been no royalty charged for manufacture of any prosthetic or sensory device developed with Government funds. We believe that the subcommittee will agree that no royalty should be charged as a rule, in view of the humanitarian character of these devices. It is suggested that administration of patents in this small and unique field therefore be left in this agency, either by amendment of section 8, or by authorizing the Administrator of Federal Inventions to delegate.

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D.C., April 20, 1961.

Hon. JOHN L. MCCLELLAN,
Chairman, Subcommittee on Patents, Trademarks, and Copyrights, Committee on the Judiciary, U.S. Senate, Washington, D.C.

DEAR CHAIRMAN MCCLELLAN: I am submitting herewith a statement concerning the Commission's patent policies and practices which I was directed by the Commission to make on its behalf.

In my telephone conversation on April 19 with counsel for your subcommittee, Mr. Robert L. Wright, he suggested that the statement be submitted for the record at this time in lieu of my personal appearance, since your hearings were running considerably behind schedule.

If we can be of further assistance, please let us know.

Sincerely yours,

MAX D. PAGLIN, *General Counsel.*

entitled "Federal Patent Policies in Contracts for Research and Development." Accordingly, while we oppose acquisition of title generally by the United States because of the reasons set forth in the attached memorandum, we would accept as a reasonable compromise which would not unduly harm the public interest nor unduly slow up the advance of technology, legislation under which the United States would take title to inventions made by contractors under conditions wherein and so long as retention would result in undue concentration of rights in and preferred positions established for contractors in areas of new technology (i.e., fields where there exists at the time no substantial fund of public knowledge in such fields, and all work for a substantial period of time will be Government financed), and yet contractors would be permitted to retain title when the field of technology involved is developed to the stage where knowledge is generally available to the public and the public can further develop the technology without substantial reliance on the Government. Where inventions made are only incidental to new technology, the contractor can well be permitted to retain title in all cases.

The aim might be accomplished under a bill along the following lines:

1. Where the principal purpose of a contract or other arrangement is directed to the development of specific technology, where there exists no substantial fund of knowledge in such technology, substantially all work for a substantial period of time will be financed by the Government, and after notice and full hearing, a designated official determine that certain established criteria are present, title to inventions made under such contracts and which are directed specifically to such new technology (i.e., are not merely incidental thereto) may be acquired by the United States;

2. Issuance of patents on the foregoing basis would be limited to inventions made during the 5 years following authorization by the Congress for the development of the specific technology;

3. Title to inventions specifically directed to and primarily useful only in the specific technology made under contract or other arrangement during the next following 5-year period would be subject to compulsory licensing;

4. Title to any invention made under contract or other arrangement thereafter would remain with the contractor; and

5. in all cases where title is retained by the contractor, the Government would acquire a free, nonexclusive license for governmental purposes.

Other suggestions have been made or are being studied by various associations and groups which would be acceptable compromises in principle as not unduly harmful of the public interest. These are of follows:

1. Permit the Government to take title where one or more carefully defined criteria related to the public health or safety are established at a suitable hearing on notice. The contractor would be permitted to retain title to all other inventions. The new Department of Defense regulation on disposition of title and the amendments to the National Aeronautics and Space Act passed by the House in the last Congress if modified to encompass suitable criteria serve as examples;

2. The contractor would retain title but a compulsory license would be available following hearing on notice at reasonable terms and conditions after a period of years if the contractor is not sufficiently responsive to market demands and a sufficient showing of need to protect or enhance the public health or safety is established; or

3. The contractor would normally retain title to inventions but following suitable hearing on notice a designated official of the United States would be permitted to declare, under carefully established criteria, certain inventions affected with the public health and safety dedicated to the public. In this case no patent would issue on such inventions.

The foregoing suggestions have been quite general and are directed to general principles. If any legislation is adopted embodying the acquisition of title by the United States, we suggest the following secondary principles be considered carefully:

1. The revocation of all other laws and regulations in conflict with new legislation. This requirement is necessary if uniformity is to be achieved.

2. Compensation to inventors and assignees for the taking of property rights in inventions, as is the case when the United States takes all other forms of property.

3. Should the Government be permitted to compete with contractors and licensees of contractors for the purpose of providing services or supplies to the

In 1957, the Commission had before it in dockets 10090 and 11228 the question of whether rules should be adopted which would have required the filing of patent information on a regular reporting basis. At that time, a majority of the Commission decided that patent information should be obtained on an ad hoc basis as it became relevant to a particular proceeding. In declining to adopt the proposed rules, the majority rested its action on the administrative difficulties which would be involved in processing and classifying the raw patent data which would be submitted to it. The majority also felt that overall surveillance of patent matters should be left to other Government departments more directly concerned with the correction of patent abuses.

However, in this connection, let me state that the Commission is currently giving consideration to the matter of a reappraisal of its patent practices and policies. The subcommittee will be kept informed as to any action the Commission may hereafter take regarding this matter.

Turning now to the two bills before your subcommittee, S. 1084 is a bill to establish a national policy for the acquisition and disposition of patents upon inventions made chiefly through the expenditure of public funds and provides that the Federal Government shall have title to all inventions and patents resulting from the performance of any obligation pursuant to a Government contract, grant, or lease, or resulting from a research grant or contract financed by the Federal Government.

S. 1176 would create a new Government agency to administer the Federal Government's patent rights. The United tSates would have exclusive right and title to any invention of any Federal employee made during working hours or with a contribution by the Government of materials, information, or the services of another Government employee during working hours. In addition, the U.S. Government would have exclusive right and title to any invention made by any person in the performance of a Government contract, lease, or grant.

It is believed that FCC contributions to the group of patents to be administered under the provisions of these bills will be very small. However, if the overall volume and complexity of administering patents held by the Federal Government is sufficient to warrant the establishment of an agency for this purpose, as proposed in S. 1176, there would seem to be no reason why patents arising from FCC activities could not be administered by such an agency. The extent and volume of patents which have been developed by Commission employees or under Commission research projects were reported to your subcommittee in the Commission's response of April 20, 1960, to your subcommittee's questionnaire. An additional patent not included in that response was issued on September 8, 1959, and covered equipment for a new TV color system. In this case the employee retained title and the Commission was granted a nonexclusive, royalty-free license. Other than the additional work that would be required of the Commission in keeping such records as may be prescribed by the Administrator, the bill, if enacted, would not be burdensome to the Commission.

As a final observation concerning these bills, let me state that whether these bills should be enacted is a matter of legislative policy for determination by the Congress.

Before closing, there are two other matters which I feel deserve attention. The Commission has noted that your subcommittee in its annual report (S. Rept. 143, 87th Cong.) has recognized, at page 14 of the report, that while the Commission seldom engages in direct scientific research, it does promulgate technical standards on which patent rights have a substantial impact. The report then notes that—

"* * * the Commission has formally declined to estimate the effect of such rights on the general availability of the specified equipment standards and maintains no staff competent to make such an investigation."

In our view, that statement does not reflect accurately the Commission's position or statutory authority with reference to patent matters and the establishment of technical standards. As already pointed out in the beginning of this statement, the Commission does consider the possible effect of patent domination before it adopts technical standards.

The Commission has also noted that at page 14 of the subcommittee's annual report, it is stated that—

"Unlike the FCC, the FAA does investigate the impact of such rights on the technical equipment standards it promulgates and makes a positive effort to see that such equipment is equally available to all the carriers it regulates."

I predict, Senator, that in almost all executive thinking, such as that I have mentioned, when given all the relevant factors and all the relevant factors are explained to them, these executives would no longer agree in the general conclusion that the Government should always take title.

I say this, too, on the basis of my own personal experience in talking with some of these people.

I was very much interested in the discussion that you had and that Dr. Forman and Mr. Rabinow had on incentives. If I may for just a brief moment, I would like to touch on some aspects of this, add a little bit to what they said perhaps.

You discussed earlier the likelihood that a small businessman would be as apt to use under license an invention if he had to pay royalty as compared with use under a free license.

I think we have to make a distinction here. I would consider it obvious that if a licensee has to pay royalty, he will be much less apt to commercialize or go into that particular product than if he gets it free, because this is an element of cost, of course.

Senator McCLELLAN. That is what impressed me about it. I thought if he could get it free, normally he would prefer that. But, at the same time, if he gets it free and everybody else gets it free, the competition would be much stronger and he might prefer to pay a royalty and have an exclusive right rather than to have the competition.

Mr. BOWES. On the license side I think so.

Now I think, too, this will depend on how difficult it is to get into the field. If it is costly, if some additional work has to be done, he will almost certainly want an exclusive license to really produce in this field. However, this is on the take-a-license side.

I think we might make one comment here. I think you have to distinguish between copying or imitating and innovating or doing something new. The cheaper it is to copy the more certain that it is going to be copied. A competitor would be rather foolish if he didn't take his competitor's ideas as long as they were free to him. He can keep in business rather cheaply this way.

But I think that imitation does not do much to advance technology. When you imitate all you do is share what already has been developed by someone. Something else is needed, a different form of incentive is needed in order to go ahead and develop the art and the technology.

This brings us into a second area of incentive which, while I haven't heard all of the testimony at your hearings, has not been emphasized in my presence, and that is the incentive to invest.

If the Government is going to take title generally, then a contractor, it seems to me, would be very reluctant to consider going into the commercialization of an idea if the commercialization will take a substantial amount of investment, if further work has to be done, further research and development, and large expense of tooling is involved so that a capital expenditure is necessary, and it may very well be that the commercial market has to be developed.

If these factors are present, a corporation or any businessman, for that matter, will be somewhat reluctant to take the risk because he has to get his investment out of the market before his competitors can copy what he has done and use for free his engineering.

Now if he has the right to withhold licenses or grant licenses, he is then in a position to help himself along. If he needs time to recover

To the extent that this statement suggests that the Commission does not take into account, before adopting technical standards, the possible adverse effects which patent domination might have on the public interest, the Commission likewise feels this statement does not accurately reflect its firm determination to assure itself whenever necessary that its technical standards will serve the public interest and not merely the private interests of the patent holders.

Also, in this connection, let me make a final observation; namely, that the Commission knows of no case in which a potential Commission licensee has been unable to operate under our rules because of his inability to obtain a patent license or the use of patent equipment pursuant to a requirement of our rules, or any claim of exorbitant license fees.

Senator McCLELLAN. All right; the committee stands in recess until tomorrow at 10 o'clock.

(Whereupon, at 3:30 p.m., the hearing was recessed until 10 a.m., Thursday, June 1, 1961.)

Now alluding for a moment to your question to Mr. Rabinow concerning taking the salt out of water, this thought occurs to me:

What we are really talking about in this area is not so much the patent rights all by themselves but the commercial rights to inventions which are made under Government contracts. The Government, I think everyone agrees, certainly should have the right to use inventions that are developed under Government contracts. This essentially is all that the Government needs. That has been stated many times.

We are really talking about what shall we do about the nongovernmental area. Now this is certainly a question for your subcommittee and for the Congress to decide, but it does seem to me that the question of the extent to which the Government should direct commercialization of these ideas is a very important matter for consideration.

While the Government may not actually—I don't believe it is contemplated—go into the actual manufacture and sale, if they are going to embark on extensive licensing programs they necessarily have to touch very considerably on the commercial aspects of a nongovernment business.

I have been rather surprised that so little mention has been made in these hearings of the George Washington Foundation report which was issued last winter. I found that very good reading. I found it full of interesting and valuable ideas on this subject.

There is, of course, involved there a fact which I think should not be overlooked. This is a unit which is relatively neutral. It was engaged by the Government, and its study was made with Government money, and I would suggest that if you can find time to read this or digest it or have it digested for you, there is considerable merit in it.

In conclusion, coming to the bill which I have offered, my suggested bill is aimed at minimizing the likelihood of undue concentration in any one or several contractors in fields of new technology. I have tried to take an approach which will involve little or no administration and which will involve the least slowing up of the technological progress and the least inconvenience to contractors and, yet, give the Government and the public the maximum advantage.

I have suggested that in fields of new technology, new technology being defined as technology or a field where the information and financing for a substantial period of time must necessarily come from the Government, entirely or almost entirely—in that situation any inventions particularly directed to new technology and useful for all practical purposes only in that technology then would belong to the Government. Any such inventions made for a period of years—I have suggested 5—from the date of contract—would go to the Government.

Then I have suggested following up with an additional period of time during which inventions made would be subject to compulsory licensing, and then after the end of this period or such other period as Congress might direct, the inventions then made in that technology would be available to the contractor by way of title. That would be under the assumption that by this period this technology would be no longer new; there would be a sufficient fund of public knowledge and

the bills presently pending before this subcommittee. My remarks will be directed more particularly to S. 1176, which is much the more detailed and comprehensive of the two measures you are considering.

In the first place, and in my deliberate judgment, I call your attention to the fact that this proposal provides for an amendment to the Constitution of the United States, not in the way the Constitution prescribes but by the proscribed method of legislative enactment. There are many who fear that in recent years, legislatively and judicially, occasional resort has been had to such unauthorized modification of the tenets of our organic law.

Now let us see, according to the Constitution, what is the power of Congress concerning patents. It is found stated in the following language in section 8 of article 1: "The Congress shall have power * * * to promote the progress of Science and Useful Arts"—how?—"by securing for limited times"—to whom?—"to Authors and Inventors"—securing what to them?—"the exclusive right to their respective Writings and Discoveries."

Inasmuch as there seems no present intimation that the Government contemplates confiscating the writings of authors, let us confine our consideration to the patent provision of the Constitution.

Now, we all realize that the Founding Fathers were men of wisdom who knew the meaning of words and terms—such as "exclusive right"—and they knew well also that the idea for a patentable discovery originates in the mind of an individual and not in the complexities of the organizations of corporations and governments. So, for a proper limited time, they accorded this exclusive right in patents to individual inventors responsible for the discoveries their patents attested.

Therefore, for that limited time the proprietary rights under such patents belong to those individuals. They can, if they so desire, assign them to corporations or to the Government, but that is a matter of their own free choice. How otherwise could corporations or the Government acquire rights under patents according to the Constitution? Bear in mind that a patent is not a gift from the Government. On the contrary, it is something an inventor has earned for himself if the discovery complies with the requirements for the issuance of a patent.

But some proponent of this legislative proposal may ask me if I have ever heard of the general welfare clause of the Constitution. Yes, I am familiar with it and think I understand its proper application. It is not directive with reference to any particular matter of legislative enactment, as is the constitutional provision concerning patents, but on the contrary a mere broad and general statement of one purpose of all legislative action, much like a Mother Hubbard which some wag has described as "an old-fashioned garment which covers everything and touches nothing."

And, though I would not ascribe such intent to any of the honorable and patriotic men and women serving in the two bodies of the Congress, there are many citizens of our country who think that, in the absence of specific constitutional authority for a legislative proposal, this general welfare clause is sometimes used as a convenient closet in which to hide such discrepancy.

GOVERNMENT PATENT POLICY

FRIDAY, JUNE 2, 1961

U.S. SENATE,
SUBCOMMITTEE ON PATENTS,
TRADEMARKS AND COPYRIGHTS,
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10:08 a.m., in room 2228, New Senate Office Building, Senator John L. McClellan presiding.

Present: Senators McClellan (presiding), and Hart.

Also present: Senator Long of Louisiana.

Staff members present: Robert L. Wright, chief counsel, Patents Subcommittee; Clarence Dinkins, assistant counsel; Herschel F. Clesner, assistant counsel; Thomas C. Brennan, investigator; George S. Green, professional staff member Committee on the Judiciary.

Senator MCCLELLAN. The committee will come to order.

Mr. Wyman, will you come around, please, sir.

STATEMENT OF KIMBALL S. WYMAN, GENERAL PATENT ATTORNEY, ALLIS-CHALMERS MANUFACTURING CO., WEST ALLIS, WIS.

Senator MCCLELLAN. Be seated.

I have a letter from Senator Alexander Wiley of this date addressed to me, which makes reference to the witness who has just been called, Mr. Wyman of Allis-Chalmers Manufacturing Co., Milwaukee.

Senator Wiley points out that Mr. Wyman is an outstanding patent lawyer and that he knows that his contribution today, to the consideration of Government patent policy, will be very beneficial to the committee.

We are proud indeed, Mr. Wyman, to have you testify, and you may now, after further identifying yourself for the record, if you desire, proceed.

Pull that mike up to you, if you will, please, sir. I want to say to you that if I asked you to do something like that, it is not your fault. Whoever selected the equipment for this building, whoever provided it should take the full responsibility, in my judgment. If it is any use at all, it was never demonstrated when I was present.

I do not know whether I am being heard at all or not when I am relying on it.

Mr. WYMAN. Thank you, sir.

Consider, as one of many such examples, the many appropriations wisely made to the farmers of our country to facilitate their production, in several instances to stabilize the prices they receive for their products, to assure safety from flood damage, et cetera. By way of analogy, can any of you tell me what proposed legislation is pending to require the farmers in return for this helpful service to turn over to the Federal Government the right to market for its own use the things they produce?

In other words, in all these other fields of governmental financial aid there is no thought of depriving the recipients of such aid of all the benefits it bestows. But, with reference to patents, it is now suggested that we even take away from inventors in and out of the Government the benefits the Constitution accords them. I think it would be well for you to look carefully into this phase of the proposal before you.

In the second place, briefly and in keeping with much that I have stated, this bill provides a long step toward the abolishment of our Patent Office, the governmental agency designed to carry out the constitutional intent in the administration of patent rights. In many respects set forth in the pending bill the Commissioner of Patents is to become a mere agent of the Administrator to do his bidding. So now it is proposed that we establish in the executive branch of the Government a Federal Inventions Administration with rather unbridled power concerning patents.

In assuming functions of the Patent Office, the Administrator is empowered to make such rules and regulations as may be necessary to control the administration of patents placed under his jurisdiction. He will be authorized to "obtain, assemble, and classify available publications and other information concerning inventions and discoveries which may provide assistance for inventors, small business organizations, and the general public." Also it will become his duty to "compile, publish, and provide for the greatest practicable distribution to libraries, trade associations, and organizations engaged in trade and industry" of information he deemes advisable.

Examine section 13 of the bill on page 27 and you will note the many functions, powers, duties, and obligations of the Government Patents Board, the Department of Commerce, et cetera, which are to be transferred to this Federal Inventions Administration.

And let me add here that the Government Patents Board no longer exists. It was abolished by Executive order of the President, in February of this year, as I recall, and its duties transferred to the Commissioner of Patents, where they properly belong. But this bill, of course, turns those duties over to the Administrator.

Senator McCLELLAN. You think this bill takes away those same functions and places them in another board?

Mr. LANHAM. To do what the Government Patents Board did.

Senator McCLELLAN. To do what the same old Board did that was abolished.

Mr. LANHAM. That was abolished and its duties transferred to the Commissioner of Patents.

Senator McCLELLAN. And we are trying to go back?

Mr. LANHAM. Yes, sir.

Senator McCLELLAN. All right, sir.

the contracts for federally financed research (research paid for in whole or in part by the Government) to provide for the Government's taking title to inventions.

Following are some specific examples:

1. Where the research is basic in nature, i.e., directed toward increasing scientific knowledge or understanding of a subject being studied, and includes applying the obtained increase in such knowledge and understanding to create new products, materials, processes, etc.

2. Where the contractor is to function primarily as an administrative agent of the Government.

3. Where the contract is for the development of products in fields directly relating to the health or safety of the public and the products as developed in the performance of the contract are in a form ready for commercial use.

On the other hand, it should be noted that there are also situations where federally financed research is of such a nature and is so related to the experience, facilities and the commercial position of the contractor, that it would be improper and even harmful for the Government to take title. In these situations, the Government should obtain no more than a free, nonexclusive license for governmental purposes. Such a license, of course, satisfies all of the legitimate needs of a Government dedicated to the principles of a competitive economy.

Proponents of S. 1176 and S. 1084 have asserted that our national interest will benefit from the enactment of legislation compelling our Government to take title, as a matter of law, to all inventions obtained in the performance of all federally financed research. This assertion specifically mentions several alleged benefits. Those alleged benefits considered most important will now be reviewed to determine whether they are in fact realistic.

First, since the Government pays for federally financed research, the Government should own all of the resulting inventions.

This allegation, on its face, appears so right, so just, so fair and so reasonable that it has tremendous popular appeal.

But, when we examine the facts, nothing could be further from the truth.

Now let's look at the facts and the fundamentals involved.

Industrial concerns are selected to do research for our Government on the basis of their having adequate facilities, competent personnel, background know-how, commercial experience, and current interest in the subject matter involved.

The usual practice is to request the firm to bid for or negotiate the contract and the contract is usually awarded to the lowest bidder or, if negotiated, to the concern deemed best qualified to timely and inexpensively achieve the contract objective.

The Government in contracting with an industrial concern desires to obtain new technical or scientific information or a product to meet certain specifications. All the Government wants is the mentioned information or a product to use. And if any inventions are made in performing such contracts, they are incidental to the work being done and, if the work is satisfactory, that is all that matters.

Regardless of the form of the contract, that is, fixed price or cost-plus-fixed-fee, the same price is paid the contractor whether or not inventions are made. In fact, our Government does not hire industrial concerns solely to invent in the sense of producing something that is patentable. If the information or product contracted for is obtained, the contractor has fulfilled his obligations to the Government whether or not inventions result.

However, as indicated by the January 31, 1961, revision of part 1 of ASPR, section IX, federally financed research may be of such a special nature as to warrant the Government taking title to all inventions conceived in the performance of such research. This is fair and reasonable but does not and should not require that the Government demand special treatment in acquiring rights to inventions.

For example, it seems only fair that an industrial concern which has a contract with our Government should treat the Government the same as it treats any of its other customers with which it has the same contractual relation. Looking at the other side of the coin, why shouldn't our Government, like other customers, respect the contractor's proprietary information that bears a restrictive notice?

In line with this philosophy, although Allis-Chalmers engineers products, equipment, and processes to meet its customers' functional specifications, it will furnish its customers data, including manufacturing drawings and specifications,

Now let us sadly contemplate what S. 1176, if enacted, would say to such needed and struggling searchers for discoveries that would promote our national defense and add countless blessings also to the demands of our domestic lives. Remember that practically everything, even very ordinary articles, are useful in national defense.

If this bill should become law, it would give such essential inventors a very positive warning in advance that, if they should succeed in their worthy endeavors and undertakings, the Government would hasten to take their patents away from them. Remember also that an inventor has no protection for his discovery until he gets his patent. Accordingly, applications for patents appropriately are kept secret. But that salutary practice would be set aside under this bill and the Commissioner of Patents would be required to give the Administrator upon his request access even to pending patent applications.

In other words, an inventor could be deprived of the benefits of his discovery even before he would have any power to protect it. In effect the Administrator would be empowered simply to tell an inventor that he might as well try to make a living in some other way and forget all about his efforts to create something worthwhile. To the inventors, so many of whom are humble citizens the Government likely would not employ, that would mean "Goodby, incentive."

Complaint is being made by many of our citizens that in some important fields of progress and advancement our country is running second by centralizing in control of the Federal Government many of the liberties of our people and by making our States mere Federal districts. In the field of advantageous patentable discoveries to keep us preeminent, how can we expect a better status if we practically prohibit the contributions of patriotic citizens capable through their own research of improving vastly our international standing? Too many laws have been enacted already with this unfortunate trend.

If ours is the earnest wish "to promote the progress of science and useful arts," "to establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity," let us adhere to the sound and fundamental principles of the Constitution and not be diverted therefrom by the approval of such offside legislative proposals as are now being considered.

Mr. Chairman, in addition I quote a few very pertinent passages of a statement by Mr. John W. Anderson, who is the president of the National Patents Council, which is a nonprofit, educational organization of smaller manufacturers, inventors, researchers, and other professional groups devoted to the field of science and invention.

Now, his background will convince you that his views are worthy of very serious consideration, and I ask that his statement be placed in the record for careful study.

Senator McCLELLAN. The statement of Mr. Anderson will be printed in the record immediately following the testimony of Mr. Lanham.

Mr. LANHAM. I shall quote a few parts briefly as time will not permit reading all of it.

Senator McCLELLAN. Go ahead.

benefit to, the public will be obtained by making Government-owned patent property generally available.

However, if we exclude Government-owned inventions which as patented are already in a form suitable for general use, apparently nothing could be further from the truth.

This is so when our Government owns the patent because licenses are made available to all U.S. citizens and concerns. Thus, for all practical purposes, a product covered by a Government-owned patent can be copied without incurring liability as soon as it is placed on the market.

Consequently, there is no incentive for anyone to expend time, effort, and money to develop and market products protected by Government-owned patents.

Moreover, in a competitive economy Government should not be in the business of furnishing services and supplies to the general public in competition with industry. And unless we switch to socialism, our Government should not make any attempt to commercialize a product even if it is protected by a Government-owned patent.

Therefore, Government ownership of inventions, excluding those which as patented are in a form ready for general use, will not make them generally available.

> Third, that Government ownership of such inventions will prevent a revolutionary invention (such as a cancer cure or a means for controlling the weather) from either being suppressed or exploited at monopolistic prices.

It seems obvious that a Government need for title, insofar as suppression of inventions is concerned, is certainly unfounded.

Let's consider the facts.

If our Government gets a free license for all inventions conceived in the performance of federally financed research, it can obviously make products embodying any such inventions readily available to the public on any terms it deems warranted. All that is required is for the Government to make and distribute the product or to have some industrial concern make it for Government use and distribution.

On the other hand, the act of 1948 (28 USC 1498) gives our Government the right to use any invention under which it is not licensed and does not have title. The only remedy a patent owner has for such use by our Government is to sue our Government in the Court of Claims to recover a reasonable royalty. No injunction can be obtained for such use.

Therefore, Government ownership of such inventions is not needed to prevent the alleged suppression or exploitation at monopolistic prices of any revoluntionary invention.

> Fourth, that Government ownership of such inventions will assure a prompt dissemination of all technical and scientific information derived from federally financed research.

Now let's see why Government ownership is not likely to achieve that result.

I believe that we are all aware that in the performance of Government research contracts the contractor is required to make periodic progress reports to the contracting agency, usually monthly, fully disclosing all inventions made in doing the work called for by the contract. Further, that the contracting agency controls the release for publication of all information contained in such reports. Unless prohibited by contract, the Government can disseminate any technical or scientific information it desires.

However, the Government is in no better position to actualy effect prompt publication of released information than is the contractor, should publication be desired.

Should the information in question contain patentable subject matter and should patent protection be desired, that fact may delay publication, but only to the extent that premature publication would bar the grant of a valid patent. And this would be true whether the invention to be patented is owned by the Government or by a private concern.

Whether an invention that appears to possess patentable subject matter is likely to be patented depends in the first instance on ownership. If it is owned by our Government, patenting is usually attempted merely for defensive purposes, i.e., to effect publication.

On the other hand, if the invention is privately owned, an attempt may be made to obtain patent protection if the owner believes (1) the invention has potential commercial application, and (2) the protection likely obtainable by patenting is such as will prevent copying in the event a commercial product is developed and successfully marketed.

dressed such conferees, pointing out to them the danger of enacting that bill with the patent provisions then included therein, as follows:

"Our membership is seriously hopeful that H.R. 12575 may not be finalized containing any patent provision that would in any way alter the U.S. patent system to deny inventions affecting astronautic and space developments any traditional status.

"You may remember that the atomic energy bill in the House was amended at the behest of our members, who are smaller manufacturers, to give atomic energy inventions conventional patent status. Under severe executive pressures the Senate-House conference committee sent the bill back to the House in its original form in which it was enacted after restoring provisions affecting patents which provisions many predicted would bring about the widely publicized conditions that have since ensued as affecting competitive international atomic energy developments.

"Our organization feels that if the even-more-drastic patent provisions now under consideration are enacted results will be deplorable and added loss would be irretrievable. Individual incentive to invent and develop would be destroyed. The broad long-pull incentives of American industry would be stifled. Control of personnel having access to top secrets would be removed from civilian responsibility. Impediments helpful only to our military competitors would be planted in critical operations with responsibility therefor carried solely by individuals having no direct accountability to prime sources of economic contributions to national defense.

"Haven't we suffered enough from the serious error made by deep-freezing inventive incentive through the Atomic Energy Act? Your good offices in promoting wide publicity as to the significance of the proposed legislation and urging exhaustive study, befroe enactment, of its probable consequences, we believe can earn you not only much future commendation but also deep personal satisfaction as a legislative leader."

It has been only a little more than 3 years since the space bill was enacted into law. Already it is evident, from reports from members of industry and of the patent law profession, that the patent provisions of the act have served as a sad deterrent, tending to discourage industry from engaging in any research in the subject field of activity.

For these and other reasons herein set forth, I strongly urge that this subcommittee consider rejecting S. 1176 and S. 1084.

WHY REPEAT DANGEROUS ERROR?

The patent provisions of the Space Act of 1958 provided for the Government acquiring outright title to inventions made during research contracts with the Space Administration. Similar provisions were included in the Atomic Energy Act, with the result that, as stated by Mr. David Lilienthal, former head of the Atomic Energy Commission, in his 1950 series of articles in Collier's magazine:

"No Soviet industrial monopoly is more completely owned by the state than is the industrial atom in free-enterprise America. The Government has today an ironclad, airtight and all-embracing legalized monopoly of this vast enterprise, and of the new industrial era the development of the atom could bring to this country."

We deal in this statement with substantially the same serious problems dealt with in my statement before the Joint Committee on Atomic Energy when, in behalf of National Patent Council and others, including my company, we opposed the enactment of the atomic energy bill with patent provisions equally violative of constitutional concepts as are those found in the proposed bills S. 1084 and S. 1176.

In Congress, the House in 1946 adopted our amendment to the Atomic Energy Act, by almost unanimous vote. The Senate-House conference committee—to whom the atomic energy bill was then referred—sent the bill back to the House in its original form—under assurances by the White House that the provisions for Government acquisition of patent rights and for modifications of the traditional functions of the patent system must be enacted without amendment and must stand until Russia agreed to international control of atomic energy and to internal inspection of atomic energy activity. Responsive to White House pressures, the committee yielded and, with the Congress under the befuddling panic the Bikini tests were certain to create, the bill was so enacted.

Also, this has been our experience on numerous occasions. An example is a pump which was designed by a competitor for pumping hot fluids and was protected by U.S. patent 2,161,695. This pump attained customer preference, thus compelling us to either seek a license or innovate to provide a competitive noninfringing design. The latter was chosen and resulted in an improved patented design which greatly enhanced our company's competitive position and gave the customer a better product.

Further in point, as to Government-owned inventions being utilized by industry, such utilization follows when the invention as patented is ready for use without further development since only copying or imitating is involved. However, if a Government-owned patented invention requires further extensive development and licenses are made available to all, it is unlikely that anyone would be interested in taking the gamble involved in the further development since it could be readily copied if success were attained.

Consequently Government ownership, instead of removing the need to seek alternate solutions to problems, may in fact result in the invention remaining on the shelf and never being used.

In a competitive economy such as ours, no one can stay in the business of developing and marketing new products if those that meet with customer preference can be freely copied by competitors. This is so because the successes must pay for the failures even though the failures always greatly outnumber the successes.

On the other hand, a privately owned patent protects against copying and thus permits the development and marketing of new products at a price such as will permit the maintenance of adequate research and manufacturing facilities, equipment, materials, and trained personnel.

All this is vitally necessary for continued industrial growth which in turn provides jobs, job security, good wages, and working conditions, and the opportunity for advancement.

We have now attained the highest standard of living of any nation in the world. And if that is what comes of having privately owned patents, what could possibly be the advantage of Government ownership?

Seventh, that there is no justification for assigning a research force to search for inventions that are not intended for use at all—but merely to erect barriers to possible competition.

Again, let's consider facts.

In the first place I am not aware that research is ever undertaken to search for inventions that are not intended for use. On the contrary, research, whether privately or federally financed, is undertaken for the purpose of obtaining useful technical or scientific information, inventions, innovations, and discoveries.

Further, if inventions are not intended for use, how can private ownership and the patenting of such inventions erect barriers to possible competition?

Obviously if what is patented is not used commercially, the patent is in reality nothing more than a publication.

Eighth, research for inventions not intended for use is especially unjustified when the public is paying for wasted effort.

It is respectfully submitted that allegations such as the research for inventions not intended for use and the public is paying for wasted effort appear to be unfounded and should be ignored for the following reasons.

As previously indicated, if federally financed research is not being undertaken with the hope and expectation of furthering our technology, then the public is paying for wasted effort.

This situation, of course, would not only be ridiculous, but also is contrary to fact as established by statements presented to this subcommittee. And I believe that the representatives of Government agencies who have presented such statements would be the first to deny that federally financed research is ever undertaken to search for inventions not intended for use.

Again, I would like to emphasize that the primary purpose of research, whether federally or privately financed, is always to obtain inventions that can be used to accomplish some useful purpose. Therefore, I submit that any assertions to the contrary should either be fully documented and supported in fact or be ignored.

Ninth, research is also especially unjustified when its only purpose is to make the public pay a still higher price for something that the public has already paid for twice—first, for the cost of discovery, second, for maintaining the private monopoly.

tremendous significance as to have required that our patent system, as affecting all three of those forces, be perverted, to place these new forces, and inventions for their application, under arbitrary control by governmental agencies. To achieve this control it was to be necessary to presume, in the gravest of subversive error, that Government could own, outright, patents in those three fields, whenever and wherever, in the opinion of a governmental agency, an invention was invested with power to affect our capacity for national defense. What invention has not that power, to some degree?

THE FRUITS OF PROPULSION BY INCENTIVE ARE EVERYWHERE AROUND YOU

To assist in restoring true perspective toward this problem of preserving incentive vital to our continued existence, may I challenge you, most respectfully, to name a single product of America, from building brick to battleships, that has not been made more useful, or more useful and less costly, or more readily available, because of one or more patentable inventions embodied in it or employed in equipment used in its production or transportation? You may search futilely for even one such product, throughout every room in your home, as well as throughout all your daily experiences, wherever you go and whatever you see. All the untold thousands of such inventions bring to you the blessings of our patent system.

Tragic it is, indeed, that familiarity makes us so blind to the true source of creative incentive that has brought, to us all, day-to-day advantages unknown, even to kings and potentates, in days before our Constitution.

Had inventors been handcuffed with relation to steam power, electric power, and the power of internal combustion, as they have been, and are, in the field of atomic power, what would be the state of our industrial economy today?

If the present enfeebled condition of our program for application of atomic energy to civilian needs is any criterion, we can be thankful that the techniques of bureaucratic control were not sufficiently advanced, at the time of their discovery, to have committed steam, electricity, and internal combustion to bureaucratic domination.

Have you asked yourself what is done to our national morale by the spectacle of our leaders whistling their way through the graveyard of our once-proud claims of world supremacy in science and invention—in this day when Russia alone commands a view of the dark side of the moon?

Any belief that we can prevent foreign infiltration of our governmental agencies, and thus prevent foreign acquisition of our atomic secrets, at the price of stifling our own inventors, unquestionably has proved fallacious. Our enemies have infiltrated our defense agencies to acquire our atomic and related inventions almost before we ourselves have had our facts officially established. It has been said that to keep fully abreast of what goes on in the atomic energy field in America one should have reliable sources of information in enemy countries.

Can we longer afford to support laws that stifle inventive incentive in America?

Questions herein are asked not idly, but rather in the hope that they may help spur us to take all the handcuffs off America's researchers, inventors, and manufacturers.

A DARK DAY IN OUR HISTORY

History will record, as one of our darkest, the day of our first departure in the Atomic Energy Act of 1946 from the constitutional concept of unrestrained incentive to create and produce for our needs of today and for our dangers of tomorrow. Can your committee, and our Congress, possibly ignore the resultant extremity in which we find ourselves? Can they ignore their obligation to restore—in our law—the only incentives that can save us from the destruction invited by our previous errors? Even a little later may prove too late.

Your committee has ample authority to determine the extremity to which Government cartels in U.S. patents have been employed to perpetrate almost unbelievable economic atrocities, sufficiently known, in the areas affected, to have disabled competent and loyal contractors and to have spread, in and far beyond those areas, discouragement to create and produce.

A VOICE TO BE HEARD

In the November 1959 edition of the magazine Electrochemical Design, Robert R. Lent, formerly an Air Force major associated with Administration of Research and Development at Air Force Headquarters, authored an article entitled "Government Erosion of the Patent Right." Mr. Lent presented, from

In a further effort to offer constructive guidance, it is submitted that the administration of Government owned inventions should be governed by the following principles:

1. The Government may grant royalty producing licenses, either exclusive or nonexclusive, with or without territorial use or product limitations, as conditions warrant, of inventions owned by the Government. Where the Government proposes to grant an exclusive license under any such invention, whether patented or the subject of a U.S. patent application, public notice identifying such patent or application shall be given in the Official Gazette of the U.S. Patent Office and in the Federal Register at least 90 days prior to grant of any such license and an opportunity given to any interested person, firm, or corporation, to apply for such license and to negotiate with the Government therefor.

2. Any such exclusive license shall be subject to the right of the Government at all times to make use of the invention for governmental purposes.

3. All proceeds from such licenses shall be paid into the U.S. Treasury for the general use of the United States.

4. The licensing of such inventions should be administered in either one of two ways:

(*a*) That they be turned over to some nonprofit private organization such as Research Corp. written up in the Tuesday, February 7, 1961, issue of the Wall Street Journal; or

(*b*) That they be handled by a skeleton Government agency similar to that now existing in Canada, namely, Canadian Patents & Development, Ltd. This latter agency operates apparently in a manner similar to that outlined for the mentioned Research Corp.

The reasons for advocating that the licensing of inventions be effected in accordance with (*a*) and (*b*) above rather than by a special Government agency, such as the Federal Inventions Administration (FIA) proposed by bill S. 1176, are that the latter would:

1. Further saddle the already overburdened taxpayer with more taxes;

2. Further complicate Government procurement and contracting activities by the governmental agencies involved;

3. Create a type of governmental agency patterned after one in Great Britain named National Research Development Corporation, which after 10 years has proven ineffective for the following reasons:

(*a*) It has a deficit of about $7 million; and

(*b*) It is mere speculation whether the agency will ever make a profit.

Mr. WYMAN. Thank you.

Our company manufactures capital goods equipment, industrial processes and systems, and components therefor for almost every industry including, but not limited to, most forms of power generation and distribution, mining, cementmaking, chemical processing, oil refining, mills (steel, textile, pulp, and paper), agriculture, construction and earthmoving, and material handling.

As to federally financed research, most of our contracts concern the adaptation, modification, or development for Government use of products and equipment which are either the same or similar to our established or contemplated product lines.

Senator MCCLELLAN. That is the reason you are frequently selected to do it, because of your past experience and because of your capabilities, demonstrated capabilities in certain fields?

Mr. WYMAN. That is correct. And I want to make clear in that respect, that, depending upon the nature of the products or equipment to be furnished. Allis-Chalmers may sometimes be a prime contractor but is more often a subcontractor. And in this respect our experience in contracting for the performance of federally financed research may in general be considered as typical for most Wisconsin industry.

I would like to begin by saying we are opposed to the enactment of the Senate bills—S. 1176 and S. 1084—which form the basis for the present hearing, for reasons that I will explain in detail.

"(2) To do so would be to place this Government in an embarrassing position with relation to any decision to deny to foreign countries the right to acquire U.S. letters patent—and thereby to amass pools of patents in this country, with all the accompanying implications of power to obstruct and coerce American industry.

"(3) This council has long recommended the enactment of a Federal statute providing that whenever any government, our own included, becomes the owner of any U.S. patent that patent be forthwith at an end, with the same effect as its normal expiration by time limitation.

"(4) For our Government to attempt ownership or control of any U.S. letters patent, other than possession of rights thereunder to employ the invention for governmental uses only, such as for war, would be a perversion of the basic principle of our patent law and would be contrary to the intent of the Constitution of the United States.

"(5) A patent grants only a negative right. That right is to exclude others, for the limited period of 17 years, from manufacture, sale, and/or use of the invention—at the will of the patent owner, and to any extent he may desire.

"(6) When our Government, which is presumed to be the entire citizenry, acquires a patent, that patent by every constitutional intent automatically expires, because there is none left to exclude. To hold differently is to hold that our Government has become a competitive device imposed upon the citizen and deriving its powers arbitrarily from a source apart from any formalized expression of the will of its people. The Government, which has granted the patent, in presuming to own it places itself in the untenable position of having vested in itself, without authority, a right which clearly, by constitutional intent, can be possessed only by the citizen.

"(7) And may not the citizen, who has heard much from certain departments of our Government about the constricting evils of cartels, ask by what conception of consistency those same departments now propose to elevate the cartel to the dignity, and destructive power, of a device employed by government itself?

"(8) It is therefore the recommendation of the council that the U.S. Government refrain also from acquiring patents in foreign countries. It recommends instead that the inventor or his assignee, other than the Government, determine whether or not to proceed 'to acquire and maintain patent protection abroad.' It is recommended that our Government refrain from obstructing in any way such action, and refrain from any participation in control of any patents so obtained by U.S. nationals.

"(9) It is not regarded as objectionable that wherever contributions by our Government to the processes of research and invention may justify, royalty-free licenses under patents be acquired by our Government for the uses and purposes of Government only, as for war, and not in any event for civilian uses or for any uses competitive to civilian manufacture, sale, and/or use."

Any patent provision in a Government contract requiring the contractor to assign to Government the entire right, title, and interest in any invention made in the performance of that contract serves only to deter contractors from entering fields of activity important to our security. Rather than face such hazards, many contractors and inventors naturally prefer to concentrate their research efforts and facilities to the development of inventions not confiscated by Government and thereby unlawfully restricted from commercial application by patent provisions such as those found in S. 1176.

Our Government should be satisfied to acquire "an irrevocable, nonexclusive, royalty-free license to practice or cause to be practiced by or for the U.S. Government for its uses only, any such invention, improvement, or discovery" as may be made in the performance of any Government contract. This would impose no military handicap upon Government. And, at the same time, it would restore incentive for the contractor to pursue, for commercial use, the development of such inventions.

WHO SPREADS THIS FALSE ASSURANCE?

In the November 23, 1959, issue of Detroit Free Press there occurred an erroneous statement, frequently encountered, promoting a serious misunderstanding of the status of patents presumed to be owned by Government. That statement said, in a press release with a Washington dateline, devoted to Senator Russell B. Long's Senate Small Business Committee's "monopoly committee," that "when the Government retains patent rights a new invention generally becomes part of the public domain, available to anyone."

Mr. WYMAN. I do not agree with it in that sense, because it is impossible to evaluate it, but the fact that a concern is going to get the rights to any inventions that may result, that may be an incentive to taking the contract or bidding for it.

Now, how much value the contractor can put on what may result in the way of patentable inventions just cannot be determined.

Senator MCCLELLAN. That is right. At the time they negotiate the contract, he cannot possibly say that the discoveries that are going to be made, the inventions that will result, and the patent rights that he will get are going to be worth $100,000 or $500,000. He cannot say that; he does not know. No one does. No one can predetermine that.

But the very potentiality of there being such values does still constitute some incentive to the contractor to want to get the contract; does it not?

Mr. WYMAN. That is entirely correct, and is especially so, I might add, where the contract is concerned with the modification, adaptation, carrying forward in a field closely related to the contractor's commercial position.

Senator MCCLELLAN. Well, now, do you think it would cost the Government in the overall—not in a single contract, but in the overall, in its research programs, in the contracts it makes—more money to get the contracting services that it requires if the Government just carte blanche takes title to all inventions that might arise?

Mr. WYMAN. I think it will cost the Government more, for the simple reason that you will either not get the most competent contractors to do the work for the Government, and consequently, time and effort may be wasted in carrying out and arriving at the ultimate result or objective of the contract.

Senator MCCLELLAN. Let us take your company as an illustration. It is quite experienced, quite competent in many fields. It already has background knowledge, experience, training, and personnel, qualified personnel, to do terrific research, let us say. And as the Government looks for contractors to do research for it in given fields, whenever your field is involved, you would say your company—and I am letting you give it a plug—would be the most competent one to employ, would you not?

Mr. WYMAN. That is very good; I thank you. But I would like to make this comment in that connection.

Senator MCCLELLAN. Let me finish this. I did not quite get through.

Mr. WYMAN. I am sorry.

SenatorMCCLELLAN. Now, are you saying, as for your company, using your company as a further illustration, that if the Government desires to take title, and in actual law, does take title to all inventions, that your company would be less interested in contracting with the Government to do its research than you are now, where you would have the right, maybe, to retain patent?

Mr. WYMAN. I am sure that would be correct, Senator.

Senator MCCLELLAN. Do you think that would apply across the board to other competent, reputable, qualified contractors?

Mr. WYMAN. I think that is entirely correct.

Senator MCCLELLAN. I wanted to get that straight because of what you said. Now you proceed, sir. I want you to finish out the point.

"(b) What patents or applications, if any, the applicant for license is willing to cross-license to the Government as consideration for the license to him.

"(c) The experience and facilities he has that will enable him to exercise such a license with benefit to the public.

"(d) Where will the manufacturing be done."

That letter enclosed a form of contract to be signed by the citizen, if it is decided by Government that he is entitled to a license. That contract makes the licensed citizen subservient to Government in a number of ways. He must submit statements "setting forth the experience and know-how acquired by licensee in the exercise of this license." The most ruthless provision, which leaves the licensee and his investments completely at the mercy of the Government, reads "that Government may revoke this license, after written notice to licensee and an opportunity given for licensee to be heard in the matter, upon a finding by Government that licensee has knowingly committed any breach of this license or that it is otherwise in the public interest that this license be revoked."

In its reply the Tennessee Valley Authority, by Joseph C. Swidler, General Counsel, asks for the identity of the applicant and his business, and closes his letter by saying:

"We will then advise him as to whether and under what general terms the license may be granted."

The Treasury Department replies that after receipt of further information it "will indicate the conditions subject to which the grant might be made and the form and content of the requisite application of request."

The Department of the Interior enclosed four pages of "Regulations of the Department relating to such licenses." The regulations state that the Government shall "determine whether the license shall be granted."

The licensee may be required to submit technical or statistical reports concerning the experience acquired through exercise of the license which provides for revocation by Government if it finds the terms of the license have been violated and that revocation is in the public interest. The regulations state that "a cross-licensing agreement may be considered adequate consideration."

The Department of the Army states that "consideration will be given to the application" upon receipt of certain information requested in its letter.

The Department of Commerce asks for information and says, "Upon receipt of this information the matter will be submitted to the Bureau concerned for its recommendation."

The Federal Security Agency states, "Licenses generally have been issued on a revocable, nontransferable, nonexclusive, royalty-free basis."

The Office of Alien Property, Department of Justice, states that patents "are being licensed on a revocable nonexclusive royalty-free basis under our standard terms."

The Department of Agriculture, as to its licenses, states, "They are also made revocable, and nontransferable, but the Department would not, of course, revoke a license except on good reason. * * *"

A condition common to nearly all such licenses is that the license may be revoked arbitrarily by Government. That makes the license a very hazardous thing for the citizen. No citizen can hope to benefit by a license unless he first invests considerable money for production and distribution. Men in business are not inclined to make such investments on any confidence they have been able to generate in the stability of persons who might exercise for Government and "in the public interest" such revocation privileges.

Here we see Government holding tenaciously to its controls of rights under patents in its expanding pools. The Antitrust Division of the Department of Justice denounces restrictive licenses, patent pools, and requirements that licensees grant rights to licensors under improvement patents. Nevertheless, Government itself proceeds to issue restrictive licenses, and builds patent pools by demanding not only rights under improvement patents but also "experience reports" transmitting "know-how."

Senator McCLELLAN. Thank you, Mr. Lanham.

If I interpret correctly your statement, you feel that for the Government to receive a royalty-free license is ample reward for any financial investment it may have made, in the research from which the invention may have been developed?

posed legislation. That is the other aspect of what you have just mentioned.

Senator McCLELLAN. I hope I am not——

Mr. WYMAN. No; I am very happy to have your questions.

Senator McCLELLAN. I am trying to get the thing in its proper perspective so that we can weigh it in the light of the testimony.

Mr. WYMAN. Those are primarily the basic reasons why we oppose the legislation, as exemplified by bill S. 1176 and by bill S. 1084.

Senator McCLELLAN Do you recognize that the Government should have an equity, some equity, some right, in some instances to a title?

Mr. WYMAN. Yes.

Senator McCLELLAN. Give us your idea of under what circumstances the Government would be justified in saying, "We are going to take absolute title."

Mr. WYMAN. We feel, generally speaking, before I give you my complete answer, that the Government in having a contract relation with our company, should generally be treated the same as any other customer of the company having the same contract relation. The Government should not demand special treatment with regard to rights to inventions arising out of contracts performed by our company.

Now, they say, many Government people say, that the Government should be treated the same as industrial concerns treat each other in their performance of contracts, and we feel that is absolutely right and that there is no double standard. But if legislation is enacted as now proposed, there will be a double standard. The Government will be getting special treatment; they will be getting rights that no industrial concern would get in dealing with each other except under specially negotiated conditions.

Now, as to our proposals, we think that either the license policy as a rigid policy nor the title policy as a rigid policy is the answer. We think that there are situations in which the Government should be entitled to take the title to date, inventions, and so forth, arising out of research And it is my firm belief that the enactment of any legislation such as now proposed will destroy incentive for companies to take contracts in the performance of federally financed research, but of more importance, I think it will stifle the effect of individual initiative and creativeness. I think that is bound to result.

We have examples right along in connection with the AEC contracts which we perform. Our engineers make inventions and our company gives awards to inventors. They compensate inventors indirectly by promotions, increases in salary, and the like. You look at any company such as ours, and the outstanding engineers and management people in scientific and engineering work, all have many contributions to their credit. But those contributions are the ones that go into commercial utilization. In other words, you can make an invention, you can take out a patent, and unless that patent is utilized and becomes a profitable operation for the company, it has no value other than a publication.

Our people come to us and say, "We have made a contribution in the AEC field. If we use this in fulfilling the contract, the Government takes title. Are we going to take out patents or file applications on it?"

trary to the protection that is already granted, except to the extent of serving the Government in that period of crisis.

Mr. LANHAM. But, Mr. Chairman, if that authority, as provided in this bill, is given to an Administrator, we are going to lose the unhampered efforts and the industry of the inventive, creative genius of our country. Naturally, the primary impulse of the inventors, while they wish to do something for their country, is to help themselves, to get something that will commercially put money in their pockets.

Senator MCCLELLAN. Do you think any of this legislation would simply destroy incentive in the individual, and that is a source from which invention must come, the minds of individuals?

Mr. LANHAM. That is right, it must come from the minds of individuals. And as I have indicated, many of our very best investors, whose names have become well known and famous throughout the world, have been very humble folk that the Government likely never would have employed in the first place.

Senator MCCLELLAN. Are there any questions?

Mr. WRIGHT. No.

Senator MCCLELLAN. Thank you very much. Good to see you again.

Mr. LANHAM. Thank you very much, Mr. Chairman.

Senator MCCLELLAN. Our next witness is Mr. Sunstein.

Will you come around, please, sir?

Be seated, please, sir and identify yourself for the record.

STATEMENT OF DAVID E. SUNSTEIN, BALA-CYNWYD, PA.

Mr. SUNSTEIN. I am David Sunstein, of Bala-Cynwyd, Pa.

Senator MCCLELLAN. Are you with some organization?

Mr. SUNSTEIN. I am employed, but I am speaking as an individual. I can give my qualifications.

Senator MCCLELLAN. All right, give a little background so he who reads might know more about you.

Mr. SUNSTEIN. First, I would like to thank you for inviting me to testify. I have made no written statement, and that was done for two reasons: (1) the pressing of time; and (2) I think it might be more beneficial to your committee if this were conducted informally from my standpoint.

Senator MCCLELLAN. We are perfectly willing, as you like. Just proceed and make any statement that you think will be informative and helpful to the committee.

Mr. SUNSTEIN. Thank you.

First, as to qualifications, I am not a lawyer, but from my past experience, I have feelings on the interaction between law and inventions and on getting inventions into public use.

I am an inventor. There are about, I would guess, 65 to perhaps 70 patents that are issued in my name in the United States, others pending. I received a bachelor of science degree from MIT in 1940, with honors. I am a professional engineer in the State of Pennsylvania, a fellow of the Institute of Radio Engineers.

I am chairman of the Research and Development Committee of the Philadelphia Chamber of Commerce and a member of organizations such as the American Society of Inventors, the Franklin Institute, the Pennsylvania Society of Professional Engineers.

dicated here as to those background inventions that have been developed at private expense, they have been excluded.

Under the proposed legislation, they would not be excluded.

In a further effort to offer constructive guidance, it is submitted that the administration of Government-owned inventions should be governed by the following principles:

1. The Government may grant royalty-producing licenses, either exclusive or nonexclusive, with or without territorial use or product limitations, as conditions warrant, of inventions owned by the Government. Where the Government proposes to grant an exclusive license under any such invention, whether patented or the subject of a U.S. patent application, public notice identifying such patent or application shall be given in the Official Gazette of the U.S. Patent Office and in the Federal Register at least 90 days prior to grant of any such license and an opportunity given to any interested person, firm, or corporation, to apply for such license and to negotiate with the Government therefor.

This would, of course, apply to inventions made by Government employees as well as those acquired by the contract relationships with industrial concerns, institutions, and the like.

We think a lot like Mr. Rabinow indicated yesterday, that is, if an invention is patented and the patent is owned by the Government and the Government conforms with its traditional policy of making licenses available to everyone, the invention or the patent has "the kiss of death," unless, in the form as actually patented, it is then ready for use by the public without further development or experimentation.

Senator McCLELLAN. Is the reason for that the expense involved in the development of the application of it? You say it has the kiss of death if it is there for the general public, for everybody to use.

Mr. WYMAN. And further development and experimentation is necessary to make it in a form suitable for general use.

Senator McCLELLAN. That is what I said. The reason it has the kiss of death is because no one wants to go out and develop the process at their expense and let everybody else have the benefit of it, is that it?

Mr. WYMAN. That is correct.

Senator McCLELLAN. If they could get the exclusive right, there might be an incentive or inducement to them to go out and spend the money to develop it?

Mr. WYMAN. That is entirely correct. That is further substantiated by our good friend, Dr. Selman Waksman, of the Rutgers Research and Education Foundation, as he related it in a talk given before the National Association of Manufacturers at the Carlton Hotel in Washington, D.C.

If I may, I shall read a brief quote from the talk:

> Despite repeated efforts on our part, we found it impossible to interest any manufacturer in the product on a nonexclusive basis. Here again, the foundation concluded that this antibiotic must be made available to the general public—

he is talking about antibiotics—

> this was accomplished through the issuance of allotted exclusive license to a manufacturer and I am happy to say that after a lapse of several years this antibiotic will soon become available to the public.

provide himself faith in thoughts he has which he knows to be incomplete at the time they are first conceived, in order that he or others working with him can bring about a successful completion of the invention and commercial exploitation.

Well, that is only one aspect of it, but essentially the incentive for invention should be placed upon the inventor so that the incentive for getting the invention put to use would exist with the inventor. That incentive has been, in some measure, already removed by existing operations—not by law, to my knowledge, but just by custom, which makes it so that inventors who are in the employ of commercial organizations or, for all I know, in the employ of the Government, are required as a condition of employment to divest themselves before the fact of any creative ideas they may have, without any contemplation of just compensation for that.

Senator McClellan. So you think they then immediately say, well, even if they have a thought, have an idea, they will not pursue it, there is no incentive for them to pursue it?

Mr. Sunstein. That is partially true even now, and that trend should be reversed back to what existed prior to 60 years ago.

There was then very little invention that took place other than by the one-man "attic" inventor. Now inventions take place in large organizations, but they still take place only in the minds of individuals in those large organizations, and usually only in the mind of one individual—sometimes two or three, but it is still a small number of people for any given invention. There's already the condition that has grown up in the past—I do not know over how many years—that, as a condition of employment in such organizations, one is frequently required to divest himself without just consideration of his rights to ideas that are not yet conceived in the manner that he might have been required but is not yet required to divest himself of inheritances he might receive.

Senator McClellan. You think it has already had an impact, the very fact that they are required to divest themselves of their ideas?

Mr. Sunstein. Yes, I think that has already had an impact and it has been in the wrong direction.

I think it is possible to provide an environment in which inventors are rewarded for their invention, even when they are working in organizations with several other inventors. In fact, in the small organization I am connected with, we have provided such an environment. We have not gone as far as we would perhaps like if it were not for competitive conditions being otherwise, practiced generally throughout the industry, but we have made a very honest attempt to reward inventors for the value of their inventions by judging them after the invention, not as a part of salary, but in consideration of the value of the assignment of that invention to the corporation, which value is redetermined from time to time by a committee set up for that purpose.

This sort of environment has proven to be one which I think is partially responsible for an unusually creative amount of output from the very small number of individuals in the organization.

I think that the practice that exists widely elsewhere now in industry, and under which the Government would seek through the proposed legislation to take title to patents created in connection with

(*a*) That they be turned over to some nonprofit private organization such as Research Corp. written up in the Tuesday, February 7, 1961, issue of the Wall Street Journal; or

(*b*) That they be handled by a skeleton Government agency similar to that now existing in Canada; namely, Canadian Patents & Development, Ltd. This latter agency operates apparently in a manner similar to that outlined for the mentioned Research Corp.

In other words, it tries to go out and interest industry in undertaking the marketing of products that are patented. If you can interest somebody by giving nonexclusive or exclusive licenses, that is done.

If industry will not undertake the development, the Government agency is in no manner obligated to do so in an effort to make it available.

The reasons for advocating that the licensing of inventions be effected in accordance with (*a*) and (*b*) above rather than by a special Government agency, such as the Federal Inventions Administration (FIA) proposed by bill S. 1176, are that the latter would:

1. Further saddle the already overburdened taxpayer with more taxes;

2. Further complicate Government procurement and contracting activities by the governmental agencies involved;

3. Create a type of governmental agency patterned after one in Great Britain, named National Research Development Corp., which after 10 years has proven ineffective for the following reasons:

(*a*) It has a deficit of about $7 million; and

(*b*) It is mere speculation whether the Agency will ever make a profit.

Now, one of the reasons for that type of operation and its failure is because its operation in general is similar to that proposed for the Federal Inventions Administration. The Agency should make efforts, even by having Government undertake the development, to make inventions available.

In other words, if industry would not do it, the Government should take on the responsibility.

That concludes my testimony. I appreciate the opportunity and the kind attention that has been given me, and if there are any further questions I shall be happy to try to answer them.

Senator HART. Thank you, Mr. Wyman.

Mr. Wright, have you any questions?

Mr. WRIGHT. No, questions, Senator.

Senator HART. Mr. Wyman, may I inquire before you leave, Mr. Kitterie for Senator Wiley, is here.

Do you have any questions, Mr. Kitterie?

Mr. KITTERIE. We do not have any right now, Senator.

Mr. WYMAN. Thank you, sir.

Senator HART. The schedule indicated that Mr. Lent would be the next witness, but the committee realizes also that the following witness, the Assistant Secretary of the Department of Health, Education, and Welfare, Mr. Quigley, now is here. I wonder if Mr. Lent would object to standing aside in order that Mr. Quigley, who has some other duties, might be heard?

Mr. LENT. I would be pleased to do so, Mr. Chairman.

Senator HART. Thank you very much.

ments with the Government to do research, and I assume they found it profitable.

Mr. SUNSTEIN. They may find they are in a sort of rat race in one respect in that, having built up a staff of a given size, it may be to their overall benefit to augment their abilities to provide job opportunities for their graduate students and extra aid for their professors by having research and development grants in house. I cannot speak for the universities generally to know whether or not they lose money or make money on their contracts. I think, being nonprofit organizations, they generally operate without profit as such.

But I do know that in any contacts I have ever seen with industry on research and development work, conducted for the benefit of the Government by industry, the Government, in its cost principles, does not allow any payment at all for assignment of title to the Government on inventions that are either conceived or first reduced to practice under a contract.

The Government gets at least a royalty-free right with the Department of Defense, and, in other agencies, may take full title. In fact, in some agencies, the Government right now operates to require industry to pay to the Government a royalty for its use of the invention up to the amount of the contract.

Now, in general, when the Government contracts for work with industry, it does it for the benefit of the Government. It seeks delivery of models of equipment to perform specific functions, or it seeks analysis of the merits or comparative merits of different ideas or different systems. In general, it gets the work it paid for, without any invention. There may be employed on those jobs people who are capable of invention. Their employment is not guaranteed by the Government. The Government contracts for a specific period of time (usually for a year or less) and for specific work, with the contractor, and the contractor must seek continued new business with the Government once it has, to a degree, become dependent on Government business by virtue of having established the Government as a prime customer. So industry takes the risk of employing the individuals, the Government may give the contractor contracts from time to time, but the Government has not paid for the past talents of the individuals that have gone into this contract, or their assignment of title or rights to any invention. The Government pays the going wage of the individual for performing that work, plus the overhead that may be associated with it, and so on. But they do not pay for assignments of either royalty-free rights or title on inventions that are related to that.

I think that the equities would be clarified somewhat further, too, if the history of an invention in connection with Government jobs were separated into the several possible types of conditions under which inventions may arise, in which the Government plays a part through its contracts or contractors.

In one case, there may be an inventor who is not working on a Government contract who conceives an idea which he feels would be of benefit to the Government. If this inventor is in a large corporation, that corporation may be in a position to reduce that idea to practice prior to seeking any Government contract. In a small business, it is very rare that a reduction to practice can be made prior to seeking a Government contract.

Thus, it will be observed that grants and intramural research account for the most significant portion of our investment in research. Although the Department of Defense, we understand, does make grants for medical research, we are not aware of the magnitude of such activity in relation to other methods of conducting this research. Therefore, there may be some material difference between how the military services' medical research programs and those which Department of Health, Education, and Welfare sponsors are conducted.

It is true that the difference between our respective policies applicable to medical research have, from time to time, made it necessary for us to explain our policies to potential contractors or grantees who were accustomed to the policies of the Defense Department. At times, these explanations have been time consuming and relatively expensive. However, after our policies and the reasons for them were explained and understood, they have generally been accepted.

Consequently, I think it may be fairly stated that the difference in the policies has not had any significantly adverse impact upon our grant or contract relationships in the medical research field. Although it might simplify, in some respects, our activities if the policies of the DCD were the same as ours, I cannot undertake to suggest that their policy should be revised to conform with ours. This would be of course, for consideration by the Defense Department in the light of its own statutory responsibilities and objectives. On balance, however, we believe that greater uniformity of Government policies in a common field of research where both DCD and this Department are involved would be advantageous.

Respecting the two bills before this committee, S. 1084 and S. 1176, we would offer some general comments. While we agree generally with the purposes of S. 1084, our analysis of the bill suggests that substantive changes are needed to provide greater flexibility in accordance with varying research programs and different arrangements for the conduct of research. The bill does not provide for any focus of responsibility for the enforcement of its provisions nor does it authorize or establish any administrative mechanism to effectuate its objectives.

Generally, we favor the more comprehensive approach represented by S. 1176. This bill contains a number of features which we regard as quite desirable, including the establishment of an organization which would give centralized direction to the administration of a Government patent program and responsible staff which should have the competence needed to handle many problems which confront us today.

We have some reservations concerning section 7(b) of the bill which provides for vesting the responsibility for gathering and disseminating scientific information in the Inventions Administration, insofar as it may result in duplication of existing facilities. The Patent Office in the Department of Commerce currently maintains a large, classified library of scientific publications for the use of its patent examiners, the patent bar and the general public. It would appear advisable that this existing repository be utilized and expanded and improved as necessary) by the Federal Inventions Administration rather than attempt to establish another such library. This would seem particularly desirable in view of the limited availability of skilled li-

it were not for technology created by private industry on the expectation of return from patents on television prior to the war.

Electronic digital computers, which are necessary for control of nearly all activities that go on in this country now, including space flights, in large measure got their start from two inventors, John Mauchley and Pres Echert, who started a very small business about 15 years ago, with the incentive of retention of all commercial patent rights.

New technology really feeds on old inventions. The rate at which the airplane industry progressed was dependent upon having an aluminum industry earlier built up. Similarly, the rate at which this country can progress in any new field now, take it as space or other fields not now forseen, is dependent in large measure on the rate at which other technology can be applied to these new fields. And that, in turn, will be increased enormously if the incentive is restored to the individuals responsible for bringing about the technological improvements.

These new industries, of course, have supplied economic employment for the country in ever-increasing scale. The country seems to need a new large industry every 10 years to keep its economy healthy. These new industries will usually arise from a small business that has some incentive for carrying these ideas forth. Our patent system has provided a necessary economic ingredient for that, and I think the whole system is in great jeopardy as to at least half of the inventors in the country, if there is not private retention of inventions, because the other half will find it necessary to adopt regulations comparable to the first half, which will remove nearly all incentive.

I think that instead of the sort of legislation that I have seen considered, if there is any further legislation needed it should be such as to correct existing inequities, to insure that there is private incentive for the taking of risks necessary to bring inventions into public use, to insure that any firms undertaking contracts with the Government for research and development work provide just reward to their inventors for the value of their inventions, and this cannot be done under the contract during which an idea is conceived because the value is not realized until later.

The contractor should further be required to insure that if the contractor does not make use of inventions conceived by his staff, the inventor has the right to do so on his own behalf.

It is this sort of thing that I think should be provided, rather than a removal of incentives through taking over title into hands which, despite perfectly good intentions, would inherently reduce the rate of progress.

I might cite one example of where there was published and known to anyone who read it a very good description of television in 1906, electronic television, with electronic scanning and a cathode-ray tube, and photoelectric cells, and so on. Making public knowledge of a concept does not insure its use. There needs to be much development from that point on before the public can benefit, and that development needs private incentive, and the incentive should lie with the inventor or the person to whom he transfers some rights with expectations of some rewards for himself.

Senator McCLELLAN. Very good, sir.

Are there any questions?

the need or reason for undertaking to supplement the normal commercial returns attending patentable inventions by Government awards. We are apprehensive that the flood of applications for awards which might follow enactment of the measure would engulf the Federal Inventions Administration and impose burdens disproportionate to the benefits derivable from such an awards program. Moreover, we would point out to the extent that this program would also include Federal employees, it appears to duplicate the provisions of the Incentive Awards Act (5 U.S.C. 2121–2123.)

This, Mr. Chairman, concludes my remarks and I shall be happy to answer such questions as the committee may have.

Senator HART. Mr. Quigley, the point has been made frequently here that if the basic rule is that title shall vest in the Government, there is a loss of interest on the part of potential contracting sources, and that this is particularly true in the case of a firm that has long and broad experience in the area, and which inescapably would draw on some of its background ideas in fulfilling the contract and any invention that might result, any patentable idea that might result would reflect at least in part, the background of years of development and ideas.

You have told the committee that you take the position, in seeking services outside the Government, that title shall vest in the Government. Now, have you discovered that this attitude deters people with experience outside Government from accepting grants or contracts?

Mr. QUIGLEY. Senator, I would say, as I indicated in my opening statement, there have been instances in the experience of the Department where particular prospective contractors or grantees have hesitated because their experience had been with the Department of Defense which pursues a different approach and a different policy. In only one instance that I can think of has the resistance or the hesitancy been so great that the Department was forced to the conclusion that if it did not make an exception to its general rule, it would not have available to it the type of research facilities and personnel that the development needed under the circumstances.

Senator HART. What kind of research was involved? What sort of field were you in?

Mr. QUIGLEY. This involved a particular phase of cancer research, where the private concerns involved felt that they had on their own done sufficient research and sufficient experimentation that the Government was, in effect, seeking to take advantage of its know-how and its experience, which they were perfectly willing to make available to the Department but only on terms and conditions that if the results proved favorable and proved patentable, in this instance, the Department of Health, Education, and Welfare would not exercise its standard claim of title.

Senator HART. What did the Department do?

Mr. QUIGLEY. In this instance, they made an exception to the general rule, and in the contracting arrangement, it was provided that inventions that were patentable, applications for a patent, could be filed in the name of the persons conducting the research. To date, the research has not progressed to that point. We do not know whether it ever will.

Senator HART. If this research produced a cure for cancer, the Department has, in effect, turned over to a private firm the commer-

such licensees after we recover the costs of obtaining the license. It is realized, of course, that we have experiences in connection with several that do not result in any income to the company, but only expense. So we adopted this roughly 20-percent figure as one that appeared to be equitable. It may be changed upward or downward from time to time, perhaps, but it appears equitable at the moment.

Now, if we use any patentable invention on which we have a proprietary position—that is, rights which have not been given away to the Government—if we use such invention in one of the products that we sell, we pay to the inventor, again in consideration of his assignment to General Atronics of the invention, a payment which is expected to be generally between zero and 5 percent of the net amount of the sale.

Now, the word "zero" is left in there because there may be some inventions which are trivial, having to do with, say, screw plating in the whole radar system, and the amount of very close to zero of the whole value of the radar may go to the plating of the screw. But, on the other hand, if the reason for the radar business having been brought about can be laid to the inventions, then the amount of payment in consideration of assignment of that invention to the company would be a significant percentage.

Right now we are paying something on the order of 3 percent on some articles we are making.

Mr. WRIGHT. Would you favor legislation which gave contractors who undertake to see that the individual inventors themselves are awarded, to the extent that their inventions prove commercially successful, or would you care for legislation that gave contractors of that kind a perferred position over those which, in the normal case, simply take title to the invention of the employee, he receiving no more award than is——

Mr. SUNSTEIN. Very much so.

Mr. WRIGHT. You have no specific proposal along that line, though?

Mr. SUNSTEIN. Well, I have not tried drafting a bill ready for submission, if that is what you mean.

Mr. WRIGHT. That is all I was interested in.

You said, I think, that you worked for big business for 15 years, but you did not give us the name of the company. Could you tell us who that was?

Mr. SUNSTEIN. That was Philco Corp.

Mr. WRIGHT. You worked for Philco for 15 years.

When you were with Philco, did you make any inventions during that period?

Mr. SUNSTEIN. Yes.

Mr. WRIGHT. Those were assigned to Philco?

Mr. SUNSTEIN. Those were assigned to Philco for no consideration.

Mr. WRIGHT. You were not given any share in the proceeds, if any, or commercial profits from the invention?

Mr. SUNSTEIN. No.

Mr. WRIGHT. We had a witness here earlier, representing the Federal Aviation Agency, who explained to us the policy they were instituting of attempting to recover for the Government the amount of its R. & D. expenditures from the contractor to the extent that the contractor was able to make a profitable use of whatever patented items the R. & D. developed.

How does that plan appeal to you?

relating to observance of procedures provided for in the contract seem to me to present questions that might even be decided on motions for summary judgment.

Mr. WRIGHT. The fact is you have had no experience, either administratively with fixing a reasonable royalty, or the litigation consequences?

Mr. HILLER. That is correct.

Mr. QUIGLEY. We have no experience with this at all, other than the negotiation for the exception.

Mr. WRIGHT. What you are really doing is entering a wholly unpredictable field there, as far as this is concerned.

One other thing I wanted to ask you about.

At the time of the Army witnesses' appearance here, it was pointed out that there was an effort to coordinate medical research in the armed services under their respective Surgeon Generals with the research in your Department under the Surgeon General of the United States, that the medical research was coordinated, but there was no coordination of patent policies; that they used different patent clauses than you use.

I wanted to find out, did you regard that as a desirable situation?

Mr. QUIGLEY. Well, I would say that I regard the great diversification of patent approaches and patent policies by the various Departments of the Government unfortunate. I think if I were living in an ideal world, or in an ideal country as far as patent policies are concerned, there would be a uniform patent policy on the part of all of the agencies of the Government. Having served in the other body of the Congress and worked on this patent question for a number of years, I realize a uniform patent policy is a long way in the future.

I think uniformity is desired.

To date, I must say, however, that despite the diversification of approach on the part of the Department of Defense on medical research in our Department, as far as medical research when it comes to the patent question, we have had surprisingly few conflicts or differences. Those that have occurred have been worked out amicably and well. This is not to suggest that this is going to continue indefinitely. I think it should be pointed out that as far as the Department of Health, Education, and Welfare is concerned, if we look at our current or recent budget, we are expending a considerable amount of public funds for research in the health field.

But this large expenditure for research by HEW is something that has come about in recent years, and I think we have to recognize that there is a lag in the inventive process.

We are dealing now with potential inventions, or inventions that resulted probably from appropriations that were made in 1950 or 1951, or 1953, when the sums of money HEW was expending on research were comparatively small. I think the potential of this problem in the conflict of approach between the two departments is great. To date, it has not been.

Mr. WRIGHT. Is it not possible, Mr. Quigley, that this diversity of policy between your medical research and the military medical research might have contributed in part to this negotiating difficulty you had yourself in the cancer chemotherapy program, when these people were

Mr. SUNSTEIN. I think in many instances, if, in fact, not in most instances, when the idea is conceived prior to the contract, that is unjust.

Mr. WRIGHT. Can you give me a specific instance in your case, where you think you were unjustly required to give a royalty-free license?

Mr. SUNSTEIN. Without reviewing the file back in the corporation, I am not certain which ones would be required. I am certain that every one reduced to practice during the contract or conceived during the contract, the Government now has a royalty-free right, and this, in many cases, in addition to being unjust, reduces our ability to——

Mr. WRIGHT. That is what I am asking for, a specific case where you think it is unjust, so you can know what the facts are on which you base your belief of injustice?

Mr. SUNSTEIN. Well, you raise a good question, and I would like to go back to look at the record of which contracts that has occurred in.

I should recite in the history of our company, which has been a growing one, our ability to reduce things to practice is only a recent one. So we are just starting now to reduce things to practice.

I will state right now, for example, we are working on a contract with the Government which, when completed, will call for reduction to practice under the contract, as I understand it, and I am not certain at all that we will be left with all rights to the invention even though it was conceived prior to contract award, even though it took a long time to get a contract based on this, despite the fact that there were agencies that felt that this was what they were waiting for for 3 years and were trying to invent themselves, and despite the fact that we expended considerable sums prior to contract award which are not reimbursed and despite the fact that under the contract the funding was in two phases, the initial phase of which ran out before the second phase was provided resulting in our having to stretch out the program over a protracted period through no fault at all of anyone in the Government to my knowledge and through no fault at all of anybody in General Atronics, but solely due to the way the situation operates, and right now when that job is completed we will be lucky to recover our costs.

Mr. WRIGHT. Well, I would like, with the chairman's permission, to suggest that when you go back and look at your records, if you find then that there was a situation where you felt you were unjustly required to give a royalty license, write us a letter about it and then we can include that in the record, too.

Mr. SUNSTEIN. All right, I will be glad to.

Senator MCCLELLAN. If you would care to cite an example of your own experience in your operation, you may submit it in the form of a letter and it will be inserted as a part of your testimony.

Mr. SUNSTEIN. I would like to add, however, that when we agree to take a contract with the Government, it is under the standard regulations that are now in use so that we may have already agreed to give the Government such a royalty-free right.

Senator MCCLELLAN. You can make any statement about it that clearly explains it.

Mr. SUNSTEIN. So that when the question of injustice arises, should we have to be forced to make such an agreement in order to take on the development work for the benefit of the Government? I think there is some inequity in that.

a hesitancy and an effort made, and you cannot blame them for trying to get what they consider to be the best deal possible from their point of view, before they agreed to do the research on our patent terms.

I just feel that the record demonstrates that where you have, as a matter of policy, title vesting in the Government, the research people are available and anxious to take our contract.

I am convinced, Senator that the proponents of the patent system tend to oversell their position. In saying this I am not belittling or discrediting the importance of the patent incentive. I think it has made a great contribution to the growth and development of this country.

I think that in this day and age, the advantage that comes from know-how, from experience, from the reputation of being able to do a job as well as or better than your prospective competitors far outweighs, as a general proposition, the advantages that might accrue to a company from any patent rights it may acquire.

One of the ways to keep on top of the field, one of the ways to keep ahead of the field, is through a Government research contract. I think this is the basic reason why we get many qualified research firms that are anxious to have our contract even though they know they will not get the patent rights.

Senator HART. I think proponents of the patent should not be turned over to the Government theory, would do themselves a terrible disservice in this area, in an area as emotionally charged as the cancer area, if they ever got into a position where they would, one, say they would never serve in pursuit of a cure, or two, they would take the contract but put second raters on it. They would do themselves an incredible disservice. I think the public would be outraged.

I am not saying you said that; I am just cautioning on the record that that is a bad position to get in.

Mr. QUIGLEY. Having occupied the same position you now occupy in the other body, I have put this question to the enthusiastic proponents of the patent approach. In not one instance did I ever find anyone who would go that far. They would drive as far as they could in support of their position but not that far. I just cannot conceive that there would be any patent lawyer or any company or any individual American that would go so far as to say "If we do not get it our way we do not want it; or if we get it, we shall turn the job over to second-rate personnel and keep our top rate people for patentable projects."

Senator HART. Thank you, Mr. Quigley.

Senator MCCLELLAN. Thank you very much, Mr. Quigley, and your associates.

Mr. QUIGLEY. Thank you, Mr. Chairman.

Senator MCCLELLAN. Mr. Robert Lent, will you come up, sir?

STATEMENT OF ROBERT R. LENT, VICE PRESIDENT, RIGGS NUCLEONICS CORP., BURBANK, CALIF.

Senator MCCLELLAN. Please identify yourself for the record.

Mr. LENT. Mr. Chairman, my name is Robert R. Lent, I am vice president of Riggs Nucleonics Corp., Burbank., Calif., and I live in Pacific Palisades, Calif. In addition to my regular duties in my company, I contribute my time and service as vice president and chair-

plus its own employees comprise approximately 50 percent of the creative people in the country, is simply that there is usually no incentive for an inventor to carry his creative concepts into patentable form, when either royalty-free rights or all rights to the invention are removed without consideration.

4. Another comment I wish to make with regard to some of the testimony presented on June 1 relates to small business views. Certainly small businesses which are doing out-in-front R. & D. work will be vastly better off for retention of all patent rights, as will be the public. It is through this means that such small businesses are able to compete with the giants. Moreover, small businesses which do not have research and development skills, but who simply do production, typically by being low bidder, should not be affected by whether the Government takes title or not. This is true for two reasons.

First, under the existing laws, if someone sells to the Government a product involving patented material, the patent holder's only recourse of action is against the Government, in the Court of Claims, rather than against the vendor. Therefore the small business that undertakes such work is not under law open to suit. However, the Government in some instances writes into the contract with the vendor an indemnification clause in which the contractor has to agree to indemnify the Government in case the Government gets sued. This is really an unjust type of clause which needn't be employed by the Government in its procurement, but is sometimes now employed. No new legislation should be required in this regard, unless it be that such indemnification clauses should not be allowed to be inserted into contracts with small businesses, nor, in any contract calling for production of equipment which has been either developed elsewhere for the Government, or developed elsewhere and not originally intended for governmental use. That is, if the Government wishes to have made for it something which is a duplicate of a standard commercial article, it should not impose upon the maker of that duplicate equipment the onus of having to indemnify the Government for infringing patents that the original developer may have had on the original article. Rather, the clauses inserted in such procurement contracts should be the standard authorization and consent clauses which give the vendor the right to use material and designs whether or not patented. As I understand the procurement regulations of the DOD such clauses are standard practice anyway in any item calling for developmental equipment, and more widespread use in production contracts would be to the best interests of the Government, the business community, and the public at large.

I wish to thank you again, for allowing me to present my views. It is apparent that your committee is operating to hear all sides of the story, and should therefore be enabled to reach whatever constructive legislation may be needed.

If I can be of any further assistance to you and your committee in considering these matters, please feel free to call on me.

Very truly yours,

DAVID E. SUNSTEIN, *President.*

ARMED SERVICES PROCUREMENT REGULATION, SECTION 9–107.2

(31 January 1961, Rev. 3—Patents)

(b) *Contract Clause (License).* The clause set forth below shall be included in every contract having as one of its purposes experimental, developmental, or research work which is to be performed within the United States, its possessions, or Puerto Rico, unless the clause set forth in 9–107.2(c) has been authorized in accordance with 9–107.1(d), or except as provided in 9–107.7 with respect to contracts on behalf of the National Aeronautics and Space Administration. See 16–809 for an approved form for optional use by contractors in reporting information required by paragraphs (c)(ii), (c)(iii), and (h) of the clause. In the administration of paragraph (e) of the clause, a request for conveyance of foreign rights to the Government is not required when the contractor does not file an application for patent in a foreign country under the conditions provided in that paragraph, unless the Government intends to apply for such patent.

pense, have it fully protected against theft by others through our Federal patent system, and then offer it for sale to the Department of Defense or other executive agencies. Should the agency adjudge the idea superior and needed, then its purchase is negotiated on mutually satisfactory terms, like any other business transaction in our free society, but only with the inventor, not his predatory competitor across the street. Assuredly, none quarrel with the legal rights of the holder of a patented and proprietary product useful to the defense effort. This is the single most fruitful source of genuine and vital "contributions to the national defense," and is, therefore, the lifeblood of our national technological race for superiority. This is the dominant path through which our member companies were born, survive, and prosper. We are a demonstration of the truth that, even through the maze of tortuous Government procurement policies and procedures, the path to success is a sound, basic, new idea.

And now we are met with the third way in which industry can participate in the defense effort and the one of pertinence to these hearings today: the acceptance and execution of a Government-sponsored research and development contract. We are all agreed that here the matter is not so simple as in the first two but I submit, gentlemen, that it need not be rendered more complex than it is by straying from the facts and imposing ideology and theory remote from the facts.

The first fact of importance in this area of our interest is that the idea comes first in the long sequence of events producing ultimately an advanced weapon on the firing line. The idea must exist, by definition, prior to any contractual relationship for its exploration and perfection. The Department of Defense has never, to my personal knowledge, come to a contractor and said: "Here is a contract for which I want you to invent something useful to us." In every case of which I have knowledge, and I have many years of experience both within the Department of Defense as a research and development officer and in private industry in the same capacity, the procedure is quite the reverse: The contractor goes to the Government and says: "I have a new idea of perhaps many uses one of which may be applicable in your weapons complex. I can develop your application of this idea with my own resources but it will take me X number of years. If my idea is technically and militarily sound and you choose to fund my development at Y level, I can reduce my development time to X—4 years." The Department of Defense, after always lengthy study of the proposal and the inevitable wait for the next fiscal year budget may ultimately agree that this new idea will assist some specific technical area of its effort and so sponsors its development.

Gentlemen, it is the specific solution to a specific problem in the shortest possible time through creation of a hardware item that comprises the sole interest of the Government in its pursuit of the potential of a new idea. It is not the idea itself that has value, otherwise our Department of Defense would soon become an agency of philosophers. That this is a fact, exactly as I have described it, can be attested to by any Department of Defense procuring agent whose familiar and oft-repeated plea to eager, expectant new companies is: "We do not buy models, drawings or ideas; we only buy hardware."

The most tragic figure in our business is the ambitious inventor on his way to a Government procurement officer without a prototype, test data, or written waiver. Gentlemen, I beg of you to fully comprehend that ideas belong to their creators, only the physical, tested, and proved part produced from them has any value to the defense effort.

That a new idea may provide a more accurate guidance to a ballistic missile is of enormous interest to the Department of Defense; that this same idea may more carefully control the speed and safety of roller coasters at amusement parks throughout the world at profit to its inventor can have no possible value, meaning or reward to the U.S. Government or any of its agencies. It is not the purpose of a Department of Defense research and development contract to produce commercially valuable patents, as the subcommittee report strongly implies.

The Department of Defense wants a missile guidance system for its missile guidance system contract and it is a missile guidance system that it gets for its money. I submit, gentlemen, that in such a transaction the Government has, indeed, gotten everything it paid for and that upon completion of such a contract complete equity is established. To insinuate that the application of this guidance system to amusement park roller coasters at profit to the inventor is a theft of dollars from the American public is an insidious, rhetorical appeal

first actually reduced to practice more than three months prior to the date of the report, and not listed on a prior interim report, or certifying that there are no such unreported Inventions; and

(iii) prior to final settlement of this contract, a final report listing all such Inventions including all those previously listed in interim reports.

(d) In connection with each Subject Invention referred to in (c)(i) above, the Contractor shall do the following:

(i) if the Contractor specifies that a United States patent application claiming such Invention will be filed, the Contractor shall file or cause to be filed such application in due form and time; however, if the Contractor, after having specified that such an application would be filed, decides not to file or cause to be filed said application, the Contractor shall so notify the Contracting Officer at the earliest practicable date and in any event not later than eight months after first publication, public use or sale.

(ii) if the Contractor specifies that a United States patent application claiming such Invention has not been filed and will not be filed (or having specified that such an application will be filed thereafter notifies the Contracting Officer to the contrary), the Contractor shall:

(A) inform the Contracting Officer in writing at the earliest practicable date of any publication of such invention made by or known to the Contractor or, where applicable, of any contemplated publication by the Contractor, stating the date and identity of such publication or contemplated publication; and

(B) convey to the Government Contractor's entire right, title, and interest in such Invention by delivering to the Contracting Officer upon written request such duly executed instruments (prepared by the Government) of assignment and application, and such other papers as are deemed necessary to vest in the Government the Contractor's right, title, and interest aforesaid, and the right to apply for and prosecute patent applications covering such Invention throughout the world, subject, however, to the rights of the Contractor in foreign applications as provided in (e) below, and subject further to the reservation of a nonexclusive and royalty-free license to the Contractor (and to his existing and future associated and affiliated companies, if any, within the corporate structure of which the Contractor is a part) which license shall be assignable to the successor of that part of the Contractor's business to which such Invention pertains;

(iii) the Contractor shall furnish promptly to the Contracting Officer on request an irrevocable power of attorney to inspect and make copies of each United States patent application filed by or on behalf of the Contractor covering any such Invention;

(iv) in the event the Contractor, or those other than the Government deriving rights from the Contractor, elects not to continue prosecution of any such United States patent application filed by or on behalf of the Contractor, the Contractor shall so notify the Contracting Officer not less than sixty days before the expiration of the response period and, upon written request, deliver to the Contracting Officer such duly executed instruments (prepared by the Government) as are deemed necessary to vest in the Government the Contractor's entire right, title, and interest in such Invention and the application, subject to the reservation as specified in (d)(ii) above; and

(v) the Contractor shall deliver to the Contracting Officer duly executed instruments fully confirmatory of any license rights herein agreed to be granted to the Government.

(e) The Contractor, or those other than the Government deriving rights from the Contractor, shall, as between the parties herein, have the exclusive right to file applications on Subject Inventions in each foreign country within:

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

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

a new, patentable idea every 96 minutes in order to earn what we now pay our senior engineers. I am sure that Edison, Steinmetz, Einstein, and Kettering, working jointly and furiously, could not support themselves in a joint apartment for a single month at such rates.

Gentlemen, 130 small defense manufacturers are opposed to these measures. The Government's own Interdepartmental Committee Study Group, headed by Commissioner Watson of the Patent Office, opposes such changes in our historic patent policies. The Nation's aircraft, missile, and electronic industry is opposed to these two Senate bills. I submit, gentlemen, that against such professional, experienced judgment in opposition only irrefutable evidence of lay public support comprising the national interest can comprise reason for their passage, yet this interest is evidenced only by the political theory of this subcommittee that patents developed by public funds should be reserved for public use. A corollary supposition would follow that brains developed by public funds should be reserved for public use, thereby placing all service academy graduates at the disposal of the Government for life. Should such a human indenture be required, we can agree that the flow of students to these essential institutions would dry up in a single term.

The sole purpose of these bills can only be the correction of an injustice to the American people, but the injustice alleged fails of definition. Firstly, the Government retains the right—of such grave concern to this subcommittee—to license whom it chooses for the manufacture of any and all devices developed at its expense under the existing armed services procurement regulations. Thus, this subcommittee is attempting to obtain for the Government something it already has: an irrevocable, nonexclusive royalty-free license for the manufacture of anything developed with its funds. Secondly, under its sovereign powers and the statute of 1910 it can usurp to itself any patent or copyright in the interest of the welfare of the Nation. Again, the subcommittee seeks to obtain that which it already has.

Gentlemen, there is no need for this legislation and its enactment will prove harmful to our welfare. Therefore, I commend to your most thoughtful consideration the clear variance between the assumptions on which these measures are founded and the vast reservoir of facts on which our political and economic system is based.

Mr. LENT. Before commencing my statement, I should like to comment to the chairman. A friend of Strategic Industries, and a former executive director of our organization, is now a columnist in Los Angeles writing for the Industrial News, a trade paper.

In the initial hearings conducted by the chairman, Mr. Marschalk attended as an observer. He returned to Los Angeles and wrote in his column about the method in which these hearings were conducted and he referred to the chairman as being 9 feet tall in his conduct of the hearings. He particularly commented on the openmindedness that you had introduced into the committee hearings, and I should like to add that we, as members of the Strategic Industries, subscribe to Mr. Marschalk's comments.

Senator MCCLELLAN. Thank you very much. I would hope that we are proceeding with the hearings constructively and objectively. There is no preconceived idea on my part, except that there is an area here that needs congressional attention. I am not fully convinced as to what the remedy should be. I think some legislation is in order. We are trying to make a study of it and are seeking information and help from those whom we think are in the best position to give it, and also from those who may be affected by whatever action the Congress would take.

This is not an investigation type of hearing. It is more of a study type of hearing, to get facts that will enable us to weigh the equities where they lie, and to appropriately protect and safeguard them to see that they are distributed to those who are entitled to them.

allowable charge or cost under this contract. Reports, instruments, and other information required to be furnished by a subcontractor to the Contracting Officer under the provisions of such a patent rights clause in a subcontract hereunder may, upon mutual consent of the Contractor and the subcontractor (or by direction of the Contracting Officer) be furnished to the Contractor for transmission to the Contracting Officer.

(h) The Contractor shall, at the earliest practicable date, notify the Contracting Officer in writing of any subcontract containing one or more patent rights clauses; furnish the Contracting Officer a copy of each of such clauses; and notify the Contracting Officer when such subcontract is completed. It is understood that with respect to any subcontract clause granting rights to the Government in Subject Inventions, the Government is a third party beneficiary; and the Contractor hereby assigns to the Government all the rights that the Contractor would have to enforce the subcontractor's obligations for the benefit of the Government with respect to Subject Inventions. If there are no subcontracts containing patent rights clauses, a negative report is required. The Contractor shall not be obligated to enforce the agreements of any subcontractor hereunder relating to the obligations of the subcontractor to the Government in regard to Subject Inventions.

(i) When the Contractor shows that he has been delayed in the performance of this contract by reason of the Contractor's inability to obtain, in accordance with the requirements of (g) above, the prescribed or other authorized suitable patent rights clause from a qualified subcontractor for any item or service required under this contract for which the Contractor himself does not have available facilities or qualified personnel, the Contractor's delivery dates shall be extended for a period of time equal to the duration of such delay. Upon request of the Contractor, the Contracting Officer shall determine to what exent, if any, an additional extension of the delivery dates and increase in contract prices based upon additional costs incurred by such delay are proper under the circumstances; and the contract shall be modified accordingly.

(j) The Contractor recognizes that the Government, or a foreign government with funds derived through the Mutual Security Program or otherwise through the United States Government, may contract for property or services with respect to which the vendor may be liable to the Contractor for royalties for the use of a Subject Invention on account of such a contract. The Contractor further recognizes that it is the policy of the Government not to pay in connection with its contracts, or to allow to be paid in connection with contracts made with funds derived through the Mutual Security Program or otherwise through the United States Government, charges for use of patents in which the Government holds a royalty-free license. In recognition of this policy, the Contractor agrees to participate in and make appropriate arrangements for the exclusion of such charges from such contracts or for the refund of amounts received by the Contractor with respect to any such charges not so excluded.

BALA-CYNWYD, PA., *June 19, 1961.*

MR. STEPHEN G. HAASER,
Chief Clerk, Senate Subcommittee on Patents, Trademarks, and Copyrights, Washington, D.C.

DEAR MR. HAASER: I wish to thank you for forwarding to me the draft of the transcript of my testimony of June 1 before Senator McClellan's Committee on Patents.

Following your suggestion, it is returned herewith with corrections. These should remove typographical errors, improve sentence structure, and more properly express my feelings. I trust that such corrections as I have made are the type you sought.

On reading the draft of my verbal testimony, I would like to amplify four points further.

(1) On page 811, in answer to Mr. Wright's question as to whether General Atronics operated at a profit, I should add that though operations showed a net loss for 1960, General Atronics had nonrecurring gains through the sale of stock, which caused the overall statement to be slightly in the black.

of which I have knowledge, and I have considerable experience, both in the Air Force and industry in this respect, the procedure is quite the reverse: the contractor goes to the Government and says: "I have a new idea of perhaps many uses one of which may be applicable in your weapons complex. I can develop your application of this idea with my own resources but it will take me X number of years. If my idea is technically and militarily sound and you choose to fund my development at Y level, I can reduce my development time to X—4 years."

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The Department of Defense wants a missile guidance system for its missile guidance system contract, and it is a missile guidance system that it gets for its money. I submit, gentlemen, that in such a transaction the Government has, indeed, gotten everything it paid for and that upon completion of such a contract complete equity is established. To insinuate that the application of this guidance system to amusement park rollar coasters at profit to the inventor is a theft of dollars from the American public is an insidious, rhetorical appeal designed to inflame. To take from this creative inventor his rewards in order to distribute them to all the people in the name of justice is to bring Robin Hood to the Halls of the Congress as our mentor.

Your Committee Report No. 143 skillfully links the expression "billions of dollars appropriated for research" with the expression "commercially valuable patents" all in the same sentence in the very first paragraph. It invites the lay reader to conclude that for its billions of dollars of research the Government has received nothing—not its Atlas, not its Polaris, not its ballistic missile early warning system—but that its contractors have stolen "commercially valuable patents" on which they are making fortunes. Why not explain to the public that for these dollars the Nation has received its advanced weapons and the inventor through commercial application of his idea has received financial reward for his labor—at no cost to the Treasury.

I would like to depart for a moment and talk about some of the ideas which are misconstrued as to how much money is really spent in this area. I would like to quote from the Congressional Record in

Likewise, the DOD patent policy inherently leads to an injustice to inventors, since no company is in a position to properly compensate an inventor for sale to the Government of subject matter comprehended by any patent on an invention to which the Government has obtained a royalty-free license. For example, in the specific case described in the preceding paragraph, General Atronics' policy to have inventors benefit directly has no chance to function with a loss on the contract and retention of no proprietary patent rights applicable to subsequent Government sales.

In summary, the struggle between the Government and much of industry over rights to patents without either party giving any just consideration to the normally rightful owner of each patent—the inventor—is one which is a tragic reflection of our social values. Some organizations, like General Atronics, are attempting to prevent inequity to the inventor to the best of their ability within the framework afforded by Government regulations, but they are frequently frustrated by these regulations.

Likewise, I'm sure the dedicated Government employees who administer these regulations and laws feel equal frustration in attempting to provide for proper justice to inventors employed by contractors, as well as by the Government.

Full correction of the inequity to inventors will restore incentive to where it belongs, to thereby most rapidly bring the benefits of invention into use by the Government, by industry, and by the public at large.

In fact, the trend in R. & D. conducted by the Government to have inventors work in Government laboratories in ever-increasing numbers makes it more necessary than ever that the Government also adopt for its own employees an arrangement to permit them to retain adequate equity in their property rights to their patentable inventions. Such would make it easier for the Government to attract first-rate inventive talent. It would also reduce the timelag in having new ideas put into use for the benefit of the public and would insure greatest use for the public benefit of inventions.

I wish to thank Senator McClellan for making my letter of June 8, 1961, a part of the record, and trust that this letter may also be included. I would be pleased to assist further the efforts of your committee by serving, for example, with a group of diverse specialists to make specific recommendations as to proposed legislation.

I again thank you for the opportunity afforded me to express my personal opinions on this very important subject matter.

Very truly yours,

DAVID E. SUNSTEIN.

Senator MCCLELLAN. Mr. Brown Morton, come around, sir.

Mr. Morton, identify yourself for the record, please.

STATEMENT OF W. BROWN MORTON, JR., CHAIRMAN, COMMITTEE ON GOVERNMENT PATENT POLICY, AMERICAN PATENT LAW ASSOCIATION, WASHINGTON, D.C.

Mr. MORTON. Mr. Chairman, I am W. Brown Morton, Jr. I live at Alexandria, Va., and I am a patent lawyer, a partner in a law firm with offices at New York and Washington.

For the year October 1960 to October 1961 I hold the office of chairman of the Committee on Government Patent Policy of the American Patent Law Association which has its headquarters here in Washington. In this capacity I have been authorized to make this statement by the board of managers of the association.

Senator MCCLELLAN. You have a prepared statement?

Mr. MORTON. Yes.

Senator MCCLELLAN. Would you like to submit it for the record and just highlight it in oral testimony?

Mr. MORTON. I think that would be desirable. As a matter of fact, Senator, the prepared statement that has been submitted already is fairly brief, consisting of some eight pages, and we are preparing an appendix to it which consists of a restatement of reasons which the

In the preparation for this appearance before this committee, I have asked several people in the military services a specific question: In your opinion, how much of the research and development appropriation for the military services is spent on programs in which you expect to get a new product, a new idea, a new concept?

The lowest figure given to me was 10 percent; the highest figure was given at 20 percent.

In my experience, I would judge this to be reasonably correct, that approximately 10 to 20 percent of these funds are actually spent in research and development contracts in the literal sense. So, instead of $7 billion, as the Senator from Louisiana referred to, actually, we are talking, if we apply the 20-percent figure, of less than a billion dollars.

But I think it is important to clarify this type of thing so that we understand what we are talking about. Now, the concept of the Federal Inventions Administration is founded on a fallacy, and innocently negates its own purpose. Mr. Long's bill would establish an entirely new Government agency to administer things that simply do not and cannot exist. The concept of the Government-owned patent is merely a play on words and attempts to somehow integrate "public" and "private" into a single word. For more than a century a patent has been defined as the right of its owner to exclude others from its use, and this the proposed Federal Inventions Administration will not do. On the contrary, its intention is to insure that everyone will have the right to use all of its patents, if they can be so described. Thus, simple definition tells us that the effect of S. 1176 is to simply anihilate the concept and definition of the patent in the United States, when public funds were used in its creation.

Our reason fails when we attempt to find a shred of evidence of constitutional, democratic, or moral purpose in Mr. Long's weighty proposal. It responds to no need, reflects to injustice, and holds forth no promise of advance in our political history. The inevitable and prompt spectacle of the U.S. Government suing one of its citizens for infringement of a patent held in the name of all the people is ludicrous.

We cannot comprehend an approaching day when any man will create new ideas out of the pain of his education, experience, and creative effort while his neighbor buys them at $25 each. Ten ideas would cost $250, a hundred would be available for only $2,500. I do not think the world harbors the brain that could produce enough ideas at $25 each to provide a home for himself and family. At the regular workweek of 40 hours, this man would have to produce a new, patentable idea every 96 minutes in order to earn what we now pay our senior engineers. I am sure that Edison, Steinmetz, Einstein, and Kettering, working jointly and furiously, could not support themselves in a joint apartment for a single month at such rates.

Gentlemen, 130 small defense manufacturers are opposed to these measures. The Government's own Interdepartmental Committee Study Group, headed by Commissioner Watson of the Patent Office, opposes such changes in our historic patent policies. The Nation's aircraft, missile, and electronic industry and most of the patent associations are opposed to these two Senate bills.

I submit, gentlemen, that against such professional, experienced judgment in opposition, only irrefutable evidence of lay public sup-

The key to our proposed bill is flexibility against a prescribed norm—that is to say, a provision of statutory authority for agency heads to make specific contracts with respect to particular situations varying from all rights in an invention to the Government to no rights to the Government at all upon, but only upon, a specific finding of particular justification for variation from a statutory standard policy.

The norm that we propose is stated in section 2(b) of our bill—a worldwide, royalty-free license to the Government to use the invention for governmental purposes plus a grant of authority for the Government to grant licenses at a reasonable royalty to third parties if an existing demand for the invention is not being reasonably met by or through the patentee of the invention after any patent has been issued 3 years. An agency head finding based on prescribed criteria is necessary to justify a departure from this norm in particular cases.

Nor does our proposed bill limit the flexibility to the negotiation stage. One of the principal objections to a rigid bill such as S. 1084 is that it fails to take into account the essential characteristic of invention—unpredictability. Hence, a given invention, unforeseeable by definition, made in the course of performance of the best planned contract may turn out to be one in which the Government either has overreached or needs more than it has bargained for. Our proposed bill provides statutory authority for an agency head to waive, on terms, a contract provision found to demand too much from a contractor when all facts about a subsequently make invention are developed. However, it can happen that an actually made invention is of much more importance to the Government than the circumstances at the making of the contract would suggest. To take care of this case, our bill provides for a contract provision enabling the Government to acquire rights beyond the norm upon payment of just compensation. The determination of the amount of the compensation is to be administrative, subject to usual review. We hope that this provision will become the usual way for industry-government differences about license-versus-title problems to be resolved in the contract negotiating stages. That is to say, where the field of the research or development is directly related to the contractor's regular business, for example, so that the most qualified contractor is unwilling, for the price offered, to give more than the usual license, and where the Government agency can foresee a potential breakthrough as a possible, though uncertain, byproduct of successful completion of the contract's primary objective, section 4 of our proposed bill provides statutory approval of a contract provision by which the Government can obtain rights to any invention made beyond the automatic license upon payment of just compensation for the rights after the invention has been made and can be accurately evaluated. Section 4 further provides statutory guides as to the relevant factors to be weighed in making the administrative determination of what is just compensation in a particular case.

A novel feature of our proposed bill—novel in U.S. patent legislation, that is—is contained in section 5. It provides for a continuing interest of the Government in the commercial history of an invention in which the Government has acquired only the usual license right. The scheme is to allow the patentee 3 years of his present full exclusive right to the invention in which to get the invention into use and thereafter to permit any person to have a license at an administratively determined reasonable royalty who can show that there exists a demand for the invention which he can supply and which the patentee is not causing to be supplied. This is a variant of the compulsory working feature of many foreign patent laws, and should dispose of the great "suppression" bugaboo by meeting it headon.

There are many economic reasons why a blanket Government-take-title policy is unsound and likely to be self-defeating, in many cases, of an aim to get inventions made and put to use. Most of these reasons have been ably presented to this committee or other congressional committees already. We summarize our understanding of the most compelling of these in an appendix accompanying this statement and containing a short bibliography of material believed relevant. We would expect our oral testimony not to review the appendix material in the interest of conserving committee time.

The problem of contractor title versus Government title is difficult to resolve with mathematical nicety because it is nearly impossible, if not impossible, to develop precise and relevant data. This is because, like the related problems of evaluating a free market economy versus a Socialist one and of assessing the effect of a patent system on a free market economy, the Government contractor problem has to be solved without recourse to the scientific method. No-

Senator McCLELLAN. But the benefits that would flow to the public by reason of the Government taking title might be different because we are proceeding with the bill, the committee and myself—the bills proceed on the theory that public funds are being invested and that the product as a result of that investment, the public has an equity in the benefits that flow therefrom, and thus the bills are intended, when we say to protect the Government, and actually, we mean the interest that should flow to the public by reason of Government financing. Would you not place that interpretation on the purpose of the bill?

Mr. LENT. Well, there are places where the Government is in or should step in and control a certain thing, and let me refer back, Mr. Chairman, to your conversation yesterday about sea water conversion. If the Government is going to sponsor this and it is so expensive that in all probability, only the Government can do so, and if it is done for the purpose of improving our natural resources, reclaiming wasteland and things like that, then I do not believe that any organization should be given the control of the commercial rights to this process.

Senator McCLELLAN. That illustration I used yesterday with relation to saline water is an unusual thing, but it is an instance where the Government might very well completely finance the research in that field to the point where it is developed.

Mr. LENT. But let us go one step further, Mr. Chairman.

Senator McCLELLAN. If it does that, then the research contractor, contracting with the Government to do the work has no right to the title, does it?

Mr. LENT. I would say no in this respect, but let us go one step further, because here is where the argument develops. Let us assume that four contracts are given by the Government for the purpose of conversion of sea water. Let us say that based upon experience and on know-how, one of those companies comes up with a unique and completely new idea on heat exchange.

Senator McCLELLAN. Heat exchange?

Mr. LENT. Yes; one of the techniques in doing this, sir, is to freeze the water.

Senator McCLELLAN. In other words, find a byproduct?

Mr. LENT. A byproduct, yes.

Now the question is, Who benefits from this particular invention? Should the U.S. Government take title to that invention, which was done in the process of developing the technique for the conversion of sea water? It is our position that the Government should not be entitled to that.

Senator McCLELLAN. Well, that raises a question, and that might point out where the real issue lies here, in that there are cases where the Government holds out and finances research for a specific objective to be attained, to try to develop and bring about a given result, or discover a given process. All right.

Certainly, the Government, when it completely finances such a project, is entitled to that particular objective once it is attained.

Mr. LENT. Right. That is what they are paying for.

Senator McCLELLAN. Now your contention is, if, in the course of doing that, the contracting party with the Government, by reason of its past know-how, which made it eligible to contract with the Government in the first place, to receive the contract, if, by reason of that experience, its capability to do this research, it stumbles upon

right in his invention if he had the misfortune to be working in federally sponsored research.

Actually, since Federal research is on a tremendous and growing scale, it is fair to say that we are here considering not merely a matter of incidental Government patent policy, but a key part of the entire U.S. scheme for the encouragement of invention. Already a very large and ever-growing portion of our gross national product includes one or more inventions less than 20 years old. Westinghouse, for example, in 1960 set a goal for 1965 of doing 25 percent of its total business in the latter year in products not available in the former. This is not surprising when it is considered that about 90 percent of all the people who ever lived who received what we now call scientific training are still alive. We may expect the rate of invention to increase as the number of trained persons thus exposed to the problems that need to be solved by inventions increases. Thus we are not merely considering a peripheral matter of sound Federal contract policy, but the potential ownership of control over the bulk of our future economy. A free enterprise system means a system free of Government ownership; such a system will not be possible in the technologically certain-to-eventuate future if the Government owns and manipulates property rights in a large proportion of current inventions.

This association does not think that the present U.S. patent system, essentially today the same as it was in 1870, is perfectly adapted to present needs, or perfectly operated to harness the very inventions it has created, for the better promotion of the progress of the useful arts. This association does think that a patent system conferring private exclusive rights is the system best adapted to promote that progress. This association does think that the Senate bills threaten the very existence of the only patent system we have without offering any substitute to prevent a consequent loss of progress in invention. This association most respectfully urges that this subcommittee report favorably on the proposed bill drafted by the association's committee, as a measure fairly and sensibly meeting any immediate problems existing in the field of Government patent policy, and turn its attention to the problem of taking positive action to review, to streamline, to modernize, and to expand the U.S. patent system to make it the most effective possible vehicle for the promotion of invention in a free enterprise economy. This association pledges its wholehearted cooperation in such a positive program.

Senator McCLELLAN. Now you may proceed and highlight your statement.

Mr. MORTON. Yes, sir.

The American Patent Law Association is a national legal society with some 2,300 members who live in some 37 of the States of the Union and here in the District. It is not confined to those patent lawyers who represent just one aspect of the patent profession. It includes many patent people from the Government as well as from industry, many who are in private law firms such as I am, and many who are corporate employees.

I think it is a fair statement to say that it has the broadest representation of the patent profession of any of the societies that may appear here.

We have been interested in this subject since 1955 to the extent of having a select committee, a special committee on Government patent policy. I have been associated with the committee off and on since its inception. This year I have the honor to be chairman of that committee, which explains my presence here this morning.

We have gone beyond merely considering the two specific bills pending before this subcommittee. As to those two bills, our committee unanimously disapproves both of them.

I have also been authorized, and should state here, to report on behalf of the Patent Law Association of Chicago, to which I do not belong, that its board of managers has recently approved reports of its committee on Government relations to patents, also specifically disapproving the two pending bills before this committee.

Mr. LENT. Yes, I believe it could have. The Boeing 707, I believe, Senator, was an outcome of the KC–97 of Boeing, which I would guess is another version of the B–52.

Senator LONG. Well, do not most of the patents held by Boeing and Douglas and the others on the 707, the DC–8 and various other planes result from and derive from, in the main, Government research and development contracts, and is not this, in fact, a civilian counterpart of the military item?

Mr. LENT. I do not know that they have patents on it. I doubt that they do. It may be a proprietory design on their part, and it is reasonable to assume that they have benefited from their experiences on the B–52. But, also, it is reasonable to assume that the Air Force has benefited, on the B–52, based on Boeing's past experience in their own activities.

So it becomes a chicken and egg situation, Mr. Long.

Senator LONG. You are not under the impression that one of your representatives could manufacture unless he got a license from Douglas or Boeing, could they? They could not get that from Boeing; that have too many patents to keep him out?

Mr. LENT. I would doubt that. I am speaking from lack of knowledge, Senator, because I am not sure. But it would be size more than anything else which would preclude an individual from building a 707. But I think that Douglas and Convair and some of the others did a pretty good job of competing with Boeing with the 880 and the DC–8.

Senator MCCLELLAN. Any questions, Senator Hart?

Senator HART. Mr. Chairman, just one.

You emphasized in very colorful style a number of points, but I wonder if we are not making an assumption here that goes beyond objective fact? You, at one point, were arguing pretty strongly that the Government got everything it paid for when it got the tool, or whatever it was.

Mr. LENT. Yes, I did.

Senator HART. Did not the contractor get paid for producing that tool, too?

Mr. LENT. Yes, he did.

Senator HART. Well, then, is not there unresolved, and is it not possible to apply this rule of thumb about who got paid for what? The byproduct, as our chairman has come to call the unexpected windfall, is it not up for grabs, and if it is up for grabs, why is it so undemocratic and unconstitutional and all these other things for the Government to be the voice that decides where it lies?

Mr. LENT. Because, Senator, there is a tendency to oversimplify here.

Senator HART. My point is, I think that same tendency is reflected in some of this colorful language you use. That is my point.

Mr. LENT. Let us put it this way. Convair, for instance, the prime contractor on the Atlas missile—it would be unreasonable to assume that Convair did all of the design, all of the development on the Atlas missile. It would be unreasonable also to assume that all things used on the Atlas missile were developed or invented as a result of Government money; quite to the contrary. Many items used on the Atlas missile were patented and developed by private money, but they were sold to Convair to use on the Atlas missile.

be just compensation, and, as the previous witness indicated, just compensation may run from a theoretical zero up to quite a high sum, depending on facts as they exist after the invention is made and after the needs of the Government have developed, after the relationships of the contractor to the specific invention have become ascertainable.

This bill, as we have drawn it, seems to us to meet fairly the objections that have been raised by Members of the Congress who have been concerned with this problem, and also to meet fairly the objections which have been raised by various industry people. And while it doesn't address itself specifically to the problem of inventor incentive in the sense of incentive directed to the individual who has a creative idea, we think it is a great deal closer to what the previous witness had in mind than either of the pending bills.

The many reasons which have been advanced by others in opposition to an all-out Government-take-title policy, I have not put in the statement itself, but we have summarized what we think are the most compelling of them in an appendix to that statement, and I think sufficient prepared copies of that appendix will be delivered here this afternoon.

I should like to point out some of the thinking underlying our decision to go about solving this problem in the way we have. First, because the problem is a difficult one to develop with any mathematical nicety, it is very difficult to even decide what are relevant data.

A great deal has been said about factfinding but without much predefinition of what is relevant. In my view, it is very much like the related problem of trying to decide whether free-enterprise economy is really better than a socialist one. We all have convictions on this point.

I have heard, for example, the situation that has resulted since the 1917 revolution in Russia cited as proof of the efficacy of the Socialist system.

I think an equally strong—in fact, I think I would say a stronger—argument can be made out that the progress the Russians have made has been due to the size of the country and its immense natural resources, and I would undertake to venture the opinion that Russia would be even further ahead if it hadn't been saddled with a Socialist economy.

Senator McClellan. If it had not been what?

Mr. Morton. Had not been saddled with a Socialist economy. If they had had the good fortune in 1917 to have evolved something approximating our Constitution I dare say they would be better off now than they are.

So we can never solve this problem scientifically unless we had a time machine and could set Russia back to 1917 plus our Constitution and let them start over again, because there are too many variants.

I think that the same thing is true here. To really know in a scientificially valid manner whether invention is going to be promoted by giving title to the contractor, or promoted by giving title to the Government, we would have to have exactly comparable trial periods using each policy and that is the kind of thing you can't do because you can't reverse time. So we have to do the best we can by reasoning from past experience, and it is certainly our view that all past experience combines to indicate that a free market economy is superior to a Socialist

research, by definition, the contract is made with no specific, concrete application of the results in mind? Is that not correct?

Mr. LENT. Presumably it is. However, let me tell you from my own——

Mr. WRIGHT. Well, it is or it is not?

Mr. LENT. Let me state from my own experience of the 4 years I spent in research and development, in those 4 years, I never saw a basic research contract.

Mr. WRIGHT. I understand, you may have had nothing to do with it. But it is a fact, is it not, that basic research is one area where the Government, of necessity, takes responsibility for putting up the money, because by definition, you are there talking about an area of research where you are not even attempting to produce a specific application which will yield the product?

Mr. LENT. You must define, Mr. Wright, what you call basic research. If you are calling basic research what makes grass green, or what is a phenomenon, that is one thing. But a lot of times, it is so prostituted in its use, and it is used for what would really be called applied research. There is very little, if any, basic research that is conducted by the military services.

Mr. WRIGHT. Apart from who conducts it, to the extent that the Government conducts basic research, is it your position that the Government is there contracting for nothing more than increase in scientific knowledge, not attempting to get a specific technical application of the knowledge, that it should not then have the rights to any resulting invention, no matter how fortuitous it may be, that comes out of that contract?

Mr. LENT. You see what you and I are really discussing here is should they take title to the patent? My position is that by definition, there is no such thing as a patent if the Government owns it. So we are really talking in parables. The Government has the right to use it and to control its use under this set of circumstances, and I think in my answer to the chairman concerning the sea water conversion, that I answered your question in that respect.

Senator MCCLELLAN. Thank you very much.

The chairman will have to leave, but I am going to ask Senator Hart to continue the hearings and undertake to conclude, if he can, before recessing. The committee will have an executive session here this afternon in this room at 2 o'clock to hear some testimony. If we can conclude before then with one other witness, at least—Senator Long, the committee will hear you immediately after the executive session this afternoon, and we hope you will attend the executive session. And if you do not get through this morning before recess, we shall be glad to hear you immediately after the executive session.

If you will proceed, Senator Hart, and get through with this next witness.

Senator LONG. I hoped I could conclude this morning, Mr. Chairman, and I very much hope you will be able to read this statement.

Senator MCCLELLAN. I shall do that, and I hoped to conclude this morning, but I have to leave.

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done in the performance of an R. & D. agreement, that, ipso facto, that invention made by him while he is doing this work becomes the property of the Federal Government; he gets nothing for it. And I see no way, whether the matter is constitutional either by application of article I, section 8, clause 8, or by any other approach—of getting around the notion that both of these bills proceed in derogation of what I might call a right of natural law.

I think that natural law is an unpopular term in law schools these days, but it means to me, at least, something that seems so just that it comes up in everybody's legal system.

The result of having title to inventions vested in the Government as contemplated by either of the two bills that are now pending here must inevitably be to increase the holdings of the Federal Government to the point where it is going to be holding upward of 25 percent of all the patents.

Let me show, if I can, some reasons why this is of utmost significance to the entire economy.

Although the George Washington report has indicated that perhaps only 4 or 5 percent of patentable inventions or patented inventions are involved here; that is, 4 or 5 percent of inventions that are commercially exploited are involved here—I think we should recognize that we are at the beginning and not in midflight of growth of the invention rate.

I heard a very arresting statistic about a month ago in a symposium here in Washington. It is not surprising, this speaker pointed out, that inventions are growing and growing because about 90 percent of all the people that have ever lived in the world who have received what we would now call a scientific education are still alive. All of the Newtons, the Edisons, the Steinmetzes who have passed on are in the 10 percent. As a consequence of that, we may expect inventions to snowball as more and more people who are trained in recognizing problems in the field of invention become exposed to them and devise solutions.

We may expect that if the Government is putting up more than half the money, that it is going to get somewhere between a quarter and a half of all the inventions.

When you couple with that the fact that our gross national product includes a startling percentage of items of supply which could not have been obtained 20 years ago—and it is going to be increasingly so—I think in the drug industry the figure is even more arresting, but I was told that one of our largest electrical companies in 1960 posed for its research people the goal of devising so many new products that by 1965 25 percent of the volume of material sold by that company would have been items they didn't know how to make in 1960. So that these bills, Senator, look toward the obtainnig of title by the Government to the right to exclude all others from the manufacture of something that may conservatively be 25 percent of the gross national product at any time.

This is government in business with a vengeance, and we are not prepared to say that we regard with equanimity the move to turn this all over to the Government. Rather, we feel that our approach, which combines flexibility of negotiation and flexibility in the post-invention stage when it is most likely to be realistically based because people know what they are talking about, with the right for the

that one can always equate public good with public ownership, and that the AEC and the NASA patent policies are good for the country.

In the case of patents, neither of these statements is true. The logic for my position has already been excellently presented by the representatives of industry both large and small, and by Mr. Bannerman, Deputy Assistant Secretary of Defense (Procurement).

With this as background, I should like to make two additional points.

1. The patent policies of the AEC and NASA, in contradistinction to that of the Department of Defense, favor large business over small business. This is best exemplified by following through the kind of competition a small technical company faces vis-a-vis a large company. If it is a big job, it is virtually impossible for the smaller company to compete because the contract negotiator places a tremendous weight on what is known as management capability. When a large company gets the work, patentable ideas come out, some of which have commerical application. In general, these are in fields in which large company already had commercial operations. Patents are taken out, and if the estimated profit return is reasonable, the company will exploit the idea. It is certainly true that on account of these patents, the smaller company cannot now enter this commercial field. But could it have entered the field if the patents had been in the public domain? The answer is almost certainly also "No." A small company needs patent protection to equalize competition with a large one, because the large company has resources the smaller company doesn't have: large sources of capital, a marketing capability, and a public image that is of tremendous help in public acceptance of the new product. Hence, if patents are in the public domain, their usefulness to smaller companies is inconsequential.

Now let's take the case where the smaller company has not been ruled out for lack of what is known as management capability and succeeds in winning a research and development contract with the Department of Defense. This usually happens because of some special capability or know-how or simply a bright idea. The company performs satisfactorily, and in the course of the work evolves a patentable process which has commercial application. The sponsoring agency gets a royalty-free license for governmental purposes. The company evaluates the market potential and finds that the product can be manufactured and sold at a profit. On account of the patent protection, the company can afford the investment or get the risk capital to engineer the item for production, make the market surveys, set up a marketing organization, and do all of the other things required to sell a new product. It is this kind of contribution that is so vital to American capitalism. Now, suppose that this company has done the work under an AEC contract. The AEC holds the patent for the public and the company may have a royalty-free license. It would be folly under these circumstances for the smaller company to pursue to commercial ends its original bright idea. If it did, some large company with an established marketing capability would move in and take over. In fact, under these circumstances it would probably never pay to be first with a commercial product, but it would be better to be a follower who can exploit and reap the profits. Almost always this would be a large company rather than a small one.

2. I think it is of interest to review the history of some of the large industries that have been created in this country. One is the automotive industry. Would it have been possible for Henry Ford to have helped create and revolutionize this industry if the Government for international reasons had had to subsidize the development of the automobile through an AEC or NASA type of sponsorship? Henry Ford started as a lone operator in a new industry. He was a maverick. No contracting officer in his right mind would have given his infant company the responsibility of creating a giant industry. It most likely would have gone to some large company (now extinct) manufacturing buggies. The only chance Henry Ford would have had under these conditions would have been to have had a bright idea which resulted in a moderate-size Government contract with patent protection. Otherwise, where was his incentive? I suppose he could have gone to work for the now extinct buggy company, but I assure you that the stable buggy industry would most likely have vetoed his ideas as being too radical.

The same thing is true for the aircraft industry. Large-scale Government support, together with AEC or NASA patent policies, would have delivered the aircraft industry to the automotive companies, and what would have happened to Messrs. Martin, Boeing, Douglas, etc., the mavericks of their days who actually did create the aircraft industries? At least they would have had a fighting chance under the DOD patent policy. In the electronics industry a similar story could

system, that there is nothing about Government contracting which makes private patenting of Government-sponsored inventions by contractors peculiar in clogging dissemination. Rather, I think inventions made under Government contract, which are subject to the control of the contracting officer, may be more quickly disseminated than private inventions. At least the tendency of the contracts is to require the Government to receive periodic reports and to have the right to publish them. However, I am impressed that there may be a justifiable criticism aimed at the patent system as a whole in that respect.

Our bill does not address itself to the problem of information dissemination because we think that it belongs with others to a general revision of the patent laws, a revision aimed to streamline the patent laws and bring them up to date with the modern inventions that have been made under its aegis; for example, in data handling and other things. We have now got to get the patent system as a system to catch up with the devices that it has produced. Thus, this association most respectfully urges that this subcommittee report favorably on the proposed bill drafted by the association's committee as a measure of fairly and sensibly meeting any immediate problems existing in the field of Government patent policy and turn its attention to the problem of taking positive action to review, to streamline, to modernize, and to expand the U.S. patent system to make it the most effective possible vehicle for the promotion of inventions in a free economy.

This association pledges its wholehearted cooperation to such a positive program.

I may say we have taken one step that way. We have had a translation made of the proposals now pending in the Dutch Parliament for the revision of their patent laws, the only English translation of this proposal in existence.

Senator McCLELLAN. All right. Thank you very much.

The bill that you have suggested will receive study.

As I understand it, you acknowledge possibly that the Government has some equity in inventions that arise out of Government-financed research.

Mr. MORTON. It seems quite clear to me that in certain circumstances they do.

Senator McCLELLAN. The Government should have, or does have, an equity, some rights in those inventions?

Mr. MORTON. In certain of those inventions I think that the Government would have a clear right to all title interest.

Senator McCLELLAN. Might have all title whether the whole purpose of the research program was to find a way to do——

Mr. MORTON. Certainly.

Senator McCLELLAN. To do one specific thing.

Mr. MORTON. Certainly.

Senator McCLELLAN. And if the Government financed it, then the Government should own the title to that particular invention.

Mr. MORTON. Yes; precisely.

We feel that if the Government——

Senator McCLELLAN. In that same instance, how do you feel about the individual whose idea may have materialized into the invention? Should he surrender all that right?

Mr. MORTON. Well, Senator, the way I envisage it is this: if a situa-

I would like to start off by saying that I had intended to write quite a long memorandum, but I got a summary of the testimony before this committee from the 18th to the 21st from the U.S. Chamber of Commerce, an organization which I, in particular, generally disagree with, but I happen to agree in this particular case. I then wrote a short memorandum, which, together with my letter to Senator McClellan, I wish to make a matter of record to this committee.

I have read but not studied in detail, the Federal Bar Journal for the winter of 1961, where Senator Long has an excellent article. I would like to start with his article, because I agree completely with the value system he is talking about. He wanted value systems to accelerate the rate of scientific achievement, to promote and maintain a free, competitive society, and to reduce our inequalities of income and wealth. I am a Democrat as well as Senator Long, and I believe in those, too. In addition he stated: "We cannot offend our sense of what is fair and just"; I am a citizen and I agree with that, too.

But I do not agree with Senator Long that by changing the patent policy, he will bring these things about. In my opinion it will harm, not help.

What is the reason for this? The reason for this is one of the things which is vital to American capitalism, something I tried to bring out in my letter to Senator McClellan, asking to testify. That is, that this country, different from Europe, although we are beginning to see it now in certain European countries—different from England—very different from England—has a mechanism and a way which small people, little people, go into business for themselves and succeed—in my particular case, I am a scientist.

We decided to form our own company, we went into business, we talked somebody into backing us with a bit of money; we are now 10 years old, or will be in September. We think we are dynamic; we have 350 employees, all of whom are stockholders who share in the wealth of this company. Our gross sales are $5 million. That is trivial in terms of our national economy, but it is not trivial in research and development.

We think we have been successful. Frankly, we could not have done it without our Defense Department's patent policy in contradiction to the AEC patent policy. Really, what I am pleading for is not so much for us anymore, because we are beyond the threshold, but for even smaller companies, some as yet unborn.

All these proposed laws will do will be to hurt us a little bit and perhaps force us to sell out to a large company. That is what happens now to many young, dynamic companies. The economic force is such that you have to sell to the big companies. This proposed law could make this happen even more.

Senator LONG. If you did not have some patent, what is to keep some other little fellow from developing your product and selling to some other company?

Mr. HENRIQUES. The big companies, sir. What I am talking about is the new technical companies not born yet that want to do this. The Government basically subsidizes all research and development in this country. The large part of it, 90 percent, goes to the big companies; why? Because they are big. The 5 to 10 percent, the dribblings, come to companies like my own.

Senator McCLELLAN. Thank you very much.

The committee will stand in recess until 2 o'clock.

(Whereupon, at 12 noon, the hearing was recessed until 2 p.m., this same day.)

AFTERNOON SESSION

Senator McCLELLAN. The committee will resume session.

All right, who is the next witness?

First, Mr. Morton, did you have anything else you wished to say? I thought you understood you were excused at noon.

Mr. MORTON. Thank you, Senator. I had nothing I wanted to say. I wanted to be sure that any questions you had asked me, I had answered.

Senator McCLELLAN. Very well. I think you covered the ground pretty well, particularly with respect to the bill you have offered for consideration. I am sure it merits our attention, and I appreciate it very much.

Mr. MORTON. Thank you.

Senator McCLELLAN. All right, the next witness.

Mr. Forman, will you come around, please, sir?

STATEMENT OF HOWARD I. FORMAN, PATENT ATTORNEY, PHILADELPHIA, PA.

Mr. FORMAN. Mr. Chairman.

Senator McCLELLAN. Be seated and identify yourself for the record, please.

Mr. FORMAN. Thank you, Senator.

My name is Howard I. Forman. I am an attorney. Patents are my specialty. I am located in Philadelphia, Pa.

I am also a lecturer at Temple University, in the Department of Political Science, where I give a course entitled "Federal Administrative Process."

By way of additional background which may be of interest, I have had about 12 years of experience as a patent attorney in charge of a field agency patents branch for Army Ordnance and, since then, have been associated with private industry in Philadelphia. For over 10 years, I pursued the study of public administration at the University of Pennsylvania, which culminated in my being granted the degrees of master of arts and doctor of philosophy. In the course of these two pursuits, patent practice and my study of public administration, I have become interested in the subject that you are considering today in these bills.

I have tried to analyze the problems that are before you from what I consider both points of view, that of a patent attorney and of a student of Government. My principal objective is to recommend constructively, in the public interest, positive legislation that might accomplish the end you are seeking and eliminate some of the objections that I find in both bills that are before this subcommittee today.

I have prepared a written statement which is quite lengthy and which you have. I definitely shall not read it today. I would like, however, to summarize for you some of the specific points, and conclude by calling attention to two bills which recently were introduced in the House, and which, in effect, would carry out the positive recommendation that I shall present here today. I have written quite

and development. In the first place, if you are a research and development company, the most foolish thing you can do is waste your time and money to try to get research contracts out of the large prime contractors, because big companies do not let research contracts to small outfits. What they let to small outfits is the small contracts, to make pieces of hardware.

When they quote all the stuff they give to small business, these are the small items, including the lead pencils.

The big companies get the big jobs; why? They get them because they have management capability. That is the prime reason. Why one big outfit gets it over another is because they wrote at that time a better proposal.

There is no point in Technical Operations, Inc., trying to get the job to manufacture the Atlas, for example. Although we might do a better job from the point of view of a contracting officer, we do not have the management capability. I agree with them; we do not. When a large company works on it, patentable ideas come out, and some of them have practical application.

Patents are taken out, the large company coldbloodedly estimates the profit return, and they will make the effort and get the product out. It is true that on account of these patents, a small company like ours could not enter this field. But please recognize, we could not enter anyway. We cannot compete with the big outfits even if you let these patents be in the public domain.

In areas where we do get Government contracts a small company, to bring about commercial applications, needs patent protection to equalize the competition with the larger company, because the large company has resources that the smaller company does not have. In order for us to take our new product, this evaporated film and make it a commercial item—not for what it does for the Air Force, but a commercial item—look at the things we have to do with our own money. In order to do these things with our own money, we have to be reasonably guaranteed that we are going to get a return.

If we do not, we are a foolish manager. We have to get larger sources of capital. If we have these patent applications which we happen to have, the sources of capital are available, because the people putting the capital in rightly want a return.

We have to have a marketing capability which we do not have. We have to have protection to do that. The most important thing is we have to develop a public image, and this takes money to get public acceptance of the new product.

Believe me, with Kodak as competition this is tough. If you have the patents in the public domain, their usefulness to some other smaller company is inconsequential in view of Kodak's position in the photographic field.

If that patent were in the public domain, what would happen if some small company were to develop the product and establish the market? They would be the missionaries, but believe me, gentlemen, missionaries are very courages but very poor.

If the small company establishes a market, what happens? Kodak moves in. What are you going to do? You have no protection, you have proved the market for them. They move in.

I can give you a classic example. The Haloid Xerox machine—Kodak was offered the basic patents and refused to take them. Haloid

1. Inventive productivity is one of our greatest national resources, but it is not unlimited. If, hypothetically, the genius of our country conceived of 1,000 patentable inventions each year, it is essential that we provide for the maximum utilization of those inventions to promote our Nation's welfare. If a sizable number of those inventions sit on the shelf, our economy suffers, our health and welfare and even our defenses may suffer, and the spur to further inventions which the promotion of the ideas of others usually provides will be relatively nonexistent. Today, with the Government subsidizing on the order of 60 percent or more of all research and development expenditures in this country, it is safe to estimate that some 600 of those 1,000 hypothetical inventions are at stake. Government officials have decried what has been termed "suppression" of patents by private industry, i.e., the failure to market worthwhile inventions for one reason or another. What will happen to those 600 patented inventions if the Government takes title to them and presumably issues free licenses to anyone who asks for one? I submit that, in the absence of the right of exclusivity afforded by ownership of the patent grant, most of those 600 inventions will go undeveloped and never be utilized to maximum advantage. If industry has sinned in the sense of "active suppression," the Government likewise would sin by what could be called passive suppression.

2. In some 12 years as a patent attorney employed by Army Ordnance, I became aware of the major problem it is to get many contractors to disclose inventions they may have made in the performance of a Government contract. Large staffs, and tremendous administrative problems, all very costly, must be expected in both the contractor's and the contracting officer's establishments. Even so, there are always doubts as to whether all reportable inventions were recognized as such, and if so whether they were properly reported. In figuring the alleged losses to the taxpayers by leaving rights to inventions with the contractor, those who have publicly maintained that such losses run into millions of dollars never take into consideration the costs which would be necessary to assure that the Government gets all the rights under a title-in-the-Government policy. My guess is that the administrative and other hidden costs would more than offset the alleged savings that the advocates of S. 1084 and S. 1176 have contended would be gained by the public.

3. Assuming that the Government takes title to all inventions arising out of contracts paid for at least partially by Government funds, is it planned to have the Government apply for (and prosecute) patents thereon? Who will do this? Is it contemplated that the Government will multiply its staffs of patent counsel and supporting personnel to handle this job? There is and has long been a serious shortage of experienced patent personnel; where will the Government get the large numbers it will need? What about the costs in handling all this tremendously increased workload? It is doubtful that the Government could prevail upon the contractor to tackle the job of preparing and prosecuting patent applications. But if it could so prevail, what assurance would there be that the contractor will put the same degree of effort into the prosecution of such cases when its staff is also busily engaged in working on the contractor's internally originated inventions to which the contractor keeps title?

4. The proverbial chance to make a million dollars is what makes many an inventor keep on inventing. Even if personal recognition is the drive in some instances, inventors do look for some pecuniary reward sooner or later. With Government contractors there will be no such potential. Payment for the contract is what they will get and no more. Under the circumstances—

(*a*) What's the incentive to make and improve, let alone disclose inventions?

(*b*) If the option exists with regard to the contractor's putting its best talent and facilities to work on its private projects as opposed to Government work, why work on the latter? Private work may lead to more than just payment for actual work done. As long as that potential exists, private projects will generally get preferential treatment. After all, there is a limit to the available brainpower and facilities, and the contractor will want to use them to its best advantage.

5. If the Government does not file applications for patent on inventions to which it takes title, but merely publishes them:

(*a*) Undoubtedly, a certain number of the inventions will be used. If there are certain "bugs" to be worked out, this may take a considerable amount of research and development. Only those will be exploited commercially which someone feels will lead to new inventions that can be pri-

Let me talk about the aircraft industry for just one moment. Let us assume we are on the same basis as the space race and the Government had to pour in all kinds of money. This is back when the airplane was just a triplane. To whom would the contracting officers have given the jobs? To the already established automotive industry. They have the management capability, the nearest kind of knowhow.

Tell me what automotive industry is in the aircraft business today? One of them tried—Ford Motor Co.—and failed.

Senator LONG. They needed a patent monopoly, did they not?

That is what they were lacking, that patent monopoly.

Mr. HENRIQUES. What do you think Mr. Martin, Mr. Boeing, and Mr. Douglas were doing? The young ones? They succeeded on account of patent protection. I am talking about a situation where the Government was putting large amounts of money into things, not the way it actually happened.

Well, the same thing is true in the electronics industry. Look at Raytheon and Sylvania today. Once they were little and they became big. They needed patent protection when they were small. They do not need the patent protection today.

I wanted to end up by talking about one thing. That is the AEC and NASA rules. I want to show you what has happened under AEC and NASA rules. NASA is still too young to talk about. AEC has been around roughly 15 years. What large industry has come out of atomic energy?

Senator LONG. Why are you working on the Atomic Energy Commission? That happens to be one of the few fields where we are ahead of the Soviets. The Department of Agriculture with a similar policy in Government research, without private patents for you boys, is a field where we are so far ahead of Russia that they could not catch us in 5 years even with our help. Is that not correct?

Mr. HENRIQUES. In the first place, Senator, I am talking about the commercial application of atomic energy, not the military applications. I am not privy to the information that allows me to discuss whether or not, in the military sense we are ahead of the Soviet Union. In the military applications of atomic energy, as a citizen, since they are unilaterally interested in stopping tests and if they really mean it, I get suspicious that they are perhaps actually ahead.

But I do not know; as I say, I am not privy to the information. But I would say they are certainly strong. However, I am talking about the commercial applications of the atomic energy. The patents were brought in because the basic philosophy was that atomic energy was so wonderful and since the people paid for it, it should belong to all the people. That is an excellent concept and honest; I believe in it too. But look at what has happened. To whose benefit has it worked? The large companies. Can you name one big company that has grown up because of this atomic energy field?

Senator LONG. Can you give me an example of one country following a philosophy such as you advocate? Name somebody else, some other country where they got ahead of us. We are as much as 5 years ahead of the Soviets, further than that ahead of England and France.

Mr. HENRIQUES. Sir, we have poured a fortune into this field. I think it is a matter of financing. Could we have done better with the money we have spent? I am of the opinion we could have.

tions he presented. I know that, in some quarters, our profession has been criticized as not having been constructive in its approach to the problem with which you are now concerned. I heard today, with deep appreciation, and I trust the Senator and the subcommittee's counsel did, too, the fact that important segments of the patent bar have come forward now with a constructive proposal, even a bill. I, too, as it happens, acting purely as an individual, based on my analysis resulting from at least 10 years' study, have come up with a bill which has the same objective in mind, namely, to advance the public interest.

Senator McCLELLAN. Is your bill a part of the material you submitted?

Mr. FORMAN. Yes, sir; in part I, in my final paragraph, I call attention to the bills, H.R. 6532, introduced by Mr. Green, of Pennsylvania, and a duplicate bill, H.R. 6548, introduced by Mr. Toll, of Pennsylvania, both now before the Committee on the Judiciary in the House.

Senator McCLELLAN. Those two bills may be made exhibits by reference, exhibits 1 and 2. We started with appendixes A and B here, and we shall make these exhibits 1 and 2 for reference only. They need not be printed in the record, but they may be identified and kept in the files for reference.

(The documents referred to may be found in the files of the subcommittee.)

Mr. FORMAN. Thank you, sir.

Now, with regard to my express statement for today, I feel that the bills that you have before you, S. 1084 and S. 1176, would, if adopted, not be in the best interests of the United States for a number of reasons. I shall discuss just three issues that I think are vitally concerned.

First of all, without going into all the explanations given by many of the people who have reported here before, and which the subcommittee staff has excellently analyzed in its several reports, I would like to describe what I think is the effect these bills would have on one of our greatest national resources; namely, inventions. To simplify the discussions, I will describe a hypothetical situation using relatively small, round numbers. Suppose that in any given year the maximum number of inventions which the inventive geniuses in this country were capable of producing was exactly 1,000.

Senator McCLELLAN. Will you explain that?

Mr. FORMAN. Let us hypothetically assume that the brains of this country could come up with a total of 1,000 patentable inventions every year. We now have the Government paying for approximately 60 percent of the research and development expenditures in the United States. Now, we may roughly correlate the number of dollars spent with the number of inventions which might come out of this research. I think it is reasonable, therefore, to assume that the fate of approximately 60 percent of these inventions, or 600 inventions out of the hypothetical 1,000 are originated each year, are at stake in the problem you are seeking to resolve.

In these trying times, Senator, it seems that every invention potentially might be important to our national interest from the point of view of our economy, national defense, health, welfare, and so forth. It is clearly the duty of the Congress as set forth in article I, section 8, of the Constitution, and being conscious of its responsibility to protect the public interest it undoubtedly is also the desire of the Congress

No matter what law you people pass, and you have been passing laws for a good long time, there are always abuses, always are going to be abuses. All you can do is try to minimize the abuses.

Senator HART. The testimony has been a flat "No" to these two proposals, and, very clearly, you have a very fresh and very imaginative mind. Can you give us some middle ground notion? Most of the testimony this morning has been, "Do not do this."

Mr. HENRIQUES. I see. I think, for example, one of the points that the gentleman preceding me brought up is, I think, a very important one. That is if the Government takes the position it is going into space, therefore, it must belong to the public—as it took the position that it was going to develop atomic energy; therefore, everything with AEC belongs to the people. It is inevitable if you do that, you are handing all the big business to the big companies. That is for sure. Maybe this is a good thing. But, for goodness sake, please differentiate between the side issues not germane to the atomic energy. I know a little bit about the Atomic Energy Commission, because we have refused work from them. We came to them with two ideas, and they insisted on patent rights, all-inclusive patent rights, even outside the AEC field. I sat and discussed this with Mr. Anderson. You give these people in these bureaucracies power and, believe me, they are rough with it.

Senator LONG. Did they find somebody who could do the job that you turned down?

Mr. HENRIQUES. No, sir. These were ideas. We generated them and came to them with, "Is this not useful?" It was not a very important thing. It was not going to solve the reactor problem. We said, "are not these useful?" They said, "Yes," and we had a bitter battle and said, "I am sorry, we withdraw our idea. We shall peddle them someplace else."

Senator LONG. What did you do with it?

Mr. HENRIQUES. We got Air Force support for one.

Senator LONG. What did the other fellow do with it, the one you sold it to?

Mr. HENRIQUES. It developed into something which I hope is a little bit useful. We can see no tremendous commercial profit out of the thing, but we did not know that when we started.

Senator LONG. Did the other fellow manage to get himself a contract, or did he develop it at his own expense?

Mr. HENRIQUES. I do not understand.

Senator LONG. You said that you peddled one of your ideas; one of them died.

Mr. HENRIQUES. Right.

Senator LONG. I guess your brain might be capable of generating that again if you had a chance to make some money out of it. The second one, you say you sold the idea to somebody?

Mr. HENRIQUES. No, we peddled the idea; this is a research job to solve a problem. It is not anything that would end up as a product. It is a research job to solve a problem. We solved this particular problem for the Air Force. They got a report out, read it, got the results. They were happy with it.

Senator LONG. The man got a patent?

Mr. HENRIQUES. In this one, it so happens that no patents came out, but we did not know that before we started. But we refused

Senator McCLELLAN. Mr. Forman, at this point may I ask, is there not quite frequently a factor of cost of applying the invention so that, although the Government takes it and has it, and it is available, the cost that would be involved in making it applicable and making use of it would be such that those who might use it would hesitate to do so unless they got an exclusive right to so use it? I do not know that I stated it——

Mr. FORMAN. I think I understand it, sir.

Senator McCLELLAN. Here are all of my competitors. I am in business, and there is a patent up there that has been developed in some defense work. I would like to have it, but I know that I am going to have to invest so many thousands of dollars, X thousands of dollars, after I get it, to get it working, apply it to my business, to my production. I could afford, maybe, to do that if I could get that from the Government exclusively. But if I do it without the benefit of such an exclusive right, if I spend that much money and then my competitor over here says, well, I shall have to do that in self-defense, if he is going to do it, we go on down the line and I have actually not gained a great deal of advantage, have I?

Mr. FORMAN. No. You would neutralize any effect or any benefit you might have obtained if you did have an exclusive right.

Senator McCLELLAN. I am not arguing that that is the way to do it. I just used that as a case of illustration, and I can imagine—I do not say I know—instances where a fellow would say, I would like to use that patent but if I do it, it is free to everybody, and if I make that investment actually, I probably would not gain much. My competitors have the same advantage.

Mr. FORMAN. I see the Senator understands the operations of the American patent system thoroughly.

Senator McCLELLAN. I do not; I do not. All I know is, if you go out and do something, it is a good idea to be practical and not theorize too much on what is possible and whether you can do it.

Mr. FORMAN. I think the Senator makes a good point about being practical, because I think that should be the main object here. We all should be practical, and I think that the commonsense solutions I am trying to advocate are, if anything, very practical.

I said there are three issues I wish to present before you today. Still discussing my first point, you have got to make the choice between leaving inventions with the contractor or taking title in the name of the Government. Until now, you have got two propositions on opposite sides of the scales. On the one side is the argument that since the Government made a contribution of some sort, either all or part of the contract sum, it should take title in the name of the people. On the other side of this scale you have the argument that in most cases you will end up with an invention that nobody wants because they lack the thing you mentioned, Senator, the right to operate exclusively. That is, nobody will want to invest sums that might be necessary to develop new plants, and so forth—I need not explain all that because you know the arguments which have been advanced on that score.

But when the question comes up and you have got to weigh these two factors, which is the more important? Is it the fact that we might be able to save some extra cost to the taxpayers because we have not given one of the contractors what looks like an extra advantage?

Senator LONG. It proves my argument and not yours. I am asking you to give me a single example of any instance where there was a good product that should have been manufactured, should have been produced; the public would have benefited from it, but it was not manufactured and not produced because no one could get the advantage of a patent monopoly on it. I have yet to hear the first example produced, and you people, you manufacturing associations would be the people in the best position to provide examples.

Mr. HENRIQUES. You are asking me to make the known out of the unknown. You are asking me to take an imaginative problem that does not exist. Every product that has been produced has been produced. I do not know of any such product, because that is an imaginary product you are talking about.

Senator LONG. A good example I am talking about would be to say here was this cotton carding machine that was developed under an agriculture contract, a fine product; it should have been used. Nobody would use it because they could not get patent protection. Now, as it turned out, you cannot cite that example, because there are 50 companies manufacturing it.

A good example would be to say here is a fine process of concentrating orange juice. It should have been used. Nobody would use it because they could not get a patent monopoly. You cannot cite that, because there are about 50 companies using that process.

It would be fine to have said here is penicillin, a fine medicine; it should have been used, but nobody would produce penicillin because these companies could not get a patent monopoly. You cannot cite that example, because there are a great many companies manufacturing penicillin.

It would have been a good example to say take aerosol; here is a fine product, it should have been used. You could make bug killers, weed killers, you could make shaving cream; a fine product. But it was not used because the companies could not get a patent monopoly on it. But you cannot cite that example. There are a thousand companies using aerosol. So we keep asking you for a single example; your first one to support your argument. You cannot produce any.

Do you know why? Because there are not going to be any. What you say happens to be incorrect.

Go on back there. If you special pleaders come in here asking for special advantages, hoping to get monopoly on products, when you are asked for specific examples, you have to grunt, because you cannot answer.

You can bring somebody in here from the National Association of Manufacturers, who presumably represent the biggest manufacturers in America, and ask him to produce his clients. You cannot do it because there are none.

Mr. HENRIQUES. I would like to make just a couple of statements on what you have said, and I think they are somewhat important. I am talking about a new company that comes up with a new idea. I assure you, if we had been smart enough to think about aerosol and done this under an AEC-type patent policy, patent would have gotten to the public and we would not now be in the commercial end of the business

Senator LONG. You could have done that under AEC or Agriculture. I believe it was true in the Defense Department before this group of contractors got a hammerhold on them.

That is my positive approach to this problem. I shall come back to it later.

I would like to go on, if I may, to the other two main points that I have indicated in my statement. The second one concerns the fact that there are administrative problems which I fear have been completely overlooked. I have not heard or seen them mentioned in previous testimony or in the various subcommittee reports—in fact, anything I have read anywhere—and I would like to describe what I think are some very important ones.

It has been said by some proponents of these bills that the way things now go, the Government is giving away several millions of dollars in valuable patent rights.

Well, I question the accuracy of the figure, but nevertheless, let us assume that there is merit to the point that there are some very valuable patent rights that Government contractors are getting out of their contracts. These valuable rights, according to this allegation, were made possible by the expenditure of tax funds, and the question, therefore, is whether it is proper to leave them with the contractor.

Apparently, though, nobody is giving consideration as to what will happen if you enact these two bills that you are thinking about today, insofar as the problems of administering them and the cost thereof are concerned. Shouldn't we balance those costs against these "giveaway" costs, as they have been described?

I submit that the administrative costs might equal and even outweight the other costs so that the net result would be a tremendous loss to the taxpayers.

I would like to explore this point a little bit.

In the first place, I can remember well in my experience with the Government as a patent counsel how difficult it was to get reports of inventions from contractors. They generally had a very serious problem in trying to evaluate their work to determine whether inventions were made, and whether they were made in the course of the Government contract. The Government's representatives always were concerned with determining whether all inventions that may have been made in the performance of the contract were, in fact, reported. Remember, this situation existed under regulations whereby a royalty-free license was all that the contractor was in almost every case required to give the Government. One can readily imagine how much more difficult this situation would be if the contractor was not allowed to keep title, but had to convey it to the Government. There certainly would be far less inducement for the contractor to report all such inventions.

Operating under the relatively liberal Armed Services Procurement Regulation, I can recall the many problems we had in getting invention reports. A followup had to be made of most contracts. Determinations had to be made as to whether inventions were or were not conceived, and whether the Government should get title or not. Practically no one cared what was to be done with the inventions thereafter. This took quite a number of people to staff not only central agencies in Washington, but field agencies from coast to coast. A tremendous number of man-hours has to be spent in ferreting out the information. We were never quite sure whether the reports we did get were thorough and complete, not because there was any attempt to conceal, although this was always a possibility, but more

ployees for General Electric and Westinghouse or all the rest of the big outfits—that is what is going to happen. It is just inevitable.

Now, maybe the law is so important that for other reasons this ought to happen anyway. I cannot pass that kind of judgment. I honestly am not here trying to promote my own end, because we have arrived at a point now where we can compete, at least a little bit, on our own. We have already established a good corporate image in the research and development field.

But we have a lot of companies in this country that as yet have not. One of them just broke off from us. They already have a defense subcontract with commercial rights for the patent. On account of this maybe they will grow. Maybe that is healthy. My company would be better off if I could still exploit them.

The company is known as Computer Associates. They just left us. I left another company 10 years ago to help form Technical Operations, Inc. I think that is what is wonderful about this country. Please do not try to change that.

Senator HART. Doctor, thank you very much. It has been a most interesting 40 minutes.

May I inquire if there are any questions from the staff.

(No response.)

Senator HART. It remains to the final witness to determine whether he wants to go on now or after the executive session.

Senator LONG. If it is all the same, I would like to go on now, but you are conducting the show.

Senator HART. I think you described it pretty accurately.

Did you intend to come to the executive session?

Senator LONG. If you are taking the testimony of a witness in the executive session, I would like to hear what he has to say.

Senator HART. You might have a better audience if you defer until after that executive session.

Senator LONG. The difficulty is I think I know who the witness is. I would much rather let the witness have the chair in the executive session and present my statement now, providing that meets with your convenience.

Senator HART. It does.

Senator LONG. Then I would just as soon make my statement now.

TESTIMONY OF HON. RUSSELL B. LONG, A U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator LONG. Mr. Chairman, I have studied much of the testimony before your committee between May 18 and 22. A number of the most frequently used arguments are so unsound that I feel that they must not be permitted to stand unchallenged in the record. I shall try to get around to most of them, even though there are a few that I shall ignore because they are really unworthy of an answer.

It has been claimed by some witnesses that if the Government retained title to the results of Government-financed research, it would violate the principles of the free, private, competitive enterprise system. This allegation ignores the difference between competitive enterprise and a Government-enforced private monopoly.

The mercantile systems (sometimes called mercantilism) developed in Western Europe during the 16th and 17th centuries.

it is going to mean something. Now, I ask you to consider what would you do if you are the contractor. On the one hand you have an obligation to prepare these facts, maybe even rough out an application, the net result of which is you are just going to give it over to the public domain and that is the end of it. On the other hand, you are faced with your private operations, and you have the natural desire to try to get the best patent protection you can on your fully privately invested developments. Logically speaking, I ask the question, on which one are you going to put your best people and your best efforts? Commonsense is going to suggest that even though a company lays down a policy that they are to be handled equally, with instructions that a Government case is to receive the very best treatment, somewhere along the different levels of an organization, somebody may do just the opposite. Someone is going to say, let us rush through this Government job and get back on our private work, because inventions arising out of the latter situation mean much more to us in the long run?

I would like to go on now to my third point. This has to do with the assignment of personnel brain power and material facilities in the contractor's operations. Suppose a contractor takes a contract under arrangements whereby any inventions he makes have to be assigned to the Government. At the same time, he is still carrying on his private business, trying not only to make new developments to solve a given problem, but hopefully, that each such invention will beget another new idea that will lead to another invention, the sum total of which might give him a better position in his private activities. Suppose you are the contract supervisor, and you have a choice to make between putting Mr. X on one job, Mr. Y on the other, and you know that Mr. X is superior in ability to Mr. Y. Would you not normally tend to put X on the private job since he is the more likely to make new inventions, and if so this might give your company greater rewards than just the amount it gets for performing a particular contract?

I suggest that this is what might happen, and if it does happen you will be defeating the major purpose of your bills. While you are trying to save a few dollars in inventions rights, or derivative benefits, you are not getting the best you can out of your contract operation. In other words, you will be defeating the very thing that the Government agencies are going out under contract to get; namely, the best possible manpower, and the best possible solutions they can find for R. & D. problems in the shortest possible time.

One more thing. On the question of cost, there is one point I neglected to mention before. You might ask, how do we know that we are going to have a greater expense in trying to operate under a system where the Government takes title, maybe not in every case, but which calls for the balancing of the equities, as one of the bills proposes? There are only two experiences I know of that we can refer to, and I think they are both in point.

One is the British system, where I think there is now recorded evidence to indicate that they find it more costly to operate a system of that sort than they ever expected and, as a result, it probably costs more than what they gain out of that program.

Now, that is a parallel example to what we have been seeing in this committee room of people who come and ask to testify in favor of greater advantage and private monopoly and that they be not required to compete with somebody. The previous witness said, "I cannot compete." If he cannot compete, he is perfectly privileged to get out of the way and let somebody get in who can compete. That is the way our system is supposed to work. The public gets the benefit from all this.

We spend money in the Department of Justice in pursuit of laws to try to achieve for the public some benefit from competition. We appropriate $7 million a year to the Federal Trade Commission to try to restrain these monopolists. Yet we then proceed to give them contracts in the amount of $7 billion a year. This is 1,000 times as much to create legalized monopolies as to try to break those that already exist.

It has been claimed by some witnesses that the patent system will be weakened if the Government takes title to the results of Government-financed research and development. My answer is that the effect will be just the opposite—that such a policy will strengthen the system.

After all, what is the justification for the patent system, anyhow?

The patent system endeavors to attain the constitutional objective of promoting the progress of science and the useful arts by granting to the inventor or initial investor a temporary monopoly in a new product or process. The logic of granting such monopoly rights through patents in a free enterprise system rests upon the assumption that such grants will speed up technological progress through the stimulus it provides for the undertaking and financing of industrial research and development and of new industrial ventures and that the deliberate restraint of competition which the Government institutes by granting temporary patent monopolies in the use of inventions is intended to have the ultimate objective of serving the public interest in that the gains for society resulting from this stimulation will offset the restrictions on freedom of enterprise which the patent grant imposes.

This stimulus is considered necessary to the undertaking of extraordinary risks. No one knows in advance whether he will be successful. The cost may be great. There are many businessmen who have not invested a single penny in the cost of the inventions, but are ready to imitate the new invention and compete in selling the new products or using a new process. Why, then, risk large sums of money in inventing, in developing new markets, perhaps in investing large sums in new plant and equipment? If a patent monopoly, however, can be expected to keep the imitators off for just a short while, the innovator perhaps can secure an attractive profit. The hope for such temporary monopoly profits serves, therefore, as an incentive to take risks.

But where are the risks in Government-financed research and development contracts? There really are none. Practically all R. & D. contracts let by Federal agencies are on a cost-plus basis. No matter how expensive a project turns out to be, the costs are covered by the Government.

Moreover, there is no risk in finding a market for the new product. The market is there, waiting eagerly in the form of the Federal department or agency for whom the research and development has

Now, coming back to my specific proposal, look how we could dispose of so many problems that have arisen, both in these bills that you have before the subcommittee at this time, and in some of the other things that you have been considering.

If you adopt the philosophy that your primary purpose is to carry forward the constitutional provision, to promote the progress of the arts and sciences, you will have no trouble in deciding which is the best solution to your problem. If you accept the proposition that the best and only well-proven way to effect such promotion is under the patent system, then you must give the contractor the inducement of an exclusive right to practice the inventions for a limited time. It is a secondary consideration that the contractor will, in some cases, get some special advantage. If there is concern over the buildup of too much concentration of power in some companies, don't blame it on the fact that they acquired patent rights under Government contracts. If this is wrong, change the procurement policies and practices so as to distribute contracts more widely. If there is concern over the misuse of patents by companies that acquire large numbers of them, such a change could eliminate that problem. If not, application of the antitrust laws will. But in no case is there a need to destroy the incentives that only patents will provide.

Well, now, you should weigh the fact that there is theoretically taken away from the public at large some advantage that might be given a dollar value. You should weigh it against the possibility that, by leaving the rights with the contractor in the first instance, the public interest will be much better served. By having an administrative setup whereby the inventions will be followed up, as I have outlined previously, and seeing to it that under the compulsory working provision the inventions are fed into the public stream, the Nation stands to benefit. Inventions arising out of Government contracts will have a good chance of being actually converted into something useful—a new plant, a new product, a new process—for the exclusive patent right will be the inducement to the contractor to do this and to invest his own funds. This will not cost the Government a penny, and it will serve to get the inventions into public use.

This is the important thing; far more important, I submit, than merely questioning what happens to the extra privilege some contractors might get out of these contracts.

I would like also to mention something which is not in the proposal that I have described in part III (app. B). It is a provision that was proposed by the Congressmen who submitted the two bill I have mentioned before. It is identified as section 6 in both bills.

It is a rather interesting innovation, to my way of thinking. I frankly cannot speak on either side of the question at the moment, because I have not had the opportunity to explore it too deeply. This section 6 calls for an awards program, which would reward—it speaks of cash awards—inventors who work on Government contracts.

If I may digress momentarily, the mechanics of the program called for in these bills are very simple. Thinking in terms of economy of administrative expense, this is what is called for under these bills. There is established a new office headed by an Administrator. He would be in the Department of Commerce, responsible to the Secretary. He would have a very small office, as I visualize it, probably fewer than 20 people. His sole job would be to see that two things

Before I leave that point I would like to state this also, Mr. Chairman. A common tendency of anyone is to urge you to do things the way he does it. Farmers say you ought to run the Government the way they run their farms. Organized labor representatives come in and tell us that we ought to pass laws to conform with their practices; they know how to do things better than we do.

Business interests particularly go for that tendency. They tell you and me that we ought to run this business the way an intelligent businessman runs his. Now how do they run their business? Any time they hire somebody to do research, they have it signed on the dotted line that they have the patent rights.

When we hire them, why should we not do what they advise us to do, run our Government the way they run their business? That is exactly what we have done every time we have passed a law on the subject.

We have conformed to their practices, and that is what I am urging you, that we conduct ourselves like prudent businessmen, carefully looking after those we represent.

They represent stockholders, we represent taxpayers, consumers. Let us look after those we represent in the same way they look after theirs, and protect our investment in this enormous research and development program.

Several witnesses before your committee have stated that Government research and development contracts are not very profitable and that commercial monopolies on the results of Government-financed contracts are necessary to induce business firms to take the contracts. Then why are there so many more qualified companies applying for contracts, even with AEC and NASA than there are contracts to be had?

These are important points and should be examined very carefully. Almost all Government research and development contracts are on a cost-plus basis with a fixed fee of from 7 to 15 percent.

Even though these fees are not negligible at all, they are meaningless as a measure of the profitability of a business. A more meaningful measure of profitability of a business is profits as percentage of owner equity; that is, net worth.

A good example is that of the food supermarket chains, which make about 1 to 1½ percent profit on their sales. However, the profits as percentage on their investment is usually about 20 percent annually. The low rate of 1 to 1½ percent on sales does not deter the Safeway and other chains from continually establishing new stores all over the country. The reason is that this figure of 1 percent is not a measure of profitability.

Let me take a specific, concrete example.

The Thompson-Ramo-Wooldridge Co., not a very well-known company, is one of the leading contractors with the Department of Defense, especially the Air Force. This company received fixed fees in 1954, 1955, and 1956 of 5.8, 9.7, and 8.1 percent, respectively. On the other hand, the return on net worth, the measurement of the profitability, was 69 percent in 1956, 46.3 percent in 1955, and 30.8 percent in 1954—all before taxes.

Well, how about after taxes?

We find that this company paid no taxes during these years as a result of consolidating its very profitable operations with the net

STATEMENT OF CHARLES I. DERR, VICE PRESIDENT, MACHINERY AND ALLIED PRODUCTS INSTITUTE; ACCOMPANIED BY WILLIAM J. HEALEY, STAFF COUNSEL, MACHINERY AND ALLIED PRODUCTS INSTITUTE

Mr. DERR. I ask the Chair's permission to have one of my associates join me.

Senator MCCLELLAN. State your name for the record and also your associate's name, please sir.

Mr. DERR. Charles I. Derr and this is William J. Healey, who is staff counsel of the institute. The organization which we represent is a national organization of capital goods and allied products manufacturers. I should say that with the chairman's permission, I will simply highlight my statement and ask leave that the full statement be included in the record.

Senator MCCLELLAN. The full statement may be printed in the record at this point. The Chair will appreciate your highlighting it.

We have, I believe, two other witnesses besides you to hear this afternoon and I was hoping we could conclude about 4 o'clock, but you proceed now and highlight your statement.

(The statement referred to follows:)

STATEMENT OF THE MACHINERY AND ALLIED PRODUCTS INSTITUTE PRESENTED BY CHARLES I. DERR, VICE PRESIDENT

Mr. Chairman and gentlemen of the committee, we appreciate the opportunity of appearing before the Patents, Trademarks, and Copyrights Subcommittee to state the views of the Machinery and Allied Products Institute and its affiliate organization, the Council for Technological Advancement, on S. 1084 and S. 1176 now pending before the subcommittee.

A word about the Machinery and Allied Products Institute is in order. The institute is a national organization of capital goods and allied product manufacturers. These companies are primarily manufacturers of commercial products and the great majority have little or no Government business. Although only a minority of our member companies are directly involved in Government contract work, the membership does include manufacturers of certain items which are indispensable to our national defense effort. Capital goods manufacturers might properly be called engineering companies; as such, they are characteristically small- or medium-sized companies whose livelihood depends upon the continuing excellence of their research and development work and the protection afforded the results of such work through our traditional patent system.

It should be noted that capital goods and allied product manufacturers, for the most part, finance their own research and development work, and in undertaking such activity for the Government, bring to such tasks an immense background of privately developed know-how.

Because of the importance of patent rights to capital goods manufacturers, the institute has for a considerable number of years been deeply interested in this and related questions. As a matter of fact, a little more than a year ago it conducted here in Washington a 2-day conference of Government and industry representatives for a discussion of the patent rights question and the closely related problem of acquisition of proprietary know-how under Government contract. Insofar as patent rights under Government contracts are concerned, the institute has two principal interests: First, the protection of contractors' rights and, second, the adequacy of incentives for Government contractors to insure that the public interest is served by the participation of the best contractors.

As the chairman has said in his statement of April 18, the main problem here "is to find some objective definition of the public interest in these patent rights that will tell a Government agency when to let a contractor take title to these patents, and when not to." Obviously, the public interest in this matter has a number of aspects. For example, there is the question of whether or not the

monopoly to a private party is that it would serve "to promote the progress of science and useful arts."

The fact is that the cost of contracts do not go up. Admiral Rickover, who has unique and wide experience in contracting, has testified to that effect. But let me, once again, give you a concrete example.

The same company I mentioned before, Thompson-Ramo-Wooldridge, performed work for the National Aeronautics and Space Administration under contracts negotiated by the Air Force. This company, even though it was making unusually huge profits, wanted the patent rights also. It objected strenuously to the inclusion of the NASA patent clause in view of the loss of patent rights to inventions made in performance of the work under these contracts. Its fee proposal for contract AF-04(647)-302 for $760,500 with patent rights was increased to $855,200 if it lost the patent rights through the inclusion of the NASA patent clause. The fee finally negotiated for this contract was $714,107, which was even less than the fee proposed using the Department patent provisions.

Fortunately for the taxpayer, the negotiating officer was a good one. Instead of giving them everything they asked for, he said, "Wait a minute, if you are going to do it for us, (*a*) you do not get patent rights, and (*b*) you are still going to get less money."

The company did not go broke. In fact, they are doing very well: they are increasing their business, and I do not believe they will come up here telling you they cannot compete.

This demonstrates, I believe, that patent rights are not determinants of cost of a contract.

Now, Mr. Chairman, what serious arguments are left to discuss? I submit there are none. It seems to me to be a degrading spectacle for an admiral to come before your committee and cite one of your own studies as a case history to support one of his sweeping assertions, only to find that it shows just the opposite. How embarrassing to have to admit that he had not even read the document—and it was a document of your own committee. How authoritative can his statements be with regard to contracting problems when he states that he was not a contracting officer, or had never even negotiated a contract, and was not aware of the policies and experiences of other agencies?

This should give us pause for thought, for although his lips were uttering the words, it is legitimate to ask who was putting the words into his mouth. Was it a patent lawyer, or was it a businessman, both of whom benefit by the present system?

Incidentally, I must congratulate your competent staff for delving into these matters and going deeply enough to find where the body is buried.

Let me read to you the key statement of the representative of the National Association of Manufacturers.

This will be found on page 11 of his statement:

> When the Government takes title to inventions and patents under Federal sponsored work, destructive economic forces set in, incentives are diminished, and commercialization is discouraged, whereas retention of title by a Government contractor enhances incentives and is far more likely to result in commercial application and a corollary strengthening of the national security.

Let me now read the ensuing colloquy:

> Mr. WRIGHT. I wonder if you could cite to us *any* figures or study *or facts of any kind* which you believe support the statement you have made there?

SOME GUIDELINES IN FRAMING PATENT POLICY

We have already alluded to a number of broad objectives involved in the disposition of patent rights to inventions resulting from Government-financed research and development. Since, as we suggested, these objectives are not necessarily consistent one with the other, any legislative recommendations resulting from these hearings must necessarily seek an accommodation of the conflicts between these objectives and a balancing of their relative weights in view of the total public interest. As possible guidelines for the achievement of such an accommodation and as an introduction to our general statement on the proposals now before the subcommittee, we suggest the following:

1. Our Government's system of research and development—and the disposition of patent rights resulting therefrom—must make a maximum contribution to the defense of the United States. In still broader terms the system should be designed to effectuate promptly and fully the increase and diffusion of human knowledge, these being essential preconditions to technological advancement.

2. Government procurement patent policy should preserve and, if possible, encourage private research—both business and individual—to pursue scientific and technical inquiries of potential benefit to Government and to the community at large.

3. Government procurement patent policy should encourage the prompt and efficient utilization for peaceful purposes of new technology developed under Government-sponsored research and development.

4. Government procurement patent policy should seek the placement of Government research and development work with the best qualified firms without reference to size.

5. Insofar as possible, Government procurement patent policy should avoid the disruption of normal Government-industry relations.

6. Government procurement patent policy should be so framed and administered as to avoid Government control over rapidly developing new technologies.

A REVIEW OF THE ASSUMPTIONS UNDERLYING THE PRESENT PROPOSALS

An examination of past studies in the field and prior testimony offered at this hearing indicates that these bills are based on a tightly interwoven series of conclusions or assumptions. Certain of these assumptions are legal, some economic, some social, some technological. And it seems to us we can best determine the nature of the problem to which they are addressed, and the efficacy of the solutions proposed, by examining the soundness of these underlying premises. Our statement of each assumption and examination of its validity appears below.

1. *The Government should get what it pays for.*—No one can disagree with the proposition that the Government ought to get what it pays for. But just what does the Government pay for in this instance?

We suggest that it pays for the performance of research and development work and that any invention which may result is, in the great majority of cases, a largely fortuitous event which was not contemplated and not bargained for, at the time of contract execution.

Speaking for the Department of Defense, which accounts for the major share of the Government's research and development spending, Mr. Bannerman stated the matter succinctly in his testimony before this subcommittee: "We are not seeking patentable inventions, the likelihood of their occurrence is unpredictable and whether they do or do not work is actually irrelevant so long as our development goals are achieved or surpassed. Patentable inventions are thus byproducts of development and our principal concern with them is that these inventions be freely available to us and to our other contractors for use in future Government work." Thus, the prime objective of Department of Defense research and development procurement is the development of new or improved military weapons systems. It is not the conception of inventions or the acquisition of patent rights to such inventions.

It may well be that in certain research and development contracts let by civilian agencies of the Government the end product sought by the contractual agreement is some new product or device or formula or process fully developed for civilian use. The contracting parties may have intended that successful performance of the contract would result in a commercially exploitable end product. One possible key to the solution of this problem now confronting the

probably a classic example of Government-sponsored R. & D. enhancing a company's profit capabilities.

> Today, we are a leading producer of commercial ship radar, the basic know-how for which we gained from the Navy work—

a Ratheon official says:

> The commercial work is in addition to the radar Raytheon turns out for the military—

he added.

The most shocking disclosure to me is the practice of the Department of Defense of giving away public money without getting in return any rights whatsoever, not even a license.

After studying this program, I have discovered some interesting facts:

One is that the Department of Defense is sharing in the cost of "contractor initiated general research and development programs." This is an expense which had previously been borne by industry.

Two is that the firms receiving this handout are among the largest in America.

The reason for this policy of assisting huge firms in promoting their independent research efforts, as given by Gen. Marcus Cooper to your committee, is that it will hasten technological development.

This suggests two important questions:

1. Is this against the law? The disposal of Government property cannot be for the exclusivity and benefit of any one individual or firm, but must be for the benefit of all the people of the United States unless there is specific statutory authority.

In this instance, the people of the United States got no specific product or service. Any benefit to the people is only a remote possibility. This program, however, is of direct benefit to certain individual contractors.

2. Even if it were legal, and I am not so sure about that, is this program good public policy? I submit that it is poor public policy. It gives a favored contractor an unearned competitive advantage. It enables him to become larger at the taxpayer's expense. It frustrates and offsets our whole antitrust program, and it is just unnecessary. If the ordinary rewards are not enough to elicit the desired technological changes, then the Government itself should develop its own capabilities to do so. The Department of Agriculture, the Atomic Energy Commission, the Tennessee Valley Authority, have shown that the Government can make greater contributions than the private sector in certain fields. Why cannot the Department of Defense do the same?

Is it not about time that the great U.S. Government should start developing an inhouse capability of managing its missile program instead of delegating this governmental function to a private company? Isn't it about time that the Department of Defense began to develop capable technical people who can evaluate the "sales pitches" of the private firms who are making of Uncle Sam an incredible "sucker" for their own gain? Air Force Under Secretary Joseph V. Charyk admitted that the Air Force has very few experts who are able to check contractors' claims, thus making the Air Force, in particular, vulnerable to defense contractor "salesmanship."

such impelling pressures, into both the Atomic Energy Act and the Space Act—each herein discussed.

Each of these acts, by its constrictive patent provisions handcuffs traditional propulsive incentives that have given to America her constant drive toward greatness. Tow sad that our Congress forgot, or was persuaded to ignore, the vital fact that the fountainhead of propulsive incentive in America is our patent system.

ARROGANCE—OR STUPIDITY?

And who can feel pride in contemplation of the all too obvious fact that the entire bureaucratic maneuver toward the establishment of a huge governmental cartel in U.S. patents flies arrogantly, and stupidly, into the face of our Constitution?

In fact the entire theory offered to justify our presumption of governmental right to own patents is based upon an unsupportable concept of constitutional law. Why otherwise could it be that no governmental agency has ever dared assert its presumed rights to any U.S. patent in any manner that would expose such assertion to review by our U.S. judiciary—a judiciary historically established to prevent dissipation of the invested power of the U.S. Constitution to promote our greatness as a nation?

Who in America can look with anything but fear upon this outstanding example of the arrogant contempt of some segments of our bureaucracy for any constitutional concept that would retard their drive for absolute controls. Now we see how such contempt has brought us—with all our traditions—to the threat of overnight annihilation as a nation, as a race, and as a civilization.

And in conclusion, just a very significant statement that Mr. Anderson makes with reference to stifling inventive incentive.

To do so, he contends, is to destroy our Nation.

The patent provisions proposed in S. 1084 and S. 1176 substantially lessen the normal incentive to invent and to exploit patented inventions.

When Government, as to vital areas of defense, deliberately withdraws from the citizen time-honored incentives to create our means for defense, how can Government express surprise that by stifling those time-honored incentives in the field of production for civilian uses it has seriously impaired the capacity of our civilian economy to support our military agencies?

No nation entering war with a backward and befuddled civilian economy has thereby improved in any way its chances for victory.

The tenaciously preserved German patent system—that made Germany's civilian economy so strong in its domestic and international trade before World War II—is now functioning freely, and has been a strong factor in making West Germany potentially so strong for defense.

Let us open wide the fountainheads of creative incentive in America, a nation upon which so much of the responsibility for defense of our Western civilization is presumed to rest.

One wonders from whence comes such will, and skill, to divorce such power so completely from the source that creates it. Certainly, our Constitution contemplated no such incentive-stifling confiscation of property as is proposed in S. 1176 and S. 1084.

I make no claim that it is the one perfect solution, or that it is perfect beyond improvement. It does, however, provide a solid basis for the development of a sound and equitable policy for Government procurement of contractor services in research and development activities. I shall be pleased to cooperate with the committee and its staff in the consideration of any perfecting modifications which the committee may, after study, believe to be warranted.

In particular, I hope that consideration will also be given by the committee to the additions recommended by the Assistant Attorney General when he testified before your committee on April 21.

Before I conclude I would like to reveal my disappointment in those newspaper publishers and editors who are, in my judgment, hiding this issue from public view. This issue, perhaps more than any one other factor, explains our failure in outer space. Here is the key to American military failures and Soviet supremacy. Yet, the great newspapers of America are ignoring the stories filed by their correspondents who discuss this issue.

Some of these same newspapers have editors and publishers who have participated as members of a committee carrying the proud banner of the "right to know." I am guessing, but I believe this is correct. Such a committee argues and quarrels with legislators that they are entitled to know what happens in every closed-door executive session of any committee They go so far as to suggest that they are entitled to know any thought that enters a legislator's mind if he dares to communicate it to one of his fellow public servants.

Yet, here is an example of an issue of enormous significance which is concealed from public view and carefully held away from public inspection in most great newspapers. To be sure, this issue has been discussed in the trade journals. Here is a copy of the Federal Bar Journal for winter (1961), in which the entire issue is devoted to this problem, containing a discussion of both sides of the argument. The American Bar Association Journal will give similar treatment in its July 1961 issue. The Wall Street Journal has reported both sides of the argument.

But what great daily newspapers have given this matter the benefit of full discussion? Only the St. Louis Post-Dispatch and the Memphis Press-Scimitar, to my knowledge, have given any intelligible discussion of this issue to ordinary, everyday people, so they might understand the argument. Perhaps the New Orleans Times Picayune can also be described as participating in reporting the activities of a Senator from the State in which that paper is published.

But how about the great New York papers, the Washington papers, the Boston papers, the Chicago papers, the Houston papers, the San Francisco, Los Angeles, Denver papers? Have they even for a moment given a fair presentation of both sides in order that the public might weigh this issue? The great St. Louis Post-Dispatch, highly respected among journalists, has reported only one story on this vital problem of such potentially revolutionary impact upon our lives, and it was an objective, fair article.

In other words, here is this gigantic issue of public concern which, in my judgment, can be decided wrongly only if the public is not informed about it. Yet, to this moment, the discussion is limited almost entirely to special pleaders and special interest groups who have an ax to grind.

have just said that without some period of exclusive use and limited protection, it is very difficult to get commercial application of new inventions.

I would like to emphasize and to make this point repeatedly: The Government itself benefits from commercial application. This benefit is not obtainable merely from the existence of a paper patent or its availability to the public.

Let me say again that the benefits are not only jobs to the employees and payrolls and taxes on both income and plant and equipment, the benefits also include new products and new processes which help us in a competitive way. This means, if the invention is successful, volume production of the items, and if a Government agency is itself buying these items, it means a reduction in the price and a greater availability of service to maintain the equipment in use. This is true even when the item is a defense item, which may not be quite identical with a public item because the same equipment being used on a larger volume of operations can spread its costs over a greater production, and the same service organization can exist throughout the country and service Government agencies, even if the equipment is not entirely identical with that of commercial practice.

Because many other witnesses have said that the situations to be covered by Government-sponsored contracts, and just what is required to get a patent exploited, varies from situation to situation, it seems to me that the only patent policy which would come near to meeting the great variety of requirements would be a flexible patent policy. Further, it seems to me that a policy which minimized the instances in which the Government takes ownership, and jeopardizes a commercial organization which performs Government research, would be a desirable policy. In other words, a flexible policy is preferable to a policy of rather frequent taking of ownership by the Government.

Senator McClellan. And what would be your comment with respect to whether the widest possible use, practical use, is obtained by the Government taking absolute right to it, or whether the Government leaves that right in private enterprise?

Mr. Holst. Would you like me to give some examples, if I could?

Senator McClellan. Well, I would like your opinion and one or two examples maybe.

The thought I had in mind is, the Government, of course, gets this much out of it: It finances the research and takes the right to get the benefit from any acquisition it may wish to make and to have the patent or the invention used to provide for the Government's needs. It gets that advantage. Thus, no royalty fee is ever charged the Government.

The next thought, as I understood from you, is the objective should be to get the widest possible use.

Mr. Holst. That is right.

Senator McClellan. Now, what would be your comment with respect to whether you do get the widest possible use and benefit to the public by the Government taking the title, and thus distribute licensing, from the Government, or whether you get the widest possible use by leaving ownership in private enterprise or to the original inventor, or the company doing the research?

Mr. Holst. I am quite convinced that you get the widest benefit to the public by leaving ownership in private hands, because then the

James Mill was no less emphatic. He says:

"Of the four sets of operations: Production, distribution, exchange, and consumption, which constitutes the subject of 'Political Economy,' the first three are means. No man produces for the sake of producing and nothing further. Distribution, in the same manner, is not performed for the sake of distribution. Things are distributed as also exchanged, to some end.

"That end is consumption" (James Mill: "Elements of Political Economy," third ed., p. 219).

The classical system was unequivocally opposed to any fostering of producer interest as such.

We should remember, however, that consumption is to be understood as both present consumption and consumption in the future: that is, investment.

We should also note that by consumption is meant not only the consumption of private individuals, the benefit of which is limited to themselves, but also the consumption of Government services such as defense, the benefit of which is enjoyed by all of us. From Adam Smith onward, it was recognized that such services might be "in the highest degree advantageous to a great society"—Adam Smith: in the work cited, volume II, page 214.

The great contribution of the classical economists, however, was their proposal for the achievement of this end, and for this they recommended what has been called the system of economic freedom.

Now what do we mean by this term?

This system can be defined in this way: Given a certain framework of law and order and certain necessary governmental services, the classical economists conceived that the object of economic activity is best attained by a system of spontaneous cooperation. As consumers, the citizens should be free to buy what they please. As producers, or as laborers, they should be free to use their property or labor in ways which, in their judgment would bring them the maximum reward in money or satisfaction. In their view it is the impersonal mechanism of the market which harmonizes the interests of the different individuals.

It follows, therefore, that a prime object of policy should be to insure the freedom of trade and industry, and to sweep away obstacles to this spontaneous cooperation where they exist.

This idea of freedom was central to the whole classical system, and it inspired their crusade against what they considered to be abuses of authority. It dictated their conception of what should be the positive functions of the state.

As I see it, the belief in the system of economic freedom rested on two bases: First, belief in the desirability of freedom of choice for the consumer; and second, belief in the effectiveness in meeting this choice, of freedom on the part of producers.

These ideas are interwoven in our subconscious thinking; they form the basis of our free, competitive enterprise system.

The first belief is simple; it is based on the view that the adult consumer is the best judge of his own interest—with some exceptions, however: the consumer, for example, must be protected from fraud—

For example, Ricardo: "Proposals for an Economical and Secure Currency: Works," edited by McCulloch, page 408, Ricardo followed Adam Smith in approving the Government stamp on plate and himself approved interference to insure the purity of drugs and the competence of doctors.

The argument for freedom of producers is more complicated. The motive for production is considered to be self-interest. But the guidance of this motive so that it conduces to the interest of the general public, is viewed as a product of the mechanism of the market and the forces of competition. The system of free markets was to be the rough discipline whereby the forces of self-interest were guided and held in check.

If we place these men in their proper historical setting, we can see that they were reformers. The system of economic freedom was not just a detached recommendation not to interfere; it was an urgent demand that what were thought to be hampering and antisocial impediments should be removed and that the immense potential of free pioneering individual initiative should be released.

The founders of our economic system were both individualists as regards ends and, with due reservation, individualists as regards means. For them an organization of production based, in the main, on private property and a competitive market was an essential complement to a system of freedom.

They did not believe that such a system was a product of nature—that it would come into being if things were just left to take their course. On the contrary, such a system can come into being only if things are not left to take their

of most value for the discussion. Please feel free to interrupt as you wish.

Senator McCLELLAN. Very well.

Your prepared statement may be published in the record in full at this point.

(The statement referred to follows:)

STATEMENT BY HELGE HOLST, TREASURER, ARTHUR D. LITTLE, INC., ON BEHALF OF THE NEW ENGLAND COUNCIL

1. INTRODUCTION

New England, with its highly developed industries and great dependence on research and development, is vitally affected by the ownership and use of patents. New England is also extensively engaged in research and development for the Government. Because many of New England's industries have sprung from and are based on patents, the effect of ownership and use of patents is particularly clear in this region. Many New England organizations bring to their work for the Government, as will be illustrated by examples, an extensive background and competence of tremendous benefit to the Government. This likewise has a bearing on Government patent policy.

The New England Council is dedicated to the welfare of New England, its people, and its institutions. The council believes New England to be vitally affected by the ownership and use of patents. Because it considers that New England's experience can assist the subcommittee in its deliberations on patent policy, it is pleased to participate in these hearings.

It is the purpose of this testimony to bring to the attention of the committee the results of careful thought and observation over many years of contact with patents as they are developed and used by industry, and as we have noted their development under contracts with the Federal Government. This experience extends from 1935 when I was a member of the legal department of Lever Bros. Co., particularly concerned with patents and new product development and exploitation. It has continued during the last 15 years during which I have been associated with Arthur D. Little, Inc., in several capacities concerned with both commercial and Government research and development.

2. PATENTS VALUABLE TO THE PRIVATE OWNER AND THE PUBLIC

First-rate developments and product improvements are of great importance to commercial organizations in their competition to offer superior service to the public. With intensification of competition through foreign competition and the acceleration of product obsolescence through technological progress, the continuous flow of new and improved products and processes has become increasingly essential to survival. Accordingly, throughout my experience it has been abundantly clear, on the basis of many examples, that patents covering new developments comprise very valuable industrial property and constitute an almost indispensable basis for starting new enterprises. Particularly in the case of small business because of the high cost of new development and their introduction to public use, without patents or some assurance of restriction on the activities of competitors for at least a period of a few years, it is difficult—if not impossible—to secure public financing for new developments.

The costs and risks involved in making new developments and carrying them through to commercialization and then launching the new products and processes are very substantial. If the processes and products can be immediately copied by competitors who have not experienced the heavy costs of technical development and market creation, this produces such unfair and unequal competition that the originator of the new concept is certain to lose. Under these circumstances the rate of introduction of innovations would be much reduced. Patents constitute a means of affording limited protection which inherently contains two safeguards of the public interest: (1) The period of exclusivity is limited; (2) the protection is given only in exchange for adequate disclosure in such form that on the expiration of the patent period the invention can be practiced by others. The result of the existence of this limited protection has been the simultaneous rapid development of the patent system and the introduction of new products and processes into industrial and commercial practice with consequent benefits to the public in the form of a wider variety of constantly improving products.

Let me read a very interesting statement:

"The people, not some self-selected Government elite, decide the course of the Nation. This decentralization of power is the strength of the free society and it must be preserved.

"In the economic sphere, the principle of decentralized power expresses itself in the system of competitive private enterprise, operating in a basically free market. The competitive system offers many advantages that are not available to centrally controlled economies—and these advantages should be utilized in the space effort and the defense program, as well as the rest of the economy.

"The competitive system, with its profit and loss discipline, puts men and companies to the test as no other system does. It rewards the creative and the efficient. It penalizes the unimaginative and the inefficient. It provides an incentive for risk not only on the obvious ideas, but also on the long shots. It provides a natural and effective system for the elimination of failure, complacency, and delay. At its best, the competitive economy has a vigor, diversity, and efficiency that no controlled economy can match" (Congressional Record, June 2, 1960, pp. A4719–A4724, speech by Ralph J. Cordiner, delivered at Los Angeles on May 4, 1960).

These wonderful words of praise for competition could well have been spoken by the very founders of our system. But they were not.

The preceding sentiments were spoken by Mr. Ralph J. Cordiner, chairman of the board of the General Electric Co., a company which has been guilty of more antitrust violations than any other company in American history. Only recently several of its high officials, together with officials of Westinghouse, Allis-Chalmers, and other companies, were sentenced to prison for their criminal acts.

Mr. Cordiner, the great champion of the free competitive private enterprise system says he knew nothing of these activities, which had been going on for many years and which pervaded so many departments. To quote Judge Ganey:

"One would be most naive indeed to believe that these violations of the law, so long persisted in, affecting so large a segment of the industry and finally, involving so many millions upon millions of dollars, were facts unknown to those responsible for the conduct of the corporation." (From text of a presentence statement made by Chief Judge J. Cullen Ganey, on February 6, 1961, in U.S. district court in the electrical equipment antitrust case. New York Times, Feb. 7, 1961, p. 26.)

To praise the free, competitive enterprise system while pulling the rug out from under it is nothing new. New "gimmicks" are constantly being devised to subvert our antitrust laws. Sometimes it is even in the name of small business, and the strategy is to nibble away at the law by allowing small businesses, through subterfuges, to conspire to fix prices and allocate markets. After that, how long will it be before the whole law itself will crumble?

Those forces, therefore, which prevent relative prices from performing their function in a free economy are subverting our economic system, and this will subtly and inevitably change our political system, for both are interrelated. The Communist forces arrayed against us will have attained their objectives without even lifting a finger.

It is interesting to note that companies which were sentenced for criminal violations of the antitrust laws are among the most important contractors with the Government for research and development. In 1960 the General Electric Co. was the 5th and Westinghouse was the 10th on the list of the largest contractors for research for the Government.

The policy by the Defense Department and other departments of the Government of relinquishing to private contractors all rights to the results of research and development financed with public funds, except for a mere license to use, is inevitably leading to greater concentration of economic power and the consequent decline of our free competitive system. The Defense Department's policy of helping huge companies to improve their already formidable patent structures at the public's expense by its very nature is destroying economic freedom.

A concrete example was found by the Comptroller General of the United States—Comptroller General's report on "Review of Administrative Management of the Ballistic Missile Program of the Department of the Air Force," pages 46–48.

As of June 1959, a particular contractor had filed applications for 95 patents, all resulting from Government-financed research and development. Out of this number, 11 applications were for inventions which the contractor himself characterized as "primary" inventions: that is, "developments believed to be

invented a new method for patching walls. The bill would require him to assign his invention for the repair of walls to the Government.

It is felt that this bill would introduce a good deal of uncertainty and confusion in Government contracts since the requirement to assign is not limited to contracts dealing with research and development or in which inventions may reasonably be expected to arise, but in all contracts.

Coming to the second bill, S. 1176, in the main it is felt that the provisions of this bill would be beneficial. Features which it is felt fill a definite need are those for providing review and uniformity of contracting policies, a central administrative agency for administering Government-owned patents, and the waiver provision in contracts.

However, as regards employees' rights, it is felt that the bill does not take into account the situations where the Government should leave the employee the commercial rights as, for example, where the invention is outside the sphere of an employee's duties and is made with a minor contribution by the Government.

Provision should also be made for leaving foreign rights with the employee where the Government does not file abroad. A royalty-free, nonexclusive, irrevocable license should be reserved to the Government with the right to issue sublicenses to U.S. citizens or corporations controlled by U.S. citizens to import into the foreign country in which a patent was obtained items made in the United States which are covered by the patent.

Senator McCLELLAN. When you get to a breaking point there—I can't follow you because I don't have a copy—I want to ask you a question.

Mr. COHEN. Yes. The waiver provision of the bill could lead to the same results in practice that are presently obtained within the Office of Saline Water Contracts. This is a breaking point.

Senator McCLELLAN. All right. First let me ask you what difference in policy do you propose, and, if you don't propose, what difference in policy should there be with respect to the Government dealing with one of its employees and with a contractor doing research work for the Government? In other words, the Government has a regular employee here that is paid a salary to perform his duties. In the course of performing his duties he discovers and develops an invention that the Government takes some right to, maybe all title or whatever is provided now. At the same time, the Government makes a contract with a laboratory or college to do some research, or with a corporation, and in the course of doing that research an invention is made, a by-product of it.

Now what different treatment should be prescribed or accorded the employee and the contractor for the Government? What is the difference? I am talking about what should be the equitable differences, if any.

Mr. COHEN. I should say the difference should be this: Of course, if the employee makes the invention in the course of his regularly assigned duties, the title to the invention belongs to the Government. There is no question about that.

In the case of a contractor, generally speaking the Government should take title. However, there may be situations where, because the Government is drawing on his past experience, his buildup of

APPENDIXES

APPENDIX A

PREPARED STATEMENT OF W. BROWN MORTON, JR., CHAIRMAN, COMMITTEE ON GOVERNMENT PATENT POLICY, AMERICAN PATENT LAW ASSOCIATION, WASHINGTON, D.C.

APPENDIX

A. Acquisition of title by the Government in connection with Government research and development minimizes incentive to invent and to invest in commercial utilization of inventions, and, indeed, to take Government R. & D. contracts

A private business organization is less apt to develop an invention commercially, especially where large investment is necessary, if it is easy for a competitor to enter the field at a very considerable saving in engineering and planning expense by copying what the developer successfully introduces.

It is recognized that retention of title by a contractor is not the only incentive that may justify a private firm's assumption of a research and development program under contract with the U.S. Government. There may be expectancy of profit from such contracts, even though it is believed that profit margins on Government R. & D. are substantially less than realized from comparable normal commercial operations. There exists opportunity to develop know-how. There is raised the hope for follow-on production contracts. In new fields, there is the opportunity to develop the best possible position with respect to competitors through the development of know-how and experience, and, in established fields, to maintain competitive positions. Where there is no apparent nongovernmental application of the fruits of such research and development, title to inventions may seem to be of relatively little importance, but unforeseen commercial uses often develop. Then, too, but not least important, is the patriotic motive which can be especially strong in fields where there are few organizations sufficiently competent or large enough to do an effective job.

Nonetheless, retention of title is a very important additional incentive and where the long-range value in a research and development program is primarily a nongovernmental use, where there is substantial competition, where there are many firms available to produce for the Government, and where results are particularly important in maintaining or attaining a competitive position, retention of title may be the most compelling incentive. Particularly is this true where a contractor already has spent large sums in achieving an important commercial position and where the Government program involves application of commercial research and development to governmental problems and any resulting patents primarily involve improvements to the existing position of the contractor.

That such patent incentive is important is indicated in the report of the House of Representatives Subcommittee on Patent and Scientific Inventions to the Committee on Science and Astronautics (the so-called Mitchell committee) which was transmitted on March 8, 1960. On pages 17 and 18, it is noted that efforts made to encourage industry to obtain foreign patents on contractor inventions in exchange for free, nonexclusive licenses failed "for the reason that the commercial concerns required some degree of exclusivity as a prerequisite to investing the funds necessary to obtain the patents. Moreover, it appeared that merely obtaining foreign patents would not afford any economic benefit since the patents are valueless unless the inventions are practiced in the countries in which the patents are obtained. Commercial concerns were reluctant to practice the patented inventions in foreign countries unless they could be assured of an exclusive license * * *."

exclusive rights, thus to profiteer out of it? The widest possible use is of public concern, of Government concern. But still there comes, it seems to me, a special benefit to corporation A, with which the Government originally contracted, if it is allowed to have the exclusive right to exploit or to develop and profit out of the invention. There would seem to be a clash of policies here.

How do you eliminate this possibility and strong probability that one corporation with which the Government places a contract gets the right to develop a process and to profit from an invention that is financed by the Government?

Mr. HOLST. I am delighted that you asked that question, even if it is a complicated question, and I would like to try——

Senator MCCLELLAN. It gets complicated to me. It may not be to you.

Mr. HOLST. I would like to answer, and the answer may be complicated, too, but I have had a chance to see this in operation.

But first of all, is it fair that one organization be given essentially all or the full benefit from a development which it is said has been made at Government expense? Very seldom is the entire cost of an invention borne by any one source, including the Government, because the organization brings to it, usually, a know-how or an existing team or administration setup. But let us assume that somehow or other the majority of the cost of the original concept was paid for under a Government contract. It still seems to me necessary to take into account, whether the Government got the primary result which it sought out of the original contract. Did it get a successful solution as quickly as possible, at as low a cost as possible, and with as large a likelihood of success, and was the price fair in the first instance? Because if so, it can be said that the Government got all that it contracted for.

But let us go beyond that. If we believe that the Government agency itself, as well as the public at large, will get benefit only if the invention is put to use, this will certainly require further investments by the corporation, yours and others, and these additional investments will probably considerably exceed the original cost of the research. This is the usual experience.

As I mentioned in the beginning, the Government agency itself will benefit if the item is put into volume production or if it is carried into further stages of development. This is made possible by commercial development, and the Government agency itself will benefit if the organization sets up a service organization, such that the item can be serviced, not on a unique basis, but rather in a routine manner and on the basis of ready availability. All of this is of benefit to the Government agency which placed the contract and requires considerable further investment by the contractor not shared by the Government. Accordingly, it cannot be said that the contractor's benefits result entirely or even principally from the Government's expenditures under the contract.

Meanwhile, the public gets the benefit of a wider availability of the new item, and also the benefit of jobs, taxes, and the like. So it is not a black and white case, as you said in the beginning.

Senator MCCLELLAN. No; but there is another factor or element that seems to modify any inequity or injustice in letting the original contractor have the exclusive benefit from it. It is this: If the Government handles its contracts, negotiates these contracts on a basis

B. For usual governmental purposes, a license is sufficient

The Government has no competitive position to protect. Moreover, the Government has the right of eminent domain through which it can use any invention under which it is not licensed, though it does not have title. Government has no need for title unless it wishes to control the commercial use of the inventions covered by patents involved. This approaches socialization and it constitutes costly and unnecessary interference with the commercial business of industry. President Lincoln said: "The patent system added the fuel of interest to the fire of genius." Unless the Government is going into business—directly or indirectly—a Government-owned patent cannot supply this fuel of interest to the exploitation of the invention to which it relates.

C. It is urged by some that the Government should take title to inventions resulting from Government-sponsored research and development because industry takes title to inventions resulting from company-sponsored research and development

With respect to the contractor-employee relationship, the law has always recognized the propriety of requiring an employee to assign title to certain inventions to the employer. This is eminently fair where the employer has furnished know-how, plant, tools, equipment, training, financing, salaries, materials, security, employee benefits, and opportunity, most or all of which are necessary to make a trained organization and suitable facilities are available as a base for inventive activity and to give the creation employee the time, free from problems of livelihood in which to invent. The same relationship does not exist, however, between Government and its contractors.

A contractor is an independent agent and not an employee, in legal relationship. However, the question might be asked, whether the Government in hiring contractors pays the going rate? The answer is that it does not, but usually awards contracts among qualified competitors to the lowest bidder. The bid price, under present practice, is not influenced by whether patentable inventions result or not.

Many contractors, on the other hand, provide incentives encouraging employees in a position to invent to make inventions. For example, one of the automobile manufacturers shares with its inventor-employees a percentage of the royalties received under licenses issued by the corporation involved. One of the large electrical manufacturing companies has an award plan which pays stated sums to its inventor-employees upon the acceptance of a disclosure, and also upon the filing of a patent application; a substantial sum for the most important of each block of 50 inventions disclosed in each department; and a special patent award, which may amount to as much as $5,000 for especially meritorious patented inventions.

Such incentives could not be made available if title is to be acquired by the Government in connection with all research and development contracts. This can be expected to diminish the extra effort which an employee will exert in connection with his work under research contracts with the Government.

The Government, through research and development contracts, does not in reality pay for making inventions. The Government pays to have developed a certain device, material, or process meeting a certain specification. Inventions, if any, are incidental to the work performed under the contract and the Government is just as well satisfied when no inventions are made.

Inventions may be the culmination of long efforts of the contractor under his own initiative and at his own expense. For example, under the patent rights clause used by the Department of Defense, a contractor who has conceived and constructively reduced to practice before the initiation of the contract must usually give the Government a nonexclusive license if actual reduction to practice occurs under the contract. These inventions are not, in fact, paid for. Indeed, from a strict point of view, these inventions are not truly made under the contract; the contract simply culminates the process toward a physical embodiment.

There is a great difference between the industry-industry situation, where one company may retain another organization to perform specific research and the Government-contractor situation; the basic purpose in sponsoring research and development under private auspices is quite different. An industry unit is in a competitive position. It is trying to stay ahead of or to catch up to its competitors in the minds of the buying public. Its success, and hence its profits (and the contribution to the Government through the taxes it

Senator McCLELLAN. Very well.
Anything further?
Mr. HOLST. No, sir.
Senator McCLELLAN. Thank you.
Senator Hart?

Senator HART. Mr. Chairman, on that last point, you developed rather fully in your last statement the notion of wide use being desirable and the means that could achieve it. You spent less time on what I understood to be your first point after making the statement, that the Government's interest was best served by achieving a prompt and responsible answer to its problem.

You then said but did not develop, as I hope you will, the notion that this prompt answer most likely will come from experienced sources. But these experienced sources would not be available as readily if there was a Government policy that did not assure them of exclusivity for a period. Would you fill me in on that chapter and verse?

Mr. HOLST. Can I cite you an example?

Senator HART. Yes.

Mr. HOLST. A great deal of the basic physics of matter is being studied with high energy machines which are called atom smashers. There are other elaborate names, but essentially, the devices are atom smashers. Much of the basic work in this field is being done with equipment produced by an organization called High Voltage Engineering Corp., of Burlington, Mass. That organization actually sought but could not get Government sponsorship to develop some of the concepts in this apparatus at an early stage. So, being composed largely of professors, they limped along as best they could until they were able to get a patent of their own. Only at that point were they able to secure outside financing, and they are now a publicly owned company. But not until they had a patent could they secure significant financing. Now because they own patents they have continued to develop the equipment, so that it now can be operated in a variety of ways, including as tandem equipment, one after the other.

Dr. Seaborg, the Chairman of the Atomic Energy Commission, speaking only last month to the American Physical Society, said that most of the interesting work being done in this field on the understanding of matter was being done with the equipment of this company. All of this was made possible, the company tells me—I know the president—only because the company had a patent; the patent enabled them to get public sponsorship and commercialization enabled them to get further funds of their own from earnings, so they have been able to spend $1,750,000 developing these pieces of tandam equipment.

If now the AEC or some other agency asks for equipment closely related to this kind of equipment, the obviously qualified source is that very company. If that company is asked to undertake developments under a policy by which it will lose all new inventions, and perhaps also be threatened with the loss of its existing commercial inventions, it will certainly be reluctant to work under such a policy. If, as a result, it withholds itself from working with the AEC or other Government agency, and the Government is therefore obliged to turn to competent but inexperienced physicists and engineers, the work

staffs, licensing organizations, auditing groups, and the like. This is an expansion of socialization, and we believe it to be undesirable in a free enterprise economy.

Is Government to embark on a patent litigation program based on infringements discovered by an investigative group against infringing taxpayers who have according to the supporting argument, already paid for the making of the invention through taxes? If payment of tribute to a contractor is double payment, is not similar payment to the Government still double payment? If exclusive license are granted, we then have the Government favoring one citizen to the exclusion of another. Is this wise or desirable?

The British experience with commercial licensing of Government-owned patents has been that the new agency operates at a substantial financial loss. Thus, we may expect a like U.S. agency not to relieve the taxpayer of any element of "double" payment, but to add a new "triple" burden. See report 6 NASA, December 23, 1960, "Administration and Utilization of Government-Owned Patent Property."

Acquisition of title by Government could also lead to direct competition with private enterprise through the setting up of Government corporations to exploit patents owned by Government. The maintenance of a healthy free enterprise system requires, we believe, minimum Government interference and competition.

F. It has been argued that public control of patents will assure free and equal availability to all

If patents are to be free to all, there is no need for Government ownership of patents—dedication of the inventions should be sufficient. But by the same token, if this is so, what incentive remains to exploit?

G. Government ownership advocates have argued that title in Government is necessary to prevent monopolization, i.e., that a contractor should not be allowed to build up a preferred patent position

In the early development of atomic energy under the necessarily strict secrecy requirements at that time, perhaps inflexible acquisition of title was justifiable, although it is believed that such justification, if ever sound, has long since passed. Actual monopoly by patent of a substantial industry is practically impossible in most fields due to the depth and breadth of technology possessed by thousands of individuals and hundreds of business organizations, laboratories, and schools. Furthermore, the development and growth of antitrust principles with respect to monopolization by patents clearly eliminates this danger. Whether the patents involved derive from private or Government-sponsored effort.

It has been suggested that there are situations when avoidance of undue concentration or preferred position in a new technology may be more important than patent incentives. The George Washington Foundation report finds: "That undue concentration would result from the license policy is a possibility so negligible that it may be disregarded." This strongly suggests that Government need not take title for this reason. The antitrust law, of general application to monopoly situations, is a far better and more just vehicle for the purpose than a shotgun policy of taking inventions from all creative contractors. We believe that more healthy competition will be throttled at birth, than monopoly thwarted, by blanket taking title by the Government.

H. It has been argued that title in a contractor is wasteful in that it compels competitors to design around the patented invention

This argument attacks the soundness of the patent system itself.

Actually, competition in designing to avoid a patent is a high form of competition. It provides the most rapid progress of the useful arts through efforts to render obsolete the earlier achievements of competitors. The benefits the Government as well as the public, where copying the product of an earlier designer is stagnation. The monopoly effect of a patent on competitors frequently leads to better or cheaper products, or both, and often opens the door to still other innovators and inventors.

The fact that a patented product may not be copied with impunity makes it necessary for other manufacturers to do their own original development work, resulting both in better products and in wider variety of products.

Copying hinders advance and promotes caution and drabness—it clearly slows down progress of the arts. The availability alternative designs both expedites progress in the public benefit and promotes a dynamism and richness of variety in our economic life.

Mr. HOLST. The problems of the Department of Defense or the space agency, landing a man on the moon or whatever it may be. That is the first objective, and the patent policy should be consistent with that objective.

Senator MCCLELLAN. Each agency should determine how it can best get its problems solved the quickest.

Mr. HOLST. That is right.

Senator MCCLELLAN. That is number one in the policy.

Mr. HOLST. That is correct.

Senator MCCLELLAN. All right.

Mr. HOLST. And it seems to me that to do that the policies under which the Government operates should attract the most competent and most experienced contractors to work on the Government's problems. And the policies must likewise secure for the Government agency which is placing the contract the right to use the results of the contract work.

Senator MCCLELLAN. Just that agency or all agencies?

Mr. HOLST. I am coming to that.

I mean the Government as a whole should get the right to use the results of contract research. But I think it must be recognized that the public benefit should also be taken into account, and the public interest may not be served by exactly the same policy that a specific agency might wish for its own right.

Senator MCCLELLAN. All right. Now I am trying to follow you. The first objective should be to get the results you want the quickest?

Mr. HOLST. That is right.

Senator MCCLELLAN. No. 1. No. 2 is what?

Mr. HOLST. Get the most competent individuals that can be enlisted to work on those problems.

Senator MCCLELLAN. That can be taken for granted almost.

Mr. HOLST. That is right.

Senator MCCLELLAN. No. 3 then?

Mr. HOLST. No. 3 is to secure to the Government the right to use the results of the contract work.

Senator MCCLELLAN. No. 3. I think we can take that for granted, if we pay for it. We ought to get the right to use it.

No. 4?

Mr. HOLST. No. 4, which is not so obvious, secures the widest possible benefit to the public?

Senator MCCLELLAN. No. 4. After the Government gets what it needs, after it gets its first objective, after it accomplishes that——

Mr. HOLST. Yes.

Senator MCCLELLAN (continuing). The next consideration should be how can the Government provide for this to best serve the public interest?

Mr. HOLST. That is correct.

Senator MCCLELLAN. Very well, I understand you now.

Mr. HOLST. If we agree on those objectives, it seems to me that we should then consider how can these objectives best be achieved. And I would say that first comes enlisting the most able contractors, the ones with the most obvious talent in their organization. But, second, contractors with prior experience that is as close as possible to what the problem deals with. This is significant because the organization with the most pertinent experience may also have com-

businesses. Naturally, imitators are not encouraged by a patent system of any sort and may often be hindered by one. Conversely, a patent system, based on a limited monopoly grant, may be the foundation necessary to the birth and survival of a creative small business.

A small creative contractor, or subcontractor, if it holds title to its Government-sponsored inventions, can prevent competition from others including the industry giants; but if title is held by the Government, there is nothing to keep the big company from adopting the subject matter of the small firm's invention and with its superior engineering, production, distribution, and advertising capabilities soon taking over the small company's share of the market. The small company surely most benefits by the exclusive patent right.

L. It has been argued by Members of the Congress that British Government has long taken title to a contractor's inventions

Representative B. F. Sisk of California on February 9, 1961, stated, in a paper read before the Federal Bar Association, that for the past 50 years patent rights for work financed by the British Government belong entirely to that Government.

Mr. Sisk may have been misinformed or only half informed. A London patent attorney advises that any inventions resulting from work carried out in Government research establishments becomes the property of the Government but "as regards inventions arising out of research and development contracts, the British contractor is normally allowed to retain title, subject to free use of the invention for British Government purposes." This appears to be the same as or similar to the DOD policy followed to February 1961.

We have no knowledge of the adoption of a title policy by any other nation, and are informed that Euratom, the European international atomic energy authority, has recently renounced a move in that direction.

M. Retention of title by contractors has been described as a "giveaway program"

Is this policy a "giveaway"? If so, how much is given away?

Senator Long of Louisiana stated that in 1959, the Government financed $7.9 billion of research and development by industry. He implies that this entire sum is the cost of making inventions. If his implication is correctly understood, his position is obviously incorrect.

It might be enlightening, if it were possible, to compare the commercial value of inventions made under Government R. & D. contracts with the face value of the contracts. It might also be enlightening, if it were possible, to segregate that portion of contract performance spent on "inventing." This, it is predicted, would again be an exceedingly modest proportion of the total. See the George Washington Foundation report pages 364 and 378. The report concludes "there is therefore scarcely any basis for the charge that the license policy results in a "giveaway."

The Government awards not a single cent for the making of inventions. The usual contract price covers the development of a device for governmental use—nothing more. The Government gets what it paid for—nothing less.

Indeed, under DOD practice, inventions are "something for nothing," because its regulations forbid any increase of contract price based on the inclusion of a grant of a license to the Government. This appears to be the opposite to a "giveaway."

If the number and value of inventions made under Government contract are relatively few and small, why are contractor's concerned?

Because some of these inventions are important and necessary to enable him to maintain a reasonably competitive position.

SHORT BIBLIOGRAPHY

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On inventors' and employers' rights and duties: "Arbeitnehmererfindungen," by Heine-Rebitzki; Hermann Luchterhand Verlag, Berlin, August 1957.

On approach of State governments sponsoring research to their contractor's patent rights: Chemical Week, December 71, 1960, p. 77 et seq.

A survey of the current industrial research picture in the United States: U.S. News & World Report, May 22, 1961, p. 102 et seq.

low temperature research being carried on in the United States depended on this equipment. It is fair to say in addition that personnel trained on this work have carried a major responsibility for the development of techniques for the loading of the Nation's liquid fuel rockets.

Peter Gray Corp., 286 Third Street, Cambridge, Mass.

This small business produces a patented spark plug cover that is used on virtually all outboard boat motors and on chain saws and similar appliances. The cover prevents grounding of the engine by water rained or splashed on the engine block. The safety and reliability of the engines is correspondingly improved.

We are personally familiar with the development and finacing of this product and can testify that exploitation would have been impossible without the limited protection of patent coverage.

The Kontro Co., North Main Street, Petersham, Mass.

With a highly qualified but small staff this company designs extremely efficient high-speed vacuum separators for processing pharmaceutical, food, and chemical products. The equipment permits a degree of purity and separation not previously possible. Its equipment is finding wide acceptance in this country and the free world.

Patent protection has been essential from the outset. Not only has it justified the establishment of the company but it now comprises its only protection from larger U.S. and foreign organizations in the field. In this instance, as usual, the patented process comprises an improvement over prior methods, thereby conferring benefits on user, the general public, owners, employees, and Government.

Cryovac Corp. (division of Grace Chemicals), Cambridge, Mass.

This company produces a variety of wrap materials, the most important of which is a clear plastic bag in which poultry products are packaged for storage and freezing. It is proper to say that without this product the quality and preservation of much "fresh" frozen food would be very poor. This type of container by permitting a close airtight fit to irregularly shaped products permits vacuum packing with resulting freedom from oxidation, dehydration, and contamination.

Cryovac has depended for its development and continuous improvement on the existence of patent protection. Because of such limited protection it has been able to make the investments necessary to offer a constantly better and more extensive service. The results have benefited the public, the company's owners and employees, and the governments of the several communities where its plants and outlets are located, as well as contributing to Federal taxes and the preservation of military food supplies.

10. GOVERNMENT'S INTEREST SERVED BY ENLISTING ORGANIZATIONS WITH DEVELOPED STAFF AND BACKGROUND

A point which should not be overlooked in developing a Government patent policy is the importance to the Government of being able to anlist the most competent organizations on Government assignments. Since military and space developments frequently require for their solution the highest levels of skill, they pose extremely difficult and indeed pioneering problems. Since such developments are both urgent and involve very large expenditures, it is particularly important that the Government have the benefit of organizations whose staff and facilities are already equipped to deal, as closely as possible, with the fields of technology or economics involved in the Government assignments.

Competence of the type sought for difficult Government work is most likely to be found in organizatitons already working in the field, or in areas closely approximating the field of interest to the Government. It is exactly such organizations which have existing, applicable know-how or facilities, or are in the best position to develop the required new knowledge with a minimum of time and cost to the Government in becoming educated in the area. This prior competence, it should be noted, has been developed without expense to the Government and results in further savings to the Government. It must be recognized that a Government policy requiring the surrender of know-how or patent results resulting from the use of such an organization's staff or facilities jeopardizes the organization's established business and is likely to deter it from offering to assist in Government assignments. Under a policy of taking only royalty-free

establish. Such agency head shall accord an applicant an opportunity for hearing on such application, and shall make findings as to the terms and conditions of the compensation, if any, to be paid to such applicant for such greater right and such agency head shall cause his executive agency to pay such compensation to such applicant in accordance with such terms and conditions from any funds authorized and appropriated for use by the agency in purchasing supplies or research or development. Such compensation may be paid by such executive agency in periodic payments or in a lump sum. In determining the terms and conditions of any such compensation such agency head shall not include any value for the irrevocable, nonexclusive, nontransferable, royalty-free license required to be reserved to the United States, under the provisions of subsection 2(b) and shall take into account—

(1) the value of the contribution of the United States to the making of such invention;

(2) the aggregate amount of any other sums which have been expended by the applicant in developing such invention;

(3) the value of the background activity, if any, of the applicant out of which the invention was developed;

(4) the degree of utility, novelty, and importance of the invention;

(5) the actual and potential use, if any, of the invention; and

(6) such other factors as such agency head shall determine to be material.

SEC. 5. (a) Whenever the United States has acquired for itself only a nonexclusive license pursuant to the provisions of section 2 and a United States patent has been issued on an invention so licensed;

(1) any person may at any time after 3 years from issue date of the patent apply to the head of the executive agency involved for a nonexclusive license under the patent;

(2) each such application shall set forth and support the nature and purpose of the use which the applicant intends to make of the license, the steps taken by the applicant to obtain a license directly from the owner of the patent, and a comparison of the anticipated effect on his activities likely to result from obtaining, or failing to obtain such license.

(b) Whenever any application has been made pursuant to subsection 5(a), the owner of the patent shall be supplied with a copy thereof and the agency head shall give the patent owner and the applicant due opportunity for hearing thereon.

(c) If, after any hearing conducted pursuant to subsection 5(b), such agency head finds that—

(1) a demand exists for the invention covered by the patent;

(2) this demand is not being reasonably satisfied;

(3) it is in the public interest that the demand be so satisfied;

(4) the applicant has adequately demonstrated his ability to supply a substantial portion of the demand if licensed; and

(5) the applicant cannot otherwise obtain a license from the owner of the patent on reasonable terms for the purposes stated in the application; such agency head shall license the applicant for the purpose stated in the application at a reasonable royalty payable to the patent owner. In determining such reasonable royalty, the agency head shall take into consideration the extent of effort by the patent owner and his privies to develop the invention to the point of practical application.

SEC. 6. No license under any particular invention or patent granted pursuant to section 2 or section 5 hereof shall be deemed to grant any license by implication under any other invention or patent.

SEC. 7. Any person aggrieved by any determination under section 4 or section 5 hereof may obtain a review of such determination in the United States Court of Customs and Patent Appeals by serving a notice of appeal upon the agency head involved within sixty days after the making of such determination.

SEC. 8. As used in this Act—

(a) the term "executive agency" includes any executive or military department of the United States, any independent establishment in the executive branch of the Government, the Government Printing Office, the Library of Congress, and any wholly owned Government corporation.

(b) the term "agency head" means the head of any executive agency, except that (1) the Secretary of Defense shall be the agency head of the Department of Defense and of each military department thereof, and (2) in the case of any authority, commission, or other agency, control over which is exercised by more than one individual, such term means the body exercising such control.

Patents, disclosures, patent applications

Contractor	Item	Patent application No.	Patent application date	Patent No.	Date patent granted
Reed Research	Article handling & sorting apparatus.	478,694		(1)	
	Optical photoelectric sensor	460,385	Oct. 5,1954		
	Drum culler	508,069			
		508,105	(2)		
	Mail input	633,284	Sept. 11,1957	2,961,085	Nov. 22,1960
	Vacuum belt shingler	696,393	Nov. 11,1957	2,905,309	Sept. 22,1959
	Output letter feeder	684,800	Sept. 18,1957	2,941,654	June 21,1960
	Feeder and multiples eliminator.			2,941,653	Do.
	Automatic mail canceling apparatus.	686,529	Oct. 26,1957		
	do	700,860	Dec. 5,1957	2,928,337	Mar. 15,1960
	Time changing mechanism	700,861	do	2,911,279	Nov. 3,1959
	Mail handling apparatus	724,646	Mar. 22,1958		
Emerson	do	732,330	May 1,1958		
	do			2,929,490	Mar. 22,1960
	Stamp detection sensing system.	(3)			
	Mail packet dressing equipment.	(3)			
	Top edge dressing device	(3)			
	Constant force stacker	(3)			
	Key ejector	705,861	Dec. 30,1957		
	Chute gaging belt arrangement.	705,872	do		
	Mail culling equipment	706,118	do		
	Letter movement device	(4)			
	Pneumatic conveyor	(5)			
	Pneumatic stacking device	(5)			
	Air jet gating system	(5)			
	Envelope feeding mechanism.	(5)			
	Mail conveying device	786,134	Jan. 12,1959		
	Code element shifting device	800,891	Mar. 20,1959		
	Binary coded track means	827,066	July 14,1959		
	Endless conveyor	844,476	Oct. 5,1959		
Pitney-Bowes	Mail handling apparatus	850,180	Nov. 2,1959		
	Decelerating device	4,800	Jan. 26,1960		
	Document handling apparatus.	58,666	Sept. 27,1960		
	Mail handling mechanism	665,336	June 12,1957		
	Mail stacking device		July 11,1957	2,926,910	
	Letter feeding device	682,346	Sept. 6,1957		
	Mail canceling device		Jan. 14,1957	2,887,951	
Burroughs	Training device, keyboard	13,320	Mar. 7,1960		
Intelligent Machines Research.	Hi-speed character sensing equipment.	(5)			
	Time interval marking device.	622,981	Nov. 19,1956		
Nuclear Chicago	Information, coding and sensing.	800,554	Mar. 19,1959		
ITT	Message compression	(7)			
ITT (PB Sub)	Envelope letter	(7)			
	Opening envelope letter and presenting it.	(7)			
	Refolding sheet	(7)			
	Mechanical coding and sorting device.	644,017	Mar. 3,1957	2,901,089	Aug. 25,1959
	Differential pressure envelope printer.	719,133	Mar. 4,1957	2,901,969	Sept. 1,1959
	Mail stacker	719,081	do	2,904,335	Sept. 15,1959
	Code printing and sorting station.	721,131	Mar. 13,1958	2,912,925	Nov. 17,1959
	Single letter feeding device	810,941	May 4,1959		
Rabinow	Optical systems	665,763	June 14,1957		
	Photoelectrical keyboard	810,940	May 4,1959		
	Magnetic recording on pieces of mail.	810,760	do		
	Article sorter		May 5,1960		
	Code converter		(8)		
	Drum inserter		May 24,1960		
	Combined vacuum pickup and printer.		(8)		
	Rotary code wheel setter		May 24,1960		
Food Machinery	Machine for sorting mail	(3)			
Aerojet General	Parcel sorting system	SN 4322	Jan. 25,1959		
	Chute for same	(9)			
	Electromechanical memory for same.	(9)			

[1] Has been allowed.
[2] No title reported.
[3] None to be filed.
[4] Application filed; no number reported.
[5] Not patentable.
[6] Publicly disclosed.
[7] Patentability not yet determined.
[8] June 1960.
[9] Application being prepared.

in inventions made by Government employees. In any event there is little point to legislating as to the determination of those rights without previously planning for and legislating upon the administration thereof.

I am strongly in favor of legislation in this area. It has been talked of for 75 years without being realized. There are many urgent reasons why it is needed. However I am opposed to passage of this bill as it now stands. It should not be enacted unless and until there is provided by statute a firm policy and plan for satisfactorily administering the patent rights which may be obtained thereby. A statute enacting such a policy and plan need not necessarily precede passage of a bill relating to the determination of rights in inventions made by Government employees; but the regulation of the administration as well as the determination of those rights should, at the very least, be integrated in one public law.

As the bill now stands, a policy is to be established under law which will undoubtedly lead to the assignment of many thousands of inventions to the Government. Is this good or bad? The answer to this question depends upon one's viewpoint. The Government employees who make those inventions may not think it is so good because, if they could keep the title to their inventions and give the Government only a nonexclusive, royalty-free license, they could possibly supplement their incomes by arranging to assign or license the remainder of their rights to commercial organizations or exploit their inventions themselves. Some Government executives may not think it is so good because they would like to be able to induce skilled scientific and technical workers to accept or remain in Government positions by offering them such an attractive advantage as the retention of commercial rights to their inventions. Other Government executives may think it is very good because they adhere to the view that the Government, like most private concerns, should be entitled to retain full rights to all inventions made by its employees, particularly when those inventions are made with the aid of Government time, funds, facilities, etc.

In the countless discussions which heretofore have been held on this subject, both in the Congress and in the various departments of the executive branch, the viewpoints just described have been the ones given the most attention. I submit that there is one viewpoint which heretofore has been overlooked and which is nonetheless worthy of equal if not greater consideration than the others. I speak of the remaining citizens of this country, not just the Government supervisors or employees, but all the others. I also speak of the mandate in our Constitution (art. I, sec. 8), which directs that patents for inventions are to be granted by the Government in order to promote the progress of the arts and sciences. A Government charged with such a duty has the responsibility of seeing that it does not do anything to destroy the value of patents—not to destroy the very thing it granted for the purpose of promoting the welfare of our people.

With such a responsibility, the Government should strive to evolve a program whereby inventions arising out of Government-sponsored research and development will tend to be further developed so as to better our way of life. The decision as to whether the Government or its employees should be given title to the latter's inventions would then be contingent upon the benefits which the people of our country stand to gain therefrom. If, for example, the Government decides a patented invention will require substantial capital investment in order to develop it to a commercially useful item, it will have to decide also whether the Government can best do this, or whether this can best be accomplished by licensing one, or more than one, outside facility. The Government may decide that it cannot properly engage in a capital investment or development program, or a patent licensing program; if so, it should leave title with the employee inventors, possibly with some contingency that the title will become void if the inventor fails to license and/or prove commercial working of the invention within a fixed period of years.

To my way of thinking, the establishment of criteria for determining rights to inventions as proposed in subject bill would be meaningless. It would establish certain rules or conditions under which title to inventions would be assigned to the Government; under other conditions, the Government would receive only a nonexclusive royalty-free license; under still other conditions, the employees would retain full title (as in cases where their invention had absolutely no connection with their work and they made the invention at home). The proponents of the bill consider this to be a "fair and equitable" way to determine who gets what rights. Such criteria are, in fact, now being employed by the Chairman of the Government Patents Board in the administration of Executive Order 10096 which subject bill is intended to replace.

sive licenses under such a federally owned patent. Contractors generally opopse this policy and contend that contracts would cost our Government more under such a policy.

The experience of the National Aeronautics and Space Administration, under a statute which is clearly directed toward title in the Federal Government, led that agency to seek modification of that statute to allow more discretionary authority in the disposition of these property rights.

The fact that many contractors with which NASA deals also deal with the military organizations, which do not have such statutory directions favoring title in the Government, undoubtedly makes the problem of negotiation more difficult for NASA. Nevertheless, from consideration of NASA testimony before the Select Committee on Small Business, it appears that other factors might very well result in the same quest by NASA for more freedom in its contract negotiations.

It seems clear that at this time imposition of the title policy across the board will cause problems and will be disruptive to contract negotiations.

The sample inquiry recently undertaken by the Patent, Trademarks, & Copyright Foundation of George Washington University revealed that only 13 percent of patented inventions obtained by contractors from Federal research and development contracts have been put to commercial use. That study expressed some reserve with respect to the significance of that figure, but it is of the same magnitude as that arrived at by inquiries of defense research contractors made by this subcommittee where the figure was less than 10 percent. These figures indicate that only a small percent of resulting discoveries which are patented have demonstrated commercial worth.

In the course of investigation of this matter, concern has been demonstrated with respect to the know-how that is developed by the contractor and that this know-how is in some way related to his retention of title in patents which may develop.

This know-how results from performance of the contract and, in our opinion, bears little, if any, relation to development of patentable material.

If, as proposed by these bills, all patents are vested in the Federal Government, techniques and nonpatentable know-how will be developed and will, nevertheless, remain with the contractor.

In this connection, a word of caution appears warranted concerning preparation of patent applications by the contractor under a policy precluding ownership of such patents by the contractor.

These applications are time-consuming, and from the contractor's point of view it seems inevitable that, if there could be any question as to whether the development under consideration would qualify as a patentable advance in the art, it would be classed as a mere technical development or know-how not qualifying as a patentable advance with no publication of the development.

The Department of Commerce urges that efforts be made to resolve this matter and avoid precipitate adoption by statute of an absolute rule which is fraught with unknown dangers.

In its investigations, this subcommittee, as stated above, raised real questions as to whether the public interest is properly served by giving the contractor the patentee's right of exclusion of others from the fruits of discoveries financed by the Federal Government. We would

(2) The Government, by constitutional mandate, is obliged to do all in its power to implement the value of patents.

(3) The indiscriminate, nonpurposeful, administration of Government-owned patents, as presently exists, is therefore violative of the constitutional mandate.

(4) Aside from the dictates of the Constitution, it is just plain commonsense for the Government to decide upon an integrated program whereby the patent rights which are created as an incident to the billions of dollars it spends on research and development are utilized to the maximum advantage of all the people.

(5) To decide how to divide patent rights between the Government and its employees in order to be "fair and equitable" to any group (the employees themselves, any department or agency of the Government, or any nongovernmental unit) must be a secondary consideration to deciding how to use patents to the best advantage of all. To do otherwise is akin to overlooking the biblical teachings of King Solomon * * * we would be carving up the "child" to be "fair and equitable" to the false as well as the real "mother," without concern for the welfare of the child itself. Patents are children spawned by the Constitution. Patent rights which are born with the aid of our tax dollars are even more so the children of all the people (the "real mother"). Shall we carve up those rights just to please a few "false mothers," or shall we make like a Solomon so that the children will live and grow to maturity?

As the National Patent Planning Commission declared in its second report (H. Doc. No. 22, 79th Cong., 1st sess., Jan. 9, 1945, at p. 8):

"The main objective should be to insure that the invention is brought into commercial channels at the earliest possible moment."

Just how this is done can readily be worked out once the policy is firmly evolved. I have suggested one way (at p. 173 of my book, "Patents—Their Ownership and Administration by the United States Government"). There undoubtedly are many other ways. The entire program can surely be put on a businesslike basis with the same goals that exist for any private enterprise that invests heavily in research and wants to assure that the inventive products thereof are fully protected so as to make possible the maximum commercial exploitation thereof. The only difference between the modus operandi of the Government and of private enterprise is that if the former cannot see its way clear to invest the dollars and man-hours needed to develop an invention, instead of letting the invention go to seed, it would seek to induce private enterprise to do the job. The potential commercial value of an invention, whether developed by the Government or by private industry, would also have to be weighed against other, more or less intangible values such as the advantage of leaving title to inventions with the employee-inventor as a tool of personnel administration.

There are, as one may expect, arguments which have been advanced against the idea of the Government administering its patent rights as by sale, license, etc. I think the arguments are invalid. In any event, instead of talking about them as we have for three-quarters of a century, it might be high time to give it a try. The British have done it with apparent success (cf. Capt. George N. Robillard's article, "Governmental Patent Administration, Policy, and Organization," at p. 270 of the December 1957 issue of the Patent, Trademark, and Copyright Journal of Research and Education published by the Patent Foundation of the George Washington University—particularly pp. 270, 271, 273, 274, 281, 282, and 285). If such a plan cannot be made to work, then why not drop the entire idea of determining who gets what share of the inventions, by whatever criteria, and just leave the title to all employee inventions with Government employees (subject to a nonexclusive, royalty-free license to the Government in the event the Government made any sort of contribution). This will save money, considerable trouble, and may even lead to the exploitation of many such inventions as a result of licenses or assignments which the employees themselves will grant.

free license for their use in fulfillment of a Government contract, or for a license for commercial exploitation upon terms and conditions (including royalties or other fees) determined by the Administrator of the Federal Inventions Administration to be just and equitable. It is believed that these provisions of the bill would seriously deter product research and improvement by companies while holding Government contracts, or would tend to channel such contracts to companies having no significant product improvement program.

While we do not favor enactment of S. 1176 because we are not convinced that there is the necessity for one uniform policy with respect to ownership of inventions originating through the expenditure of public funds, we do favor the bill's general concept of centralized administration and management of Government owned patents and licenses. This approach should facilitate maximum utilization of scientific and technical information both within the Government and the civilian economy. Furthermore, we favor the centralized administration of a program of awards to individuals for inventive contributions as provided for in S. 1176.

The Bureau of the Budget has advised that, from the standpoint of the administration's program, there is no objection to the submission of this report to your committee.

Sincerely yours,

JOHN L. MOORE, *Administrator.*

GENERAL SERVICES ADMINISTRATION,
Washington, D.C., May 16, 1961.

HON. JOHN L. MCCLELLAN,
Chairman, Subcommittee on Patents, Trademarks, and Copyrights, Committee on the Judiciary, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in partial reply to your letter of March 22, 1961, as supplemented by conversation with Mr. Herschel F. Clesner, assistant counsel of the subcommittee, concerning Government patent policy. GSA's reports on S. 1084 and S. 1176 have been sent by separate letters.

Your letter inquires as to the effect of private ownership of patent rights which are needed to operate a Government-owned plant upon the ability to sell the plant to others. GSA has not found that the existence of such patent rights has materially affected the ability of the Government to sell commercia plants. Your subcommittee has previously raised this question with respect to certain specified plants, which are discussed below.

The plants at Luckey, Ohio, Manteca, Calif., and Canaan, Conn., for the production of magnesium by the ferro-silicon-calcine retort process, are not subject to any patent restrictions. The first two named plants have been sold by the Government and the third is to be sold pursant to a bid opening on June 1, 1961. The last-named plant is the only one now in operation for the production of magnesium and calcium, for which the plants are specially designed. The Canaan plant is now producing special high-purity magnesium. For the general production of magnesium these plants are not competitive with plants that use the electrolytic process.

The Painesville, Ohio, plant for the production of magnesium by the electolytic process was subject to certain patent restrictions, but Dow Chemical Co. has stated that no payment of license fees is necessary on the future production of magnesium at this plant. The plant has not yet been sold in view of the fact that, primarily because of the absence of a cheap source of electrical power, it is high-cost plant.

The Maumelle Ordnance Works at Little Rock, Ark., is designed to produce picric acid and ammonium picrate, both of which are explosives. The plant is not subject to any patent restrictions and was sold on March 2, 1961, to Perry Equipment Co.

The Keystone Ordnance Works at Meadville, Pa., is designed for the production of TNT. It is not subject to any patent restrictions but to date has not been sold. Negotiations are now underway for the disposition of that plant.

The formerly Government-owned plant at Louisville, Ky., is designed for the production of alcohol-butadiene, which was subject to certain patent restrictions, although Union Carbide Corp., the owner of the patent rights, has agreed to license the purchaser of the plant. It was sold to Rohm & Haas Co., which will not use the plant for the production of alcohol-butadiene.

The Morgantown Ordnance Works in Morgantown, W. Va., is designed for the production of anhydrous ammonia, and the Du Pont Co. alleges that it is

INCREASED INVESTMENT IN RESEARCH TENDS TO INCREASE PATENTS

It is a pity, indeed, that in this wonderful age of scientific accomplishment people find it so difficult universally to agree upon the relative value of patents to the welfare of the Nation. Apparently, patents mean different things to different people. To the inventor who obtains a patent and successfully employs it in suing infringers, forcing them to cease and desist use of his invention or to pay him royalties, the patent system normally will be looked upon with favor. To the would-be infringer who is thus curbed, to the inventor who fails to get a patent because his invention is ruled to be old in the art, or to the patentee who finds his patent can readily be circumvented because its coverage was too restricted, the patent system may appear to leave something to be desired. There are other such pros and cons which have been discussed in the literature much more extensively, but it is not proposed to review them here, for it is desired to focus primary attention on other issues.

Would anyone argue against the view that research and development tend to produce inventions? It would appear safe enough to consider that proposition as being an example of the well-known legal doctrine, "res ipsa." What about the proposition that inventions tend to lead to patents? Of course, not all research culminates in inventions; and not all inventions are patentable. But since it appears to be a normal desire in man to protect his intellectual property, just as any other property which he may possess, one may expect that if inventions result from research the originators will seek some form of protection such as the patent system is presumed to provide. And when patents exist which appear to bar another's path to free use of the inventions covered thereby, we have seen the seeds of new research efforts sown in an effort to "get around the patent," this leading to new inventions and a continuation of the cycle as new patents are obtained.

Until rather recently, there have been expressed considerable doubts as to whether the number of patents an individual or an organized research group obtains could be directly proportioned to the amount of time and effort invested in research and development. Now, as a result of objective studies made by the Patent, Trademark, and Copyright Foundation of the George Washington University, it appears rather clear that the number of patents obtained actually is a measure of research activity.[2] In other words, the more we invest in research and development, the greater the chances that we will discover new ideas, a good proportion of which will be patentable.

Of course, to keep things in proper perspective, one does not engage in research merely to see how many inventions can be made or how many of them will prove to be patentable. Research is entered into for many reasons, but the procurement of patents is not one of them per se; the motivation for patenting is the effect, not the cause, of research. Primarily, research programs are entered into for the purpose of finding solutions to problems, to satisfy needs or wants of some kind. Practically anyone or any group that wishes to keep abreast of the times, whether it is in the interest of national defense, the advancement of medical knowledge, the furtherance of the economy, etc., must utilize the results of someone's research.

It may be a surprise to many people that, although over $10 billion per year is currently being spent in research and development in the United States,[3] we were not always so research-minded. The Navy and some of our early industries always employed some people to develop and improve devices. No university did any more than a little part-time dabbling in research until 1876 when Johns Hopkins was founded with graduate research as one of its major purposes. General Electric, in 1900, was the first industry to set up a research organization as a separate, full-time activity. By 1915 we had about 100 industrial research laboratories, about 1,600 by 1930, and today there are well over 3,400 such facilities employing about 170,000 people.

In the first half of the 20th century the Federal Government's interest in research has grown tremendously so that a sizable chunk of our annual budget

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[2] Cf. "Productivity Surprise in Patent Scorecard," Chemical Week, July 25, 1959, p. 109, which sights reports from the Patent, Trademark, and Copyright Foundation of the George Washington University, indicating that 55 to 65 percent of all patents granted have been commercially used to the profit of the owner. The basic data may be found in PTC J. Res. & Ed., 1, No. 1 (June 1957), pp. 74–75, 89–96; Conference Supplement (1957), pp. 72–73; 2, No. 4 (December 1958), pp. 463, 472–485, 493, 495, 498, 499, 500–501.

[3] Based on National Science Foundation survey as reported in Chemical and Engineering News, vol. 37, No. 37, Sept. 14, 1959, p. 31.

Mr. JORDAN. It is our view, Mr. Chairman, that there is no one policy that is desirable for all departments of the Government.

Senator MCCLELLAN. Well, that gives me some concern. I don't see why the overall policy shouldn't be the same for the different departments of Government. I can understand that, in order to be equitable, there would have to be flexibility to modify the overall policy. I am not disputing your statement at all. I am simply seeking information.

If a policy that is applicable to the Defense Department is good and sound, why wouldn't that same policy be sound and proper for the Agriculture Department?

Mr. JORDAN. I think that it could be provided there was some flexibility to recognize the differences in the program of the Agriculture Department from that of the Defense Department.

Senator MCCLELLAN. That is the point I am making. I don't quite understand that the Government would have what we call a different policy applicable to different agencies. It seems to me that there should be a Government policy which has—I don't know the word. Not facilities. But a policy that permits of flexibility to adjust to given cases and circumstances.

Mr. JORDAN. Yes, sir, I believe that is our view.

Senator MCCLELLAN. I can't quite reconcile that either the Government ought to have one policy in the Defense Department and another in Agriculture and another in the Post Office and another somewhere else. I don't understand all of these different policies.

There ought to be one broad, general policy that it is the policy of the Government to take title, No. 1, except—and there might be many exceptions.

Mr. MACOMBER. May I comment, Mr. Chairman?

Senator MCCLELLAN. Or there ought to be a Government policy not to take title but simply taking, in all instances, a royalty-free license.

Now that states the two divergent viewpoints. Which policy should we have?

Mr. MACOMBER. Mr. Chairman, if I may comment, I think that it would be highly desirable to have some statutory guidance by way of a Government policy, and I think what Mr. Jordan is suggesting really is that the degree of flexibility that we believe would be necessary would involve almost a different policy on the part of different agencies.

Or let me put it this way:

A greater number of exceptions to the established policy in the case of one agency than in the case of another.

Senator MCCLELLAN. That may be one way of stating it. We may be splitting hairs, but I can well see that there might need to be in one agency many more exceptions. I mean the circumstances would warrant different adjustments than in another department so far as that goes. But I was trying to think in terms of an overall policy, and I am becoming more and more convinced that the legislation has got to deal largely, primarily with an overall policy, and then you have got to allow some flexibility in the administration to adjust it to the given circumstances so as to do equity.

But whether that policy should be that the Government takes title or that the Government simply takes a royalty-free license and leaves

with judgments totaling about $6.5 million. With the experience of handling patent claims arising out of and since World War I behind them, it has long been apparent to Government procurement officials that something ought to be done to prepare defenses against inevitable patent infringement claims.

Since half the research in the country continues to be financed by Federal funds, it seems reasonable, to expect that some of the inventions resulting from that investment, if patented and available for use without further charge to the Government, might form the basis for defense against unwarranted patent claims and lawsuits. Many companies apply for patents on their developments purely for defensive reasons, i.e., to forestall the possibility that someone else will make the same discoveries, patent them, and charge royalties which could have been avoided if the former had obtained the patents. The Government has exactly the same stake in protecting its research investment. This is as it should be, and every taxpayer should insist that our Government take steps to gain that protection.

This problem has been considered in and out of the Halls of Congress for almost 40 years. Various Government and bar association committees have worked on it, as have many organizations purporting to represent certain segments of industry. Practically all of these groups have published their findings and/or recommendations. In almost every instance, there has been no disagreement with the general proposition that the Government should obtain rights to inventions which are primarily paid for out of Federal funds, so as to protect against the possibility that it will have to pay someone a patent royalty for the use of something it caused to be developed first. There has been considerable disagreement, though, as to what sort of protection the Government needed or should seek to obtain.

GOVERNMENT'S RESPONSIBILITY RE PATENTS ARISING FROM GOVERNMENT-SPONSORED RESEARCH

Many conscientious Government officials in the legislative and executive branches thought they saw a twofold responsibility which they should discharge with respect to patents on inventions arising out of federally financed research. In addition to the consideration of using them for purely defensive purposes, they looked upon them as Government property to which all of our people should be equally entitled. On its face, there seems to be nothing wrong with this proposition; if there are benefits to be enjoyed from any piece of Government property, it is normally proper that every citizen should have an equal right to share them. But the problem is not so simple. There are at least two contingencies which make its solution on an equitable, practical, and sensible basis quite difficult.

One is that in most cases the inventions which arise out of a Government contract cannot clearly be defined and delimited as having been made entirely at the Government's expense. Government procurement authorities quite naturally try to obtain research and development contractors who have a background of experience, equipment, and facilities to tackle a particular problem. They know that, as a rule, they stand a better chance of getting a satisfactory solution, in the least amount of time and at the least expense, if they call on people having a commercial background of applicable know-how. Very often a contractor is selected and agrees to accept a contract because it has one or more patented or patentable inventions in its "bag of tricks" which both the contractor and the Government contracting officials are sure will solve the Government's needs most satisfactorily. It then becomes a question of balancing the equities. How much of the end result was paid for by the Government? How much was paid for by the contractor? This can cause a big enough headache when a company which manufactures nuts and bolts is asked to design a new product that is only slightly different from its commercial line. The problem naturally is magnified many times when the contract is a guided missile in which the contractor may find it expedient to use numerous and complicated circuits or tube elements it may develop for television at its own expense.

The second contingency, which makes it so difficult to decide how to determine who should get the patent rights arising out of Government contracts, is the net effect on the utility to the Nation of the inventions themselves. It must not be forgotten that the people of this Nation, the Founding Fathers, and all their descendants, have instituted and developed a patent system for a very special,

Then I am, of course, here thinking of the case where the prospective research contractor has a great deal of background in the area and has brought his research to a considerable distance along the road.

Mr. WRIGHT. Well, he has it to a point where he can talk about some specific area where either he has made inventions or he thinks some are likely to result. Is that what you have in mind?

Mr. MACOMBER. Not necessarily that far, but a case where the contractor has done a great deal of work in the same general area so that what he did under this research contract would be related to what he has been doing, and it is for that reason that he is the best qualified contractor to do the work.

Mr. WRIGHT. Well, let me ask you a question in that connection.

I noticed in your letter that you refer at one point to the policy that the Federal Aviation Agency has adopted of attempting in any event to recover its contributions to R. & D. to the extent that the contractor is able to make a successful commercial use of them.

Do you see any reason why that policy couldn't be employed? I mean no matter how much work the contractor is getting, isn't he fairly compensated if the Government interest is limited simply to a potential recovery of what it has contributed to the development, assuming that it is successful?

Mr. MACOMBER. On the basis of our very limited experience, I don't see any problem with that kind of policy at all. I think it would be a desirable one. It would, for one thing, serve in part at least to overcome the argument of the believers in the title policy that unless the Government takes title the public pays twice for the same piece of work.

Mr. WRIGHT. Mr. Howard, of that Agency, testified here at the last hearings, and he said he had had no difficulty in persuading any contractor that this was a desirable field. There is just one other field I want to touch on.

You said you didn't have much research and development responsibility, but you do have responsibility for procurement and disposition of Government-owned production facilities, don't you?

Mr. MACOMBER. We have Government-owned production facilities for disposal; yes, sir.

Mr. WRIGHT. In that connection it sometimes occurs, does it not, that in one of your Government-owned plants a patented process may be of the kind that is built into the plant? That is, you may not be able to operate the plant successfully without a license under certain patented processes?

Mr. MACOMBER. There have been a few instances; yes, sir.

Mr. WRIGHT. Well, in those instances I take it your plant is more difficult to dispose of, is it not, unless you have title to the patent so that when you sell the plant you can sell the right to use the built-in processes as well as the bricks and mortar?

Mr. MACOMBER. I think the answer to that is, theoretically, "Yes" so far as our limited experience has gone. We do not know of an instance where the lack of Government title to the patents has seriously handicapped our disposal effort.

Mr. WRIGHT. Well, apart from handicap, I was just thinking in terms of the price that the Government realizes.

You mean it makes no practical difference in how much the Government is going to get on disposition of the plant whether or not it is

conceived by the contractor, possibly at some considerable expense, before it accepted the contract. Now the contracting officer is authorized to consider and exclude from the licensing grant any invention which is covered by an issued U.S. patent or pending U.S. patent application filed by or on behalf of the contractor prior to the contract. To justify such exclusion, the contracting officer must find that at least one of the following conditions exist:

(1) The contractor has spent sums to develop the invention (e.g., research and development costs and expenses for preparing and prosecuting the patent application) which are relatively large compared to the cost of the proposed contract or at least of that part of the contract which appears likely to involve the invention in question;

(2) The practicability of such an invention has been established by engineering design;

(3) The invention concerns a basic material, and it is not the purpose of the contract to develop such material;

(4) The invention is useful only for military purposes and the contractor does not have facilities for furnishing the item to the Government in production quantities.

It certainly appears reasonable for the Government to demand a license to any invention first actually reduced to practice in the performance of its contract, but only if the invention was not covered by a pending U.S. patent application or issued U.S. patent. If no application is on file or patent issued, there may always be a source of dispute as to whether an invention later proved to have been reduced to practice under the contract is identical with one the contractor claims to have made before receiving award of the contract. With the application or issued patent a matter of record such a dispute can be more readily settled administratively, or by arbitration, or by court action if necessary.

But what is to be gained by demanding a license if the contractor has a patent on an invention but has not yet made a model or sample of it, unless he meets one of the four conditions just described? Undoubtedly, the contractor will get a "break" in that he will be given funds to test out his invention and thereby eliminate or minimize financial risk on his part. The Government should not complain about this so long as it receives the benefit of the invention by successful performance of the contract. The majority of the people, who, after all, the officials of our Government represent, should not complain because if the invention proves useful, whether in the defense of our Nation, or in the advancement of the arts and sciences, they will receive derivative benefits. A few competitors of the contractor will, perhaps, be put to a temporary disadvantage if the invention proves to have commercial significance. But, in the likelihood that such an invention is involved, it is just as probable that the owner thereof will seek and find other sources of financial support and then reduce his invention to actual practice without Government contract assistance. If this happens, the Government loses out in failing to get the benefit of what appears to be a qualified contractor with a potential answer to a Government problem. What is more, if the invention gets on the market free of Government aid, the Government proper, and the people-at-large will still be liable to pay the inventor, in one way or another, for the right to use his invention.

What is wrong with letting the inventor capitalize on his invention in keeping with the principles of our patent system? If the Government subsidy he appears to be getting distorts our perspective, then think of the contract sum as a loan. The Government makes loans for many other purposes, such as for subsidizing a business undertaking or a farming enterprise; why not for developing a worthwhile invention? Successful performance of the contract would be the quid pro quo—full repayment of the "loan."

It is difficult to see the wisdom of insisting on the existence of at least one of the four conditions mentioned earlier. It only causes more hardships for the contracting officer and more delays before the contract is consummated as approvals of such exclusions are weighed and acted upon through channels. It all adds up to considerable unnecessary expense by the Government for no really worthwhile purpose.

PATENT PROVISIONS IN NATIONAL SCIENCE FOUNDATION, ATOMIC ENERGY, AND SPACE ACTS

Although the patent provisions in the current Armed Services Procurement Regulation may not be the product of any predetermined Government policy,

Senator McCLELLAN. Very good.

Any questions?

You lead off with the questions, Mr. Counsel.

Mr. WRIGHT. The only question that I wanted to explore with you: I noticed from your response this time and from our prior hearings last year there has apparently been a change in the policy that the Post Office Department pursues with respect to taking title of inventions coming out of its research contracts. I wonder if you could tell us what the change was and why you made it.

Mr. WENCHEL. The change was that up until recently the Department's policy was to take merely the license. We have now determined that we should take title to inventions made in research and development contracts.

Mr. WRIGHT. And I was wondering why, how you happened to reach that conclusion. What were the factors which caused you to change? Was it something in your experience?

Mr. WENCHEL. This change was made by the present administration. I think it may have been in part influenced by the apparent desire of this committee that this be adopted as a Government policy. But——

Senator McCLELLAN. The committee hasn't spoken out yet on it.

Mr. WENCHEL. I realize, it has not spoken officially.

Mr. WRIGHT. I think what the witness may be referring to, Mr. Chairman, was the subcommittee's report on patent practices of the Post Office Department.

Is that what you are referring to?

Mr. WENCHEL. Yes.

Mr. WRIGHT. That report did point out, did it not, that what the Post Office was doing was agreeing not to use this letter-sorting equipment that was being developed for any purpose that might be regarded as in competition with private industry. Of course, Railway Express was claiming at that very moment that the parcel post service, which might use this equipment, was in fact a competitor. Do you recall that?

Mr. WENCHEL. I recall that. The Department has not agreed that that is a correct legal interpretation of the situation. However, it is recognized that that argument has been made, and, so, it has taken that into consideration, of course.

Mr. WRIGHT. I take it, just to make sure about that, that possibility was one of the reasons for the change, wasn't it, that you wanted to be sure you weren't in a position where you couldn't use that letter-sorting equipment in the parcel post service or anywhere else in the Government; didn't you?

Mr. WENCHEL. That was a factor. However, I do believe the contractual provision could have been so modified as to have continued the license policy without having that objection present.

Mr. WRIGHT. In any event, I gather you say this change of policy is more a product of the change in administration than anything else?

Mr. WENCHEL. Yes, sir.

Mr. WRIGHT. All right.

Senator McCLELLAN. Any questions, Senator Hart?

of all such inventions to the Government, asserting that public funds have paid for the employees' services and the result thereof, and the employees should not be left with the title and the right to charge the public a royalty for the use of that which the public already has paid for in the form of salaries, etc. Another argument in favor of such assignment is based upon analogies made with the corresponding employment relationship in most private organizations.

A second group favors leaving title with the employees as an incentive to attracting qualified personnel to scientific posts in the Government service, thus offsetting the lure posed by higher salaries offered by private industry which traditionally requires its employees to assign inventions to the employer. The group urges that the Government needs only a royalty-free, nonexclusive license for its protection against claims that it may be infringing other persons' patents. Hence, why not leave title with the employees and thus help solve recruiting problems as well as the problems involved in taking title and administering patents assigned to the Government?

A third group contends that there is a "middle ground" between these two extremes, and it is the best solution because it is based on a "fair and equitable" distribution. The proponents of this position would have employees assign their inventions to the Government when the inventions were made as a result of the employees having been specifically hired and/or assigned to work on research and development problems and when the inventions were made with the aid of Government help in the form of funds, material, equipment, services, etc. Title to all other inventions not qualifying for assignment to the government in view of such criteria would be left with the employees, subject to a nonexclusive, royalty-free license to the United States.

All three of these views are adequately discussed in "Federal Employee Invention Rights—Time To Legislate" [10] by Finnegan and Pogue who, incidentally, advocated the views represented by the third group described above. Actually, as in many controversial issues, there is some merit to the position of each group. It then becomes a question of weighing those merits against offsetting drawbacks in order to arrive at any sensible conclusions. This was attempted by the present writer in a critique of the article by Finnegan and Pogue which was entitled "Federal Employee Invention Rights—What Kind of Legislation?" [11]

As in the case of inventions made by Government contractors, there has been lacking from all previous considerations regarding the disposition of rights to inventions by Government employees a much-needed fundamental philosophy. Little if any heed has been given to the end result of the proposals which would lead to the assignment of increasing numbers of patents to the Government. What happens to the inventions covered by those patents appears to have been nobody's concern. The ability or failure of those patents to contribute to the progress of the country through exploitation of the arts and sciences which they disclosed seems to have been lost in the consideration of other matters.

People inside the Government argued for various reasons in favor of one or another of the three proposals depending on the apparent needs or views of a particular department or agency. People outside the Government, except for a militant group which argued against the Government's needing any sort of patent rights—even as a defense against infringement claims—cared little about what happened to inventions made by Government employees. What those people outside the Government did not realize was the fact that there is a close parallel to be found in the reasons for either taking or leaving title to inventions of Government personnel with the reasons for taking or leaving title to inventions of Government contractors.

Congress obviously has been led through one route to see such a parallel because in the patent provisions of the Space Act it adopted much of the thinking incorporated in Executive Order 10096 [12] which presently governs the distribution of rights to inventions made by Government employees. Evidence of this fact can be found in an article by O'Brien and Parker entitled "Property Rights in Inventions Under the National Aeronautics and Space Act of 1958." [13]

It is submitted that, through quite another route, one can see even more clearly how closely parallel are the problems concerning disposition of rights to the Government contractors. This is through the overriding concept of the public's

[10] 40 J. Pat. Off. Soc. (April and May 1958).
[11] 40 J. Pat. Off. Soc. (July 1958), p. 468.
[12] 15 Federal Register 389 (1950).
[13] 19 Fed. Bar J. 255, 261 (1959).

STATEMENT OF ADAM G. WENCHEL, ASSOCIATE GENERAL COUNSEL, POST OFFICE DEPARTMENT; ACCOMPANIED BY EDWARD M. TAMULEVICH, ADMINISTRATIVE OFFICER, OFFICE OF RESEARCH AND ENGINEERING, POST OFFICE DEPARTMENT

Mr. WENCHEL. Thank you.

I am Adam G. Wenchel, Associate General Counsel, Post Office Department, and I am accompanied by Mr. Edward M. Tamulevich of our Office of Research and Engineering of the Post Office Department.

Senator MCCLELLAN. Mr. Wenchel, do you have a prepared statement?

Mr. WENCHEL. We did not propose to read a prepared statement, Mr. Chairman. We did file a report with you.

Senator MCCLELLAN. The Department submitted a letter.

You have a very brief statement here. Do you wish to have this statement of yours placed in the record?

Mr. WENCHEL. I would appreciate having it placed in the record.

Senator MCCLELLAN. We will place in the record at this point a letter from Postmaster General Day, dated April 19, 1961. Also a statement submitted this day by Mr. Adam G. Wenchel. It will appear in the record at this point.

(The documents referred to follow:)

OFFICE OF THE POSTMASTER GENERAL,
Washington, D.C., April 19, 1961.

HON. JOHN L. MCCLELLAN,
Chairman, Subcommittee on Patents, Trademarks, and Copyrights, Committee on the Judiciary, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request for the views of this Department with respect to S. 1084 and S. 1176. Since your letter indicated that the chairman is considering the general patent policy as well as these two bills, our comments deal with the general propositions involved rather than all of the detailed provisions of the bills.

Both bills would establish a uniform patent policy for all Government agencies dealing with research. In addition, S. 1176 provides for an independent agency to administer Government-owned patents.

A basic question is posed: Whether title to inventions and patents originated under Government contracts, particularly research and development, should lie with the Government, or whether it should be kept by contractors as part of their compensation, with the Government holding a nonexclusive, royalty-free, irrevocable license.

In its research and development contracts the Post Office Department has followed the patent policy established by the Defense Department, as contained in the Armed Services Procurement Regulations. This policy provides generally for contractor ownership of patents with nonexclusive, royalty-free, irrevocable license to the Government, and in certain cases where the nature of work under contract or the public interest so indicates, provision is made for Government title. This policy has been extended by the Post Office Department to include within the license mail handling operations of foreign postal administrations.

Your request for a report on these bills has provided the present postal administration its first occasion to study which policy it should follow. We have determined that the public interest would be served better by obtaining title to patents than by obtaining mere licenses. Accordingly, we propose to make future contracts for research and development contracts on this basis. Accordingly, the Department has no objection to the principle embodied in S. 1084 and S. 1176 that title to invention made in the course of Government financed research should rest in the Government.

While we anticipate that we may face some difficulties in following this policy and we may narrow our field of potential contractors somewhat, the De-

305. In effect, he called for the granting to the Administrator of wider discretionary authority to dispose of rights to NASA-sponsored inventions and patents. Presumably, a feature of NASA's patents administration will be to issue licenses to its contractors responsible for making the inventions in question. The license will be revocable at the option of the Administrator if the recipient fails to convince him that the invention has been developed to the point of practical application within 5 years from the date of issuance of the patent thereon, or within 8 years from the grant of the license. In the same period, NASA would grant other such nonexclusive, revocable licenses. By the end of the licensed period, if the invention has not been worked, NASA may revoke all nonexclusive licenses and grant an exclusive license for a specified new period of years with a similar working requirement. The exclusive licensing would be tried at that time on the theory that the nonproductive result of the nonexclusive licensing effort indicated that a factor precluding development of the invention was the lack of exclusive rights which would justify the risks of development costs.

On January 11, 1960, Representative Overton Brooks, chairman of the House Committee on Science and Astronautics, introduced H.R. 9484, a bill designed to replace section 305 so as to give the Administrator broadened discretionary authority as described above. It is submitted that passage of this bill will only be another piecemeal effort to patch up the troublesome patent provisions in the existing law. That it will not satisfy the industrial concerns of the Nation has already been indicated by the protests which were heard at a panel discussion on January 20, 1960, before the Washington, D.C., meeting of the American Patent Law Association in which more important than the voiced objections was the fact that once again we see in formation another stopgap approach to the problem of establishing a clear-cut Government patent policy.

The NASA proposal that patents arising from its contracts should be given the chance to be commercially developed is sound, but its intended method of implementation is not. By keeping title to the inventions at the outset, NASA is bound to discourage its contractors from investing heavily in exploiting inventions that may require considerable capital for their development to a point of practicality. Even if NASA, at the outset, gave an exclusive license to the contractor which made the invention, the licensee would be concerned over the possibility that NASA might take back all rights to the patent without giving what the contractor would consider to be a reasonable chance to prove that it is working the invention. But the plan to issue nonexclusive licenses is much worse; it may cause the contractor who originated the invention to lose interest, dispose of the facilities that it may have devised or set aside for developing the invention, reassign personnel to other tasks, et cetera, once the contract is over. The chances of the Government to get the contractor interested in taking an exclusive license several years after such a decision will be mighty slim indeed.

Perhaps the NASA proposal falls short of the solution advocated by the present author because of a desire to effect some sort of compromise between the demands of its contractors and the objectives believed to be wanted met by the Congress. If so, it is too bad because the proposal will surely not satisfy its critics among would-be contractors, and it will be putting Congress in the position of enacting another law that merely defers the problem instead of solving it. A revision to the Space Act's patent provisions should shift the emphasis from the current plan to leave title with NASA and merely license the contractors. In lieu thereof, exclusive title should automatically be vested in the contractor, subject only to a reversionary right in the Government upon failure of the contractor to work the invention within the previously described 5- or 8-year period. This could be accomplished by providing for the right of the Administrator to issue a rule to show cause why such reversionary right should not be exercised by the Government.

Such an arrangement would give the contractor an incentive to work the patented invention before the expiration of the designated period by giving him the assurance that he will have a guaranteed exclusive right for that time, and an opportunity to defend that right against any possible adverse administrative action if he believes he has made a conscientious effort to work the patent within that period. No contractor who has an honest intention to exploit the patent should object to such a plan because it gives him a reasonable chance to keep the exclusive rights to the invention he originated. If the 5- or 8-year period proves to be too short to do a good job of exploitation, as in cases where acts of God, strikes, or other problems beset the contractor, he could probably get more time allowed him upon appeal to the Administrator. Keeping in mind that the

Senator McCLELLAN. That is what I wondered.

Mr. COHEN. No. If——

Senator McCLELLAN. A fellow working in a corporation, the corporation has got a contract to do certain research for the Government. But in the course of doing that research, some employee of that corporation conceives an idea that if we had a certain tool, a certain machine, certain equipment, we could do this character of work, or some other work, far more expeditiously and economically. Does that patent, that invention, then belong to the Government?

Mr. COHEN. Well, it depends on, first, what the employee's contract was with his employer, and, secondly, whether this invention was in the line of the research and development that the corporation was hired to do.

Senator McCLELLAN. Let us say that the invention, the discovery which the employee makes while working for a corporation, is a certain attachment to a piece of machinery over here that would help that machinery expedite work. It seems to me that that would belong to the corporation and belong to the man who made the invention, who made the discovery. It is not related necessarily to what the Government was trying to do, finding a way to get to the moon or something else.

Mr. COHEN. In that case, probably so. If the—but that depends really on what the contract is between the employee and the corporation.

Senator McCLELLAN. What I am convincing myself of, if I am not informing anyone else, is that this thing is very complicated and I don't know how you are going to write a law that is going to do equity in all cases. That is what I am becoming convinced of the more of this testimony I hear.

Mr. COHEN. I agree with that.

Senator McCLELLAN. How do you do it?

I think we can concede everybody wants to find a solution that is equitable between the Government, between private enterprise and individuals, but I am beginning to wonder—I won't say I am convinced here, but I am beginning to wonder whether there can be absolute rigidity and at the same time do justice. I think there has got to be some way of providing some flexibility that permits adjustment according to equities that may be present in a given case in each instance. What is your thought regarding that general statement?

Mr. COHEN. I agree with you, sir, that there is a great need for flexibility, and that is the position that we take in our statement.

Senator McCLELLAN. All right; proceed. I just thought about how you are going to write a law that will cover all of these contingencies. I don't know.

Mr. COHEN. With regard to the question asked specifically about making the patents available in the field of desalination of water, in coal, and in fisheries, first as to Government title, our patents assigned to the Government are available for licensing under the Department's licensing regulations. On a suitable showing, any responsible party can obtain a royalty-free, nonexclusive license.

As to the availability of patents where title is in the contractor, first, as to saline water, the contractor has title and Government has a royalty-free, irrevocable nontransferable license for governmental

ever those differences may be is not important. It is the invention made by the employees that counts, whether they are employees of the Government or of its contractors. What is done with that invention to promote the progress of our arts and sciences is the important consideration.

Here, then, is a challenge. Congress, which for over 80 years has been considering what to do with the rights to inventions made in the performance of Government-sponsored research, has never settled upon a definitive policy which all could understand and which would apply uniformly to all. Congressional committees interested in the byproducts of Government-sponsored research represented mainly by patent rights have reacted in various ways to pressures brought by all sorts of interest groups, both within and outside of the Government itself. The different patent provisions in the different statutes affecting inventions made by Government contractors, and problems caused by the refusal to legislate with regard to inventions made by Government employees, add up to a woeful lack of purposeful direction.

APPENDIX C

ADDITIONAL MATERIAL SUBMITTED BY T. L. BOWES, GENERAL PATENT COUNSEL, WESTINGHOUSE CORP.

TITLE TO INVENTIONS MADE UNDER GOVERNMENT-SPONSORED RESEARCH AND DEVELOPMENT

The question of disposition of title to inventions made under R. & D. contracts with the U.S. Government is assuming major importance.

Representative B. F. Sisk, of California, in a paper presented before the Federal Bar Association on February 9, 1961, urged the desirability of the Government taking title to such inventions.

In February 1961, the Department of Defense issued new regulations under which it is provided that the Government may take title when the "public interest" seems to justify it.

On February 28, 1961, there was introduced by Senator McClellan, of Arkansas, a bill (S. 1084) providing that the United States shall have exclusive right and title to any invention arising from any contract or lease made by or for the United States.

On March 1, 1961, Senator Russell B. Long of Louisiana introduced a bill (S. 1176) to establish a Federal Inventions Administration for the utilization of patent and technical data rights owned by the Government. Under this bill the United States would take all rights to all scientific and technological achievements paid for with tax dollars.

It is therefore important that the issues be fully developed.

The problem of contractor title versus Government title is difficult to resolve with mathematical nicety because it is nearly impossible, if not impossible, to develop precise data. The best that can be done is to reason out answers by evaluating the various advantages and disadvantages of all factors to the Government, to the contractor, and to the public interest, especially the latter.

It is believed that a policy permitting retention of title by contractors is the more advantageous to all three of these interests. This conclusion is based on the following considerations:

1. Acquisition of title by the Government in connection with Government research and development minimizes incentive to invent and to invest in commercial utilization of inventions, and, indeed, to take Government R. & D. contracts.

A private business organization is less apt to develop an invention commercially, especially where large investment is necessary, if it is easy for a competitor to enter the field by copying what the other has already done at a very considerable savings in engineering and planning expense.

It is recognized that retention of title by a contractor is not the only incentive justifying assumption of research and development programs under contract with the U.S. Government. There is expectancy of profit from such contracts even though it is believed that profit margins on Government R. & D. are substantially less than realized from normal commercial operations. There exists opportunity to develop know-how. There is raised the hope for follow-on production contracts. In new fields there is the opportunity to develop the best

D. Statements and letters submitted for record:

3. Simple subject matter involved.
4. Obvious market present.
5. Competitive pressure compel imitation.

The orange juice concentrate and aerosol dispenser examples fall within one or more of the above conditions.

In this area, let us avoid the mistake of confusing the incentive to open a new field and introduce a new product with the willingness, if not anxiety, of late comers to take advantage of royalty free licenses to patents, know-how and experience of innovators, as for example, under certain consent decrees. Let us not confuse innovation with imitation. Certainly, incentive is reduced substantially if a competitor can enter a field without development expense and thus compete unfairly with the developer of the field who has contributed at least his organization, facilities, and know-how.

Referring to study No. 15 published by the O'Mahoney committee, the author, Fritz Machlup, on page 38 notes that products are developed all the time where there is no patent protection in order to (1) keep up with competitors and (2) get the jump for the time and to recover the cost of the change before competitors catch up. This is no doubt true in some cases, but is such a head start usually sufficient to provide the necessary incentive to move forward technologically?

Machlup on pages 39–40 says that progress requires both innovation and imagination. If rapid imitation is expected no one wants to risk expensive innovation. Imitation is cheap engineering.

It has been said perceptively that an open-to-all policy is "limited to sharing what has been developed and offers no stimulus to increased technological development." It seems certain that an open policy will induce free imitation and to that extent, at least, slow up investment looking toward technological advance.

It has been claimed that Government has had no particular difficulty in finding contractors for R. & D. work. This may or may not be true. It appears clear that some firms avoid Government R. & D., especially when the title policy is in effect. Research and development work can best be done at least expense only by those qualified in the fields involved. Accordingly, the public interest and often the safety of the Nation demands that the best organization (best because of their past record of success, background, ability, facilities, etc.) should be engaged. Often, this may not be the case if Government always takes title.

Dr. Alan Waterman, Director of the National Science Foundation, has pointed out that the industries that spend the highest percentage of their sales on research and development are almost always those with the highest rate of growth. Growth, then, depends on research and development. Copying anothers product does not make for growth.

2. Government acquisition of title to all research and development induced inventions may well lead to less total research effort by nongovernmental units. Private enterprise has a limited number of dollars to spend on research and development. Maximum research and development effort results from the sum of private enterprise dollars plus Government dollars. If a contractor cannot have title, he will probably take less Government work or limit Government contracts to noncommercial areas. The incentive to take Government research and development contracts is obviously reduced, at least in the commercial fields. Total research may hold up well where the other incentives predominate but the total can be expected to be lower. Maximum and fastest results should be obtainable by fostering conditions where the creator can enjoy the fruits of his inventions.

3. It has been argued by some that the Government should take title in order to effect the constitutional purpose of promoting the progress of the arts. This argument fails to note that the Constitution specifies the effecting of this progress through an "exclusive right" to the inventor's discoveries.

If it is argued that the Constitution is interested primarily in the exclusive right being exercised only by the inventor, the difficulty, if any, is compounded if this exclusive right is passed on to the Government which is then in the position of requiring an employer to require an employee to assign to the Government.

The constitutional purpose is satisfied by the disclosure of the invention in a patent and does not require commercialization. The technology is enriched by disclosure. While the public interest may, in many cases, be still more benefited by commercialization in addition to disclosure, there are many instances where commercialization is not sound at the time of the issuance of a patent or for

Mr. HOLST. That is correct. Whether we like it or not, it seems to me that is a necessary policy.

Senator MCCLELLAN. I see.

Mr. HOLST. This is contemplated by the idea of a license to use for governmental purposes.

Senator MCCLELLAN. Some licenses the Government purchases for its own use. Does the license to which you refer apply to any competitor of the original inventor?

Mr. HOLST. Yes. Of course, there is always a question of foreground and background rights, but within the normal language of whatever inventions have been created at Government expense, the Government should have the right to turn to second sources of supply. Our discussion is based on the assumption that the Government has this right.

Now, it also seems to me that the objectives of the Government will best be served, both the Government agency and the general public, if inventions that may grow out of Government work can be given the widest possible public use. This point is not obvious, and I would like to expand on it a bit. And, if you wish, later on, and if time permits, I will be glad to cite companies and specific examples, but let me first make the point.

An invention and a patent is not in itself of any real value unless it is put to use. It does not do the inventor any good, nor the Government, nor the public. It only becomes useful when it is put to good use.

If an invention is put to good use, this creates jobs for employees; it creates items and services which the public can enjoy and benefit from. It also produces tax revenue to both the local community and the State in which the organizations exist and to the Federal Government at large.

None of this will be achieved unless the patent is put to use. Merely getting a paper right, or making a paper right available to the public, will not create any of these benefits. The benefits will only happen if the patents, if the inventions, are put into widespread use. Incidentally, if you get into volume use, the organization which makes successful use of inventions will continue to make improvements and create facilities and build a know-how relating to this use.

There are many examples of this kind, but if you wish, I shall pass on to my points, and then I presume you will question me as you wish.

Now, since I am advocating a policy of as wide as possible private use of patents, I think it is proper to ask whether or not private use of patents, create monopolies or promotes secrecy. The answer is both yes and no, but mostly no.

A patent is a limited monopoly for a limited period of time. It is limited not only in time, but also to the specific disclosure of the patent. The disclosure must be such, if the patent is to be valid, that it can be understood by competitors even during the life of the patent, and certainly can be practiced by the competitors upon the expiration of the patent. But not only is a patent limited in time, it is very strictly limited to what is novel in the disclosure.

Senator MCCLELLAN. May I interrupt to make this observation, with which I am sure you will agree. Even during the life of the protection of the patent, it is exposed, and thus is known, the process

ment made for training a group of people or providing the atmosphere in which they can invent.

Inventions may be the culmination of long efforts of the contractor under his own initiative and at his own expense. For example, under the patent rights clause used by the Department of Defense, a contractor who has conceived and constructively reduced to practice before the initiation of the contract must usually give the Government a nonexclusive license if actual reduction to practice occurs under the contract. These inventions are not, in fact, paid for. Indeed, from a strict point of view, these inventions are not truly made under the contract; the contract simply culminates the process toward a physical embodiment.

There is a great difference between the industry-industry situation, where one company may retain another organization to perform specific research and the Government-contractor situation; the basic purpose in sponsoring research and development under private auspices is quite different. An industry unit is in a competitive position. It is trying to stay ahead of or to catch up to its competitors in the minds of the buying public. Its success, and hence its profits (and the contribution to the Government through the taxes it pays) is dependent on this. Hence, it often makes little or no sense to pay for such research and have only the right to use the results thereof when competitors, who have made no investment, have ready access to the same developments. The contractor hopes for patentable inventions which will protect his investment. This is true even though the contractor freely licenses his competitors. The Government, on the contrary, has no competitive position to attain or maintain and does not need patents to accomplish its purposes.

The Government's goal is usually the development of a device which meets certain specifications, whether patentable or not patentable, although in some cases it seeks development of new information or technology. The Government wants developed something to use. The competitive situation is immaterial—quite differently, however, when industry hires out research, it seeks development of a product to sell. Competition now becomes a most material factor. It makes no economic sense to pay cost plus profit to another so that the other can compete with you on the product of your sponsored work. Neither logic nor sound economics justifies the result.

It should further be noted that industry does not always take title when one industry unit using its own funds employs another industry unit to perform research work. The firm doing the work often, perhaps usually, keeps title on the ground that it is not normally in the business of doing research and development for others and, therefore, is willing to make an exception only if it may enjoy the fruits of its success beyond a mere fee or profit on a particular job. This is particularly true when the firm doing the work is actively engaged in the field encompassing the potential project. The equities of the relationship between the parties usually determine the negotiated disposition of rights. The Government itself does not always acquire title from its own employees. It is understood that employees have been permitted to retain title subject to a nonexclusive license running to the Government, even in cases where the Government has contributed to the invention. Thus, the Government's own patent procedures recognize that there are circumstances justifying acquisition of less than complete title. Is a contractor entitled to less consideration?

6. It has been argued by some that the public should have free access to patents because it, through taxes, has paid for the research and development work. Payment for research and development does not cover payment for inventions as noted above. Further, the public gets the full benefit of its payments through a free license for governmental purposes.

The public also pays for privately sponsored research and development. Development costs must be recovered one way or another and in theory it should make little difference whether development cost is paid directly by the public to the developer as an element of the cost embodied in the price or whether it pays for such development by paying taxes to the Government so that the Government may then cover the developer's cost.

The price paid to the contractor by the people (through the Government) is related to governmental needs and not to the needs of the public as such. Hence, a free, nonexclusive license gives the people (the Government) exactly what it needs and pays for.

This argument is akin to the argument that contractor title results in the public paying twice. This argument is not understood. The contractor, if he

condition established for a waiver are not met, however, then the Government would take title in accordance with section 3 of the bill

Whether the bill would in operation effect a substantial change depends on the interpretations which would be applied in practice to the waiver provisions as contrasted to the policies currently in effect during contract negotiations. At present, account is taken of the contractor's investment in the field by way of laboratory and plant facilities, personnel, and past work in the subject matter under investigation, and his current position. If it is felt that the Government is essentially drawing on the contractor's past fund of knowledge, training and experience, then title is generally left with the contractor with a royalty-free license to the Government, and a license at reasonable royalties to the public. If, however, the background contribution of the contractor is minor, title should be and is taken by the Government.

AVAILABILITY OF INVENTIONS TO THE PUBLIC

In general, all inventions which are assigned to the Government arising out of work done by or for the Department are available to the public under the Department's patent licensing regulations (43 CFR 6). These provide essentially that a royalty-free, nonexclusive, nontransferable license will be issued to property qualified applicants. The licensees may be required to submit annual reports and may be required to cross-license.

In the desalination of water, in inventions where title is left with the contractor, the Government receives a royalty-free, nonexclusive, irrevocable license and the contractor is required to issue licenses to applicants at a reasonable royalty. This insures that a monopoly situation will not develop and that the invention will be made available without restrictions to local government agencies, processors, producers, and the general public.

As regards coal research, no research and development contracts have been awarded as yet. The act setting up the Office of Coal Research (74 Stat. 336) provides that:

"SEC. 6. No research shall be carried out, contracted for, sponsored, cosponsored, or authorized under authority of this Act, unless all information, uses, products, processes, patents, and other developments resulting from such research will (with such exceptions and limitations, if any, as the Secretary may find to be necessary in the interest of national defense) be available to the general public. * * *"

Either having the Government take title, or compulsory licensing, by requiring the contractor to issue licenses at a reasonable royalty meets the statutory requirement that any patents arising out of research paid for by the Government be available to the general public.

In those cases where title to any invention made pursuant to a contract will be left with the contractor, the Government will obtain a royalty-free nonexclusive, irrevocable license, and the contractor will agree to issue licenses to the public at reasonable royalties.

Other aspects of coal research are carried out by the Bureau of Mines. The Government takes title to all inventions made by Bureau employees which are within the scope of their assigned duties. Regarding fisheries, almost all research is carried out by the Fish and Wildlife Service employees. Some work in fish oils is being carried on by university laboratories for Fish and Wildlife Service, but all inventions are required to be assigned to the Government. In two important fields, sea lamprey control and animal damage control, large-scale chemical screening programs are carried out, which raise peculiar patent problems.

Chemical companies supply the compounds voluntarily and free of charge to Fish and Wildlife Service for testing. If the compound is new and is found to be useful, then under the patent law, title to the patent covering the chemical per se is in the supplier, while title to the method of using it for animal control purposes may be with the Government or the supplier depending on who conceived the invention. The agreement with Fish and Wildlife Service provides for cross-licensing between the Government and the supplier. If the Government has title to the use patent it will of course issue licenses to all applicants under the Department's licensing provisions. However, if title to the patent is with the supplier, the Government has a royalty-free nonexclusive, nontransferable license thereunder.

effort because it enlarges the number of units willing to accept contracts, assures availability of the best contractors, and minimizes the cost of accomplishing the desired research and development.

The last point raises an interesting advantage to Government from permitting retention of title by contractors. The patent incentive encourages acceptance of Government contracts by the most qualified companies. A significant number of contracts are taken at no profit and even at a loss because of the incentives. Retention of title by contractors has resulted and will continue to resul favorably to the Government through such cost price advantages.

This position does not disregard the recent adoption by the Department of Defense of a policy whereby title may be acquired by the Government in some cases. It is too soon to determine how the new policy will operate and the advantages of a license policy has not been disclaimed.

11. Government ownership advocates have argued that title in Government is necessary to prevent monopolization, i.e., that contractor should not be allowed to build up preferred patent positions. In the early development of atomic energy under the necessarily strict secrecy requirements at that time, perhaps acquisition of title was justifiable (although it is believed that justification, if ever sound, has long since passed). We also believe that this argument is not generally sound. Patent monopoly by size or prior entry into an art is practically impossible in most fields due to the depth and breadth of technology possessed by thousands of individuals and hundreds of business organizations, laboratories and schools. Furthermore, the development and growth of antitrust principles with respect to monopolization of patents clearly eliminates this danger. Even if such monopolization is possible, this is an era of extremely free licensing policies, especially by large business units.

Developments move so rapidly in the existing state of technology that an interested party can rarely, if ever, be kept out of an industry for any appreciable time through adverse patent situations.

The foundation report cited above says by way of conclusion "That undue concentration would result from the license policy is a possibility so negligible that it may be disregarded."

It is particularly undesirable to be overconcerned with the possibility of undue concentration or preferred positions. Minimization of these results may be worth while in the public interest but this policy may, and often will, hinder the promotion of technology. The latter is more important, particularly since concentration and preferred positions can be handled in other ways as, for example, under the antitrust laws.

If, to avoid undue monopoly or concentration, it is found desirable to take title away from contractors, a swing to a policy wherein Government always takes title is too extreme.

It has been suggested that there are situations when avoidance of undue concentration or preferred positions in new technologies may be more important than patent incentives. The foundation report finds "That undue concentration would result from the license policy is a possibility so negligible that it may be disregarded". This strongly suggests that Government need not take title for this reason. However, if such a deprivation of inventors is countenanced, deprivation of patent rights should be limited to inventions specifically intended for and useful, as a practical matter, only in the new technology and compensation to the inventor or his assignee for surrender should be paid. Rather than transfer title to the Government, dedication to the public or compulsory licensing of such inventions might be a workable compromise.

If avoidance of undue concentration or preferred positions is in the public interest, optimum promotion of new technology is also important in the public interest, perhaps of greater importance in the long run. A title policy, we believe, is less likely to produce rapid advance in new technology.

12. It has been argued that title in a contractor is wasteful in that it urges infringers to design around the patented invention. The argument itself partially refutes the monopoly theory.

Actually, competition in designing to avoid a patent is a high form of competition; it provides the most rapid progress of technology through efforts to obsolete achievements of competitors, and this benefits the Government as well as the public (mere copying the product of an earlier designer is stagnation); it frequently leads to better or cheaper products, or both; and it often opens the door to still other innovators and inventors.

The fact that a patented product may not be copied with impunity makes it necessary for other manufacturers to do their own original development work

in patents for exclusive use. We believe that there are occasions when the granting of exclusive licenses would aid in the commercial development of certain patented inventions to the ultimate benefit of the public.

Section 12 authorizes awards to any person who has made a contribution of significant value to any program administered by any executive agency. The programs administered by the Department of Agriculture are comprehensive and the bill opens the door to voluminous requests for awards. We feel that administration of such a provision would be impracticable. We would have no objection to this section if it was limited to include only contributions in which the Government has the proprietary rights.

As you have requested, we have prepared an appraisal of the portion of the report of Dr. Roy C. Newton which relates to the patent policies of the Department. We will be pleased to file this with the committee.

Mr. Chairman, this concludes my statement.

Senator McCLELLAN. Now, Mr. Maclay, if you will, you may proceed to summarize your statement.

Mr. MACLAY. You have asked that we discuss with you the patent practices followed by the Department of Agriculture, and to express the views of the Department with respect to (1) the probable effects of S. 1084 and S. 1176 on its operations, and (2) the section dealing with the patent rights contained in a report of Dr. Roy C. Newton of October 14, 1960, to the Secretary of Agriculture on "Utilization Research in the Department of Agriculture—An Appraisal of Present Program, Staff, and Facilities."

Research activities of the Department of Agriculture and of activities sponsored by the Department from which inventions result extend over five principal areas; namely, (1) research by Department employees, (2) research carried on by private and public organizations and institutions under Research and Marketing Act contracts, (3) research by State agricultural experiment stations financed in part by Federal grant funds, (4) research carried out with public or private institutions under cooperative agreements, and (5) research under foreign agricultural research grants in accordance with Public Law 480, 83d Congress, as amended.

The statutes authorizing researches in these areas and the Department's manner of handling inventions resulting from such researches are provided in my formal statement. Each area will be discussed as related to sections of S. 1176.

Senator McCLELLAN. May I inquire, do you have a copy of this summary available?

Mr. MACLAY. Yes.

Senator McCLELLAN. May we have it. We don't have a copy of that.

Mr. MACLAY. The provisions of S. 1084 in general are encompassed in S. 1176, a more comprehensive bill. We will therefore discuss certain sections of S. 1176 which have a bearing on the Department's operations. Our remarks are equally applicable to the related parts of S. 1084.

The criteria set forth in S. 1176 under section 3(a) for acquiring title to inventions made by employees appears to be essentially a restatement of the court law founded on the implications arising out of a contract of employment or from the job assignment in absence of an express contract disposing of the title rights. The criteria accord essentially with the practice which has been followed by the Department of Agriculture for many years, including operation under Executive Order 10096 as modified by Executive Order 10930 of March 27,

If true, however, and if publication serves a useful end, the solution is fully within control of the contracting officer. Such contracts require contractors to report data and inventions to the Government. Periodic progress reports are required. It should be easy for the Government, since the Government technical representatives maintain close surveillance over technical progress, to tell almost at a glance whether these reports are complete and up to date. Except for certain "proprietary data" and restrictions on classified information, there is no limitation on public disclosure by the Government of the information thus acquired.

It should also be noted that more dissemination of knowledge often does not lead to acceleration of technology—exclusive rights promote this end and assurance of a proprietary position is the best way of accelerating progress and at times the only way.

Hence, there seems to be little chance for any wall of secrecy properly chargeable against contractors. Even if such a wall is present in some cases, would the wall be lowered or removed merely by transferring title of inventions to the Government? Any contractor who would attempt to cancel or delay reporting information under a license policy can be expected to do so under a title policy.

17. It has been stated by a staff member of a Senate subcommittee that the subcommittee files show that the patent incentive is not important to small business. Logic would seem to disprove this claim as a general proposition. As noted before, patents are not the only incentive and in highly developed arts may be a very weak incentive.

We suggest that small companies are particularly benefited by retention of title. Without the protection of the exclusive right they may not have any basis for excluding larger and stronger competitors and will more frequently be unable to exist.

A small contractor, or subcontractor, if it holds title, can present competition from others including the industry giants; but if title is held by the Government, there is nothing to keep the big company from adopting the subject matter of the invention and with its superior engineering, production, distribution, and advertising capabilities soon minimize the small company's share of the market. The small company most benefits by the exclusive patent right.

18. Maximum incentive for contractors will normally lead to maximum commercialization. Maximum commercialization should provide maximum tax revenue realization. It seems obvious that maximum incentive follows from the retention of title by a contractor.

19. It has been pointed out somewhere else that the security market shows, to some degree, the disadvantage of the Government acquiring title. It has been pointed out that companies with a large volume of Government work generally have the lowest price-earning ratio. This suggests that Government procurement is not considered by investors to be wholly satisfactory for contractors; permitting retention of title by contractors should help to make Government contracts more desirable.

20. Royalty income encourages patenting speculative disclosures and thereby increases technological disclosures. Taking of title by the Government, therefore, discourages the filing of patent applications on such inventions.

21. It has been argued by Members of the Congress that British Government has long taken title to contractor's inventions. For example, Representative B. F. Sisk, of California on February 9, 1961, stated in a paper read before the Federal Bar Association that for the past 50 years patent rights for work financed by the Government belong entirely to the Government.

Mr. Sisk may have been misinformed or only half informed. A London patent attorney has advised me that any inventions resulting from work carried out in Government research establishments becomes the property of the Government but "as regards inventions arising out of research and development contracts the British contractor is normally allowed to retain title subject to free use of the invention for British Government purposes." This appears to be the same as or similar to the DOD policy followed to February 1961.

We have no knowledge of the adoption of a title policy by any other nation.

22. Retention of title by contractors may result in lower R. & D. costs to the Government.

Whether this result is factual is probably not subject to rigorous proof one way or the other. However, the foundation report finds evidence that contractors believe retention of title is important and this belief may well result in lower contract costs because of the anticipated value of retained inventions.

rights to the inventions have been left to the States for disposal in accordance with the policy or laws of the States.

Senator McCLELLAN. They have been very few, haven't they?

Mr. MACLAY. I would not know how many. I suppose a few. Most of this work is basic research rather than applied.

Senator McCLELLAN. There have been none of them of any great commercial value?

Mr. MACLAY. Well, I suppose there have been some of considerable value.

Senator McCLELLAN. I say of commercial value.

Mr. MACLAY. Any return probably goes back to the States.

Senator McCLELLAN. All right.

Mr. MACLAY. Section 3(b) would change this practice. The Department recommends retention of present policy as regards Federal grant funds under the Hatch Act to State agricultural experiment stations, namely, that proprietary rights to inventions made by State employees whose research may have been financed in part by Federal funds be disposed of in accordance with the policy of or laws of the respective States.

Senator McCLELLAN. Would you say you don't need a change?

Mr. MACLAY. That is correct.

Senator McCLELLAN. That section 3(b) as it is now would make a change?

Mr. MACLAY. Yes.

Senator McCLELLAN. That change, you say, is not desirable?

Mr. MACLAY. That is correct.

Relative to inventions resulting from research grants to foreign institutions under Public Law 480, it is the practice of the Department to acquire the proprietary rights to any U.S. patents which may be obtained, and to acquire a worldwide license for governmental purposes. The foreign patent rights are, however, left to the disposition of the foreign grantees.

These provisions were developed at the inception of the program at the insistence of grantees and foreign governments. This feeling was strong in many countries. In a number, grants are made to institutions that are instrumentalities of foreign governments.

It is highly doubtful that legislation or regulations in these countries would permit such institutions to enter into agreements which would not protect patent rights for the foreign institution or government. Section 3(b) would change this practice. The Department recommends continuation of allowing foreign patent rights be retained by foreign grantees for inventions developed under Public Law 480.

Senator McCLELLAN. As I understand it now, for instance, we grant in our foreign spending program technical assistance. We provide funds for some college or some laboratory in a foreign country to do research, and out of that comes a discovery or an invention. The present policy is we let that country have it?

Mr. MACLAY. The Department of Agriculture reserves the U.S. patent rights.

Senator McCLELLAN. We take it for the United States only?

Mr. MACLAY. That is correct.

Expansion of the gross national product at a greater rate than the historic average of 3 percent has been stated to be a desirable, if not necessary, objective. Organized research backed by maximum incentives to invest and produce can easily accomplish recommended goals. Any weakening of incentives such as the patent incentives must significantly slow down advance in this direction.

We are operating under a policy which has been highly successful for decades. This policy has not factually been shown disadvantageous. Arguments against it are theoretical and have not been proved.

The desirability of acquisition of title by Government can be plausibly argued. I feel, however, that the long-term public interest, as well as the specific interest of Government and contractor are best served by permitting the contractor to retain title with a free, nonexclusive license to the Government for governmental purposes.

A BILL To prescribe a national policy with respect to the disposition of rights to inventions made chiefly through the expenditure of public funds, whereunder (1) concentration of rights in and preferred positions for inventors and their assignees will be minimized in new and entirely unknown fields of technology wherein the Government of the United States has or will collect a substantial fund of technical information not available to the public, and (2) normal exercise of the patent rights will reside in inventors and their assignees (a) when such fields of technology are developed to the stage wherein knowledge is generally available to the public, and the public can further develop the technology without substantial reliance on the Government, or (b) inventions are not primarily directed to or useful only in such technology

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. Where the principal purpose of a contract, grant, or lease entered into or made with or by a government department or agency and each subcontract, subgrant or sublease thereunder which calls for the performance of experimental, developmental, or research work is to develop a specific technology after ample prior notice and a full hearing with respect thereto, such hearing including the inventor or his assignee in any event and the public whenever the subject matter of the technology permits, and the Commissioner of Patents determines, upon a written petition with the basis therefor stated in ample detail, by the head of the government department or agency with which such contract, grant, or lease was entered into or made, that the conditions of this Act are met, shall issue any patent or patents directed to inventions made under such contract, grant, or lease which shall have been specifically directed to and primarily useful only in said specific technology to the United States of America subject to a free, irrevocable, nonexclusive license to the inventor or his assignee: *Provided, however,* That the provisions of this section 1 shall be limited to inventions made during the five years following an authorization by the Congress for the development of a specific technology as defined herein, or for such lesser terms as Congress may direct, unless the Congress prior to the expiration thereof (a) extends such time for an additional term not to exceed five years, or (b) reduces said term to a specified lesser term.

SEC. 2. Title to any invention or inventions specifically directed to and primarily useful only in said specific technology and made under such contract, grant or lease during the five years next following the term, including extension thereof, provided for in section 1, or such lesser term as Congress may direct, shall remain in the inventor or his assignee, but such inventor or his assignee shall license all responsible applicants for license on reasonable terms and conditions including royalty provisions.

SEC. 3. Title to any invention or inventions made under such contract, grant or lease after the term or terms provided for in sections 1 and 2, or made during said term or terms and which is not primarily useful in or specifically directed to specific technology, or made under conditions not otherwise provided for herein shall remain the property of the inventor or his assignee subject only to a free, nonexclusive, irrevocable, nontransferable license to the United States for the practice throughout the world for governmental purposes of such invention. No license granted herein shall convey any right to the United States to manufacture, have manufactured, or use any such invention for the purpose of providing services or supplies to the general public in competition with the inventor or his assignee or commercial licensees thereof.

SEC. 4. The term "specific technology" shall mean, for the purposes of this Act, technical information in a field where there exists no substantial public

This Department has long considered it desirable that the Government agencies have authority to issue exclusive licenses or otherwise dispose of its interest in patents for exclusive use. We believe that there are occasions when the granting of exclusive licenses would aid in the commercial development of certain patented inventions to the ultimate benefit of the public.

Section 12 authorizes awards to any person who has made a contribution of significant value to any program administered by any executive agency. The programs administered by the Department of Agriculture are comprehensive and the bill opens the door to voluminous requests for awards. We feel that administration of such a provision would be impracticable. We would have no objection to this section if it was limited to include only contributions in which the Government has the proprietary rights.

As you have requested, we have prepared an appraisal of the portion of the report of Dr. Roy C. Newton which relates to the patent policies of the Department. We will be pleased to file this with the committee.

Mr. Chairman, this concludes my statement.

Senator McClellan. The appraisal of the report of Dr. Newton may be printed in the body of the record immediately following this witness' testimony.

Counsel, do you have any questions?

Senator Hart, do you have any questions?

Senator Hart. No; thank you, Mr. Chairman.

Senator McClellan. All right, Mr. Counsel, any questions?

Mr. Wright. I would like to ask Dr. Maclay about this report of Dr. Newton.

First, can you tell us who Dr. Newton is?

Mr. Maclay. Dr. Newton is a former vice president and director of research at Swift & Co. He retired from that organization a couple of years ago, and was requested by, at that time, Secretary of Agriculture Benson to make a study of the utilization research part of the agriculture research administration as to its effectiveness, and so forth.

Mr. Wright. What was the occasion for asking him to make a report? Do you recall?

Mr. Maclay. I think it came back to a number of bills during the last 5 years that have been introduced in the Congress to greatly expand the utilization research phases of agricultural research in the Department. The Secretary wished an independent appraisal by an outside competent individual of just how our research was operating, whether it was effective, whether or not we had a good staff.

Mr. Wright. One of the things he examined was this question of whether or not you might get better utilization of your inventions if you were able to license them exclusively, was it not?

Mr. Maclay. That is correct.

Mr. Wright. And can you tell us just briefly what his conclusion was?

Mr. Maclay. Industry has on numerous occasions, indicated that it would not take up certain developments made in the Department of Agriculture because they were not able to have exclusive rights. Dr. Newton, when he came in to make this survey, was very definitely of that opinion. But, as he states in the report, after he asked some leading questions of various industry people, he got the impression that

6. After extensive hearings by the Mitchell subcommittee of the House of Representatives during the 86th Congress on the subject of the title policy of the National Aeronautics and Space Administration prescribed by the Space Act of 1958, a bill sponsored by Congressman Brooks was passed by the House by a large majority. This bill favored the modification of the existing section 305 of the Space Act relating to patents. It was concluded by that investigation that the public interest would best be served by a more flexible patent policy than that proposed by the McClellan bill, S. 1084.

7. Due to the disallowance of specific items of cost under research and development Government contracts, the contractor is seldom, if ever, completely reimbursed for his normal cost of doing business. Thus, the contention that the Government and hence the public does not get all that it pays for when the contractor retains the patent rights in an invention arising out of federally financed research, which retention enables him to explore whatever commercial market is available, is a false conclusion. It is not possible to determine before the work is accomplished whether or not an invention would result and it would therefore be impossible to determine a price for inventions during the negotiation of a contract. Indeed the patent provisions of the Armed Services Procurement Regulations expressly prohibit any increase in contract price by reason of the license grant to the Government required by the regulations in research and development contracts. Further, the Government normally awards its research and development contracts to those having a high degree of background know-how and experience which, in the case of a contractor engaged in manufacturing operations for the general public, has been acquired at its own expense in the course of its regular commercial operations. This background know-how and experience is not recognized in the contract price and represents a substantial contribution by the contractor.

The Long bill, S. 1176, differs from the McClellan bill, S. 1084, in that it seeks to establish a Federal Inventions Administration to exploit patents to which title has been acquired by the Government covering inventions arising out of federally financed research and development projects. The Administrator under this proposal would file and prosecute patent applications on inventions wherein title has been acquired by the Government. The Administrator is charged with the responsibility for creating and maintaining a catalog of all such data and to grant nonexclusive royalty-free licenses for a fee under certain circumstances and to negotiate a royalty bearing license with reporting and use requirements under other circumstances. In addition, the bill contemplates a waiver arrangement.

The Automobile Manufacturers Association, Inc., is opposed to the enactment of S. 1176 for all of the reasons stated above with regard to the vesting of title in the Government, as well as the following:

1. The creation of a Government authority capable of licensing inventions on a royalty basis, which inventions form the subject matter of patents which the Government has issued to itself, raises the serious constitutional question of whether or not the Government may grant such patents. Furthermore, since such a program would require that the Government protect its licensees by enforcing its patents against nonlicensed users of the patented inventions, a second constitutional question is raised as to whether or not the Government may sue such infringers. It must also be kept in mind that the incentive for investment of risk capital to commercialize a patented invention arises out of the right to exclude others. This necessarily requires the granting of exclusive licenses by the Government in some instances and would raise the question of constitutionality as well as charges of discriminatory policies. Such use of Government-owned patents would place the Government in a position to exercise controlling power over industry and research and development.

2. With more than 50 percent of the entire annual national outlay for research and development being spent by Federal procurement agencies, the cost of creating, staffing, and operating such a new administration would unquestionably exceed the annual income from fees and royalties. Based upon the findings in a recent study contract NASw-177 of NASA by Dr. Archie Palmer to the effect that the British Government realizes less than one-third of the cost of operation of its Government patent licensing program, it is extremely unlikely that the returns from such a proposal as that of S. 1176 could ever pay the cost of administration.

STATEMENT OF W. D. MACLAY, ASSISTANT ADMINISTRATOR, AGRICULTURAL RESEARCH SERVICE; ACCOMPANIED BY S. P. LEJKO, ASSISTANT TO THE ADMINISTRATOR, AGRICULTURAL RESEARCH SERVICE; AND T. A. SEEGRIST, OFFICE OF THE GENERAL COUNSEL, U.S. DEPARTMENT OF AGRICULTURE

Mr. MACLAY. Mr. Chairman and members of the committee, I am W. D. Maclay, Assistant Administrator, Agricultural Research Service. My associates are S. P. Lejko, assistant to the Administrator for Legislation and Special Assignments, Agricultural Research Service, and Mr. T. A. Seegrist, Office of the General Counsel of the Department.

Senator MCCLELLAN. Very good.

Now you have a prepared statement here of some 11 pages, I believe. Can you summarize your statement——

Off the record for a moment.

(Discussion off the record.)

Senator MCCLELLAN. The Chair directs that the prepared statement of the witness Mr. Maclay be printed in full in the record at this point.

(The prepared statement of Mr. Maclay follows:)

STATEMENT OF W. D. MACLAY, ASSISTANT ADMINISTRATOR, AGRICULTURAL RESEARCH SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. Chairman and members of the committee, you have asked that we discuss with you the patent practices followed by the Department of Agriculture and to express the views of the Department with respect to (1) the probable effects of S. 1084 and S. 1176 on its operations; and (2) the section dealing with the patent rights contained in a report of Dr. Roy C. Newton, October 14, 1960, to the Secertary of Agriculture on "Utilization Research U.S. Department of Agriculture—An Appraisal of Present Program, Staff and Facilities."

Information on the patent practices followed by this Department was furnished to the committee staff. I will summarize on the patent practices followed by this Department.

The research activities of the Department of Agriculture and of activities sponsored by the Department from which inventions result extend over five principal areas, namely: (1) Research by Department employees; (2) research carried on by private and public organizations and institutions under Research and Marketing Act contracts; (3) research by State agricultural experiment stations financed in part by Federal grant funds; (4) research carried out with public or private institutions under cooperative agreements; and (5) research under foreign agricultural research grants in accordance with Public Law 480, 83d Congress, as amended.

These principal areas are carried out under the authority of a number of statutes. The principal ones are: (*a*) The Department's organic act of 1862; (*b*) the Agricultural Experiment Stations Acts starting in 1887 and reenacted in 1955; (*c*) a number of sections of the McSweeny-McNary Act of 1928; (*d*) section 1 of the Soil Conservation and Domestic Allotment Act of 1935; (*e*) the Bankhead-Jones Research Act of 1935, as amended by title 1 of the Research and Marketing Act of 1946; (*f*) section 202 of the Agricultural Adjustment Act of 1938; (*g*) title 2 of the Research and Marketing Act of 1946; (*h*) sections 104(a) and 104(k) of the Agricultural Trade Development and Assistance Act of 1954.

The first area relates to inventions which result from research by Department employees. The Department is operating under Executive Order 10096 and Administrative Order No. 5, dated April 26, 1951 (16 Federal Register 3927) in determining ownership of the domestic patent rights of inventions made by its employees. As we understand the Executive order and the interpretations which have been given it, ownership of the employee inventions is determined by criteria which accords essentially with the common law or court rules derived

Under present contractual security requirements, scientists are free to publish and disseminate their findings providing there is no violation of security classification status. The present system permits immediate and full disclosure of research results regardless of the origin of the sponsorship. The result is a rather unsystematic, yet very spontaneous and effective, dissemination of findings as they are made. This dissemination takes place in dozens of professional journals and in the hundreds of professional meetings, regional and national, that are conducted by the scientific community. Government research as well as private research benefits from this interchange. To deprive investigators working on sponsored research of the right to disclose their findings, based upon the Government's proprietary interest, will be to reduce the quality of such sponsored research and at the same time to increase its cost and retard its completion. Scientists agree that without the free ability to disclose, consult, and compare findings, worthwhile output of a high order would soon disappear.

S. 1176 strikes at the very heart of the traditional incentives for academic growth and advancement. Progress in a scholarly field depends on contributions made to the fund of knowledge in that field. College and university research workers are generally below their industrial counterparts in rate of compensation. The difference is accepted, though sometimes grudgingly, as the price of pursuing and publishing scientific truths. The university investigator stands to receive greater recognition than his brother scientist in industry because he is free to publish his findings without restriction and in a manner which will reflect his contribution. His standing and progress within his field is determined to a large measure by his right to publish. This right is considered to be a positive intangible benefit of each scientist's university affiliation. It is upheld without exception by leading universities, some supporting it to the extent that they will enter into no agreement which limits the right of the university or its staff to publish findings arising out of sponsored research. The American Association of University Professors, motivated by similar considerations, takes a strong stand against any abridgment of the right to publish research results.

Section 7 of S. 1176 gives the proposed Federal Inventions Administration the right to determine the proprietary interests of the Government in scientific and technical information. This measure would require that investigators clear each publication before printing and each paper before it is orally presented. The FIA would be called upon to understand and render decisions on a vast amount of material concerned with matters propounded by the Nation's leading scientists dealing with findings of the most advanced technical nature. The staffing and administrative problem on a project of this scope would be large indeed. It is contemplated that the agency would require a staff fully as technically competent as the Patent Office staff and considerably larger in order to evaluate both patentable material and other proprietary information. Expeditious handling would be required to insure that the FIA did not restrict the present free and orderly flow of information. Safeguards would be required in order that the agency did not overclassify information to the detriment of any individual or group. Appeal procedures would be required to rectify wrongs of law or equity caused by errors in the administration of the act. The agency would find itself continuously confronted with a tremendously large mass of complex information requiring proprietary determination. There would be a tendency "to play it safe" on matters requiring a fine degree of resolution. Such a practice would serve the interests of the FIA and possibly the Government; in many cases it would work a hardship upon individuals and it may at times be an actual disservice to the people of the United States. Even after clearance by the FIA the university investigator would have no assurance that his material will be available for publication under his own name. It is a practice of many Government agencies to issue bulletins in the name of the agency rather than in the name of the contributing scientists. Research results published by the FIA in this manner would deny the scientists the recognition he deserves.

S. 1176 places the burden of proof upon any inventor directly or remotely associated with a Government activity who is filing a patent application to establish that the Government has no rights in his invention. At the time an application is filed an affidavit would be required which would assert the applicant's clear title. Any application accompanied by such an affidavit would subject to review by the FIA for its determination of governmental interest in the invention. The act very broadly defines the Administration's powers and in no way provides for limitation of those powers. As a result the Administrator is clothed with quasi-legislative authority in promulgating agency regula-

they will try to beat him to it. It is doubtful therefore if this policy is a serious handicap to the commercialization of new developments by utilization research.

"The second of these complaints about the patent policy is the reversion of ownership of foreign rights to the inventor inasmuch as the invention was paid for by public funds. In several cases which have come to our attention the inventor has negotiated for sale of his foreign rights before such rights had actually come to him. The dissatisfaction, of course, came from those firms which did not even have a chance to bid on these foreign patent rights. That this is inherent in the patent policy will be seen if we take the following points into consideration:

"1. Foreign patent applications must be filed within 1 year of filing date in the United States.

"2. Most inventors do not have the finances to file in all foreign countries.

"3. The inventor does not know which countries to file in until he knows what company is interested in the patent and in what countries that company does business.

"4. With a lapse of 6 months before the inventor owns these foreign rights this leaves only 6 months to negotiate, sell, and file on the inventions. This is not enough time; so the inventor often does the negotiating before he owns the rights.

"The laboratory employees consider this reversion of ownership an added incentive to good development work.

"This writer would recommend against inventor-ownership of foreign rights for two reasons:

"1. These rights were accumulated at public expense, and any financial return should accrue to the public. If it is not practical for the Government to negotiate the sale of these rights by competitive bids, then they should be allowed to lapse so that all persons will have equal opportunity to use them.

"2. When developments are made by a team of scientists working together it is often impossible to determine who are the actual inventors. If a few members of the team get substantial returns from the invention, it will lead to dissatisfaction of the others and destroy teamwork. It will lead to secrecy among the workers when there should be free exchange of ideas to make the most rapid progress. Furthermore, it could lead to the selection of projects having large economic possibilities in foreign countries but little or no possibility of using agricultural commodities of this country."

Our experiences in the last few years, and the recommendations of the Newton report, indicate that it is desirable for the Government to acquire the foreign patent rights along with the domestic patent rights in the invention of our employees. Therefore, we would favor enactment of legislation similar to that of section 3(a) of S. 1176, which provides for worldwide acquisition of the rights.

We are presently operating under the provisions of Government-wide Executive Order 9865 and administrative order No. 6. In the absence of legislative change, we would be glad to cooperate with the other Government agencies in obtaining such changes in the orders as would secure for the Government the foreign patent rights.

Senator McCLELLAN. All right, call the next witness. Mr. Cohen. Mr. Cohen, identify yourself for the record, please, sir.

STATEMENT OF ERNEST S. COHEN, ASSISTANT SOLICITOR, BRANCH OF PATENTS, OFFICE OF THE SOLICITOR, DEPARTMENT OF THE INTERIOR

Mr. COHEN. Mr. Chairman, members of the committee, I am Ernest S. Cohen, Assistant Solicitor, Branch of Patents, Office of the Solicitor in the Department of the Interior.

The contents of this statement were submitted——

Senator McCLELLAN. I don't know whether that mike is working or not. Please speak a little louder.

Mr. COHEN. I have prepared a summary of my statement which I would prefer to read.

patents which result on inventions either first conceived or first actually reduced to practice in the performance of such contracts.

The proposed bills would not only perpetuate an inequity practiced by large industry too widely in the past, but they would make it law, and moreover make it law inequitable to about 50 percent of the inventors of the country.

These proposed bills would lead to a legal requirement on the part of contractors wishing to do business with the Government that they arrange with their employees, as a condition of employment, that each employee agree to divest himself before the event of all rights he would otherwise have under the Constitution to his intellectual output in the area of inventions. All this would be without a contemplation of equitable compensation for such inventions.

While many industrial firms have in the past imposed this inequity upon their creative people, a trend in the opposite direction now exists in industry, by arranging for just compensation to the inventor for each of his creative inventions. This trend needs encouragement, not rejection under the law.

Thus the course of action currently underway as represented by the above-referenced bills would remove from about half of the inventors in the country the constitutional provisions which in the past have contributed in a major way to making this country the foremost in the world in its ability to bring to the public the fruits of technological creativity. This benefit to the public has been enabled through the encouragement of required investments and marketing arrangements afforded by the patent system.

Government ownership of patents is further clearly against public interest if the monopoly granted by each patent is reserved to the Government so that none but the Government can market or use the invention. Government ownership of patents is also equally against public interest if the Government were to take the alternative course of action and grant everybody a royalty-free license under each patent, since this course in essence destroys all utility and value of the patent to anyone, and removes the business condition which has usually proven necessary to warrant investment to start manufacture and sale of a new concept.

Under existing laws, the Government is authorized to use any patented inventions and can force patent holders to make their patents available to others when it is deemed to be in the public interest. Under these circumstances, there is no need or justification for the Government taking full title to any invention.

Inventions are born only in the minds of individuals. A corporation or a government cannot make an invention. Inventions are conceived spontaneously, by individuals, and the conception in general is not attributable to any Government contract. The various factors which go into making up an invention include the entire previous history of the inventor, as well as perhaps his ancestors. For the Government to usurp all rights to an invention merely because it is conceived during the course of a Government contract is highly unjust. In general on each contract performed for the benefit of the Government, the Government obtains specific articles, research work accomplished, analyses, etc., as called for under the contract.

Inventions cannot be contracted for, because they cannot be foreseen or ordered. Likewise, merely because the Government contracts for the actual reduction of practice of an invention which was conceived not under Government contract would represent an equally unjust situation if the Government were to thereby receive for no further consideration, royalty-free rights. Often much time and considerable sums (compared to the means at the disposal of the inventors and even to their employers) are expended prior to such Government contracting on the subject invention, as well as on other inventions which may not lead to the obtaining of even an initial Government contract.

If on those inventions that do lead to a contract, the Government were to automatically obtain a royalty-free right, then it becomes difficult or impossible from an economic standpoint for the inventor or the contractor to maintain himself or itself in a position to continue to render similar services to the Government in the future on other new ideas.

The threat of Government ownership of all inventions conceived or first actually reduced to practice under Government contracts is sufficiently great as nearly to destroy the present patent system in its entirety, since it would prevent effective patenting of more than half of the inventive concepts created.

State agricultural experiment stations at an average of 4 to 1 ratio of Federal funds. The research conducted at these stations is with State personnel rather than Federal personnel. Therefore, it would become difficult to determine if an invention resulted from the use of Federal or State funds.

The fourth area will deal with cooperative agreements with public and private institutions. The disposition of patent rights in cooperative agreements is made according to the following provisions: "Any invention resulting from this cooperative work and made jointly by an employee or employees of the U.S. Department of Agriculture and a cooperator or an employee or employees of the cooperator shall be fully disclosed either by publication or by patenting in the United States and any such patent shall either be dedicated to the free use of the people in the territory of the United States or be assigned to the United States of America in the discretion of said Department and the said Department shall have an option to acquire the foreign patent rights in the invention for any particular foreign country, said option to expire in the event that the Government fails to cause an application to be filed in any such country on behalf of the Government, or determines not to seek a patent in such country within 6 months after the filing of an application for a U.S. patent on the invention. Any invention made independently by an employee or employees of the U.S. Department of Agriculture or by the cooperator or an employee or employees of the cooperator shall be disposed of in accordance with the policy of the U.S. Department of Agriculture or the cooperator, respectively."

The volume of inventions arising from work done under cooperative agreements is relatively small. Patents on such inventions would be of concern to us only in the event an employee of this Department was an inventor. The disposition of the patent rights in that case and the licensing of any patents obtained would be handled in the same manner as all other employee inventions.

The fifth area deals wtih foreign agricultural research grants in accordance with the Public Law 480 program. Our regulations provide the following: "The public shall be granted all benefits in the United States of America of any patentable results of all research and investigations conducted under this grant, through dedication, assignment to the Secretary of Agriculture, United States of America, publication, or such other means as may be determined by the Director. Rights to patentable results in countries other than the United States of America shall be in accordance with the policy of the grantee, provided that an irrevocable, nontransferable, and royalty-free license to practice such invention throughout the world be issued to the U.S. Government."

At this point, Mr. Chairman, I would like to talk briefly on the bills which are before the committee. The provisions of S. 1084 in general are encompassed in S. 1176, a more comprehensive bill. We will, therefore, discuss certain sections of S. 1176 which have a bearing on the Department's operations. Our remarks are equally applicable to the related parts of S. 1084.

The criteria set forth in S. 1176, under section 3(a) for acquiring title to inventions made by employees appears to be essentially a restatement of the court law founded on the implications arising out of a contract of employment or from the job assignment in absence of an express contract disposing of the title rights. The criteria accords essentially with the practice which has been followed by the Department of Agriculture for many years, including operation under Executive Order 10096, as related to acquiring title to the domestic patents. It is believed legislative adoption of criteria according to section 3(a) would have little effect on the present practice of the Department with respect to domestic patents.

Relative to the foreign rights, the Department has been following the practice prescribed by Administrative Order No. 6 under which an option to the foreign rights is acquired. In all instances the options have expired in 6 months after filing of a U.S. application and the employee-inventors have thus retained the foreign rights. Since section 3(a) provides for the Government to acquire the worldwide title its adoption would change the Department's practice with respect to foreign patents. We would have no objection to this change.

Section 3(b) relates to acquisition by the Government of title rights in inventions resulting from contracts, leases, or grants. Under this provision, the worldwide title rights to inventions arising out of such Government-sponsored activities would be obtained by the Government, subject to such waivers and exceptions as are provided for in sections 10 and 11 of the bill.

Research of this Department, other than that by employees, is primarily sponsored by contracts under the Research and Marketing Act of 1946, by

1. How to achieve equity in respect to rights in inventions and other technological developments related to public procurement, as between the industry engaged in production and the public as represented by Government;

2. How to achieve essential stimulus to advances in military technology to assure that the United States is never in second place versus any potential enemy;

3. Best development of the civilian economy from the productive commercial use of technology having both military and civilian potential; and

4. Added assistance to small business by preservation of an effective climate in which smaller firms can remain healthy and grow.

Our relationship to these four basic points should be explained. We believe we are a typical small firm. When we began operations in 1948, we had $7,000, some electric motors contributed by one partner, a lease on a small building, and a do-it-yourself desire to succeed. There were four of us. We built our own equipment, worked ourselves 12 to 16 hours a day, and negotiated personal loans to feed our families.

We didn't know anybody, had no special "in" by which we could get business. We were indistinguishable from any of 200 other plating shops with whom we competed for the available business in our county. Up to the time when we developed a superior hard-chrome plating technique, we very nearly went broke. Many times our wives urged us to give it up and get jobs where we could make a decent living.

It was our development of a then unique method for hard-chrome plating to finished dimension which made the difference. When we worked it out, it eliminated a second, costly grinding operation previously required to bring hard-chromed parts into the dimensional tolerances required for military usage. Although our pricing for this more precise finish was necessarily higher than the prices offered by competitors, we built up our first volume of sales because of the savings to customers accomplished by eliminating the cost of grinding.

We should underline that this development, as well as all others that followed, was entirely at our own cost and risk. We have never had a research and development contract or subcontract. We have studied customer needs and when some need was not being met, we tried to use our ingenuity to find a solution. If we found a solution, we went to prospective customers and offered our new service in competition with others.

We believe this is highly typical of small business. In a recent survey, "Defense Procurement and Small Business," by a team of researchers at the University of Washington, it was found that 39.7 percent of the small firm respondents were manufacturers of proprietary products, and that 48.8 percent of all sales—the largest single category—were represented by sales of proprietary products. While we are not a manufacturer in the sense of making and selling a product, our business—like the manufacturers—is built almost entirely on processes or process techniques developed by us, each process trying to excel something offered by competitors.

Anadite holds one patent (U.S. No. 2,890,135) covering a vacuum deposition process to eliminate the dangers of hydrogen embrittlement in the protective cadmium coating of high tensile steel parts. This hydrogen embrittlement problem was a severe hazard to operation and safety of both military and civilian aircraft prior to our development. It has been the subject of concern by major producers over a period of years.

Significantly—although this process was developed entirely at our own expense—if S. 1176 had been enacted at the time of the invention, it could easily have embraced this development, with a resulting demand that title be transferred to the Government. We believe this situation results from a misinterpretation of certain facts regarding contracting and subcontracting and will go into precise detail later in this statement.

Meanwhile, in addition to our patent position on the vacuum deposition process, we are U.S. licensees on the Hardas process of hard anodizing, a Scottish development. We obtained the license as a means to solve another military-oriented problem in the anodic protection of certain alloys and configurations for which all processes developed in this country were found to be inadequate. Our obtaining of this license was the final result of our lengthy private research during which we studied all known U.S. processes and ultimately gambled a trip to Scotland in the hope that the process of which we had found some information in a British paper might solve the problem which we knew was holding up production on a major airplane.

already made a substantial contribution; but in all such cases the Government should obtain at least a free license under the resulting inventions and should prohibit their suppression or the assessment of unreasonable charges for their use by others." [Emphasis added.]

In essence this is the Department of the Interior's policy. However, the bill goes beyond inventions arising out of Government-financed research and development, and includes inventions made in the performance of any contract with the Government. According to the bill, the United States gets title to any invention made in the performance of "* * * any obligation arising from any contract or lease executed * * * by * * * the United States."

If a lessee of a Government-owned building covenants to keep it in repair, and in so doing invents a new method for patching walls, according to the bill his invention must be assigned to the Government. Such a result would be highly undesirable, and it illustrates the large area of uncertainty that would be created in Government contracts. To avoid any ambiguity as to the obligations which would give the Government title, the bill should be limited to inventions arising out of research and development bearing a direct relation to a contract, lease executed, or grant made by or on behalf of the United States.

In summation, it is believed that this bill is too inflexible, both as to the Department's employees, and with contractors, lessees, and grantees, in requiring assignment of inventions to the Government under all circumstances. As to the Department's employees, the current departmental regulations which give the employees title in certain cases, have served satisfactorily for many years. Some leeway should be permitted in the case of contractors, to take care of emergency situations, or cases where it would be inequitable for the Government to take title.

S. 1176

This bill is a comprehensive piece of legislation touching substantially all aspects of proprietary rights in inventions in which the Government has an interest. It covers the rights of inventors, establishment of a Federal Invention Administration, provides for the orderly administration of Government-owned patents, the dissemination of information relating to inventions, licensing protection of the Government's rights to inventions, waiver of Government rights uder certain conditions, gives the requirements for the provisions in Government contracts, leases, and grants, and sets up awards for inventive contributions. In the main, the bill fills a longfelt need to make the Government's patent policies more uniform, to require in general an assignment of title to the Government, and to give centralized administration to the large pool of Government-owned patents. Under wise administration, in accordance with the licensing provisions of the bill (sec. 8), more Government patents should enter the bloodstream of industry than do at present, and should yield some financial return to the Treasury at the same time.

The main criticism that is made is to that portion dealing with the rights of Government employee (sec. 3 (a)). This states that "The United States shall have exclusive right and title to any invention made by any officer or employee of the United States or any executive agency if—

> "(1) The invention was made in the performance by such officer or employee of duties which he was employed or assigned to perform, and was made during working hours or with a contribution by the Government of (A) the use of Government facilities, equipment, materials, or funds, (B) information in which the Government had a proprietary interest, or (C) the services of any other officer or employee of the Government during working hours; or
>
> "(2) The officer or employee who made such invention was employed or assigned to perform research, development, or exploration work and the invention is directly related to the work he was employed or assigned to perform or was made within the scope of the duties of his employment."

Insofar as the invention is made by an employee who is employed to invent, or is engaged in research and development, it is clear that title to any invention made by him in the line of his duties should go to the Government. However, where an invention is made by an employee not engaged in research and development, to require an assignment in all instances may work serious inequities. Where the Government's contribution is minor relative to the employee's, title should be left with him subject to a license to the Government.

The provisions for waiver in section 10 of the bill seemingly do not cover employee's rights. From the general tenor of section 11, it would appear that

The only significant difference is that the productive work is handled in small lots, often "hogged out by hand," so to speak, a condition which unavoidably involves higher cost. The actual portion of such contracts which represents true research—and this is especially true of the largest contracts involving the most dollars—is seldom as much as 10 percent.

This does not take away from the value of these contracts to the Nation. It is necessary to produce working examples, to prove theory in practice. The finest computers cannot physically build a Polaris submarine, a B–70, or an intercontinental missile. Until such items are built and used, design theory cannot be verified. This is the productive function which utilizes 90 percent of the funds so frequently and mistakenly lumped as "research."

On the second point we have the condition which most disturbs many small firms like ourselves. At our supplier level, almost no subcontracting is done on an R. & D. (cost reimbursable) basis.

Thousands of small firms will attest that their most common experience is to be asked whether they can furnish a device which will perform a certain function and, if so, to quote a price for varying quantities from one to perhaps a couple of hundred. Usually, such a request goes competitively to any number of firms which may have a device potentially capable of the function required. Perhaps all of them must adapt some prior proprietary development to the unique performance requirement stated. None has a contract. Any engineering or development work they must do is always at their own expense and risk.

In the face of this fact of life for the independent supplier, we have often heard it asked, "But doesn't the Government pay for this research in the price of the articles which it purchases?" Though no one in business would ever ask it, this is a fair question for those not exposed to the personal experience of businessmen. The answer is, "No."

There is a far cry between the position of a firm being reimbursed for its costs in the hope that advanced technology will ensue, as against a group of other firms receiving nothing but a challenge to develop what they can at their own risk—and then being asked to quote competitively to see which firm shall get an order for an initial small quantity of items. Often the modified or adapted item may sell for less than its predecessor. Even if it costs more, the forces of competition play heavily in the picture. Our own example in our privately developed hard-chrome technique is pointed. The process sold for more (it took more work to accomplish), but every customer saved money by eliminating a second process which our development obviated.

When we refer to quoting competitively we are aware that we must clarify a point often misunderstood. Competitive prices are not to the same design. Each company quotes a fixed price on furnishing its own item. Thus the competition embraces not merely price (although that remains a key factor), but all the relative merits of performance, quality, service, and reliability. This is one of the most intense forms of competition known—leading always to improved technology and better products—yet all the risks are taken by the developers, and only the successful have even a chance for ultimate profit in the event that this program continues and fellow-on sales can be obtained.

Clearly, if it is a matter of equity, the Government would have to go far to invent a better system for obtaining maximum technological progress at minimum public expense. Obviously the system would dissolve without ethical respect and legal protection for the proprietary position of those who take the gamble to particpate.

There is another form of statistic often cited and equally misleading on which we would make brief comment. An example is in Senate Report No. 143, filed by the Subcommittee on Patents, Trademarks, and Copyrights, April 3, 1961. At page 6 the statement is made, "Of 3,700 patents obtained by the 75 contractors on these inventions during the period 1949–59, less than 10 percent are in commercial use." The illusion created is that perhaps the contractors are intent on withholding the benefits of such patents from the public. This thesis is common among those emotionally opposed to the patent system, itself.

Constructively such a statement needs a point of reference, a means of comparison. What public use, we must ask, has there been of the majority of all inventions patented in the past? Particularly those by individual inventors? We have no access to the statistical data on the question, but experience leads us to an informed guess. Our guess is that less than 2 percent of all the 3 million patents obtained by inventors has ever proved to have commercial utility. We attribute the situation to nothing more sinister than the simple

6. GOVERNMENT BUDGETS SHOULD BE DEVOTED TO THEIR PRIMARY OBJECTIVES

In reviewing the matter of Government ownership of inventions and patents, it must be recognized that the acquiring of such rights is costly due to the time and effort required to receive, store, and process the information, and for the prosecution of patent applications if this course is adopted. It should be seriously questioned whether appropriations made by Congress for purposes of defense, space exploration, agricultural improvement, or other purposes should be diverted from their primary objectives to the acquisition of patents. This becomes particularly pertinent since there is little or no evidence that the Government actually uses inventions owned by it. Under these circumstances it would seem that a royalty-free license to the Government would in most instances give the Government all the right to use that it needs, while at the same time being less costly to the Government than patent ownership. If in addition the benefits of commercialization can be extended to the Government and the public alike, this is of further benefit and cost savings to the Government.

7. THE GOVERNMENT DOES NOT USE PATENTS

In considering the development of Government patent policy and incurring of associated heavy costs, it is certainly appropriate to inquire into the use made of patents by the Government. During my 15 years with Arthur D. Little, Inc., many industrial clients of the company have developed, produced, and offered to the public items and processes covered by inventions developed for them by Arthur D. Little, Inc. During this same time I have been intimately associated with, and for many years was directly responsible for, the Government contracts of the company. In this period a considerable number of inventions have been disclosed to the Government and patents applied for. At no time have I observed any instance in which the Government has made affirmative use of any of the inventions.

8. THE GOVERNMENT SHOULD NOT ENTER THE FIELD OF PATENT EXPLOITATION

It is proposed under bill S. 1176 to provide for a Government establishment devoted to the exploitation of patents. Surely such a step should be avoided, if possible. Government concern should concentrate on primary objectives—defense, space exploration, agricultural improvement, and the like—which private enterprise cannot undertake. Commercial exploitation of inventions in the normal manner should surely be left to private enterprise which exists for this purpose. Among other considerations it is not desirable that the Government directly or indirectly engage in competition with its citizens in commercial undertakings. Just as Government agencies are more experienced and competent in the fields of their activity—government—private enterprise is more expert in its area—commercial exploitation—with which it is in constant contact. Of the many demands for Federal expenditure, surely this is one which could and should be avoided.

9. NEW ENGLAND DEMONSTRATES EFFECTIVENESS OF PATENTS IN CREATING BOTH GOVERNMENT AND PUBLIC BENEFITS

The general points made above are aptly illustrated in the experience of New England. New England, because of its extensive educational facilities, has demonstrated a particular aptitude for attracting and nurturing inventive talent. As a result, the New England scene is dotted with organizations which owe their origin or present success to inventions and patents. Many organizations might be cited. The following few are selected as illustrative:

Scully Signal Co., Melrose, Mass.

This company, now celebrating its 25th anniversary, owed its origin to the invention and patent protection of a "vent signal" applied to the inlet of oil tank storage systems. For example, the home oil tank with this signal attached to the oil inlet can be filled from outside the house with adequate knowledge of the degree of fullness of the tank. The sound of the whistle produced as the air is displaced from the tank by the inflowing oil tells the level of the oil in the tank. Income derived from this invention has been plowed back into the business which now employs a staff of 100. Its product is extensively used throughout the country.

petitors (large and small). Considering the very small profit, if any, and the very large threat of injury to our business if our know-how goes to the larger companies which can beat us with their greater dollars, we conclude that it is more patriotic to preserve our business than to invite competitive destruction.

It may be asked with reason whether our position as a smaller firm is in any way comparable to that of the larger companies. In the most significant aspects we believe it is. Cost disallowance provisions are not changed between large contracts and small. The fees payable are a fairly small percentage of total estimated cost (6 or 7 percent, as a rule) and are further reduced by disallowances. A review of the annual reports of companies identified as among "the 100 largest" R. & D. contractors reflects that their profit on such sales is generally not more than 4 percent and often less.

Such rates of profit, through perhaps enough—and we would not wish to be drawn into debate on that issue—to compensate for the portion of a development program done on R. & D. contracts, strike us as far from adequate to compensate for the value of background development and know-how. Merely as a matter of survival as a job-creating firm, we could not justify the risks.

Considering the position of our small firm and many others like us under the present law and regulation of the Department of Defense and the Space Administration, we cannot leave the question of equity without considering the language of proposed new law.

We may consider S. 1176 which contains the more detailed language. Even though we never do R. & D. work at public expense, and though we sell our services at fixed prices by means of competitive quotation, we find we would be a "contractor" under the definitions of S. 1176. In section 2(e), a contract "means any actual *or proposed* contract, agreement, agreement, understanding, or other arrangement between any executive agency and any other person * * * and includes assignment, substitution of parties, *or subcontract at any tier* executed or entered into for or in connection with the performance of that contract." [Emphasis supplied.]

Very clearly this includes us. We engage in metal finishing for approximately 800 different customers each year. A substantial percentage of these customers sells either direct to government, or to some other company which incorporates their product as a component of an end item.

Here is a daily occurence with us: We anodize a piece of aluminum which will be fabricated as a part for an electronic instrument. The instrument may have both commercial and military use. If the parts we anodize today happen to go into an instrument which then happens to be sold as a control device for a "research airplane," we have inevitably taken part as a "subcontractor at any tier" in the prime R. & D. contract. In fact, the terms of the purchase orders we receive make clear this contractual relationship.

Now, take the commonplace event that on the day we innocently process the described parts our laboratory people suggest a change in production technique by which the dielectric properties of the parts can be enhanced. We try this change and find we have a superior result which we promptly adopt as standard. There is no change in price to the customer, but we have an extra selling point for future sales, so we are delighted.

Except that we have now performed an invention—"any invention, discovery, improvement or innovation, without regard to the patentability thereof"—within the definition of section 2(g) of S. 1176. Since we are "a subcontractor at any tier," and since the invention [see sec. 3(b)(2)] "resulted from any activity undertaken in the performance of services under any contract * * * for work involving scientific or technological research, development, or exploration," it is quite apparent from the language of S. 1176 that the "United States shall have *exclusive right and title*" to our development. [Emphasis supplied.]

This means we would no longer even have the right to practice our development ourselves, except by Government permission.

Most important of all: Not one cent of Government money has gone to finance our development—and nowhere in the proposed act is there any provision to exclude private developments made in the manner described.

Some will claim there is neither intent nor danger of such interpretation. To them we must answer that we already are experiencing it under the Space Act. The language of section 305 of that act has been brought into the contract and subcontract clauses necessarily passed down the chain of supply. So long as the prime contract is even partly for "research"—and that part may be as

Senator McCLELLAN. All right, gentlemen. Which one will be the spokesman for the agency?

Mr. JORDAN. I will be.

Senator McCLELLAN. All right.

Mr. Jordan, do you have a prepared statement?

Mr. JORDAN. No, sir; we do not have a prepared statement, Mr. Chairman.

Senator McCLELLAN. All right.

Are you for or against the bills?

Mr. JORDAN. I might explain, Mr. Chairman, that we have addressed to the committee three letters over the signature of Mr. John Moore, the Administrator of General Services. These letters were addressed to you, and the first one that I would like to mention, if I may, and just introduce these for the record, was April 20, transmitting the views of General Services Administration on S. 1084; and April 21, transmitting our views on S. 1176; and on May 16, 1961, a further letter commenting upon specific inquiries which had been addressed to us concerning the effect of private ownership of patent rights upon our ability to dispose of plants which had become surplus to the needs of the Government, and some other matters.

Senator McCLELLAN. These letters, copies of which will be furnished the reporter, will be printed in the record in full at this point in the order of their date.

(The letters referred to follow:)

GENERAL SERVICES ADMINISTRATION,
Washington, D.C., April 20, 1961.

Hon. JOHN L. McCLELLAN,
Chairman, Subcommittee on Patents, Trademarks, and Copyrights, Committee on the Judiciary, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: The views of the General Services Administration have been requested on S. 1084, 87th Congress, a bill to establish a national policy for the acquisition and disposition of patents upon inventions made chiefly through the expenditure of public funds.

This bill provides that the United States shall have exclusive right and title to any invention made by any person in the performance of any obligation arising from any contract or lease executed or grant made by or on behalf of the United States. The bill further provides that an invention resulting from a research contract or grant financed by the United States shall be patented in the name of the United States only, and that no patent on such invention shall be issued, assigned, or otherwise transferred to anyone as compensation under any such contract or grant.

GSA does not favor enactment of S. 1084. It is believed that the policy expressed in the bill does not provide the flexibility generally desirable in negotiating contracts required to meet the research and development programs of the Government and further, that enactment would deter normal and desirable efforts of supply contractors to achieve product improvement during the period of performance of a Government contract.

While GSA does not make research grants or carry on extensive research and development programs, we have followed, with minor exception, the license concept in the relatively few research contracts awarded in recent years. Based on our limited experience, we feel that there are situations where insistence upon a "title acquisition" policy may disrupt vital research and development programs. On the other hand, we recognize that there are programs which may reasonably be viewed as not only justifying but requiring acquisition by the United States of right and title to an invention resulting from research financed with public funds. Accordingly, it is our view that a rigid national policy is not desirable.

We believe that agencies utilizing the license policy might well give consideration to a plan for recoupment through royalties of public funds invested where a research contractor acquires title to an invention which is subsequently exploited commercially. However, we are not certain that this approach in every

In that company's case, because of instinctive patriotism, the decision was extremely difficult. Many prior commercial developments made on their own have been freely furnished to aid their Government. We have a right to ask, if a management with strong patriotic motivation must still decline in such circumstances, how easy will it be for others to decline when less nobly motivated?

Let us leave the point with this one thought: We cannot be sure how great will be the damage in respect to dulled incentive for participation by those most competent to advance military technology. We can only be sure there will be some damage. Our question then is: Who will assume the responsibility?

DEVELOPMENT OF CIVILIAN ECONOMY

The theory that Government title to inventions will yield a more widespread development and use—and a lesser cost for the public to enjoy such inventions—also remains open to question.

Many inventions inherently require substantial investment and preparatory expense before they can be developed to public use. The availability of patent protection has, from our Nation's own progress record, been a key factor in bringing about necessary investment. Is it an essential factor? That we must determine.

Here again we are involved with conjecture. It cannot be shown whether atomic energy—the field where private patents are prohibited—has been as fully developed as it might have been. Some say no; some say yes; nothing is proved in debate.

We can suggest only one guideline which might be helpful in decision. This is to construct what might be the situation if there were no patent system, if all technology were turned over to the Government.

In such circumstance it would appear that one of the two conditions would have to prevail: (1) the State would have to arbitrarily assign inventions to developers of its choice, or (2) if usage were free to all, only those with the greatest accumulations of capital could afford risk development of items which others could readily copy. Since the first proposition suggests possibilities of infinite connivance to attain favored assignments, it would be untenable in a free country. Since the second leaves nothing but the absolute control of dollars, it would appear to be unthinkable.

The concept of public benefit through extended development of publicly owned inventions appears to fall of its own weight.

ASSISTANCE TO SMALL BUSINESS

We are left with the final issue on which our position may rightly be taken to be influenced by selfish interest. We are a small company. Our selfish interests is in the opportunity to prosper and grow. The question seems to be whether real economic health for a small firm can be built on the knowledge of others.

All our personal experience appears to point to the opposite. We believe the availability of protection for patents and other proprietary positions is the last refuge of small and independent firms. Without such protection, all commerce seems to resolve to the issue of who has the most money with which to command and control the market. In such a situation, the smaller firm is irretrievably lost.

Any theory that seizure of patents and know-how from larger firms would provide work and skill for the smaller is a Robinhood philosophy incompatible with a nation which proclaims equality of rights to rich and poor. Moreover, the theory is grounded in fallacy. It contemplates that the larger firms have something worth taking for the benefit of the smalls, but that the small firm technology which might be "swept in" would be inconsequential.

From the viewpoint of small companies which have some experience in supplying military needs this belief is almost ludicrous. The large firms design the major structures of submarines, missiles, aircraft, things which no small firm can make. It is the small firms, themselves, in the manner earlier described, which account for the major portion of specialized component design, that is, the things which other small firms can make.

Undoubtedly the opposed belief springs from a fad in public thinking—a fascination with the concept of "organized invention" in which huge teams of research scientists—by sheer weight of numbers—are supposed to accomplish king-size strides in every branch of technology.

Now, then, I might agree with you or anyone else on many, many exceptions and many qualifications to that. But to write legislation you have got to start with a base, and I am trying to figure out which base to start with.

All right, go ahead.

Mr. JORDAN. Well, this is all we have, Mr. Chairman.

There are some members of our staff here from the Public Buildings Service of General Services and our Defense Materials Services. We will be pleased to answer any questions which you may have.

Senator MCCLELLAN. You pretty well then set out in the letters the position of the agency?

Mr. JORDAN. Yes, sir.

Senator MCCLELLAN. Very well.

Any questions, Senator Hart?

Senator HART. Mr. Chairman, I was interested in your comments just a moment ago as to the starting point, or call it what you will.

Based upon your experience in a wide variety of property disposition matters, can you conceive that Congress could write a law which would establish the basic principle that title would be in the Government except, and hope to be able to spell out the exceptions? Or would you suggest we think of asserting the general proposition in the statute and then, as this Long bill does, create a Federal Inventions Bureau or something like that, assuming the constitutionality of it, simply stating the proposition that basically the rule should be that title should be in the Government but this agency should consider and then list generally half a dozen of these items that you mentioned, the extent of contributions, background of the private developer and so on?

As between those two which approach do you think would offer the greater promise in terms of workable legislation?

Mr. MACOMBER. I would think, Senator, that any legislation would have to be written in extremely general terms, laying down guidelines rather than attempting to set out specific exceptions, and with provision for some kind of a centralized review perhaps rather than centralized administration.

Senator HART. I understand you then to suggest that you think it unlikely that we could draft a law which we could permit each executive agency to seek to apply. Rather, we should visualize a law which sets out the general proposition, let the agency make a determination and then have some separate and, I presume, new agency make a final appraisal as to the wisdom and the propriety of the agency decision under the general statute?

Mr. MACOMBER. I have been thinking along that line. Senator, yes, that that would be the most practical way to handle this very difficult and controversial subject. Whether it should be a new agency, thereby creating one more agency, theoretically at least reporting directly to the President, or whether there is some existing agency that would be sufficiently divorced from the controversy to perform that function I am not sure, and also I would think that it should be on a postreview basis, at least should be tried that way in order to avoid these delays in channeling every single transaction in advance to this central agency.

Senator HART. Thank you.

Thank you, Mr. Chairman.

reduced to practice in the performance of any work called for or required in a contract, the Government obtains a royalty-free license to practice such inventions for Government purposes. The contractor retains title for all other purposes.

Needless to say, this position is imcompatible with either Senate bill S. 1176 or Senate bill S. 1084, introduced by the chairman of this subcommittee. In the light of conflicting patent policies between Government agencies, in many cases supporting identical research and development programs, the need for uniform Government patent policies is clear. There is no objection to S. 1084 and S. 1176 on this ground; rather the objection is directed to policies enumerated in these bills.

The issue clearly presented in both of these above-mentioned Senate bills is directed to the question of whether the Government takes title to patent inventions as opposed to the contractor retaining title and granting royalty-free license to the Government to practice these inventions in appropriate circumstances. The right of the Government to take title to an invention under S. 1084 is extremely broad. This right extends by its terms to an invention made by any person in the performance of an obligation arising from any contract, lease, or grant made by or on behalf of the United States. Under S. 1176, the Government derives a broad right to title to inventions of similar scope.

Our objection to these bills is based on the competitive disadvantage imposed on American business as against foreign business in the domestic market, the opportunity presented to foreign nations having political motivations in opposition to our own for furthering their ends at the expense of the American people, the competitive disadvantage of American business in the international market, the undesirable effects on establishment and development of small scientific business, and the undermining of the patent system as a mechanism for rewarding inventors.

FOREIGN-OWNED U.S. PATENTS

In his appearance before the Mitchell committee hearings last year, Mr. Alfred H. Rosen of our association pointed out that a substantial percentage of patents issued by the U.S. Patent Office are directly issued to foreign corporations.

Quoting from this statement:

"In the calendar years 1949 to 1958, inclusive, this percentage increased from 8 percent in 1949 to 14 percent in 1958 (computed from statistics supplied by the U.S. Patent Office Organization and Methods Division). Thus, out of a total number of 50,824 patents issued in 1958, a total of 7,395 patents (approximately 1 out of every 7) were issued by the United States to residents of foreign countries. If the Government takes title to significant numbers of patents, the ratio of commercial U.S. patent rights held by foreign owners to such rights held by U.S. owners will be artificially increased still further."

This does not include a very substantial number of patents issued to domestic corporations and trustees acting as agents for foreign corporations. Integrated out, it is clear that effective dominance of important fields of activity can be realized by foreign corporations. For example, before World War I, the German corporations rather completely dominated the diazo dye field by virtue of a combination of patent and trade secret control. This gives rise to the insidious prospect domestic or foreign corporations, acting as agents or fronts for adverse powers, can selectively dominate important fields of activity by virtue of inventions made in areas to which we have no access.

Furthermore, by this means, such adverse powers can, for unrelated political and economic reason, carry on their activities at the expense of the American people and, at the same time, exclude them from participation. The extent to which such a situation exists at this moment certainly bears investigation. It is indeed frightening to contemplate the avenues available to foreign competition in the event that our Government effectively interferes with the ability of domestic corporations to compete in our modern scientific and technical environment. Rather than inhibit the motivation of domestic corporations to sponsor and patent inventions, it would appear that the better course lies in strengthening and further stimulating inventors in accordance with the well-tested and highly developed principles of our patent system.

EFFECTS OF FOREIGN PATENTS ON INTERNATIONAL TRADE

We are today vitally concerned with the competitive position of American industry in foreign markets. Foreign patents are at least as important to the

We believe that the legislation now before the subcommittee is contrary to the best interests of the U.S. Government, of American industry, and, most importantly, of the people of this country. We therefore respectfully ask that you consider our views seriously in your deliberations and that you record our opposition to the specific bills now before the subcommittee as well as to the principle which they represent.

Sincerely,

SOL M. LINOWITZ,
Chairman of the Board.

groups, in the main, guarantees their survival. The removal of the patent incentive most directly affects the ability of small business to compete in the commercial market, not big business. In addition, the restraints of our antitrust laws have been very effective to date in precluding the very large companies from dominating technical fields by virtue of their patent positions.

I should like to cite a specific example taken from my own experience. A very talented group doing business at an annual sales rate in the order of $1 million was faced with the problem of the development of commercial products. Note that the development of a new product and the cost of pioneering such a product typically runs into hundreds of thousands of dollars. Since this group did not know in advance whether or not it would itself manufacture these products or license them for sale to others, it was vitally concerned with the problem of patentability. An essential ingredient for the product finally chosen for commercial development was indeed its apparent patentability. This product was based on an invention made in the performance of a Government contract.

In this case, if the contractor could not retain title to his patents, it is very probable that the product would not have found its way into the marketplace. The particular product involved appears to have a significant bearing on the ability of other groups to advance the state of the art in very important areas of technology.

There are many other examples which can be cited. While such case histories are certainly relevant, the example chosen very largely characterizes the position of small business vis-a-vis commercial development.

The very idea that small business opposes the placing of title to inventions in the hands of the contractor is foreign to my direct experience and that of my colleagues. To suggest otherwise requires a demonstration more replete with facts than has thus far been proposed.

SHOULD THE GOVERNMENT BE IN THE PATENT BUSINESS?

If the Government takes title to inventions, essentially two alternatives are present: A policy of royalty-free licensing may be adopted in the manner of Atomic Energy Commission; or the Government may assume the burden of developing and protecting its patents for sale on a royalty basis. In the light of the experience to date, the former policy is of no practical significance. Who bothers to take a license on a royalty-free basis? The latter course is in accordance with the principles of S. 1176, which purports to place the Government squarely in the business of selling patents. In this regard, the first question that comes to mind is, Whatever for? What pressing problem is solved? Is it intended for the Government to preempt private business in the area of research and development? Has private business demonstrated its inability to foster its proprietary interests in a manner calculated to serve the national interest? Clearly not.

The present need is for uniform Government patent policies. There appears to be no justification for exceeding the minimum requirements of the Government to practice or have practiced inventions for governmental purposes. The Government has a present right by virtue of supplying its authorization and consent to ignore patent rights in the areas affecting the national interest. The patent holder has the right to sue for just compensation in the Court of Claims. Thus, there presently exists a mechanism for the Government to assert its sovereign right in those areas sufficiently affecting national interest, and the patent holder has a remedy for just compensation.

What is the justification for going any further at this time? In answer to the above, it is respectfully submitted that no such justification presently exists. There is not the history of dislocation normally considered a necessary condition for the Government's taking a greater role.

A patent in final analysis is one aspect of many relating to the marketing of products. It has been clearly established that our Government is not in the business of developing and marketing products for normal commercial channels. This is the accepted and successful role of American business. It is precisely the stimulus for developing and maintaining markets for products which most effectively and most naturally influence the present patent activity. Unless and until it has been amply demonstrated that American business is incapable of carrying this burden, there would appear to be no justification for the Government's usurping this well-accepted role.

We, of course, recognize that there are Federal agencies which are primarily interested in the promotion of pure science and research and which undertake projects designed directly to promote the public welfare in their areas of interest. To the extent that these agencies conduct their efforts through private organizations engaged solely in research, we can conceive of some justification in a requirement that any patents resulting from the work should belong to the Government.

Various other Federal agencies, however, are concerned with the accomplishment of specific task as rapidly, effectively, and cheaply as possible. This is particularly true in the case of the Department of Defense. While contracts awarded by such agencies often involve equipment concepts so new and so complicated as to require research and development in the initial stages, the ultimate objective of the Government in entering into the contracts is to acquire essential tools and equipment.

It is not necessary to point out that the success of the Government in obtaining essential equipment depends on the continued existence of numerous commercial organizations possessing the full complement of necessary research skills, experience, and production facilities.

As a relatively small company, we are acutely aware of the practical difficulties which the enactment of the aforementioned legislation would cause Xerox Corp. and those similarly situated. The records in the hearings before the Mitchell and Brooks committees in the House and the Long and O'Mahoney committees in the Senate are replete with specific examples of these problems. We are anxious to cooperate in every way possible in the furtherance of the defense effort. But as in the case of most industrial contractors, when we devote our resources to research and development—whether for our own purposes or in order to produce hardware for the Government—we do so in the reasonable expectation that the end result will be proprietary commercial products which will contribute to our business.

For several years we have participated in Government sponsored contracts, most of which have involved research in the new field of xerography and some of which have produced patents under which the Government is entitled to license rights. The patents themselves are owned by Xerox Corp. and have contributed toward our continued growth and our correspondingly increased potential for service to the United States. Were we in the future to be deprived of the prospect of a continued strengthening of our patent position as it might be affected by Government sponsored work, we would find it increasingly difficult to participtae in programs designed to provide essential equipment to the United States.

In a very real sense, we are in the business of growing; and we are not economically capable of diverting our limited resources to projects which will not add to our assets as well as pay for our current expenses.

It is possible that concerns substantially larger than ours may not find the proposed legislation as disturbing as we. We suggest, however, that this attitude, if it exists, derives principally from the fact that the proportion of effort involved in any particular contract taken by a large corporation would be relatively insignificant compared to its total resources. To deprive the smaller contractor of its investment in patents, we believe, would be to curtail seriously the degree of Government business done by any but the largest businesses and would at the same time restrict the growth of smaller companies thus depriving the American people of the important contributions which those concerns are prepared to make to the future of our country.

The most direct and serious impact of the proposed bills would be on procurement by the Department of Defense. Under the present system, license rights to any inventions made under a contract with the Department are available to the Government for noncommercial purposes. Subject to the relatively narrow limitations contained in the recent revision to section 9–107.1 of the Armed Forces Procurement Regulations, however, the contractor retains ownership of the invention and is therefore able to develop the commercial field to which it may relate. Government and industry alike have found this approach largely acceptable and, we submit, the American people have been its ultimate beneficiaries. To deprive those contracting with the Department of Defense of the right to retain ownership of inventions resulting from their contracts will be to eliminate a most important factor motivating private industry to undertake Government work and we suggest that the ultimate result can only be to restrict sharply the number of concerns able to cooperate in the defense effort.

On this basis you may well ask why we are concerned at all. Obviously we are not going to make any direct contribution to company dividends through Government research. In fact, with the following exception, we perform all of our Government contract research at cost and collect no fees or profits.

In 1950 we were asked by the Radiation Laboratory at the University of California and the Atomic Energy Commission to build and operate a unique accelerator at Livermore, Calif. A new subsidiary company was formed to carry out this program and it was dissolved after the program was completed. A nominal fee was involved in this contract.

All other contracts have been reimbursed at cost. We have had a series of these with the Navy, Air Force, and the Atomic Energy Commission. We have carried out research on development of radiation-resistant fuels and lubricants, and on synthetic hydraulic fluids for supersonic aircraft. We have conducted extensive studies for the AEC on the effects of radiation on petroleum and related products. We participated in the nuclear energy powered aircraft program by conducting research on radiation-resistant lubricants. We have been awarded contracts by the U.S. Navy's Bureau of Ships for several technical services. One was the supervision of a submarine fleet test to evaluate diesel fuels from various parts of the world to determine if there were adverse effects from high sulfur content fuels and, if so, to see if more highly compounded diesel engine lubricating oils would be needed for this more severe service. A second phase of the work was to determine if snorkel operation of the diesel engines presented lubrication problems. We have also done contract work on jet fuels, rocket fuels, and the performance of diesel engines under Arctic temperatures. Currently we are conducting fundamental research on fuel cells for the Diamond Ordnance Fuze Laboratories.

In some cases we were approached by the Government agency to do this work; in others we expressed an interest in getting a research contract and made the first approach. In all of these contracts, our extensive background of experience in developing fuels, lubricants, and petrochemicals, and our understanding of the fundamentals of their performance, were our stock in trade, and both we and the Government agencies felt that we could contribute a great deal with a relatively small contract price because of this background. For our part, we felt this work was worthwhile because we learned more about the developing needs for new fuels, lubricants, and other products that we supply to the military services.

Our work for the Department of Defense was done under contract provisions which provided the Governmnt with a royalty-free license, but did not require us to surrender our proprietary information and patent rights to our competitors for non-Government commercial uses. In some of these contracts where we performed a particular service, there were no patent aspects to consider and no inventions resulted. Under one contract we developed a synthetic hydraulic fluid which will permit aircraft hydraulic systems to operate under the high temperatures associated with flights at supersonic speeds. This is now marketed by Oronite Division of California Chemical Co., a subsidiary of the Standard Oil Co. of California. As a result of this contract, the Department of Defense received its complete research reports on a successful development, and also has a commercial supply of the product available. While the Department of Defense made the research reports available to industry, we filed our patent applications. We do not know what the outcome will be, but we at least have a chance to protect our findings for any future commercial use they may have. Even more important to us, under this type of contract we have not endangered our accumulated proprietary position in this field.

We have also worked for years under small contracts with AEC on radiation damage of hydrocarbons and other organic materials and the development of radiation-resistant lubricants, and hydraulic fluids for use in atomic reactors. However, each of these contracts was extensively negotiated with the AEC, particularly with regard to scope of work.

As a specific example of the problems encountered in such negotiations, several years ago we tried to negotiate a research contract with the AEC relating to the development of lower cost organic coolants and moderators for organic reactors. Having as we do a group of highly trained experts in this field of work, both we and the AEC felt it would be a natural for us to carry on such a program which was specifically desired by the AEC. In connection with the proposed work, it was hoped that through the selection of petroleum refinery hydrocarbon streams we would be able to develop a source from which these

party is unwilling even to grant a free, nonexclusive license under the inventions made.

Our conclusion, then, is that the arguments made to support the position that Government is doing nothing more than industry does in acquiring title to inventions fail to give due weight and consideration to all of the factors involved.

PRACTICAL EFFECT OF GOVERNMENT POLICY OF TAKING TITLE TO INVENTIONS RESULTING FROM GOVERNMENT CONTRACTS

The logical consequence of a Government policy of taking title to patents is that a company must consider the effect of each contemplated contract on its continued existence, short term and long term, the effect on its employees, the community in which they live, and even on the country. The decision will many times, be made not to accept a given contract. This is the attitude of Texas Instruments, as is well illustrated in a letter sent by Mr. P. E. Haggerty, president of Texas Instruments, to former U.S. Senator Lyndon B. Johnson, and other Representatives in Congress from the State of Texas, in conjunction with the hearings on the Mitchell bill. A portion of Mr. Haggerty's letter is quoted below:

"The practical effect of the present property rights provisions (sec. 305 of the National Aeronautics and Space Act of 1958—Mitchell bill) is that Texas Instruments must examine each situation involving NASA, directly or indirectly, to determine if a contract for work can be accepted. As to certain minor, noninventive types of situations, we have been able to accept contracts relating to the work of NASA. In work involving present or anticipated commercial positions, Texas Instruments could not, in many instances, justify performing work for NASA under the present property rights provisions.

"This same cautious, critical type of approach by Texas Instruments to contracts with NASA is typical of the attitude of industry in general toward contracts with NASA, as can be seen from pages 28–32 of the Mitchell committee report. In other words, the present section 305 provisions are stifling and retarding the conduct of the space program—the same as similar provisions have always stifled other programs, for example, the atomic energy program.

"The Mitchell bill presents a fair compromise between the equities of a contractor, the public and the Government and alleviates the most objectionable features of the present section 305 of the Space Act. Therefore, we hereby go on record as recommending the passage of the Mitchell bill as one of the amendments to the Space Act. It is hoped that you concur in our belief that the present section 305 of the Space Act is objectionable and will lend your support toward passage of the Mitchell bill."

Apart from the injustice and lack of need, it seems that this country can ill afford the loss of time and the loss of competent, conscientious contractor service which would inevitably result from a Government take-title patent policy.

CONCLUSION

The cost of research which may result in invention and even the development which leads to a proof of the invention is small compared to the cost of bringing that invention to the marketplace. The engineering leading to production in quantity of an invention usually involves a large multiple of the cost of research. Our experience would support a multiple up to as much as 10 times the cost of research. The cost of the plant and tooling to manufacture an invention usually costs more than the engineering. Again, our experience would support costs of up to as much as three times the engineering cost. Developing a market usually costs somewhere between the cost of the engineering and the cost of the plant to produce an invention. Adding all these together, it becomes clear that the investment necessary to bring a worthwhile invention to the market and to the public is large indeed compared to the research which may produce the invention. The inducement for bringing inventions to the marketplace is greatly enhanced by a good patent position, for the manufacturer may then have a means of recouping his costs and justifying the accumulative investments in research, development, engineering, plant, and marketing.

We support the position that the Government should have an irrevocable, royalty-free, and nonexclusive license to use and have used under inventions made in the course of Government contracts for research, development, and experimentation. These rights are all that the Government needs or can make use of, and we basically oppose any greater rights under inventions in the Gov-

made possible by many millions of dollars company investment in facilities and background research. It seems to me that the Government could better require that contract provisions respecting Government ownership be applied only after there has been a specific finding that an invention or discovery is of primary importance to our national defense, safety, or welfare. Further, where such a finding is made, a contractor of the type discussed should be allowed to retain for commercial purposes rights in its proprietary fields.

We believe that such a balancing of private and public interests would meet the Government's needs while furnishing a reasonable incentive, and protection of proprietary rights, to companies able to make a real contribution to Government research programs. A small group of company scientists assigned to a Government research project in an area of the company's main competence could make unusually rapid progress because they then could draw freely on the background of experience and knowledge of the whole company enterprise.

In conclusion, we firmly believe that such incentives and protection of proprietary rights will permit the Government agencies to obtain the most for their research dollars.

CAMCO, INC.,
Houston, Tex., May 3, 1961.

Mr. ROBERT L. WRIGHT,
Counsel, Subcommittee on Patents, Senate Judiciary Committee, Washington, D.C.

DEAR MR. WRIGHT: We are unalterably opposed to any legislation which permits further encroachment by Government into the fields of free enterprise, particularly as pertains to Government acquiring the rights to any inventions developed by corporations during the performance of Government contracts.

The protection afforded individuals and corporations by patents on inventions is the very backbone of the free enterprise system. The rights to such patents certainly belong to the inventors along with any benefits derived therefrom.

Any research and development programs necessary to the performance of a Government contract is substantially financed with our corporate tax money anyway and any inventions resulting therefrom could not have been possible without years of know-how, experience, and ingenuity of the companies concerned. They should not be forced to sacrifice the rights and privileges which for generations have been the major contributing factor providing incentive for the tremendous advances made by this country in the fields of science, engineering, and production technology.

We sincerely request that you carefully examine the facts for the possible impact on this Nation's future development and we urge that you vote against any such legislation.

Sincerely,

HAROLD E. MCGOWEN, Jr., *President.*

REPORT OF THE COMMITTEE ON PATENTS, TRADEMARKS AND TRADE PRACTICE OF THE CHICAGO BAR ASSOCIATION

S. 1084 AND S. 1176

APRIL 18, 1961.

The bills with which this report is concerned relate to the interest of the United States in inventions made by private contractors during the course of work related to a contract, agreement or other relation between the United States and the contractor. Both bills are before the Judiciary Committee of the Senate. Hearings started on the bills on April 18, and it is anticipated that they will continue into May.

An appendix attached hereto discusses briefly certain aspects of present Government practices related to contractors' inventions, and points out some of the advantages of the present system. In general, the Government receives a royalty-free license for Government use, and the contractor retains title to the invention.

S. 1084, introduced by Senator McClellan, provides that the United States shall have title to any invention made by any person in the performance of any contract; and that no invention resulting from a research contract shall be patented other than in the name of the United States.

cated, this is not unusual in the case of small businesses, who must have a market for their products when they start producing them.

Therefore, we suggest that the term "contract" be modified to indicate that only contracts for research and/or development are meant and not contracts for commercial products. We appreciate your interest and consideration of this matter.

Sincerely,

W. B. WEBBER, *Vice President.*

STATEMENT OF TEXAS INSTRUMENTS, INC.

INTRODUCTION

MAY 31, 1961.

We, of Texas Instruments, Inc., view with concern what appears to be an ever-increasing deterioration of incentives for all Americans. This gradual but inexorable erosion of incentives has manifested itself in a number of ways, but it is particularly noticeable in recent proposals and enactments for outright ownership of patents by the U.S. Government. It is indeed ironic that we in America, who can attribute to the incentive system in large measure the spectacular growth of our industrial complex and our Nation, are tending to abandon the very principles that have led to our success.

Before presenting our views on the bills under consideration at the hearing, bills S. 1084 and S. 1176, we feel that it might be helpful to make a brief statement of one of our philosophies.

Texas Instruments and its employees have responded well to incentive systems, not the least of which is the patent system. The patent system has given hope and encouragement to the investment of the capital necessary to place products on the market. We compete daily in the marketplace with the hope of making a profit from the sale of those products but, to do so, we find that our very best efforts and the use of the latest and most advanced technologies are required. We desire to make a profit. Let me say here, however, that we do not apologize for this desire to make profits, because profits have enabled us to grow from a little company to a larger company over the years and, in the course of growing into a larger company, we have provided employment for many thousands of people and made a contribution to the gross national product of this country in a very real sense. Our desire is to continue to grow as a company and as a contributor to the economy of this country.

THE BILLS BEFORE THE COMMITTEE AND THEIR SUPPORTING ARGUMENTS

The bills before the committee incorporate the basic proposition that, in general, all inventions arising out of contracts with the Government, regardless of which branch or agency of the Government makes the contract, shall belong to the Government. The arguments that have been made on behalf of this proposition fall into two categories: (1) What the Government pays for it should own; and (2) the Government should have a uniform patent policy. An argument often made, collateral to the first, is that industry should not object to Government taking title to inventions because, after all, industry takes title to inventions made by its employees and contractors.

PERSPECTIVE FOR THE ARGUMENT THAT THE GOVERNMENT SHOULD RECEIVE THAT FOR WHICH IT PAYS

With respect to the argument that the Government should receive that for which it pays, it should be clearly understood that in most instances the Government would be getting more than it pays for in taking title to all inventions made under Government contracts. Oftentimes we share the cost of research and development work with the Government when both the Government and Texas Instruments want to have research and development work performed on a given subject matter. In other instances, because of competition, certain beneficial research and development work must be bid at less than the actual cost required to perform the work. In still other instances, the research work may be performed at a slight profit only to have the profit reduced or taken away upon a determination of allowable costs by the Government.

use requires substantial redesign, the cost of which must be borne by the manufacturer.

In some instances, principally with regard to inventions which relate solely to weapons and have no conceivable nongovernmental use, the contract between the Government agency and a research and development contractor may provide for an assignment of the invention and all patent rights to the Government. Even here, however, such provisions are included in the contract only after negotiation between the contractor and the Government agency.

Another arrangement for handling rights under research and development contracts was used recently by the Department of Health, Education, and Welfare for pharmaceutical research work. Under these contracts, the contractor retains title to the patents resulting from the work and is sole supplier for both governmental and nongovernmental use so long as he can meet the demand. Even the Government cannot purchase elsewhere without infringement. If the contractor fails to supply the demand, the Government can compel the granting of licenses, but only after notice and hearing, and on payment of a reasonable royalty.

The Atomic Energy Act of 1946 was the first general departure from the historic American patent policy. It excepted from private ownership patent rights in certain specified areas relating to atomic energy. The theory behind this exception was that the work was financed entirely by the Government and there were no substantial private rights or interests in atomic energy. There are many who feel that this exception was unwarranted and unnecessary. The initial, and rather rigid, provisions of the Atomic Energy Act relating to patents have since been made more lenient.

In research contracts, the Government's interest is in the effective, expeditious conduct of the research. It seems to your committee that this may best be accomplished by providing maximum incentive to the contractor. In our view, the moneys received, usually cost plus a fixed percentage, under the contract do not amount to such incentive. The most effective incentive is provided by an opportunity to make profit by manufacturing and selling devices developed pursuant to the contract. Where such devices have important nongovernmental uses, the incentive is strengthened. Where this incentive is lacking, companies with excellent research departments may not bid for Government research and development work. As a result, contracts may be let to companies whose research departments are not the best available and work on contracts may not be pursued with maximum zeal and tenacity, to the detriment of the national interest.

GOVERNMENT CONTRACT PATENT POLICY

(By William H. Davis)

JUNE 26, 1961.

The long-continued discussion of Government policy as to inventions and patent rights growing out of Government-financed research and development, although sometimes overheated, dogmatic, and distorted by conflicts of special interest, has, on the whole, displayed a great deal of commonsense and uncovered much information recorded in the hearings of the congressional committees and also in current publications.[1]

Out of this discussion and enlightenment has grown a significant amount of common understanding and agreement.

In the first place, it is now clearly understood that the policy in question extends only to research and development in useful arts, i.e., in applied technology; that it does not extend to the wider fields of "pure science"; to a discovery which advances the frontiers of scientific knowledge but is not a process, machine, manufacture of composition of matter.[2] These "pure science" increments of knowledge once disclosed cannot be monopolized. And it is perhaps worth noting that the trend of Government-financed research is increasingly toward "pure science."

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[1] See, for example, "Symposium on Government Contract Patent Policy" in Federal Bar Journal, vol. 21, No. 1, winter 1961; "Federal Patent Policies in Contracts for Research and Development" in the Patent, Trademark, and Copyright Journal of Research and Education, vol. 4, No. 4, winter 1960; and "Administration and Utilization of Government-Owned Patent Property," Dec. 23, 1960, contract NASw-177, of the National Aeronautics and Space Administration.

[2] 35 U.S.C. 101.

cated some illusive and meaningless lipservice "exclusions" also set forth in ASPR 9–107.2.

6. Since DOD "got away" with its confiscation of privately developed background inventions, naturally other Government procurement agencies climbed aboard and Congress even followed suit with the Space Act and its equally meaningless waivers. By evolution we find it now appearing in S. 1176.

7. My principal reason for opposing S. 1176 or any other legislation which perpetuates the defining of a background invention as a foreground invention (subject invention) by the use of the word "actual" or "actually," is the detrimental effect this policy has had, is having, and will continue to have on the defense effort. This is a time when our Government is telling industry it should invest more of its own funds in research of value for defense. Industry, both large and small, is fully cognizant that if it creates military equipment designs (not actually reduced to practice) with its own funds, they will be confiscated, the exclusions provided by ASPR 9–107.2 not to the contrary. This is no way to encourage private research for defense.

I want to make it abundantly clear what I am talking about and I sincerely hope you will discuss this with learned Government research personnel. At the moment our Government is spending huge sums of money on research and development and there is no doubt but that many people conclude that any privately sponsored "defense" research is trivia and can be ignored. Such thinking is undoubtedly behind the "first actually reduced to practice" clause and is dangerous. Government sponsored research, standing alone, is totally inadequate for effective defense. It must be supplemented by privately sponsored research and particularly by research which has no commercial end-use aspect to it at all. You need only look at any missile system to realize what a great part of its technology was the product of former privately sponsored research. To think that the same contribution from industry is not now needed and will not be needed in the future is the shortest type of shortsightedness. As long as the word "actual" remains in the quoted phrase, a certain amount of privately sponsored research for defense will die at the board of directors tables. It has to. Large expenditures of stockholders' money cannot be justified in the face of outright confiscation. I quote Senator Long himself from his address to the Senate last year:

"Any board of directors would probably fire its management officers if they failed to protect the company's interest in such valuable discoveries as those for which the company has paid."

I also quote from a letter dated April 6, 1961, which I have received from Senator Long:

"I definitely adhere to the view that inventions should belong to 'those who pay to have them created.'"

Very truly yours,

S. C. YEATON,
Vice President and Director of Patents.

SPERRY GYROSCOPE CO.,
Great Neck, N.Y., May 1, 1961.

Hon. JOHN L. MCCLELLAN,
Chairman, Committee on the Judiciary,
Subcommittee on Patents, Trademarks & Copyrights,
U.S. Senate,
Washington, D.C.

MY DEAR SENATOR MCCLELLAN: 1. This will acknowledge, with thanks, receipt of yours of April 20, 1961, in response to my former letter of April 11. I will be grateful if you will include my letter and this one also in your record. There are many features of S. 1176 which can be the subject of an honest difference of opinion. I have specifically called your attention to one feature which is all bad. I doubt if you will find anyone who will champion it, including Senator Long.

2. I sincerely hope you will scrutinize subparagraph (4) of paragraph (b) of section 10 of S. 1176 personally. I am sure you will be convinced from your own examination alone that I have made an accurate statement, namely,

(*a*) A patentee whose patent covers an invention constructively but not actu-

form of Federal authority to administer Government patents.[5] Although the authorities proposed have differed a great deal from one another, each of them is a recognition, explicit or implicit, of the Government responsibility.

In the practical resolution of disagreement by persuasion such a consensus, developed out of prolonged discussion from so many conflicting points of view, can scarcely be ignored.

I think it may reasonably be said, therefore, that the problem confronting the Congress with respect to governmental patent policy has, by this consensus, been narrowed down to what sort of Federal authority should be entrusted with this responsibility and how far should the Congress go in enacting a declaration of policy to guide such authority.

It is my opinion that the flexible provisions of the amendment of section 305 of the National Aeronautics and Space Act of 1958 proposed by Congressman Brooks in H.R. 6030, or the flexible provisions of the act proposed by the American Patent Law Association spokesman would leave in any such authority all necessary power to discharge that responsibility. They give to the Administrator the duty to prescribe provisions governing the disposition of the rights to inventions resulting from Government-financed experimental, development or research work; require him in all cases to reserve to the United States not less than an irrevocable, nonexclusive, nontransferable, royalty-free license and authorize him to waive title to the monopoly of any such invention on such terms and conditions as he determines to be in the best interest of the United States.

Our available experience in administering Government-owned patent monopoly rights is not, in my opinion, sufficient to warrant any attempt to lay down at this time restrictive guide rules limiting the Administrator's discretion. On the contrary, I think we are confronted with a situation which demands a great deal of further experimentation under the very dissimilar conditions that confront the several agencies.

For this reason I would be opposed to setting up a single governmental authority to govern the conduct of all the governmental agencies that now will have to deal with patent monopoly rights. We are accustomed in this country to think with some pride of the democratic States united under our Federal Constitution as so many experimental laboratories in which the complexities of local self-government can be tried out. I think the same idea should be taken into account in the experimentation that now lies ahead of us with respect to the effective use by the Government of the patent monopoly; that it is premature to try to set up a single administrative agency, and that for the present at least the wiser course would be to leave each of the governmental agencies now responsible for administering Government patent rights to make its own experiments under a general act of Congress giving each of them the power and discretion provided for in the case of NASA in Congressman Brooks' proposed legislation or in the proposal of the APLA.

ARTHUR, DRY & DOLE,
New York, April 13, 1961.

Hon. JOHN L. MCCLELLAN,
Senate Office Building,
Washington, D.C.

DEAR SENATOR MCCLELLAN: I am deeply concerned over two bills now being studied by the Senate Judiciary Committee's Subcommittee on Patents, Trademarks, and Copyrights. They are your bill, S. 1084, and Senator Long's bill, S. 1176. These bills seek to give the Government full title to all inventions made by private contractors in Government research and development contracts. They would make commercial applications of such inventions available to all other companies.

I do favor laws that protect the public interest. And I agree that the Government should have royalty-free license to use all inventions made under contracts which it finances. Possibly some type of legislation is desirable to insure this right. But the proposed legislation goes far beyond this point and it is my

[5] Senator Long, Federal Bar Journal, vol. 21, No. 1, p. 25; Congressman Overton Brooks, Federal Bar Journal, vol. 21, No. 1, pp. 26–36; H.R. 6030, 87th Cong., 1st sess., the bill recommended by the American Patent Law Association spokesman at these hearings, and others.

contracts, since resulting inventions would be made available to their competitors for commercial uses. Thus the Government would be denied the benefits of advanced research experience in certain fields. This would not be in the best interest of the country's overall defense effort.

4. The proposed legislation seeks to solve a nonexistent problem. Most, if not all, companies, believing in the patent system, have no quarrel with the practice of giving the Government a royalty-free license to use for governmental purpose all patents resulting from research and development work done under Government contract while allowing the contractor to retain legal title (and therefore all nongovernmental rights) to such patents. Accordingly they see no need for taking such rights away from the originating contractor and distributing them to the rest of the business community either as largess or on terms to be determined by the Administrator of the Federal Inventions Administration which would be established by S. 1176.

5. The proposed omnibus approach to Government patent policy seems unwarranted. The bills in question would handle all types of Government research in the same way, whether it be for AEC, NASA, Department of Defense, Commerce Department, or any other agency. It would seem that there is or may be a considerable difference in the way patent rights in these various areas should be handled. The omnibus approach might, indeed, even include inventions made incident to a supply contract where the Government was merely purchasing goods and had no intention of contracting for inventions.

6. The proposal in S. 1176 by which the Government would license for commercial use inventions made by contractors under Government contracts seems highly incongruous. If the royalty asked were nominal, would-be commercial users would not have much incentive to go through the procedure prescribed for getting the license because they would know that all other companies could get a license just as easily and none would have competitive advantage. In this regard, the proposal is reminiscent of the Alien Property Custodian efforts during and after World War II to license seized enemy patents upon payment of a nominal fee. If the royalty asked were considerable there would be great reluctance to seek such a license and the result would be that the invention would be little used for nongovernmental purposes.

CONCLUSION

We believe that this type of legislation would not be in the best interests of the Government because it would jeopardize acceptance of and performance under research and development contracts. We submit that any legislation in this field should follow the present practice of the Department of Defense, giving the Government a royalty-free license for governmental purposes and allowing the contractor to retain full rights for nongovernmental purposes.

SAN DIEGO PATENT LAW ASSOCIATION,
San Diego, Calif., June 5, 1961.

Senator JOHN L. MCCLELLAN,
Senate Judiciary Subcommittee on Patents,
Washington, D.C.

MY DEAR SENATOR MCCLELLAN: I am writing you to express my personal opinion and the opinion of the San Diego Patent Law Association concerning the proposed legislation that pertains to Government ownership of patents. The San Diego Patent Law Association includes in its membership representatives from all of the major manufacturers in San Diego.

We desire to be on record as opposing bills No. S. 1084 and No. S. 1176 and any other bills that are directed to a similar objective. Such bills, if enacted, would impede the origination and development of technical advancements in the space and military fields. Further, statutes as are contemplated by such bills would restrict full utilization in future Government projects of technical advancements that U.S. industry originates and develops through private funds.

This country, its economy and its gross national product has grown to its world dominating size on the basis of our ability for rapidly originating, developing, and utilizing technical advancements. This ability was fostered under the safe disclosure principles in our patent system and received its driving force from incentives in our free enterprise system. We do not believe that

An article by Senator Clair Engle, of California, titled "Patents and Public Purpose," which appears in the March 1961 issue of Aerospace, gives substantial expression to my views on the subject of Government patent policy. As a private citizen who fully endorses the philosophy of free enterprise and minimal Government regulation thereof; as well as a staff member of a research and development organization which has made substantial contributions to the Government R. &. D. effort, I strongly urge upon you the wisdom of extending the present Department of Defense patent policy to other Government agencies rather than the extension of present AEC and NASA policies as a general policy to be followed by all Government agencies.

I have been associated with Government research and development contracts and grants for a number of years in large universities and in commercial organizations. One point which I have yet to see given proper emphasis in any argument on the subject of patent policy is the obvious fact that no one in the history of Government R. & D. contracting has ever signed a contract to invent anything. To do so would be patently idiotic. Contractors enter into such contracts for the agreed purpose of performing basic or applied research in a prescribed area or to perform experimentation leading to the development of a desired device or component. The contractor invariably agrees to devote his best efforts to accomplish the work outlined, but in no case does he ever agree in advance to invent anything.

The implications of the foregoing are significant in the present debate on Government policy and I shall not impose upon your busy schedule in an effort to expound them here. I should like to state, however, that my personal experience with administration by Government agencies has been such as to enable me to predict the inevitable creation and growth of one more enormously expensive regulatory bureaucracy, characterized by administrative paralysis, which would further hamper the efforts of the United States in competing with the Soviet Union for world leadership, should the philosophy of the AEC and NASA patent policies be further extended.

May I thank you once again for your kind invitation to submit a statement for inclusion in the record.

Sincerely,

IVAN M. PONEDEL,
Manager, Government and Industry Relations.

STATEMENT BY HENRY P. HUTCHINSON OF RIDGEWOOD, N.J.

My name is Henry Parks Hutchinson, a member of the technical staff of ITT Communication Systems, Inc. I received an E.E. in engineering from Columbia Polytechnic Institute of Brooklyn in 1930 and a M.S. in E.E. from Columbia University, New York City, in 1933. I entered employment in the U.S. civil service. For the next two decades I was promoted to sucessively higher positions in the U.S. civil service, occupying during the last 15 years the following positions:

1. Research engineer and section chief at the National Bureau of Standards, Washington, D.C.
2. Chief engineer, U.S. Army Aviation Center, Fort Monmouth, N.J.
3. Assistant director of research, U.S. Army Signal Research and Development Laboratory, Fort Monmouth, N.J.
4. Special consultant to the chief, Applied Physics Division, U.S. Army Signal Research and Development Laboratory, Fort Monmouth, N.J.

I am a scientist, engineer, and inventor, have written a number of technical papers, and made several inventions for which patents have already been issued or are pending with the U.S. Commissioner of Patents. I am a senior member of the Institute of Radio Engineers and have participated in the work of the International Scientific Radio Union (URSI) and of the Central Radio Consultative Committee (CCIR). I am a licensed professional engineer, New York State License 16,913. I have been engaged in the fields of radio communications, Army aviation electronics, and research in basic and applied science since 1936. During World War II and the Korean emergency, I served with the U.S. Army Signal Corps in the Research and Development Division of the Chief Signal Officer, U.S. Army, and during 1944–45, overseas in India and China.

[From the Southern California Industrial News, Mar. 20, 1961]

GOVERNMENT BUSINESS: COLLECTIVIST INVENTION?

(By John Marschalk)

There is an interesting parallel between what some of our lawmakers think we should do about patents and what the Russians are doing with farm products.

In a February 26 decree, the Russians abolished their farmers' markets. These were free markets. Farm peasants who worked their own private plots, together with millions of suburban gardeners who did the same, brought their produce to the city each day. City people purchased their needs at prices reached by free bargaining, that is, by the law of supply and demand.

Out of 560 mililon acres of Russian land devoted to farming, the peasants who supplied the farmers' markets operate only 16.5 million acres, about 3 percent. The rest of the acreage is under collective and state farm operation.

Yet the little private plots accounted for a much larger part of Russia's food. Something like 61 percent of all the eggs, 27 percent of the meat, and 15 percent of the milk came from these small farms.

It must have burned the commissars to have this demonstration of free incentive going on under their noses.

From now on, the little farmers can keep their land, but they will bargain with a single customer, the state. They will be required to sell to a government-operated consumer cooperative, and you can figure what chance they have of pushing for a good price.

The incentive for good production will presumably come from something other than the chance to make a ruble or two. Why such incentives have not worked better on the big collectivist and state farms is a rude question. Now, with nobody able to make a bargain ruble, maybe they will all do better.

Maybe.

So, what about patents?

Well, some of our lawmakers figure they can get inventions with the same kind of incentive the Russians have rigged up for peasant farm production.

On February 28, Senator McClellan introduced S. 1084 which, if it were to become law, would have establish that "Notwithstanding any law, custom, usage, or practice to the contrary, no invention resulting from a research contract or grant financed by the United States shall be patented other than in the name of the United States. * * *"

This doesn't say the Government wants the free right to use the invention for governmental purposes. That is what the Government already gets as a minimum under every federally financed research contract.

Senator McClellan's is a whole-hog proposition. It says the Government not only would get the free right to practice the invention, the inventor could not get a patent for a chance to make a buck out of it commercially.

This proposition seems based on the idea that if a company is paid for the inventor's time while working on a Government contract, that is enough. The argument is that Uncle has paid for it, so why should anybody have a private right in it?

The argument overlooks a few small points.

Like the fact that if you have something which might help Uncle, you won't likely take a Government contract to speed final development. Not if you can finish it on your own and thus protect your commercial rights.

Or like the fact that an inventor has to eat between Government contracts.

Or that Uncle doesn't place contracts with guys who have empty heads. If they don't bring most of the answers with them, why choose them as contractors?

Of course, we can abolish the patent system altogether. As Russia has done with the free markets. Then the patriots will darn well heave to, or else.

Now there's the ticket: collectivist invention.

Any more ideas to help close the missile gap, fellas?

companies will accept Government contracts, provided that the Government will waive the onerous terms of S. 1084. Once such terms are waived, the Government has been forced to abandon its policy.

Since these terms can be expected either to kill the goose that laid the golden egg, or result in unequal and unequitable treatment to various contractors, it is recommended that the bill be amended in the following sense:

(1) Delete lines 3 to 6, page 1, inclusive.

(2) Insert: "That the United States shall have exclusive rights to use, purchase, or sell apparatus, and equipment, using or based on inventions made by any person in the performance of any obligation arising from any contract or lease executed or grant made by or on behalf of the United States and that said use shall not require that any patent as issued include a specific Government right to use. Furthermore, that the patent as issued to the inventor or his assignees, shall grant all commercial rights residing in the invention."

(3) Delete lines 7–10, page 1, and lines 1–4, page 2.

It is believed that the changes recommended more adequately protect the Government's interest in the governmental use of new inventions. At the same time, the recommendations conform with article 1, section 8, of the Constitution of the United States by retaining solely for commercial use those features of our patent system which have in the past brought forth such a harvest of inventions.

With respect to recommendation (3) above, it is believed that the present system of applying for and recording inventions in the name of the individual inventors should be continued. There are many intangibles here. Not the least is the individual's desire for personal achievement and recognition. For scientists, this comes most frequently from the acceptance of professional papers and from inventions. If an inventor is denied recognition, by having patents issued anonymously in the name of the United States, he no longer has present incentive to disclose his inventions.

COMMENTS ON S. 1176

This bill, which is more inclusive and detailed than S. 1084, suffers from the same basic defect. This occurs in paragraph b, page 4, lines 11 to 25, inclusive, and page 5, lines 1 to 2, inclusive, when the Government takes title to all inventions occurring under Government contracts, leases, or grants. For the reasons stated under comments on S. 1084, it is believed that this bill S. 1176 also is not in the country's best interests.

Attention is called to page 20, section (1), lines 13–17 which provides for total waiver of the Government's interest under the identical situation described in my comments on S. 1084. Thus within this single document a complete reversal of policy is possible. This opens a door to political pressure and bureaucratic administration of national policy.

Furthermore, under section 10(b)2(c), page 22, lines 9–12, and section 10(b)(4), page 22, lines 20–25, the extent of the bill is not clear.

Since inventions are made only by individuals, the requirements of section 11(c), page 24, lines 7–18, "shall also contain provisions * * * sufficient to require such person to furnish * * * at such times or times as shall be prescribed * * * full and complete technical information" are onerous and essentially unenforceable. The positive approach to this problem is taken by section 12 which offers awards for certain inventive contributions. The bill does not make it clear whether the proposed awards are restricted only to inventors who are officials or employees of the U.S. Government.

It is believed that all the principles recommended in my comments on S. 1084 and S. 1176 with regard to Government contracts should also apply in the case of Government officials and employees.

It is recommended that bill S. 1176 be amended as follows:

(1) Delete section 3, page 3, line 18, page 4, lines 1–25, and page 5, lines 1–2.

(2) Insert:

"SEC. 3. (a) The United States shall have exclusive rights to use, purchase, or sell any equipment in Government service based on any inventions made by any officer or employee of the United States, or any executive agency regardless of conditions under which the invention was made. Furthermore, said use shall not require that the affected patent specifically include a clause stating the Government's right to use. A Government document listing such patents shall be sufficient.

"(b) Any patent applications by any officer or employee of the United States shall, where the officer or employee desires commercial rights, be prosecuted by said officer or employee at his own expense and any patent issuing shall be in

law, would in effect confine the benefits and incentives provided by the patent laws to only 40 percent of what they were designed to cover. If this is the ultimate desire of the subcommittee, this can be done very simply by adding only 10 words to section 101 of title 35 of the United States Code (amendatory words italicized):

"*Except for inventors financed directly or indirectly under Government contracts*, whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

If the ultimate desire is not simply to exclude such inventors but to preserve their rights in favor of the Government, then an even more fundamental change is involved. Surely your subcommittee would be shocked if one suggested that it propose the submission of a constitutional amendment to the States amending article I, section 8, to read:

"The Congress shall have the power * * * to promote the progress of science and useful arts, by securing for limited times to authors and inventors, *except inventors financed directly or indirectly by Government contracts*, the exclusive right to their respective writings and discoveries. *As to those inventors so excepted, Congress shall have the power to block the progress of science by acquiring their rights and exercising them on behalf of the Federal Government.*" [Italic added.]

But this is exactly the practical impact of what the subcommittee proposes.

It is my understanding that you wish concrete proposals from anyone not in agreement with the philosophy of the bills which you are now considering. Here are two:

The major concern of your subcommittee is that in some instances Government contractors are going to get an undeserved windfall as a result of patents resulting from Government-financed research, which can be regarded as specially favoring the contractors and discriminating against others. Now, this concern does not at all justify the postulate that every contractor is always going to get a windfall in every such instance. Quite the contrary is the fact, and it is very seldom that any such windfall materializes. I suggest that you confine your insurance realistically to the contingency that you are trying to insure against. This may be completely satisfied in two ways, as follows:

(*a*) A priori (i.e., if an unfair windfall is realistically envisioned in a particular case):

A provision permitting the head of any department contracting for research and development services (not an administrator of a special bureau) to make exceptions in certain cases from the standard provisions normally giving the Government full license rights, in the manner outlined last year by the Mitchell subcommittee in H.R. 12049 (now H.R. 1934) after careful and objective consideration of a large cross section of testimony on behalf of responsible individuals, corporations, and agencies.

Such a result, if desired, could and should be accomplished without the creation of a completely unproductive bureaucracy, by which the Government, representing the public, seeks to exploit the rights to exclude which have been granted certain members of the public by the Patent Office, which has been productively engaged in this work for over 100 years.

(*b*) A posteriori (i.e., in the rare instance in which a windfall does in fact occur):

A provision similar in principle to the FAA policy under which the Government may recover the Government's contribution toward the research expenditures.

I trust that the superficially appealing political dress of "getting for the Government what it paid for," so liberally sprinkled through the discussions of the issues now under consideration, will not blind the subcommittee to the basic realities of what is involved, and the injurious consequences to the public which would follow should ill-conceived legislation be enacted.

I am taking the liberty of sending copies of this letter to people interested in the work of the subcommittee, and am enclosing additional copies for your convenience.

Respectfully,

ALDEN D. REDFIELD.

The resolution was adopted pursuant to a report and recommendation received by our board of governors from the section on patent, trademark and copyright law of our association.

Should you desire additional information with reference to this matter, I suggest you correspond with the chairman of our patent, trademark and copyright law section, John F. Schmidt, whose address appears below.

Sincerely yours,

AMOS M. PINKERTON, *Executive Director.*

RESOLUTION ADOPTED APRIL 29, 1961, BY THE BOARD OF GOVERNORS OF THE ILLINOIS STATE BAR ASSOCIATION

Whereas bills such as S. 1084 (McClellan), S. 1176 (Long), and H.R. 5804 (Multer) would provide that in all cases the United States have exclusive right and title to invention made in the performance "of any obligation arising from any contract or lease executed or grant made" (S. 1084) by the United States;

Whereas these bills draw no distinction between widely varying contracting conditions which dictate differing treatment of the ownership of patentable inventions (e.g., research and development contracts as compared with mere procurement contracts);

Whereas we are generally opposed to the U.S. Government operating as a patent holding or licensing body or agency, because we believe that except in unusual circumstances any given patent is more likely to be commercially exploited and the technical knowledge represented by the patent more widely disseminated throughout industry if the patent ownership is in private hands rather than in the Government;

Whereas there has been no demonstration that the public would significantly gain by acquisition of title to inventions in all cases as provided in the bills; and

Whereas the possibility of reward in the form of significant commercial patent rights resulting from outstanding performance is in many cases an important incentive to the taking, and most diligent performance of research and development contracts by private enterprise, to the benefit of the public:

Resolved, That the Illinois State Bar Association is opposed to the enactment of S. 1084 (McClellan) S. 1176 (Long), and H.R. 5804 (Multer); it is further

Resolved, that certified copies of this resolution be mailed by the executive director to the two Senators from the State of Illinois, the Honorable Everett M. Dirksen and the Honorable Paul H. Douglas; to all Representatives of the State of Illinois; to the members of the U.S. Senate Committee on the Judiciary; and to the appropriate Members of the U.S. House of Representatives on the Judiciary Committee.

I hereby certify that the above and foregoing is a true copy of a resolution adopted by the Board of Governors of the Illinois State Bar Association at its meeting in Chicago, Ill., on April 29, 1961.

Attest:

[SEAL]

SAMUEL H. YOUNG, *Secretary.*

Dated: May 9, 1961.

COLUMBIA, S.C., *May 28, 1961.*

Senator OLIN D. JOHNSTON,
Washington, D.C.

DEAR SENATOR JOHNSTON: I notice in the Congressional Daily that the Subcommittee on Patents of the Senate Judiciary Committee is to resume hearings on May 31 on the revision of Government policy on patents. As you are a member of that committee, I would like to offer herein my ideas to the subcommittee.

I have studied patent legislation going back to the Constitutional Convention of 1787, when the Committee of Eleven reported their recommendation on the powers to be granted to the Congress, and the Convention voted "nemo contra" the plenary powers to legislate in this field, except that patent rights were to be for "limited" times as opposed to an indefinite grant. As I stated in the American Bar Journal in 1955,[1] I believe a good case could be made for mandatory licensing of patents under a reasonable royalty formula to be established by Congress. But that seems difficult of passage, and perhaps a compromise can be effected.

[1] May 1955, p. 396.

applications, acquiring title and proprietary rights, with respect to inventions, maintaining custody and control of documents. He is required to prepare and maintain indexes and to disseminate information to the public by obtaining, assembling, and classifying available publications and other information concerning inventions and evaluating scientific and technological information under the provisions of section 7, and to publish and distribute these findings, much of which could better be performed by the present Patent Office if it were given the job.

The body of inventions which are patented are to be licensed under the provisions of section 8, the usual fee to be $25. The Administrator has the right under certain circumstances to grant an exclusive license under the provisions of section 8(b).

In the event an application is filed by anyone who may have been connected in any way with a Government contract, the law requires the application to be accompanied by a full and complete statement of the facts under section 9(b) and the Administrator, after receiving the statement from the Commissioner, shall have the right to direct that the patent issue to the Administrator. The applicant is given a limited time period to establish his rights before the "Board of Patent Interferences," a Board unfitted by training or background to decide legal questions of title and equitable rights and which has heretofore limited its jurisdiction to questions of priority.

To be sure, under the provisions of section 10(a) the Administrator may waive the rights of the Government under certain inventions or classes of invention contingent upon certain determinations and certain other events.

Section 11(a) requires that any agreement entered into by or on behalf of an executive agency shall contain provisions as determined by the Administrator to be adequate for the protection of the proprietary interests of the United States, and under subsection (b) of section 11 the Administrator may even exempt from the provisions of subsection (a) certain contracts.

A provision for awards for certain inventive contributions is contained in section 12, the amount of the award to be determined by an award board, selected by the Administrator, after hearing and a report made to him. The factors affecting the size of award are specified.

The effective date of the act is stated to be the "first day of the fourth month beginning after the date of enactment of this act except that sections 2, 4, and 5 thereof shall take effect on the date of enactment of this act."

The establishment of a Federal Inventions Administration is based upon a fundamentally erroneous concept, to wit, that the Government should own patents. If Mr. Long is serious about this thing, why go to the trouble and expense of dressing up in complicated form, as is done by this act, something which would result in an expensive nullity? Why could not the same result (an undesirable result in our view) be obtained simply by stating that all inventions of the class here under discussion belong to the Government, are available to all members of the public, and publish them in a publication put out by the Government? Why go to the trouble and expense of prosecuting patent applications resulting in patents which protect no one and which are in effect to be given away? This proposed bill is the full equivalent of traversing the circumference of the earth to visit the adjacent town rather than going there directly.

An important fact is that we do not wish to abandon the concept of patents and we do not wish to buy our way into socialism with our own money. The bill is fundamentally bad for inclusion of all the factors mentioned above and for many others which time and space will not permit us to set forth here.

Your opposition to this bill, the enactment of which we believe would be a disservice to the American people, is respectfully urged.

Very truly yours,

W. D. SELLERS,
Chairman, Legislative Committee.

CINCINNATI, OHIO, *May 26, 1961.*

HON. JOHN L. MCCLELLAN,
Chairman, Senate Judiciary Subcommittee on Patents, Trademarks, and Copyrights, Washington, D.C.

MY DEAR SENATOR: I have read the reams of material resulting from the efforts of your subcommittee to develop appropriate legislation to deal with the problem

So pressed and distraught was I by the tactics of the Wurlitzer Co. that I consummated that unfair agreement, and retired, from New Jersey to Florida (at 70).

This personal example is cited to show how the large corporations deal with independent inventors. Their dealings with their own employees are no less unjust.

Their claims that their own contracts with the Government must contain stimuli for invention in the form of patent retention, are never applied when they are the employer. Their arguments for this to get the highest inventive effort, and to guard against "holdouts" in their own employees working on Government-sponsored work, likewise do not hold water.

If they paid (substantially) their own employees working on their own R. & D. projects, for meritorious inventions, or if they left those employees with the patent rights, and if they kept for themselves, only nonexclusive "shop rights," their arguments against such a policy in their contract dealings with our Government would come with better grace. As it is they are untenable, and double-talk.

Should you wish to include these remarks in any future "study" report, please do so.

Some years ago Senator O'Mahoney, when I complained of the complete absence of studies of the Patent Systems based on the viewpoint of its very core—the inventor himself—he suggested that I submit such a report. I had already and at my own expense, sent to every Member of Congress a 13-page paper on "The Decline of American Inventions," I also testified at two of the House and Senate hearings on patent extension bills both as an independent inventor, and as president of Patent Equity Association. Additionally I submitted statements concerning the havoc wrought by the War II stop orders on my own patent operations. Those patent extension bills never were passed and for only one reason: the NAM and the APLA associations, both dominated, as the patent policy committees, by big business patent lawyers, used their vast powers to strangle them, when passage was imminent.

In order to get wider circulation of my "Decline of American Inventions," I have recently expanded it to include, as part II, of an 86-page monograph, "Creativity, Its Seeds, Its Culture, and Its Fruits."

This is now in the hands of the editorial committee of Technology and Culture, a publication of the Society for the History of Technology, based at Case Institute of Technology in Cleveland.

I have not sounded them out as to their attitude concerning the possibility of my submission of this monograph to you as one of your study reports, but if you feel that it might help fill the void in your series of reports, I will gladly write them. And if you are interested I will forward to you my only remaining copy of that monograph.

The Inventor's Council.—Among many other facets of our patent system, and interesting particularly to those patriotic inventors who submit, gratis, to the Inventor's Council, and the Department of Defense, their concepts and ideas which they feel might be useful, I have included some comments based on my own experiences.

In these I have asked some very pertinent questions, and drawn some conclusions concerning the disposition of these submitted inventions, which do not square with the assurances by those bodies as to protection of the inventor's rights, even if these only be the credit for given inventions.

It is my conviction that these suggestion boxes of the Inventor's Council and the Defense Department are only grab bags for private industry as defense contractors.

Ideas and plans considered meritorious by them cannot all, certainly, be kept confidential in security-bound governmental laboratories, who alone develop them into defense-usable hardware. What then becomes of them?

They can only be turned over to defense or R. & D. contractors for further improvement, design, and manufacture into such hardware. With no inventor's ownership tag on each such invention, and no hand-off caution, what then is to prevent such contractors from filing patent applications in the names of their employees who add a little here and there perhaps and claim the whole invention. These applications of course, in the Defense Department contractors operations are at once assigned to the company, which therafter is free to use them in its private industry manufacturing operations.

If the submitting inventor ever gets any merit report at all, it is usually negative, or it has already had prior investigation, showing that he is a Johnny-

Department of Defense policy is illustrative, and to provide for deviation therefrom only in rare situations. To this end, we advocate the policy inherent in the amendment to section 305(a) of the National Aeronautics and Space Act as provided in H.R. 6030 (Brooks), with the further suggestion of the addition to section 305(a) of provisions emphasizing that the license policy is to be the norm and that deviation from it should be only in the exceptional case.

In urging these views on the committee, we stress that it is our conviction—

1. That inventions arising from Government contracts are in large measure properly attributable to the contractor's prior knowledge developed through his own investments in time and money.

2. That the progress of the useful arts as well as our economy is best promoted by industry rather than Government ownership of patents.

3. That the protection of our national interest and security, which is the objective sought by most if not all of the Government-industry contracts coming within the purview of these bills, will be best served by adherence to the so-called license policy as distinguished from the so-called title policy.

4. That the administration, in accordance with the directive of article I, section 8, of the Constitution, of the extensive and varied patent rights that would be vested in the Government by the provisions of S. 1084 and S. 1176 would impose difficulties and burdens upon the Government out of all proportion to the contemplated benefits, if any.

UNIVERSITY OF COLORADO,
Boulder, Colo., June 6, 1961.

Hon. JOHN CARROLL,
U.S. Senate,
Washington, D.C.

DEAR SENATOR CARROLL: After reading about the proposed Federal patent policy in which the Government acquires all patents resulting from Federal R. & D. contract, I have the following comments to offer. I am now a professor at the University of Colorado and have been for the last 15 years. Prior to that time I was connected with General Motors and the Du Pont Co. for 15 years as a research chemist and engineer. It is my firm belief on the basis of my experience both in industry and in academic life that Government acquisition of patents resulting from Federal research and development contracts would not only slow progress in industry and in universities, but it would remove a lot of the incentive for men and companies to do research for the Government. It is also my belief, that insofar as industry is concerned, the proposed policy of Government ownership would diminish the incentive to invent and develop new products which have been for several decades the crowning virtue of our industrial development. Proposed restrictions on the ownership of the patents would result in large industrial companies with highly seasoned research men and technical background in hesitating to go after Government contracts since the fruits of their labors arising from years of industrial experience and research could easily become the property of any other group who deemed it unnecessary to go into the keen competition for Government-sponsored research. Out patent policy at the present time has resulted in the greatest industrial development the world has ever seen and to my mind any effort to weaken our present patent system would eventually result in the abolition of a system which has made us the most prosperous nation in the world.

I believe the Government should adopt a flexible policy in the matter of Federal patents which would recognize functions and problems peculiar to individual agencies and take into account the different types of research and development contracted for by the Government. Congress, therefore, should enact legislation setting broad general policies on ownership of patent rights. In essence I would like to see a policy such as that existing in the Defense Department where the Defense Department obtains a royalty-free license and permits the contractor to retain patent rights.

I wish to take this opportunity in thanking you in advance for all your efforts and support of our present patent system.

Sincerely yours,

J. D. PARK, *Professor of Chemistry.*

6. The taking of title to data and information arising out of contracts raises great problems in protecting background rights because of the difficulties in separating background information from that generated under a contract, this problem being severe where licenses are involved and being extremely difficult where the Government takes title.

7. Finally, we object to the requirement of reporting the facts of invention and copying the Administrator on every patent application by a company merely because the company has a Government contract. This requirement and its related procedures makes the accused guilty until proven innocent and puts prima facia rights in the trespasser rather than the owner of record.

These reasons are more fully explained in the paper attached hereto. We will appreciate your subcommittee giving due consideration to the matters raised and sincerely believe that the interests of the country may better be served by withdrawing these bills.

Respectfully,

LAMONT B. KOONTZ, *President.*

STATEMENT REGARDING S. 1084[1] AND S. 1176[2]

With regard to the above bills, S. 1084[1] and S. 1176,[2] the Minnesota Patent Law Association wishes to go on record with the following views, it being noted that comments relative to the Government taking title relate to both bills whereas the other comments apply to S. 1176.

1. Both of these bills are intended to put the Government in the patent licensing business in direct competition with its suppliers. The bills are intended to bring about uniformity in the patent policies of the various branches of the Government but no evidence is seen that such uniformity is needed. In addition, these bills would, by putting title to inventions in Government hands, also put furhter commercial development of the inventions under Government control. The scope of the material controlled would be broad and encompassing for, by definition, "contract" includes "proposed contract" and the term "invention" is defined as meaning "improvement" or innovation" which thereby means that the Government would be controlling everything involving novelty arising out of all Government contracts or proposed contracts.

The establishing of another Government business widens a trend that has already gone far. In effect, our Congressmen sit as directors of a multitude of Government businesses; this cannot help but distract their attention and divert their energies from their primary function of lawmaking.

By maintaining Government control over inventions and their licensing, many inventions may be lost or suppressed from a practical standpoint, because the Government people administering the inventions generally are not close to the art to which the invention relates and therefore may fail to realize its potentialities. Ordinarily, the most ardent promoter of an invention is the inventor but he is in no position to actively push an invention in the hands of the Government.

2. These bills would tend to discourage inventions from the standpoint of business largely because industry would have no good reason to get or keep inventive people on its payroll.

The bills would likewise tend to discourage invention from the standpoint of the inventor because, after going through the pains of reporting and advising the Government of his technical accomplishments in sufficient detail to enable it to prepare and prosecute a patent application on an invention, the inventor is almost certain to believe that the effort expended isn't worthwhile. In addition, most inventors get satisfaction out of advancing the interests of their employer but, where the Government takes title, there is little to justify any such satisfaction especially when there is no national emergency and the Government is competing with his employer. The average Government agency is believed to generate relatively little invention per unit of expenditure and these bills will tend to lower contractors' inventive outputs to the same mediocre level; a survey of inventiveness per expenditure in AEC and NASA should show this.

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[1] S. 1084 provides that the U.S. Government takes title to any and all inventions made in the performance of any obligations arising from Government contracts, leases, or grants.

[2] S. 1176 provides for the establishment of a Federal Inventions Administration for receiving title to information and inventions arising out of Government contracts or from Government employees and further provides for licensing or otherwise disposing of the rights obtained.

estimated 103,175 members who were organized under chairmen at the time, and which were reported to us by chairmen to the 42d day after mailing of Mandate No. 262. Since that time we have recorded receipt of late ballots on Mandate No. 262 from chairmen totaling 9,088. However, an analysis of all 21,937 ballots voted by members who are organized under chairmen shows the percentages the same as were reported on the earlier analysis of the 12,849 total.

2. Additional thousands of ballots were likely voted and mailed directly to Congressmen by the 57,655 members who were without chairmen at the time of the Mandate No. 262 poll. These ballots, or estimates of same, did not enter in any way into the tabulations reported in the Mandate No. 263, and thereafter reported to you.

3. An additional actual 14,762 ballots were voted by nonmembers and members on Mandate No. 262 during the course of calls by federation full-time field representatives, and were subsequently sent on to their Members of Congress. Analysis of these ballots show the opinion trend quite similar to that found in the tabulation of ballots reported by district chairmen. However, these ballots were not considered in arriving at the percentage nationwide cross section of votes reported through district chairmen. These ballots were kept entirely aside from ballots voted by members and sent to their Congressmen through chairmen. They have not in any way affected these percentages.

We trust that the foregoing answers the questions you have in mind concerning our Mandate No. 262 poll. It has been a pleasure to write to you on this subject. If we can be of any further service, please drop us a line.

With all best wishes,

Sincerely,

GEORGE J. BURGER, Jr.,
Assistant to President.

[The Mandate, published by National Federation of Independent Business—Bulletin No. 262]

HELP GET 87TH CONGRESS OFF TO A GOOD START—VOTE YOUR BALLOTS

* * * * * * *

4. POLICY ON GOVERNMENT FINANCED INVENTIONS

Should Congress permit private firms to patent inventions that are financed and developed by Federal funds? (This refers to inventions which private firms make during work on Government research contracts.) ☐ for ☐ against.

* * * * * * *

BEFORE VOTING ISSUES, READ THESE EXPLANATIONS

* * * * * * *

4. Argument for permission to patent: Chance to patent inventions made during Government contracts gives firms incentive to do outstanding work. This benefits all our people. Take the right away, and you reduce their interest. There's not as much profit in Government work as in private production. While on this, firms that make and patent inventions allow Government to use them without charge. Further, some small firms have made and patented inventions on Government contracts. These have helped them grow. Without patent protection, their giant competitors could have taken over and likely driven them out of business.

* * * * * * *

4. Argument against permission to patent: The public should own what the Government pays for. That's the basic point here. When a firm undertakes a Government contract, inventions made during its work should be freely available to all citizens. This is true especially on research contracts financed by Government. It has important meaning to small business. Some 95 percent of research contracts are going to giant firms. Discoveries made have great bearing on products and services with commercial importance in the years ahead. Unless patents are forbidden on these inventions, the giants may be assured monopoly stranglehold on our business system.

* * * * * * *

ment acquiring rights, or title, only to the improvements, if any, while the company retains the dominant rights. Small business is normally weak in financing and thus is not in as good a position to reduce any inventions it may make to actual practice with its own funds. Thus, with the invention conceived outside of a contract and some money spent thereon, if the actual reduction is under a Government contract, as provided by these bills, the small business loses all its rights.

Under these bills, small business doing Government contracting work would be no more than a job shop dealing in engineering services.

Some have said that the present forms of contracting tend to put more and more industrial dominance in the hands of big business and thus render antitrust enforcement more difficult. Actually, since most R. & D. work is issued on a negotiated contract basis, the Government already has full and complete control over the issuance of its contracts. Further, where the Government takes title, and assuming that exclusive licenses may be needed for practical development of inventions, the Government would then have the problem of determining who should obtain the licenses and this would be no easier than determining its contractors in the first instance. Actually, patents obtained from Government contracting are believed to be minor items in maintaining or furthering dominance by big business. It is the small companies anxious to grow that really benefit from patents.

5. The disposition of patent rights from Government employees is subject to different considerations than those affecting contractors.

Since the Government provides the employment, the environment, the background, and the facilities used by its employees, it has a logical basis for taking title to the inventions related to their work. However, even though it may be quite proper for the Government to take title from its employees, it does not follow that it should take title from its contractors.

The contract money spent by the Government is only a partial contribution to the average invention for it is the contractor who provides the type of employment required to attract good men; he furnishes the background, the environment, the facilities, and in many cases, the inspiration.

Contrary to the allegations of some Government people, the prime contractor does not indiscriminately take title from his subcontractors. At least in the aircraft industry, the normal procedure is for the prime contractor to ask for title only where he provides the dominant technical contribution to be made in the subcontracting work or where the subcontractor is a consultant having no manufacturing facilities. In those cases where reliance is on the subcontractor to solve a problem for the prime, the prime contractor may not even get a license and seldom gets more than a license. Ordinarily, the Government does not provide the dominant technical help in its contracting but rather relies on the contractor to solve the problems that may arise.

The relationship between the Government and its employees should be such as to foster and promote the best possible Government. Presently, the Government employee, if he takes title, can use this title only for selling to or licensing some manufacturer. This same manufacturer may be one doing business with the department of the Government employing the Government employee-inventor, hence conflicts of interest may arise where Government employees take title.

6. Taking of title to the information and data arising out of contracts adds insult to injury. The Government has long taken a license to the data and other information arising out of Government R. & D. work and even though only a license was involved, contractors have had much difficulty in keeping background proprietary rights out of Government hands. However, this problem has been so difficult that many contractors have let the Government acquire background data rather than face the problem of separating the old from the new. Now, if the Government asserts ownership to such information, the contractor's problem of giving the Government its pound of flesh without losing his blood then becomes acute. We believe that these provisions alone will freeze out many otherwise capable contractors and subcontractors and will waste much manpower.

7. As a last but not least statement, S. 1176 requires a company having even a single Government contract to make a statement with regard to every invention it makes concurrently with the contract and to supply a copy of any patent application with the statement to the Administrator and then, if the Administrator believes he would like to have the application, the burden is on the inventor to prove that the application belongs to him (or his

Will you kindly make this part of the records of your hearings?

We are happy to pass this information on as a service to your committee in its consideration of this legislation.

Sincerely yours,

GEORGE J. BURGER, *Vice President.*

NATIONAL FEDERATION OF INDEPENDENT BUSINESS,
Burlingame, Calif., July 5, 1961.

HON. JOHN L. MCCLELLAN,
Chairman, Committee on the Judiciary,
Senate Office Building, Washington, D.C.

DEAR SENATOR MCCLELLAN: We are happy to give you the information requested in your June 28 letter, regarding our mandate No. 262 poll on the question of who (Government or private firms) should take title to inventions which are made during the course of work on federally financed contracts.

To begin with, the advice you have already been given by our Washington office was based on our poll presentation as it appeared in the attached marked copy of the mandate, No. 262. As is immediately obvious, the question as presented in the attached mandate is basically identical with the issues raised by S. 1084 and S. 1176.

We mailed each of our members the customary one copy of the mandate No. 262, on December 9, 1960. In other words, our report to you was on the basis of a nationwide polling of all federation members.

At the time of mailing, we had a net membership of 160,830 individual, independent, smaller business and professional man members in all 50 States of the country (this number has since risen to 170,432). Some estimated 103,175 of these members were organized, at the time, into chapters under active district chairmen.

Our total response from members under chairmen in this particular poll ran 21,937 individual signed ballots. Of course, members sent their signed ballots to their Congressmen through their chairmen, the chairmen totaling them and advising us of the results of the vote in their chapters. We have retained in our files the signed reports received from chairmen in this mandate No. 262 poll, and if you would like to verify our reports, you are welcome to do so. However, we have a records-retention problem, and it is about normal time to discard the mandate No. 262 reports. Therefore, we would appreciate your advising us if you wish us to put a "hold" on these reports or if we are free to discard them in line with our regular operating procedure.

Now, we would like to make several observations which are pertinent to this particular mandate No. 262 poll (observations which apply generally to all the mandate polls):

1. In order to make a timely report in mandate No. 263 to members on the outcome of this poll, we had to cut into our returns from chairmen on the 42d day after mailing. We had received reports on 12,849 ballots to that time. As reported to you, our analysis showed 65 percent of members who exercised their mandate ballot right to that time favored Government taking title to inventions made during the course of work on federally financed contracts, 27 percent favoring the position that private firms should be able to patent such contracts, with 8 percent expressing no preference either way. For your information, we have just analyzed all 21,837 ballots reported by chairmen and find no change in the percentages reported to you. Except in the rare cases of extremely close votes, we have customarily found that late reports from chairmen do not materially affect our nationwide tabulations as recorded in issues of the mandate.

2. You undoubtedly have noted that 57,655 of our members were in chapters without active chairmen at the time of the mandate No. 262 poll. This is a situation which arises from the fact that our chairmen are business and professional men and women members subject to all the vicissitudes of our time. In any period of time, some of them are going to fall ill or to become more deeply immersed in their activities to the point where they find it impossible to continue chairmen activities, others are going to change their business locations, others will sell out, etc. For this reason we have a constant flux in chairmen, and some chapters are temporarily without the

benefits by commercial exploitation of an invention by private enterprise first directly as a consumer of the commercial product.

There can be no doubt that there is a much greater probability of products embodying the invention being made available to the public when the product is produced by private enterprise having patent protection as compared to an arrangement stemming from Government title to the invention. The second public benefit is an indirect one of payment by private enterprise of income taxes on any profits resulting from the sale of products embodying the invention. This second benefit is doubly lost where the Government endeavors to supply the public need. First there is the loss of income taxes which the contractor would have paid. Second, the cost of Government is increased due to the addition of staff and facilities.

It is further resolved by the Patent, Trademark, and Copyright Committee of the Minnesota State Bar Association that, if it be considered desirable to have a uniform patent policy for all agencies of the Government, the present Armed Services Procurement Regulations be used as a minimum standard of contractors rights and not as a springboard for more restrictive legislation.

THE NATIONAL FEDERATION OF COLLEGE AND UNIVERSITY BUSINESS OFFICERS ASSOCIATIONS, COMMITTEE ON GOVERNMENTAL RELATIONS,
Washington, D.C., May 29, 1961.

Hon. JOHN L. MCCLELLAN,
Chairman, Subcommittee on Patents, Trademarks and Copyrights,
Senate Committee on Judiciary,
Washington, D.C.

DEAR SIR: The American Council on Education has forwarded to you testimony on S. 1176.

They also forwarded a copy of this proposed legislation to this office for study.

We have prepared the enclosed testimony which we would appreciate you including in your report.

Very truly yours,

NELSON A. WAHLSTROM, *Executive Director.*

The attention of the American Council on Education has been called to S. 1176, introduced in the Senate of the United States on March 2, 1961, which would (1) prescribe a national policy with respect to the acquisition and disposition of proprietary rights in scientific and technical information obtained and inventions made through the expenditure of public funds; (2) establish a Federal inventions administration to administer the proprietary rights of the United States with respect to such information and inventions; and (3) encourage the contribution to the United States of inventions of significant value for national defense, public health, or other national scientific programs.

Examination of this bill fails to reveal how it would in any way stimulate invention and creative efforts on Government research projects, how it would help small business concerns, or how it would further the principles of a free enterprise society. On the contrary, it is believed that it would discourage the inventive efforts it would allege to stimulate, it would create an administrative colossus at great cost which by its very redtape would inhibit the motivation to invent, and it would make it less likely that small business firms could benefit from inventions developed under Government-financed research.

The overriding issue on which this legislation, and the legislation proposed in S. 1084, is based seems to be what policy will best achieve maximum technological progress in the Nation where the Government furnishes all or part of the financial support for research and development. Can this best be accomplished by the Government acquiring only those rights necessary to insure free and unrestricted use of such inventions for governmental purposes, or can this be accomplished only by the acquisition in every case of all rights to inventions by the Government.

The present patent practice of the Department of Defense requires a contractor to grant the Government only a nonexclusive, royalty-free license for inventions made under defense contracts. This is an equitable practice that leaves the contractor some incentive to invent. In the case of an industrial contractor this arrangement often makes worthwhile otherwise relatively unprofitable