U.S. GOVERNMENT
SMALL BUSINESS ADMINISTRATION
WASHINGTON, D.C. 20416

January 11, 1979

MEMORANDUM TO: Members, Government Task Force on Patent Policy

FROM: Paul A. Pumpian

SUBJECT: Small Business Administration Recommendations

Small business industrial innovation will be stimulated by providing small business with a longer period of patent protection than is currently available and by providing small business with a source of patent-business advice and assistance in the Federal Government.

The Small Business Administration recommends:

1. Creation of a two-tier patent policy to enable granting to a small business patent protection for a longer period than the term granted to large business.

2. Establishing the Office of Small Business Patent Counsel to advise and assist small business on selected patent matters.

The other proposals recommended in my memorandum of December 19, 1978 can apparently be satisfied by the creation of a "National Patent Court" and the resulting expeditious handling of patent litigation.

The rationale for the above stated recommendations are attached hereto.

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CREATION OF A TWO-TIER PATENT POLICY TO ENABLE GRANTING TO A SMALL BUSINESS PATENT PROTECTION FOR A LONGER PERIOD THAN THE TERM GRANTED LARGE BUSINESS

In a study commissioned by the National Science Foundation and completed in 1945, it was reported that in the 1953-73 period, about half of the major innovations produced in U.S. industry were made by firms with less than 1,000 employees and about one-quarter by firms with less than 100.1/

Some studies have shown that small firms produce major innovations at a higher rate than large firms.2/

Small firms tend to put to commercial use a higher percentage of their patented inventions than larger firms.3/

There has been a decrease in the number of patents granted to U.S. residents.4/

Some analysts support the idea that there has been a shift in the emphasis of R&D from a search for new technology to upgrading existing technology and compliance with government regulations.5/

The statement "It is well known that the present patent term (seventeen years from patent grant) often fails to coincide with commercialization," was made to support the extension of the patent term.6/

Because the investment made by small business to develop a product and obtain, maintain and protect a patent position represents a much larger percentage of the profits and assets of small business, many small businesses are reluctant to invest in industrial innovation.

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Additionally, the cost of marketing a developed product represents a large percentage of the assets of a small business often necessitating the acquisition of debt capital, the repayment of which is extended over a period of time. The repayment period is generally limited by the life of the patent and hence, extending the patent term for small businesses would enable longer repayment periods. Also, small business finds it difficult to obtain debt financing for marketing a patented product years after the issuance of the patent when marketing efforts may be at their peak.

To enable a small business to recoup its investment in R&D and patent protection, small business should be given patent protection for a longer term than that granted large business if a significant increase in industrial innovation is desired.

FOOTNOTES

1/ William K. Scheirer, Small Firms and Federal R&D (Washington) p. 9. See also Richard O. Zerbe, Jr., "Research and Development by Smaller Firms," Journal of Contemporary Business, Spring 1976.

2/ Science Indicators, National Science Board, 1976, pages 35 through 41 (footnote 6, Draft Report on Patent Policy - see section 1, page 2a).

3/ B. S. Sanders, "Patterns of Commercial Exploitation of Patented Inventions by Large and Small Corporations "PTC Journal Research and Education, Volume 8, No. 1, Spring 1964, page 5, at page 53 (footnote 8, Draft Report on Patent Policy - see section 1, page 3 of Report).

4/ Draft Report on Patent Policy, Section 1, page 2, last paragraph.

5/ Ibid, section 1, page 2, first paragraph.

6/ Ibid, section 4, first paragraph.

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-EXECUTIVE SUMMARY-

The Task Force:

> "... affirms the basic concepts of the U.S. patent system as originally premised in the Constitution and as they exist today. We believe that the fundamental merits of the patent system are as sound today as they were in the period of industrial growth and respect for patents in the nineteenth century and in the first half of the twentieth century. The Federal patent law still responds to the Constitutional objective 'to promote the progress of ... useful arts by securing for limited times to ... inventors, the exclusive rights to their ... discoveries.' Continued industrial success of the U.S. requires the incentives of the patent system, not only to encourage the necessary investment of capital and effort in research and for the commercialization of inventions so that society can enjoy their benefits, but also to encourage the disclosure of inventive technology."
>
> "The grant of a limited exclusionary right by the enabling Federal patent statute in return for the prompt disclosure of newly created technology provides the basis for thse incentives. Without these incentives, innovative research and development would not be supported with the degree of enthusiasm and willingness to invest risk capital that has been the American tradition. Moreover, the inventions produced by R&D might otherwise be kept secret to an extent which would inhibit technological progress. The exclusionary right granted under a well-examined patent does not take from the public anything that previously existed; rather, the patent right stimulates the creation, early disclosure, and utilization of new technology thus adding to the store of human knowledge. The exclusionary right often stimulates others to 'invent around', resulting in further technical progress."

The above is a direct quote from the Position Statement on the U.S. Patent System prepared by the Industrial Research Institute (IRI)*.

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* See note 4, infra.

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Endorsed by 100% (127) of IRI's member companies responding to the draft position statement, the basic premise expressed reflects a broad concensus of industry's view of the patent system and is, as well, fully endorsed by the Federal Agency members of the Task Force. The view is shared by the members of the Advisory Subcommittee on Patents and Information Policy who state in their report:

> "Our subcommittee concludes that the Patent System is an essential element in our free enterprise system and has made a significant contribution to the economic development of our country."

Yet, like IRI and the Advisory Subcommittee, the Task Force recognizes that certain Patent System changes and improvements can and should be effected to enhance the beneficial impacts of the system on the industrial innovation process. To that end, the Task Force makes several recommendations aimed toward achieving three goals.

GOALS

- To enhance the reliability and certainty of issued patents
- To reduce the cost of patent rights enforcement
- To stimulate innovation by small business and independent inventors.

RECOMMENDATIONS WITH MAJOR IMPACT ON INNOVATION

I ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO UPGRADE THE U.S. PATENT AND TRADEMARK OFFICE

II ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO PROVIDE FOR THE REEXAMINATION OF PATENTS IN THE PATENT AND TRADEMARK OFFICE

III ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO PROVIDE A SPECIALIZED APPELLATE COURT FOR PATENT CASES

IV ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO REDUCE THE COST OF PATENT LITIGATION [Arbitration Issue]

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OTHER RECOMMENDATIONS WHICH WOULD INCREASE INNOVATION

V ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION FOR A CLARIFICATION OF THE STATUTORY DEFINITION OF PATENTABLE INVENTION (35 U.S.C. 103)

VI PROVIDE ASSISTANCE IN THE USE OF THE PATENT SYSTEM TO SMALL BUSINESS AND INDEPENDENT INVENTORS

VII CLARIFY THE PATENT RIGHTS TO BE ACCORDED NEW TECHNOLOGICAL ADVANCES (E.G., COMPUTER SOFTWARE AND MICROORGANISMS)

OTHER MATTERS CONSIDERED

VIII CONDUCT FURTHER STUDY OF WAYS TO COMPENSATE FOR DELAYS IN COMMERCIALIZATION CAUSED BY GOVERNMENTAL REGULATION

IX STUDY THE FEASIBILITY OF IMPLEMENTATION, UNDER NATIONAL SPONSORSHIP, OF THE CONCEPT OF A PRODUCT DEVELOPMENT CORPORATION

X CONDUCT FURTHER STUDY OF THE RIGHTS OF THE EMPLOYED INVENTOR

XI COMPULSORY LICENSING

As a review of the Task Force recommendations reveals, there is substantial agreement between the Task Force and the Advisory Subcommittee on Patents and Information Policy -- agreement which extends to the adoption, in total, of most of the Subcommittee's major recommendations. The Task Force feels that such private/public sector unanimity of view, not only concerning the problems but the solutions, as well, gives both weight and immediacy to the recommendations presented.

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RECOMMENDATIONS WITH MAJOR IMPACT ON INNOVATION

I: ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO UPGRADE THE U.S. PATENT AND TRADEMARK OFFICE.

Any efforts to enhance the certainty and reliability of the issued patent should begin with the U.S. Patent and Trademark Office (PTO). The members of the Task Force and the Advisory Subcommittee are in unanimous agreement that the PTO as currently staffed and funded is unable to carry out that kind of quality examination of applications for patent which fosters a real sense of confidence in the patent system.

The PTO currently receives over 100,000 patent applications annually, with about 70% of these eventually maturing into patents. When a patent application is filed in the Office, it is assigned to an examining official (patent examiner) who specializes in the particular area of technology disclosed in the application. The patent examiner conducts a comprehensive search of the technology involved to ascertain if the disclosed invention is useful, novel and unobvious, and communicates his findings to the patent applicant. After one or more such communications, and in accordance with other examination procedures, the application either matures into a patent, or becomes "abandoned". This entire process, from the time of filing the application to patent issuance or abandonment, takes an average of about 20 months.

The PTO handles the examination of the over 100,000 applications for patent filed each year with a staff of slightly less than 3,000 people (under 1,000 of whom are examiners - persons who have technical and, in many instances, legal training), and a budget for FY 1979 of approximately $94 million. The high volume of activity in this area, coupled with limited resources and personnel, has resulted in an average of only about 15 hours spent on the examination of the average application.[1] In sharp contrast, the new European Patent Office (EPO), established to administer the new multinational European Patent system, will have a staff of approximately 2,000 and a budget equal to more than $115 million (dollars) to handle a projected annual workload of 40,000 applications. By those standards, the PTO with its workload of 100,000 applications should have a staff of 5,000 and a budget of nearly $290 million. Clearly the PTO is understaffed and underfinanced by comparison. It should be noted as well, that the EPO will have no function of trademark registration or mission of patent information dissemination.

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1 Based on PTO statistics for FY 1978

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More specifically, years of serious under-funding[2] of the PTO have resulted in:

- The requirement that primary emphasis be placed on work quantity rather than work quality.

- The virtual elimination of personnel development efforts aimed at keeping the PTO's corp of examiners current in the technologies and industries with which they must deal.

- The gradual degradation of the integrity and completeness of the 22 million documents in the patent search file, the principal resource used by examiners in determining patentability of an invention.[3] As noted by the Advisory Subcommitte,

> "[f]ailure by the U.S. examiner to find and cite pertinent prior art results in the issuance of patents which contain claims that do not accurately define the scope of protection to which the invention is entitled, and thus are not given a high degree of acceptance in practice and are more vulnerable to attack in the courts."

Indeed, some courts are expressing skepticism about the quality of the PTO's work. The following quotes are illustrative:

> "[I]t is unrealistic to attach any great weight to the allowance of a patent by an overworked staff."

> "To be honest, this Court is rather amazed to find that a patent as flimsy and as spurious as this one has been granted by the Patent Office."

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2 See Appendix ___ for PTO budget authority from FY 76 through FY 80. Note particularly that an increase of over $5 million in the PTO budget for FY 80 is required just to maintain the status quo.

3 PTO studies have shown that various portions of the search file have from 2 to 28% of the U.S. patent documents missing - the higher percentages occur in those portions of the file relating to the more active technologies. Thus, file integrity among U.S. patents is often the lowest where it is the most critical.

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> "[T]he volume of patent applications processed by the Patent and Trademark Office and the ex parte nature of the proceedings further undermines any presumption given [a patent]."
>
> "A major factor contributing to the Patent Office's failure to consider applicable prior art is the fact that the Patent Office is too overworked to give adequate attention to patent applications and grants."

The above sampling of judicial sentiments is somewhat understandable, when one considers that in many instances the best patentability evinonce before a court is often not considered by the PTO during the patent granting stage. Reliable statistics graphically quantify the significantly increased percentage of validity holdings by the federal courts when the best patentability evidence before the court was also considered by the PTO.[4]

One factor contributing to the inability of the examiner to locate the best patentability evidence is that the patent reference file has not been properly updated in ten years. This increases the time required for a thorough search and decreases the likelihood of locating patent documents. The economic consequences resulting from this situation are significant. Longer patent pendencies delay investment of capital, and also delay the dissemination of current technology on which further advances can be based. If U.S. patents cannot be granted promptly, it also delays their use as patentability evidence against patents issuing to others in foreign countries and harms the position of U.S. industry in foreign trade.

While Congress has given the PTO a mandate to work toward an 18 month total pendency period for patent applications, during FY 1978 the average patent pendency slipped almost one month. Under FY 79 funding, average pendency is expected to increase to 21.2 months, and with expected FY 80 funding, a pendency of 22.8 months is projected. In addition, there are patent applications pending over 20 months on which there has been no action.

Under present funding, the goal of 18 month pendency can only be met by spending less time on more applications, with a corresponding

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[4] See especially, G. Koenig, Patent Invalidity: A Statistical and Substantive Analysis, Clark Boardman Co., Ltd., New York, N.Y. (1974) at §5.05 [6], p. 5-58 et. seq.

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decrease in the quality of the patent document. The loss of confidence in U.S. patents due to low quality is one of the reasons behind U.S. industry's increasing tendency to cut R&D investment in high risk new technology. Less research and development leads to more static technology causing the U.S. to fall further and further behind foreign advances. As more innovative processes and products are developed and manufactured abroad, more U.S. jobs vanish and the balance of trade problem becomes even more acute.

Accordingly, the Task Force is in unanimous agreement with the following three recommendations of the Advisory Subcommittee to upgrade the Patent and Trademark Office:[5]

> 1. "The PTO should be given the funds* and resources to improve its examination procedure and thereby to enhance the validity and enforceability of U.S. patents. Such improvement should include expansion of the PTO examining corps to permit more thorough searching of the prior art without increased application pendency. Emphasis should be placed on the quality of the patent examination and not on quantity of applications examined. The PTO should expand its quality control program to review a greater sampling of allowed patent applications, thus ensuring more uniformity in the quality of the issued patents. Furthermore, the PTO should improve the integrity and completeness of the PTO's primary search tools, i.e., the patent search file and its scientific library."
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> "* If the PTO is given increased funding, consideration should be given to raising at least a portion of such funding through higher fees. The Government Accounting Office has proposed that the PTO recover in fees 55 percent of its costs (it now recovers 32 percent of its costs;[6] see Chemical and Engineering News, November 27, 1978). The subcommittee feels, however, that excessively high fees could constitute a disincentive to innovate on the part of individual inventors and small firms. Any steps taken to raise additional income from PTO operations should, accordingly, give special consideration to providing relief for individuals and small firms."

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5 See also Industrial Research Institute Position Statement on the U.S. Patent System, Appendix ___, wherein several recommendations are made regarding improvements in the patent system and specifically, in PTO operations.

6 These figures do not accurately reflect the current situation. while GAO now proposes that the PTO increase its fees from the present 27% recoupment rate of its costs, but it does not suggest a specific new rate of recovery.

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5 See also Industrial Research Institute Position Statement on the U.S. Patent System, Appendix ___, wherein several recommendations are made regarding improvements in the patent system and specifically, in PTO operations.

6 These figures do not accurately reflect the current situation. while GAO now proposes that the PTO increase its fees from the present 27% recoupment rate of its costs, but it does not suggest a specific new rate of recovery.

The Task Force is informed that to achieve the goals implicit in the above recommendation would require a PTO annual budget increase in the neighborhood of from $6 to $9 million, without reexamination.[7]

> 2. The PTO should "develop, have developed, or use an available computerized patent and prior art search system to better assure the finding and consideration of the closest prior art by the examiner."

The Task Force is informed that the cost of development of a computerized patent file search system would be about $10 million. More specific analysis of this recommendation can be found in the Information Policy section of this Task Force report.

> 3. Legislation should be enacted, such as H. R. 13628 (Rodino, 95th Cong.) and S. 3615 (Kennedy, 95th Cong.), which would permit certain patent and trademark fees to be credited to the PTO appropriation to pay for the costs of Patent and Trademark Office products (e.g., patent copies) and services (e.g., examination). The legislation would also give the Commissioner greater authority to set the fees for products and services. Under current law, many fees must be set by Congress.

The reimbursement authority, as proposed in H.R. 13628 and S. 3615, would not only be used to pay the costs of existing PTO products and services, but could also be used to sustain, after establishment costs are met, many new products and services, some of which are outlined below.

The PTO maintains in machine-readable form a wide variety of bibliographic and substantive information about U.S. patents. If business people, consumers, educators, researchers, scientists, engineers, and others had easy access to this information from remote locations, i.e., "satellite search centers", this information could be put to far greater use than it is today. Solutions to technological problems could be identified, unnecessary duplicative research could be avoided, and the "state of the art" in any area of technology could be readily identified. Such satellite search centers would provide computerized access to important technological information in fields

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[7] See Appendix ___ for specific breakdown of PTO estimated costs for improvements to the quality of examination. Note that reexamination based on "prior patents and printed publications" would cost an additional $1 to $3 million, which could be recouped through reimbursement legislation.

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such as energy and the environment. Computer controlled microfilm search systems of the entire classified collection of patented technology could be made available to libraries, universities, research institutions, and small business development centers. The importance of providing access to this information is underscored by studies suggesting that over 80% of U.S. patents contain technical information not available in the non-patent literature. The dissemination of the patent file would be especially beneficial to small business and independent inventors who would gain easy and inexpensive access to a body of information which could be utilized as:

- a problem-solving tool

- a stimulus to improvement type innovation

- a cost saver in the sense that duplicative innovative effort would be avoided.

Additional services and products, such as "abstract journals" directed at specific technologies, computer access to trademark files, and individually tailored state-of-the-art reports could also be established.

In addition to these services, the reimbursement authority could be expected, in a large measure, to sustain a reexamination procedure for issued patents as more thoroughly discussed in Recommendation II.

II: ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO PROVIDE FOR REEXAMINATION OF PATENTS IN THE PATENT AND TRADEMARK OFFICE

The Advisory Subcommittee astutely observed that

> "[o]ne of the fundamental problems of the existing patent system is that pertinent prior art is very often found after the patent has issued and has become commercially important." (emphasis added)

The PTO has addressed this most pressing "fundamental problem", although to a limited degree, by institution of recent agency regulations which afford patent owners a procedural opportunity to obtain a ruling from the PTO on the pertinence of certain patentability evidence after their patent has been granted. Public participation in this reexamination procedure is presently dependent upon the commencement of the procedure by the patent owner. Accordingly, the PTO has published notice in the Federal Register (Vol. 43, No. 245, at 59401 et seq) of its intent to extend the regulations to provide for a more liberally instituted reexamination. As presently constituted,

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the extension will permit the PTO to render advisory opinions to any member of the public on the validity of any United States patent upon the submission of certain patentability information and upon the payment of a standard fee. However, not only is the patentability information limited to "patents and other publications", there is no right to appeal contemplated for any party, including the patentee.

In spite of this commendable extension of the right to rexamination proposed by the PTO, the Task Force feels compelled to take a more long range view of the total reexamination issue. The reexamination of patents as presently proposed by the PTO is unquestionably needed to further enhance the reliability and certainty of the issued patent. However, even further enhancement would be achieved by adoption of the Advisory Subcommittee's proposal, which we endorse. Specifically:

> "[The PTO should] initiate a system for the reexamination of U.S. patents by any party requesting such reexamination during the life of the patent. The reexamination system should provide for submission of written arguments by the patentee and other interested persons concerning patentability over prior patents or printed publications. Such reexamination should be handled on an expedited basis by the PTO so that a prompt decision can be rendered. If the claims are held to be patentable over the cited art, the presumption of validity of the patent is enhanced and patentees and interested parties would have a clearer idea about the strength of the patent, without resorting to litigation. In some instances, the reexamination procedure should help avoid litigation costs."
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> "If the patent claims were held to be invalid over the cited art, the patentee would have the right to amend his claims and to define his invention more accurately, or assert his position to the Board of Appeals and, on appeal, to the Court of Customs and Patent Appeals or the U.S. District Court for the District of Columbia."
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> "This reexamination system would be available whether or not the patent to be reexamined was already involved in litigation. In such case, however, it would be solely within the court's discretion as to whether the litigation should be stayed pending the reexamination, so as to avoid undue delays in obtaining a final court adjudication.[8] We further recommend enact-

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8 Several courts have been very receptive to the initial "reexamination" procedure already instituted by the PTO. Some have placed great weight upon the decisions rendered pursuant to the procedure. See, e.g., St. Regis Paper Co. v. Bemis Co., 188 USPA 107 (So. D. Ill. 1975), rev'd. on other grounds, 193 USPQ 8 (7th Cir. 1977); Corometrics Medical Supplies v. Berkeley Bio-Engineering, 197 USPQ 467 (No. D. Cal. 1977).

we further recommend enact-

8 Several courts have been very receptive to the initial "reexamination" procedure already instituted by the PTO. Some have placed great weight upon the decisions rendered pursuant to the procedure. See, e.g., St. Regis Paper Co. v. Bemis Co., 188 USPA 107 (So. D. Ill. 1975), rev'd. on other grounds, 193 USPQ 8 (7th Cir. 1977); Corometrics Medical Supplies v. Berkeley Bio-Engineering, 197 USPQ 467 (No. D. Cal. 1977).

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ment of suitable legislation to fully implement the reexamination system; in the interim, the subcomittee encourages the Commissioner to use his rule-making authority to institute reexamination to the fullest extent possible."

This type of limited adjudicatory inter partes review would be perhaps the most effective step that could be taken by the PTO to insure the maximum reliability of its work product - the issued patent. In fact, the Task Force would prefer to see an even more complete reexamination procedure than that recommended by the Advisory Subcommittee -- a procedure which would permit consideration of all bases for contesting the patentability of an issued patent, not just those involving "patents and printed publications."

Of course, such a complete reexamination system has various practical problems, foremost of which are (1) implementation within the PTO, (2) institution of safeguards to avoid possible harassment of patentees by competitors, and (3) clarification of the rights and scope of appellate review. However, the most practical and unavoidable problem of such a system is the allocation of appropriated resources.

The fee that would be charged by the PTO to reexamine a patent would have absolutely no tangible financial impact upon the operating budget of the PTO. Such money goes directly to the Treasury of the United States. With reimbursement authority, as discussed in greater detail in Recommendation I of this report, a fee could be established to defray the added cost to the PTO of reexamination. In this manner, neither the overall efficiency and quality of the work of the PTO would be adversely affected nor would appropriation increases be required. This reimbursement authority is also crucial to the limited reexamination proposal published by the PTO in the Federal Register, which the PTO estimates will cost from $1,125,000 to 3,375,000 [9] to implement.

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[9] Supra, note 2

III: ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO PROVIDE A SPECIALIZED APPELLATE COURT FOR PATENT CASES.

The Advisory Subcomittee has noted that

> "[t]he present judicial system for reviewing patent disputes has generated extensive differences in the various circuits' application of the patent law which has inordinately increased litigation expenses (by encouraging forum shopping) and made it extremely difficult for patent lawyers to advise their clients as to the likelihood of success in a given case." (emphasis in the original)

We are in complete agreement.

There is a wide variety of views among the circuits as to the nature of the test to be applied in determining whether patentable invention exists. By way of example, some courts insist that "synergism" must be present before an invention rises to the level of patentability.[10] Other courts reject this requirement.[11] Of course, there's the middle ground, where courts rely upon both the three-prong test of Graham v. John Deere, 383 U.S. 1 (1966) and "synergism".[12]

A reasonable degree of predictability and certainty are essential to the innovator, who oftentimes must rely upon the foundation created by his patent in order to gain a foothold in new technologies or to remain competitive in existing technologies.

Accordingly, we recommend adoption of the Advisory Subcommittee recommendation, to-wit:

> "This subcommittee favors a centralized national court[13] with exclusive appellate jurisdiction (subject to Supreme

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[10] St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 (7th Cir. 1977); Republic Industries v. Schlage Lock Co., 196 USPQ 351 (S.D.Ill. 1977); Lawrence v. The Gillette Co., 196 USPQ 610 (S.D.Cal. 1977)

[11] Clark Equipment Co. v. Keller, 197 USPQ 209 (8th Cir. 1978); Lewart Co. v. Acco Int'l., 192 USPQ 376 (N.D.Ill. 1976); Systematic Tool & Machine Co. v. Walter Kidde & Co., 193 USPQ 587 (3d Cir. 1977)

[12] Bird Provision Co. v. Owens Country Sausage, 197 USPQ 134 (5th Cir. 1978); Black and Decker Mfg. Co. v. Disston, 196 USPQ 22 (W.D.Pa. 1977)

[13] See Appendix ___ for a detailed proposal offered by the Department of Justice.

[11] Clark Equipment Co. v. Keller, 197 USPQ 209 (8th Cir. 1978); Lewart Co. v. Acco Int'l., 192 USPQ 376 (N.D.Ill. 1976); Systematic Tool & Machine Co. v. Walter Kidde & Co., 193 USPQ 587 (3d Cir. 1977)

[12] Bird Provision Co. v. Owens Country Sausage, 197 USPQ 134 (5th Cir. 1978); Black and Decker Mfg. Co. v. Disston, 196 USPQ 22 (W.D.Pa. 1977)

[13] See Appendix ___ for a detailed proposal offered by the Department of Justice.

> Court review) over patent-related cases as a vehicle for insuring a more uniform interpretation of the patent laws and thus contributing meaningfully and positively to predicting the strengths of patents."

IV: ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION TO REDUCE THE COST OF PATENT LITIGATION.

The cost, in terms of both time and money, of judicial enforcement of the rights derived from the patent grant are a severe drain to the innovator, especially the small business or independent inventor who can ill-afford the prohibitive legal costs attendant to patent enforcement litigation. In our opinion the Advisory Subcommittee has correctly identified the most serious deficiency in the present judicial climate of patent enforcement causing this drain - abuse of the discovery process. Some argue that the real culprit is "shotgun pleadings". Others have been heard to say that boilerplate defenses, especially those concerning fraud in the procurement of the patent, are the cause. The fact is that abuse of the discovery process is, as phrased by CCPA Chief Judge Howard T. Markey, a "horrible waste of judicial time". We concur with the Advisory Subcommittee's statement that

> "... ways must be found to reduce the cost of patent litigation[14], and a decision must be available within a reasonable time."

Accordingly, we adopt the Advisory Subcommittee's recommendation as our own, to-wit:

> "[T]hat the Supreme Court, through the Judicial Conference, require each federal court to exercise a high degree of control over the conduct of patent litigation, with particular concern for the time and expense of discovery."

[Arbitration Issue - Mossinghoff paper]

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14 Of course, our Recommendations I through III will go a long way towards alleviating the excessive costs of patent enforcement. Moreover, we encourage further study to identify additional means for reducing the cost of patent litigation in the federal court system.

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OTHER RECOMMENDATIONS THAT WOULD ENHANCE INNOVATION

V: ADOPT THE ADVISORY SUBCOMMITTEE RECOMMENDATION FOR A CLARIFICATION OF THE STATUTORY DEFINITION OF PATENTABLE INVENTION (35 U.S.C. §103).

As noted in Recommendation III, the federal circuit courts of appeal have enunciated different and often incompatible views of what constitutes patentable invention. While the Advisory Subcommittee report recognizes that the national patent court "will do much to eliminate these disparate views," that subcommittee, like ours, is concerned about the possible new litigation which might ensue from a legislative "rewriting" of 35 U.S.C. §103. However, we do recognize the urgent need for clarification of this issue. Accordingly, we support[15] the adoption of the Advisory Subcommittee recommendation for a clarification of the statutory meaning of patentable invention (35 U.S.C. §103).

VI: PROVIDE ASSISTANCE IN THE USE OF THE PATENT SYSTEM TO SMALL BUSINESS AND INDEPENDENT INVENTORS

[SBA PAPER - PUMPIAN]

VII: CLARIFY THE PATENT RIGHTS TO BE ACCORDED NEW TECHNOLOGICAL ADVANCES (E.G., COMPUTER SOFTWARE AND MICROORGANISMS)

The Advisory Subcommittee has recommended implementation of the CONTU proposal [16] which would specifically provide protection for computer software. The subcommittee also recommended that patent protection be afforded those software items which meet the existant criteria for patentability, as well as new life forms and "use-specific" chemical compositions.

The Task Force generally acknowledges that implementation of the CONTU proposal would, in a large measure, alleviate the computer software issue; however, the Task Force was not able to reach a concensus regarding the extension of patent protection to software, new life forms and "use-specific" chemical compositions. We were

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15 Again, our Recommendation III should provide the certainty needed in this area.

16 The National Commission on New Technological Uses of Copyrighted Works (CONTU) has proposed amendments to the 1976 Copyright Act. See Appendix ____ for the BNA Patent, Copyright and Trademark Journal brief analysis of the CONTU proposal.

°

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°

unable to identify convincing evidence relating to the extent of the impact on innovation, if any, resulting from the absence of patent protection for the referenced new technological advances. Nevertheless, the Task Force concurs in the Advisory Subcommittee's note of the comments in In re Chakrabarty, 197 USPQ 72, 76 (CCPA 1973) that

> "... if our patent laws are to achieve their objective, extra-legal efforts to restrict wholly new technologies to the technological parameters of the past must be eschewed [and the a]dministrative difficulties, in finding and training PTO examiners in new technologies, should not frustrate the constitutional and statutory intent of encouraging invention disclosures, whether those disclosures be in familiar arts or in areas on the forefront of science and technology"

Some members of the Task Force felt that the appropriate vehicle for the clarification of the patentability of computer software is legislative action, as has been suggested by the Supreme Court.[17]

At this time, however, the Task Force can only recommend further study on the appropriateness of the patent rights to be accorded "new" technological advances.

OTHER MATTERS CONSIDERED

VIII: CONDUCT FURTHER STUDY OF WAYS TO COMPENSATE FOR DELAYS IN COMMERCIALIZATION CAUSED BY GOVERNMENTAL REGULATION.

The Task Force members recognize that there are situtations where the rewards promised by the patent system may be significantly eroded as a result of regulatory activities of other Government agencies. This is particularly the case where agencies such as EPA and FDA require extensive testing of products (pharmaceuticals, pesticides, etc.) over a period of years to establish environmental acceptability, safety, and so on. As a result, a product may not be approved for marketing until a significant portion of the exclusivity period granted by the patent has expired.

The Advisory Subcommittee proposed legislation which would extend the patent term to compensate for such delays. The Task Force members

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17 See, e.g., Gottschalk v. Benson, 175 USPQ 673, 677 (1972); Parker v. Flook, 198 USPQ 193, 200 (1978)

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17 See, e.g., Gottschalk v. Benson, 175 USPQ 673, 677 (1972); Parker v. Flook, 198 USPQ 193, 200 (1978)

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could not reach a concensus on this issue. Specifically, there was some question about the degree to which these delays impact negatively on decisions to innovate. In addition, some members thought that the extended term raised significant administrative questions. For example:

- What criteria could be established for determining which delays warranted an extension, e.g., would agency regulations affecting a product after marketing warrant an extension of patent protection; or would the procedure be limited to just those cases where regulations result in pre-market delays? The Task Force generally favored the latter.

- What procedure would be used to secure such an extension? It was generally agreed that any extension procedure would be optional and that it would have to be initiated by the patentee. In addition, most members felt that if an extension period were implemented, the extension should be obtained "up front", i.e., at the start of the patent term, so that competitors could plan their activities in view of a published expiration date.

Others of the Task Force preferred a delay in issuance of the patent until such pre-market clearances were obtained. This idea was seen by some, however, as detrimental to the objective of stimulation of innovation. This is so because the technological information contained in the patent application would not be disclosed to the public for, perhaps, several years after the filing of the patent application.

An alternative to the modification of the patent term was raised in the context of urging regulatory agencies to reduce the time required to secure pre-market clearances.

The Task Force can only recommend that this issue be the object of further study to determine the extent of the problem vis-a-vis its impact on innovation and if desirable, to identify a viable set of alternatives to alleviate the problem.

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IX: STUDY THE FEASIBILITY OF IMPLEMENTATION, UNDER NATIONAL SPONSORSHIP, OF THE CONCEPT OF A PRODUCT DEVELOPMENT CORPORATION.

The Task Force showed keen interest in the concept of a product development corporation, along the lines of the National Research Development Corporation (NRDC) in Great Britain, and the Connecticut Product Development Corporation (CPDC). These and other organizations in various countries seek to stimulate innovation through commercial development of inventions which might otherwise be unutilized. While the NRDC serves to exploit unutilized patents resulting from public research, the CPDC stimulates development of new products by making available public funds for development in situations where financial aid would otherwise not be available. Both organizations are structured in such a way that they are required to be self-sustaining. It appears from the information obtained in the limited amount of time available for this study, that the NRDC and the CPDC have met with considerable success.[18]

The Task Force members agree that imaginative mechanisms such as these could have significant impact on industrial innovation, particularly insofar as they are a potential source of great assistance to small business and independent inventors. However, it was also recognized that additional time and study would be required to analyze and evaluate various formats and institutional structuring arrangements before any specific recommendations could be made.

Although more limited than either the NRDC or CPDC efforts, the NASA "Tech Brief" and the DoE energy extension programs were cited by various Task Force members as existing examples of Government-sponsored technology transfer mechanisms which should be encouraged and, perhaps, expanded. The Task Force agrees that the Patent and Trademark Office should consider implementing a similar program where problem-solving reports would be provided, on request, to the general public on a cost reimbursable basis.[19] A model for such a program is provided by the efforts of Sweden's patent office in this area.

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[18] See Appendix ___ for the 1978 Annual Statement of the NRDC and a discussion paper on the CPDC.

[19] See the reimbursement legislation proposal discussed in Recommendation I.

[19] See the reimbursement legislation proposal discussed in Recommendation I.

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X: CONDUCT FURTHER STUDY OF THE RIGHTS OF THE EMPLOYED INVENTOR

Some members of the Task Force, as was the case in the Advisory Subcommittee, proposed that legislation be enacted requiring corporations to give significant compensation to their employed inventors or to release inventions to the employee-inventor for self-commercialization. The proposal would specifically forbid mandatory employment contracts which assign employee patent rights to the employer for a nominal fee. The majority of Task Force members questioned the impact of this recommendation on the innovation process. While it was generally agreed that the innovation "climate" in a firm was a significant factor in stimulating employees to invent and to report their inventions, it was suggested that there is little available data indicating that the proposal would impact positively on innovation. The majority of the Task Force was willing to endorse the experienced feeling of the Advisory Subcommittee that:

> "... corporations should be encouraged to motivate their employees to participate in all phases of the innovative process. This encouragement could be in the form of awards, promotions, release of unused inventions to the inventors and other systems presently being successfully used throughout industry in the United States."

The majority of the Task Force members conceded that more study in this area is warranted, and noted that Congress is studying the issue including the Employed Inventor Law of Germany which requires compensation to inventors.

XI: COMPULSORY LICENSING

(To be discussed at meeting)

VALUING TECHNOLOGY

ASSOCIATION OF UNIVERSITY TECHNOLOGY MANAGERS

1991 ANNUAL MEETING

1. Traditional Valuation Approaches

    a. Cost approach
    b. Market approach
    c. Income approach

2. Definition Of Fair Market Value

    a. Amount at which technology would change hands between a willing buyer and a willing seller at arm's length

    b. Present value of future economic benefits

3. Cost Approach

    a. "Value" = Cost to re-create the technology

    b. Costs to re-create the technology may include:

        i. Labor and overhead
        ii. Materials and supplies
        iii. Equipment and other capital
        iv. Lost sales due to delayed market entry
        v. Other

    c. Observations:

        i. Usually based upon trended historical costs
        ii. Most useful with new technology
        iii. Caution: Does not reflect earnings potential!

Copyright 1991. Daniel M. McGavock, C.P.A., IPC Group, Inc. 205 West Wacker Drive, Suite 1400 Chicago, IL 60606. (312)641-0051.

4. Market Approach

   a. Value = Arm's length price paid in a comparable transaction
   b. What constitutes a "comparable" transaction?

      i. Type of technology
      ii. Industry
      iii. Economic conditions
      iv. Market size and characteristics
      v. Profitability
      vi. Timing
      vii. Barriers to entry
      viii. Terms of agreement

5. Income Approach

   a. Value = Present value of expected future income streams

   b. Elements of income approach:

      i. Amount of income stream
      ii. Duration of income stream
      iii. Risk associated with realization of income stream

   c. Amount of income stream:

      i. Incremental profits over alternatives

         (1) Cost savings
         (2) Price premiums
         (3) Enhanced sales volumes
         (4) Other

      ii. Relief from royalty method

      iii. Residual income method

   d. Duration of income stream:

      i. Legal life (e.g. 17 years for patent)
      ii. Technological or functional life
      iii. Economic life

   e. Discount rate reflects risk:

      i. Inflation risk
      ii. Liquidity risk
      iii. Business risk

ii. Technological or functional life
iii. Economic life

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i. Inflation risk
ii. Liquidity risk
iii. Business risk

6. Methods For Determining Royalty Rates

   a. Established rates/industry norms

   b. Apportionment of licensee's expected economic gain

      i. Rules of thumb
      ii. Fair rate of return on capital

   c. Licensor's next best alternative to licensing

7. Technology Licensing Survey Results

   a. Results to be published this spring in The Licensing Law and Business Report

   b. Of 118 respondents, 14 were from University/Government organizations

   c. Importance of established rates versus profit analysis in determining royalty rates (Figure 1)

   d. Importance of other factors on royalty rates (Figure 2)

   e. Typical royalty rates: industry differences (Figure 3)

   f. Typical royalty rates: University/Government organizations (Figure 4)

8. Preparing For License Negotiations

   a. Market research:

      i. Market size
      ii. Market segments/applications
      iii. Channels of distribution
      iv. Major players
      v. Recent trends

   b. Company-specific research:

      i. Existing product lines
      ii. Market position and reputation
      iii. Manufacturing and distribution capacity
      iv. Profitability
      v. Financial strength
      vi. Recent developments

   c. Sources for valuation data: See attached listing

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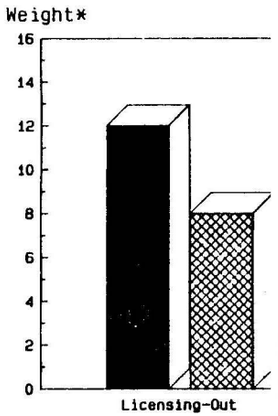
iii. Manufacturing and distribution capacity
iv. Profitability
v. Financial strength
vi. Recent developments

c. Sources for valuation data: See attached listing

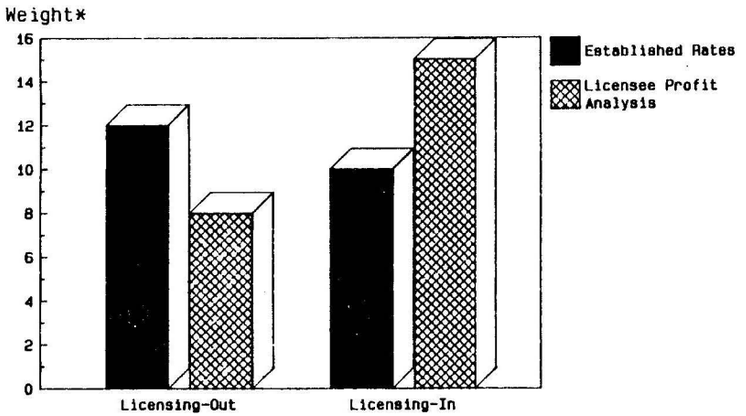
ESTABLISHED R/



* Relative Importance On /

Figure 1

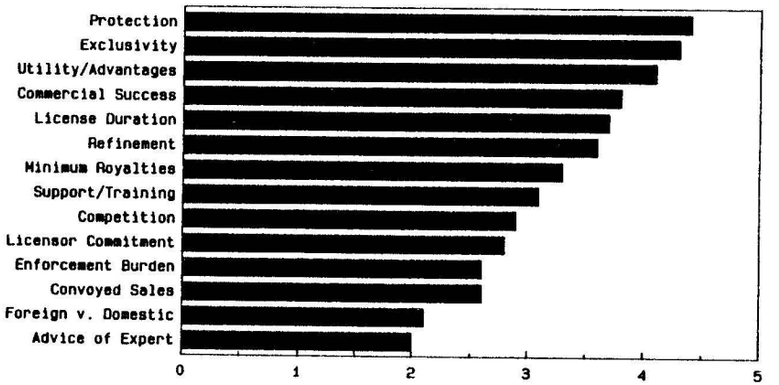
ESTABLISHED RATES v. PROFIT ANALYSIS



* Relative Importance On A Scale of 30.

Figure 2

IMPORTANCE OF VARIOUS FACTORS ON ROYALTY RATES LICENSING-IN



1 = Not Important, 5 = Extremely Important

TYPICAL LICEN

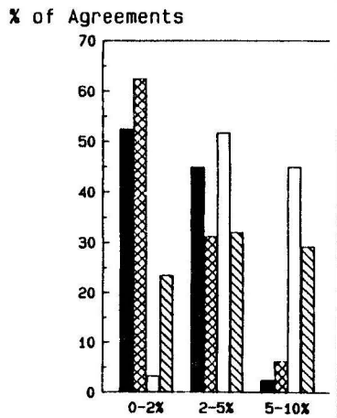


Figure 3

TYPICAL LICENSING-IN ROYALTY RATES

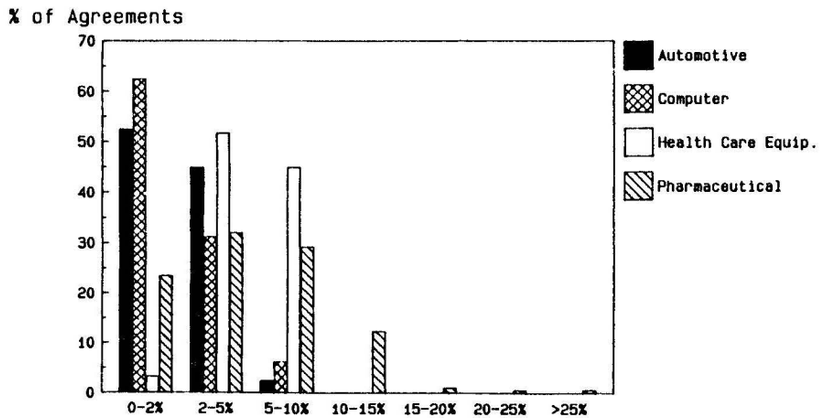
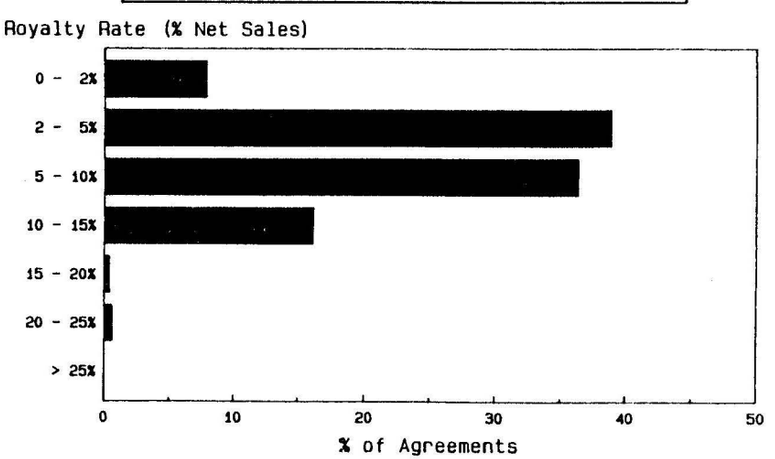


Figure 4

TYPICAL LICENSING-OUT ROYALTY RATES FOR UNIVERSITIES AND GOVERNMENT



SOURCES FOR BUSINESS VALUATION DATA

1. **Source**: *Almanac of Business & Industrial Financial Ratios*, Leo Troy, ed.

Source Description: Balance sheet and income statement data along with key financial ratios, broken down by four-digit SIC numbers. Each SIC number breakdown shows data for current year and previous two years. Current data are further broken down by sales ranges.

Medium: Book, updated annually.

Publisher: Prentice Hall
Route 9W
Englewood Cliffs, NJ 07632
(201) 592-2000

2. **Source**: *American Statistics Index*

Source Description: Index of economic, demographic and statistical information.

Medium: Book, updated monthly and bound in annual volumes.

Publisher: Congressional Information Service
4520 East-West Highway
Suite 800
Bethesda, MD 20814
(301) 654-1550

3. **Source**: *Business Conditions Digest*

Source Description: Charts and statistical data for leading economic indicators. Includes cyclical indicators, composite indicators and their components.

Medium: Book, updated monthly.

Publisher: U.S. Bureau of Economic Analysis
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

* Compiled by **IPC Group, Inc.**

Publisher: U.S. Bureau of Economic Analysis
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

* Compiled by **IPC Group, Inc.**

4. **Source**: *Business Information Service*

Source Description: Various reports that have been filed by corporations with the SEC.

Medium: Microfiche or hard copies. May take part in subscription package or place individual orders.

Publisher: Disclosure, Inc.
Business Information Service
5161 River Road
Bethesda, MD 20816
(301) 951-1300

5. **Source**: *Dialog Information Services, Inc.*

Source Description: Provides dozens of databases including financial news, legal and government data, corporate directories, patent and trademark data, economic data, reference data and newspaper abstracts.

Medium: On-line information subscription service. Data may be viewed on line and/or downloaded to a floppy disk, from which it may be printed.

Publisher: Dialog Information Services, Inc.
Marketing Department
3460 Hillview Ave.
Palo Alto, CA 94304
(800) 334-2564

6. **Source**: *Directory of Companies Required to File Reports with the Securities & Exchange Commission*

Source Description: Listing, alphabetically and by industry group, of all the firms required to file under the Securities Exchange Act of 1934.

Medium: Book, updated annually.

Publisher: Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

Publisher: Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

7. **Source:** *Dun & Bradstreet Business Information Reports*

Source Description: For a specific company, balance sheet and income statement data for most recent three years. Also, credit, operational and management history.

Medium: Individual reports may be received via fax or mail if member of the subscriber service.

Publisher: Dun & Bradstreet Business Credit Services
One Diamond Hill Road
Murray Hill, NJ 07974-0027
(201) 665-5610

8. **Source:** *Economic Indicators*

Source Description: Includes basic U.S. economic indicators such as GNP, spending, personal consumption, corporate profits, production activity and security market data. Information includes most recent six years.

Medium: Book, updated monthly.

Publisher: Council of Economic Advisors
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

9. **Source:** *Economic Report of the President*

Source Description: Annual report to the U.S. Congress from the U.S. President (as prepared in consultation with the President's Council of Economic Advisors). Discusses projected economic policy of the administration, economic outlook and provides current economic statistical data.

Medium: Book, updated annually.

Publisher: Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

10. **Source**: *Executive Compensation Service*

Source Description: Salary and bonus information for employees of all levels broken down by job description and by industry.

Medium: Book, updated annually.

Publisher: American Management Association
135 West 50th Street
New York, NY 10020
(212) 586-8100

11. **Source**: *Federal Reserve Bulletin*

Source Description: U.S. banking and monetary statistics, including data such as employment, prices, GNP, construction, interest rates and industrial production. Data includes the most recent three to five years.

Medium: Book, updated monthly.

Publisher: Publication Services
Mail Stop 138
Board of Governors of the Federal Reserve System
Washington, DC 20551
(202) 452-3244

12. **Source**: *Handbook of Basic Economic Statistics*

Source Description: A handbook of basic economic data on industry, commerce, labor and agriculture.

Medium: Book, updated annually with monthly supplements.

Publisher: Economic Statistics Bureau of Washington D.C.
Box 10163
Washington, DC 20018
(202) 393-5070

Washington, DC 20018
(202) 393-5070

13. **Source:** *Handbook of Economic Statistics*

Source Description: Economic statistics for selected non-communist and all communist countries. Covers economic profile of the country, data on economic trends, energy, agriculture, minerals and metals, chemicals, manufactured goods and foreign trade.

Medium: Book, updated annually.

Publisher: U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 27161
(703) 487-4650

14. **Source:** *Industry Norms & Key Business Ratios*

Source Description: Provides one-year balance sheet and income statement data (and key ratios) broken down by four-digit SIC numbers.

Medium: Book, updated annually.

Publisher: Dun & Bradstreet Business Credit Services
One Diamond Hill Road
Murray Hill, NJ 07974-0027
(201) 665-5610

15. **Source:** *Instant Information*

Source Description: Listing of nearly 10,000 organizations, associations and government agencies. Includes the name, address, phone number and a brief description of each listing. Part one is an alphabetical listing by state (including Puerto Rico and Canada). Part two is an alphabetical listing by organization title. Part three is an alphabetical listing by subject.

Medium: Book, 1987.

Publisher: Prentice Hall Press
A Division of Simon & Schuster, Inc.
Gulf & Western Building
One Gulf & Western Plaza
New York, NY 10023
(212) 698-7000

Publisher: Prentice Hall Press
A Division of Simon & Schuster, Inc.
Gulf & Western Building
One Gulf & Western Plaza
New York, NY 10023
(212) 698-7000

16. **Source**: *Investment Markets: Gaining the Performance Advantage*, Roger G. Ibbotson and Gary P. Brinson

Source Description: Includes charts, tables and narrative analyses of world capital markets. Includes analyses of U.S. stock market, foreign stock markets, bond markets, inflation throughout the world, gold and silver markets and real estate markets. Also includes discussions of investment theory.

Medium: Book, 1987.

Publisher: McGraw-Hill Book Co.
1221 Avenue of the Americas
New York, NY 10020
(212) 512-2000

17. **Source**: *Key Business Ratios*

Source Description: Includes fourteen key ratios broken down by SIC codes. For each SIC code, data are divided into three size ranges by net worth.

Medium: Book, updated annually.

Publisher: Dun & Bradstreet, Inc.
One Diamond Hill Road
Murray Hill, NJ 07974-0027
(800) 234-3867

18. **Source**: *LEXIS*

Source Description: Extensive legal database. Subscriber can seek specific cases and federal codes. Information is classified into many specialized "libraries" to aid in the search process.

Medium: On-line information subscription service. Data may be viewed on line and/or downloaded to a floppy disk, from which it may be printed.

Publisher: Mead Data Central
Marketing Communications
Department LL
P.O. Box 933
Dayton, OH 45401
(800) 543-6862

Publisher: Mead Data Central
Marketing Communications
Department LL
P.O. Box 933
Dayton, OH 45401
(800) 543-6862

19. **Source**: ***M & A DataBase***

Source Description: Computer accessible database that provides up to 300 information points on all announced M & A transactions involving U.S. companies.

Medium: Computer accessible database.

Publisher:
ADP Network Services
MLR Publishing Co.
229 South 18th Street
Philadelphia, PA 19103
(800) 237-3282

20. **Source**: ***Mergers & Acquisitions***

Source Description: Articles on recent events in the U.S. and foreign M & A arena. Also provides statistics on all announced mergers and acquisitions for the period since the last publication.

Medium: Bi-monthly magazine.

Publisher:
MLR Publishing Co.
229 South 18th Street
Philadelphia, PA 19103
(215) 790-7040

21. **Source**: ***Mergerstat Review***

Source Description: Statistical reference guide on all announced mergers and acquisitions in the past year. Also includes historical data on mergers, acquisitions, reorganizations, etc. for both U.S. and foreign-based companies.

Medium: Book, updated annually.

Publisher:
Merrill Lynch Business Brokerage and Valuation, Inc.
854 East Algonquin Road
Schaumburg, IL 60173
(708) 981-9800

22. **Source**: *Moody's Bank & Finance Manual*

Source Description: Five to seven years of balance sheet and income statement data, along with key financial ratios for companies in the insurance, finance, real estate and investment industries. Includes, for each company, a narrative of its business and a listing of all subsidiaries. Also includes analyses of the various firms' debt and equity structures.

Medium: Book, updated semi-weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

23. **Source**: *Moody's Industrial Manual*

Source Description: Five to seven years of balance sheet and income statement data, along with key financial ratios for companies listed on the NYSE, AMEX, and regional stock exchanges. Includes, for each company, a narrative of its business and a listing of all subsidiaries. Also includes analyses of the various firms' debt and equity structures.

Medium: Book, updated semi-weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

24. **Source**: *Moody's OTC Industrial Manual*

Source Description: Includes industrial companies listed on the over-the-counter stock market. Provides data such as historical background, mergers, subsidiaries, products, plants, officers and directors. Also includes financial information and analyses of the various firms' debt and equity structures.

Medium: Book, updated weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

Medium: Book, updated weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

25. **Source:** *Moody's Public Utility Manual*

Source Description: Five to seven years of balance sheet and income statement data, along with key financial ratios for electric and gas utilities, gas transmission companies, and telephone and water companies. Includes, for each company, a narrative of its business and a listing of all subsidiaries. Also includes analyses of the various firms' debt and equity structures.

Medium: Book, updated semi-weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

26. **Source:** *Moody's Transportation Manual*

Source Description: Five to seven years of balance sheet and income statement data, along with key financial ratios for railroads, airlines, shipping, bus and truck lines. Includes, for each company, a narrative of its business and a listing of all subsidiaries. Also includes analyses of the various firms' debt and equity structures.

Medium: Book, updated semi-weekly and bound in annual volumes.

Publisher: Moody's Investors Service, Inc.
Publication, Editorial, & Executive Offices
99 Church Street
New York, NY 10007
(212) 553-0435

27. **Source:** *National Trade and Professional Associations of the United States and Canada and Labor Unions*

Source Description: Index of contacts for industry and trade information. Approximately 6,000 organizations listed.

Medium: Book, updated annually.

Publisher: Columbia Books, Inc.
777 14th Street, NW
Washington, DC 20005
(202) 737-3777

Publisher: Columbia Books, Inc.
777 14th Street, NW
Washington, DC 20005
(202) 737-3777

28. **Source:** ***NEXIS***

Source Description: Extensive financial, legal, technical and popular news database. Subscriber can search for specific news items by subject, author or source. Information is classified into many specialized "libraries" to aid in the search process.

Medium: On-line information subscription service. Data may be viewed on line and/or downloaded to a floppy disk, from which it may be printed.

Publisher: Mead Data Central
Marketing Communications
Department LL
P.O. Box 933
Dayton, OH 45401
(800) 543-6862

29. **Source:** ***The Paine Webber Handbook of Stock & Bond Analysis***, Kiril Sokoloff, ed.

Source Description: Provides discussion and analysis hints for a variety of industries.

Medium: Book, 1979.

Publisher: McGraw-Hill Book Co.
1221 Avenue of the Americas
New York, NY 10020
(212) 512-2000

30. **Source:** ***Predicasts F & S Index of Corporate Change***

Source Description: Information provided on name changes, reorganizations, bankruptcies, liquidations and joint ventures. Part one is in alphabetical order by company name. Part two is in numerical order by SIC number. Part three is in alphabetical order by type of event.

Medium: Book, updated quarterly and bound in annual volumes.

Publisher: Predicasts, Inc.
11001 Cedar Ave.
Cleveland, OH 44106
(800) 321-6388

Publisher: Predicasts, Inc.
11001 Cedar Ave.
Cleveland, OH 44106
(800) 321-6388

31. **Source**: *Predicasts Index of Corporations and Industries*

Source Description: Index of current information on specific companies, specific products and industries. Arranged in alpha-company order and in SIC number order.

Medium: Book, updated weekly and bound in monthly and annual volumes.

Publisher: Predicasts, Inc.
11001 Cedar Ave.
Cleveland, OH 44106
(800) 321-6388

32. **Source**: *Robert Morris Associates Annual Statement Studies*

Source Description: Balance sheet and income statement data, along with key financial ratios, broken down by four-digit SIC numbers. Each SIC number breakdown shows data for current year and previous two years. Current data are further broken down by sales ranges.

Medium: Book, updated annually.

Publisher: Robert Morris Associates
One Liberty Place
1650 Market Street
Suite 2300
Philadelphia, PA 19103
(215) 851-9100

33. **Source**: *Standard Industrial Classification Manual*

Source Description: Provides definitions for SIC numbers.

Medium: Book, 1987

Publisher: U.S. Office of Management and Budget
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

34. **Source:** ***Standard NYSE Stock Reports***

Source Description: Provides financial data such as sales, earnings, book value, dividends and stock trading range for individual companies. Also provides a narrative about the background of the company, recent events and the outlook for the future of the firm and its industry.

Medium: Book, updated quarterly.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

35. **Source:** ***Standard & Poor's Analyst's Handbook***

Source Description: Statistical industry composite data, including sales, operating profits, dividends, earnings and depreciation. Data cover over 90 industries.

Medium: Book, updated annually.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

36. **Source:** ***Standard & Poor's Bond Guide***

Source Description: Covers over 6,100 domestic and Canadian corporate bonds as well as hundreds of convertible and international bonds. Includes corporate and government bond yields, comparative financial data for each corporate bond, S & P debt ratings, rating changes and more.

Medium: Book, updated monthly.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

New York, NY 10004
(212) 208-8786

37. **Source:** ***Standard & Poor's Industry Surveys***

Source Description: Basic financial data on 36 key industries. Each industry report includes a financial comparison of the leading companies in that industry.

Medium: Book, updated quarterly & annually.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

38. **Source:** ***Standard & Poor's Register of Corporations, Directors, & Executives***

Source Description: Volume one: Alphabetical listing of over 37,000 companies with a description of each business, the address and telephone numbers, and corporate officers and directors. Volume two: Alphabetical listing of individuals serving as officers, directors, trustees or partners. Volume three: Indexed by SIC number.

Medium: Book, updated annually.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

39. **Source:** ***Standard & Poor's Statistical Service***

Source Description: Current basic statistics for broad industry groups. Includes security price index record by industry group.

Medium: Book, updated monthly.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

25 Broadway
New York, NY 10004
(212) 208-8786

40. **Source**: *Standard & Poor's Stock Guide*

Source Description: Covers stocks listed on all major U.S. stock exchanges. Provides information on institutional ownership, recent stock performance data, highs and lows for the past year and over a period of the past 20 years, balance sheet data, debt structure and earnings.

Medium: Book, updated monthly.

Publisher: Standard & Poor's Corporation
25 Broadway
New York, NY 10004
(212) 208-8786

41. **Source**: *Statistical Abstract of the United States*

Source Description: Summary statistics covering social, political and economic organizations in the United States.

Medium: Book, updated annually.

Publisher: U.S. Bureau of Census
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

42. **Source**: *Stocks, Bonds, Bills, & Inflation*

Source Description: Includes charts and narrative analysis of economic indicators for the past decade. Also gives economic and security market data from 1926 to the present, such as: various interest rates, equity risk premia, inflation, NYSE capitalization deciles and indices of year-end cumulative wealth.

Medium: Book, updated annually.

Publisher: Ibbotson Associates, Inc.
8 South Michigan Avenue, Suite 700
Chicago, IL 60603
(312) 263-3425

Publisher: Ibbotson Associates, Inc.
8 South Michigan Avenue, Suite 700
Chicago, IL 60603
(312) 263-3425

43. **Source:** *Survey of Current Business*

Source Description: Provides national income and product account data for past three years, real GNP trends and cycles, regional economic analysis, international economic indicator comparisons, and more.

Medium: Book, updated monthly.

Publisher:
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

44. **Source:** *U.S. Industrial Outlook*

Source Description: Statistical and narrative analyses of recent trends and forecasts for over 200 industries. Includes analyses of industries' supply and demand, developments in domestic and foreign markets, employment trends and capital expenditure trends.

Medium: Book, updated annually.

Publisher:
U.S. Department of Commerce
Industry & Trade Information
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
(202) 783-3238

45. **Source:** *The Value Line Investment Survey*

Source Description: For specific companies, provides summary statistics and narrative analyses by industry and detailed financial data for the previous 15 years. The individual firm report includes a narrative section which describes the business and the outlook for the near future. The publication is geared towards security analysis, but is useful in a wide variety of settings.

Medium: Book, updated weekly.

Publisher:
Value Line, Inc.
711 Third Ave.
New York, NY 10017
(212) 687-3965

Medium: Book, updated weekly.

Publisher:
Value Line, Inc.
711 Third Ave.
New York, NY 10017
(212) 687-3965

46. **Source:** *Ward's Business Directory of U.S. Private and Public Companies*

Source Description: Provides listing of all U.S. companies, divisions, or subsidiaries broken down by SIC numbers. For each firm, lists address, phone number, most recent sales figure and number of employees.

Medium: Book, updated annually.

Publisher: Gale Research, Inc.
Book Tower
P.O. Box 441914
Detroit, MI 48244-9980
(800) 223-4253

with paragraph (d)(1) in § 1–9.107–5 (f);

(3) An *irrevocable*, nonexclusive, royalty-free license in the inventions, in which case paragraph (d) of the Patent Rights clauses in § 1–9.107–5 shall be replaced with paragraph (d) in § 1–9.107–5(g); or

(4) An *irrevocable*, nonexclusive, royalty-free license in inventions constructively reduced to practice prior to the effective date of the contract, in which case paragraph (d)(4) of § 1–9.107–5(h) shall be added to the Patent Rights clauses in § 1–9.107–5.

(f) *Subcontracts.* (1) The policy expressed in § 1–9.107–3 is applicable to prime contracts and to subcontracts regardless of tier. The appropriate Patent Rights clause prescribed by this subpart shall be included in all subcontracts having as a purpose the conduct of experimental, developmental, or research work. In general, the Patent Rights clause in the prime contract, with the exception of the withholding provision, will be appropriate for inclusion in such subcontracts. Whenever the prime contractor or a subcontractor considers the inclusion of the Patent Rights clause of the prime contract in a subcontract to be inconsistent with the policy expressed in § 1–9.107–3, or a subcontractor refuses to accept a Patent Rights clause in his subcontract, the matter shall be referred to the agency contracting officer for resolution prior to the award of the subcontract. Upon such referral, the same considerations and procedures followed by the contracting officer in selecting the Patent Rights clause included in the prime contract shall be used in selecting the Patent Rights clause to be included in the subcontract.

(2) Contractors shall not use their ability to award subcontracts as economic leverage to acquire rights for themselves in the inventions resulting from subcontracts.

(g) *Publication of invention disclosures.* The Patent Rights clauses of § 1–9.107–5 and § 1–9.107–6 specify in paragraph (c)(4) and (b)(2), respectively, that the Government may duplicate and disclose invention disclosures reported under the contract. However, the publication of the information in an invention disclosure by any party before the filing of a patent application may create a bar to the filing of foreign patent applications. The agency may restrict the publication of such information by the contractor in order to protect the interests of the Government or the contractor in obtaining foreign patents by adding the paragraph prescribed by § 1–9.107–5(i)(2) as a consecutively-numbered paragraph after pargraph (e)(4) of the clauses of § 1–9.107–5, and after paragraph (b)(2) of the clauses of § 1–9.107–6. Where the contractor has been authorized to file foreign patent applications, the agency may desire to restrict its publication of the information in the related invention disclosure in order to protect the filing of such foreign applications by the contractor. In this event, the sentence in § 1–9.107–5(i)(1) should be added to paragraph (e)(4) of the Patent Rights clauses in § 1–9.107–5, and to paragraph (b)(2) of Patent Rights clauses in § 1–9.107–6.

(h) *Deviations.* Any departures from the policy, procedures, and clauses of this subpart shall be subject to the provisions of § 1–1.009.

§ 1–9.107–5 Clauses for domestic contracts (long form).

(a) *Patent Rights clause—Acquisition by the Government.* When the agency has determined that a contract falls within § 1–9.107–4(a)(2), the following clause shall be included in the contract.

PATENTS RIGHTS—ACQUISITION BY THE GOVERNMENT

(a) *Definitions.* (1) "Subject Invention" means any invention or discovery of the Contractor conceived or first actually reduced to practice in the course of or under this contract, and includes any art, method, process, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the Patent Laws of the United States of America or any foreign country.

(2) "Contract" means any contract, agreement, grant, or other arrangement, or subcontract entered into with or for the benefit of the Government where a purpose of the contract is the conduct of experimental, developmental, or research work.

(3) "States and domestic municipal governments" means the States of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, Guam, the Trust Territory of the Pacific Islands, and any political subdivision and agencies thereof.

(4) "Government agency" includes an executive department, independent commission, board, office, agency, administration, authority, Government corporation, or other Government establishment of the executive branch of the Government of the United States of America.

(5) "To the point of practical means to manufacture in the co position or product, to practice of a process, or to operate in t machine and under such condi establish that the invention is and that its benefits are reasona ble to the public.

(b) *Allocation of principal ri signment to the Government.* Th agrees to assign to the Governm tire right, title, and interest th world in and to each Subject I cept to the extent that rights by the Contractor under paragra and (d) of this clause.

(2) *Greater rights determin* Contractor or the employee-inv authorization of the Contractor greater rights than the nonexcl provided in paragraph (d) of in accordance with the procedure of 41 CFR 1–9.109–6. A request nation whether the Contractor ployee-inventor is entitled to greater rights must be submi Contracting Officer at the time disclosure of the invention pursu graph (e)(2)(i) of this clause. than 8 months thereafter, or period as may be authorized by t ing Officer for good cause show by the Contractor. The inform submitted for a greater rights ex is specified in 41 CFR 1–9.109–6. mination of greater rights und tract normally shall be subject to (c) of this clause and to the reser conditions deemed to be appropri agency.

(c) *Minimum rights acquired b ernment.* With respect to each in vention to which the Contractor cipal or exclusive rights, the Contr

(1) Hereby grants to the Go nonexclusive, nontransferable, ir cense to make, use, and sell each i vention throughout the world by of the Government of the Unit cluding any Government agency and domestic municipal governme

(2) Agrees to grant to respon cants, upon request of the Gover cense on terms that are reasonable circumstances:

(i) Unless the Contractor, his a his assignee demonstrates to the G that effective steps have been tak 3 years after a patent issues on a tion to bring the invention to th practical application, or that the has been made available for licensi free or on terms that are reasona circumstances, or can show cau principal or exclusive rights sho tained for a further period of tim

(ii) To the extent that the in required for public use by governm ulations or as may be necessary to f lic health, safety or welfare nee

ately, that the Government may duplicate and disclose invention disclosures reported under the contract. However, the publication of the information in an invention disclosure by any party before the filing of a patent application may create a bar to the filing of foreign patent applications. The agency may restrict the publication of such informa-

the Trust Territory of the Pacific Islands, and any political subdivision and agencies thereof.

(4) "Government agency" includes an executive department, independent commission, board, office, agency, administration, authority, Government corporation, or other Government establishment of the executive branch of the Government of the United States of America.

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tion to bring the invention to th practical application, or that the has been made available for licensi free or on terms that are reasona circumstances, or can show cau principal or exclusive rights sho tained for a further period of tim

(ii) To the extent that the in required for public use by governm ulations or as may be necessary to f lic health, safety or welfare nee

the contractor in order to pro-
e interests of the Government or
tractor in obtaining foreign pat-
addi the paragraph prescribed
0.107 (2) as a consecutively-
ed paragraph after paragraph (e)
the clauses of § 1–9.107–5, and
aragraph (b)(2) of the clauses
.107–6. Where the contractor has
uthorized to file foreign patent
ions, the agency may desire to
its publication of the informa-
the related invention disclosure
r to protect the filing of such
applications by the contractor.
event, the sentence in § 1–9.107–5
hould be added to paragraph (e)
ne Patent Rights clauses in § 1–9.
nd to paragraph (b)(2) of Patent
lauses in § 1–9.107–6.

Deviations. Any departures from
icy, procedures, and clauses of
part shall be subject to the pro-
f § 1–1.009.

**07–5 Clauses for domestic con-
cts (long form).**

*atent Rights clause—Acquisition
Government.* When the agency
ermined that a contract falls
§ 1–9.107–4(a)(2), the following
nall be included in the contract.

TS RIGHTS—ACQUISITION BY THE GOVERNMENT

finitions. (1) "Subject Invention"
ny invention or discovery of the
or conceived or first actually reduced
ce in the course of or under this
and includes any art, method, proc-
ine, manufacture, design, or com-
of matter, or any new and useful
ent thereof, or any variety of plant,
or may be patentable under the
ws of the United States of America
eign country.

ontract" means any contract, agree-
nt, or other arrangement, or sub-
entered into with or for the benefit
overnment where a purpose of the
s the conduct of experimental, de-
tal, or research work.

ates and domestic municipal gov-
" means the States of the United
e District of Columbia, Puerto Rico,
n Islands, American Samoa, Guam,
Territory of the Pacific Islands,
political subdivision and agencies

overnment agency" includes an ex-
epartment, independent commis-
rd, office, agency, administration,
Government corporation, or other
nt establishment of the executive
the Government of the United
America.

(5) "To the point of practical application" means to manufacture in the case of a composition or product, to practice in the case of a process, or to operate in the case of a machine and under such conditions as to establish that the invention is being worked and that its benefits are reasonably accessible to the public.

(b) *Allocation of principal rights.* (1) *Assignment to the Government.* The Contractor agrees to assign to the Government the entire right, title, and interest throughout the world in and to each Subject Invention, except to the extent that rights are retained by the Contractor under paragraphs (b)(2) and (d) of this clause.

(2) *Greater rights determinations.* The Contractor or the employee-inventor with authorization of the Contractor may retain greater rights than the nonexclusive license provided in paragraph (d) of this clause in accordance with the procedure and criteria of 41 CFR 1–9.109–6. A request for determination whether the Contractor or the employee-inventor is entitled to retain such greater rights must be submitted to the Contracting Officer at the time of the first disclosure of the invention pursuant to paragraph (e)(2)(i) of this clause, or not later than 3 months thereafter, or such longer period as may be authorized by the Contracting Officer for good cause shown in writing by the Contractor. The information to be submitted for a greater rights determination is specified in 41 CFR 1–9.109–6. Each determination of greater rights under this contract normally shall be subject to paragraph (c) of this clause and to the reservations and conditions deemed to be appropriate by the agency.

(c) *Minimum rights acquired by the Government.* With respect to each Subject Invention to which the Contractor retains principal or exclusive rights, the Contractor:

(1) Hereby grants to the Government a nonexclusive, nontransferable, paid-up license to make, use, and sell each Subject Invention throughout the world by or on behalf of the Government of the United States (including any Government agency) and States and domestic municipal governments;

(2) Agrees to grant to responsible applicants, upon request of the Government, a license on terms that are reasonable under the circumstances:

(i) Unless the Contractor, his licensee, or his assignee demonstrates to the Government that effective steps have been taken within 3 years after a patent issues on such invention to bring the invention to the point of practical application, or that the invention has been made available for licensing royalty-free or on terms that are reasonable in the circumstances, or can show cause why the principal or exclusive rights should be retained for a further period of time; or

(ii) To the extent that the invention is required for public use by governmental regulations or as may be necessary to fulfill public health, safety or welfare needs, or for other public purposes stipulated in this contract;

(3) Shall submit written reports at reasonable intervals upon request of the Government during the term of the patent on the Subject Invention regarding:

(i) The commercial use that is being made or is intended to be made of the invention; and

(ii) The steps taken by the Contractor or his transferee to bring the invention to the point of practical application or to make the invention available for licensing;

(4) Agrees to refund any amounts received as royalty charges on any Subject Invention in procurements for or on behalf of the Government and to provide for that refund in any instrument transferring rights to any party in the invention; and

(5) Agrees to provide for the Government's paid-up license pursuant to paragraph (c)(1) of this clause in any instrument transferring rights in a Subject Invention and to provide for the granting of licenses as required by (2) of this clause, and for the reporting of utilization information as required by paragraph (e)(3) of this clause whenever the instrument transfers principal or exclusive rights in any Subject Invention.

Nothing contained in this paragraph (c) shall be deemed to grant to the Government any rights with respect to any invention other than a Subject Invention.

(d) *Minimum rights to the Contractor.* (1) The Contractor reserves a *revocable*, nonexclusive, royalty-free license in each patent application filed in any country on a Subject Invention and any resulting patent in which the Government acquires title. The license shall extend to the Contractor's domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and shall include the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license shall be transferable only with approval of the agency except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(2) The Contractor's nonexclusive domestic license retained pursuant to paragraph (d)(1) of this clause may be revoked or modified by the agency to the extent necessary to achieve expeditious practical application of the Subject Invention under 41 CFR 101–4.103–3 pursuant to an application for exclusive license submitted in accordance with 41 CFR 101–4.104–3. This license shall not be revoked in that field of use and/or the geographical areas in which the Contractor has brought the invention to the point of practical application and continues to make the benefits of the invention reasonably accessible to the public. The Contractor's nonexclusive license in any foreign country reserved pursuant to paragraph

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(d)(1) of this clause may be revoked or modified at the discretion of the agency to the extent the Contractor or his domestic subsidiaries or affiliates have failed to achieve the practical application of the invention in that foreign country.

(3) Before modification or revocation of the license, pursuant to paragraph (d)(2) of this clause, the agency shall furnish the Contractor a written notice of its intention to modify or revoke the license, and the Contractor shall be allowed 30 days (or such longer period as may be authorized by the agency for good cause shown in writing by the Contractor) after the notice to show cause why the license should not be modified or revoked. The Contractor shall have the right to appeal, in accordance with procedures prescribed by the agency, any decision concerning the modification or revocation of his license.

(e) *Invention, identification, disclosures, and reports.* (1) The Contractor shall establish and maintain active and effective procedures to ensure that Subject Inventions are promptly identified and timely disclosed. These procedures shall include the maintenance of laboratory notebooks or equivalent records and any other records that are reasonably necessary to document the conception and/or the first actual reduction to practice of Subject Inventions, and records which show that the procedures for identifying and disclosing the inventions are followed. Upon request, the Contractor shall furnish the Contracting Officer a description of these procedures so that he may evaluate and determine their effectiveness.

(2) The Contractor shall furnish the Contracting Officer:

(i) A complete technical disclosure for each Subject Invention within 6 months after conception or first actual reduction to practice whichever occurs first in the course of or under the contract, but in any event prior to any on sale, public use, or publication of such invention known to the Contractor. The disclosure shall identify the contract and inventor and shall be sufficiently complete in technical detail and appropriately illustrated by sketch or diagram to convey to one skilled in the art to which the invention pertains a clear understanding of the nature, purpose, operation, and, to the extent known, the physical, chemical, biological, or electrical characteristics of the invention;

(ii) Interim reports[1] at least every 12 months from the date of the contract listing Subject Inventions for that period and certifying that:

(A) The Contractor's procedures for identifying and disclosing Subject Inventions as required by this paragraph (e) have been followed throughout the reporting period; and

(B) All Subject Inventions have been disclosed or that there are no such inventions; and

(iii) A final report[1] within 3 months after completion of the contract work, listing all Subject Inventions or certifying that there were no such inventions.

(3) The Contractor shall obtain patent agreements to effectuate the provisions of this clause from all persons in his employ who perform any part of the work under this contract except nontechnical personnel, such as clerical employees and manual laborers.

(4) The Contractor agrees that the Government may duplicate and disclose Subject Invention disclosures and all other reports and papers furnished or required to be furnished pursuant to this clause.

(f) *Forfeiture of rights in unreported Subject Inventions.* (1) The Contractor shall forfeit to the Government all rights in any Subject Invention which he fails to disclose to the Contracting Officer within 6 months after the time he:

(i) Files or causes to be filed a United States or foreign application thereon; or

(ii) Submits the final report required by paragraph (e)(2)(iii) of this clause, whichever is later.

(2) However, the Contractor shall not forfeit rights in a Subject Invention if, within the time specified in (1)(i) or (1)(ii) of this paragraph (f), the Contractor:

(i) Prepared a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the contract; or

(ii) Contending that the invention is not a Subject Invention, he nevertheless discloses the invention and all facts pertinent to his contention to the Contracting Officer; or

(iii) Establishes that the failure to disclose did not result from his fault or negligence.

(3) Pending written assignment of the patent applications and patents on a Subject Invention determined by the Contracting Officer to be forfeited (such determination to be a final decision under the Disputes Clause), the Contractor shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this paragraph (f) shall be in addition to and shall not supersede other rights and remedies which the Government may have with respect to Subject Inventions.

(g) *Examination of records relating to inventions.* (1) The Contracting Officer or his authorized representative until the expiration of 3 years after final payment under this contract shall have the right to examine any books (including laboratory notebooks), records, documents, and other supporting data of the Contractor which the Contracting Officer reasonably deems pertinent to the discovery or identification of Subject Inventions to determine compliance with the requirements of this clause.

(2) The Contracting Officer shall have the right to review all books (including laboratory notebooks), records and

[1] Agency may specify form.

tory notebooks), records and
the Contractor relating to th
first actual reduction to pr
tions in the same field of t
work under this contract
whether any such inventio
Inventions if the Contractor
to:

(i) Establish the procedure
(e)(1) of this clause; or

(ii) Maintain and follow s
or

(iii) Correct or eliminate
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(30) days after the Contract
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(h) *Withholding of payments to Subcontracts*). (1) A
final payment of the amou
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if in his opinion the Contra

(i) Establish, maintain, a
tive procedures for identify
ing Subject Inventions pur
graph (e)(1) of this clause;

(ii) Disclose any Subject
suant to paragraph (e)(2)(i)
or

(iii) Deliver acceptable
pursuant to paragraph (e)
clause; or

(iv) Provide the inform
subcontracts pursuant to par
this clause.

The reserve or balance sh
until the Contracting Offic
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(2) Final payment under
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sures of Subject Inventio
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(3) The Contracting Offi
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exceed $50,000 or 1 percent
this contract whichever is
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contract. The withholding
or subsequent payment th
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to the Government under

(i) *Subcontracts.* (1) For
this paragraph the term
means the party awarding a
the term "Subcontractor" m

Subject Inventions for that period and certifying that:

(A) The Contractor's procedures for identifying and disclosing Subject Inventions as required by this paragraph (e) have been followed throughout the reporting period; and

(B) All Subject Inventions have been disclosed or that there are no such inventions; and

[1] Agency may specify form.

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inventions. (1) The Contracting Officer or his authorized representative until the expiration of 3 years after final payment under this contract shall have the right to examine any books (including laboratory notebooks), records, documents, and other supporting data of the Contractor which the Contracting Officer reasonably deems pertinent to the discovery or identification of Subject Inventions to determine compliance with the requirements of this clause.

(2) The Contracting Officer shall have the right to review all books (including labora-

exceed $50,000 or 1 percent
this contract whichever is
shall be withheld under this
the amount specified by
being withheld under other
contract. The withholding
or subsequent payment th
construed as a waiver of any
to the Government under

(i) *Subcontracts.* (1) For
this paragraph the term
means the party awarding a
the term "Subcontractor" m

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final report within 3 months after
n of the contract work, listing all
nventions or certifying that there
ich I[illegible]tions.
e Co[illegible]tor shall obtain patent
s to effectuate the provisions of
ee from all persons in his employ
rm any part of the work under this
xcept nontechnical personnel, such
employees and manual laborers.
e Contractor agrees that the Gov-
nay duplicate and disclose Subject
disclosures and all other reports
s furnished or required to be fur-
rsuant to this clause.
*feiture of rights in unreported Sub-
tions.* (1) The Contractor shall for-
ie Government all rights in any
nvention which he fails to disclose
ntracting Officer within 6 months
ime he:
s or causes to be filed a United
foreign application thereon; or
omits the final report required by
(e) (2) (iii) of this clause, which-
er.
vever, the Contractor shall not for-
in a Subject Invention if, within
specified in (1) (i) or (1) (ii) of
raph (f), the Contractor:
pared a written decision based upon
of the record that the invention
er conceived nor first actually re-
practice in the course of or under
ct; or
ntending that the invention is not
Invention, he nevertheless dis-
invention and all facts pertinent
tention to the Contractor;
:ablishes that the failure to dis-
not result from his fault or
.
ding written assignment of the
plications and patents on a Sub-
ion determined by the Contracting
be forfeited (such determination
nal decision under the Disputes
ne Contractor shall be deemed to
nvention and the patent applica-
patents pertaining thereto in trust
vernment. The forfeiture provision
agraph (f) shall be in addition to
not supersede other rights and
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ct to Subject Inventions.
*mination of records relating to
.* (1) The Contracting Officer or
ized representative until the ex-
3 years after final payment under
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(including laboratory notebooks),
cuments, and other supporting
e Contractor which the Contract-
reasonably deems pertinent to
ery or identification of Subject
to determine compliance with
ments of this clause.
Contracting Officer shall have the
view all books (including labora-

tory notebooks), records and documents of the Contractor relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this contract to determine whether any such inventions are Subject Inventions if the Contractor refuses or fails to:

(i) Establish the procedures of paragraph (e) (1) of this clause; or

(ii) Maintain and follow such procedures; or

(iii) Correct or eliminate any material deficiency in the procedures within thirty (30) days after the Contracting Officer notifies the Contractor of such a deficiency.

(h) *Withholding of payment (Not applicable to Subcontracts).* (1) Any time before final payment of the amount of this contract, the Contracting Officer may, if he deems such action warranted, withhold payment until a reserve not exceeding $50,000 or 5 percent of the amount of this contract, whichever is less, shall have been set aside if in his opinion the Contractor fails to:

(i) Establish, maintain, and follow effective procedures for identifying and disclosing Subject Inventions pursuant to paragraph (e) (1) of this clause; or

(ii) Disclose any Subject Invention pursuant to paragraph (e) (2) (i) of this clause; or

(iii) Deliver acceptable interim reports pursuant to paragraph (e) (2) (ii) of this clause; or

(iv) Provide the information regarding subcontracts pursuant to paragraph (i) (5) of this clause.

The reserve or balance shall be withheld until the Contracting Officer has determined that the Contractor has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause.

(2) Final payment under this contract shall not be made before the Contractor delivers to the Contracting Officer all disclosures of Subject Inventions required by paragraph (e) (2) (i) of this clause, and an acceptable final report pursuant to (e) (2) (iii) of this clause.

(3) The Contracting Officer may, in his discretion, decrease or increase the sums withheld up to the maximum authorized above. If the Contractor is a nonprofit organization the maximum amount that may be withheld under this paragraph shall not exceed $50,000 or 1 percent of the amount of this contract whichever is less. No amount shall be withheld under this paragraph while the amount specified by this paragraph is being withheld under other provisions of the contract. The withholding of any amount or subsequent payment thereof shall not be construed as a waiver of any rights accruing to the Government under this contract.

(i) *Subcontracts.* (1) For the purpose of this paragraph the term "Contractor" means the party awarding a subcontract and the term "Subcontractor" means the party being awarded a subcontract, regardless of tier.

(2) Unless otherwise authorized or directed by the Government Contracting Officer, the Contractor shall include this Patent Rights clause modified to identify the parties in any subcontract hereunder if a purpose of the subcontract is the conduct of experimental, developmental, or research work. In the event of refusal by a Subcontractor to accept this clause, or if in the opinion of the Contractor this clause is inconsistent with the policy set forth in 41 CFR 1-9.107-3, the Contractor:

(i) Shall promptly submit a written notice to the Government Contracting Officer setting forth reasons for the Subcontractor's refusal and other pertinent information which may expedite disposition of the matter; and

(ii) Shall not proceed with the subcontract without the written authorization of the Government Contracting Officer.

(3) The Contractor shall not, in any subcontract or by using a subcontract as consideration therefor, acquire any rights in his Subcontractor's Subject Invention for his own use (as distinguished from such rights as may be required solely to fulfill his contract obligations to the Government in the performance of this contract).

(4) All invention disclosures, reports, instruments, and other information required to be furnished by the Subcontractor to the Government Contracting Officer under the provisions of a Patent Rights clause in any subcontract hereunder may, in the discretion of the Government Contracting Officer, be furnished to the Contractor for transmission to the Government Contracting Officer.

(5) The Contractor shall promptly notify the Government Contracting Officer in writing upon the award of any subcontract containing a Patent Rights clause by identifying the Subcontractor, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Government Contracting Officer, the Contractor shall furnish a copy of the subcontract. If there are no subcontracts containing Patent Rights Clauses, a negative report shall be included in the final report submitted pursuant to paragraph (e) (2) (iii) of this clause.

(6) The Contractor shall identify all Subject Inventions of the Subcontractor of which he acquires knowledge in the performance of this contract and shall notify the Government Contracting Officer promptly upon the identification of the inventions.

(7) It is understood that the Government is a third party beneficiary of any subcontract clause granting rights to the Government in Subject Inventions, and the Contractor hereby assigns to the Government all rights that he would have to enforce the Subcontractor's obligations for the benefit of the Government with respect to Subject Inventions. 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.

(b) *Patent Rights clause—Retention by the Contractor.* When the agency has determined that a contract falls within § 1-9.107-4(a)(3), the Patent Rights clause in § 1-9.107-5(a) shall be included in the contract, except that the name of the clause shall be changed to "Patent Rights—Retention by the Contractor", paragraph (b) of that clause shall be replaced by the following paragraph (b), and the following paragraphs (j) and (k) shall be added:

(b) *Allocation of principal rights.* (1) The Contractor may retain the entire right, title, and interest throughout the world or in any country thereof in and to each Subject Invention disclosed pursuant to paragraph (e)(2)(i) of this clause, subject to the rights obtained by the Government in paragraph (c) of this clause. The Contractor shall include with each Subject Invention disclosure an election as to whether he will retain the entire right, title, and interest in the invention throughout the world or any country thereof.

(2) Subject to the license specified in paragraph (d) of this clause, the Contractor agrees to convey to the Government, upon request, the entire domestic right, title, and interest in any Subject Invention when the Contractor:

(i) Does not elect under paragraph (b)(1) of this clause to retain such rights; or

(ii) Fails to have a United States patent application filed on the invention in accordance with paragraph (j) of this clause, or decides not to continue prosecution of such application; or

(iii) At any time, no longer desires to retain title.

(3) Subject to the license specified in paragraph (d) of this clause, the Contractor agrees to convey to the Government upon request the entire right, title, and interest in any Subject Invention in any foreign country if the Contractor:

(i) Does not elect under paragraph (b)(1) of this clause to retain such rights in the country; or

(ii) Fails to have a patent application filed in the country on the invention in accordance with paragraph (k) of this clause, or decides not to continue prosecution or to pay any maintenance fees covering the invention. To avoid forfeiture of the patent application or patent, the Contractor shall notify the Contracting Officer not less than 60 days before the expiration period for any action required by the foreign patent office.

(4) A conveyance requested pursuant to paragraph (b)(2) or (3) of this clause shall be made by delivering to the Contracting Officer duly executed instruments (prepared by the Government) and such other papers as are deemed necessary to vest in the Government the entire right, title, and interest to enable the Government to apply for and prosecute patent applications covering the invention in this or the foreign country, respectively, or otherwise establish its ownership of the invention.

(j) *Filing of domestic patent applications.* (1) With respect to each Subject Invention in which the Contractor elects to retain domestic rights pursuant to paragraph (b) of this clause, the Contractor shall have a domestic patent application filed within 6 months after submission of the invention disclosure pursuant to paragraph (e)(2)(i) of this clause or such longer period as may be approved by the Contracting Officer for good cause shown in writing by the Contractor. With respect to the invention, the Contractor shall promptly notify the Contracting Officer of any decision not to file an application.

(2) For each Subject Invention on which a patent application is filed by or on behalf of the Contractor, the Contractor shall:

(i) Within 2 months after the filing or within 2 months after submission of the invention disclosure if the patent application previously has been filed, deliver to the Contracting Officer a copy of the application as filed including the filing date and serial number;

(ii) Include the following statement in the second paragraph of the specification of the application and any patents issued on a Subject Invention, "The Government has rights in this invention pursuant to Contract No. ------- (or Grant No. -------) awarded by (identify the agency).";

(iii) Within 6 months after filing the application or within 6 months after submitting the invention disclosure if the application has been filed previously, deliver to the Contracting Officer a duly executed and approved instrument on a form specified by the Government fully confirmatory of all rights to which the Government is entitled, and provide the agency an irrevocable power to inspect and make copies of the patent application filed;

(iv) Provide the Contracting Officer with a copy of the patent within 2 months after a patent is issued on the application; and

(v) Not less than 30 days before the expiration of the response period for any action required by the Patent and Trademark Office, notify the agency of any decision not to continue prosecution of the application and deliver to the agency executed instruments granting the Government a power of attorney.

(3) For each Subject Invention in which the Contractor initially elects not to retain principal domestic rights, the Contractor shall inform the Contracting Officer promptly in writing of the date and identity of any on sale, public use, or publication of the invention which may constitute a statutory

bar under 35 U.S.C. 102, which
lized by or known to the Con
contemplated action of this
(k) *Filing of foreign paten*
(1) With respect to each Sub
in which the Contractor elects
cipal rights in a foreign cou
to paragraph (b)(1) of this c
tractor shall have a patent a
on the invention in that cou
ance with applicable statut
tions, and within one of
periods:
(i) Eight months from the
responding United States a
by or on behalf of the Contra
an application is not filed,
the date the invention is subm
closure pursuant to paragra
this clause;
(ii) Six months from the da
granted by the Commissioner
Trademarks to file foreign
where such filing has been
security reasons; or
(iii) Such longer period a
proved by the Contracting O
(2) The Contractor shall n
tracting Officer promptly of e
plication filed and upon writte
furnish an English version
application without additional

(c) *Patent Rights clau*
When the agency has det
a contract falls within § 1-
the Patent Rights clause
(a) shall be included in the
cept that the name of the
changed to "Patent Right
and paragraph (b) of tha
be replaced with the followi
(b):

(b) *Allocation of principal r*
signment to the Government.
ject Invention is identified,
agrees to assign to the Gover
tire right, title, and interest t
out the world except to th
greater rights are retained by
under paragraphs (b)(2) and
clause.
(2) *Greater rights deter*
Contractor, or the employee-
authorization of the Contract
greater rights than the none
provided in paragraph (d) of
accordance with the procedu
of 41 CFR 1-9.109-6. A requ
mination of whether the Co
employee-inventor is entitled
greater rights must be submi
tracting Officer at the time of
of the invention pursuant to
(2)(i) of this clause, or no
months thereafter or such le
may be authorized by the Co
cer for good cause shown in

any maintenance fees covering the invention. To avoid forfeiture of the patent application or patent, the Contractor shall notify the Contracting Officer not less than 60 days before the expiration period for any action required by the foreign patent office.

(4) A conveyance requested pursuant to paragraph (b)(2) or (3) of this clause shall be made by delivering to the Contracting Officer duly executed instruments (prepared by the Government) and such other papers as are deemed necessary to vest in the Government the entire right, title, and interest to enable the Government to apply for and prosecute patent applications covering the invention in this or the foreign country, respectively, or otherwise establish its ownership of the invention.

(j) *Filing of domestic patent applications.* (1) With respect to each Subject Invention in which the Contractor elects to retain domestic rights pursuant to paragraph (b) of this clause, the Contractor shall have a domestic patent application filed within 6 months after submission of the invention disclosure pursuant to paragraph (e)(2)(i) of this clause or such longer period as may be approved by the Contracting Officer for good cause shown in writing by the Contractor. With respect to the invention, the Contractor shall promptly notify the Contracting Officer of any decision not to file an application.

(3) For each Subject Invention in which the Contractor initially elects not to retain principal domestic rights, the Contractor shall inform the Contracting Officer promptly in writing of the date and identity of any on sale, public use, or publication of the invention which may constitute a statutory

accordance with the procedu
of 41 CFR 1-9.109-6. A requ
mination of whether the Co
employee-inventor is entitled
greater rights must be submi
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of the invention pursuant to
(2)(i) of this clause, or no
months thereafter or such le
may be authorized by the Co
cer for good cause shown in

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International Labour Organisation
Sectoral Activities Programme

TMSAI

Tripartite Meeting on Salaried Authors and Inventors

Geneva, 1987

The protection of salaried authors and inventors

International Labour Office Geneva

International Labour Office Geneva

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INTRODUCTION

At its 226th Session (May-June 1984), the Governing Body of the International Labour Office decided to convene a Tripartite Meeting on Salaried Authors and Inventors; the meeting will be held in Geneva from 24 November to 2 December 1987. In accordance with the decision taken by the ILO Governing Body at its 231st Session (November 1985), it will have the following terms of reference: (a) to adopt conclusions on the principles that should be applied in order to protect the rights of salaried authors and inventors, having due regard to the interests of employers; (b) to make recommendations for future ILO action.

This meeting responds to a request that the Advisory Committee on Salaried Employees and Professional Workers has voiced on several occasions. Already at its First Session in 1949 it expressed the hope that the study on the rights of the salaried inventor, which had been launched before the Second World War by the two committees which preceded it - the Advisory Committee on Professional Workers and the Advisory Committee on Salaried Employees - should be continued with a view to drawing up an international standard. The Advisory Committee on Salaried Employees and Professional Workers has reiterated this wish in one way or another on four occasions since then.[1] At its Ninth Session in 1985 it adopted a resolution concerning the rights not only of salaried inventors but also those of authors, in which it requested the Director-General, on the basis of the conclusions of the scheduled Tripartite Meeting of Experts, to prepare a report on the law and practice on the question of their protection and to consider the desirability of placing this question on the agenda of an early session of the International Labour Conference with a view to adopting appropriate international standards.

The protection of inventions and works by patents and copyright as such is not within the competence of the ILO; the World Intellectual Property Organisation (WIPO) deals with the protection of inventions, while the protection of copyright is carried out by both the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and WIPO, each organisation playing a vital role within its sphere of action to guarantee and promote the protection of intellectual property. However, viewing this subject from the standpoint of labour law and social justice, which clearly fall within the ILO's competence, both salaried authors and inventors are faced with common problems which stem from the same source: the existence of an employment relationship. Similarly, the protection of rights granted to both these categories of employees on the inventions or works they create in the course of this relationship is based on similar principles.

Today, an increasing number of creators of works are employees. When it comes to inventions, they often play a leading role; in some countries, it is estimated that employees are responsible for up to 75 or even 90 per cent of all inventions. There can be no escaping the fact that the protection of their intellectual rights is therefore a topical issue.

Whether the employees concerned are authors of inventions, innovations, discoveries, industrial designs, software, intellectual works and performances, they belong to a wide variety of occupational categories and are employed in many sectors of activity, both public and private. The enterprises or organisations employing them are thus themselves extremely diverse. This report does not constitute an exhaustive study of such a vast and complex subject or give a full and detailed picture of all the categories of employees concerned in this field. Its purpose being to serve as a basis for discussions at the tripartite meeting, it sets out rather to take stock of the problems and solutions proposed in law and practice.

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The first chapter endeavours to define or at least clarify the general framework within which the rights of salaried authors and inventors are an issue today, both nationally and internationally. Chapter II examines the general way in which it is determined who is the owner of inventions and works created by employees and looks into the economic rights arising from these inventions and the various national approaches to this question; it also studies the conditions governing the exercise of these rights. Chapter III discusses the pecuniary rights of salaried inventors and authors, i.e. their entitlement to special remuneration or other forms of compensation and rewards for their intellectual activity (compensation granted to employees whose creations do not generate intellectual rights are dealt with in a separate chapter). Chapter IV examines employees' moral rights in connection with the product of their creative activity. Chapter V looks at the effects of the termination of the employment relationship on the economic, pecuniary and moral rights of workers, inventors and authors. Chapter VI is devoted to the machinery for settling disputes and grievances between employers and employees. Finally, Chapter VII examines the compensation granted to the salaried authors of discoveries, innovations, technical improvements and suggestions used by the enterprise or organisation employing them and, in a general way, creations and personal proposals which do not give rise to intellectual rights.

The report concludes with a list of suggested points for discussion which might be examined during the meeting.

This report is based on the replies to the questionnaire that the ILO sent to all member States for this meeting and on information the Office had at its disposal, especially concerning the relevant legal provisions.

The Office had requested governments to send their replies not later than 15 December 1986. However, since only a few countries had sent in their reply by this date, a special effort was made to take account as far as possible of communications submitted up to 30 April 1987.

The following 41 countries either replied to the Office's questionnaire or sent information on the situation of salaried authors and/or inventors: Australia, Austria, Brazil, Burundi, Canada, Central African Republic, Chile, Colombia, Côte d'Ivoire, Czechoslovakia, Denmark, Ecuador, Egypt, Ethiopia, Finland, France, German Democratic Republic, Federal Republic of Germany, Hungary, Indonesia, Italy, Kuwait, Madagascar, Mexico, Morocco, Netherlands, Niger, Norway, Pakistan, Peru, Philippines, Portugal, Rwanda, Spain, Sweden, Switzerland, Thailand, Turkey, USSR, United Kingdom and United States. These replies and information varied considerably both in length and amount of detail.

The Governments of the following countries informed the Office that they were not in a position to reply to the questionnaire, that they had little or no information on the subject, or that there were no specific regulations on salaried inventors and authors: Barbados, Benin, Guinea, Saint Lucia, Singapore and Sri Lanka. Replies from the Governments of India, Iraq, Mauritius and Uganda arrived too late to be included in the report.

Governments were requested to consult the employers' and workers' organisations concerned. Of the 41 governments which replied to the Office's questionnaire or submitted information, the following countries pointed out that they had undertaken such consultations or enclosed the observations of the organisations with their reply: Australia, Austria, Brazil, Burundi, Canada, Colombia, Czechoslovakia, Ecuador, Egypt, Ethiopia, Federal Republic of Germany, Finland, Hungary, Italy, Mexico, Norway, Peru, Philippines, Portugal, Sweden, Switzerland, USSR, United Kingdom and United States.

Governments of India, Iraq, Mauritius and Uganda arrived too late to be included in the report.

Governments were requested to consult the employers' and workers' organisations concerned. Of the 41 governments which replied to the Office's questionnaire or submitted information, the following countries pointed out that they had undertaken such consultations or enclosed the observations of the organisations with their reply: Australia, Austria, Brazil, Burundi, Canada, Colombia, Czechoslovakia, Ecuador, Egypt, Ethiopia, Federal Republic of Germany, Finland, Hungary, Italy, Mexico, Norway, Peru, Philippines, Portugal, Sweden, Switzerland, USSR, United Kingdom and United States.

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Several international non-governmental workers' and employers' organisations transmitted information or comments to the Office, namely: International Confederation of Executive Staffs (CIC); Confédération internationale des fonctionnaires (CIF); International Confederation of Societies of Authors and Composers (CISAC); Liaison Committee of Engineers, Supervisory and Managerial Staffs and Technicians (CLIICT); International Federation of Commercial, Clerical, Professsional and Technical Employees (FIET); International Federation of Musicians (FIM); Public Services International (PSI); Postal, Telegraph and Telephone International (PTTI); Nordic Conference of Supervisors, Technicians and other Managers (NAU), and the International Organisation of Employers (IOE). These comments and information concern workers' organisations in Argentina, Australia, Austria, Belgium, Bermuda, Denmark, Egypt, Finland, France, Federal Republic of Germany, Ghana, Hungary, Luxembourg, Mauritius, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sri Lanka, Sweden, Switzerland, United Kingdom and Hong Kong. Employers' organisations from the following countries also sent their comments: Brazil, Canada, Republic of Korea, New Zealand and United States.

The ILO would like to thank all those who sent in information for this report, especially those who did so in detail.

Note

[1] At its Fourth, Sixth, Eighth and Ninth Sessions.

CHAPTER I

FRAMEWORK OF PROTECTION

National laws and regulations have long acknowledged the vital role that creative activity plays in fostering progress and development, not only in the technical and economic but also in the social and cultural fields. It is even more relevant today because any enterprise - and, generally speaking, any economy - loses ground when it cannot keep abreast of technological innovation and be competitive both nationally and internationally. As far as the developing countries are concerned, the promotion of creativity is a decisive factor in so far as it helps them to be less dependent upon foreign techniques, goods and services. The rules and regulations governing intellectual property, by protecting individual inventors and granting them rights over their inventions or work, do in fact encourage creative activity and enable society as a whole to share its benefits. These rights are laid down in various international standards, and more particularly in the Universal Declaration of Human Rights adopted in 1948 which stipulates that "everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author".[1]

However, the once traditional image of the inventor and individual creator enjoying the benefits of their creative work, upon which the legal protection of intellectual property was originally based, is today very much a thing of the past. Industrial development, the accelerated pace of technological change, the increasing volume of investment and human resources that is needed to develop innovations, inventions, goods and services protected by copyright and the growing proportion of industries based on their development and use in national economies have, by changing the organisation and financing of creative work, considerably altered this image. More and more inventions, innovations and other intellectual creation now come from employees in public and private enterprises - whether or not they are employed for this purpose - in both industrialised and developing countries.[2]

However, no international labour or other standard has yet tackled the specific situation of the employee inventor. Although international instruments on intellectual property of a universal nature, whether dealing with copyright (Berne Convention for the Protection of Literary and Artistic Works[3] and the Universal Copyright Convention[4]) or with industrial property (Paris Convention for the Protection of Industrial Property[5]), do provide for the protection of inventions or works, they do not specifically cover those provided by employees. The Rome Convention[6] does protect performers, but it too is silent on the problems that arise in an employment relationship. The Convention for the Grant of European Patents (Munich, 1973) and the Community Patent Convention (Luxembourg, 1975), which lay down regional standards, refer the matter of the employee inventor to the law and practice of the member States of the European Community; the first, for instance, stipulates that, if the inventor is an employee, the right to the European patent shall be determined "in accordance with the law of the State in which the employee is mainly employed" or, if the said State cannot be determined, in accordance with the law of the State in which the establishment employing him is based.

Apart from a number of provisions contained in regional agreements concluded between countries, such as the Agreement on the Creation of an African Intellectual Property Organisation, signed in Bangui in 1977, and the Agreement on Subregional Integration signed in Cartagena in 1969, which covers

regional standards, refer the matter of the employee inventor to the law and practice of the member States of the European Community; the first, for instance, stipulates that, if the inventor is an employee, the right to the European patent shall be determined "in accordance with the law of the State in which the employee is mainly employed" or, if the said State cannot be determined, in accordance with the law of the State in which the establishment employing him is based.

Apart from a number of provisions contained in regional agreements concluded between countries, such as the Agreement on the Creation of an African Intellectual Property Organisation, signed in Bangui in 1977, and the Agreement on Subregional Integration signed in Cartagena in 1969, which covers

a group of countries in Latin America, this subject is only taken up at the international level in the WIPO Model Law for Developing Countries on Inventions[7] and the Tunis Model Law on Copyright for Developing Countries;[8] the latter contains two sets of alternative provisions that correspond to the main legislative approaches adopted by the countries concerned, and these are again reflected in the Model Provisions for National Laws on Employed Authors that were adopted in January 1986 by a committee of government experts convened by WIPO and UNESCO, in spite of the reservations expressed by certain delegations.

The role of the ILO

The ILO has been examining the situation of the employee inventor since 1928, when it held the First Session of the Advisory Committee on Professional Workers, one of the two committees which preceded the Advisory Committee on Salaried Employees and Professional Workers. At its Second Session the following year, the Committee recommended that all patents should mention the name of the inventor or inventors and that additional compensation "in proportion to the value of the invention and the circumstances in which it was made" should be paid to the inventor employed either in a private or a State undertaking when the employer is granted a legal title to the patent, unless he has received fair remuneration either in wages or otherwise. It stipulated that no agreement to the contrary could deprive employees of these rights. Finally, it recommended that the adoption of an international instrument in this field should be considered.[9]

At its First Session in 1931,[10] the ILO's Advisory Committee on Salaried Employees adopted a resolution on the same subject, in which it requested the Office to take all the necessary measures to hasten the adoption of international regulations on inventors' rights for salaried employees and to consider in which way these regulations should be established: whether by means of an international labour Convention or by revision of the International Convention on the Protection of Industrial Property or simultaneously by the two methods. With regard to the content of such regulations, it considered that it was of fundamental importance that the inventor should be entitled to receive a patent or, failing that, that "the name of the inventor should be mentioned in all official documents concerning the protection of the inventor and on every occasion where such protection is mentioned" and that several restrictions should be placed on the freedom of contract. For instance, according to the resolution, contracts entered into with employers for the transfer of the rights over future inventions should only be permitted when the salaried employee had been engaged specifically for research work with a view to making inventions. It stipulated that contracts of this nature were only permissible if they provided for special compensation for the inventor, which was also to be guaranteed even if the inventions remained secret or unexploited.

The two committees pursued the matter at subsequent meetings and it was then taken up by the Advisory Committee on Salaried Employees and Professional Workers which succeeded them. At its First Session in 1949, this Committee urged that the study of employee inventors' rights should be continued with a view to the adoption of international regulations. It has reiterated this wish on several occasions since then, and specifically at its last meeting in 1985 when it requested that the protection of the salaried inventor and author should be studied with a view to adopting appropriate international standards.

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The International Labour Conference also dealt with this question when it examined the problems of non-manual workers, including technical and supervisory staff, at its 43rd Session (1959). In its conclusions, it requested the ILO to convene a Committee of Experts to consider the problems of the salaried inventor.

The subject was also discussed at the 1977 Tripartite Meeting on Conditions of Work and Employment of Professional Workers, which declared that the promotion of creativity among professional workers is an important factor for job satisfaction and is in the interests of the undertaking and of society in general. The compendium of principles and good practices drawn up at this meeting cited among the means of providing incentives to creative activity, "the recognition and safeguarding of the rights of the salaried inventor, the development of a working atmosphere favourable to innovation and the granting of the greatest possible measure of freedom to research workers (without prejudice to the public interest or the rights of the employer or to fellow workers) to publish the results of their work and a positive encoouragement to take part in scientific and technical congresses".[11]

Compared to employee inventors, it is only relatively recently that the ILO has focused its attention on the protection of salaried authors - at least in the broad sense of the term, since performers were discussed at the ILO very early on, as we shall see. In 1982, a consultation meeting on copyright ownership and its consequences for the relations between employers and employed or salaried authors was jointly organised by the ILO, UNESCO and WIPO. Following this meeting, the Governing Body of the ILO decided at its 222nd Session (March 1983) to invite the Director-General to bear in mind the possibility, when preparing his proposals for the programme of meetings for 1986-87, of including provision for the preparation and convening of a tripartite meeting dealing with the protection of the rights of salaried authors and inventors; the Governing Body duly decided to convene this meeting at its 226th Session (May-June 1984).

The protection of performers bound to an employer by an employment relationship, who were included in the field covered by the above-mentioned tripartite meeting in their capacity as employees "who create goods or services that generate intellectual rights", was examined by the ILO in the context of the rights of performers in broadcasting, television and the mechanical reproduction of sounds (it should be noted that in this report, performers will be examined together with authors). In 1930 one of the first requests the Office received from a workers' organisation, the International Confederation of Professional Workers, stressed the need for a special convention for performers "whose rights are derived from their contract of service with their employers". In the preliminary report[12] drawn up for the 26th Session of the International Labour Conference, which was to have held a first discussion on the subject in 1940, the ILO pointed out that the criteria for any international regulations should include the existence of an employment relationship. The Second World War prevented the International Labour Conference from meeting that year, but the idea was taken up again by the Advisory Committee on Salaried Employees and Professional Workers at its Second Session in 1952, when the office again proposed in a report on the rights of performers[13] that an employment relationship be one of the criteria for defining the term "performer".

Though various studies[14] have been carried out on the protection of the rights of salaried inventors and authors and despite extensive discussions of the subject and the adoption of resolutions to include it in the agenda of the International Labour Conference, this issue has still not been resolved. The issue has now come to the forefront due to rapid technological change,

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increasing international competitiveness and the growing and vital role employees now play in the development of inventions and original works.

The importance of protection

Apart from the largely state-financed activities carried out in research institutes and in universities,[15] which in many countries are playing an increasingly important role, enterprises, especially the bigger ones, often have their own research and development department for improving methods and processes and thereby expanding their operations. Many employees do indeed produce money-earning inventions or other original creations, in the course of their job. For instance, it is estimated that 60 per cent of all inventions are developed by employees in Denmark,[16] between 66 and 75 per cent (and probably even more in future) in Austria,[17] between 70 and 75 per cent in France,[16] 80 per cent in the United States[18] and between 80 and 90 per cent in the Federal Republic of Germany.[19]

Many works eligible for copyright protection are also being produced by salaried employees[20] in public or private enterprises, the activities of which, whether traditional or new, often depend to a great extent on such original creations and contribute more and more to the economy of many countries.[21] This is the case in industries where design work and the applied arts play a major role and in such sectors as publishing, advertising, the press, radio, television, films, the videogram and recording industry and the mass media in general. The same is true of new technologies and data processing in so far as computer software is subject to copyright in a growing number of countries. Many goods and services subject to copyright are also created in the scientific and cultural fields and in research and education where many people are employed.[22] Furthermore, technological innovations and the new forms of creation and dissemination of original works that they make possible have brought the whole question of the protection of salaried authors very much to the fore.

The growing interest in creative activity can be seen from the fact that measures and policies are being adopted to encourage and develop innovations and creativity, both nationally and within the enterprise: in France, for instance, workers are granted leave to conduct research and work on innovations; companies, especially in industrialised countries, are introducing new schemes, such as the quality circles which originated in Japan; and a new concept known as "intrapreneurship"[23] has been devised, again as a means of encouraging and rewarding creative effort.

The protection of the rights of salaried authors of inventions, innovations, discoveries, technical improvements or any other creative work is therefore a highly topical issue today, and it is a matter of growing interest in many countries. While some countries have adopted regulations on the matter long ago, others have done so only very recently. In France and the United Kingdom, the legislation on copyright was amended at the end of the 1970s in order to cover inventions developed by employees which had previously been governed by collective agreements, individual contracts, common law and case law. In Sri Lanka, the legislation pertaining to intellectual property was amended and codified in 1980 and now covers both salaried authors and inventors. In Spain, legal provisions regulating in detail the situation of salaried inventors were adopted in 1986 and a bill on intellectual property has been introduced for salaried authors. Elsewhere, the question is still under discussion.

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The issue is in fact quite complex and can give rise to considerable controversy, mainly because of the conflict between the principles of labour law and those of intellectual property. Under labour law employers normally own the product of their employees' work in exchange for which the employees receive regular pay; according to the principles of intellectual property legislation, however, intellectual rights are vested only in the author or co-authors of the creation. The question is therefore how to reconcile these principles and protect the differing interests of both employer and worker.

The situation is further complicated by the fact that, whereas in the past inventing was primarily an individual activity, it is now often carried out not only in an undertaking but also sometimes within a team; it is the result of a wide range of activities which have made the invention possible or at least contributed towards its success. This is why it is sometimes considered difficult, if not impossible, especially by employers, to attribute an invention to a specific person and that, even where it is possible, it would be unjust to give all the credit to the inventor alone because, apart from the technical and economic facilities provided by the enterprises and the financial costs and risks they take upon themselves, many other persons contribute towards the preparation, completion and success of an invention with their work, advice and ideas.

To this, others retort that an innovation or a creation is a deliberate individual activity, that only an inventive or creative mind can devise a practical solution to a problem, can actually bring an idea or project to fruition, and that not everyone has what it takes to be an inventor or creator. They argue, for instance, that employees are recruited to carry out research, make discoveries, analyse and solve specific problems but not to invent, as evidenced by the fact that failure to invent in no way implies that their contractual obligations are not being respected. They further argue that, whatever the resources provided by the enterprise, these can only help towards developing an invention and that the expenses and risks incurred are offset by the benefits it reaps from exploiting the creations of employees; it is therefore only fair that inventors and authors should be granted certain rights and be allowed to share the benefits accruing from their work, just as workers often receive a share of the profits their enterprise has made as a result of their work in the form of bonuses, commissions, etc. The suggestion has therefore been made that employees should perhaps be guaranteed rights not only over their inventions and original works as defined in intellectual property law but over the product of their creative activities in general, as is already the case in a number of countries.

The nature and content of protection

The aim of national measures which guarantee the rights of salaried inventors or authors is therefore twofold: first, to encourage creative activity by protecting and rewarding its author; second, to reconcile the differing interests of workers and employers. As in intellectual property law, regulations usually distinguish between various categories of rights: "ownership" rights over the original work; material and economic rights (generally deriving from actual or legal possession) whereby the invention or work can be financially exploited or used for a specific period of time; the pecuniary or compensatory right whereby salaried inventors who are not recognised as being entitled to ownership or utilisation rights or have ceded them to their employer usually receive instead some form of special remuneration or other compensation; and moral rights, which are of an

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individual and personal nature, establish a direct link between the employee and his or her creation and guarantees recognition of that fact.

National laws and practice usually identify various categories of inventions and works which determine the nature and scope of the employee's rights and therefore those of the employer. Leaving aside for the time being the shades of meaning and precise definitions that may vary from country to country, the first category includes so-called "service" or "mission" works and inventions that are directly linked to a person's employment and are the outcome of the employee's normal course of work; here, the employer usually has extensive rights over the works or inventions. In many countries there is a second category, especially as regards inventions, known as "dependent", "tied", "mixed", "casual" or even "attributable" inventions, which are made outside the employee's normal or contractual duties but are nevertheless related to the activities of the employing enterprise or organisation and to its economic and trade interests or have been made possible by the inventor's access to the enterprise's facilities. Finally, there are the so-called "free", "independent" or "personal" inventions and works, produced quite independently of the employee's functions and job, which normally belong to their creator who, sometimes within certain limits and under certain conditions, is free to use them as he or she wishes and enjoy all the ensuing rights; in practice, a clear distinction is made between this and the first two categories. The assessment and classifying of an employee's creation may raise problems and give rise to controversy; this is particularly the case of dependent inventions, which are often difficult to set apart from the other categories, because it is not always a straightforward matter to determine and appreciate either the share of the resources made available by the employer or the extent of his interests.

Legal bases of protection

The legal bases for protecting the rights of salaried inventors and resolving the problem they give rise to are extremely varied. In addition to the legal or statutory provisions arising out of labour legislation, special legislation and general legislation on patents, industrial designs, copyright and performers' rights, there are sometimes also specific regulations. In countries where there is no relevant legislation or in order to supplement existing laws, the principles applying to the rights and obligations of the salaried authors of inventions, artistic works or performances are determined by collective agreements or individual contracts. In some countries, the matter is mainly regulated by common law or case law, the latter being particularly important when employee's rights are not properly defined, if at all, and must therefore be determined in each case in the light of the employment contract and the relevant principles of labour law and intellectual property law.

As mentioned above, the provisions concerning the original creations of employees may be found in labour legislation, as far as inventions are concerned; this is the case in Argentina, Brazil, Mexico, Paraguay and the United States (California) (where they deal with restrictions on the contractual transfer of the inventor's rights to the employer). The same applies to Panama, where the protection of salaried authors is also provided for by the Labour Code. In France and Tunisia, labour legislation deals specifically with the rights of journalists. In other countries - Switzerland and Turkey, for example - the protection of employee inventors is ensured by the legislation on contracts and relations between employees and employers in general (Code of Obligations). In Colombia, the matter is dealt with by the

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Code of Trade. Elsewhere again, provisions concerning the creations of employees can be found in the Civil Code, as in Ethiopia (inventors and authors) and in Italy (inventors).

Several countries have adopted specific legislation that regulate the rights of salaried inventors in detail. These include Denmark, Finland, Federal Republic of Germany, Norway and Sweden. Canada and the United States, have special regulations governing inventions made by state employees. In the United States, three states in addition to California - Minnesota, North Carolina, Washington - have recently taken legal steps to limit the scope of contracts transferring the rights over an employee's invention to the employer.

In the socialist countries - for instance, Bulgaria, Czechoslovakia, USSR - salaried authors are usually covered by laws which protect and encourage not only inventions but also discoveries and rationalisation proposals.

In many countries provisions pertaining to employees' intellectual creations are contained in the legislation on intellectual property, either in general texts as in Sri Lanka (where the matter is regulated by the Intellectual Property Code, which covers salaried inventors and creators of industrial designs as well as salaried authors) or, more often, in specific regulations governing industrial ownership of inventions and/or industrial designs, copyright, or performers' rights.

The protection of salaried inventors comes under patent law in Austria, Barbados, Brazil, Egypt, France, Hungary, Israel, Italy, Japan, Kuwait, Malaysia, the Netherlands, Portugal, Spain, Thailand, United Kingdom and Zaire.

The laws and regulations governing salaried authors are usually found in national legislation on copyright. This is the case in Algeria, Barbados, Brazil, Cameroon, Chile (civil service), Congo, Côte d'Ivoire, Cuba, Czechoslovakia, Ecuador, France, German Democratic Republic, Federal Republic of Germany, Ghana, Guatamala, Guinea, Hungary, Israel, Japan, Kenya, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Philippines, Portugal, Rwanda, Senegal, Tunisia (civil service), Turkey, the USSR and the United States.

As will be seen in the following chapters, the scope of legal and statutory measures dealing with salaried inventors and authors varies. More often than not, copyright laws specify only the general principles applying to the legal ownership of works created by employees in the course of their duties and to their transfer by law or by agreement to the employer. Generally speaking, the rights and obligations of the parties are determined by collective agreements, individual labour contracts and, finally, by case law. However, in some countries (Eastern European countries, for example) copyright laws define in more or less specific terms the respective rights of the employee and employer as regards the use and financial exploitation of the work, as well as the author's monetary entitlement when his or her rights are transferred to the employer.

Legislation concerning employee inventors is usually more specific. Some laws deal with the various categories of inventions they may be responsible for and the three categories of rights mentioned earlier in the text and regulate in some detail the rights and obligations of the parties concerned. Others tend rather to lay down general principles. Finally, in countries where inventions - and hence patents - are mainly state-owned, the relevant regulations deal essentially with the inventor's moral rights and pecuniary entitlements.

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The scope of protection

The scope of national laws and practice as regards the protection of the salaried creator depends on a number of factors: the type of creation; the legal definition of "invention", "work" and "employee"; the sector in which the creator is employed and his or her occupational category.

As regards the type of creation protected, the scope of the protection granted to employees responsible for inventions, discoveries, innovations or original works is often determined by the scope of the intellectual property regulations protecting the product of creative activity, by the relevant system of patents or similar rights (such as utility models and authors' certificates) and by the copyright system, since the criteria and definitions upon which they are based sometimes restrict that protection.

According to common usage, an invention means "an idea of an inventor which permits in practice the solution to a specific problem in the field of technology"[24] and relates to a new product or process. A patentable invention generally involves devising a system, appliance or process, or any improvement to them, which has an industrial application and which is novel, useful and "non-obvious". As a general rule, laws protecting inventions by means of patents exclude software and scientific theories, methods and discoveries.[25]

However, many workers may and indeed do initiate rationalisation schemes, technical improvements, innovations or discoveries that may give rise to valid achievements, improvements, processes or technical products, if not actually to patentable inventions. These, when introduced by the employing enterprise or organisation, may result in considerable social and economic benefits for the enterprise, for the national economy or for society as a whole; the discovery of the AIDS virus, which led to the development and marketing of screening tests for the disease, is an example of the stakes involved.

In practice, the implications of the link between the protection of the employee inventor and industrial property depend on the "patentability" criteria applied in the various countries and, sometimes, on the type of legislation involved. In Switzerland, for instance, where it is the Code of Obligations that applies, the provisions relating to employee inventions are enforceable whether they are patentable or not.

The law sometimes recognises employees' rights not only over patentable inventions but also, in a broader sense, over innovations. This is the case in Eastern European countries, where the legislation protects those responsible for discoveries or rationalisation proposals by granting them diplomas or authors' certificates which, as with inventions, acknowledge their creative activity and guarantee certain rights, especially pecuniary rights. In the Federal Republic of Germany the law regulating the rights of employee inventors also applies to proposals for technical improvements which, although they may not justify the issuing of a patent or licence, do place the employer in a privileged position comparable to his holding an intellectual property right. Other proposals for technical improvements are regulated by collective agreements or by agreements or rules at the level of the enterprise. In many countries, in fact, enterprises acknowledge the value of their staff's inventions or innovations by offering various forms of compensation and allowing them a share of the ensuring profits or savings.

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enterprise ... for use by that enterprise"[26] which relate to the activities of the enterprise but have not yet been used or considered for use.

By and large, works eligible for copyright protection are deemed to be "all original intellectual creations expressed in a reproducible form,[27] irrespective of their quality and mode of expression. National legislation relating to copyright usually specifies the types of creations that are protected. Certain works may be excluded, such as official documents (Burundi, Denmark, Ethiopia, Finland, Hungary, United States) or other administrative works or publications (Philippines, United States).

As mentioned earlier, computer software today is increasingly protected by copyright. This is so under common law in Australia, Chile, Denmark, France, the Federal Republic of Germany, the United Kingdom and the United States and under case law in Austria and Italy. Some other countries (Canada, Netherlands, Norway, Spain, Sweden) are planning to amend their legislation on copyright specifically to include software. In several countries, however, computer programmes are not yet subject to any specific protection, and this may be a problem for the employees who develop them.

Provisions relating to salaried inventors or authors may also vary according to the type of creation. For instance, in Switzerland, different regulations apply to salaried inventors and to creators of industrial designs. Similarly, copyright laws dealing with the employees' situation sometimes contain different provisions for different types of work (software, cinematographic, photographic or collective works).

The scope of national law and practice varies as to the persons protected and as to whether the term "employee" is to be understood as covering workers in the public sector as well as in the private sector, members of the armed forces and teaching staff. There are sometimes specific provisions regarding certain categories of inventors, such as public service employees (Canada, Egypt, Switzerland, United States). Elsewhere, the legislation on employees' inventions applies to workers in both the private and the public sectors (Denmark, Italy, Finland, Japan, Norway, Spain, and Sweden, as well as in Austria, France, the Federal Republic of Germany and Israel subject to several special provisions for public servants).

In some countries (Finland, Norway, Sweden), inventors in the armed forces are excluded from the scope of the legislation regulating employees' inventions because of the special nature of their inventions. Sweden, as already noted, has a special law on the matter. In other countries (Federal Republic of Germany, Israel) members of the armed forces are considered as public servants in this respect.

National law and practice also differ in their approach to teachers in universities or higher education establishments. In Denmark, the Federal Republic of Germany, Finland, Norway and Sweden legal provisions pertaining to employees' inventions do not apply to them; they are not considered as employees but as independent inventors, both on account of their academic freedom and because their official function is to teach and not to invent. This is usually also the case in Switzerland.[28] Elsewhere, as in Spain, inventions made by professors in the course of their duties as teachers or research workers are accredited to the university. In other countries their situation varies, mainly according to the source of the funds earmarked for work and research carried out in universities. Special rules and regulations may also apply to staff in research institutes, such as the Commonwealth Scientific and Industrial Research Organisation (SCIRO) in Australia, the National Scientific Research Centre (CNRS) and Institute of Scientific

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Research for Co-operative Development (ORSTOM) in France, and the Council of Scientific and Industrial Research (CSIR) in Ghana.

As for inventors, there may be special measures for certain categories of salaried authors. For instance, a number of copyright laws relating to employees have regulations that differ according to the sector - public or private - in which they work (Malawi, Mali, Malta, Thailand, Zambia), the type of work they produce or their occupational category. This is the case with teachers in Colombia and with journalists in Australia, Bangladesh, Canada, India, Pakistan and the United Kingdom. Other countries have specific texts for public service employees, teaching staff and (in Ecuador, for example) journalists.

As a general rule, national law and practice define salaried inventors and authors as being persons making an invention or creating an original work while under a contract of employment, which implies that the worker is legally and economically bound to the enterprise. It is usually this state of dependency which differentiates the contract of employment from similar contracts, such as contracts for work and contracts for a specific task or order. Nevertheless, certain categories of highly skilled employees and employees with specific qualifications or responsibilities, such as researchers, persons employed in higher education and managerial staff, enjoy a considerable amount of independence in the course of their duties and are themselves responsible for supervising the work of others. The criteria determining whether a contract is a contract of employment or a contract for the hire of services vary, moreover, not only according to the sense in which the term "employee" is used but also from country to country. This also holds true of the manner in which national law and practice determine whether the measures relating to employees' creations apply regardless of the status of the employees - permanent, trainee or temporary - their grade in the hierarchy and their position within the enterprise or organisation employing them.

In some countries, measures regulating workers' creations apply to all employees, including supervisory and management staff. This is usually the case for inventors: in Austria, where the courts have ruled that provisions relating to employees' inventions cover those made by technical directors in so far as they are required to follow instructions and pay the same contributions as other workers, in Japan,[29] and in the Scandinavian countries. In the Federal Republic of Germany, on the other hand, where the law on employees' inventions applies to temporary workers, the management and members of the board of directors of an enterprise are not considered as employees but assimilated to the employer.[30] In Canada, the measures applicable to inventions by workers in the private sector that have evolved out of common law generally refer to the concept of "trustee", irrespective of the type of employment contract, to determine whether the inventor is required to declare the invention under the name of the employer.

Just as the term "employee" has taken on a broader meaning nowadays in several countries, the measures regulating works created by employees sometimes also apply to certain works that have been commissioned, if not all. In the United States, for example, provisions relating to works created under a contract for services specifically apply not only to those created by employees in the course of their work but also to certain commissioned works (contributions to a collective work, parts of a film or other audio-visual work, translations, supplementary work, educational work, etc.). Under legislation on collective agreements in the Federal Republic of Germany, persons who are not employees in the strict sense of the term but who work for somebody else, as well as the organisations representing them, may conclude collective agreements; these agreements apply, for example, to journalists, broadcasting staff, magazine editors and graphic artists.

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As far as performers are concerned, the distinction between employees and the self-employed is not always clear. In market-economy countries, performers on the permanent staff of an enterprise are a relatively small group and include for example the members of established orchestras and the actors in permanent theatre company. In most cases, performers move on from one employer to the other or switch from salaried employment to self-employment. Periodic work, which is very widespread, does not prevent performers from working on a regular basis for one or more employers on whom they are therefore dependent.

This distinction becomes important in countries where the nature of the contractual relationship determines the respective rights of employer and performer. In the Federal Republic of Germany, for example, they vary according to whether it is a contract of employment or a contract for services - a distinction that has also been made in case law in the United Kingdom ("contract of service" and "contract for services"). In other countries contractual clauses binding performers - whether self-employed or employees - to the person hiring their services tend to be similar, if not identical. For instance, in Canada the agreement between CTV Television Network Ltd. and ACTRA, the actors' union, stipulates that the union represents self-employed performers but can act as a bargaining agent for employed performers, in which case the agreement applies in the same way as a collective agreement.

* * *

As a result of technological change and the growing role of employees in the development of inventions, technical innovations and works protected by copyright, the trade union and occupational organisations representing salaried inventors and authors are focusing their attention on the rights of this category of workers. In a declaration it approved in February 1986, the Executive Committee of the European Trade Union Confederation (ETUC) stated that "all authors and holders of similar rights must be recognised to have intellectual property rights and titles to the work they create ... (whether they are) employed or self-employed, or with fixed-term or unrestricted contracts".

In 1966, the International Federation of Commercial, Clerical, Professional and Technical Employees (FIET) adopted its Guiding Principles for International Regulations which, among other recommendations, call for the recognition of the intellectual and economic rights of all workers over their inventions. Recalling that it is in the public interest and in the interest of technical progress to encourage inventions, to exploit any patentable invention and to release it for general use after a reasonable period of protection, the Guiding Principles stipulate that all the intellectual and economic rights over inventions belong in principle to the actual inventors themselves and make a number of demands that are designed to safeguard the rights of salaried inventors: patent rights must be granted to the actual inventor or his legal successors; the inventor's name must be cited in the employer's application for a patent; the same rights must apply to all workers making inventions in the course of their contractual duties or employment, whether they are manual workers, salaried employees, public servants, members of the armed forces or persons undergoing regular vocational training, etc.[31]

These demands formed the background of a draft resolution concerning the protection of employee inventors' rights that was submitted by the Workers' delegates of several countries at the 66th Session (1980) of the International

designed to safeguard the rights of salaried inventors: patent rights must be granted to the actual inventor or his legal successors; the inventor's name must be cited in the employer's application for a patent; the same rights must apply to all workers making inventions in the course of their contractual duties or employment, whether they are manual workers, salaried employees, public servants, members of the armed forces or persons undergoing regular vocational training, etc.[31]

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Labour Conference. Recalling the work carried out by the ILO and the repeated demands of the Advisory Committee on Salaried Employees and Professional Workers to secure the adoption of an international instrument on this subject, it proposed several principles upon which such an instrument should be based. These included: the recognition that all intellectual and economic rights to, and arising from, an invention belong to the actual inventor; the possibility to cede certain of these rights to the employer when an employee is specifically engaged on the type of work with which the invention is concerned; the actual exploitation of the invention by the employer; the payment to the employee of an agreed sum in compensation for ceding the invention or the right to use it; the need to provide the worker with all necessary information enabling him to make an objective assessment of the economic value of his invention; the settlement of disputes by independent arbitration; the acknowledgement of the inventor's name; the recognition that questions relating to employee inventors' rights should be accepted as appropriate for determination by collective agreement; finally, the fact that agreements setting aside these basic principles shall be invalid. It invited the Governing Body of the ILO to place the subject on the agenda of a forthcoming session of the International Labour Conference. (However, as this draft resolution was not among the first five resolutions to be considered, in accordance with article 17, paragraph 5(a) of the Standing Orders of the Conference, it could not be examined due to lack of time.[32])

For its part, the World Federation of Trade Unions (WFTU) adopted a recommendation in 1975, which was then adopted by the Liaison Committee of Engineers, Supervisory and Managerial Staffs and Technicians. This recommendation advocates the elaboration and application of measures to protect every employee author of an invention and to guarantee him his moral right, rights of ownership and compensation.[33]

Notes

[1] Article 27, paragraph 2. The International Covenant on Economic, Social and Cultural Rights takes up the same terms (article 15, paragraph 1, subparagraph c).

[2] Certain governments replying to the Office questionnaire noted that inventions and works were usually made by independent inventors and authors and that it was unusual that they were carried out within an employment relationship (Chile), that the conditions to which the said questionnaire referred did not exist within the country (Saint Lucia) or that salaried inventors and authors represented only 0.1 per cent of the country's total labour force (Singapore).

[3] Adopted on 9 September 1886 and successively revised in 1908, 1928, 1948, 1967, 1971; it was amended for the last time in 1979. As at 1 January 1986, 76 States adhered to this Convention.

[4] Adopted in 1952 by UNESCO, this Convention was revised in 1971; as at 15 March 1987, 79 States adhered to the 1952 version and 43 to that of 1971.

[5] Adopted in 1883, this Convention has been amended on several occasions (in 1900, 1911, 1925, 1934, 1958, 1967 and 1979).

[6] This Convention was adopted on 26 October 1961; as at 4 July 1987, 31 States adhered to this Convention. It is open to States belonging to the Berne Convention and the Universal Copyright Convention.

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[7] WIPO: WIPO model law for developing countries on inventions, Vol. I (Geneva, 1979).

[8] Tunis model law on copyright for developing countries, adopted by the Committee of Governmental Experts convened by the Tunisian Government in Tunis from 23 February to 2 March 1976 with the assistance of WIPO and UNESCO (Paris, UNESCO, and Geneva, WIPO, 1976).

[9] Resolution concerning the protection of inventions by wage-earners, adopted by the Advisory Committee on Professional Workers (6-7 December 1929). See: International Labour Code 1957, Vol. II (Geneva, ILO, 1954), Appendices, pp. 243-245.

[10] Resolution concerning the Protection of Salaried Employees' Inventions, adopted by the Advisory Committee on Salaried Employees, First Session (Geneva, 14-15 April 1931), ibid. For an overview of the examination of the matter by the Advisory Committee on Salaried Employees and that of Professional Workers, see J. Tessier: "The ILO and non-manual workers during the past 50 years", in ILO: Panorama (Geneva, ILO), No. 37, July-Aug. 1969.

[11] ILO: Report of the tripartite meeting on conditions of work and employment of professional workers, Geneva, 1977 (doc. CTI/1977/8, Annex I, paras. 68 and 69).

[12] ILO: Rights of performers in broadcasting, television and the mechanical reproduction of sound, International Labour Conference, 26th Session, Geneva, 1940, fourth item on the agenda, Report A.

[13] ILO: Rights of performers in broadcasting, television and the mechanical reproduction of sound, Advisory Committee on Salaried Employees and Professional Workers, Second Session, Geneva, 1952, Report III.

[14] These include: F. Neumeyer: "Employees' rights in their inventions: A comparison of national laws", in International Labour Review (Geneva, ILO), Jan. 1961; ILO: Le personnel scientifique et technique hautement qualifié. Conditions d'emploi et de travail (Geneva, 1974); idem: Conditions of work and employment of professional workers (Geneva, 1977); and Cornwell, Sally C.: "Employee rights in innovative works", in International Labour Review (Geneva, ILO), May-June 1980.

[15] In some countries, co-operation between universities and industry in research work has been considerably stepped up during the past few years; this is particularly the case in the United States in the electronics and data-processing sectors. An overview of this subject may be found in "La coopération université - industrie. Les centres coopératifs de recherche aux Etats-Unis", in Travail et méthodes (Paris), No. 445/446, Aug.-Sep. 1986.

[16] Cornwell, op. cit.

[17] Government's reply to the Office's questionnaire.

[18] In 1978, 22 per cent of all patents issued were to individuals. See: H.L. Schuchman: "Engineers who patent: Data from a recent survey of American bench engineers", in World Patent Information (Oxford, Pergamon Journals Ltd), Vol. 5, No. 3, 1983.

[19] Hans Schade: "Employees' inventions - law and practice in the Federal Republic of Germany", in Industrial Property (Geneva, WIPO), Sep. 1972.

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[19] Hans Schade: "Employees' inventions - law and practice in the Federal Republic of Germany", in Industrial Property (Geneva, WIPO), Sep. 1972.

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[20] R. Cuvillier: "Employment and copyright", in Copyright (Geneva, WIPO), Apr. 1979, and Th. Limperg: "Employees' rights in their capacity of authors", ibid., Sep. 1980.

[21] Concerning the economic importance of copyright and activities related to the goods it protects, see H. Olsson: "The Economic Impact of Copyright Law", in International Copyright Symposium, Heidelberg, 24-25 April 1986 (Munich, J. Schweitzer Verlag, 1986). According to studies carried out in several industrialised countries, it is estimated that the share of activities linked to copyright in the GNP is constantly on the increase. For instance, it is calculated that it accounts for 2.4 per cent of GNP in the Netherlands, thus exceeding that of the chemical industries (1.9 per cent). See R. Rembe: The performing artists in the technological era, Reports/Studies CREA No. 38, Divison of Cultural Development and Artistic Creation (Paris, UNESCO, 1986).

[22] Cuvillier, op. cit.

[23] Experiments in this field tend to encourage the proposal and realisation of joint projects carried out by the enterprise and worker that are likely to lead to new activities inside and outside the enterprise, at least in part. Profits, as well as the means needed to start the project and carry it out, are shared between the parties in various forms. On this subject see Jean-Louis Mentior: Synthèse des expériences intrapreneuriales observées en Suède et aux USA (Bruxelles, IP Montage).

[24] WIPO: WIPO model law for developing countries on inventions, Vol. I (Geneva, 1979), p. 19, art. 112.

[25] They usually exclude inventions contrary to public order and morality and plant or animal varieties. In some countries, patents are not issued either for products of prime necessity and public interest, such as pharmaceutical products.

[26] WIPO: WIPO model law for developing countries on inventions Vol. II (Geneva, 1989), p. 27.

[27] WIPO: WIPO glossary of terms of the law of copyright and neighbouring rights (Geneva, 1980).

[28] On this question, see F. Dessemontet: "Inventions in Swiss universities", in Industrial Property (Geneva, WIPO), Dec. 1982.

[29] Y. Harima: "Rights and obligations in employees' inventions", in Japan Patents and Trademarks (Suzuye Institute of IIPR), 1982.

[30] Mathias Ruete: "The German employee invention law: An outline", in Employees' Inventions - a Comparative Study, published under J. Philipps (Sunderland, Fernsway Publications, 1981), p. 184.

[31] International Federation of Commercial, Clerical, Professional and Technical Employees (FIET): Employee inventor rights: A guide for trade unionists (Geneva, 1981).

[32] ILO: Record of Proceedings, International Labour Conference, 66th Session, 1980, 1/7.

[33] World Federation of Trade Unions (WFTU): The rights of the salaried inventor (Prague, 1975).

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CHAPTER II

ECONOMIC RIGHTS

The material or economic rights deriving from an invention, industrial designs, software, a literary, scientific or artistic work and, generally speaking, from any creative work giving rise to intellectual rights are closely related to their ownership. It is the latter which normally leads to possession of the patent on an invention and the exclusive right to exploit it for a specific time, just as it confers upon the copyright holder the right to have temporary economic use of a work. Where economic rights have not been recognised to the employees over an invention or work, or where such rights are awarded or transferred to the employer, the employees' rights will consist of a pecuniary or compensatory right in the form of financial remuneration or some other type of compensation, which will be considered in the next chapter.

Material or economic rights, according to the terminology used in the different approaches to intellectual property, are transferable and have considerable direct economic consequences. This is why ascertaining to whom the product of the inventive and creative activity of an employee belongs and what his or her employers' rights are in the exploitation or use of the product is of prime importance for those concerned. The ways national legislation and practice have responded to this question are varied and complex. They depend not only on recognition of employees' copyright on an invention or their ownership of the work they have created and the enjoyment of the resulting economic rights or, alternatively, on their transfer, wholly or in part, to the employer but also, as has been seen, on the relationship between the creation in question and the employment of the person concerned and his or her normal or usual duties. National legislation and practice with respect to employee inventors, on the one hand, and salaried authors, on the other, are discussed below on the basis of the comments and information communicated to the Office and those already available to it.

The economic rights of inventors

Workers' rights of ownership and exploitation of the invention they are responsible for, like the limitations on those rights - namely, their obligations vis-à-vis their employer and the employer's rights - differ, as seen in the previous chapter, according to the category to which the invention belongs. They also vary according to the principles underlying them. Under industrial property law, the rights over an invention or industrial designs belong to their creator. Under labour law, on the other hand, the product of an employee's work belongs to the employer. The solutions adopted by national legislation and practice reflect this contradiction: some consider the employees as the initial owner either of all their inventions, whatever category they belong to, or of some of them; others, however, vest directly in the employer the ownership of inventions made by employees in the course of their contractual or normal activities, inventions related to the activities of the enterprise and/or inventions that have been made possible by the use of information, equipment or resources that are available in the enterprise.

An employee who is the original copyright holder of an invention made in the course of his or her employment is often bound by legislation or by contract to transfer, assign or simply offer the exploitation rights to the employer. Transfer or assignment of rights is normally subject to a number of

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conditions, such as notification of the employer that the invention has been made and communication of the employer's decision to the worker. It is therefore not only the scope of the respective rights of the parties which varies according to the country and the category of the invention but also the method of acquisition of those rights.

The different categories of inventions

The categories of inventions recognised in national legislation and practice and the situations they cover can vary considerably. The relevant definitions may, however, be more or less broad and in practice, therefore, this sometimes blurs the distinction between the various categories.

Legislation and practice in many countries explicitly or implicitly identify three main categories of inventions, as mentioned in the preceding chapter (Argentina, Brazil, Canada (in the public service), Colombia, Egypt, France, Italy, Kuwait, Malaysia, Nigeria, Paraguay, Spain, Switzerland, Thailand, United States (in the public service and, in the absence of any special contractual provisions, the private sector in so far as the categories are covered by common law provisions) and Zaire).

Some countries have a different classification and distinguish between enterprise inventions, i.e. those in which the facilities, processes or methods of the enterprise play a leading role, irrespective of the inventor(s), service inventions and free, independent or occasional inventions (Panama and Venezuela, for example).

Other legal systems distinguish between several categories of dependent invention over which the employer may acquire rights. This is so in Finland, Norway and Sweden which have special legislation on salaried inventors' rights, though in Sweden the collective agreements concluded in 1970 by the Swedish Employers' Confederation (SAF) and three unions, the Industrial Employees' and Technicians' Union (SIF), the Foremen's and Supervisors' Union (SALF) and the Qualified Engineers' Association (CF), mention only three: service inventions which are made in the course of the employee's normal duties or tasks specially assigned to him; tied inventions whose use comes within the employer's sphere of activity; and inventions other than those mentioned above which are defined as free inventions.

Elsewhere, again, the law refers explicitly or implicitly only to two categories: service inventions, which are defined in very broad terms, and free inventions. This is the case in Austria, the Federal Republic of Germany, Israel and Japan.

In the Federal Republic of Germany the legislation on employees' inventions refers explicitly to service inventions, which it defines as deriving from a person's occupational activity in the enterprise (or administration) or as being essentially based on the experience or work of the enterprise or public administration, and free inventions.[1] In Ethiopia also the Civil Code refers to two categories: inventions made by an employee specially recruited to carry out research or make inventions, and others which are deemed to be free. In Mexico, too, the Labour Code distinguishes from other inventions those which are made by workers appointed to undertake research or studies for the employer in order to improve processes used in the enterprise.

Austria's law on patents refers only to service inventions, which it describes as inventions connected with the activities of the enterprise that fulfil one of the following conditions: the activity responsible for the

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invention is part of the requirements of service; the employee has been encouraged to make the invention by his activity in the enterprise; the invention has been greatly facilitated by the experience or resources of the enterprise. In Israel the service invention is defined as an invention derived from the employee's activity or made during his service. In Japan, it is an invention which is related to the employer's activities and made by a worker in the course of the duties he is required to perform for the employer.[2]

Free inventions

According to information communicated to the Office or available to it, national law and practice recognise that the employee is the owner of any free or independent inventions and may therefore normally dispose of them and enjoy all the related economic rights, exploit them himself or assign them to others.

Legislation in various countries explicitly stipulates that any free or personal invention belongs to the employee (Argentina, Brazil, Colombia, Ecuador, France, Federal Republic of Germany, Mexico, Spain, Venezuela).

In Brazil, the law establishing an industrial property code states that inventions and improvements made by an employee under contract without using the employer's resources, information, finance, materials, facilities or equipment belong exclusively to the inventor. Similarly, in Colombia, Ecuador and Peru, an invention which has neither been made by an employee responsible for research nor been facilitiated by the inventor's access to secrets or confidential research is the imprescriptible property of the worker concerned.

The Panamanian Labour Code defines free inventions as inventions in which the personality or the effort of the employee predominates; they belong to the inventor even if they derive from his or her employment. The employee may not renounce ownership of a free invention in favour of the employer or a third party other than by a contract concluded after the invention has been made. The Labour Code of Paraguay contains similar provisions; it provides that a worker may not renounce ownership of an independent invention in favour of the employer except by special contract after the making of the invention, which it defines as any invention due to the personal skills exercised in the course of a worker's employment that does not meet the criteria applicable to exploitation or service inventions.

Where, as often happens, free inventions are not defined, they comprise all inventions other than those over which the employer has or obtains exploitation rights or may claim direct ownership. This is the case in Ethiopia, France, the Federal Republic of Germany, Mexico, Spain and the United Kingdom, where the inventor is explicitly deemed to be the owner of any inventions made in circumstances other than those defined by law. The same is true of Sweden under the above-mentioned collective agreement on employees' rights over their inventions, as it is in countries where the worker's right of ownership over a free invention - though not expressly stipulated - is safeguarded a contrario by provisions governing the rights and duties of the parties concerned in respect of service and/or dependent inventions (Austria, Canada (in the public service), Denmark, Finland, German Democratic Republic, Hungary, Israel, Italy, Japan, Malaysia, Netherlands, Norway, Portugal, Sri Lanka, Switzerland, Thailand, United States (in the public service and in the private sector in the absence of special provisions or contractual obligations to the contrary), Zaire). In these cases it is the definition of service and/or dependent inventions which in practice determines the scope of the definition of free inventions: the broader the former, the more restricted the latter.

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As we have seen, certain categories of employees are sometimes considered as independent inventors: the inventions they make are deemed to be free and are therefore their property, whatever category they belong to. This is the case for teachers at universities and institutes of higher education in Denmark, Finland, Federal Republic of Germany, Norway and Sweden. There may however be certain reservations. Thus, in the Federal Republic of Germany, where the law on employees' inventions stipulates that teachers and scientific assistants in universities and the major scientific institutes are free, inventors are obliged to inform the university or institute of the exploitation of an invention when it has provided special resources for work on the invention; at the request of the university, inventors must also indicate the type of exploitation and the profits made. The university may claim an appropriate share of the proceeds, up to the value of the resources provided.

The author of a free invention is sometimes subject to certain obligations and restrictions designed to protect the employer's interests, and specifically to enable him to judge the quality of the invention. In the Federal Republic of Germany, employees are bound by law to notify their employer immediately of any free invention and provide any information which the latter may need to determine whether it is indeed a free invention and to claim it if he believes that it is not. No claim may be made beyond a certain time following notification (three months). The requirement that the employer be notified is waived when the invention is quite clearly not relevant to the activities of the enterprise. In France, where employees are likewise required to declare all inventions, the declaration must contain any information needed to determine how to classify the invention, specifically as regards its purpose, possible applications and the circumstances in which it was made.[3]

In Argentina, whose labour legislation stipulates that the inventions and personal discoveries of workers are their property even though they may have used equipment not belonging to them, workers who decide to assign their rights to their employer must give the latter preference over other potential acquirers. In Mexico, too, employers have a preferential right to exclusive use or acquisition of the invention and corresponding patent. In Venezuela employers have priority in acquiring independent or occasional inventions and improvements in industrial processes (i.e. inventions and improvements in which the effort and talent of a worker who has not been employed to undertake research and find new processes have played a leading role); an employer may exercise this right of acquisition within 90 days of the inventor's offer.

Service and dependent inventions

Unlike the situation with free inventions, employers do have or may generally claim extensive though variable rights over service or dependent inventions by workers in their employ, i.e. inventions produced in the course of a worker's normal or usual duties (often described as service inventions), inventions that are directly relevant to the employer's economic or commercial interests, and inventions that have entailed the use of resources or facilities made available to the employee (dependent inventions). Although in many countries they fall into two different categories, there are cases where the rights attached to them are regulated in the same way and the employer benefits from similar rights of ownership and/or exploitation. These rights are often accompanied by a legal or contractual obligation to award financial compensation to the inventor; when this is not the case, enterprises none the less frequently offer remuneration or a reward on a voluntary basis (for example, in Canada and the United States). Compensation is in fasct what protection of salaried inventors is all about here since, while the employee

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normally retains the moral rights, the property and exploitation rights are generally granted to the employer, directly, by assignment or by acquisition.

According to the country and/or category of invention, a worker may or may not initially enjoy the right of ownership and have to assign or offer it to the employer. The WIPO model law for developing countries on inventions indicates that the right to a patent for a service invention, which it defines as an invention made in execution of a commission or an employment contract, belongs to the employer in the absence of contractual provisions to the contrary; as to dependent inventions, i.e. inventions made by employees whose employment contract does not require them to engage in inventive activity, in the field of activities of their employer and by using data or means made available to them through their employment, the model law proposes two alternatives, one granting the patent right to the employer and the other granting it to the salaried employee who must then offer the employer a chance to acquire it.[4]

In some countries, the right of ownership is initially vested in the author of a service invention, subject to the acquisition of rights by the employer.

This is the case in the Federal Republic of Germany, where the definition of a service invention also covers what may elsewhere be described as a dependent invention. An employee responsible for a service invention must notify the employer immediately in writing, with a description of the technical problem, its solution and the invention itself. The inventor must also indicate the service instructions or directives received, the experiments or work of the enterprise that were used, the co-workers involved (as well as the nature and scope of their collaboration) and what the employee considers to be his or her personal participation. The employer may claim the invention wholly or in part and thereby acquire all the rights in it or a non-exclusive right of use. The claim must be in writing and must be communicated to the employee within four months of notification of the invention; otherwise the invention becomes free and the employee may dispose of it at will. If the employer claims only a partial right in the invention and if his or her right may unfairly jeopardise exploitation of the invention by the employee, the latter may demand that the employer acquire an unrestricted right or abandon all rights in the invention. The employer - and the employer alone - has the obligation to file an industrial property claim in the country, unless the legitimate interests of the enterprise require that the invention remain undisclosed, unless it has become free or unless the employee agrees to a claim not being filed; otherwise it is the inventor who files for patent in the name and at the expense of the employer. The award of unrestricted rights also means that employers may file for a patent abroad; if they decide not to file for a patent in certain countries, the right to do so falls to the inventor for those countries. Similar provisions apply to utility models. On the other hand, it is the employer who initially and directly holds the rights in ornamental designs and models, unless otherwise provided for by contract.

In Austria salaried inventors are entitled to a patent for an invention made during their employment, except where there is a provision to the contrary in their contract. Clauses stating that future employees' inventions belong to the employer or reserving for the employer the right to exploit such inventions are valid only if they are drawn up in writing or included in collective agreements and restricted to service inventions. When a contract provides that an employee's future invention becomes the property of the employer, the worker must immediately inform the latter of any inventions made, except those which obviously do not fall within the terms of the contract. The employer must inform the worker of any claim to the invention as a service invention within four months of notification; in the absence of

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any claim by the employer, the invention remains the property of the employee; the latter, like the employer, is required to refrain from disclosing the invention. When the employee is a public servant or under a public-law contract, the employer may claim a service invention or the right to exploit it without concluding any special contract.

In Israel an employee who makes a service invention must notify his or her employer as soon as possible; the employee must also inform the employer of any patent applications which he or she may have filed. Where there is no agreement to the contrary, a service invention becomes the property of the employer, unless he or she renounces the right within six months of notification of the invention. In the notification, the employee may inform the employer that, in the absence of any reply to the contrary within the said period, the invention shall become the employee's property.

In Japan inventors normally retain the right to patent their inventions, while the employer enjoys a non-exclusive exploitation licence; they may, however, be granted the right to a patent or exclusive rights over the invention by contract, under the works' rules or by means of any other provision. Any agreement, works' rule or other provision assigning to the employer in advance the right to obtain a patent or an exclusive licence to an invention other than a service invention is null and void.

In the Netherlands employers are entitled by law to a patent on an invention by a worker whose function it is to use his or her know-how to make inventions of the type for which a request for patent is made.

In Denmark, Finland, Norway and Sweden, the right of ownership of all service or dependent inventions is initially vested in the salaried employee, while the employer has the possibility of acquiring this right or various kinds of utilisation rights. In Denmark the law on employees' inventions permits the rights over inventions produced in the course of a worker's employment and related to the employer's field of activity, or over inventions which result from the employee's official duties, to be assigned to the employer. In Finland employers may acquire, wholly or in part, the rights over inventions resulting from tasks entrusted to an employee or from the latter's experience in the enterprise if the invention is related to the employers' field of activity. They may also acquire the rights over an invention whose exploitation does not come within their sphere of activity if it offers a solution to a problem the worker was asked to tackle as part of a job. Moreover, they may acquire the right to exploit an invention made in other circumstances, even independently of the worker's employment, on condition that its exploitation is relevant to their field of activity; in such cases they have the first option to conclude an agreement with the inventor. Similarly, employers in Norway may require that rights over an invention which comes within their field of activity be transferred to them, wholly or in part, if the worker's main task is to undertake research or other work that may lead to an invention; they may also claim the right to exploit an invention which does not result from the worker's duties if such exploitation falls within the sphere of activity of the enterprise; use of the invention must in such cases be restricted to the enterprise's own activities. Similar provisions are contained in the law relating to the rights of salaried inventors in Sweden. In all these countries inventors may file for a patent provided that they inform their employer, the intention being that the latter may obtain the patent if he or she becomes the acquirer. Any employee who makes a service invention must inform the employer and provide him or her with details of the invention. The employee must also inform the employer of what he or she considers to be the relationship between the employment and the invention. If the employer wishes to acquire a right over the invention, he or she must inform the employee in writing within four

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