OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

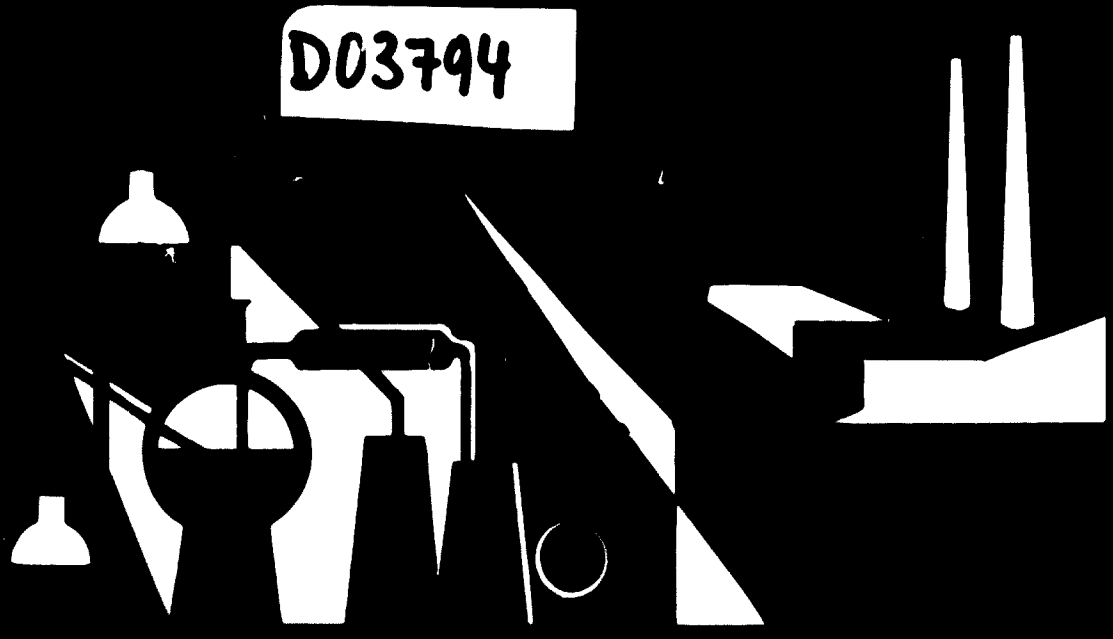
FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

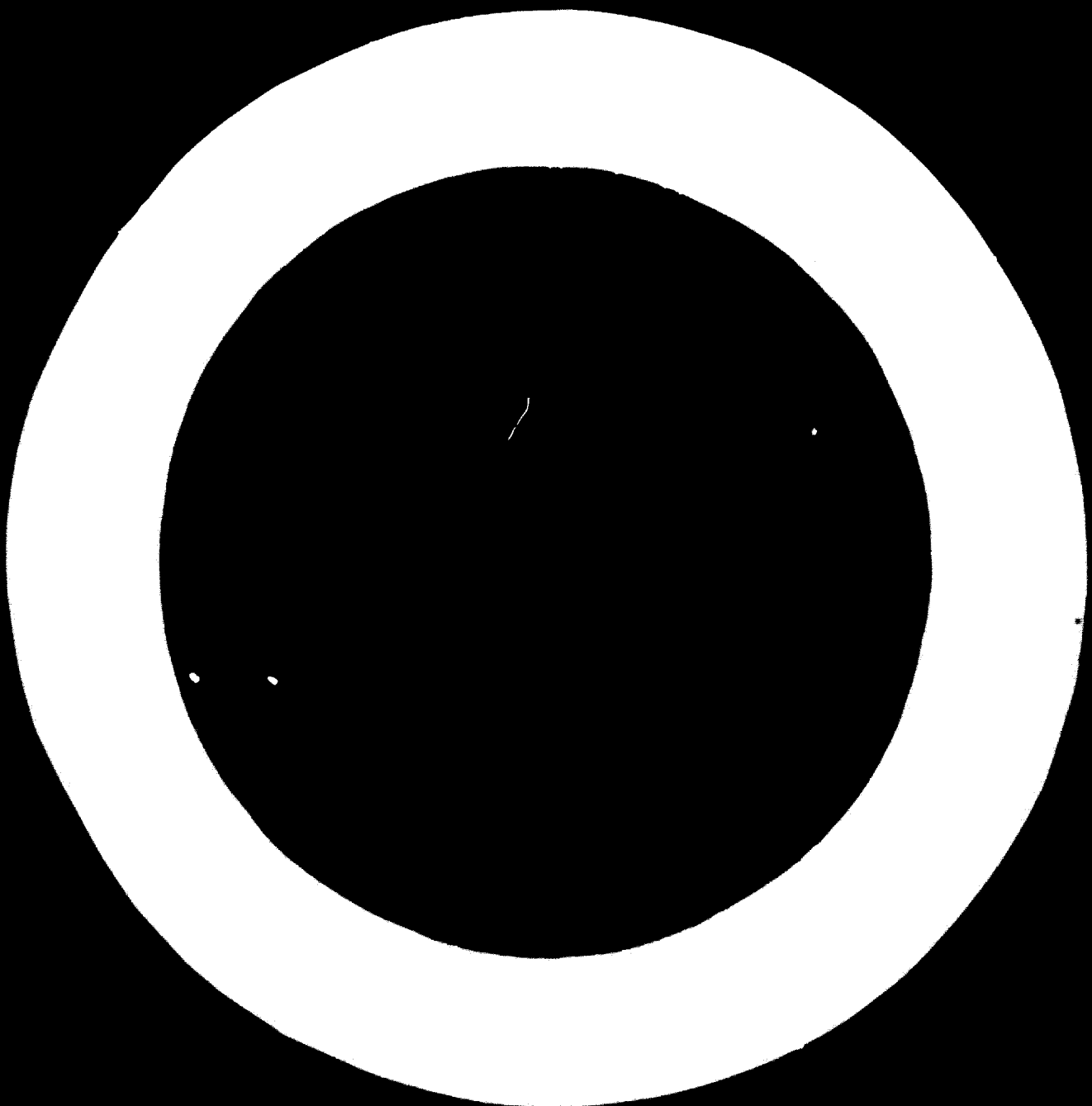
For more information about UNIDO, please visit us at www.unido.org

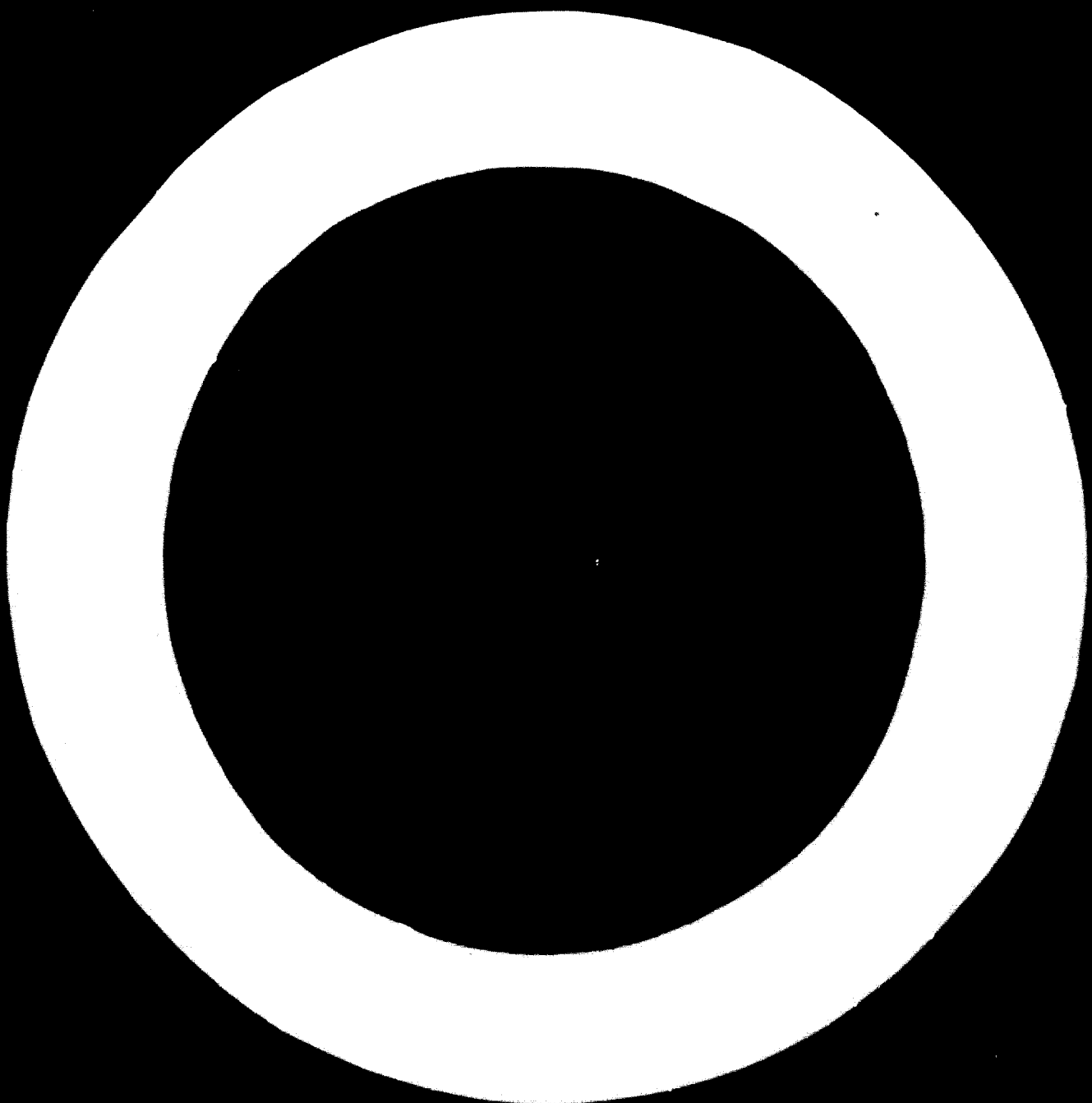
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org



The role of patents in the transfer of technology to developing countries

UNITED NATIONS





Department of Economic and Social Affairs

THE ROLE OF PATENTS IN THE TRANSFER OF TECHNOLOGY TO DEVELOPING COUNTRIES

Report of the Secretary-General

UNITED NATIONS
New York, 1964

NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

E/3961/Rev.1

UNITED NATIONS PUBLICATION

Sales No.: 65. II.B. 1

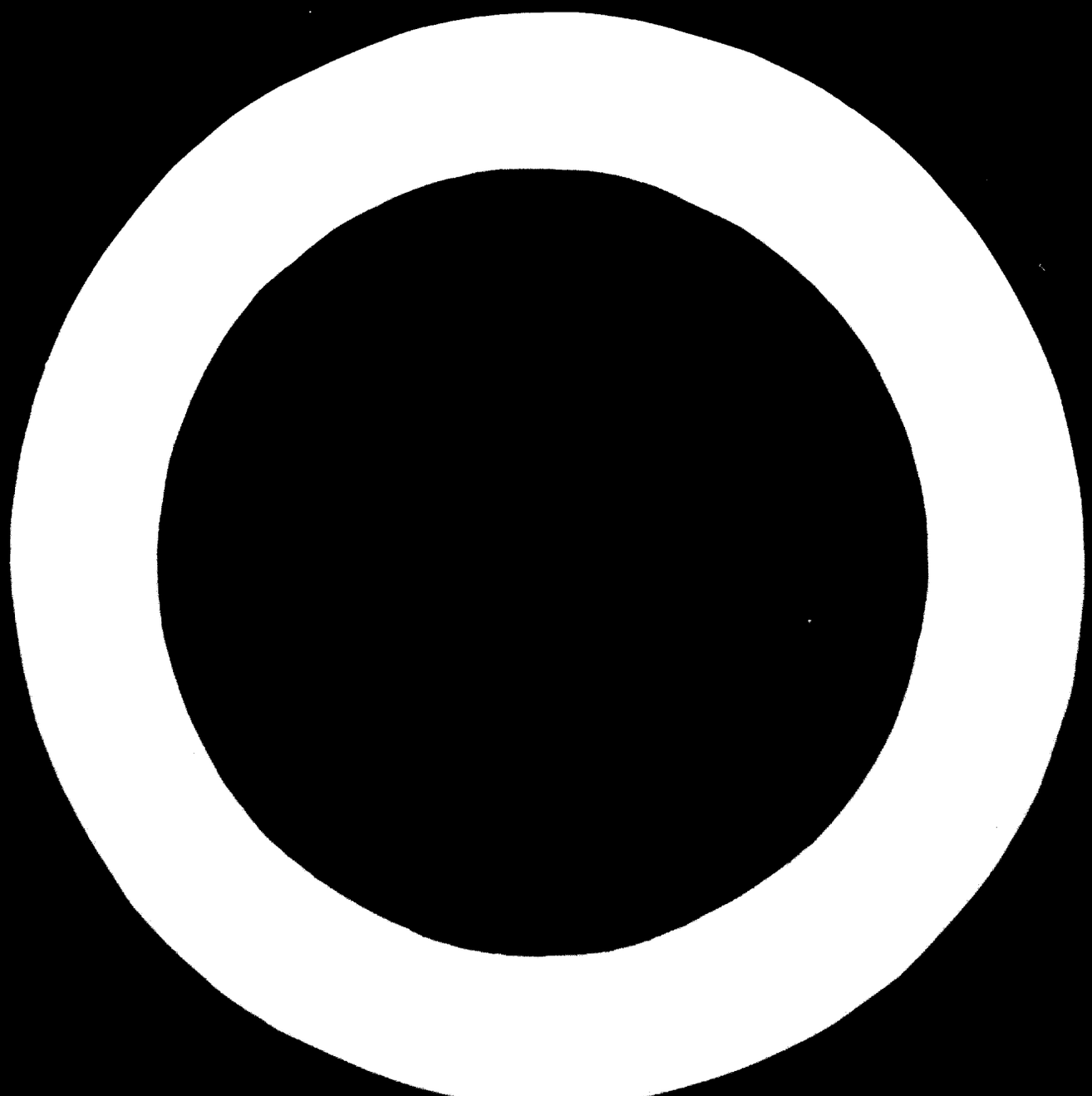
Price: $U.S. 1.50
(or equivalent in other currencies)

CONTENTS

CONTENTS (*continued*)

CONTENTS (*continued*)

ANNEXES



INTRODUCTION

A. General assembly resolution 1713 (XVI) and subsequent developments

The present study on the role of patents in the transfer of technology to under-developed countries was prepared in accordance with the terms of General Assembly resolution 1713 (XVI) of 19 December 1961. The resolution called for a report containing:

"(*a*) A study of the effects of patents on the economy of under-developed countries;

"(*b*) A survey of patent legislation in selected developed and under-developed countries, with primary emphasis on the treatment given to foreign patents;

"(*c*) An analysis of the characteristics of the patent legislation of under-developed countries in the light of economic development objectives, taking into account the need for the rapid absorption of new products and technology, and the rise in the productivity level of their economies;

"(*d*) A recommendation on the advisability of holding an international conference in order to examine the problem regarding the granting, protection and use of patents, taking into consideration the provisions of existing international conventions and the special needs of developing countries, and utilizing the existing machinery of the International Union for the Protection of Industrial Property."

(The text of the resolution is appended as annex A.)

In view of the broad substantive and geographical coverage of the inquiry, the Secretary-General advised the Economic and Social Council at its resumed thirty-fourth session in December 1962 that the report could not be completed in time for submission to the third session of the Committee for Industrial Development or the thirty-sixth session of the Council. He accordingly suggested, and the Council accordingly recommended, that the collection and analysis of information should continue during 1963 and that the report should be presented in 1964 to the Committee for Industrial Development, the Economic and Social Council and the nineteenth session of the General Assembly.[1]

The Committee for Industrial Development at its third session in May 1963 received an Interim Report by the Secretariat,[2] noted the recommendation of the Council and accordingly decided to defer discussion of the subject until its fourth session in 1964.[3]

The Preparatory Committee of the United Nations Conference on Trade and Development at its second session recognized the importance of patents in facilitating access to technological experience and know-how, when applied in such a way as to take fully into account the special needs and requirements of the economic development of the developing countries. The Committee noted that a study had already been started on the subject as a result of the initiative taken by Brazil in the United Nations. It was suggested by the Committee that this work be expedited so that the study could be brought to the attention of the Conference.[4]

The General Assembly at its eighteenth session noted the above recommendation of the Economic and Social Council, as well as the suggestion incorporated in the above report of the Preparatory Committee of the Conference on Trade and Development, and requested the Secretary-General to continue with the preparation of the study referred to in sub-paragraphs (*a*), (*b*) and (*c*) of resolution 1713 (XVI), and to submit it to the United Nations Conference on Trade and Development, as well as to the Committee for Industrial Development, the Economic and Social Council and the General Assembly at their 1964 sessions. The General Assembly also recommended that the Conference on Trade and Development, in the deliberations under item IV of its provisional agenda (Invisible Trade), give serious consideration to the study prepared by the Secretary-General.[5]

B. Preparation and scope of the report

General Assembly resolution 1713 (XVI) had requested the Secretary-General to prepare the report "in consultation with appropriate international and national institutions, and with the concurrence of the governments concerned". Accordingly, the Secretary-General circulated on 8 October 1962 to Governments and interested inter-governmental and non-governmental organizations, a Questionnaire on the role of patents in the transfer of technology to under-developed countries. (The text of the letter of transmittal and the Questionnaire, and the names of the Governments and organizations from which replies have been received, are appended as annex B.) The views and information received in reply to this Questionnaire have been fully used in the preparation of the present report.

The organization of the study has been designed to provide a convenient arrangement of the wide scope of the issues covered by resolution 1713 (XVI). In terms of general content, item (*b*) and the legislative aspects of item (*c*) of the resolution are covered by part One (Major characteristics of patent systems) and annex D (Synoptic table of major provisions of patent legislation in selected countries). Item (*a*) and the economic aspects of item (*c*) are dealt with in part Two (The effects of patents on the economies of under-developed countries).

The economic analysis of the effects of patents on the economies of under-developed countries (part Two) considers the role of patents in the actual transfer of

[1] Documents E/3702, paragraph 8 (vi), and E/SR.1237, paragraphs 48-52.
[2] Document E/C.5/35.
[3] Document E/3781, E.C.5/37, paragraph 68.
[4] E/3799, paragraph 165.
[5] General Assembly resolution 1935 (XVIII) of 16 December 1963.

technology; the role of patents in relation to imports of patented products and processes; and finally, the role of patents in improving the process of invention and innovation through the indigenous technology of developing countries themselves.

In accordance with the intent of the General Assembly, the study has focused on the problem of the treatment extended to foreign patentees. For this reason, considerable emphasis has been placed upon the international patent system and the extension of patent protection to foreign inventors, which are discussed in part One, chapter II. The pertinent material directly applicable to foreigners has been specifically covered in connexion with the discussion of multilateral and bilateral treaties, under which States have assumed international obligations with respect to such matters as the grant of national treatment and of priority rights of application to foreign patentees. In the majority of cases, however, the treatment of foreign nationals is governed by measures of general application, and a non-discriminatory attitude towards foreign patentees results from the non-existence of any distinction between nationals and foreigners.

No attempt has been made in part One to discuss all the rules pertaining to patents. However, it has been thought useful to cover the major issues of the juridical basis of the patent grant, conditions of patentability, and governmental regulation relating to failure to work the patent, abuses of the patent privilege through the medium of restrictive business practices, public use of patented inventions, and regulation of assignment and licensing agreements.

A survey of national patent legislation is called for by subparagraph (*b*) of resolution 1713 (XVI), and is indeed essential to the understanding of the various issues raised in that resolution. Every effort was therefore made to include in this study information regarding pertinent legislation in both developed and under-developed countries, including the legislative changes made or contemplated in newly independent States. In this connexion the Secretary-General requested the International Bureau for the Protection of Industrial Property to prepare a survey of national patent legislation for thirty-four selected countries, which provided the basis for the tabular presentation appended as annex D. Studies of patent legislation of ten countries[6] were also submitted by the International Chamber of Commerce and the International Association for the Protection of Industrial Property. Of special help in this context was the information included in official reports on revision of the patent law submitted by several Governments.[7] There have also been taken into consideration various international and regional patent agreements among Governments, including among the latter the African and Malagasy Accord on Industrial Property and the European Common Patent Draft Convention, which have a bearing on the functioning of national patent systems.

General Assembly resolution 1713 (XVI) also requested that the Secretary-General's report should take "into consideration any pertinent discussions which might take place in the United Nations Conference on the Application of Science and Technology for the Benefit of the Less-Developed Areas". Since the agenda for the Conference did not contain a specific item on the subject of patents, the Conference's papers and discussions did not provide any treatment of the subject. Consequently, no reference is made in this report to the discussions of the Conference. It may, however, be desirable to communicate the Report to the Advisory Committee on the Application of Science and Technology to Development, set up by the Economic and Social Council under resolution 980 A (XXXVI)[8] of 1 August 1963 following the Conference, so that it may take this analysis into account in its over-all study of the transfer of technology to developing countries.

The present report was prepared by the Fiscal and Financial Branch of the Department of Economic and Social Affairs.

---

[6] Brazil, Ceylon, France, Israel, Japan, Morocco, Mexico, Switzerland, United Kingdom, Yugoslavia.

[7] Canada—Royal Commission on Patents, Copyright and Industrial Designs, Report on Patents of Invention, Ottawa, 1960.

India—Report on the Revision of the Patents Law, by Shri Justice H. Rajagopala Ayyangar, September 1959.

United Kingdom—Interim and Final Reports on the Patents and Designs Acts, London, April 1946, and September 1947.

[8] *Official Records of the Economic and Social Council, Thirty-sixth Session*, document E/3816.

SUMMARY AND CONCLUSIONS

A. National patent systems

The chief purpose of the economic and legal analysis undertaken in this study has been to consider, from the viewpoint of the economically under-developed countries, whether on balance the patent system can play a useful role in encouraging the transfer of technology to developing countries and contribute to their economic development; and whether this system is a proper vehicle for accommodating the respective interrelated interests involved, i.e., the interest of the inventor in his creation; the social interest of encouraging invention; the consumer interest in enjoying the fruits of the invention upon fair and reasonable conditions, and the national interest in accelerating and promoting the economic development of the country.

The grant of the patent privilege has been based on two primary legal and social justifications. The first is that patents are private property, i.e., the inventor has the exclusive right in his invention and the patent grant recognizes this right. The other is that they are exclusive privileges for a limited term of years granted by the Government in the public interest to encourage research and invention, to induce inventors to disclose their discoveries instead of keeping them as trade secrets, and to promote economic development by providing an incentive for the investment of capital in new lines of production. It is on this latter rationale that modern patent systems chiefly rely.

In order to qualify for a patent grant, the product or process must conform to certain legislative criteria of industrial utility, novelty and/or inventiveness. Such statutory criteria of patentability are subject to interpretation and application by national Patent Offices and national courts. The thoroughness with which a Patent Office in practice reviews the patent applications filed with it to determine whether the invention claimed or disclosed therein is patentable depends not only on the controlling legislative provisions, but also on the extent to which the office is adequately staffed to carry out its review functions. Patent Offices of developing countries are likely to have more limited staffs and undertake a more limited review of patent applications than those of some of the more industrialized countries.

Developing countries in fact can rarely afford the resources of skilled manpower and the costs of a comprehensive Patent Office review procedure such as exists in some industrial countries. For this reason, some of them have been considering the possible harmonization and unification of their national patent systems and, more particularly, the establishment of a joint Patent Office that would have the resources of trained personnel and finance that are necessary for successful patent administration but are not within the capacity of the individual under-developed countries. The first regional Patent Office and uniform patent law of this kind created so far is the African and Malagasy Industrial Property Office established pursuant to an Accord among twelve member countries of the African and Malagasy Union.

In addition to affiliating with a regional Patent Office and pooling their joint research efforts therein, the under-developed countries may consider two alternative methods of meeting the problem posed above. They may dispense with strict standards in the review of patent applications and, following the practice of a number of countries, issue patents of importation, confirmation or revalidation, i.e., patents issued on inventions already patented in another country which are based upon the first corresponding foreign patent issued. Or, they may call on the services of an organization such as the International Patent Institute of the Hague which examines patent applications submitted by national patent administrations and gives opinions thereon to private persons.

B. International patent relations

Both in the under-developed countries and in most industrialized countries, but to a larger extent in the former than in the latter, the statistics indicate that, generally speaking, the percentage of patents granted to foreigners is much larger than that granted to nationals. It is therefore significant that the patent laws of most countries make no distinction between domestic and foreign applicants and follow the principle of national treatment, i.e., nationals of a foreign country or others who are domiciled or have an effective industrial or commercial establishment therein are guaranteed equality of treatment with the nationals of the country granting the patent. In a few countries, this principle is qualified by the notion that the foreign country should give reciprocal treatment to the nationals of the home country.

Of the international treaties and conventions relating to the protection of foreign inventors, the most important is the Convention of the Paris Union for the Protection of Industrial Property, first established in May 1883 and currently adhered to by sixty-four industrialized and under-developed countries. The most important principles underlying the Paris Union are the principle of national treatment, described in the preceding paragraph, and the right of priority, whereby a national of a member country who has filed a patent application in a member country of the Paris Union has a twelve-month priority over any other person for filing an application for the same invention in all other member countries of the Union.

C. Government regulation of patent uses

There is an extensive range of national legislation directed against practices that are considered abuses of the national patent system—chiefly *the non-use of patents, restrictive business practices, excessive royalties.* This legislation, on the whole, applies to both the

foreign and the domestic owners of the abused patents, although the legislation dealing with the non-exploitation of patents was historically directed primarily toward foreign nationals, while exchange controls with respect to the limitation of royalties relate exclusively to foreign patentees.

Provision for the *revocation or compulsory licensing* of patents which have not been commercially exploited in the country within a prescribed time after the patent has been granted is made in the patent laws both of industrial and under-developed countries. As a historical matter, this legislation was adopted because of concern over the fact that the foreign owners of inventions could, by refusing to exploit the patents covering such inventions, prevent the development of national industries which might give employment to nationals and utilize available national resources. Another important factor was the fear that foreign patentees could, by excluding other producers of the patented articles from the market, be in a position to monopolize the import of such articles into the country and thereby exact higher prices from domestic consumers.

There are still in existence, mainly in the case of some under developed countries, statutes which provide for revocation of a patent where it has not been exploited within, usually, two years of its issuance, or where its use has been discontinued for more than two years. More recent laws, however, have favoured the less stringent remedy of compulsory licensing of patents under which anyone ready to work an unused patent may compel the patentee to issue him a licence. This trend has been aided by the Convention of the Paris Union under which patent revocation is permissible only if the granting of compulsory licences does not suffice to prevent abuses resulting from the exercise of patent rights. In the case of the developing countries, there may be administrative advantages in a third method (automatic lapse of patents in the case of non-working beyond a certain period, since this method (unlike revocation or compulsory licensing) would not require government or private initiative to be implemented. By the automatic lapse of the patent, the public becomes possessed of the invention without any preliminary administrative or judicial action; but, on the other hand, this may impair inducement subsequently to work the invention which may be provided by the existence of the patent.

Many countries have an administrative requirement that all patentees pay annual or periodic fees, which usually increase with the age of the patent. The size of these payments is considered to be an important factor in bringing about the abandonment of unused patents.

In the case of inventions of special interest to the public welfare or security, provisions have been made in many laws to throw their use open to others than the inventor. Thus, in many countries, no patents may be issued for inventions in certain fields (especially food and medicine). In other cases, where patents are issued, provision is made in the public interest for: (*a*) the compulsory licensing of the patent to the Government or to any other interested party; or (*b*) the expropriation of the patented invention by the Government. In both cases, there arise issues relating to the compensation of the patentee and the administrative or judicial mechanics and authority for determining such compensation.

National policies differ as to the circumstances under which Governments, or persons other than the patentee or his voluntary licensee, may use patented inventions. There also exist national differences as to the nature of the public interest which justifies the compulsory licensing or expropriation of patented inventions, and as to the procedures employed in connexion therewith. The public interest deemed to justify the exclusion from patentability, compulsory licensing, or expropriation of patents, may relate to such diverse matters as the national defence, public health, improvements in the international balance of trade, development of special resources available in the country or general industrial development.

Many countries, mainly those which have reached a certain level of industrialization, have taken legislative, administrative or judicial action against *restrictive business practices* that may occur in connexion with patent licence and transfer agreements. Such agreements may include clauses prohibiting the licensee from exporting or selling in designated areas; requiring him to use only materials, equipment, personnel supplied by the patentee ("tie-in" clauses); fixing the resale prices of wholesalers and retailers and, in some cases, of the manufacturing licensee himself; limiting his output; and compelling him to pay royalties for unused patents ("compulsory package" licences). For some cases (e.g., tie-in clauses), legislation of this type is part of the national patent law, but more usually it constitutes part of the general anti-trust legislation of the country. Since business restrictions of this kind are considered against public policy, it is immaterial whether they appear in patent or in general business agreements, and since, moreover, the effective enforcement of policies against restrictive business practices requires a larger number of trained specialists with adequate investigative powers and appropriate legal sanctions, legislation of a general nature would appear to be a more efficient method of coping with this problem than legislation that is part of the patent law and adds to the duties of a patent office.

National Governments have sought to cope with the problem of restrictive business practices in international patent licence agreements by taking legal action against abuses—at home or abroad—of patents issued by them, or by adhering to treaties dealing with restrictive business practices in international trade. There are at present two multilateral treaties in effect which establish supranational programmes for the prevention and control of restrictive business practices. These are the Paris Treaty of 1951 establishing the European Coal and Steel Community, and the Rome Treaty of 1957 establishing the European Economic Community, both concluded by Belgium, the Federal Republic of Germany, France, Italy, Luxembourg and the Netherlands.

In many countries, the terms and conditions of patent assignment or licence agreements with foreign patentees are generally subject to governmental review, chiefly from the point of view of their probable effect on domestic private and public interests. One area of potential abuse by a foreign patentee is the charging of an *excessively high royalty or fee*. For this reason, government review of the terms of agreements between

foreign patentees and domestic licensees or assignees is exercised chiefly with a view to the reasonableness of royalties and the transfer abroad of royalty payments. (See the following section, for a discussion of the economic aspects of this issue.)

D. Economic effects of patents

In the development of under-developed countries, the transfer of technology is only one of several essential elements taking its place alongside such other factors as financing, trade and the development of human and natural resources, as well as the development of a country's indigenous technological resources. Within the purview of this factor of the transfer of technology itself, moreover, the role of patents is limited by the fact that patented knowledge is only a part of the total technological knowledge which should and does flow to under-developed countries. This is so partly because much of the technology required by these countries is not at that latest stage of technological advance which is covered by patents. Partly, it is because the under-developed countries lack so much in general know-how and management experience, that the knowledge covered by patents alone is usually not sufficient for the introduction of new products and processes.

On the other hand, the significance of patents for, and their impact on, under-developed countries may transcend the field of transfer of technology. The patent system will affect under-developed countries also via the import of commodities which are patented products or incorporate patented processes in their production. Finally, the patent system has a relation, not only to the transfer of technology but also to its creation, to the extent to which patents issued to national and resident inventors may promote the development of an indigenous technology.

As regards foreign patentees, the situation where the national enterprise in the under-developed country will be able to produce the product or work the process covered by the patent without any technical, managerial or financial co-operation from the foreign patentee, or from other foreign sources, is quite exceptional especially in the least developed countries. This is particularly so in view of the fact that commonly the operation and application of new inventions is not feasible without the benefit of the relevant unpatented technological know-how embodied in formulae, processes and blue-prints, trade secrets, etc.

Probably the most frequent case in practice will be the one where the national producer in the under-developed country would seek recourse to the technical support and other resources of the foreign patentee. This may be so either because these are not obtainable elsewhere or because the national producer does not have the ability to select and combine the different technological and financial factors needed, without the patentee's help. If the domestic enterprise wants to use the foreign patentee's technological and management know-how or capital, and cannot obtain these as readily anywhere else, the foreign patentee will look for assurances of a safe and profitable situation. Patent protection in the developing country may or may not have a high place among these profitable conditions or guarantees which he expects. In any case, the fact is that patent protection is actually asked for and expected in a large number of situations, and quite apart from its actual economic significance it may be of psychological importance for the foreign patentee-investor.

However, the terms and conditions of licensing agreements are legitimately a subject for the concern and control by the Governments of under-developed countries. Of particular concern to them are undue financial sacrifices exacted from the national licensee resulting in balance of payments burdens, and other unduly restrictive features of licensing agreements which diminish the benefits of introducing the patented innovation in the under-developed country.

There are difficulties in determining what is an excessive balance of payments burden, and the necessary information cannot be obtained from the available statistics. Moreover, the actual burden which royalty payments to foreigners impose on a country cannot be measured in balance of payments terms alone, but must also be evaluated in terms of the contribution that the technology in question makes to the development of a particular industry within the country and the long-run contribution that it makes to decreasing the country's dependence on foreign imports and increasing its exports of the product in question.

Undue financial sacrifices may appear not only in the form of excessive royalties, but also in excessive prices paid for materials or components or for the services of technicians obtained from the patentee, or an undue share of profits or an undue amount of equity transferred to the patentee in return for the use of his patent or for his technical services, unduly high management fees, etc. It will be seen that the financial terms of these agreements are highly complex and their effective control calls for considerable administrative resources and flexibility.

The handicaps and possible abuses from which under-developed counties may thus suffer in connexion with patent licensing are basically due to the monopoly of technical knowledge, management knowledge, capital resources and marketing access enjoyed by the firms and economies of the more advanced countries, rather than to the existence of patents as such. The basic problem to tackle for the international community is the one-sided relationship under which the possession of know-how and capital resources are so unequally distributed. The balance of payments burdens resulting from this one-sided relationship are heavy and take many different forms. They have never been fully appreciated, or even properly measured, as compared with the burdens of adverse terms of visible commodity trade of under-developed countries.

Although the burden of the patent system is most readily apparent in the form of the heavy payments which are made for licensing fees and royalties or profit transfers to foreign patentees, yet frequently a serious burden of the patent system may lie in precisely the opposite form, namely those patents which are not being utilized within an under-developed country although they could be used advantageously in its productive economy. This burden is not measured by the volume of fees and royalties: since the patents are not in fact worked, no fees and royalties are paid. The true burden here lies in the absence of the social and economic benefits which the working of the patented

product or process could have meant to the under-developed country and in the inability of the under-developed country to utilize its resources in the fullest and best possible way, in consequence of the non-working of the patent.

Where, however, the patent could not be economically worked in the country, the burden may result from the higher prices which may have to be paid for the importation of the patented products, as a result of the monopoly position gained by the inventor through the grant of the domestic patent. This, however, will be the case only in so far as the price of the imported product is not already controlled by the patent or market situation in the developed countries from which the product could be obtained. Conversely even the grant of a domestic patent will not give the inventor a monopoly position in the local market in the case of interchangeable products which are typically manufactured by competing suppliers, each of whom has his own set of patents on processes, components, etc.

In any case, the effect of higher prices specifically due to patent protection is almost impossible to disentangle from higher prices due to such factors as exclusive know-how, trade secrets, restrictive practices, or the dominant market position of the supplier, all of which are intrinsically unrelated to the patent system. Since patents are thus only one of the factors which may bring about higher prices, the question arises whether measures directly affecting price levels or general anti-trust legislation are not an economically more effective and administratively more feasible technique of coping with the problem than legislation devoted specifically to the patent system.

The importance of stimulating indigenous innovation and pioneering applications of new technology in under-developed countries at reasonable cost is undoubted. Even though it may be true and inevitable that the bulk of the improved technology applied in under-developed countries will be taken from the stock of technological knowledge existing and being created elsewhere in the world (and will thus be transferred rather than newly created), yet this transferred technology will often have to be specifically adapted and adjusted to special local needs and circumstances. The encouragement of national and resident inventors and innovators in under-developed countries is particularly important because of the manifold special risks which attend investment in under-developed countries in any case. In so far as patent grants provide encouragement and protection, they may serve in some measure as an offset to the many risks that national innovators are running and the handicaps they are facing, compared with their counterparts in the industrially more advanced countries.

E. Conclusions

The analysis presented in this report covers the economic, legal and technical implications of the patent system for the economies of under-developed countries. The basic position from which the problem has been approached was that of the United Nations, i.e., that the economic progress of the under-developed countries is a matter of concern not only to themselves, but also to the world community at large, and that—as stated in General Assembly resolution 1713 (XVI)—"access to knowledge and experience in the field of applied science and technology is essential to accelerate the economic development of under-developed countries and to enlarge the over-all productivity of their economies".

The issue of patents to nationals and residents is one—though not the only—method at the disposal of Governments of under-developed countries for encouraging and rewarding invention and technical progress. The establishment of patent systems in under-developed countries for nationals and residents, moreover, raises no specific problems, subject to the possible need for technical assistance or pooling arrangements in administering such systems, and the general importance of conserving the scarce scientific manpower for directly productive tasks. In this direction, non-examination systems of patent issue may recommend themselves especially to under-developed countries. The possibility of utilizing international resources for the purpose of examination of patent applications from under-developed countries also clearly suggests itself.

The real issues revolve around the position of the foreign patentee—and it is with these that resolution 1713 (XVI) on the role of patents in the transfer of technology to under-developed countries is concerned. Where a patent granted to a foreign national is not worked in the under-developed country, there may result artificially high prices of the patented article when imported into the under-developed country, but such high prices may be the result of other factors than the exclusionary monopoly given the patentee. The patent system may thus be an element in the over-all picture of adverse terms of trade for under-developed countries, but its impact is not separably measurable. In this context, it has nothing to do with the balance of payments burden of royalties since no royalties are paid where the patented product is not locally produced. The situation may be eased from the point of view of under-developed countries if the more developed countries operate—as some often do—the patent system in a context of general (especially antitrust) legislation which serves to reduce or counteract possible misuses of the system for restrictive or price-raising purposes, not only at home but also on operations abroad. The under-developed countries are also in a position to adopt, and many have in fact adopted, measures to control unreasonable prices and other abuses of the patent system.

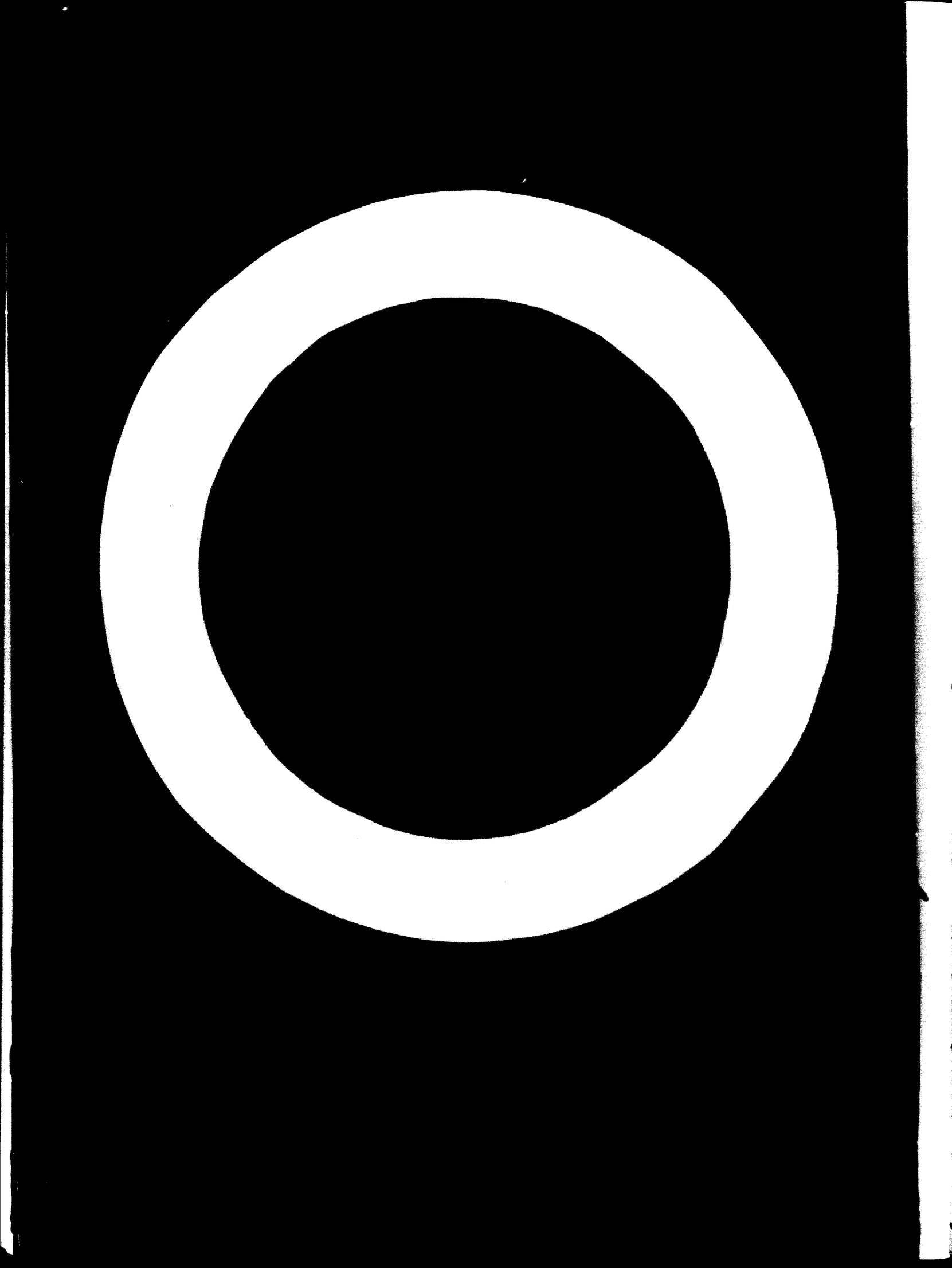
Where the patented product or process should be advantageously introduced into the economy of under-developed countries, a number of issues arise. The case where this can be done without the technical co-operation or other resources of the foreign patentee or any other source outside the under-developed country is in practice exceptional; where such a case exists, provisions for compulsory working or licensing will deal with the situation if fairly and effectively administered. This will also be the case where the patent can be worked with such additional foreign know-how and resources as can be acquired from third parties or in the open market. The best course of action by the under-developed country will depend on whether it prefers the patentee to come and work his invention himself (possibly in a joint venture with local enterprise)—provided he is willing to do so on acceptable conditions—or whether it prefers the invention to be worked wholly by nationals. There may be sound economic reasons for either preference in given cases.

In spheres of production vital to the national interest and the development of special resources, or to public health, limitations on patentability, or provision for limiting the scope of the patent grant by special working or compulsory licensing in the public interest are natural, as is evidenced by the inclusion of such limitations in the legislation of many countries.

Where the technical services, management experience and perhaps capital resources as well as other connexions of the foreign patentee himself are essential for the introduction of the patented process in the under-developed country, and cannot be procured elsewhere, his minimum terms and conditions will have to be met in one form or other if it is decided to bring the innovation to the under-developed country. In so far as this can be described as a one-sided relationship and may express itself in undue balance of payments burdens on the under-developed country (or else in undue delays in introducing the new technology), such results are not attributable to the patent system as such, nor is the resulting burden properly measured by the patent royalties.

The Governments of the developing countries have a legitimate interest in preventing excessive exploitation of their one-sided technological and financial dependence. One such possible method is the screening and control of licence agreements, and avoidance of unduly restrictive features. The world community and the Governments of more developed countries can assist by inducing patentees not to be unduly restrictive in the conditions and terms on which they are willing to spread technology into under-developed countries; a variety of policy measures ranging from domestic compensation of patentees, provision of international funds for this purpose, equivalent investment guarantees and legislation against restrictive practices applying to business operations abroad could be used for this purpose.

In its final paragraph, resolution 1713 (XVI) raises the question of the "advisability of holding an international conference in order to examine the problems regarding the granting, protection and use of patents". No views on this question have been expressed by any Governments in their replies to the Secretary-General's inquiry. In fact, as pointed out in the report, the problems arising in connexion with the transfer of technology to developing countries go much beyond the operation of national patent systems or the conduct of international patent relations, so that a Conference such as that contemplated in the resolution could only deal with part of the issues. More could be done through the combination of appropriate legislative and administrative measures at the national level with action to curb restrictive business practices in international licensing agreements, and the provision of technical and financial assistance to developing countries along the lines discussed in the report. In the final analysis, the question of patents can be best seen in the broader context of facilitating the transfer of technology, patented and unpatented, to the developing countries, and enhancing the ability of the latter to adapt and use such foreign technology in the implementation of their development programmes. This may be considered as falling within the scope of inquiry of the Advisory Committee on the Application of Science and Technology to Development, established by Economic and Social Council resolution 980 A (XXXVI), to whose attention the analysis presented in this report may usefully be drawn.



Part One

MAJOR CHARACTERISTICS OF PATENT SYSTEMS

Chapter I

NATIONAL PATENT LEGISLATION

1. The juridical basis of the patent grant

1. For the purposes of this report, a patent may be defined as a statutory privilege granted by the Government to inventors, and to other persons deriving their rights from the inventor, for a fixed period of years, to exclude other persons from manufacturing, using or selling a patented product or from utilizing a patented method or process. At the expiration of the time for which the privilege is granted, the patented invention is available to the general public or, as it is sometimes put, falls into the public domain.

2. The grant of patents has been justified on the basis of two concepts:

(*a*) The concept of patents as confirming the private property of the inventor in his invention;

(*b*) The concept of the patent as a special grant of monopoly to encourage invention and industrial development.

These two concepts will be briefly discussed in the light of the history of patents.

A. The patent as private property

3. The private property theory of patents is based on the concept that the inventor has the exclusive right in his invention and that the patent grant does no more than recognize this right. In other words, the patent does not create a new legal right, but rather gives legal enforcement to an existing right inherent in the invention. This theory has support in the wording of certain patent legislation and also, for instance, in the discussions of the Patent Law in the French National Assembly that took place towards the end of the eighteenth century. The preamble to the French Patent Law of 1791 expressed the private property theory as follows:

> "Every novel idea whose realisation or development can become useful to society belongs primarily to him who conceived it, and it would be a violation of the rights of man in their very essence if an industrial invention were not regarded as the property of its creator."

4. The view that patents were private property underlay the patent legislation of most European countries towards the end of the nineteenth century, and also received strong support from the United States. It was endorsed by the international conference held in Paris in 1878 in connexion with the discussions that resulted in the conclusion of the Paris Convention for the Protection of Industrial Property, which adopted the following formulation:

> "The right of inventors and of industrial creators in their own work, or the right of manufacturers and businessmen over their trademarks, is a property right. The law enacted by each nation does not create these rights, but only regulates them."

B. The patent as an incentive to invent, disclose and invest

5. Patent legislation has never been based solely on the concept of the patent as the confirmation of an inherent, rather than the creation of a statutory, property right. Such a concept would have left no room for such restrictions on the patent grant as its fixed duration, its exclusion for inventions in certain fields (see section 3B below) and the forfeiture or compulsory licensing of patents for failure to work them. For this reason, even the French Patent Law of 1791 provided that patents should be forfeited in the event that patented products were imported into France, and it involved a long passage of years before France finally replaced the sanction of forfeiture with that of compulsory licensing. As will be seen in a later chapter,[9] many other countries have placed similar qualifications on the patent owner's exclusive privilege, by compelling unused patents to be worked or licensed in the public interest. There must therefore be recognized the second main element in the concept of the patent grant—that it is an exclusive privilege granted by the Government in the public interest to encourage invention and to promote the economic development of the country.

---

[9] Non-use of patented inventions: compulsory working and compulsory licensing provisions (chapter III (1)).

6. Historically, there have been two methods of accomplishing this public interest objective: the older form of special monopoly granted to a named individual by the sovereign of the country, and the general type of statutory grant provided for in modern patent legislation. The exclusive privilege granted by the sovereign to private individuals to sell a product or to use a new process has been known for centuries both on the continent and in England. Thus, the function of the patent monopoly as an incentive to invent was stressed in a preamble to the patent law of 1474 of the Republic of Venice, which stated that the protection was designed to serve as an incentive to others. In England, the inventor's right was not recognized by the common law, but was based on a royal prerogative to grant monopoly privileges. These, however, were originally granted by the Sovereign in England for the purpose of raising revenue and hence involved for the most part every-day necessities, devoid of novelty or invention.

7. To avoid this abuse of royal prerogative, the British legislature enacted the Statute of Monopolies in 1623. According to a 1944 *United Kingdom* Committee report: "The Statute had as its object the suppression of monopolies and it declared monopolies, grants, and letters patent for the sole buying, selling, or using of anything within the realm to be contrary to law, but section 6 excluded patents for invention from that general proscription in the following terms:

> "'Provided also that any declaration before mentioned shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law, nor mischievous to the State, by raising prices of commodities at home, or hurt of trade, or generally inconvenient; the said fourteen years to be accounted from the date of the first letters patent or grants of such privilege hereafter to be made, but that the same shall be of such force as they should be if this Act had never been made, and none other'."[10]

8. This was the first general law of a modern State to lay down the principle that patents were to be made available on a uniform basis to inventors for the purposes of encouraging inventions, manufacture and the introduction of foreign technology. The scope of the statute was subsequently broadened when court decisions construed the words "first and true inventor" to include the first one to introduce a new art from abroad, thus extending protection to imported technologies as well as to absolutely new inventions.

9. The public interest theory upon which the patent system is based was described as follows in the above-mentioned United Kingdom Report:

> ". . . the opportunity of acquiring exclusive rights in an invention stimulates technical progress, mainly in four ways: first, that it encourages research and invention; second, that it induces an inventor to disclose his discoveries, instead of keeping them as a trade secret; third, that it offers a reward for the expense of developing inventions to the stage at which they are commercially practicable; and fourth, that it provides an inducement to invest capital in new lines of production which might not appear profitable if many competing producers embarked on them simultaneously. The history of industrial development seems on the whole to have justified this theory."[11]

10. The idea of patents as a grant of special privilege intended to reward inventors for advancing the public interest was incorporated in the *United States* Constitution of 1789. Article I, section 8, clause (8) of that document empowers Congress "to promote the progress of science and useful arts by securing for a limited time to authors and inventors the exclusive right to their respective writings and discoveries".

11. Special legislation protecting inventions was also introduced in *Brazil* in the beginning of the nineteenth century. The Brazilian Patent Law of 15 July 1809, the fourth modern patent law in point of time (following the English, United States and French statutes), laid down the following policy:

> "It being highly convenient that inventors of any new machinery should have an exclusive privilege for a certain time, I hereby order that no matter who should be in such a position to submit the plans of his invention to the Royal Board of Trade which, verifying that such invention is really worthy, should be given the exclusive right for the period of fourteen years after which the invention should be published so that all the nation might have the right to share the benefits of such invention."

The Brazilian Federal Constitution of 1946, in paragraph 17 of article 141, also provided that: ". . . inventions belong to their authors to whom the law will assure a temporary privilege or, if their use is convenient to the public, will grant an adequate prize".

12. A 1959 official Indian Report on the Revision of Patent Laws, emphasizing the role that patents play in the economy of the country, cites the following words from an established text:[12]

> "Patent systems are not created in the interest of the inventor but in the interest of national economy. The rules and regulations of the patent systems are not governed by civil or common law, but by political economy."

13. The International Chamber of Commerce has taken the following position in a 1959 report submitted by its Commission on International Protection of Industrial Property:

> "It is understandable that the Governments of the countries . . . and the public of each country, whose

[10] United Kingdom Second Interim Report, op. cit., para. 8.

[11] *Ibid.*, para. 9.

[12] Indian Report, op. cit., paragraphs 20, 21, citing P. J. Michel, *Introduction to the Principal Patent Systems of the World*, New York (1936), vol. I, p. 15.

aspirations and needs each of these Government's voices, seek and press for the kind of law and international arrangement which they consider best for their own national economy and interests."[13]

14. *In conclusion*, it may be stated that the creation and delimitation of the inventor's right is essentially a process in which account is taken of, and an attempt is made to reconcile and satisfy, the whole scheme of public and private interests pressing for recognition, i.e., the interest of the inventor in his creation; the social interest of encouraging invention; the interest of the buying public to enjoy the fruit of the invention upon fair and reasonable conditions; and the interest of national government to accelerate and promote the economic development of the country.

2. Patents and other types of governmental grants to inventors

A. Patents

15. Patents are the principal method whereby most countries reward inventors. As explained in the previous section, the patent is an exclusive privilege, granted to a person for a fixed term of years, to manufacture, use and sell a product or to employ a method or process. In order to qualify for a patent grant, the product or process must conform to certain legislative definitions of what is patentable, which contain in general various features of capability of industrial application, novelty and/or inventiveness.[14]

B. Certificates of Authorship

16. Another method used by Governments for rewarding inventors is that of issuing Certificates of Authorship. This method is employed by a number of countries in Eastern Europe, namely, Bulgaria, Czechoslovakia, Poland, Romania and the Soviet Union. These countries also have patent systems.

17. The salient features of Certificates of Authorship, as exemplified in the USSR legislation, are as follows: the effect of a Certificate of Authorship is to certify the authorship by the inventor of his invention and to establish the exclusive right of the State to use the invention. Any State, public or co-operative organization has the right to use the invention thus certified without special permission; however, the Government bureau in charge of inventions must be informed of such use. The remuneration given the holder of a Certificate of Authorship is determined by the savings realized in the economy through the utilization of his invention. Foreigners as well as nationals may receive Certificates of Authorship.

18. The principal difference between a Certificate of Authorship and a patent is that the former, unlike the latter, does not give the inventor any exclusive right to utilize the invention himself or to license others to use it. The certificate thus is rather in the nature of a monetary reward rather than a legal right or privilege assertable against third persons. For this reason, no registration or annual fees are required for Certificates of Authorship.

C. Utility models

19. A statutory system for granting rights in *utility models* has been developed, among other countries, in Germany and Japan. Utility model rights are similar to the rights attaching to patents for invention, but are granted for lesser innovations involving a smaller technical advance than required for a patentable invention and for a shorter term.

20. In Germany, the system of *Gebrauchsmuster* (utility or working models) was introduced in 1891, and it afforded protection to small inventions of instruments or objects of practical use. In Japan, the system of utility model rights was first introduced by the Utility Model Law of 1905, which followed the pattern of the German system of *Gebrauchsmuster*. At that time it was considered beneficial to the country's economy to establish a system for protecting technical improvements of a minor nature in the same way as inventions. The situation changed after the First World War, when the Japanese industry reached a more highly developed standard of production. Nevertheless, the utility model system is still considered useful for domestic industries of a smaller scale, which are quite wide-spread in Japan. The present system for the protection of utility models in Japan[15] differs substantially from the German system. Unlike the German *Gebrauchsmuster* system, utility model applications (like patent applications) are currently examined as to novelty and inventiveness.[16]

D. Special kinds of patents

21. Among other types of patents granted by some countries (which are referred to in the Synoptic table (annex D)), may be listed:

Patents of confirmation or revalidation, largely recognized in Latin America,[17] are issued for inventions already patented in another country and are based upon the first corresponding foreign patent issued. The purpose of a confirmation or revalidation patent is to permit the invention to be protected, notwithstanding the prior publication of the invention resulting from patenting in other countries. The object in granting this type of patent is to promote the introduction and domestic exploitation of foreign inventions.

Patents of importations have essentially the same characteristics as patents of confirmation or revalidation. Their main use has been in Belgium and Spain.

Patents of addition cover improvements on already patented inventions. These patents can be obtained either by the owner of the main patent or by other persons.

---

[13] The Revision of the Paris Union Convention, I.C.C. Paris (1959), p. 19.

[14] For the language of such legislative definitions, see column 2 of the Synoptic table of major provisions of patent legislation in selected countries (annex D). As for the way these provisions are interpreted or administered, see section 3 below.

[15] Introduced by the Law No. 123, of 13 April 1959.

[16] For further details on the subject matter of utility models patents and their duration, see columns 2 and 4 of the Synoptic table (annex D).

[17] They are granted, for instance, in Argentina, Chile, Colombia, Venezuela—see Synoptic table (annex D).

Caveats (or "precautional patents"), which are issued for relatively short periods of time, entitle a person, who is an inventor but has still to perfect his application for a patent, to notice of applications by other persons for a patent on the same invention and to the opportunity to object within a stated period to such application by such other persons.

3. Conditions of patentability

A. Requirements of patentability—role of administrative and judicial review

22. As mentioned above (see paragraph 15), patents are generally issued in respect of products, methods or processes which possess some legislatively-defined feature of novelty, industrial utility or inventiveness. The legislative criteria for patentability are set forth in column 2 of the Synoptic table of major provisions of patent legislation in selected countries (annex D). However, the degree of novelty or inventiveness that qualifies an invention for patent protection depends in practice not only on the statutory definition, but also on the way in which the requirements set forth in the patent statute are interpreted and applied by the Patent Office and by the national courts. These requirements, which are necessarily broad and ambiguous, have to be applied to specific industries and may have to be related to the state of the technology prior to the invention for which the patent is claimed. Accordingly, even in the few industrial countries which have extensive administrative machinery for investigating the prior technology or state of the industrial art, there will necessarily exist differences of opinions among experts and the competent state administrative and judicial organs as to whether particular inventions or discoveries qualify for patenting.

23. Questions as to the existence or absence of novelty and inventiveness of specific products, methods or processes come up for consideration at various stages. They may arise during the administrative review of an application for a patent; or as a ground upon which such an application may be opposed; or at a later stage in a proceeding for the revocation or cancellation of an issued patent; or in suits for patent infringement where the validity of the patent is disputed by the person charged with the infringement.

24. With respect to the first stage—that of review of patent applications by the Patent Office—there exists a variety of legislative provisions regarding the extent to which the Patent Office is required to review and examine patent applications to see whether they conform to the statutory conditions of patentability. These range from those which require the Patent Office to review as to form only (that is, whether the description in the patent application covers a patentable product or process), to those which prescribe an extensive examination as to the novelty, industrial utility, inventiveness and, in some cases, priority of invention, of the product or process for which a patent is desired. More detailed information regarding the review procedure obtaining in various countries is available in column 3 of the Synoptic table contained in annex D.

25. The thoroughness with which the Patent Office in practice reviews the patent applications filed with it depends not only on the language of the controlling legislative provision but also on the extent to which the office is adequately staffed to carry out its review functions. Unavoidably, the patent offices of most developing countries have much more limited staffs and undertake a far more limited review of patent applications than those of the industrial countries. Wherever the scope of patent review is restricted—be it in an industrial or a developing country—the responsibilities of the courts in reviewing patents to see whether they conform to the statutory conditions of patentability is correspondingly increased. As already indicated, such judicial review may occur both in proceedings brought against the patentee for the cancellation or annulment of a patent and in suits by patentees for patent infringement.

B. Exclusions from patentability

26. In addition to excluding from patentability products and processes which do not meet the affirmative standards outlined in the preceding paragraphs, national patent laws also contain certain specific exclusions from patenting. Some of these specific exclusions are logical corollaries of the general concept of the patent. Thus, the requirement that the patent claim show invention excludes from patenting purely scientific and mathematical discoveries or principles. The requirement that the claimed invention must result in a product or a process excludes such matters as bookkeeping, financial, credit or other business forms and systems.

27. Some national laws specifically exclude from patenting plant or animal varieties or biological processes for their production; or inventions relating to nuclear energy; or inventions contrary to public order, morality or the public health and safety. In most of the countries replying to the Questionnaire, there are restrictions on the patentability of food, pharmaceutical, medicinal or chemical products, and the processes relating thereto. (See column 2 of annex D.) The reasons advanced for the non-patenting of these products are their importance in daily use and their essentiality to the health of the community, coupled with the fact that, especially in the case of proprietary drugs, competition between different patented products serving the same function is less readily available than for the bulk of industrial patents used in under-developed countries (see para. 285 below). However, in most cases where the product is not patentable, it is considered in the public interest to provide for the patenting of the process for producing the product. This is on the theory that the grant of the patent will promote further research and investment in developing alternative and more efficient processes.[18]

28. In connexion with the foregoing, it should be noted that the scope of protection afforded by a process patent is not the same in all countries. Thus, in some

[18] The provision excluding medicinal and food products from patentability but allowing the grant of patents to processes obtains, in one form or another, in the following countries, namely, Brazil, Canada, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Ireland, Japan, Republic of Korea, Luxembourg, Mexico, Morocco, Norway, Poland, Sweden, Tunisia, and the United Arab Republic. This list is not inclusive and with certain variations the same provision obtains in most patent systems.

countries the patent for the process affords protection to the patentee not merely against the use of the process by others, but also against the sale of the products produced by the patented process; in other words, a patent to a process for making a new chemical compound has in many respects an effect similar to that of the patent on the compound itself.[19] On the other hand, in other countries, the patent on the process is not enforceable against products produced by the process. It is, of course, never enforceable against the same product produced by *another* process.

29. In many countries, medicinal, food and chemical products, as well as processes, are freely patentable.[20] However, in some cases the grant of a patent may be refused on the ground that the substance capable of being used as a food or medicine is a mere mixture of known ingredients.[21] In some of these countries, moreover, provision is made for the compulsory licensing of patents in the interest of the public; the desired effect of these provisions (which are dealt with in chapter III, section 3) is to limit the monopoly power of the patentee and to avoid the limitation of supplies, the imposition of high prices and other adverse effects on the public interest thought to inhere in the patentee's unrestricted control of the patented product or process.[22]

30. In one of the countries answering the Questionnaire—Italy—both products and processes of a pharmaceutical nature are ineligible for patenting. However, the Italian reply indicated that the existing law is being amended to extend patentability both to pharmaceutical products and the processes for their production.

[19] This provision obtains, for instance, in Switzerland and the Federal Republic of Germany.

[20] For instance: Australia, Belgium, Cuba, El Salvador, India, Israel, New Zealand, the United Kingdom and the United States.

[21] This provision obtains, for instance, in Australia, Israel, New Zealand and the United Kingdom.

[22] For a detailed discussion of this matter see: United Kingdom Final Report, op. cit., paras. 92-99, and Canadian Report, op. cit., p. 93, *et seq.*, both of which recommended to replace provisions for exclusion from patentability by special compulsory licensing provisions in the public interest. This revision was also recommended by the Nordic Committee (see para. 187 below) regarding the law of Denmark, Finland, Norway and Sweden. On the other hand, the Indian Report (op. cit., paras. 46-100) observes, regarding the patentability of inventions relating to chemical products, or products produced by chemical processes, that the interests of a country in early stages of industrial development would be best served by confining patentability to the processes by which the products are obtained, and to deny patents to the products *per se* or in a qualified manner. Regarding food and medical products, the Report recommends to deny patentability on the grounds of the importance of these articles in daily use and their vitality to the health of the community. However, it was not considered in the public interest to render the *process* unpatentable.

Chapter II

INTERNATIONAL PATENT RELATIONS

1. International and regional patent arrangements

31. In a report on the role of patents in the transfer of technology between countries, special interest attaches to the international aspects of patent protection. It should be emphasized at the outset that an international patent as such does not as yet exist. The first international office granting patents valid for several countries—that of the African and Malagasy Union—has just commenced operation (see paragraphs 50-56 below). Neither is there at present any means whereby a patent granted by a given country can confer any protection beyond the borders of that country. What has sometimes been referred to as the "international patent system" is in fact the practice of international patent relations resulting from the existing international treaties with respect to patents. While these treaties affect the rights of patentees with signatory countries, patents granted by any particular country remain territorially limited to that country. Hence, any person who applies for a patent in one country has to make a separate application in each and every country where he wishes to protect his invention and has to conform to the respective domestic legal requirements of all such countries. Thus, the chief purpose of the existing international treaties is to eliminate or ease some of the difficulties arising from the territoriality of patents.

32. The purpose of this survey is to consider, from the developing countries' point of view:

(*a*) The nature and role of the main provisions of the International Convention of Paris and other international treaties relating chiefly to the protection of foreign inventors;

(*b*) The plans for regional agreements which try, in connexion with the drive for economic integration and co-operation, to unify or harmonize the patent laws of the signatory countries, and to eliminate the great expense, both for applicants and Governments, of having separate national patent offices by the establishment of regional patent offices;

(*c*) Provision of services on international or regional basis to Governments and individuals relating to research and examination in connexion with patents.

A. International and regional agreements for the protection of foreign inventors

(i) *Convention of the Paris Union for the Protection of Industrial Property*

33. Any discussion of the international protection of patent rights must start with the International Union for the Protection of Industrial Property, which was established by the Paris Convention in May 1883 (the so-called "Paris Union"). Since its adoption, the Convention of the Paris Union has been revised and modified several times. In addition to several less important revision conferences, the four major revisions were those of Washington in 1911, The Hague in 1925, London in 1934, and Lisbon in 1958. At the present time, sixty-four countries, including both industrialized and under-developed countries, adhere to the Paris

Union. The Paris Union Convention is not limited to patents, but extends to all kinds of industrial property, including also trademarks, utility models, industrial designs, trade names, indications of source or appellations of origin, as well as the repression of untair competition.

34. The following countries were members of the Paris Union as of 1 August 1964:

Country	*Date of accession*
Australia	1907
Austria	1909
Belgium	1884
Brazil	1884
Bulgaria	1921
Cameroon	1964
Canada	1923
Central African Republic	1963
Ceylon	1952
Chad	1963
Congo (Brazzaville)	1963
Cuba	1904
Czechoslovakia	1919
Denmark	1894
Dominican Republic	1890
Finland	1921
France	1884
Gabon	1964
Germany (Federal Republic)	1903
Greece	1924
Haiti	1958
Holy See	1960
Hungary	1909
Iceland	1962
Indonesia	1888
Iran	1959
Ireland	1925
Israel	1950
Italy	1884
Ivory Coast	1963
Japan	1899
Laos	1963
Lebanon	1924
Liechtenstein	1933
Luxembourg	1922
Madagascar	1963
Mexico	1903
Monaco	1956
Morocco	1917
Netherlands	1884
New Zealand	1891
Niger	1964
Nigeria	1963
Norway	1885
Poland	1919
Portugal	1884
Romania	1920
San Marino	1960
Senegal	1963
South Africa	1947
Spain	1884
Sweden	1885
Switzerland	1884
Syrian Arab Republic	1924
Tanganyika	1963
Trinidad and Tobago	1964
Tunisia	1884
Turkey	1925
United Arab Republic	1951
United States of America	1887
United Kingdom	1884
Upper Volta	1963
Viet-Nam (Republic of)	1884
Yugoslavia	1921

35. The Convention establishing the Paris Union also created the International Bureau for the Protection of Industrial Property, an inter-governmental organization, which functions in Geneva as a part of the United International Bureaux for the Protection of Intellectual Property (B.I.R.P.I.). The tasks of the Bureau include liaison between the patent administrations of the Union's member countries, the study of questions relating to industrial property, the preparation of conferences of revision, and the publication of documents and other information in this field.

36. Without diminishing the importance of the Paris Union and its principles, it should be noted that there are many countries granting patents which are not members of the Paris Union. In certain cases, the principles adopted by the national laws of these countries with regard to foreign patent applicants are similar to those contained in the Paris Union; in other cases, they differ. Also, there are some countries which make no provision for patent protection. (See paras. 105-106 below.)

37. The main provisions of the Paris Convention of interest to foreign inventors are the principles of *national treatment* (article 2) and *priority of patent application* (article 4). The Paris Convention also sets forth certain minimum standards of protection, applicable to patentees generally but of particular significance for foreign patentees. The most important of these control the sanctions which may be imposed upon a patentee for failure to work the invention in the country granting the patent (*compulsory working* and *compulsory licensing* provisions).

38. The *national treatment* principle requires that member States afford the same rights to nationals of other member States as they give to their own nationals. Non-nationals who are domiciled in a member country, or who have a real and effective industrial or commercial establishment therein, are assimilated to nationals (article 3).

39. It should be noted that the national treatment principle does not call for reciprocal treatment. Under the principle of national treatment, each country applies its own standards to all applicants and patentees, whether they are its nationals or not. Thus the national law of each country determines the rights and obligations of all applicants and patentees, domestic and foreign, with regard to such matters as patentability, formalities necessary to obtain protection, duration of

patents, conditions of use, etc. This may result in a situation in which the nationals of a given country receive less generous treatment in other countries than is afforded foreign patentees in their own country, or *vice versa*. Since each "national treatment" country is free to determine, according to its own needs, the substantive scope of patent protection, the degree of such protection will vary from country to country.

40. Under the *right of priority* (article 4), a national of a member country who has filed a patent application in a country that is a member of the Paris Union has a twelve-month priority over any other person for filing an application for the same invention in all other member countries of the Union.

41. This right of priority serves to mitigate the disadvantages, discussed above, of the limited territorial effect of national patents. It gives an applicant in any one Paris Union country ample time to apply for patent protection in other countries, without being hindered from doing so by the acts of other persons who might in the interval apply for a patent for the same invention or by his own acts. In the absence of the priority conferred pursuant to the Paris Convention, the national law requirement of novelty could no longer be satisfied in the case of a subsequent application in a country where the patent law provides that earlier publication of the invention *anywhere in the world* is a bar to patentability. Such countries are in the majority; a substantial but lesser number of countries bar from patentability only inventions previously published *within the country*.

42. Another provision specifically bearing on the patent rights of foreigners is that of the *independence of patents* (article 4 *bis*), according to which the cancellation or expiration of a patent in one country of the Paris Union does not lead to the cancellation or expiration of a patent for the same invention in other member States. The Paris Union Convention in article 5 also prohibits forfeiture of a patent on the ground of importation into the country of patented articles produced in other countries that are members of the Paris Union. This last provision safeguards the rights of patentees against national legislation involving the revocation of patents where the patented product had been imported into the country.

43. As already indicated, the major substantive limitation imposed by the Paris Convention on the patent systems of member States relates to sanctions for non-working or other abuses of the patent grants. Under this provision, no such sanctions for non-working or insufficient working may be imposed on a patentee until the expiration of a period of four years from the date of filing of the patent application, or three years from the date of the grant of the patent, whichever period last expires. Even then, the Convention provides that a patent may not be revoked except in cases where the granting of compulsory licences would not be sufficient to prevent abuse of the monopoly grant by failure to work the invention. In any case, a proceeding for the forfeiture or revocation of a patent may not be instituted before the expiration of two years from the date of the grant of the first compulsory licence. Article 5 applies to other abuses of monopoly. Compulsory licences may be granted, for example, for refusal by the patentee to grant licences on reasonable terms or demanding unreasonable conditions, where licensing would be in the public interest.[23]

44. Any group of countries may conclude special arrangements concerning the protection of industrial property, in so far as such arrangements do not contravene the provisions of the Convention (article 15). Only countries which are Paris Union members can adhere to such arrangements, but adherence is voluntary. Consideration had been given to this article in the various regional patent arrangements, such as the Afro-Malagasy Accord and other agreements referred to below in paragraphs 50 to 64.

45. The International Bureau has, since 1962, initiated several activities specially designed to assist developing countries on questions concerning patents and other forms of industrial property. The International Bureau organized in August 1963 an African Seminar on Industrial Property, in Brazzaville (Congo), and a Committee of Experts to study industrial property problems of industrially less developed countries, in October 1963, in Geneva. In the latter Conference representatives from the following member and non-member countries participated: Algeria, Brazil, Colombia, Czechoslovakia, Iran, Japan, Sweden, Tanganyika, the United States and Venezuela. The Committee recommended that developing countries "should establish legislation and an administration appropriate to their needs in the field of industrial property"; and that "so far as they are not members of the Paris Union, should consider the possibility of adhering to that Union taking into account the advantages of such an adhesion". The Committee also recommended that the International Bureau should undertake to prepare a draft of a model law for the protection of inventions and technical improvements, and should put in hand a programme of technical assistance for the benefit of member countries of the Paris Union. In the summer of 1964, the Bureau in co-operation with the Colombian Government held a Latin American Seminar on Industrial Property in Bogotá, Colombia.

(ii) *Other agreements regarding the protection of foreign inventors*

46. Similar to the Paris Union, there are other regional and bilateral agreements establishing the right of priority and national treatment, on the basis of reciprocity.[24] In this connexion, the inter-American treaties and the inter-Commonwealth arrangements are of special interest.

47. There have been several *Inter-American Conventions* in the field of industrial property. These conventions relate not only to patents, but also to other forms of industrial property, such as trademarks and industrial designs. One of the more significant conventions bearing on patents was signed in Buenos Aires in 1910. This convention adopts the principles of the Paris Union Convention respecting national treatment, rights of priority, and independence of patents. It is in effect among the following States: Bolivia, Brazil, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Haiti,

[23] For a more detailed discussion of this aspect of the Paris Union, see chapter III, 1 below.

[24] See column 5 of the Synoptic table (annex D).

Honduras, Nicaragua, Panama, Paraguay, United States of America, and Uruguay.[25] A prior convention, the Convention of Montevideo of 1889, is still in force as between Argentina, Bolivia, Peru, Paraguay and Uruguay. This convention assures reciprocal national treatment and a right of priority of application of one year. A further convention was signed in Caracas in 1911, which is in effect among Bolivia, Colombia, Ecuador, Peru and Venezuela.

48. Various bilateral priority provisions are in effect between certain countries of the *British Commonwealth*, namely, Australia, Canada, Ceylon, India, Ireland, Pakistan, New Zealand and the United Kingdom, which are generally known as *Inter-Commonwealth Arrangements*. In all these bilateral arrangements, the first application generates a twelve-months' priority term in the other countries. Thus, in India and Pakistan which are not members of the Paris Convention, the Inter-Commonwealth Arrangements provide a way by which the priority can be obtained.

B. International and regional agreements for the unification or harmonization of substantive patent laws

49. While the Paris Union and the other conventions mentioned earlier did not purport to bring about uniformity in national patent legislation, they have advanced the idea of harmonizing and co-ordinating the functioning of national patent systems. There have since been efforts, in connexion with the drive towards regional economic integration, to obtain greater uniformity in the granting and administration of patents. These efforts have resulted in several plans for the granting of a uniform regional patent (discussed below), of which only the African and Malagasy proposal has thus far been implemented. In addition, two European Conventions dealing with matters of patent law (discussed below) are also in effect.

(i) *The African and Malagasy Industrial Property Convention*

50. The trend towards regional economic integration and related efforts to unify or harmonize substantive laws have had a direct impact upon discussions and agreements among developing countries, with a view to the possible harmonization and unification of patent systems and, more significantly, the establishment of a regional patent office that would have the resources of trained personnel and finance that are necessary for successful patent administration, but are not readily within the resources of most individual under-developed countries. Consequently, the potentialities of a central patent office serving the needs of an entire region are of considerable interest.

51. This idea has recently been implemented by the African and Malagasy Organization for Economic Co-operation. The member States of the Organization have agreed to establish in Africa an Industrial Property Office and to subscribe to a Common Patent, Trademarks and Designs Act. The Agreement (signed in Libreville on 13 September 1962), will be administered by a single central office located in Yaoundé (Cameroon). The following group of twelve countries have ratified the agreement: Cameroon, Central African Republic, Chad, Congo (Brazzaville), Dahomey, Gabon, Ivory Coast, Madagascar, Mauritania, Niger, Senegal, Upper Volta.

52. The Afro-Malagasy Accord provides for a common system for obtaining and maintaining industrial property rights, including patents. The ultimate aim of the Accord is to provide for uniform national legislation, a system of single filing, and a centralization of administrative procedure in the African and Malagasy Industrial Property Office. The annexes to the Accord set forth uniform industrial property legislation to apply in each member State. Under article 3 (1) of the Accord, when the patent applicant is domiciled in a member State, application may be made either with the national patent administration or with the Central Regional Office, according to the legal provisions in force in the State concerned. Under article 3 (2), applicants domiciled outside member States file their applications directly with the Central Office; such applicants must, however, appoint an agent in one of the member States.

53. The Central Office will have the duty of registering the filing of applications, applying the administrative procedure, and issuing certificates that are effective in each member State.

54. The uniform national laws contained in the annexes are based substantially on corresponding French legislation. The signatory parties undertake to adhere to the Paris Union.[26] Any non-signatory African State which is a party to the Paris Union may apply to adhere to the Accord.

55. All communications to the Central Office must be in French. Transitional provisions provide for the extension of French patents granted before the independence of the member States.

56. According to a *communiqué* published on 30 November 1963, by the Director-General of the African and Malagasy Industrial Property Office, the first of January 1964 has been fixed by the Office as the date of entry into force of the Annexes and Rules of the Afro-Malagasy Accord. As from that date, applications relating to patents, trademarks and designs or models will be received.

(ii) *The European Conventions on patent applications, patent classification and unification of patent laws*

57. Three European Conventions dealing with matters of patent law have been concluded under the auspices of the Council of Europe, but only the first two Conventions are in force. The first is the European Convention Relating to the Formalities Required for Patent Application, signed at Paris on 11 December 1953. The purpose of this Convention is to simplify and unify, so far as possible, the formalities prescribed by the various national patent laws in respect of applica-

[25] Some of these countries are also members of the Paris Union, namely: Brazil, Cuba, Dominican Republic, Haiti, Mexico and the United States.

[26] So far, the following countries have adhered to the Paris Union: Central African Republic, Cameroon, Chad, Congo (Brazzaville), Gabon, Ivory Coast, Madagascar, Niger, Senegal, and Upper Volta.

tions for patents. The following countries have ratified this Convention: Denmark, Federal Republic of Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, South Africa, Sweden, Switzerland, Turkey, United Kingdom.

58. The second agreement is the European Convention on the International Classification of Patents for Inventions, signed at Paris on 19 December 1954. This Convention declares that the adoption of a uniform system of classification of patents is in the common interest of all countries and is likely to contribute to the harmonization of national legislation. Accordingly, the Convention provides that each contracting country shall adopt a system of classification of patents set out in the annex, which is called "International Classification". Each contracting country is at liberty to apply the International Classification either as a principle or as a subsidiary system of patent classification. The following countries have ratified this Convention: Australia, Belgium, Denmark, Federal Republic of Germany, France, Ireland, Italy, the Netherlands, Norway, Sweden, Turkey, and the United Kigdom.

59. Both this Convention and the one relating to patent application formalities are open to accession only by members of the Paris Union.

60. A third agreement, not yet in effect, is the European Convention on the Unification of Certain Points of Substantive Law on Patents for Invention, signed at Strasbourg on 27 November 1963. This Convention sets out certain uniform principles in connexion with important basic matters of patent law, such as types of invention for which patents may be granted and the definition of novelty. This Convention is not yet in force but has been signed on behalf of Denmark, Federal Republic of Germany, France, Italy, Netherlands, Sweden, Switzerland and the United Kingdom. It provides that it shall be open to accession by members of the Council of Europe. After its entry into force, the Committee of Ministers of the Council of Europe may invite any member of the Paris Union which is not a member of the Council of Europe to accede thereto.

(iii) *Other plans for uniform patent legislation*

The European Draft Patent Convention (Draft Convention of the Member States of the European Economic Community)[27]

61. Another instance of proposed regional co-operation in the field of patent law and administration has been the subject of recent discussions among the member States of the European Economic Community, with respect to the establishment of a European Patent. This development is not operative but a detailed Draft Convention for the establishing of a European Patent, to be issued by a European Patent Office, was drawn up in 1962 by a committee representative of the six members of the European Economic Community.

62. The Draft contains provisions under which States members of the Paris Union may apply to accede to, or may apply to be associated with, the European Patent Convention. The terms of accession or association must be laid down in a special agreement concluded between the applicant State and the original contracting States. The decision to honour the application of a third State must be taken unanimously by the original contracting States. The authors of the Draft have not yet agreed on whether accession should be open only to the European members of the Paris Union or to all members of that Union.

63. It is contemplated that the European patent system will, for a transitory period, exist alongside the national patent systems. A single application for a European Patent would afford protection in all countries adhering to the Convention, and the scope of such protection would be the same for all such countries. The system will have a common administration, the "European Patent Office", and a special court, the "European Patent Court". The trouble and expense now involved in patenting an invention in the various national patent offices would therefore be vastly reduced. It is intended that the European Patent Office will examine the application as to form, but the search for novelty will be carried out by the International Patent Institute in The Hague.[28] On the basis of this examination, a "Provisional European Patent" will be granted within some eighteen months after filing. A deferred examination as to novelty and inventiveness will be carried out at the request of the patentee or third persons and will lead to the confirmation of a "Final European Patent".

64. The European Draft Patent Convention reflects the tendency of a regional organization to eliminate the administrative burden of national patent systems, for the purpose of promoting economic development and other objectives in the countries concerned. The establishment of a single regional patent office could be an important step towards the more efficient utilization of the limited manpower resources available for the examination and issuance of patents. The establishment of a European Patent is responsive to the ideas of economic integration that underlay the Rome Treaty establishing the European Economic Community. The harmonization of existing national patent laws of the member countries is also contemplated, on the ground that differences in national patent legislation distort the normal conditions of competition.

The "Nordic Patent"

65. Co-operation within a regional context is also taking place among the Scandinavian countries, according to a report submitted by a Nordic Committee representing Denmark, Finland, Norway and Sweden.[29] This Committee has been established for the purpose both of harmonizing the patent legislation of the member countries and of setting up a new system of Nordic patents, in which a patent granted by any one of the four countries would generally be effective in all of them. Up to now, this Committee has been examining the question of harmonizing national legislation and has recommended, among other matters, certain criteria in respect of the categories of inventions that are patentable.

---

[27] Belgium, Federal Republic of Germany, France, Italy, Luxembourg and the Netherlands.

[28] See paragraphs 67-69 below.

[29] Information provided in Governments' replies to the Questionnaire.

The Commonwealth and Benelux discussions

66. The Commonwealth countries held a Conference at Canberra in 1955 with the object of harmonizing their patent systems and formalities. The Benelux countries have also held discussions looking to the adoption of uniform patent legislation, but have made no recommendations about the establishment of a unified system.[30]

C. Research and Examination Services—The International Patent Institute of The Hague (The I.I.B.)

67. An international agreement was signed, on 6 June 1947, for the purpose of setting up an International Patent Institute in matters of patents. The Institute is available for examining patent applications submitted by the patent administrations of the member States and giving opinions on novelty of inventions to private persons. It is thus a service to national Patent Offices and private individuals, and does not deal with the legal rights of individual patent applicants or with the grant of patents.

68. The following countries are parties to this Agreement: Belgium, France, Luxembourg, Monaco, Morocco, Netherlands, Switzerland, and Turkey. The Agreement is open to accession by any country that is a member of the Paris Union.

69. The research and other services offered by this form of institution can be most helpful both to Governments and patentees. It can provide national regional patent offices with relevant information which otherwise would have to be procured through much expense and investment of manpower. As indicated above, the European Patent Office to be established by the European Economic Community is expected to rely on the technical services of the Institute. Under-developed countries may find it useful to pool their research resources in one regional institute, or to use the services of an international body such as the I.I.B., and thus avoid the great drain in money and scarce technological expertise involved in establishing separate administrations to handle the complex research and examination problems involved in patent applications.

2. Extension of patent protection to foreign inventors

A. The extent of foreign ownership of patents

70. In most countries, the number of patents granted to their own nationals is usually smaller than those granted to foreigners. The table reproduced in annex E shows the number of patent applications and/or patents granted in various countries for the period 1957-1961, as well as the percentage of total patents applied for and granted which are issued to foreigners. The table was prepared on the basis of data furnished by Governments in their reply to the Questionnaire.

71. The significant fact shown by this table is that a higher percentage of patents is granted to foreigners than to nationals not only in the developing countries, but also in many industrialized countries. Specifically, this is true in such industrialized countries as: Canada, France, the Netherlands, United Kingdom, Italy, Denmark, Norway, and Belgium.

72. However, in the developing countries, the proportion of patent grants to foreigners tends to be much higher. It is indicated in the recent report on the revision of the Indian patent laws[31] that, if account is taken of the economic, industrial and scientific value of the patented inventions, patents taken out by nationals of developing countries play an even less important role. Thus, according to the Indian Report, if regard is had to the number of patents for which renewal fees have been paid after a certain time period (which gives a rough idea of the value attached to the invention by the patentee), the proportion of domestic to foreign patentees would be less than for patents as a whole. This is an important consideration because it is recognized that the number of patents which are actively worked within a country, either by the patentees themselves or by their licensees, are only a very small percentage of the total number of patents on the register.

B. Motives in applying for patents abroad

73. The question of why foreigners take out patents in other countries has many economic and legal facets. In the view of the above-mentioned Indian Report, the reasons why foreigners take out patents in other countries are as follow:

> "... These patents are therefore taken not in the interests of the economy of the country granting the patent, or with a view to manufacturing them, but with the main object of protecting an export market from competition from rival manufacturers, particularly those in other parts of the world".[32]

74. While this aspect of the problem is highlighted by the Indian Report and by other commentators,[33] it is not the sole explanation for foreigners taking out patents abroad, nor is it certain that it is the most important. Thus there are many instances where the inventor or the enterprise holding the patent seeks to prevent other foreign or local enterprises from manufacturing the patented product or carrying out the process for which the invention is essential, with the intention of itself either manufacturing the product or carrying out the process in the foreign country. Another purpose sought to be achieved by taking out a patent abroad occurs when the prospective patentee intends neither to manufacture himself nor to import the patented commodity, but rather to license or assign the patent to local enterprises in return for royalties or other considerations. The foreign patentee may also expect commercial advantages from the patent licence rather than, or in addition to, direct financial returns. Thus, licensing agreements whereby a local firm is authorized to utilize the patented invention often contain restrictive provisions requiring the licensee to purchase raw materials from the licensor, to employ his technical personnel, to maintain prices at certain levels, etc.

[30] Information provided in Governments' replies to the Questionnaire.

[31] Op. cit., paras. 25-27.

[32] Op. cit., paras. 28-29.

[33] See, for instance, Dr. Edith Tilton Penrose, *The Economics of the International Patent System*, The Johns Hopkins Press, Baltimore, 1951.

75. Frequently, there may be no explicit economic motivation for filing a patent application abroad, but merely the desire to safeguard the priority rights established by the Paris Union Convention and by similar reciprocal arrangements. As explained above (see paragraph 41), the protection granted by the right of priority is limited to a fixed period of twelve months. It may therefore be regarded as essential to register a patent in other countries in order that these rights may be protected beyond this fixed period, even if the prospective patentee has no immediate plans for exploiting the patented invention.

76. These problems relating to failure to work the patent, restrictive provisions in licence agreements and the level of royalties will be dealt with separately in the subsequent chapters of this report. It is proposed here to set forth the views of the different Governments as to the various factors involved in taking out patents in foreign countries. What follows is based on data furnished and opinions expressed in Government replies to the Questionnaire and on the treatment extended in the respective countries to foreign patent applicants.

C. Attitudes of Governments on the protection of foreign patentees

77. In the case of India, which is not a member of the Paris Union but extends unqualified national treatment to foreign inventors, the patent system has been established for over a century. Hardly 10 per cent of the patents granted under the Indian patent law are of Indian derivation and more than 90 per cent of the patents are owned by foreigners. The Indian reply to the Questionnaire emphasizes that this position has not improved since the attainment of independence. The reply states that India has not derived any substantial benefits from these patents and attributes this on the one hand to the reluctance of patentees to work their inventions in India, either by themselves or by granting licences to Indian concerns, and on the other, to the fact that India is not sufficiently technologically advanced to work most of the patented inventions. Accordingly, the reply concludes that the patent system, which yields advantages to the highly industrialized countries, does not produce the same results when applied to the under-developed countries; the foreign-owned patents are not taken out to protect their local utilization, but rather to protect the export market in that country from competition by rival, mostly foreign, manufacturers.

78. In Lebanon, which is a member of the Paris Union and extends national treatment to foreign patentees, the Government's reply states that a great number of foreign patents are not used in Lebanon, and that the reason for their being taken out is to preserve patent rights.

79. The Government of Cuba expresses the opinion that, although a large number of foreign inventions have been patented in Cuba, the country has not derived any benefits from this fact, since the patents have been used to monopolize the importation of products that the patents protect. Cuba is a member of the Paris Union and extends national treatment to foreigners.

80. The three replies summarized above support the view that inventors apply for patents in other countries mainly in order to be able to import their products without competition from other foreign or local manufacturers. Other replies, referred to in the following paragraphs, while not necessarily ignoring this factor, emphasize the other important factors involved in the taking out of patents in foreign countries. These replies stress the advantages of the patent system in the public interest of all countries in assisting the spread of technology through publication of details of inventions which have been patented; manufacturing and investing capital in the patenting country; as well as that of licensing and transferring the patent to a local enterprise in consideration for royalties. These were the motivations that were stressed in the bulk of the replies received that essayed an evaluation of the economic effect of granting patents to foreigners.

81. In the United Kingdom, where rather more than half the applications for patents emanate from abroad, the Government's reply points out that from very early days the Government has encouraged foreigners as well as nationals to make their inventions known. The British Government concludes by stating that the advantages and incentives to invent, disclose and develop the inventions, as well as the inducement to invest capital, inherent in the patent system, outweigh the disadvantages inherent in granting monopolies, and that these advantages apply to countries which export patents as well as to those which are the recipients of patents.

82. In Canada, where the patent system does not differentiate between foreign and domestic inventions and patents are taken out by foreigners roughly at the rate of 95 per cent foreign to 5 per cent domestic, the laws and policy of the Government encourage the entry into the country of new inventions and the setting up of new industries.

83. In France, patent applications of foreign origin accounted for more than 60 per cent of all patent applications filed in France in 1962 and the balance of payments involving the sale and purchase of patents and licence concessions shows a deficit of some 300 million new francs during the period 1957-1962. The Government's reply states that this data suggests that France is not primarily, but is to a large extent, a recipient of foreign know-how. The access to foreign know-how has been, in the opinion of the French Government, facilitated by the existence of a patent system which "by giving the owners of such know-how the assurance of being protected in France both by domestic legislation and by the International Convention, enables them to licence or assign their patent rights with complete security".

84. In Israel, where the patent law does not distinguish between Israel and foreign inventors, it is considered that the utilization of foreign inventions by Israel enterprises would for all practical purposes be rendered impossible were not patent protection granted to foreign inventors. The reply also notes that liberally granted patent protection has facilitated the creation of new industries and in certain cases prevented the establishment of a large number of small enterprises competing in a very restrictive home market, which would have been detrimental to the economy of the country.

85. Japan is one of the few countries where the number of domestic patent applications is larger than that of foreign applications, although the number of

foreign applications is still very substantial; two-thirds of the patentees and patent applications are in the name of Japanese nationals. The Government's strong position in favour of the extension of patent protection to foreign inventors is based on the following evaluation: production in Japan involving techniques introduced from foreign countries has increased by 72 per cent at an average annual rate over the last eleven years. This rate of growth is surprisingly high, compared with that of total manufacturing in Japan, which is 21 per cent at an average annual rate. It has been calculated that, if there had been no introduction of foreign technology into Japan, the annual rate of growth in the Japanese manufacturing industry would have been only 19.8 per cent.

86. The introduction of foreign technology into Japan, it is also reported, has contributed to the modernization of equipment and investment in equipment related to the foreign technology. The amount of export of goods manufactured through the assistance of foreign technology during the decade 1951 to 1961 was placed at $1,500 million. On the other side, royalty payments during the same period amounted to $300 million, and the import of materials and parts which were necessary in connexion with the use of foreign technology was $380 million. Hence, the net gain of foreign currency was $820 million. In addition to this, the production made possible by the foreign technology had the effect of reducing imports of similar products. According to the Government reply, the Japanese patent system protects foreigners on the assumption that the satisfactory introduction of foreign-owned technology is contributing greatly to the development of the Japanese industry.

87. The Government of the Federal Republic of Germany states that the supply of inventions and technical know-how to under-developed countries is hindered in most such countries by the inadequate patent protection afforded by them for patents. Furthermore, there have been hindrances in many cases owing to the fact that a number of developing countries are not members of the Paris Union and therefore do not grant patents on the basis of prior filings elsewhere.

88. In the Netherlands, which is mainly a recipient of foreign inventions, the prevailing opinion has been that, due to the existence of a national patent system, foreign patentees are more prepared to have their patented inventions and the related know-how practised by granting licences, and thereby to supply that know-how to interested national industries. The same positive results would not have been achieved if a national patent system did not exist. The Netherlands is a member of the Paris Union and its law makes no distinction between foreign and domestic patentees.

89. A favourable approach to foreign inventors is also reflected in the reply of the Government of the Republic of South Africa. South Africa is a member of the Paris Union and extends national treatment without any distinction between domestic and foreign patentees. The South African reply quotes from the book *A Quarter of a Century of Industrial Practice in South Africa*, by a former Chairman of the South African Board of Trade and Industries:

> "South Africa may succeed, up to a point, in dispensing with foreign capital, but what she certainly cannot do without, without seriously retarding her industrial growth, is these material skills and techniques which can only be drawn from the more highly industrialized countries."

The South African reply concludes that there can be no doubt that the existence of a national patent system protecting foreign patentees has assisted in the industrialization of South Africa, in so far as the engineering, mining and certain secondary industries are concerned.

90. In the Republic of Korea, where the number of nationally-owned patents is surprisingly higher than the number of foreign-owned patents, the Government asserts in its reply that foreign inventions and know-how are imported into the country through the existence of a national patent system. However, the reply points out that many of the foreign inventions and know-how might have been introduced to Korea under private contracts without resort to the patent system. But even in the case of such contracts, the Government of Korea still considers that the patent system has assisted all parties concerned to invest in the country, by assuring them that their interests will be safeguarded. Korea is not a member of the Paris Union, and it extends priority of application rights only to nationals of countries which, by treaty, convention or law, afford similar rights to Korean citizens.

91. The United States of America, which is primarily a supplier of inventions and know-how to other countries, is a member of the Paris Union and applies the national treatment principle to all foreigners, without qualification. Its Government has expressed a clear opinion in favour of protection for foreign inventors under national patent systems. The basis for this view is set forth in the United States reply to the Questionnaire as follows:

> "One element that is considered by a potential investor with respect to an investment involving a patent licensing agreement for production in a particular country, is the matter of effective patent protection in that country. Theoretically, a country could have free access to all of the technology embodied in patents without maintaining a patent system. Often the information disclosed in patents is not sufficient, however, to be of much utility to the potential user. He needs to have the related technology to 'work' the patent. Since patent licenses today usually involve commitments for the provision of technical assistance, the licensee obtains much more than naked patent rights. The local economy benefits by the acquisition through the agreement of valuable industrial techniques and know-how. In addition, dollar costs arising from royalty payments to United States firms are often more than offset by earnings of foreign exchange from increased exports or savings of exchange due to the availability from domestic sources of a product or service previously imported. This is not to say, however, that a foreign investment project involving a patent licensing arrangement in a less-developed country is always beneficial to the less-developed country. On the one hand, it may mean that a particular less-developed country may be giving up cheaper imports and may be diverting some of its economic resources from other activities in which it might be more efficiently engaged. On the other

hand, the project may contribute in one way or another to general economic development and broadening of the industrial base in the less-developed country. These are factors which the less-developed country must weigh in arriving at decisions on an investment project involving a patent licensing arrangement."

92. In the Soviet Union, foreign firms and individuals may secure either a patent or certificate of authorship through the established Soviet legal procedure. Soviet law extends rights to foreign applicants on a reciprocal basis, that is, to nationals of countries in which the patenting of Soviet inventions is permitted. A foreign national who obtains a certificate of authorship or a patent enjoys essentially the same rights as Soviet citizens. A certificate of authorship entitles him to remuneration determined according to the savings realized in the economy through utilization of his invention. If the foreign national secures a patent, he may license or assign it against remuneration to any Soviet organization entitled to conclude foreign trade agreements.[34] The Soviet Union, in its reply, comments as follows on the methods of transfer of technology from the Soviet Union to developing countries:

"The Soviet Union is transmitting to the economically backward countries its foremost scientific and technical attainments, and its foremost experience in production. Passing on these achievements (including also inventions) is done in the most varied ways, in particular by providing technical documents and descriptions of technological processes. The Soviet organizations supply the under-developed countries with equipment of modern design worked out on the basis of the most up-to-date production requirements and taking into account the most recent achievements of science and techniques... Technical achievements are passed on above all by transmitting the corresponding documents and descriptions of technological processes. Many inter-governmental agreements provide for the Soviet Union to deliver drawings and descriptions of technological processes necessary for the output of a product, without collecting a special payment for a license granting the right to produce that product."

93. With respect to Soviet patents or patents held by third parties, the Soviet Union concludes:

"...the inter-governmental agreements include a clause that the documents delivered may be used only within the country concerned for the output of the appropriate products at the projects constructed with the assistance of the USSR, and shall not be delivered to foreign persons, either national or juridical. This is done in order to protect the patent and other interests of the Soviet Union, inasmuch as the delivery of the documents is aimed at a very particular purpose.

"Another question to do with patents which arises regarding the economically under-developed countries concerns patents held by third parties.

"So that the transfer of the right to Soviet inventions already mentioned to the economically under-developed countries is effective, and also so that the supply of equipment to these countries can proceed unhampered, the patent rights of third parties in force in these countries' territory, and in particular of capitalist firms from other States, should not be infringed."

D. Role of unpatented know-how[35]

94. In some replies, it was indicated that the majority of agreements with foreign inventors and foreign enterprises do not involve patents, but are concluded as "special agreements" without any reference to patent protection. This applies, for instance, in Czechoslovakia, where the majority of agreements with countries receiving technological know-how are not based on the patent system and the subject matter of these agreements is mostly undisclosed know-how and practical experience. The Czechoslovak reply emphasizes that no data is available ascertaining to what extent the patent system or its particular features in countries that are recipients of patents and know-how has helped or hindered the conclusion of such "special agreements".

95. The Government of the Republic of Korea has pointed out that many foreign inventions and considerable know-how may have been introduced to the country under direct contract with foreign parties without reference to the patent system. However, it qualified this statement by stating that the mere fact that the patent system existed was an important factor in convincing investors to transfer their technology to the country. This last view is shared by the Government of the Netherlands which, as already stated, has expressed the opinion that, due to the existence of the national patent system, foreign patentees have been more prepared to transfer or license both their patents and the related know-how.

E. Scope of application of "national treatment" principle

96. In the light of the views expressed above, it is of interest to note the number of countries that accord *national treatment* to foreign inventors. As already explained in connexion with the discussion of article 2 of the Paris Union Convention (see paragraph 38), the principle of national treatment is that nationals of foreign countries or others who are domiciled or have effective industrial or commercial establishment therein are guaranteed equality of treatment with nationals in the country granting the patent. This principle is followed by most national patent systems, regardless of whether the country is a member or non-member of the Paris Union, either by virtue of specific statutory enactment or implicitly as a matter of the binding force of treaty obligation. The following countries seem to make no substantive distinction between provisions applicable to domestic patent applicants and those applying to foreign applicants and follow the unqualified principle of national treatment:

Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Ceylon, Colombia, Cuba, Denmark,

[34] See "Assignment and licence agreements with foreign patentees and know-how owners", para. 240, below.

[35] See also chapter III (4) below, on "Assignment and licence agreements with foreign patentees and know-how owners".

Federal Republic of Germany, Finland, France, Hungary, India, Ireland, Israel, Italy, Jamaica, Lebanon, Luxembourg, Mexico, Nepal, Netherlands, New Zealand, Norway, Pakistan, South Africa, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, United States of America, Venezuela, Viet-Nam (Republic of), Yugoslavia.

97. In the above-mentioned countries, foreign applicants are treated alike, except for the right to *priority of application*, regardless of whether they are from countries that are members of the Paris Union.

98. In other countries that are members of the Paris Union, the principle of *national treatment* is qualified by the *principle of reciprocity*. In these countries, patent protection is granted without qualification to the nationals and residents of Paris Union countries, but, in the case of non-Paris Union countries, is extended only to nationals and residents of those foreign countries that grant patents to nationals of the granting country. This is the situation in the following countries:

Czechoslovakia, Iran, Japan, Morocco, Poland, Spain, United Arab Republic.

The following countries, which are not members of the Paris Union, accord national treatment qualified by the principle of reciprocity, i.e. to nationals and residents of those foreign countries that grant patents to nationals of the granting country:

China, El Salvador, Korea (Republic of), Philippines, Union of Soviet Socialist Republics.

99. Some of the countries which accord national treatment to foreigners require that a person not resident in the country appoint, as his *legal agent or representative*, a resident of the country who is empowered to represent him in all matters pertaining to the patent application and in subsequent legal proceedings relating to the patent. This provision is in conformity with article 2 (3) of the Paris Union, which expressly reserves the right under the laws of the member countries of the Union to require the designation of such agents and establish procedural requirements. The following are among those countries which require the appointment of such legal agent or representative:

Argentina, Austria, Czechoslovakia, Denmark, Federal Republic of Germany, France, Hungary, Japan, Korea (Republic of), Philippines, Sweden, Switzerland, Union of Soviet Socialist Republics.

Neither this requirement nor the qualification with respect to reciprocity discussed in paragraph 98 above are regarded as derogations from the basic principle of national treatment.

F. Status of patent legislation in the developing countries

100. As noted earlier, both the countries extending national treatment to foreign patentees and the member States of the Paris Union include countries in every stage of economic development. As the focus of this report is on the problems of the developing countries, their approach to the extension of patent protection to foreigners deserves special consideration. In this connexion, the developing countries may be divided into four categories.

101. In the first group there are a substantial number of developing countries which are members of the Paris Union Convention, have their own patent legislation and extend protection to foreign patentees. These countries include: Brazil, Ceylon, Cuba, Haiti, Israel, Iran, Lebanon, Mexico, Morocco, Syria, Tunisia, United Arab Republic and Viet-Nam (Republic of).

102. A second group of developing countries possess patent legislation, but are not members of the Paris Union. These countries either accord national treatment to foreigners without qualification or qualify the principle of national treatment by the principle of reciprocity. This group includes China, El Salvador, India, Korea (Republic of), Nepal, Pakistan and Philippines.

103. In the third category may be included many newly independent countries which have no patent legislation and which previously depended upon either the French or the United Kingdom patent systems. In the former French territories in Africa, the grant of a patent in France afforded automatic protection to foreigners in the manner prescribed by the French system. Since attaining independence, most of these countries have taken action to provide for continued patent protection to foreign patentees and for the issuance of regional patents through the recent Afro-Malagasy Agreement (see paragraphs 50-56 above).

104. A comparable situation to the one described above exists in former United Kingdom territories. Kenya, Nigeria, Tanganyika, Trinidad and Tobago have reported that they have no separate system for granting patents. Patents already granted in the United Kingdom can be registered in the country, but this means that the only foreigners who can obtain protection in these countries are those who have obtained a patent in the United Kingdom and have registered that patent in the country within a certain period from the date of the United Kingdom patent grant. Of the countries mentioned in this paragraph, Tanganyika and Nigeria have recently become members of the Paris Union.

105. In the fourth and last category of developing countries fall those that have no patent legislation, and obviously no patent protection for foreign inventions. This includes, for example, Indonesia, Sudan and Thailand.[36] However, Indonesia is a member of the Paris Union and the Indonesian Department of Justice is in the process of drafting a patent law. In the meantime, provisional applications for patents may be filed with a special government office pursuant to a special decree issued by the Ministry of Justice. The filing of such application will in due course, when the Patents Act is promulgated, confer on the applicant the priority rights established by the Paris Union.

106. The Government of Sudan has stated, in response to the Questionnaire, that in their country there is no law for the protection of patents and designs, but that provision may be made for the publication of a cautionary notice in the "Gazette of the Republic of the Sudan". The Government expects that, in the course of the country's development, steps will be taken to provide for the issuance of patents.

---

[36] See also prefatory note to the "Synoptic table of major provisions of patent legislation in selected countries" (annex D).

Chapter III

GOVERNMENT REGULATION OF THE EXERCISE OF THE PATENT GRANT

I. Non-use of patented inventions—compulsory working and compulsory licensing provisions

A. Considerations for non-use provisions

107. Statutory provisions for the revocation or compulsory licensing of patents, which have not been commercially exploited in the country within a prescribed time after the patent has been granted, may be found in the patent laws of most industrial and under-developed countries. These provisions against patent non-use usually apply irrespective of whether the invention involved is of national or foreign origin. However, as a historical matter, they originated from concern over the fact that foreign owners of inventions could, by refusing to exploit the patents covering such inventions, prevent the development of national industries which might give employment to nationals and utilize national resources. Another important factor was the fear that foreign patentees could, by excluding other producers of patented articles from the market, monopolize the export of such articles to the country and thereby exact higher prices from domestic consumers.

108. Additional considerations that have been voiced in the more recent patent legislation of certain countries are the following: that the demand for a patented article within the country is not being met, or is being met to a substantial extent by importation from abroad; that markets for the export of the patented commodity capable of being produced within the country are not being supplied; and that the efficient working within the country of other patented inventions is being unfairly prejudiced because of inability to exploit the non-used patent. Obviously, legislation directed to remedying such conditions is not limited to the non-use of patents, but covers situations where their domestic exploitation is deemed inadequate or the patentee's refusal to grant a licence has adverse affects on trade and industrial development.

B. Non-use provisions in national laws

109. The national statutes providing for the compulsory licensing or revocation of patents in the event of no or inadequate use within the country differ with respect to the wording of the standard which is to guide their application by the Patent Office. The legal criteria set forth in the different national laws are summarized in annex D to this report (Synoptic tables of major provisions of patent legislation in selected countries—column 7).[87]

[87] In a Secretariat report prepared in 1953 for the Economic and Social Council analysing the governmental measures relating to restrictive business practices, considerable attention was also devoted to the problem of non-use of patents and the report reproduced the texts of some forty national patent statutes providing for the revocation or compulsory licensing of patents in the event of non-use. (See E/2379, *Economic and Social Council Official Records: Sixteenth Session, Supplement No. 11A*, paragraphs 170 to 183, inclusive; E/2379/Add.2, *Economic and Social Council Official Records: Sixteenth Session, Supplement No. 11B.*) However, these texts and discussion may, in the case of some countries, be affected by more recent legal developments.

110. In order to indicate the scope of the economic considerations which are considered relevant in the case of patent non-use, there is quoted the following comprehensive list of criteria set forth in the relatively recently amended (1950) patent law of India:

"(*a*) That the patented invention, being capable of being commercially worked in India, has not been commercially worked therein or is not being so worked to the fullest extent that is reasonably practicable;

"(*b*) That a demand for the patented article in India is not being met to an adequate extent or on reasonable terms, or is being met to a substantial extent by importation of the patented article from other countries;

"(*c*) That the commercial working of the invention in India is being prevented or hindered by the importation of the patented article from other countries;

"(*d*) That by reason of the refusal of the patentee to grant a licence or licences on reasonable terms:

"(i) A market for the export of the patented article manufactured in India is not being supplied, or

"(ii) The working or efficient working in India of any other patented invention which makes a substantial contribution to the establishment or development of commercial or industrial activities in India is unfairly prejudiced;

"(*e*) That by reason of conditions imposed by the patentee upon the grant of licences under the patent, or upon the purchase, hire or use of the patented article or process, the manufacture, use or sale of materials not protected by the patent or the establishment or development of commercial or industrial activities in India is unfairly prejudiced."

111. The Indian legislation on this point is largely patterned on the prior United Kingdom Patents Law of 1949 and is similar to the legislation of Canada, Ireland, New Zealand, Pakistan, South Africa and to a lesser extent, Israel, the Philippines and Trinidad and Tobago. This supplies some indication that the industrial countries are trying to protect interests within their national economies similar to those sought to be protected by the developing countries.

C. Compulsory licensing vis-à-vis revocation

112. The first laws dealing with patent non-use were adopted prior to the emergence of the corporate age, when patents were essentially employed by the individual patentee. Hence, they provided for the revocation of unused patents (see, e.g., the French Law of 1844, the Belgian Law of 1854, and the Argentine Law of 1864). There are still in existence, mainly in the case of some under-developed countries, statutes which provide for revocation where a patent has not been exploited within two years of its issuance, or

where its use has been discontinued for more than two years, or for even shorter periods of time.

113. Later on, when the exploitation of patents by licensees became more prevalent, consideration was given to the less stringent remedy of compulsory licensing. Thus, there are now many countries, such as Japan, Netherlands, Norway and Sweden, which make provision for the compulsory licensing of non-used patents and no provision for their revocation. The more recent national statutes (with the exception of the Italian Law of 1939) tend to establish a period of time after the issuance of the patent during which no application may be made for a compulsory licence, and a further time period during which the patents are not subject to revocation; many of these statutes follow the time periods set forth in article 5 of the Paris Union (see paragraph 114 below), but there are variations. In some countries, revocation of the patent may take place if the patent is being commercially exploited only outside the country. Mexico has a unique provision whereby, if a patent is not exploited within the first twelve years of its issuance, its term is reduced to twelve years. This is in addition to a provision for compulsory licensing in the event of non-exploitation during the first three years of the patent's life or the interruption of its exploitation thereafter for more than six consecutive months.

114. The trend away from revocation and toward the less stringent remedy of compulsory licensing in the event of non-use has been supported on the ground that patent revocation is inconsistent with the principle of international protection of patentees, unduly harsh on inventors, discouraging to investors who wish to introduce technological innovations and a stimulus to firms to locate their enterprises in locations for which they are not economically suited. The chief legal reason for the national legislative trend toward compulsory licensing is the adoption of article 5 of the Paris Union for the Protection of Industrial Property, which has attempted to standardize (and render more lenient to the patentee) the national compulsory licensing and revocation procedures hitherto prevailing. In article 5, the principle is set forth that patent revocation will be resorted to only if the granting of compulsory licences does not suffice to prevent abuses resulting from the exercise (including the non-use) of patent rights. The standard established is that an unused or inadequately exploited patent is not subject to compulsory licensing until after three years from the date of issuance of the patent, or until after four years from the filing of the application for a patent if the patent was issued within twelve months from filing. The patent is not subject to revocation until two years after the issuance of a compulsory licence to an applicant. A proposal advanced at the latest 1958 Lisbon Conference of the Paris Union to forbid the revocation of unused patents and to have compulsory licensing as the sole remedy was unsuccessful. Similar attempts had been made at prior Conferences.

115. The national laws of some member countries of the Paris Union do not necessarily conform to the standard laid down in article 5. For example, in France, such conformity was not established until 1953. In Belgium, legislation designed to bring the 1854 Patent Act provision with respect to patent non-use in line with article 5 of the Paris Union is currently under consideration. Italy, although a member of the Paris Union, still prescribes revocation as the sole remedy in the case of non-working.

D. Evaluation of non-use provisions

116. Students of the problem have advanced economic arguments both in support of, and in opposition to, the patent non-use laws, also referred to as compulsory working and compulsory licensing statutes. The basic economic justification for such laws is that the non-working of a foreign patent destroys its only valid basis, to bring the economic benefit of the invention to the community, as indicated in paragraphs 107 and 108 above. The economic objections centre about the proposition that such statutes, particularly those relating to compulsory working, are a form of trade protectionism, comparable in their effect to restrictive tariffs and having the same detrimental effect on international trade. Moreover, it may not be economically desirable to exploit an invention within a country; in such a case, the law, by compelling a foreign patentee to work his invention within the country or by encouraging domestic entrepreneurs to exploit the invention, may have the effect of forcing the domestic consumer, particularly in an under-developed country with its relatively thin markets, to pay more for a patented product than if they imported it from a country better qualified to produce it. Other objections to such statutes are that they destroy or diminish the value of patents as an incentive to invention and investment in expensive research facilities; that they will injure small firms that are compelled to license larger competitors; and that they are difficult to administer and an ineffective means of reducing restrictions on industry. The validity of these objections is disputed by the supporters of compulsory licensing, particularly as they apply to the under-developed countries.

E. Practical effects of non-use provisions

117. It is difficult to determine how effective the laws requiring compulsory working and licensing in the event of patent non-use have been in practical operation. The criteria underlying these laws are difficult to interpret and apply. Such statistics as are available, which come primarily from the industrial countries, indicate that administrative or judicial enforcement of the statutes is relatively infrequent. Thus, revocation is almost never demanded. The United Kingdom reports that, over a recent five-year period, seven applications for a compulsory licence based on non-use of the patent were made, of which one was granted and the others withdrawn or abandoned; Canada, during a similar period, that five compulsory licences were requested, two granted and three still pending; Denmark, that seven applications for compulsory licence were made, of which three were granted, three are pending and one has been withdrawn; the Philippines, that eight requests were made, all of them pending; Republic of Korea, one request and one licence granted. In India, four compulsory licences for non-use were requested, and one granted. In Ireland, one request was made; in Israel three, and in Poland seven, but in all three countries no licence has been granted during the five-year period. Norway reports that since 1910 a total of twenty-seven requests for compulsory licences have

been made, a total of eleven licences have been granted, while two have been denied, and eleven shelved or withdrawn. Only three of the cases in question involved Norwegian nationals, while the other twenty-four requests related to patents held by foreign nationals. In fact, regarding the vast majority of requests for compulsory licences mentioned above, the patents were originally issued to foreign nationals. Australia, Cuba, Japan, Morocco, the Netherlands, New Zealand and Switzerland report that there have been no requests for compulsory licences during the last five years.

118. The infrequency of requests for compulsory licensing might, however, indicate that the mere possibility of invoking these statutory provisions has served to make patentees more amenable to exploiting the patents within the country, either directly or through licensing arrangements, than they otherwise might have been. Likewise, the fact that the Government has the power to intervene and fix royalty rates under a compulsory licence in the event of disagreement among the parties, may—in these countries—impel voluntary agreement between patentees and licensees.

119. There are other reasons why it is difficult to ascertain how effective compulsory working and compulsory licensing statutes have been or can be in advancing the economic development of a country. Many patents are frequently taken out, for defensive and other purposes, which are not susceptible of industrial exploitation. Other patents may constitute minor improvements which are not essential to the production of an article and can be easily bypassed in industrial practice. As pointed out in part Two of this report, a wide range of economic factors must be present to support a self-sustaining industrial development in a country, and access to a patent is therefore ineffective in the absence of other necessary factors of production. These considerations apply to both industrial and developing countries, but with probably greater force in the case of the latter, with their special dependence on unpatented technological and management know-how.

120. On the other hand, in the case of the developing countries, one might also consider the administrative advantages of providing for the automatic lapse of patents in the case of non-working beyond a certain period. This may be considered more effective than revocation or compulsory licensing, both of which require government or private initiative to be implemented. By the automatic lapse of the patent, the public becomes possessed of the invention without any need for preliminary administrative or judicial action. On the other hand, an automatic lapse intervening without prior consideration by the Government or application by a third party desirous of working the patent, may reduce the chance of the invention being worked at a later, more conducive stage of development, because of the disappearance of the patent inducement.

F. Compulsory licensing or expropriation in the public interest

121. Besides provisions which are specifically directed to the non-use of patents, there exist more general provisions for compulsory licensing or compensatory expropriation in the public interest. This issue is discussed in detail in section 3 below. As pointed out there, many countries make provision for the compulsory licensing or compensated expropriation of patents where the public interest so requires, even in situations where the patent owner has been exploiting his patent. However, in many cases these provisions for compulsory licensing in the public interest apply only to food and medicinal products. Other statutes provide for the revocation of the patent if it has been used in a manner prejudicial to the public interest or to the interests of third persons.

G. Interdependent patents

122. A substantial number of countries (e.g., Japan, New Zealand, Norway, Portugal, Switzerland) have adopted laws which provide that the owner of a so-called "improvement patent" may obtain a licence under the basic patent if he satisfies the conditions set forth in the statute, including the payment of appropriate compensation, affording proper security to the owner of the basic patent and demonstrating that the improvement patent constitutes a notable technical advance. When the owner of the improvement patent obtains a licence under the basic patent, the owner of the basic patent is, as a rule, entitled to a cross-licence under the improvement patent. This provision is applicable to situations where basic patents are not being exploited within the country.

H. Restrictive conditions regarding non-use of patents

123. A number of patent laws contain no statutory provision dealing with the non-use of patents. Yet, even in the absence of such statutory provisions, the problem of non-use has been dealt with. Thus, in the United States, the mere non-use of the patented invention is not a ground for attacking a patent or preventing the patentee from obtaining injunctive relief against infringers. However, agreements among enterprises not to use a patented invention involving the fencing in of the patentee against competitors or the "blocking" of a competing technology, have been held by the courts to constitute violations of the anti-trust law (which is discussed in the next section of this report). Where patent non-use is found to be part of an effort to foreclose competition or shows an intent to monopolize, it violates sections 1 and 2 of the Sherman Anti-Trust Act. The consequences of being found guilty of such violation is that the violator may suffer the loss or diminution of his patent rights. Independently of the situation that obtains in the United States, the suggestion has been advanced that the national policy with respect to the non-use of patents should not be considered in isolation, but should be co-ordinated with the general policy of the country with respect to restrictive business practices.

I. Payment of fees

124. There should also be noted an administrative factor which serves to bring about the voluntary abandonment of unused patents. This is the requirement that all patentees in most countries pay annual or periodic fees, which usually increase with the age

of the patent. The size of these payments may be an important factor in encouraging the voluntary abandonment of unused patents.

2. Safeguards against abuses of the patent privilege

A. Restrictive and monopoly arrangements

125. As pointed out earlier, the owner of a patent may either retain exclusive control over it, or transfer or assign it to another person, or license it to other persons. In the event a patentee retains full control of his patent and decides not to exploit it, he becomes subject to the national compulsory working and compulsory use statutes described in the preceding chapter. This chapter will concern itself with other restrictive business practices connected with the exploitation of patents that are considered under national legislation to be abuses of the patent privilege. The most frequent of such restrictive business practices are the conditions and limitations to be found in patent licence and transfer agreements, such as requirements to use patented and unpatented materials supplied by the patentee ("tie-in" clauses); price fixing; limitations of output and sale; excessive royalties; and payment of royalties for unused patents.

B. Measures contained in national patent legislation

126. Unlike the situation with respect to non-use of patents, many countries have no legislation or other legal provision specifically relating to restrictive business provisions in patent licence agreements. Among these are: Ceylon, Czechoslovakia, El Salvador, Korea (Republic of), Luxembourg, Nepal, Pakistan, Poland, Switzerland, Trinidad and Tobago and Viet-Nam (Republic of).

127. The United Arab Republic reports that, while it has no definite laws for the regulation and exploitation of patents and royalties: "Each case is studied individually according to the conditions and obligations stipulated in contract." India, which currently has no patent or antitrust provisions bearing on the subject of restrictive business practices in patent licence agreements, states that:

> "The prevalence of restrictive trade practices is detrimental to the interest of public generally and therefore the question of introducing in the new Patents Bill a provision aiming at prevention of abuse of monopoly by restrictive practice is under consideration."

Italy, which is a member of the European Economic Community and subject to the antitrust provisions of articles 85 and 86 of the Rome Treaty establishing the Community (which will be discussed later in this report, see paragraphs 167 *et seq.*, below), also indicates that national legislation for the regulation of restrictive business practices is in the course of consideration.

128. National legislative provisions directed at restrictive business practices may be contained either in the patent law itself or in laws applicable to restrictive business practices generally. Illustrative of the former type of provision is the statutory provision to be found in the patent laws of Australia, Ireland, New Zealand, South Africa and the United Kingdom, making unlawful agreements requiring a patent licensee to purchase unpatented articles, or to buy materials only from the patentee, or not to use articles supplied by persons other than the patentee.

129. In the United States, restrictive arrangements of the type described above, which are known as "tie-in" clauses, while not regulated by the patent statute, have frequently been the basis whereby the courts have denied a patentee protection against the direct or contributory infringement of his patent. The rationale underlying these decisions is that a patentee engaging in a tie-in practice subverts the policy underlying the patent law, by seeking to restrain commerce in patented or unpatented articles not within the monopoly granted by the patent on which he is suing.

130. The patent statutes of New Zealand and South Africa also provide that any contract for the payment of royalties after the term of the patent expires is voidable at the option of either party. The justification advanced for this legislative provision is that such a contractual arrangement is not within the boundaries of the monopoly granted by the patent.

131. The more usual approach has been to rely on general legislation to curb restrictive business practices in patent licence and transfer agreements. One of the reasons for such reliance is that these business restrictions are considered against public policy, regardless of whether they involve patent misuse. The other reason is that the detection, and prevention and control, of restrictive business practices requires extensive administrative facilities and specially trained personnel for investigation and enforcement that are not within the capacity of Patent Offices or Industrial Property Offices, and cannot efficiently be divided as between cases involving patents and those which do not. The operation of such general legislation in the patent field is discussed in the subsequent paragraphs.

132. A few countries have indicated that their civil law may apply to restrictive business practices in patent assignment and licence agreements (Mexico) or that such practices may be regulated by the Central Bank (Philippines).

C. Practices permissible under the patent grant

133. Even in countries which have general antitrust legislation directed against restrictive business practices, some of these restrictions, when imposed by a patentee upon his licensee, are regarded as within the scope of the patent grant and are not considered to be anti-competitive in nature or in conflict with the policy underlying the antitrust legislation. The question of what is within or without the proper scope of the patent grant is one upon which there exist both a substantial body of agreement and differences of opinion.

134. Section 20 (1) of the German law against Restrictions of Competition of 27 July 1957 indicates that restrictions on a licensee in respect of the nature, extent, quality, place or time of the licensee's exercise of the patent right do not go beyond the scope of that right and hence are exempt from the application of the statutory antitrust prohibitions.

135. The patent licence restrictions thus removed from the application of the German antitrust law appear to be identical with those patent licence restrictions which, according to a recent communication issued by the Commission of the European Economic Community, are within the scope of the patent right and hence not considered subject to the prohibitions of article 85 (1) of the Rome Treaty, the basic antitrust provision of the European Economic Community. These are:

"Obligations imposed on the licensee which have as their object:

"1. Limitation to certain means of exploiting the invention which are contemplated by the law on patents (manufacture, use, distribution);

"2. Limitation:

"(*a*) Of the manufacture of the patented product,

"(*b*) Of the application of the patented process, to technically defined areas of application;

"3. Limitation of the number of products to be manufactured or of the number of times the right is exercised;

"4. Limitation on the exercise of the right:

"(*a*) In time (a licence of a shorter duration than the patent),

"(*b*) In space (a regional licence for a part of the territory for which the patent was granted, a licence limited to exploitation in a given place or to a specified factory),

"(*c*) Personal limitations (limitations of the licensee's power to alienate, such as a prohibition against assigning the licence or granting sub-licences)."

136. In considering the above list of patent licence restrictions falling within the patent grant, it should be noted that the Commission does not regard the list as all inclusive. Also, these restrictive conditions have been declared outside the scope of article 85 (1) of the Rome Treaty only in the case of simple patent licence agreements; the Commission specifically refrained from passing judgement with respect to patent pools, reciprocal licences and multiple parallel licences involving such restrictions. Moreover, the Commission's clearance of these restrictions as within the prohibition of article 85 (1) is limited to provisions which do not exceed the duration of the validity of the patent.

137. In the United States, the courts have generally upheld similar patent licence restrictions as being "reasonably within the reward of the patentee" under the patent laws. However, such arrangements are scrutinized by the courts when they are part of a cross-licensing or patent pool arrangement, to determine whether they unreasonably restrain competition or monopolize trade in violation of law.

138. In Japan, article 23 of the Anti-Monopoly Law provides that the law shall not apply to acts recognized to be within the execution of rights under the Patent Law. Restrictive provisions limiting the licencee's field of operation, output and geographical area are regarded as within the patentee's power.

D. Measures contained in general antitrust legislation

139. This report will next discuss the situation in the following countries which possess general antitrust legislation which is applicable to restrictive business practices in patent assignment and licence agreements: Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Ireland, Japan, Netherlands, Norway, Sweden, United Kingdom and United States. While these are all industrialized countries, their practices may be of considerable interest to developing countries considering legislation in this field.

140. The discussion will deal first with those countries for which there has been made available only general information concerning the scope of the antitrust legislation and then with those for which there is available more detailed information as to particular restrictive business practices that are prohibited or regulated by such legislation.

141. In Belgium, the recently enacted law of 27 May 1960, directed against the abuse of economic power, may apply either to the patent owner or his licensee, if such abuse can be shown. An abuse of economic power exists when one or several persons possessing economic power have harmed the public interest by practices which distort or restrain the normal play of competition or which impair the economic freedom of producers, distributors or consumers, or the development of production or exchange. Economic power is defined as the power which such person or persons have, through industrial, commercial, agricultural or financial activities, to exercise a dominant influence on the supply of goods or capital or on the price and quality of a specific commodity or service. Belgium also recognizes the applicability of the antitrust prohibitions of the European Economic Community, which will be discussed in para. 166 *et seq.*, below.

142. In France, article 59 *bis* of the 1945 Price Ordinance prohibits every concerted action, convention, combine, express or implied, or trade coalition which has the object or may have the effect of interfering with full competition by hindering the reduction of productive costs or selling prices or by encouraging the artificial increase of prices. Article 37 of the Price Ordinance forbids unjustified refusals to sell or to render services; discriminatory sales terms or prices not justified by cost factors; tie-in clauses; and minimum resale price maintenance. It is possible to obtain an administrative exemption from the minimum resale price prohibition, especially in the case of patented or guaranteed articles, but the authorities have been sparing in granting such exemptions. Patent licence agreements may in certain circumstances violate the national antitrust legislation.

143. In the Netherlands, the Economic Competition Act of 1958 requires any regulation of competition, except those exempted by general regulation or special dispensation, to be registered with the Ministry of Economic Affairs. The Minister may issue general orders declaring certain classes and types of restrictive clauses to be invalid, or individual orders invalidating a specific regulation or competition. The basis for such action is that the regulation of competition has a harmful effect on the public interest. Patent licence agreements may violate the Economic Competition Act of 1958, if they embody practices or clauses extending beyond the exclusive rights of the patentee and not construed as an essential corollary of those rights.

144. In Ireland, the Restrictive Trade Practices Acts of 1953 and 1959 provide for inquiries and reports by the Fair Trade Commission, on the basis of which the Commission may make orders which, when con-

firmed by act of the Parliament, may prohibit certain restrictive and unfair practices in relation to the supply and distribution of the goods concerned.

145. In Finland, the basic antitrust law is the Law on Restriction of Competition of 18 January 1957. This law applies to agreements which require the contraction or restriction of entrepreneurial activity or demand the observance of certain prices or practices or which restrict or are intended to restrict the contracting parties' freedom of competition in some other manner, and to other restrictions of competition. It also applies to enterprises which have "such a dominating position in some field of entrepreneurial activity that competition must be deemed to be lacking in this sphere or to be essentially restricted". In the latter connexion, it is recognized that a patent is a monopoly permitted by law, and accordingly: "Only restraints of competition associated with the patent but not belonging essentially to the patent are governed by the legal regulations relating to restriction of competition."

146. Denmark, Norway and Sweden have antitrust legislation similar to that obtaining in Finland, in that enterprises are required to supply to the Government information concerning restrictive business practices; a register of such information is maintained; and antitrust enforcement is based to a large extent on the principle that publicity and governmental investigation will prove effective, in most cases, in curbing harmful restrictive business practices.

147. In Canada, the Combines Investigation Act, 1927-46, prohibiting combinations which restrain trade or commerce, is applicable to patent licence agreements. The statute contains a specific provision that, in any case where the exclusive rights conferred by patents have been used so as to (*a*) unduly limit the facilities for transporting, producing, supplying, or dealing with an article or commodity which may be the subject of trade or commerce, (*b*) unduly restrain or injure trade or commerce in such article or commodity, (*c*) unduly prevent or limit the production of such article or commodity or unreasonably enhance its price, or (*d*) unduly prevent or lessen competition in such article or commodity, the court may issue preventive orders. Such orders may declare any agreement relating to the use of the patent void in whole or in part, restrain the carrying out of provisions of such agreements, or direct the granting of licences under the patents involved to such persons and under such terms and conditions as the court may deem proper.

148. Restrictive business practices in the United Kingdom are governed by two basic laws, the Restrictive Trade Practices Act of 1956 and the Monopolies and Restrictive Practices (Inquiry and Controls) Acts of 1948 and 1953, as amended by the Restrictive Trade Practices Act of 1956. The Restrictive Trade Practices Act of 1956, part I, applies to any agreement, between two or more persons carrying on manufacturing, sales or processing activities within the United Kingdom, containing restrictions as to prices to be charged or quoted; terms or conditions of manufacture or sale; quality of goods to be produced, supplied or acquired; types of manufacturing processes to be applied to goods or the quality or kind of goods to which such processes are to be applied; or the persons to or from whom or the places in which goods are to be bought or sold or manufacturing processes applied. All such agreements are to be registered with a Registrar of Restrictive Trade Agreements, and judicially investigated by a Restrictive Practices Court in order to declare whether or not such restrictions are contrary to the public interest. If any such restriction is declared contrary to the public interest, it is void.

149. If a patent licence or assignment contains none of the above enumerated restrictions except in respect of an invention to which the patent relates or of articles made by the use of that invention, the Restrictive Trade Practices Act of 1956 does not apply. Agreements relating only to exports are not subject to registration with the Registrar and adjudication by the Court, but must be notified to the Board of Trade; however, this is not true of agreements involving both domestic and export transactions, which are subject to the procedures of the 1956 Act.

150. The Monopolies and Restrictive Practices (Inquiry and Control) Acts of 1948 and 1953, as amended, provide that, if the Board of Trade considers that certain specified conditions prevail in respect of the supply of goods, or the application of any process to goods or the export of goods from the United Kingdom, it may refer such matters to a Monopolies Commission for investigation and report. Currently excluded from this requirement are all such agreements that are required to be registered under the Restrictive Trade Practices Act of 1956. The report of the Monopolies Commission may, and in most cases must, be laid before each House of Parliament. If the House of Commons by resolution declares that conditions operate or may be expected to operate against the public interest, an application may be made to the Comptroller-General of Patents under section 40 of the Patents Act of 1949. If it appears to the Comptroller-General that such conditions in a patent licence restrict the use of the invention by licensees or the right of the patentee to grant other licences under the patent, or the patentee refuses to grant licences on reasonable terms, the Comptroller-General may cancel or modify such conditions or order the patent to be endorsed with the words "licences of right". The effect of such an endorsement is that any person is thereafter entitled to a licence on such terms as, failing agreement with the patentee, are determined by the Comptroller-General.

151. The United Kingdom Board of Trade is at present conducting a comprehensive review of legislation on monopolies and restrictive practices, but no proposals or decisions have yet been announced.

152. In the Federal Republic of Germany, section 20 of the Law Against Restrictions of Competition of 27 July 1957 contains prohibitions against restrictions involved in the transfer of patents, utility designs and rights relating to the protection of new plant varieties, and the licences to such rights, and section 21 of that Act indicates that similar provisions are applicable in the field of unpatented technology or know-how. Under section 20 (1) of this law, patent transfer and licence agreements are ineffective, in so far as they impose restrictions on the transferee or licensee which go beyond the scope of patent. (There have already been mentioned (see paras. 133-138, above) certain types of patent licence restrictions that the statute designates as being within the scope of the patent

grant.) Paragraph (2) of section 20 sets forth other restrictions on the transfer or licensing of patent rights which are not prohibited under paragraph (1), to the extent that these restrictions do not extend beyond the duration of the transferred or licensed right; these will be discussed later in connexion with the effect of antitrust legislation on specific restrictive business practices (see para. 155 *et seq.*, below). Under paragraph (3) of section 20, the Cartel Authority may grant permission for restrictive agreements of the type prohibited by paragraph (1), "if the freedom of the transferee or licensee or of other enterprises to carry on business activities is not unreasonably restricted and competition in the market is not considerably prejudiced" by the restrictions. The concluding paragraph (4) of section 20 provides that the basic antitrust prohibition and exemptions contained in sections 1 to 14 of the 1957 Act remain unaffected by section 20.

153. In Japan, as already indicated (see para. 138, above), certain restrictions that are within the patent grant are recognized as not being inconsistent with anti-monopoly policy. However, the unreasonable restraint of competition or unreasonable restriction of business activities on the part of other entrepreneurs, involving abuse of the patent right, are subject to the Law relating to Prohibition of Private Monopolization and Methods of Preserving Fair Trade, hereinafter referred to as the Anti-Monopoly Law. The application of the Anti-Monopoly Law to specific restrictive business practices is set forth below (see para. 156, *et seq.*).

154. In the United States, section 1 of the Sherman Act of 1890 prohibits combinations, agreements and understandings among competitors which restrain the domestic and foreign commerce of the United States and section 2 of that enactment prohibits the monopolization or attempted monopolization of such commerce. These provisions are in appropriate circumstances applied against the parties to patent assignment and licensing agreements and subject such parties to both civil and criminal proceedings instituted by the Department of Justice and to treble damage suits by private persons who can show that they have been injured by the restrictive business practices in question. In addition, "tie-in" clauses in patent licence agreements have been held illegal, not only under section 1 of the Sherman Act but also under section 3 of the Clayton Act; the enforcement of the latter statute may be either at the hands of the Department of Justice or of the Federal Trade Commission. A civil suit brought by the Department of Justice may result not only in terminating the complained of restrictions, but in rendering unenforceable, either permanently or for limited periods of time, the patents involved in such restrictions. It may also result in requiring the patentee to issue licences to all applicants upon the payment of uniform reasonable royalties.

"Tie-in" clauses

155. The insertion of a provision in a patent licence agreement requiring the licensee to use patented or unpatented materials supplied by the licensor, or not to procure such materials from any other source, has, as has already been indicated, been declared contrary to the patent legislation of the United Kingdom and several other British Commonwealth countries (see para. 128, above). Such "tie-in" clauses have also been held or stated to be illegal under the general antitrust legislation of the United States, the Federal Republic of Germany, Japan, and the European Economic Community. However, in the three latter cases, if the use of the "tied-in" material is indispensable to ensure the technically unobjectionable exploitation of the patent, the restriction may be legal.

Fixing resale prices of patented products

156. In Japan, the Federal Republic of Germany and the United States, the right to designate the sales price at which a manufacturing licensee may sell lies within the power of the patentee. However, where such provisions have been aimed at or resulted in industry-wide price fixing, or are part of a cross licensing or multiple licence arrangement, they have been held to violate the United States antitrust laws. Similarly, in the Federal Republic of Germany patent pooling arrangements and compulsory package licences containing such restrictions may be void.

157. In the Federal Republic of Germany, the fixing by a patentee or licensee of a resale price at which wholesalers and retailers may sell is possible only upon compliance with section 16 of the Law Against Restrictions of Competition, authorizing such resale price maintenance for trade-marked goods but requiring the registration with the Federal Cartel Authority of agreements fixing such prices.

158. In the United States, a patentee may fix the resale price only of his manufacturing licensees; the sale of a patented product terminates the seller's control over it and exhausts the seller's right to control its resale price. Hence, in the United States, a patent licensing programme which attempts to control the prices of wholesalers and retailers contravenes the Sherman Act.

159. In Japan, the patentee does not, as a rule, have the right to designate the resale price of a patented article; a patentee or licensee desiring to designate a resale price must apply to the Fair Trade Commission under article 24-2 of the Anti-Monopoly Law. The Commission has thus far allowed such resale price requirements in the case of nine commodities.

160. In Finland, under section 12 of the Law on Restriction of Competition, the Cartel Office can forbid an enterprise from either fixing minimum resale prices or from suggesting prices unless it is expressly stated that the suggested price may be undercut when the Cartel Office deems that such a restraint on competition will be injurious to the consumer. The Swedish Law of 1953 to Counteract Certain Acts in Restraint of Competition, as amended in 1956, forbids resale price agreements; while the Freedom of Commerce Board may grant exemptions from this prohibition, it has done so in only a few cases.

Restrictions on sales territories

161. As indicated earlier, the limitation of a licensee to selling a product within a particular area of the country is within the patent right. However, it has been held in the United States that the purchaser of a patented article in one part of the United States may resell it anywhere in the United States despite such territorial restriction. Moreover, patent rights granted by a United States or Japanese patent are only

co-extensive with the geographical limits of the country, and do not justify an agreement by a licensee not to export the patented product from the country, which has been held illegal under the laws of those two countries.

Royalties for unused patents

162. In Japan, Federal Republic of Germany, and the United States, the requirement of the payment of royalties by a licensee covering patents which he is not using is not in itself legally objectionable. However, where a patentee coerces a licensee to accept a licence under one patent on condition that the licensee accept licences under another patent or a whole package of patents (so-called "compulsory package licensing"), the scheme may be attacked as beyond the grant of the patent monopoly and as a violation of the antitrust law.

163. In Brazil, special regulations have recently been issued under the Transfer of Profits Act, which apply to the use of patents and to the payment of royalties. In order to receive governmental approval for patent licence agreements, it is necessary to prove that the licensee is in fact exploiting the patented invention, and that the patent is not a mere fiction in the contract, designed to justify the payment of royalties.[38]

Cross-licensing and patent-pooling arrangements

164. Limitation of a licensee's territory or field of operation, the fixing of his resale price and the limitation of his output are proper exercises of the patent power held by individual patentees. However, where cross-licensing and patent-pooling arrangements are involved, different considerations obtain. In the United States, it has been judicially recognized that cross-licensing or patent-pooling may be necessary to resolve patent conflicts or to utilize mutually dependent or blocking patents; in such circumstances, they promote rather than restrain competition. On the other hand, such arrangements necessarily involve co-operation among competitors that may lead to unreasonable restraints of trade violating the antitrust laws. In any given situation, a determination of antitrust legality therefore requires an examination of the purpose, the power and the products of the parties involved. Accordingly, in many situations, patent pools and cross-licences involving price-fixing, division of fields, suppression of the sale of unpatented products and similar practices have been held unreasonable and to violate the antitrust laws.

E. International effects of restrictive arrangements

165. While most countries do not have laws preventing patent misuse and restrictive business practices, several countries, as the preceding paragraphs of this report have shown, have taken legislative, administrative or judicial action against such restrictive business practices (which may involve patent misuse) as tie-in sales; the fixing of the resale prices of wholesalers and retailers and, in some cases, of manufacturing licensees; agreements not to export or not to sell in designated areas; compulsory package licences; allocations of territories; and limitations of output. These laws and decisions take no account of the domestic or foreign nationality of the patentees or licensees involved; the basis of the jurisdiction exercised by the national authorities is the existence of a domestic patent, issued by the national government, and the imposition by the patentee (or the licensee) of restrictions on the exercise of that patent that are considered to be contrary to the public interest or to the policy of the country. From the standpoint of that public policy, the question of whether foreign or domestic nationals are involved in the patent abuse is usually not a consideration.

166. There is no international convention or rule of law to prevent national governments from condemning or taking some legal action against abuses of patents issued by them. On the contrary, the Paris Convention expressly provides that each member State may adopt legislation providing for the grant of compulsory licences in order to prevent abuses in the exercise of patent rights (article 5, para. A2). The question has been raised at times, however, whether, as a practical matter, national governments can adequately cope with the problem of harmful restrictive business practices in international patent licensing agreements, i.e., agreements where one of the parties or the licensed inventions are of foreign origin. It is therefore in order to set forth in some detail two currently functioning multilateral treaties dealing with restrictive business practices involving international trade, the Paris Treaty of 1951 establishing the European Coal and Steel Community and the Rome Treaty of 1957 establishing the European Economic Community. Under these two treaties, six countries—Belgium, Federal Republic of Germany, France, Italy, Luxembourg, and the Netherlands—have subscribed to supra-national programmes for the prevention and control of restrictive business practices, affecting—though not limited to—patented articles and processes.

167. The specific restrictive practices against which articles 85 and 86 of the Rome Treaty Establishing the European Economic Community are directed are horizontal and vertical (resale) price fixing, whether accomplished directly or indirectly; the limiting or controlling of production, distribution, technical development or investment; dividing of markets or sources of supply; tie-in sales; the application of unequal conditions for equivalent goods or services vis-à-vis other contracting parties, to the competitive disadvantage of such parties; and the fixing, directly or indirectly, of other conditions of transacting business. Such provisions are prohibited under article 85 (1) and (2) of the Rome Treaty when they involve agreements between enterprises, decisions of associations of enterprises, and concerted practices "which are apt to affect the commerce between Member States and . . . have as their object or effect the prevention, restriction or adulteration of competition within the Common Market".

168. Under article 85 (3) of the Rome Treaty, the Commission of the European Economic Community has the authority to exempt from the prohibitions of article 85 (1) and (2), agreements, decisions or concerted practices "which contribute to the improvement

[38] See also section 4 below, "Assignment and licence agreements with foreign patentees and know-how owners".

of the production or distribution of commodities or to the promotion of technological or economic progress". However, an exempted arrangement must meet not only this test but three additional safeguards. The restrictive arrangement:

(*a*) Must reserve "an appropriate share of the resulting profit to the consumers" (the concept of "profit" is not limited to that of price savings);

(*b*) Must not impose on the enterprises involved restrictions going beyond those necessary for the attainment of the above described rationalization objectives; and

(*c*) Must not enable such enterprises to "eliminate competition in respect of a substantial portion of the commodities involved".

169. Article 86 of the Rome Treaty prohibits, as incompatible with the Common Market, "... the abusive exploitation of a dominant position in the Common Market or a substantial part thereof by one or several enterprises to the extent that it is capable of affecting the commerce between Member States". The practices which it is recognized may result in such an abusive exploitation of market position are, with one exception, similar to those referred to in connexion with article 85. The basic difference is that the cartel restrictive practices covered by article 85 (1) are prohibited unless exempted by the Commission under article 85 (3), whereas the practices of market-dominating concerns covered by article 86 are not forbidden unless they amount to an abuse of market position.

170. Both the Commission of the Common Market and the national antitrust authorities of the six countries constituting the European Common Market have the authority to apply articles 85 (1) and (2) and 86 of the Rome Treaty. However, only the Commission can grant antitrust exemptions under article 85 (3). The Commission is given far-reaching investigative powers and the power to impose heavy fines or penalties not only in connexion with its substantive decisions, but also in connextion with false information given it or failure to comply with its investigative requests.

171. Persons who wish to have their agreements exempted pursuant to article 85 (3) of the Rome Treaty are generally required to register such agreements with the Commission. To date thousands of such agreements have been filed with the Commission, but the Commission has been very slow in arriving at any definitive policies. The only declaration of policy that the Commission has made with regard to patent licence agreements is the one referred to earlier in this section of the report. In addition to the restrictions already mentioned as falling within the scope of the patent grant and therefore not prohibited by article 85 (1), the Commission has indicated that it will not regard that article as prohibiting an agreement by the licensor to grant no other licences and to refrain from exploiting the invention himself, and commitments to communicate unpatented know-how acquired in the course of exploiting the licensed inventions or to grant licences on improvements or on new patent applications. However, in the latter connexion, reciprocal cross-licensing of patents and know-how by the licensee is valid only if it is not exclusive and if the licensor has assumed analogous undertakings.

172. The Commission has not yet laid down its policy with respect to the export of patented articles from one member to another member of the Common Market. However, considering the underlying objectives of the Rome Treaty to break down all territorial barriers to trade among its member countries, one of the most important issues pending before the Commission is the extent to which it will authorize conditions in patent licence agreements preventing the export of patented articles outside of the territory for which the licensee holds a licence.

173. Roughly speaking, article 65 of the Paris Treaty establishing the European Coal and Steel Community covers the same type of restrictive business practices as are covered by article 85 of the Rome Treaty. Similarly, its prohibitions apply to all agreements, decisions and concerted practices "tending directly or indirectly to hinder, restrict or adulterate the normal operation of competition within the Common Market". The High Authority of the Community is authorized, under article 65 (2) of the Paris Treaty, to exempt from this prohibition specialization agreements, joint buying and selling arrangements and certain analogous distribution agreements, if it is satisfied that such arrangements:

(1) Contribute to a substantial improvement in the production or distribution of the products involved, and are essential to the achieving of such a result;

(2) Are not more restrictive than is necessary for such purpose; and

(3) Do not give the interested parties the power to fix prices or control or limit the production or sale of a substantial part of the products involved, or protect the parties from effective competition by other enterprises within the Community.

174. The Paris Treaty provisions cover only two basic commodities, coal and steel. The problem of the future permissible scope of patent licensing agreements within the Common Market is therefore primarily dependent on the interpretation of the later Rome Treaty establishing the European Economic Community, which covers all commodities other than those within the jurisdiction of the European Coal and Steel Community.

F. Concluding observations

175. In evaluating the foregoing national and international developments with respect to the control of restrictive business practices, it must be borne in mind that most of these developments are of comparatively recent origin. With the exception of the United States and Canada, the legal developments at the national level have all taken place subsequent to World War II. The dates of the initiation of the two international programmes for the control of restrictive business practices, those of the European Coal and Steel Community and of the European Economic Community, are 1952 and 1957, respectively. Because of this lack of historical background, the complex nature of the problem, and other reasons, it is not possible to say how effective has been the enforcement of the policies against monopoly and restrictive practices laid down in the various national and international measures. It is clear, however that, for the effective enforcement of these policies,

a large number of trained personnel armed with adequate investigative powers, and appropriate legal sanctions, are required.

176. While some under-developed countries, such as Mexico and Argentina, have in the past adopted general antitrust measures, there is no indication that such measures are currently enforced. Brazil has more recently adopted new antitrust legislation, and Australia has under consideration the adoption of such legislation. However, the bulk of the countries with antitrust legislation are industrial countries. If, as is the fact, the industrial countries find difficulty in putting into practical effect the general legal standards formulated in their national antitrust legislation, even more difficulty will be encountered by the under-developed countries. While these difficulties should not deter developing countries from adopting antitrust provisions which might reduce or counteract the restrictive abuses, it seems more appropriate to conditions in developing countries to favour measures for the screening and regulation of assignment and licence agreements (see below, section 4).

177. In this connexion, another problem arises regarding agreements for the licensing or transfer of unpatented technology ("know-how"). Such agreements may contain restrictive conditions that are contrary to the national public policy. It is also recognized that the same type of restrictions may be present in know-how licence agreements as are to be found in patent licence agreements. This suggests that any examination of restrictive business practices in connexion with the transfer of technology to under-developed countries is necessarily incomplete if it confines itself to the consideration of patents and ignores know-how.

178. There are, however, special problems and difficulties with respect to know-how. The economic and legal considerations relevant to restrictions placed on the use of know-how have not received as intensive exploration as has been the case with respect to similar restrictions imposed in connexion with the utilization of patents. Also, national governments have a better legal basis for coping with patent licence restrictions, because a patent is a privilege granted by the State, the limits of which are expressed by the claims and specifications of the patent, and on the exercise of which the State can impose conditions. In the case of know-how, Governments are dealing with a type of private property, the legal status of which is subject to considerable uncertainty and the economic nature of which it is difficult to define with precision. This issue as well as the various aspects of Governments' regulation of patent and know-how assignment and licence agreements are further discussed below in section 4.

3. Public use of patented inventions

179. The preceding sections have discussed how national patent legislation through compulsory working and licensing provisions deals with the problems of non-use and misuse of patents. These provisions reflect a wide-spread public interest in the proper and effective utilization of inventions (as does the exclusion from patentability of certain items affected with a special public interest (see chapter 1.3)).

180. This section will deal with other legal provisions designed to serve this interest by bringing about the use, by governmental agencies or by persons other than the patentee, of patented inventions, without necessary reference to whether the patentee is himself working the invention.

181. The two most common methods for throwing open patented inventions to use by others than the patentee are: (*a*) compulsory licensing of patents to interested parties and (*b*) the expropriation of the patented invention by the Government, with or without the possible consequence of placing the invention within the public domain. In both cases, there arises the issues of the compensation to the patentee and of the administrative or judicial mechanics and authority for determining such compensation.

182. *National laws* differ as to the extent to which, and the legal procedures under which, Governments will be entitled to the use of patented inventions. Thus, the policy of the United Kingdom has been to limit the governmental authority to use inventions to wartime periods and to the purpose of maintaining, controlling and regulating supplies and services essential to the well-being of the community, their equitable distribution and their availability at fair prices. Efforts to give the Government similar powers under peacetime conditions have been unsuccessful. Thus, a recent United Kingdom report has concluded that, in normal times, government departments should be in the same position as any ordinary manufacturer and, if unable to come to terms with the patentee, should apply for a compulsory licence.[39]

183. On the other hand, a recent Indian report has recommended that existing governmental powers to use patented inventions should be expanded, so that all governmental departments, and public corporations run by the Government, would be empowered to use patented inventions on the payment of reasonable compensation as determined by a special statutory procedure, without need to resort to the general procedure of application for compulsory licence.[40]

184. National policies differ, not only as to the circumstances under which Governments may use patented inventions, but as the nature of the public interest which justifies the compulsory licensing or expropriation of patented inventions and as to the procedures employed in connexion therewith. As will be seen from the ensuing summary of national legislation, the public interest which justifies compulsory licensing or expropriation measures may relate to such diverse matters as the national defence, public health,[41] improvements in the balance of trade of the country, development of special resources available in the country or industrial development in general. An examination of these different rules indicates that compulsory licensing or expropriation are considered as special alternatives, used only in exceptional situations. The basic concept of the patent system is that the patent owner—i.e., the inventor or his assignee or licensee—is ordinarily in the best position to assure the most effective exploitation of his invention. Compulsory licensing or expro-

[39] United Kingdom, Final Report, op. cit., paragraphs 56-91.
[40] Indian Report, op. cit., paragraphs 168-174.
[41] As will be seen, public use of patents in the food and drug field function as an alternative to the exclusion of this field from patentability (see chapter 1.3 above).

priation can be effective only where the patented invention is critical to the production of a commodity and the industrial development in question is not dependent also on unpatented technology or other resources within the control of the patentee. The need of a country for a patented product or the utilization of a patented process must be weighed against the possible deterrent effect that compulsory licensing or expropriation may have on the patentee's incentive to engage in further inventions or to invest in the industrial exploitation of his technology.

185. Various provisions for compulsory licensing or expropriation of patents in the public interest are summarized in annex D, Synoptic table of major provisions of patent legislation in selected countries (column 7). However, some provisions of special interest, which were set forth in the Governments' replies to the Questionnaire, will be mentioned here.

186. In *Czechoslovakia*, in cases where the patented invention has a particular importance for the State, such as defence, and no agreement on licensing conditions has been reached between the enterprise needing the invention and the patentee, the Office for Patents and Inventions may decide to allow the State to use the invention without the consent of the patentee. If there is no agreement between the parties regarding compensation, that issue is decided by the courts.

187. The legal provisions in the *Scandinavian* countries are of special interest in view of the revisions suggested by the Nordic Committee. In *Denmark*, there are no provisions regarding compulsory licensing on general grounds of the public interest (as distinguished from non-use of patents). In *Finland*, if an invention proves to be such that the national interest requires its immediate use by the community, the patent may be expropriated by the State for public needs (section 25 of the Patent Act). The expropriation may cover all rights deriving from the patent or be restricted to the right to use the patent for the needs of the State itself. In addition to the possibility of expropriation, if the invention is of general usefulness, it can be ordered to be made generally available to the public (section 35 (2) of the Patent Act). The power both to expropriate an invention and to order that it be made freely available to the public is vested in the Government, and reasonable compensation must be paid to the patentee by the State in both cases. If no agreement is reached as to compensation, the patentee may institute judicial proceedings against the State to determine the compensation (section 36 of the Patent Act). In *Norway*, compulsory licensing may be granted to the Government under the expropriation provisions of section 8 of the Patent Act, irrespective of whether the patentee is working the invention. Under these provisions, it is also possible for the Government to authorize private utilization of the patent at its expense. In *Sweden*, under section 17 of the Patent Act, the Government may decide that an invention shall be free for use by the general public or by the State, notwithstanding any patent. In such a case, however, the patentee is guaranteed full compensation, to be determined in the last instance by the courts. The preliminary report on Nordic patent legislation (prepared by a committee representing Denmark, Finland, Norway and Sweden) proposed to permit compulsory licensing where, in the public interest, there are weighty reasons for such action. This proposal is of special significance in view of the Nordic Committee's recommendation to allow the grant of patents for foodstuffs and drugs, and terminate the present exclusion from patentability under the national laws of the four countries. It indicates that, in the case of inventions relating to foodstuffs and medicines, compulsory licensing provisions are considered by the Committee as preferable to non-patentability.

188. In *El Salvador*, article 12 of the Patents Act provides that patents may be expropriated on grounds of public utility, subject to the payment of compensation. This applies when the unrestricted use of the subject matter of the patent is likely to create an important new sector of national economic resources, and the patentee refuses to allow the exploitation of the patent in the country although this is feasible.

189. In the *Federal Republic of Germany*, the patent law requires the granting of a compulsory licence in the public interest. The public interest must be affected to a considerable extent before a compulsory licence may be justified. The Government's reply mentions that in recent years only a very small number of compulsory licences have been granted, as in most cases voluntary agreement is reached by the parties. However, in the following cases, the courts have decided that the public interest justifies the grant of a compulsory licence: (*a*) supply of urgently required raw materials; (*b*) the need for free use of highly valuable material for scientific purposes; (*c*) avoidance of plant shut-down or large-scale dismissal of employees; (*d*) higher standards of safety and better hygienic conditions in plants.

190. In *France*, there has been in effect since 1953 a special licensing system, in the interest of public health, relating to pharmaceutical processes and products. These provisions are applied when the products involved are not at the disposal of the public in sufficient quantities, do not possess sufficient quality or are sold at too high prices. In this case, a special licence (*licence spéciale*) may be granted by the minister in charge of industrial property, upon the advice of a special commission. The commission is empowered to fix the rate of royalties, as well as other provisions of the licence.

191. In *Hungary*, patents are worked primarily by State enterprises and State organs. The working of patented inventions required by economic needs of the nation may, therefore, be achieved by instructions of superior governmental organs, such as the decree of the competent minister, without recourse to a compulsory licensing procedure. While the working of inventions is enforced by administrative proceedings without any need for court decision, the adequacy of the compensation is determined by the courts.

192. In *India*, section 23 CC of the Patents and Designs Act, 1911, authorizes the Comptroller of Patents, on the application of any interested person, to grant licences under patents relating to (*a*) substances capable of being used as foods, medicine, or insecticides or in the production of such products, or (*b*) processes for producing such substances, or (*c*) inventions capable of being used as part of surgical or curative devices, unless it appears to him that there are good reasons for refusing the application. In set-

tling the terms of licences under this provision, the Comptroller is required to endeavour that the products in question be available to the public at the lowest prices consistent with the patentees' deriving a reasonable benefit from their patent rights. With respect to patents on substances or processes other than those mentioned above, if the Central Government is satisfied that it is expedient or necessary in the public interest that a licence thereunder be granted, it may notify to this effect in the Official Gazette, whereupon the same provisions apply as in the case of foods, medicine and insecticide, to the extent they can be made applicable. However, over a recent five-year period twenty-two compulsory licences were requested on grounds of public interest relating to food and medicines, and only one granted.

193. In *Israel*, section 21 of the Patents Ordinance provides that any interested person may present a petition to the Registrar of Patents alleging that a reasonable requirement of the public with respect to a patented invention has not been satisfied and asking for the grant of a compulsory licence or, in the alternative, for the revocation of the patent. If the parties do not come to an arrangement between themselves, the petition is referred by the Registrar to the court. If it is proved to the satisfaction of the court that the reasonable requirements of the public with reference to the patented invention have not been satisfied, the patentee may be ordered by the court to grant licences on such terms as the court may think just. If the court is of the opinion that the reasonable requirements of the public will not be satisfied by the grant of licences, the patent may be revoked by order of the court. There are under consideration provisions for making available to the public, under a compulsory licence, patent rights relating to the production of food or medical products.

194. In *Japan*, if the working of a patented invention is particularly desired from the viewpoint of public interest, anyone desiring to work that invention may, after obtaining the approval of the Minister of International Trade and Industry, consult the patentee or exclusive licensee for the latter's consent to work the invention. If no agreement is reached, the Minister of International Trade and Industry may order that a licence be given by the patentee or the exclusive licensee.

195. In the *Republic of Korea*, when a patented invention is considered to be useful in the national defence or public interest, the patent rights may be limited or expropriated by the Government, and the invention may be worked by the Government or by any other person licensed by the Government. The Government or the licensee, as the case may be, is required to pay compensation.

196. In the *Netherlands*, the granting of compulsory licences is provided for by articles 34 and 34 A of the Patent Act, which specifies public interest, national defence, and the interest of domestic industry as grounds for granting compulsory licences.

197. In the *Philippines*, compulsory licences may be granted to any person if the patented invention relates to food or medicine or is necessary for the public health or public safety.

198. In *Poland*, a compulsory licence may be granted if the working of the invention is necessary for the national defence or the implementation of the economic plans of the State.

199. In the *Republic of South Africa*, section 48 (1) of the Patent Act provides that, where a patent is in force in respect of a substance capable of being used as food or medicine or in the production of food or medicine, or a process for producing any such substance, or any invention capable of being used as, or as part of, a surgical or a curative device, the Commissioner may, on application made by any person interested, grant a licence on such terms as he thinks fit. In settling the terms of licences under this provision, the Commissioner is asked to endeavour to secure that food, medicine, surgical and curative devices shall be available to the public at the lowest prices consistent with the reasonable advantage that the patentee is supposed to derive from his patent rights.

200. In the *United Kingdom*, the Comptroller-General of Patents is authorized under section 41 of the Patent Act, 1949, to grant an applicant a licence under a patent relating to a substance capable of being used as food or medicine, or in the production of food or medicine, or a process for producing such a substance, or any invention capable of being used as, or as part of, surgical or curative devices. Such an application may be made and the licence granted at any time after the sealing of the patent. These provisions replaced prior legislation which had excluded food and medical products from patent protection.[42]

201. In the *Soviet Union*, compulsory licensing is provided for in the event an invention is of particularly great importance for the State but an agreement is not reached with the patentee for the assignment of the patent or for its licensing. In such a case, the patent may, by decision of the Council of Ministers of the USSR, be compulsorily purchased by the State or an appropriate organization may be given permission to use the invention; payment to the patentee is also provided for. In practice, however, there are no cases where the Government of the USSR has used its right of compulsory purchase of a patent or its right to acquire a licence.

202. In the *United States of America*, the use of patented inventions by the Government is governed by statutory provisions relating to specific situations, such as the national security provision of the Patent Act of 1952, the Tennessee Valley Authority Act and the Atomic Energy Act. The last-named provides that, as to patents applied for before 1 September 1964, the Atomic Energy Commission may declare any patent covering an invention or discovery of primary importance in the atomic energy field to be affected with the public interest. The Commission is thereupon empowered to licence such a patent, making provision for a reasonable royalty to the patent owner. No such compulsory licences have been issued under the Atomic Energy Act. In addition, the United States reply points out that the patent law provides that injunctive relief for patent infringement be granted in accordance with the principles of equity. Therefore, the courts have denied injunctive relief for patent infringement where

[42] This is the same development that is envisaged by the Nordic Committee in its draft law. See paragraph 187 above.

public health and safety demand that the infringing use be continued, and left the patentee with the remedy of damages only.

203. In *Yugoslavia*, a patent may be expropriated if this is in the public interest, which is determined by the Council of Producers of the Federal People's Assembly.

204. In *Canada*, the report of the Commission on Patents of Invention[43] deals with the issue whether inventions intended for or capable of being used for the preparation or production of food or medicine should be subject to special compulsory licensing provisions and answers this question in the affirmative. It recommends the adoption of a provision similar to those in effect in India and the United Kingdom.

4. Assignment and licence agreements with foreign patentees and know-how owners

A. Patented and unpatented technological know-how

205. Agreements to assign or license patents are in the main governed by the general contract law of the country, and not by national patent legislation. However, as has been pointed out in section 2 above, restrictive conditions in such agreements are, in those countries which have such legislation, governed by the antitrust law or, in a few cases, by the patent statute.

206. In addition, under the patent laws of many countries it is required, as a condition of the patent assignment or licence being valid as against third persons, that it be in writing and registered with the appropriate government office, i.e., Patent Office, Office of Industrial Property, or the Ministry charged with supervision of patent matters.

207. The supply of technical know-how to enterprises in developing countries is not limited to patent assignment and licence agreements. In fact, the transfer of patented or unpatented technical know-how may be accomplished through a variety of types of agreements. Among the most common are licence agreements under which the licensee is granted certain rights to manufacture and sell products utilizing inventions, processes, techniques and other industrial property rights of the licensor. Other agreements for the supply of know-how may be embodied in agreements for the supply of technical services; engineering and construction contracts; management contracts; sales service contracts; trademark licences; distributorship agreements; and contracts for the rendering of financial advice and assistance.[44] In practice, these arrangements seldom fall into neat categories. Their common link is their function of providing access to information and expertise embodying the accumulated experience, experimentation and research of the know-how owner.

208. Know-how agreements are thus not necessarily restricted to the transfer of rights to patented inventions. In many cases, such agreements may involve unpatented formulae, processes and blueprints, trade secrets and other forms of industrial property which are as, or more, important to the licensee than the licensor's patent rights. Frequently, the agreements will involve the transfer of know-how through the rendering of services by technical or managerial personnel who have accumulated the necessary skills or experience. Agreements providing for the transfer of unpatented know-how may, in certain cases, replace patent licensing and assignment where the enterprise possessing the know-how is willing to make it available, but feels that the national patent legislation or other circumstances involved in doing business in a specific country, make patent licences or transfers unsafe. The problem has been pointed out in some of the government replies (see paras. 94, 95 above).

209. The relationship between patented and unpatented know-how is of importance, particularly in the light of the frequent experience that the information concerning patented inventions which is disclosed and available for general use through the publication of the claims and specifications of the patent, and in other technical publications, is, in most cases, not sufficient to enable third persons to work the invention, unless the latter also has access to the complementary —unpatented—know-how. In this situation, two different assumptions may be considered: (*a*) that the patentee will pass on his secret know-how only where it is assured of patent protection or (*b*) that the patentee is able to perfect his control over his—patented and non-patented—technology even in the absence of patent legislation, through the terms of his licence agreement with the user. The respective economic implications of these two assumptions are discussed in part Two, chapter IV below.

210. Patents and other forms of industrial property, such as trademarks, copyrights and designs, are the subject of national and international measures of legal protection. On the other hand, international instruments dealing with industrial property generally make no mention of unpatented know-how. Very little is definitely known concerning the protection afforded know-how under national laws, particularly as related to the question of the wrongful appropriation, misuse or unauthorized use of know-how by third persons. It is, of course, possible to point to the contract between the licensor and licensee as the main legal instrument governing the relationship between those parties, but the contract usually does not afford protection as against third parties.

211. An interesting attempt[45] has been made to base the legal protection granted to unpatented know-how on the general protection afforded under national legal systems against acts of unfair competition. This leads to the further suggestion that the unfair competition provisions of the Paris Union Convention (article 10 *bis*) may be applicable to know-how agreements, thus providing an international approach to the problem. While such an approach is of considerable interest and may be of some utility, it does not provide a satisfactory solution of the problem. In view of the important role

[43] Op. cit., pp. 93 *et seq.*

[44] For a detailed discussion of these arrangements, see chapter I, Contractual devices for the transfer of technical and managerial know-how from enterprises in industrialized countries to enterprises in under-developed countries, in "The Promotion of the International Flow of Private Capital". Further Report by the Secretary-General (E/3492, 18 May 1961).

[45] Stephen P. Ladas, "Legal Protection of Know-How," *The Patent, Trademark and Copyright Journal of Research and Education*, volume 7, No. 4 (1963), p. 397.

that unpatented know-how plays in the transfer of technology to developing countries, it is considered essential to define it and provide for its legal protection,[46] in a way that will take care of the special needs both of the developing countries and of the know-how owners. This may be accomplished in connexion with the revision of appropriate national and international measures relating to patents and other forms of industrial property.

B. Governmental incentives

212. The Governments both of industrialized and of developing countries can play an important role in encouraging the transfer of patented and unpatented know-how from industrialized to less developed countries. This may be achieved through administrative action, by granting special benefits and privileges in connexion with know-how arrangements which receive official approval.[47] Most of the measures adopted by the Governments of developing countries for the purpose of encouraging such patent licence and transfer agreements, involve the relaxation or avoidance of otherwise applicable exchange controls and the provision of tax incentives. Other measures having the same purpose are guarantees against expropriation and assurances concerning the employment of foreign technical and managerial personnel. These measures may be a part of the generally applicable tax, exchange control of labour laws of the country, or they may form part of legislation specifically relating to foreign investments. In nearly every case, administrative action in the form of screening and approval by the Government is required before the incentives are made available.

213. A few industrial countries have reported the existence of governmental policies calculated to encourage the dissemination of their technology to developing countries. Thus, the laws of the Federal Republic of Germany, Japan, Switzerland and the United States provide investment guarantees for their nationals who are engaged in the export of patented and other technical know-how.

214. The *Federal Republic of Germany* states that, in many treaties for the promotion of investments concluded by it with developing countries, patents are considered property rights and protected as such.

215. *Japan* provides that the transfer of inventions and know-how from Japan to other countries may be protected under the Export Insurance Law. This law aims at compensating, among other export risks, any loss incurred by the supoliers of techniques and technical services resulting from their inability to collect the remuneration stipulated in their contracts. Japan also provides that the exporters of patented or other know-how may deduct, from their taxable income, 50 per cent of the proceeds arising from such export. (See Special Taxation Measures Law, arts. 21-3, 55-3).

216. *Switzerland*, in the Federal Law of 26 September 1958, provides for guarantees against risks incurred in connexion with the exportation of technical knowledge.

217. The *United States* provides investment guarantees under the Foreign Assistance Act of 1961, as amended. This includes guarantees in connexion with the licensing of "patents, processes, or techniques", against the payment of royalties. The specific risks covered by the guarantees are: inconvertibility of foreign currency receipt into dollars, loss through expropriation or confiscation, and loss from damage to physical assets caused by war. The guarantee programme is administered by the Agency for International Development. The agency requires the investor to furnish it, as part of the guarantee application, with a copy of the licensing agreement, and must be satisfied with the reasonableness both of the rate of royalty and of the estimated royalty payments.

218. The *Soviet Union* states that it renders technical assistance to under-developed countries "on the basis of bilateral inter-governmental agreements, or through the United Nations". The policy of the Soviet Union is to give this assistance, including the granting of licences to use Soviet inventions, free of charge; not to lay down any conditions in respect of sales of products and not to insist on exclusive rights of any kind to purchase products; and not to participate in the ownership or management of the undertakings built with the help of such assistance.[48]

219. Several developing countries have adopted special tax and other measures in order to encourage the local absorption of foreign technology, through assignment and licensing agreements relating to patented and unpatented technological know-how.

220. The Israel reply indicates that *Israel* seeks to promote the receipt of patents and know-how as investments from abroad and at the same time to encourage the transfer of knowledge to other developing countries. While the latter is effected chiefly through the Government's technical assistance programme, the transfer of patents and know-how to Israel is promoted by the Encouragement of Capital Investment Law of 1959, under which foreign know-how may qualify as capital investment. In such cases, the investor may enjoy special tax benefits and transfer guarantees. If the know-how takes the form of the services of foreign technicians, the salary of such technicians may be entitled to special tax rates.

221. In the *Republic of Korea*, article 16 of the Foreign Investment Encouragement Law of 1960 provides that, in the event a registered foreign investor or Korean national desires to conclude contracts with a foreign national for the transfer of patent or other technological rights, the contracts must be submitted for approval to the Chairman of the Economic Planning Board. Upon the approval of the contract, the remittance of the compensation due the foreign national under the contract is permitted. Article 20 of the law provides for the reduction or remission of taxes upon the payments made pursuant to such contracts, as follows: the whole compensation is exempted from income

[46] Some ideas in this connexion have been proposed by the Economic Commission for Europe (see documents E/ECE/Trade/89, and E/ECE/Trade/100), and its *Ad Hoc* Working Party on Contract Practices in Engineering considered a model form of contract relating to sale of know-how.

[47] For a detailed discussion of these incentive measures, see "The Promotion of the International Flow of Private Capital", Further Report by the Secretary-General (E/3492).

[48] See also above, paras. 92, 93.

tax or corporation taxes for a period of five years from the date when the contract was signed; the amount of such tax is reduced by two-thirds for the next two years; and the amount is reduced by one-third during the eighth year.

C. Applicable government regulations

222. In many countries, both industrialized and under-developed, the terms and conditions of patent assignment or licence agreements, whether they involve nationals or foreigners, are not subject to governmental supervision. On the other hand, the tendency of many countries is to examine the terms of assignment or licence arrangements for the supply of patented and unpatented technological know-how in the light of their probable effect on local private and public interests, and to take appropriate steps to eliminate actual or potential disadvantages to such interests. As a practical matter, this means that the local government indicates to the enterprise supplying the know-how that an agreement which fails to meet official standards will have to be revised before the necessary approval or desired incentives will be granted.

223. One obvious area of potential abuse by the know-how supplying enterprise is the charging of an excessively high royalty or fee. Thus, government approval of terms of agreements between foreign patentees and domestic licensees or assignees is required mainly in connexion with the reasonableness of royalties and the transfer abroad of royalty payments, and is usually part of the general administrative machinery for regulating foreign exchange. It is, of course, exceedingly difficult for a governmental agency to ascertain in each case what constitutes a fair rate of payment. One way of treating this difficulty is to take the approach of fixing maximum rates of compensation and adopting certain basic rates which will be applied unless some extraordinary benefit to local interests justifies an exception. Thus, the Government of India has adopted a ceiling royalty rate of 5 per cent which can be exceeded only in exceptional cases.

224. In *Brazil*, new regulations have recently been issued under the Transfer of Profits Act, which relate to the use of patents and the payment of royalties. These regulations do not specify the system of control or payment, but are based on the policy of conserving foreign exchange. Thus, when the licence agreement is based exclusively on unpatented know-how, it is necessary to ascertain whether the know-how is actually needed, that is to say, whether there are not in Brazil techniques and specialists capable of taking the place of the foreign technical expertise. Similarly, if the agreement involves the exploitation of a patent, it is necessary to ascertain whether the patent is currently being applied in Brazil, whether its exploitation is useful to Brazilian industry, and whether the Brazilian licensee is in fact exploiting the patented invention. The Government of Brazil advances the following explanation for these regulations: "The purpose of this is to ensure that the patent is not a mere fiction in the contract, designed to justify the payment of royalties. Although it is in general use all over the world, the system of royalties affects the under-developed countries more than others, since they do not possess the facilities and the experts, and hence have to accept restrictions and obligations of an economic character, some of them prejudicial to the interest of the country."

225. In *China*, under the Patent Law, aliens and nationals are required to apply to the Patent Office for approval of the terms of patent licence and assignment agreements.

226. In *Cuba*, the transferability abroad of royalty payments for the use of patents is governed by the law regulating the export of foreign currency.

227. In *Czechoslovakia*, the approval of the Ministry of Foreign Trade is needed in connexion with licences and similar agreements with foreigners regarding the use of inventions and patents. The regulations relating to foreign exchange are applied to such agreements.

228. In *France*, the general provisions governing foreign exchange apply to patent agreements, but the practice in this connexion is described as liberal.

229. In *Hungary*, it is required that an application be made to the Ministry of Foreign Trade for approval of the terms of agreements between foreign patent owners and their domestic licensees. The transfer abroad of royalty payments for the use of foreign patents and know-how is governed by the general provisions of the foreign exchange regulations.

230. In *India*, the provisions of the Industries (Development and Regulation) Act, 1951, which regulates the establishment of industries in India, and of the Foreign Exchange Regulation Act, 1947, which regulates the remittance of royalties and other payments abroad, are pertinent. According to these provisions, payments of royalties abroad cannot be made without first obtaining the written permission both of the Central Government and of the Reserve Bank of India.

231. In *Ireland*, there are no special provisions restricting agreements with foreign patentees. However, under the Exchange Control Act, 1954, the permission of the Minister of Finance is required for the making of any payments to persons resident outside the Sterling Area. No specific provisions therein are applicable to royalty payments, application in respect of which may be approved by a bank, save in certain cases which must be submitted to the Department of Finance for consideration. However, the exchange control practice in regard to royalty payments under patent agreements is described as liberal.

232. In *Israel*, foreign exchange control regulations (Regulations 12A and 4C of the Defence (Finance) Regulations, 1941) govern the terms of agreements by which foreign nationals license or assign their domestic patents. According to these regulations, it is illegal for an Israel resident to enter into such agreements unless approval is received from the Comptroller of Foreign Exchange, who is an official of the Treasury. This approval is granted only after a competent authority has expressed its opinion on the necessity of the agreement and on its terms. Where an agreement involves the licensing of patents to be utilized in industry, the Comptroller of Foreign Exchange seeks the advice of the Ministry of Commerce and Industry, and specifically of the Chief Engineer of the Ministry, who acts upon the recommendations of the officers in charge of the respective industrial branches. In the usual case, the decision as to the amount of royalties is left to the parties concerned. However, in a few

cases the Chief Engineer has refused to recommend approval of an agreement due to the excessive rate of royalties provided in the agreement. The transfer of royalties abroad is not limited, except in cases where the product produced under the agreement is not considered to be of importance to the economy of the country. In such cases, the royalties are paid into a special bank account or used within the country. However, even in the last mentioned cases the transfer abroad of royalties will be permitted if the licensee exports the patented product.

233. In *Italy*, there are no provisions requiring government approval of agreements to assign patents or grant licences. However, under the general law governing currency transfers abroad, proof is required that the currency transfer is made in fulfilment of a normal contract of licence or assignment.

234. In *Japan*, agreements with foreign nationals to licence or assign their domestic patents must be approved by the Government after consultation with the Foreign Investment Council, of which the Minister of Finance is the director. The Council consults the Ministry of Finance, the Ministry of International Trade and Industry, the Science and Technology Agency, the Bank of Japan and other ministries and offices concerned. Approval of a patent licence or assignment agreement is conditioned upon its meeting the following requirements:

(*a*) It has no adverse effect on the development of Japan's economy, especially from the viewpoint of the balance of payments and the development of important industries;

(*b*) The royalty payment is on a proper level in terms of the importance of the licensed technology to the economy.

The transfer abroad of royalty payments pursuant to agreements approved by the Foreign Investment Council is allowed without any further permission from the Office of Foreign Exchange. When the royalties are to be received in local currency (yen) within a period of less than one year, the agreement is not required to undergo the procedure set forth above but may be approved by the Bank of Japan, in consultation with the Ministry of International Trade and Industry and the Science and Technology Agency.

235. In *Mexico*, the assignment of rights conferred by a patent is governed by the formalities established by the civil law. The approval of patent agreements is the responsibility of the Directorate General of Industrial Property, and no distinction is made between nationals and foreigners. However, the control of royalty payments under patent agreements and the transfer abroad of such royalty payments is vested, not in the above-mentioned Office, but rather in the Secretariat of Finance and Public Credit. There are no restrictions regarding the transfer abroad of royalties for the use of patents and know-how.

236. In *New Zealand*, there is no express limitation on the amount of royalty payments for the use of patents and know-how, but there are limitations, based on the conservation of the country's foreign exchange, on the transfer abroad of such payments.

237. In *Pakistan*, the prior permission of the State Bank of Pakistan is required before entering into a contract for the payment of royalties to non-residents. The royalty terms are examined and approved by a special Committee. Once these terms are examined and approved by the Committee, remittances abroad are allowed by the Bank of Pakistan in accordance with those terms and subject to such conditions as the Committee may have laid down.

238. In *Poland*, there are no special provisions relating to agreements to license or assign patents. However, the Invention Law of 1962 requires that such agreements be entered into only with enterprises authorized by the Minister of Foreign Trade.

239. In *South Africa*, the transfer abroad of royalty payments is not limited, provided the terms of the agreement have been approved by the exchange control authorities.

240. In the *Union of Soviet Socialist Republics*, licensing agreements and agreements for the sale of patents may be concluded in respect of inventions already patented in the USSR or those for which patent applications have been filed. The provisions of the law on foreign trade transactions and on foreign trade monopolies are applicable to such agreements. A foreign patentee may not conclude such agreements with every Soviet organization or citizen, but only with organizations that are given the right to conclude foreign trade agreements. This includes both the Export and Import Enterprise "Litsenzintorg"[49] and other foreign trade enterprises. The validity of such agreements depends upon their being registered with the Committee on Inventions and Discoveries of the Council of Ministers of the USSR. No limitations on the amount of royalty payments for the use of foreign patents and know-how or on the transferability abroad of such payments are provided for in the legislation of the USSR or exist in practice.

241. In the *United Arab Republic*, there is no law regulating agreements by which foreign inventions can be purchased or used locally. However, the approval of the Ministry of Industry is required, which will be granted after studying the specific terms of the proposed agreement. The approval of the Ministry of Industry carries with it approval of the transfer abroad of the royalty payments provided for in the agreement.

242. In *Yugoslavia*, agreements between Yugoslav enterprises and foreigners with respect to patent rights and licences have to be approved by the Secretariat for Industries of the Central Executive Council.

[49] "Litsenzintorg" is an independent economic organization enjoying the rights of a legal entity and operating on a commercial basis. Its purpose is to provide for the sale of patents on Soviet inventions and their exploitation abroad, the purchase of foreign patents and the licensing of their exploitation within the USSR, and the sale and purchase of technical documentation.

Part Two

EFFECTS OF PATENTS ON THE ECONOMIES OF UNDER-DEVELOPED COUNTRIES

INTRODUCTION

243. General Assembly resolution 1713 (XVI), under which this report is prepared, is entitled: "The role of patents in the transfer of technology to under-developed countries", and it is in this context that the economic impact of the patent system is being discussed. In placing the question within this particular context, it becomes necessary to maintain a proper perspective. In the development of under-developed countries, the transfer of technology is only one of several essential elements taking its place alongside such other factors as financing, trade and the development of human and natural resources, as well as the development of a country's indigenous technological resources. While it is important to realize that the transfer of technology is only one of a number of elements in economic development, we must at the same time not neglect the fact that this element may be closely intertwined with the other elements, and an improvement in the flow of technology to under-developed countries may also have a favourable impact on these other elements.

244. Even within the single field of transfer of technology, the role of patents is obviously limited by the fact that patented knowledge is only a part of the total technological knowledge which should flow to under-developed countries. While it is difficult, in the absence of more detailed knowledge and concrete studies which may be hard to devise, to be very precise or even completely certain in this regard, the weight of the available evidence is that patents cover only a minor part of the total knowledge flowing to or required by under-developed countries. This is so partly because much of the technology required is not at that latest stage of technological advance which is covered by patents. Partly, it is because the under-developed countries lack so much in general know-how and management experience, that the knowledge covered by patents alone would usually not be sufficient for the introduction of new products and processes. Naturally, these two factors do not apply in exactly the same degree to all under-developed countries or all industries. Within the broad category of under-developed countries, there are a number of relatively advanced countries where the significance of patented knowledge has already noticeably increased in line with their general technological advancement, and there are certain capital intensive industries which even in the less-developed countries require the import of the most advanced technology.

245. On the one hand, therefore, patents play only a limited role in the transfer of technology. But, on the other hand, their significance for, and impact on, under-developed countries may transcend the field of transfer of technology. This will be the case particularly in two directions:

(*a*) The patent system has a relation, not only to the transfer of technology, but also to its creation, in so far as the protection and rewards which it holds out to inventors and innovators may be an essential inducement or pre-condition for the research and development activities underlying the inventing and innovating process; and

(*b*) The patent system will affect under developed countries not only via the transfer of technology, but also via the import of commodities which are patented products or incorporate patented processes in their production.

These two aspects must be considered in any reasonably rounded picture of the impact of the patent system on the economies of under-developed countries. It is not to be assumed that the resolution meant to exclude these aspects by placing the matter in the context of the transfer of technology.

246. Accordingly, this part of the report begins by considering the role of patents in the actual transfer of technology (chapter IV); it then examines the role of patents in relation to imports of patented products and processes (chapter V); and finally it considers the role of patents in improving the process of invention and innovation through the indigenous technology of the under-developed countries themselves (chapter VI).

247. The discussion has to be conducted in terms of general economic analysis. It is painfully clear that in relation to these problems which lie in the borderland of law, technology and economics, very little concrete research and analysis of specific situations is available. It appears that little progress can be made by further refinements of general economic analysis. On the other hand, there seems to be considerable difficulty in undertaking empirical studies to evaluate the economic impact of patents on the process of development. In any event, such concrete studies would remain hypothetical and speculative in nature.

Chapter IV

THE ROLE OF PATENTS IN THE ACTUAL TRANSFER OF TECHNOLOGY: PRODUCTION OF PATENTED PRODUCTS AND USE OF PATENTED PROCESSES WITHIN THE DEVELOPING COUNTRY

248. It should be recognized from the outset that there are perfectly legitimate economic reasons, which may cause a foreign patentee to wish to produce the patented product, or introduce the patented process, in his own or some other industrialized country, rather than in the under-developed country, and export the

product to the under-developed country rather than produce it there. From his point of view, his cost of production may be lower and his investment more profitable or secure by producing the patented product or using the patented process in its own country or other industrial country, on a large scale; this may give him wider markets, greater efficiency and higher profits as compared with production in the under-developed country, or the licensing of production there. This interest of the patentee will not be at variance with the interest of the under-developed countries in those situations where and as long as the under-developed country does not conceive it economically feasible to set up a manufacturing industry within its territory but wishes to take advantage of the international division of labour and import its requirements of the patented product from abroad. On the other hand, the Government of an under-developed country, equally legitimately and using a set of cost and benefit calculations different from the private profit-cost calculation of the foreign patentee, may conclude that it would be desirable to have the patented product produced in the country rather than import it. The utilization of domestic materials, employment and training of domestic labour, saving in foreign exchange, etc., may all play a part in such calculations. The establishment of the industry making the patented product or using the patented process may, in fact, be an explicit part of the development plan of the under-developed country. Even where this is not so, its establishment may still be desired. It is this problem which is at the heart of the difficulty and controversy concerning the effect of a patent system on under-developed countries, as far as products or processes are concerned, which could be worked in these countries.

249. The least complicated situation is where the national enterprise in the under-developed country would be able to produce the product or work the process covered by the patent without any technical or financial co-operation from the foreign patentee, or from other foreign sources. This situation will be quite exceptional in the least developed countries, although less so in the already partially industrialized countries. In such a case, the under-developed country would appear to be best off if it gave no patent but were in a position freely to use the patented process or produce the patented product. There remains, of course, the question of fact whether the disclosed specifications of the patent would be sufficient to enable the under-developed country to make use of the patented process. Like the general case here considered—no need for other foreign know-how or assistance apart from the patent—this condition will also be the exception rather than the rule. Normally, the disclosure in the patent journals is not in itself sufficient to enable under-developed countries to make ready use of the patented technology. Where this disclosed information is sufficient, the solution of a suspended patent which took full effect only upon being worked within the country might deserve consideration. Alternatively, the method of compulsory licensing, or working, with a fair determination of royalties in the absence of agreement between the two parties directly concerned, provides the obvious solution where the patent system is used.

250. From the economic point of view, there remains the question whether in such cases the foreign patentee should be given a preferential right for manufacturing or using his patented process himself in the under-developed country. In favour of such a preferential right are such considerations as fairness to an inventor or to one who has borne the risk of investing in research and development, and the expectation that it may bring into the under-developed country additional investment and capital resources. Moreover, without such a right the value of the patent may become problematical to the foreign patentee and it may not be applied for. Against giving to the foreign patentee a preferential right is the interest of the under-developed country—and of the world at large—that new technology be spread as rapidly as possible not only to the economies but also to the nationals of under-developed countries; in some cases a policy to keep out foreign investments and foreign enterprises in the specific field concerned; or possibly a fear of burdening the future balance of payments with the transfer of profits and the repatriation of investments. The arguments seem sufficiently balanced to prevent any general conclusion on their basis alone. Since such preferential right, however, is an integral element of the patent system, countries which have such a system are likely to make exceptions only in areas where superior public interests are concerned, while otherwise possible exploitation of the preferential right to impose excessive burdens on the economy could be guarded against through controls over royalty rates, etc.

251. A more difficult problem arises where the patent could be worked without the technical services and other resources of the foreign patentee, but only by using the corresponding services and resources of other foreign sources, perhaps direct competitors of the foreign patentee. In this case, the general argument for giving the foreign patentee a preferential right of working the patent seems clearly stronger than in the previous case where the nationals of the under-developed countries were able to introduce the new process without additional support—apart from use of the patent—from abroad, provided that the foreign patentee can be induced to offer his technical services on substantially similar terms to those obtainable from other foreign sources—e.g. through direct government controls or through compulsory licensing statutes providing for some kind of government-fixed reasonable royalties in the event the parties fail to agree on a reasonable royalty. In practice, however, it would be difficult to distinguish this case from the one where the know-how of the patentee himself is required.

252. Probably the most frequent case in practice will be the one where the national producer in the under-developed country would still need the technical support and perhaps other resources of the foreign patentee—or could secure them from him more readily than from any other source. This may be so either because the related technical knowledge of the patentee, although not covered by the patent, is essential and not obtainable elsewhere; or because his management experience may be essential and not obtainable elsewhere; or thirdly because his capital is needed and not obtainable elsewhere. These three factors are usually found in differing combinations with each other.

253. The case where the knowledge covered by the patent is the only bottleneck preventing the transfer of

the patented technology without the co-operation of the foreign patentee, is probably the least frequent of all (although this cannot readily be quantified or stated with complete confidence). This statement does not amount to saying that the patented knowledge is not necessary; *that* it will be in the normal case. But equally, in the normal case, it will not be sufficient. The patent applied for in an under-developed country will normally have been previously issued in an industrial country. Hence, its description will be available in the patent gazettes and other technical sources, and if only the patented knowledge and nothing else were the factor preventing introduction of the process in the under-developed country, the problem could be solved if the under-developed country gave no patent, or gave it only under provision of compulsory licensing (or compulsory working) of the patented technology. The subsequent analysis, therefore, proceeds on the main assumption that the co-operation of the patentee (or of some other foreign source requiring substantially similar terms) is needed for the successful transfer of the patented technology.

Factors affecting the patentee

254. The foreign patentee may be willing to start production in the under-developed country himself (directly or—more usually—through a controlled subsidiary). From his point of view, the advantages of doing so may be manifold. Most obviously he is spared the trouble and expense of finding a qualified licensee willing and able to give the necessary commitments—in itself not always easy in under-developed countries—as well as the difficulty of concluding a satisfactory licence agreement and controlling its implementation; he may avoid tariff barriers or other import restrictions or foreign exchange restrictions by establishing himself in the under-developed country, rather than supply materials and services to a licensee; by maintaining his own control of the enterprise, he may establish for himself an assured market for his own components and spare parts; by being able to control quality directly he may protect the reputation of his product; by supplying neighbouring countries from his base in the under-developed country, he may save cost of transport; the location in the under-developed country may possibly enable him to escape restrictive legislation or trade union pressures in his own or a third country; he may wish to forestall possible competitors by locating himself in the under-developed country, etc. Some of these advantages may also be secured by licensing the patent, but others may require working of the patent by the patentee in the under-developed country.

255. There are also, of course, corresponding disadvantages which in many cases make the foreign patentee disinclined to work his own patent in the under-developed country. Foremost of all will be the fact that he has to risk his own capital in a perhaps unknown and uncertain market and environment for production, and he might consider himself subject to risks of discrimination, nationalization or expropriation; he may lack confidence in the assurances given and promises made by the under-developed country to attract him; he may regard the market that can be reached from the under-developed country as too small, and hence the scope of the resulting operation as being too small and costly; he may wish to avoid the managerial dissipation resulting from plants in different countries; he may fear the dissipation of his staff of trained technicians and skilled workers; he may fear the cost of training new workers, or he may fear that once trained they will benefit his potential competitors; he may fear that incompetent or untrained nationals will be imposed on him as managers, etc. Again, some of these considerations may also in part operate against licensing, but broadly speaking they are of the kind to tilt the balance against direct working of the patent.

256. Neither of these lists of advantages or disadvantages is complete. In any case, the list is sufficient to show how great is the variety of considerations which will enter the decision of the patentee whether to come and work his innovation himself in the under-developed country (either voluntarily or because he would otherwise be faced with the prospect of having his patent refused or revoked, or compulsorily licensed) or whether to licence his patent without any pressure or compulsion.

Factors affecting the Governments of developing countries

257. From the point of view of the under-developed country, there equally are many reasons why it may wish to attract the foreign patentee to work his patent himself, but also reasons to the contrary. Among the reasons for wishing to attract the patentee, there may be first and foremost the fact that capital is brought into the country and thus the under-developed country saves its own scarce capital resources for other sectors and products for which foreign capital is not available. Licensing agreements may also, in varying degrees, co-exist with arrangements for capital assistance by the foreign patentee. The new product or the new improved process may be in a high priority field included in the development plan of the country or strongly desired for purposes of diversification of the economy. The foreign patentee may bring with him a great amount of technological knowledge which will permeate the domestic economy through the employment of local managers, local technicians and local workers. The high quality of the products and the reputation of the brand name connected with a foreign firm may make it easier to create a domestic market for the product and may facilitate export to neighboring countries. New domestic taxable capacity is created. Skilled people are brought into the country. In so far as the foreign patentee risks his own capital, no fixed burden on the balance of payments is created, except for royalty arrangements such as are involved even in the case of a corporate subsidiary. The foreign patentee may be willing from the start or subsequently—to sell shares in his established enterprise to national investors, thus helping to increase domestic savings and the development of national capital markets.

258. There is also a negative reason why the Government may wish the foreign patentee to come and set up the new product or process himself in the under-developed country: the Government may feel that, even if the foreign patentee were induced or forced to license his innovation to nationals, his non-patented knowledge, the need for his technical services and for

his other resources would give him such a strong position that he would, in fact, be exercising managerial control. In such circumstances, the Government may feel that, since the foreign control cannot be avoided in any case, it might as well be brought into the open and the foreign patentee might as well import and risk his own capital. This situation is one in which the Government would basically prefer licensing of the patent to its own nationals, but feels that its own legislation and powers of controlling royalties and screening the terms of licence agreements would not be sufficient to cope with the *de facto* situation in which the foreign patent holder can exact a stiff price in one form or another.

259. There are also reasons why an under-developed country may legitimately not wish the foreign patentee to come himself even though his patented technology is wanted for introduction in the country. For example, the product or process concerned may not be within the priorities set by the development plan, and hence it may not appear justified to assume foreign exchange liabilities for the transfer of profits and amortization on foreign capital for this purpose. There may be local sentiment against foreign firms operating in the specific branch or industry concerned; the Government of the under-developed country may prefer to have its own nationals given the experience and chance of managing the new firms or introducing the improved process themselves. It may fear that a foreign enterprise will order all its requirements of materials and parts abroad rather than in the country. It may object to a desire of the foreign patentee to use his own nationals as technicians and in other skilled occupations. Joint ventures in which foreign patentees associate themselves with local investors may serve to bridge the pros and cons for both foreign patentees and Governments.[50]

Policy implications

260. The foregoing discussion will have made it clear that the complexity of possible situations is such that very little can be said in general about the kind of provision most appropriate for under-developed countries. Where the foreign investor is quite willing to come and the Government is quite anxious to have him come, and where the conditions on both sides are broadly compatible, there is obviously no great problem. The patentee will come under the protection afforded by the patent. The special rights given under the patent may well result in higher than strictly competitive prices in the domestic market. This will yield the patentee extra profits which he may at least partially wish to repatriate in one form or another. On the other hand, after a time, these profits will become generally available to the nationals of the under-developed country, as will also the skills and general experience arising from the operation of the plant in the under-developed country.

261. Obviously, if an under-developed country wants to have the foreign patentee's knowledge, management know-how or capital, and cannot obtain it as readily anywhere else, it must meet his price and conditions if it wants to induce him to come (or even if it wants to induce him to pass on his non-patented knowledge and necessary assistance to domestic licensees). He will want a reasonable prospect, or perhaps a guarantee, of a profitable situation. Patent protection in the under-developed country may or may not have a high place among these profitable conditions or guarantees which he expects. In any case, the fact is that patent protection is actually asked for and expected in a large number of situations, and quite apart from its actual economic significance it may be of psychological importance for the foreign patentee-investor. Presumably in many cases, absence of patent protection could be replaced by corresponding or equivalent guarantees, e.g. assurances that no rival firm would be allocated the necessary factors of production or foreign exchange, or special concessions or by guarantees of sales, prices, or markets. However, even where such alternatives exist, patent protection may well be a cheaper and more effective way of giving the foreign patentee what it needs to attract him.

262. The Governments and enterprises of under-developed countries, in their turn, may, within the limits of what is acceptable to the foreign patentee, maximize the benefits to the under-developed country by such measures, apart from royalty limitations, as requirements of local training, local management and capital participation, prohibition of unduly restrictive features as to supplies, markets, etc. The multi-dimensional nature of the arrangement increases the possibilities that a mutually acceptable bargain for an economically worthwhile project can be reached if the full circumstances of each case are properly considered and proper negotiation facilities exist.

Compulsory working and licensing

263. If the Government wishes the foreign patentee to come and work his patent, but the latter is reluctant to do so, the Government can either use the method of compulsory working or the method of compulsory licensing.

264. Compulsory working of his patent may be accepted by the foreign patentee as the lesser evil, compared to not obtaining or losing his patent and facing the danger of new competition or uncontrolled use of his process. Compulsory licensing may also have the same effect because, faced with the prospect of having to accept fixed or controlled royalties and collaborating with licensees in the under-developed country whom he has not selected, the foreign patentee may then prefer as the lesser evil to work his innovation himself in the under-developed country or with licensees of his own choice. It must be assumed, of course, that a foreign patentee unwillingly induced to produce in an under-developed country by the threat of compulsory working or compulsory licensing will tend to limit his operations in the under-developed country and his commitments there to the minimum required to avoid the consequences of the loss of patent protection and to justify his investment. The threat of compulsory licensing will be effective only to the extent that patented knowledge is the total external knowledge required

[50] See "The Promotion of the International Flow of Private Capital", Further Report by the Secretary-General (E/3492, 18 May 1961); and Third Report by the Secretary-General (E/3665/Rev.1, 23 July 1962).

for national operation or where the other necessary knowledge can be obtained in the open market.

265. If the Government of the under-developed country is anxious to bring the new product or process to its own economy, but the foreign patentee is unwilling to come, at least on the conditions acceptable to the Government, or alternatively if the Government does not wish him to come, then the indicated policy is clearly the one of compulsory licensing. This is widely provided in patent laws, especially after the patent has not been worked by the foreign patentee himself for a certain period of time. The foreign patentee may be quite happy with such licensing arrangements. His knowledge of the necessary non-patented technology, his management know-how, his access to necessary components, capital or markets and the possession of his protected brand name will usually give the foreign patentee a very strong position in negotiating the conditions of the licence, even if his position as a patent holder should be weakened by the pressure of compulsory licensing and his royalty income should be kept down by adjudication and government control of royalties and other forms of government screening. It must be realized that the royalty paid will be only one dimension of the total bargain in which the foreign patentee might be involved.

266. One further complication arises from administrative and legal necessities. The foregoing discussion has shown that there are many different circumstances governing each particular case, both on the side of the foreign patentee and as far as the interests of the under-developed country are concerned. However, it will not be possible, beyond a certain area of flexibility, to deal with each case separately on its own merits and adjust the rules on a case-by-case basis. There will always be a need for a firm legal and administrative framework capable of encompassing the multitude of actual situations.

267. Licensing by itself is not protection or guarantee against the monopolistic features of the patent system since the conditions written into the licence agreement can be just as restrictive or more restrictive than the conditions inherent in the possession of a patent. Under compulsory licensing provisions, however, such restrictions could be controlled. But foreign patentees may not wish to have patents under such conditions; or national licensees may not come forward unless lured by the prospect of the privileges of an exclusive licence. Again, in such cases the difficulties of creating competitive conditions are essentially not due to the existence of a patent system or any specific features of it, but rather to the absence of technological and managerial knowledge and capital in the under-developed country. The patented part of this gap in knowledge will rarely be the only factor of production which is lacking and may be only a small fraction of the country's total lack. Hence its enforced diffusion by compulsory licensing on a non-exclusive basis cannot provide a major solution of the underlying problem.

268. The terms and conditions of licensing agreements are legitimately a subject for the concern and control by the Governments of under-developed countries. Of particular concern to them are:

(*a*) Undue financial sacrifices exacted from the national licensees resulting in balance of payments burdens, and

(*b*) Other unduly restrictive features of licensing agreements which diminish the benefits of introducing the patented innovation in the under-developed country.

Balance of payments burdens

269. (*a*) There are conceptual difficulties in determining what is an excessive balance of payments burden, and the necessary information cannot be obtained from the available statistics. Moreover, the actual burden which royalty payments to foreigners impose on a country cannot be measured in balance of payments terms alone, but must be evaluated in terms of the contribution that the technology in question makes to the development of a particular industry within the country and the long-run contribution that it makes to decreasing the country's dependence on foreign imports and increasing its exports of the product in question. Conversely, undue financial sacrifices may appear not only in the form of excessive royalties, but also in excessive prices paid for materials or components or for the services of technicians obtained from the patentee, or an undue share of profits or an undue amount of equity transferred to the patentee in return for the use of his patent or for his technical services, unduly high management fees, etc. It will be seen that the financial terms of these agreements are not easily controllable. Proper control would call for consideration of the total arrangement entered into by the patentee, not only the royalty item of the licence agreement. It is also clear that effective control calls for considerable administrative resources and flexibility which may be beyond the administrative capacity of at least some under-developed countries.

270. (*b*) Potentially unduly restrictive features of licence agreements may also take the most varied forms. Some of the most frequent ones which may be mentioned here are: to tie the licensee to getting his materials or equipment exclusively from the patentee or from sources approved by the patentee; to submit his price and marketing policies to the control of the patentee; to give the patentee a say in day-to-day management policy; to limit sales to the domestic market or to specified foreign markets only; to limit the quantity of production. Again, it is in the theoretical power of Governments of under-developed countries to control such unduly restrictive features of patent licensing. This they can do either as part of general legislation directed against restrictive business practices (such as exists in some developed countries), or by specific provisions for screening and controlling the terms of individual licence agreements. However, although the theoretical power exists, and is in fact exercised in some under-developed countries, most under-developed countries may lack either the general legislative basis or the specific administrative resources required for such control.

271. It must also be emphasized once again that these handicaps and possible abuses from which under-developed countries may suffer in connexion with patent licensing, are basically due to the monopoly of technical knowledge, management knowledge, capital

resources and marketing access enjoyed by the firms and economies of the more advanced countries, rather than to the existence of patents as such. Essentially, the patent system does not operate in the direction of adding to the sum total of restricted knowledge and resources not shared by the under-developed countries, but, if anything, it works in the opposite direction. If only the existence of patent protection and nothing else prevented the transfer of new technology to under-developed countries, excessive royalties and other excessive restrictions under licensing agreements would hardly be possible to the extent to which they exist now. In any case, they would probably be within the power of Governments to control by relatively simple administrative screening, if they grant patents. The patent licence may be the legal peg on which this whole transaction is made to hang, but the agreement would often look no different if no patent were involved at all. The basic problem to tackle for the international community is the one-sided relationship under which the possession of know-how and capital resources are so unequally distributed. The balance of payments burdens resulting from this one-sided relationship are heavy and take many different forms. They have never been fully appreciated, or even properly measured, as compared with the burdens of adverse terms of visible commodity trade of under-developed countries. Those who have directed attention to these heavy burdens have, therefore, rendered a valuable service and the United Nations as well as the international community at large is rightly concerned with this matter. But as long as we are concerned merely with the role of the patent system as such in creating these balance of payments burdens, it seems irrefragable that its particular role in the circumstances can only be called a minor one. Moreover, as long as the one-sided distribution of technological knowledge persists, the balance of payments burden involved may still be a reasonable or at least an inescapable price to pay for the benefits of the transfer of technology for which it is a pre-condition.

272. In conclusion, it may be said that the burden on the under-developed country, although it may appear in its balance of payments as patent royalties or licence fees is not a burden created by the patent system as such. It arises from the one-sided dependence of the under-developed country on the exclusive knowledge, or management, or capital resources of the foreign patentee. If the price did not appear in the form of royalties or licence fees, it would presumably appear in some other form, equally onerous to the balance of payments. Even among the burdens attributable to the patent system, royalties may well be less important than "invisible royalties"—higher prices paid as a result of lessened competition. (See chapter V.)

273. Moreover, where the patented technology is actually transferred to the under-developed country, the balance of payments burden of patent royalties and related licence fees must also be set against the savings of foreign exchange due to import substitution (or earnings due to export expansion), attributable to the transfer of the patented technology.

274. The only way in which the burden could be avoided in such a case is by some outside intervention through the medium of multilateral or bilateral assistance schemes. These, for instance, might assume some of the burden of the costs assurances and guarantees[51] required by the patentee for making his intellectual property in patented and other technological knowledge available to the under-developed country. With a broader context, of course, the provision, as part of foreign aid programme, of financial and technical assistance to Governments and enterprises of under-developed countries enhance their ability to absorb advanced foreign technology and reduce the inequality of their bargaining position vis-à-vis that of the foreign patentee. In the absence of such outside intervention, the fact remains that the foreign patentee's price and conditions must be met if the under-developed country wishes to obtain the benefits of the needed technology.

275. Although it is natural that the burden of the patent system should appear to the under-developed country concerned mainly in the form of the heavy payments which are made for licensing fees and royalties or profit transfers to foreign patentees, yet frequently a serious burden of the patent system may lie in precisely the opposite, namely those patents which are not being utilized within an under-developed country although they could be used advantageously in its productive economy. This burden is, of course, not measured by the volume of fees and royalties—quite the contrary: since the patents are not in fact worked, no fees and royalties are paid. The true burden here lies in the absence of the social and economic benfits which the working of the patented product or process could have meant to the under-developed country and in the inability of the under-developed country to utilize its resources in the fullest and best possible way, in consequence of the non-working of the patent.

276. In this respect, those who criticize the patent system from the point of view of economic development of under-developed countries, have sound grounds for believing and pointing out that a serious problem exists. But (leaving apart the question to what extent the patent system as such rather than the unequal distribution of knowledge, management know-how, and capital is the real problem involved), the visible part of the burden—the fees and royalties—refers to cases where in fact the patented innovation is used. There is reason to believe that in spite of licence fees and royalties the under-developed countries derive net benefits from the transfer of the patented knowledge. The more serious burden is not visible in specific transactions and balance of payments accounts. Rather, it must be deduced by economic analysis. It relates mainly to those cases where the patented technology is not in fact transferred. This burden could be estimated only as a result of detailed studies of specific countries and industries. Such studies do not so far seem to have been carried out, and they would in any case involve a good deal of non-measurable judgement. There would also be other difficulties in the way of such concrete studies. One major difficulty would be the almost insurmountable one of disentangling the effects of the patent system as such on the one hand, from other restrictive business

[51] As an analogy, one might point to the system of guaranty insurance for investments in under-developed countries available under the laws of Japan, the United States and the Federal Republic of Germany (see part One, paragraphs 302 *et seq.*).

practices, trade-marks, monopolistic possession of necessary know-how and the deficiencies of capital and facilities in under-developed countries on the other hand. Another difficulty is the mass of often highly sensitive statistical information and technological detail which would have to be secured, even if such studies were limited to just a few specific countries or to specific industries.

Chapter V

FOREIGN PATENTS WITHOUT TRANSFER OF TECHNOLOGY: IMPORT OF PATENTED PRODUCTS AND PROCESSES

277. The case where an under-developed country is not—or not yet—directly interested in introducing the patented new product or process in its own economy will be more frequent than might at first be assumed. New patents developed abroad will embody the latest state of technological advance, and will often relate to risky new production on the border of new technology. Moreover, the nature of these new patented products and processes will probably reflect the specific needs and resource endowments of the advanced countries where the invention or innovation is made. In fact, where this is clearly the case, patent protection in under-developed countries will not usually be sought since the benefits would not justify the efforts and costs involved (legal fees, patent fees, etc.). For the under-developed countries, with their simpler technology, their scarcer capital and often more abundant labour, the more suitable technology may usually be one which was new in the industrialized countries perhaps twenty or thirty years earlier. Since the patent term is usually from fifteen to twenty years, all information patented twenty or more years ago is no longer subject to patent protection or restrictions based on patent protection, and should now be freely available to the under-developed countries. The disclosure inherent in the patent system makes these processes more readily accessible to the under-developed countries than they would have been in the absence of a patent system.

278. Whether the under-developed countries are able to utilize and absorb the older patented information of twenty or more years ago, is, of course, a different question. That depends on the necessary related non-patented technological knowledge and the necessary capital to introduce and exploit the older innovation. It must be remembered that just by reason of being considered "obsolete" and submerged by progress in the advanced countries, the appropriate older technology may also be difficult to obtain—but not for reasons which have anything to do with patent protection.

279. The policy implications of this argument can be, and have been, interpreted in different ways. On the one hand, it can be said that as patents will become freely available to the under-developed countries after the maximum period of twenty years and would probably not be needed by them before this time, there can be no harm for the under-developed countries to grant such patents and collect the patent fees. On the other hand, since the production utilizing the foreign patents is not to be introduced in the under-developed countries in any case, the under-developed countries have no interest in granting such patents, whose only effect is to restrict competition among its suppliers. The first argument refers to the advantages to under-developed countries of supporting the patent system in the supplying country, the second to the disadvantages. These will be considered in turn below.

280. In any case, it should be borne in mind that, unless under-developed countries have very clear development plans or development policies, it will be difficult to distinguish in practice between patents relating to products and processes to be imported and those relating to products or processes to be worked within the country. Development plans also are not infallible, for instance, where unexpected new resources may be discovered. Nor is it easy even for the best development planner to foresee what new technological processes may be right for introduction in a developing country over such long periods as fifteen to twenty years, representing the normal duration of patents. This creates the danger that if patents were refused to the inventors and owners of such new processes on the grounds that the process concerned would only be imported and not applied within the country, this might delay the subsequent introduction of the new technology, when the economy was sufficiently matured. Finally, the rule of thumb that the latest technological advances are not suitable to under-developed countries is subject to many broad exceptions, some relating to the type of industry involved, others to more general considerations, e.g. that highly automated machinery can serve to reduce drastically the need for scarce skilled labour.

281. Here, it must be stressed again (as in paragraph 266, above) that the patent system, to be effective, must be of general application and cannot be structured or administered on a case-to-case basis. This does not mean, however, that broad categories of special situations could not be provided for. In the instant case of the foreign patent whose working in the under-developed country can be visualized only after a certain passage of time, consideration might be given to the adoption of the so-called Confirmation Patent in use in several Latin American countries (see part One, paragraph 21 above), provided that the confirmation patent is worked or licensed within a reasonable term, for instance, three years from its registration. Within that term, the owner of the patent would have to prove, by filing an affidavit or otherwise, that the patented invention has been actually worked by manufacture or industrial practice in the country. Failing such proof, the registration would be automatically revoked. This suggestion may be helpful in avoiding the need for a full system of prior examination while facilitating the transfer of know-how to developing countries.

Advantages

282. It may at first appear surprising that an under-developed country should have an economic interest in granting patents to foreign patentees for products or for processes that are not being utilized within the country. But, in so far as the whole intended rationale of the patent system is to encourage and promote the improvement of products and processes through the introduction of new, better and cost-reducing methods, it can be argued that under-developed countries have a direct interest in improving productivity and reducing costs not only inside their own frontiers, but equally within the countries which supply them with the products which they import. The argument is that the under-developed countries even as purchasers are in some degree the beneficiaries of technological progress in the more developed countries, just as the under-developed countries also have a direct interest, as suppliers, in a high rate of growth in the industrialized countries such as is induced by their accelerated technological progress. There may also be a question in some cases whether a small national market will be supplied unless the supplier is granted exclusive control of the market.

283. There is, of course, a strong doubt as to whether the patent protection in the markets of the under-developed countries is of sufficient importance to those engaged in research and development in the more developed countries for the participation of the under-developed countries in the patent system to make any real difference. On the one hand, the protected sales in under-developed countries are probably rather small and marginal in the case of technologically new products and processes covered by new patents; frequently, these markets may be so marginal and uncertain as not to enter at all into the motivation or enterprises engaged in research and development in the more industrial countries. (In such cases, patents in the under-developed countries will usually not be applied for.) On the other hand, even comparatively small additional markets and receipts can make a much more than proportionate contribution to the anticipated profits derived from new inventions and introduction of new processes because of the fixed overhead costs inherent in research and development expenditure; receipts from sales in additional markets, such as the under-developed countries, would in most cases be sheer profit since the cost of research and development would be balanced against receipts from the major markets. Even in so far as patent protection in the under-developed countries were thought to have a discernible effect in promoting research and development in the supplying countries, it would have to be questioned whether it is to the interest of the world economy that the poorer countries should be expected, by way of higher prices for their imports, to contribute to the recoupment of research expenditures in the richer countries.

284. Apart from the possible—though doubtful—encouragement of research and development in the supplying countries, the granting of patents on products imported from abroad can also be defended on the grounds that the import of today is the local manufacture of tomorrow. Once the foreign patentee has been allowed to build up a patent-protected export market, he may then be more easily induced to undertake or license local manufacture as the next step. Historically, the process of import substitution has certainly played an important part in the modernization and diversification of products in under-developed countries.

Disadvantages

285. If the negative conclusion concerning the lack of influence of under-developed countries on the course of research and development and progress of technology in the industrialized countries is correct, then the argument against granting patent protection for imported products gains in force. In that case, it might be arguable that the under-developed countries, not being able to influence the real cost of production of their patented supplies in the advanced countries, would be interested in lowering their own cost by inducing maximum competition among their suppliers, through eliminating patents. This is a matter of great importance. Unfortunately, empirical evidence is lacking as to the extent to which patent protection by reducing competition in fact raises prices to the under-developed country. The presumption must be that it does, on the assumption that the patentee would appear to have an interest in obtaining as high a price for his product as is consistent with the obtaining of maximum profits.

286. On the other hand, competition for the imported product may in any case be excluded by the patent or market situation in the more industrial countries which may rule out a free choice of suppliers whether or not the under-developed country issues a patent. There may also be processes of production alternative to the patented process, or products more or less substitutable for the imported product; either set of conditions would create alternative sources of supply and reduce the possibility of excessive and non-competitive prices. Moreover, patent protection in under-developed countries may not have any appreciable tendency to raise prices of imports by these countries in so far as the whole range of interchangeable goods is concerned. Interchangeable products (e.g. autos, sewing machines, air conditioners, radios, refrigerators, etc.) typically are manufactured by suppliers, each of whom has its own set of patents on processes, components etc., but the competition between the interchangeable final products acts to prevent any "cashing in" on the patent protection through an inflated price to the consumer. It is therefore useful to distinguish between the case of interchangeable patented products (which probably figure very importantly in under-developed country imports) and patented products (e.g. highly specialized equipment items, and certain drugs) which have no counterparts.

287. One might think of undertaking empirical studies examining, for the case of individual under-developed countries, the proportion of their imports represented by patented supplies, and by economic analysis arriving at conclusions as to the degree in which the patent system reduced potential competition, and to make estimates of the degree in which such excluded potential competition could have lowered the prices of supplies. However, it is clear that such concrete studies, while not impossible, would be very

difficult and would remain hypothetical and speculative in nature.

Combined effects on balance of payments

288. The effect of the under-developed countries affording patent protection to imported products on their terms of trade is ambivalent. To the extent that it is necessary to improve production processes in the supplying countries and lower cost of production in the supplying countries, it may be expected to have a favourable effect on the terms of trade of under-developed countries. On the other hand, to the extent that it limits competition in the supplying countries and retards the immediate spread of the new lower cost processes, it may fortify the dominant position of suppliers vis-à-vis the under-developed countries, and thus have an unfavourable effect on the latter's balance of trade. Whether the favourable or unfavourable effect is prevailing—while it can be argued in a general way—can really be decided only by studies of specific cases and specific situations. Such studies will, however, not be easy to design, and their implementation —which must rely heavily on often confidential industry data—must be considered as problematical.

289. Some economists have argued that lower real costs of production in the industrial countries are not generally passed on to the consumers, including the under-developed countries, but instead are passed on to the suppliers of factors of production in the industrialized countries themselves in the form of higher wages and incomes. This, if true, would, of course, reduce or eliminate the favourable effect on the under-developed countries, but only if the analysis is arbitrarily stopped at this point. If the analysis is further pursued, one would have to take into account the effect of the higher wages and incomes in the industrialized countries on the demand for the products of the under-developed countries. This impact is bound to be favourable to the under-developed countries, although some or most of the effect will be in terms of increased quantities of exports from the under-developed countries rather than in improved terms of trade.

290. Some advocates of strong patent protection would, in any case, argue that the unfavourable effect of restriction is outweighed by the generally favourable effect of the disclosure inherent in the patent system and the stimulating effects which the patent system radiates throughout production in the industrial countries and which lowers cost of supplies to under-developed countries and expands their markets generally. The validity of this argument, however, depends on whether the amount of disclosure actually made —and indeed, required—in patent applications is sufficient to enable an invention to be worked. As has been indicated in the preceding chapter, most patented knowledge probably has to be supplemented by related technical and financial services to the under-developed countries, either by the patentee or from other external resources. In any case, as the protection afforded by the patent expires, the disclosed process will be available to all with the necessary knowledge and capital and thus will benefit purchasers in under-developed countries unequivocably.

291. While this analysis is necessarily inconclusive since many of the various factors at work cannot be readily measured or quantified, a general presumption remains that the under-developed countries which import a high proportion of their total supplies, especially in vital investment fields, from the more developed countries, have a strong long-term interest in the lowering of cost of production in those countries and in the patent system, in so far as it makes a contribution to this end. However, the more immediate sacrifice in the form of possible higher prices paid for imported supplies than the prices which would have to be paid in the absence of exclusive rights bestowed by them upon foreign suppliers under the patent system must remain a serious consideration as a price to pay for the possible advantages. The cost and benefits are difficult to measure quantitatively and to compare with each other. In particular, the effect of higher prices specifically due to patent protection is almost impossible to disentangle from higher prices due to such factors as exclusive know-how, trade secrets, restrictive practices, or the dominant market position of the supplier, all of which are intrinsically unrelated to the patent system. Since patents are thus only one of the features which may bring about higher prices, the question arises whether measures directly affecting price levels or general antitrust legislation are not an administratively more feasible technique of coping with the problem than legislation devoted specifically to the patent system.

292. Apart from the difficulty of such disentanglement, practically, the situation is further complicated by the difficulty of speculating to what extent a policy of refusing patent protection by the under-developed country could affect the fundamentals of the situation. It must be remembered that where there is no intention of producing the patented article or using the patented process within the under-developed country, the foreign patentee will normally be more interested in taking out patents in other advanced countries which could be his competitors in supplying the article in the market of the under-developed country, rather than in taking out a patent in the under-developed country. In this situation, obviously the under-developed countries would hardly be able to affect the situation. No patent application will be made to them, but even if such an application should be made, refusal of the patent would still not restore a competitive position among its sources of import.

293. There is, however, one category where it is definitely *not* to the advantage of the under-developed countries to promote technical progress in the more developed countries, i.e., those products which compete directly with the products of the under-developed countries. The cases within this category which come most immediately to mind—although they are not the only ones—are those of synthetic products competing with the natural products of the under-developed countries. It is, however, again very doubtful whether in fact the under-developed countries have it in their power, by granting or refusing patent protection for such products, to have any significant influence on the rate of progress in the production of synthetics or their emergence on the market.

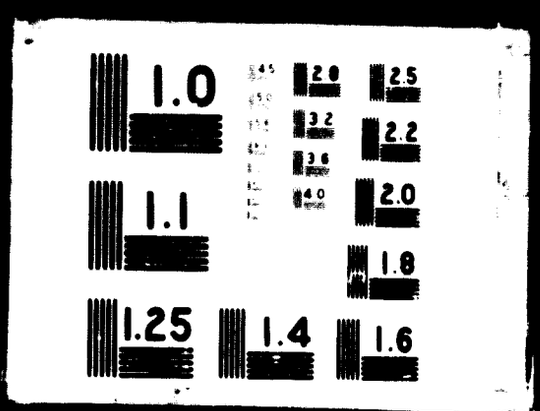
294. The nature of technological progress in industrial countries in any case is such that it is not easily possible to separate the rate of progress in specific fields, such as the production of synthetics, from technological progress in others. Probably the best policy

15. 7. 74

2 OF 2

DO

3794



for the under-developed countries is to seek to counteract such harmful effects of technological progress, as the displacement of their natural products by synthetics, by direct agreements and understandings with the industrial countries through trade concessions, and through compensation by general or specific aid and assistance, rather than by attempting differential treatment in the patent system.

295. Another argument put forward for issuing patents to foreign patentees in the case here discussed —i.e., where there is no question of producing the patented product or using the patented process within the under-developed country itself—is the element of reciprocity. This argument is weak from the economic standpoint, particularly for the countries in earlier stages of development. In their cases, reciprocal treatment of patentees is a somewhat unreal concept, in the absence of technological equality. Generally speaking, in trade relations among unequal partners, the principle of non-reciprocity is becoming more and more generally accepted. In the case of patents perhaps even more than in trade generally, formal reciprocity amounts to actual non-reciprocity. In any case, the patent system of most countries does not require reciprocity, in which case a national of a country without a patent system can secure patents in a country with a patent system.

Chapter VI

PATENTS AND THE DEVELOPMENT OF INDIGENOUS TECHNOLOGY: PATENTS TO DOMESTIC INVENTORS AND INVESTORS

296. The importance of stimulating innovation and pioneering applications of new technology in under-developed countries at reasonable cost is undoubted. Even though it may be true and inevitable that the bulk of the improved technology applied in under-developed countries will be taken from the stock of technological knowledge existing and being created elsewhere in the world (and will thus be transferred rather than newly created), yet at the same time it has become clearer than ever that this transferred technology will often have to be specifically adapted and adjusted to special local needs and circumstances, the utilization of local materials, special local labour conditions, climate, smaller scale of production, etc. Such adaptation may itself require inventive and pioneering qualities; in practice, the dividing line between creation and adaptation of technology is by no means clear cut. While in many under-developed countries the creation or creative adaptation of technology will initially often have to be in the hands or under the auspices of foreign technicians and also to some extent in the research departments of local subsidiaries of foreign companies, as under-developed countries gradually evolve towards more industrialized economies, as the level of education and training rises, and as productive experience is gained and available resources increase, the scope for indigenous creative innovations by nationals will rapidly increase. It will do so more rapidly if the groundwork of encouragement has already been well laid in the earlier stages.

297. The encouragement of inventors and innovators in under-developed countries is particularly important because of the manifold special risks of investment which attend investment in under-developed countries in any case. Their encouragement and protection is an elementary offset to the many risks that they are running and the handicaps that they are facing, compared with their counterparts in the more advanced countries.

298. In extending this encouragement and protection, there are many different measures at the disposal of an under-developed country of which the patent system is only one, and not necessarily the most important. Direct monetary rewards to the inventor or subsidies for the innovating producer, tax concessions, tariff protection against external competitors, liberal allocations of foreign exchange and other needed resources, free training of labour, provision of well-located premises and public utility services, prevention of wasteful competition from imitators through allocation of national resources under development plans, assistance with access to needed non-patented technical information, securing of adequate markets and demand, freedom from price or other controls—all these may be of much greater importance, in specific cases, to the inventor and innovating producer than the legal protection afforded by the issue of a patent.

299. However, these other measures may be enhanced by patent protection, and in some cases may not even be fully effective unless combined with it. Moreover, the encouragement provided by the patent grant may have its own role to play within this total array of measures, and may be preferred as a matter of policy to other measures for a variety of reasons. For instance, direct monetary rewards to inventors or direct monetary subsidies to innovating investors may be too expensive, in view of the limited fiscal capacity of the country. Furthermore, such rewards to inventors or innovators for new processes which do not apply to priority fields within a country's development plan may be expensive, without commensurate benefits to an economy. In such, or similar, circumstances, the issue of a patent which requires—and allows—no individual administrative selection may be the best way of combining public economy with the necessary protection and encouragement of national innovation.

300. Another argument in favour of a patent system for nationals in under-developed countries is that one of the chief drawbacks of the system in more advanced countries may not be of great importance in under-developed countries at an early stage of their development. This drawback consists in the discouragement and limitation of imitation and competition which, in one form or other, must be the counterpart of the protection given to the pioneer. The reason why this drawback may not be particularly serious in under-developed countries at an early stage is, of course, the limitation of markets and resources, which in any case, under

national plans may permit of only one single plant in various economic sectors. Thus, some limitation of competition among national producers is in any case inevitable as well as desirable in the natural condition of many under-developed countries. The patent system will not in this regard create new problems, especially if abuses of the monopolistic position can be prevented under general legislation. By the time additional plants are called for—perhaps in a subsequent development plan period—the original innovator in any case may have acquired enough of a head start so that he is no longer dependent on patent protection. Also the existence of a patent constitutes an incentive to develop alternative processes and thus "invent around" the prior invention. Taking all these factors into consideration there would appear to be no necessary inference that the patent system, unless abused, would unduly limit competition, while at the same time it satisfies the precepts of economic justice and efficiency, both of which call for the encouragement of the creative innovator or innovating investor.

301. In so far as the patented improvement refers to a product or process which is an actual or potential export from the under-developed country—perhaps a processed local material—it also may be of importance to secure patent protection for the national innovator in other countries, whether by bilateral agreements, or through adherence to an international reciprocal system. While this case may be comparatively rare for under-developed countries (as compared with the opposite problem of the protection of the foreign patentee), it deserves special attention because of the great value attached to an increase in the export earnings of under-developed countries. It also becomes of increasing importance to countries in the intermediate stages of industrial development.

302. A national patent system for under-developed countries would, of course, have its limitations. In the first place it would be harmful to devote the very limited resources of under-developed countries in the field of applied technical research and pioneering innovation to the production of patentable innovations, to the exclusion of more urgent and more important problems, and perhaps to the detriment of governmental or government-sponsored research.

303. In the second place, it would be equally clearly wrong to devote some of the same scarce scientific resources to the building up of patent offices examining claims for patents to the detriment of other uses for those resources. In this later context, non-examination systems of patent issue might recommend themselves specially to under-developed countries since they obviate much of the staffing requirements for patent offices. An alternative solution would be the utilization of international resources for the purpose of examination of patent applications from under-developed countries whether by means of *ad hoc* recourse to an organization such as The Hague Institute (see paragraphs 67-69 above), or by a pooling of the resources of under-developed countries, e.g. on a regional basis, as has already been arranged among the member countries of the Afro-Malagasy Organisation (see paragraphs 50-56 above).

304. In the third place, in countries where development of technology and rapid spread of original experience are so crucially important, great care must be taken that the patent system should not be used to retard and block local production and invention rather than promote it. In spheres of production vital to the national interest and the development of special resources, or to public health, limitations on patentability or provision for limiting the scope of the patent grant by special working or compulsory licensing in the public interest are natural, as is evidenced by the presence of such limitations in the legislation of many countries.

CONCLUSIONS

305. The above analysis has considered the economic implications, as distinct from legal or technical considerations, of the patent system for the economies of under-developed countries. The basic philosophy from which the problem has been approached is that of the United Nations, i.e., that the economic progress of the under-developed countries is a matter of concern not only to themselves, but also to the world community at large, and that—as stated in resolution 1713 (XVI)—"access to knowledge and experience in the field of applied science and technology is essential to accelerate the economic development of under-developed countries and to enlarge the over-all productivity of their economies".

306. The establishment of patent systems in under-developed countries for nationals and residents raises no specific problems, subject to the possible need for technical assistance or pooling arrangements in administering such systems, and the general importance of conserving the scarce scientific manpower for directly productive tasks. The issue of patents to nationals and residents is one method—among others—at the disposal of Governments of under-developed countries for encouraging and rewarding invention and technical progress.

307. The real issues revolve around the position of the foreign patentee—and it is with these that resolution 1713 (XVI) on the role of patents in the transfer of technology to under-developed countries is concerned. Where a patent granted to a foreign national is not worked in the under-developed country, there may result artificially high prices of the patented article when imported into the under-developed country, but such high prices may be the result of other factors than the exclusionary monopoly given the patentee. Patents may thus play a part in the picture of adverse terms of trade for under-developed countries, but their specific impact is not measurable. It does not involve the balance of payments burden of royalties since no royalties are paid in this case. The situation is eased from the point of view of under-developed countries if the more developed countries operate—as some of them do—the patent system in a context of general legislation which reduces or counteracts possible misuses of the system for restrictive or price-raising purposes, not only at home but also on operations abroad. The under-

developed countries are also in a position to adopt measures which might reduce or counteract unreasonable prices and other abuses of the patent system.

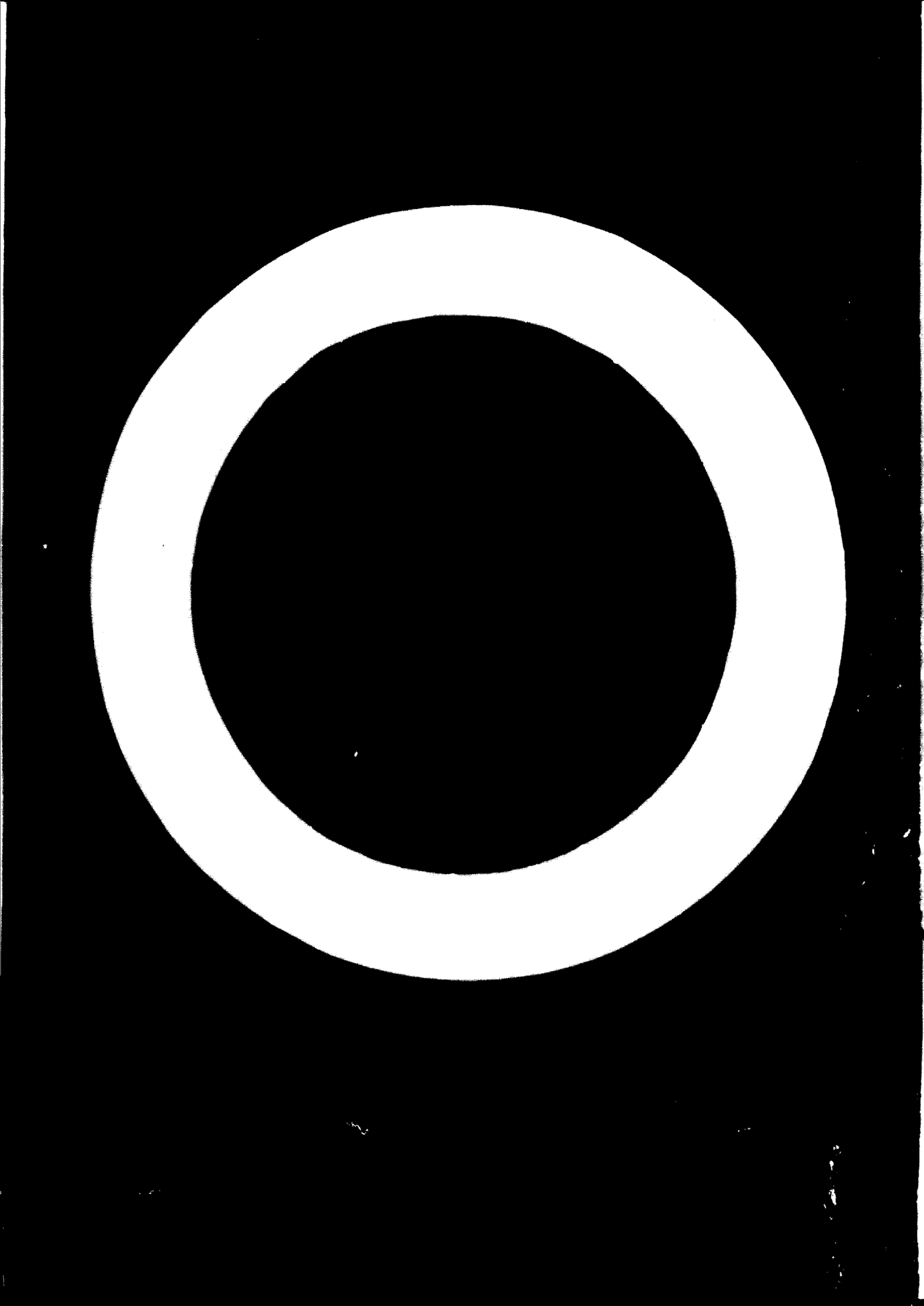
308. Where the patented product or process should be advantageously introduced into the economy of under-developed countries, a number of issues arise. The case where this can be done without the technical co-operation or other resources of the foreign patentee or any other source outside the under-developed country is probably exceptional; in such case a system of compulsory working or licensing will deal with the situation if fairly and effectively administered. This will also be the case where the patent can be worked with such additional foreign know-how and resources as can be acquired from third parties or in the open market. The best course of action by the under-developed country will depend on whether it prefers the patentee to come and work his invention himself (possibly in a joint venture with local enterprise)—provided he is willing to do so on acceptable conditions—or whether it prefers him to stay out. There may be sound economic reasons for either preference in given cases.

309. Where the technical services, management experience and capital resources as well as other connexions of the foreign patentee himself are essential for the introduction of the patented process in the under-developed country, basically the situation is that in one form or other the minimum terms and conditions of the foreign patentee must be met if the innovation is to be brought to the under-developed country. In so far as this can be described as a one-sided relationship and may express itself in undue balance of payments burdens on the under-developed country (or else to undue delays in introducing the new technology), such results are not attributable to the patent system as such, nor is the resulting burden properly measured by the patent royalties. It has been shown that many different considerations may induce the foreign patentee either to prefer working his patent himself in the under-developed country or else rather to license its manufacture; similarly, the Government of the under-developed country may have good reasons to prefer either course. Where these mutual preferences coincide, a satisfactory agreement should be capable of being reached.

310. The Governments of under-developed countries have a legitimate interest in preventing excessive exploitation of their one-sided technological and financial dependence. One such possible method is the screening and control of licence agreements, and avoidance of unduly restrictive features. The world community and the Governments of more developed countries can assist by inducing their patentees not to be unduly restrictive in the conditions and terms on which they are willing to spread technology into under-developed countries; a variety of policy measures ranging from domestic compensation of patentees, international funds for this purpose, equivalent investment guarantees and legislation against restrictive practices applying to business operations abroad, is at their disposal for this purpose.

311. In the final analysis, the question of patents must be seen—and dealt with—in the broader context of facilitating the transfer of patented and unpatented technology to the developing countries, and enhancing the ability of the latter to adopt and use such foreign technology in the implementation of their development programmes.

[redacted]



ANNEXES

ANNEX A

Text of General Assembly resolution 1713 (XVI)

The role of patents in the transfer of technology to under-developed countries

The General Assembly,

Recalling its resolution 1429 (XIV) of 5 December 1959 on the possibilities of a further expansion of international contacts, as well as an increased exchange of knowledge and experience in the field of applied science and technology,

Taking note of Economic and Social Council resolution 375 (XIII) of 13 September 1951 and of the reports on restrictive business practices prepared by the Secretariat and by the *Ad Hoc* Committee established under the above-mentioned Council resolution,[a]

Bearing in mind that a United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas will be convened under Economic and Social Council resolution 834 (XXXII) of 3 August 1961,

Bearing in mind that access to knowledge and experience in the field of applied science and technology is essential to accelerate the economic development of under-developed countries and to enlarge the over-all productivity of their economies,

Realising that the protection of the rights of the patent-holders both in their country of origin and in foreign countries has contributed to technical research and, therefore, to international and national industrial progress,

Affirming that it is in the best interest of all countries that the international patent system should be applied in such a way as to take fully into account the special needs and requirements of the economic development of under-developed countries, as well as the legitimate claims of patentees,

Requests the Secretary-General, in consultation with appropriate international and national institutions, and with the concurrence of the Governments concerned, to prepare for the Committee for Industrial Development, for the Economic and Social Council, and for the General Assembly at its eighteenth session, and taking into consideration any pertinent discussions which might take place in the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, a report containing:

(*a*) A study of the effects of patents on the economy of under-developed countries;

(*b*) A survey of patent legislation in selected developed and under-developed countries, with primary emphasis on the treatment given to foreign patents;

(*c*) An analysis of the characteristics of the patent legislation of under-developed countries in the light of economic development objectives, taking into account the need for the rapid absorption of new products and technology, and the rise in the productivity level of their economies;

(*d*) A recommendation on the advisability of holding an international conference in order to examine the problems regarding the granting, protection and use of patents, taking into consideration the provisions of existing international conventions and the special needs of developing countries, and utilizing the existing machinery of the International Union for the Protection of Industrial Property.

1084th plenary meeting,
19 December 1961.

---

[a] See *Official Records of the Economic and Social Council, Sixteenth Session, Supplement No. 11A* (E/2379 and Add.1); *ibid., Supplement No. 11* (E/2380); document E/2443; *Official Records of the Economic and Social Council, Nineteenth Session, Supplement No. 3* (E/2671); and *ibid., Supplement No. 3A* (E/2675).

ANNEX B

(1) Text of transmittal letter and Questionnaire circulated by the Secretary-General

The Secretary-General of the United Nations presents his compliments to the Permanent Representative of and has the honour to refer to resolution 1713 (XVI) of the General Assembly, concerning the role of patents in the transfer of technology to under-developed countries.

In this resolution the General Assembly requested the Secretary-General to prepare for the Committee for Industrial Development, for the Economic and Social Council, and for the General Assembly at its eighteenth session, "a report containing (i) a study of the effects of patents on the economy of under-developed countries; (ii) a survey of patent legislation in selected developed and under-developed countries, with primary emphasis on the treatment given to foreign patents; (iii) an analysis of the characteristics of the patent legislation of under-developed countries in the light of economic development objectives, taking into account the need for the rapid absorption of new products and technology, and the rise in the productivity level of their economies". The Secretary-General was also requested to include in this report "a recommendation on the advisability of holding an international conference in order to examine the problems regarding the granting, protection and use of patents, taking into consideration the provisions of existing international conventions and the special needs of developing countries, and utilizing the existing machinery of the International Union for the Protection of Industrial Property".

The resolution invites the Secretary-General to prepare the report "in consultation with appropriate international and national institutions, and with the concurrence of the Governments concerned". Accordingly, the Secretary-General has the honour to submit the attached inquiry enumerating the relevant issues on which factual information and the views of His Excellency's Government are requested.

The Secretary-General would appreciate receiving a reply to this Questionnaire, if possible in duplicate, not later than the middle of December 1962 so that he may be able to take full account of it in the preparation of his report. To this end it would be helpful if even partial replies were to be forwarded, without awaiting the preparation of answers to all the items in the Questionnaire.

8 October 1962

QUESTIONNAIRE

The role of patents in the transfer of technology to under-developed countries

A. PATENT SYSTEM

1. If there is a system in effect to grant patents:

(*a*) Supply the applicable laws, regulations, etc., as well as any recent reports (e.g., annual report of the Patent Office), studies, etc., relating to its operation and policies;

(*b*) List the name of the agency charged with issuing patents, its address and its chief official, and indicate the number and professional background of its professional staff;

(*c*) List categories of processes or products (industries), if any, which are excluded from patentability (e.g., pharmaceutical products); state the reasons and indicate whether any changes are under active consideration.

2. If no patent system is in existence, indicate whether active consideration is currently being given to the possible introduction of a patent system (supplying existing relevant draft texts, studies, reports, etc.).

B. TREATMENT OF FOREIGN INVENTIONS[b]

3. (*a*) Describe briefly (with citations to the applicable statutory texts) the provisions bearing on the rights of foreign individuals and companies to secure patents and license their use, especially in so far as these provisions may differ from those applicable to domestic individuals and companies;

(*b*) Explain specifically, where appropriate, those provisions which are designed to implement the patent provisions of the Paris Union or any other applicable international patent convention.

4. Describe briefly (with citations to the applicable statutory texts) any special provisions or measures designed to regulate the terms of agreements by which foreign nationals license or assign their domestic patents, especially through:

(*a*) A requirement of governmental approval of the terms of agreements between foreign patentees and domestic licensees or assignees; indicate, where appropriate, the name of the agency or agencies, issuing such approval, their addresses, chief official in charge, their respective functions, and the number and professional backgrounds of their technical staffs;

(*b*) A limitation of the amount of royalty payments for the use of foreign patents and know-how (e.g., limitation to percentage of sales receipts or profits involved);

(*c*) A limitation of the transferability abroad of royalty payments for the use of foreign patents and know-how (through general foreign exchange regulations or specific provisions applicable to royalty payments).

5. Describe briefly (with citations to the applicable statutory texts) any special provisions designed to promote the transfer of foreign inventions and know-how from developed to under-developed countries, e.g., through:

(*a*) Special tax and other incentives;

(*b*) Measures for the protection of foreign patent rights (e.g., through risk insurance or through assurances against expropriation in national laws or international treaties).

6. Indicate whether active consideration is being given to any changes in the situation described in the replies to this part B, and supply relevant reports, studies, draft legislation, etc.

C. COMPULSORY LICENSING OR REVOCATION[c]

7. Describe briefly (with citations to the applicable statutory texts) any provisions which permit the revocation of patents, the granting of compulsory licenses to their use or any similar measure, on such grounds as the following:

(*a*) The patented process or product has not been (adequately) used or manufactured in the country;

(*b*) The patent rights have been misused or abused (e.g., by improper conditions imposed by the licensor);

(*c*) General availability of the patented product or process is considered to be in the public interest (e.g., in the case of food or medical products).

8. If there are such provisions for the revocation or compulsory licensing of patents, supply, as far as available, the following data, preferably for the last five years:

(*a*) The number of patent revocations (i) applied for and (ii) granted with regard to patents originally issued to:

[b] In replying to the questions in part B please discuss the legislative, etc., provisions in the light of their actual application, in day-to-day practice, taking into account governmental and business practices and important court decisions, in so far as possible.

[c] In replying to the questions in part C please discuss the legislative, etc., provisions in the light of their actual application, in day-to-day practice, taking into account governmental and business practices and important court decisions, in so far as possible.

Nationals;

Aliens;[d]

(*b*) The number of compulsory licenses which were (i) requested, (ii) granted with regard to patents originally issued to:

Nationals;

Aliens.[d]

9. Indicate whether active consideration is being given to any changes in the situation described under 7 above, and supply relevant reports, studies, draft legislation, etc.

D. Restrictive business practices[e]

10. Describe briefly (with citations to the applicable statutory texts) any provisions and governmental measures (whether specifically addressed to patents or of general applicability[f]) which regulate (or prohibit) the insertion, in agreements for the licensing or transfer of patents, of requirements relating to:

(i) The use by the licensee or transferee of machinery, parts, materials or technicians supplied or prescribed by the transferor or licensor (so-called tie-in clauses);

(ii) The limitation of the use of the patent to certain fields of operation;

(iii) The minimum price at which the products produced under the patent may be sold by the transferee or licensee;

(iv) Efforts by the licensee or transferee to fix the resale price of such products on the wholesaler or retailer level;

(v) Limitations of the output;

(vi) Limitations on the geographical area in which the products produced under the patent may be sold by the transferee or licensee (e.g., not outside the country of manufacture);

(vii) Payment by the transferee or licensee of royalties on patents owned or controlled by the transferor or licensor even if he (the transferee or licensee) does not actually use them;

(viii) Cross-licensing or patent-pool arrangements;

(ix) Any other requirements.

11. Discuss the practical application and implementation of these provisions and measures, especially in the case of licensing and transfer agreements by foreign patentees.

12. Indicate whether active consideration is being given to any changes in the situation described under 10 above, and supply relevant reports, studies, draft legislation, etc.

[d] In so far as available give figures separately for each country of origin.

[e] In replying to the questions in part D please discuss the legislative, etc., provisions in the light of their actual application, in day-to-day practice, taking into account governmental and business practices and important court decisions, in so far as possible.

[f] Where the generally applicable rules are subject to special exemption or qualifications in the case of patents or know-how, please explain.

E. Economic data

13. In so far as available, supply information, preferably for each year since 1957, on the number of patents (i) applied for, and (ii) granted to:

(*a*) Nationals;

(*b*) Aliens (if possible, separate figures by countries of origin).

14. In so far as available, supply actual or estimated data, preferably for each year since 1957, on the annual amount of total royalty payments:

(*a*) Received from abroad[g] for the use of the inventions and know-how of domestic nationals;

(*b*) Transferred to foreign countries[g] for the domestic use of inventions and know-how of foreign nationals.

15. Supply any other available economic data, studies, reports, etc., with respect to the extent and importance in the national economy in general, and in specific industries in particular, of inventions and know-how of foreign nationals, distinguishing whether these are patented in the country or not, and whether they are exploited in the country by foreign undertakings, by domestic assignees or licencees or by joint ventures of foreign and domestic interests.

F. Evaluation

16.

A. In the case of a country which is primarily a *recipient* of foreign inventions and know-how:

(1) Describe and evaluate the manner in which access to foreign inventions and related know-how has been helped or hindered:

(*a*) Through the existence or non-existence of a national patent system;

(*b*) Through the exclusion from patentability, if any, of certain kinds of products or processes (see question 1 (*c*) above);

(*c*) Through any particular features of the present national patent system.

Where appropriate, distinguish between different industries.

(2) Specifically, if there is no national patent system, or if foreign inventions are not patentable in the country, describe and evaluate the extent to which and the manner in which:

(*a*) Foreign inventions have been actually used in the country;

(*b*) The know-how pertaining to such inventions has been secured in the country.

B. In the case of a country which is primarily a *supplier* of inventions and know-how to other countries, describe and evaluate the manner in which the supply of such technology to industry (or to specific industries) in under-developed countries has been helped or hindered by:

(*a*) The existence or non-existence of patent protection for foreign inventions in such recipient countries;

(*b*) Through any particular features of the patent system of such recipient countries.

[g] If available, give data separately for each foreign country.

(2) List of Governments, inter-governmental and non-governmental organizations replying to the Questionnaire

Replies and information have been received in response to the Questionnaire from the following fifty-five States and various inter-governmental and non-governmental organizations.

(*a*) The following States have replied to the Questionnaire: Australia, Austria, Belgium, Brazil, Cambodia, Cameroon, Canada, Ceylon, China, Cuba, Czechoslovakia, Denmark,

El Salvador, Federal Republic of Germany, Finland, France, Hungary, India, Indonesia, Ireland, Israel, Italy, Jamaica, Japan, Kenya, Laos, Lebanon, Luxembourg, Madagascar, Mexico, Morocco, Nepal, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Philippines, Poland, Republic of Korea, Republic of Viet-Nam, South Africa, Spain, Sudan, Sweden, Switzerland, Tanganyika, Trinidad and Tobago, Tunisia, Turkey, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom of Great Britain and Northern Ireland, United States of America and Yugoslavia.

(*b*) The following sixteen organizations have replied to the Questionnaire:

(i) *Inter-governmental organizations*

African and Malagasy Industrial Property Office

Commission of the European Economic Community

Council of Europe

Council for Mutual Economic Assistance

Inter-American Development Bank

International Bank for Reconstruction and Development

International Bureau for the Protection of Industrial Property

Organization of American States

Organisation of Economic Co-operation and Development

(ii) *Non-governmental organizations*

Federation of British Industries

International Association for the Protection of Industrial Property

International Bar Association

International Chamber of Commerce

International Law Association

National Association of Manufacturers (U.S.)

United States Chamber of Commerce

ANNEX C

Governments' evaluation of the manner in which access to inventions and know-how had been helped or hindered through the existence or non-existence of a national patent system[h]

AUSTRALIA

No reliable evaluation has been or can be made, but it is believed that the patent system has fulfilled its function of stimulating industrial progress.

BELGIUM

Belgian law has always aimed at protecting inventions irrespective of their origin in order thus to promote technical progress generally. (*Translation from French.*)

BRAZIL

The evaluation referred to can only be made, in respect of Brazil, on the basis of concrete cases. There are complex inventions which require specialized technical assistance and there are simple inventions which do not. In many cases, contracts are mainly designed to take advantage of the patent system to obtain royalties without justification. (*Translation from Portuguese.*)

CANADA

The patent system does not differentiate between foreign and domestic invertions. Patents are taken freely by foreigners at the rate of 95 to 5 domestic. Our laws and the policy of the Government encourage the coming in of new inventions and the setting up of new industries.

CEYLON

By the registration of foreign patents in Ceylon this know-how is made available to this country.

CHINA

Access to foreign inventions and related know-how has been helped through the existence of a national patents system. Exculsion from patentability of certain kinds of products or processes with sound reasons has certainly had a beneficial effect. (*Translation from Chinese.*)

CUBA

In Cuba a distinction is made between inventions and "know-how". A large number of foreign inventions have been registered in Cuba, but the country has not derived any benefit from this, since they have been used to monopolize the products that these patents protect. The foreign inventors applied for and obtained patents in Cuba in order to be able to import their products without competition from any other manufacturer. That was possible owing to certain deficiencies in the Patents Act, which provided that for the patent to enter into force the mere display of the object to be covered by the patent was sufficient, without the place of manufacture being taken into consideration. (*Translation from Spanish.*)

CZECHOSLOVAKIA

Czechoslovakia is not primarily a recipient of foreign inventions and know-how. Foreigners have under conditions of reciprocity the same rights as Czechoslovak citizens. Therefore, there are no special provisions or measures in which access of foreign inventions could be hindered. On the contrary, in recent years, there has been in the Czechoslovak Socialist Republic a constant increase of applications for patents by foreigners and the number of patents granted to them is also increasing year by year. The majority of agreements[i] are not based on the patent system and their subject matter is mostly undisclosed know-how and experience. No data have yet been elaborated ascertaining to what extent the patent system, or its particular features, in countries recipient of patents and know-how has helped or hindered the conclusion of such agreements.

FRANCE

An examination of the data[j] shows that patent applications of foreign origin account for more than 60 per cent of all patent applications filed in France in 1962. Furthermore, the balance of payments involving the sale and purchase of patents and licence concessions shows a deficit of some 300 million new francs during the same years. These figures suggest that French industry is not primarily, but to a large extent, a recipient of foreign know-how. This situation is obviously facilitated by the existence of the patent system which, by giving the owners of such know-how the assurance of being protected in France both by domestic legislation and by the International Convention, enables them to license or assign

[h] The text is reproduced in its original form as presented in government replies to part F of the Questionnaire (see annex B), except where translation (by the Secretariat) is expressly noted.

[i] Reply to item 16 B of the Questionnaire.

[j] See annex E below.

their patent rights with complete security. (*Translation from French.*)

FEDERAL REPUBLIC OF GERMANY

The supply of inventions and technical know-how to under-developed countries is hindered in most of these countries by the still inadequate patent protection system. There have been cases in which even the illicit copying of products has led to considerable difficulties. There have been hindrances in many cases owing to the fact that a number of under-developed countries are not members of the Paris Union Convention and therefore do not grant priorities.

HUNGARY

The inventions and know-how actually used in Hungary are roughly balanced by those sold to foreign countries. The use of inventions and know-how of foreign nationals, required by Hungary's industrial development, has always been secured on the basis of agreements with foreign patent owners. No industry has suffered drawbacks in this respect. No obstacles have been raised by Hungary to the transfer of domestic patents to foreign countries.

INDIA

Although the patent system has been working in India for over a century, hardly 10 per cent of the patents granted under the Indian statute have been of Indian nationals, and more than 90 per cent of the patents are owned by foreigners. The position has not improved since the attainment of independence by India. The Indian public have access to the specifications of the foreign-owned patents, as all these specifications are open to public inspection. Nevertheless, India has not derived any substantial benefit by these patents. This is due to the reluctance of the patentees to work their inventions in this country either by themselves or by granting licences to Indian concerns, and probably also due to the fact that the country has not technologically advanced to work most of the inventions. It would thus appear that the patent system, the advantages of which are applicable to highly industrialized countries, does not yield the same results when applied to under-developed countries. The foreign patents are not taken in the interests of the economy of the country granting the patents, but merely to protect the export market from competition from rival manufacturers, particularly manufacturers from other countries. As has been stated by Shri Justice Rajagopala Ayyangar in his Report, "the costs in under-developed countries where a patent is worked wholly abroad far exceed any possible gains".

As already stated above, ... inventions relating to Atomic Energy have recently been rendered unpatentable under the Atomic Energy Act, 1962. With regard to this class of invention, however, there are special considerations, e.g. all the applications in India are of foreign origin and the Government has taken the sole responsibility for the development of Atomic Energy in India.

The absence of a provision in the Indian Patents and Designs Act, 1911, for revocation of a patent on the ground of non-working or failure to work adequately is considered detrimental to the interests of the country. A. has been stated by Edith Penrose in her book entitled *Economics of the International Patent System*, "When a country grants patents to foreigners for inventions which the foreigner is not going to 'work' in the country himself, but which he is willing to make available to domestic producers at a price, the price paid to the foreigner is clearly one of the costs of granting the patents and just as clearly must restrict the use of the invention to those who can pay the price. From the point of view of producers this cost is simply the royalty payment made to foreign firms." Again "There is no doubt that normally granting of patents to foreign firms stimulates the rate of invention in the foreign country . . . Most countries have little if anything to gain economically from granting patents to foreign firms." The question has been carefully considered by Shri Justice Rajagopala Ayyangar in his Report, where he comes to a similar conclusion. On the effect of non working of foreign patents, the Judge says that this country is deprived of getting in many cases goods, even though they are essential for industrial production or for the health and safety of the community, at cheaper prices from available alternative sources, because of the patents protection granted in India.

The matter assumes great importance in respect of patents for drugs and articles of food. (See, for instance, Kefauver Report in the United States.) It is a fact that the price of the same drug varies considerably from country to country. The question of public interest is involved in these cases.

India is primarily not a supplier of inventions and "know-how" to other countries. As already stated, only about 10 per cent of the patents granted under the Indian Act are owned by Indians and even these deal mostly with cottage and small-scale industries. The number of patents by Indians in respect of major industries which might facilitate exports of manufactured goods is negligible.

ISRAEL

It is considered that the utilization of foreign inventions by Israel enterprises would, for all practical purposes, be rendered impossible in the absence of a national patent system.

It seems that the existence of such a patent system since 1924 has made it possible both to build up industries utilizing contemporary technical knowledge protected by patents and secret know-how, and to protect the fruits of research carried on by local industry and its research industries.

It may further be noted that the liberally granted patent protection has facilitated the creation of new industries and has in certain cases prevented the establishment of a large number of small enterprises competing in an exceedingly restricted home market, which would have been detrimental to the economy of the country.

ITALY

Italy is primarily a recipient of foreign inventions. Access to foreign inventions is helped by the patent system in force in Italy. Access to foreign inventions relating to medicines and to processes for their production is hindered because such processes and products are not yet patentable in Italy. However, the present law is being changed to extend patentability to both pharmaceutical processes and their products. When these amendments come into force, access to foreign inventions in this field will certainly be easier. (*Translation from Italian.*)

JAMAICA

The registration of foreign patents is usually effected through local solicitors. This provides opportunity for appropriate contacts with persons likely to be interested in utilizing the inventions since quite often such solicitors are the legal representatives of such persons. Thus usage of local entrepreneurs, either alone or in association with overseas entrepreneurs, is facilitated.

JAPAN

Seen on the international level, our patent system is one of the best formulated of the world, and there is no likelihood that the right of foreigners will not be protected adequately, preventing the introduction of foreign technology to Japan. In fact, the satisfactory introduction of new foreign technology is contributing greatly to the development of Japanese industries.

No chemical product or substance obtained by nuclear transformation is patentable in Japan. But this is true in many

advanced countries of the world, and since the process by which such product or substance is obtained is patentable, we believe that the end result is approximately the same, unaffected by the lack of patentability for such product or substance.

The Japanese patent system was instituted with due consideration taken of the patent system of various countries and, furthermore, as it is supported by our Patent Law which incorporates the spirit of the Union of the Paris Convention, there is no ground whatsoever that one can state that, by the difference in the patent system, introduction of foreign technique is either unduly encouraged or discouraged.

There were certain countries recipient of technology to which not only export of technology from Japan but also of merchandise manufactured by new technique from Japan met difficulties, due to the lack of a patent system or a system to protect the inventions of foreigners. Regardless of whether the recipient country is an under-developed country or not, there were some instances where the Japanese inventors received damages as the recipient countries do not recognize the patentability of products or processes which not only Japan but most of the countries of the world recognize as such.

Republic of Korea

Foreign inventions and know-how are considered to be imported into this country through the existence of a national patent system. Though many foreign inventions and know-how might have been introduced to Korea under private or personal contract not through the patent system, the patent system has helped both parties to invest their properties in this country with confidence that their property could be protected from misuse by others.

Lebanon

A great number of the foreign patents are not used in Lebanon. The reason for their registration is just to guarantee their patent rights.

Madagascar

The Malagasy Republic is primarily a recipient of foreign inventions and know-how. Patent proprietors have thus far operated at their own risk and without any guarantee other than the possible support of the public authorities in the event of litigation (it should be explained, in this connexion, that there has never been any dispute, much less litigation). Moreover, the interest of the Malagasy Republic in encouraging the greatest possible investment in order to develop its economy has done much to help matters. However, the recent establishment of the African and Malagasy Office, as the result of an international agreement which takes into account the provisions of the international agreements concerning industrial property, will, in addition to the material advantages which it represents, most certainly facilitate access to foreign inventions and related know-how through the guarantees which it provides. (*Translation from French.*)

Mexico

Because pressure of time has made it impossible to compile the requisite data, it is impossible to determine the extent to which Mexico is a recipient of foreign inventions and know-how. It may be stated, however, that the equality before the law of national and foreign inventors facilitates the availability of foreign inventions and know-how. (*Translation from Spanish.*)

Netherlands

Our country is obviously a recipient of foreign inventions. In our country the opinion prevails that due to the existence of a national patent system, foreign patentees are more prepared to have their patented inventions and the related know-how in this country practised by granting licences and thereby supplying that know-how to interested national industries, than in case a national patent system did not exist. The patents prevent abuse of the inventions and the related know-how by those other than the licensees. The exclusion from patentability of chemical products as such of methods of medical treatments and of methods of cultivation and breeding of plant and animal varieties, never did exercise a prejudicial influence on the access to relevant foreign inventions and know-how.

New Zealand

It is assumed that New Zealand is primarily a recipient of foreign inventions and know-how. There has been no recent study of the patent system in New Zealand and there is no means of finding out what its effect is upon the economy of the country. The criticism of the patent system in general as existing in this country has come to the knowledge of the authorities in recent years and it is appreciated that New Zealand should not expect to be a recipient of inventive skill from abroad without making its contribution, by way of royalties, towards the cost of research and the rewarding of inventors.

Nigeria

The Nigerian Government is at present actively considering the possibility of revising portions of the Law of Nigeria relating to patents so as to make room for the registration of patents for applicants from countries other than Great Britain, which, prior to the independence of Nigeria, had enjoyed automatic recognition in Nigeria.

Poland

Business transactions of Polish persons in the sphere of inventions refer in principle to countries in which an organized patent system is in existence. On demand of countries in which an organized patent system does not exist, Poland is ready to be helpful in organizing such a system.

South Africa

It is extremely difficult to evaluate in precise terms the manner in which access to foreign inventions and know-how has assisted in the industrial development of the Republic. A former Chairman of the South African Board of Trade and Industries in his book "A Quarter of a Century of Industrial Progress in South Africa," however, writes as follows:

> "South Africa may succeed, up to a point, in dispensing with foreign capital but what she certainly cannot do without, without seriously retarding her industrial growth, is those mature skills and techniques which can only be drawn from the more highly industrialized countries."

There can be no doubt that the existence of a national patent system has assisted in the industrialization of South Africa, in so far as the engineering, mining and certain secondary industries are concerned.

Switzerland

Even in the absence of published statistics, it can be said that Switzerland is a supplier rather than a recipient of foreign inventions and know-how. If the supply of inventions and know-how to industry in under-developed countries has so far been limited, this is very likely due to the lack of adequate patent protection for foreign inventions in the recipient countries.

In order to encourage the supply of inventions and know-how to the under-developed countries, three principal kinds of measures should be taken in those countries:

(*a*) Effective patent protection for foreign inventions;

(*b*) Effective protection of foreign capital investments, including the transfer of real net profits in the form of interest, dividends of royalties to creditors;

(c) A genuine guarantee that, in the event of the nationalization of property, rights or interests belonging to foreign suppliers, adequate and effective compensation would be granted and transferred to the foreign owners

In order to explain and justify these suggestions, it is sufficient to recall that in both Europe and the United States of America the great industrial and commercial development of the nineteenth century was not hindered but rather helped by the adoption of laws on patent protection, and that the absence in those countries of any tendency to nationalize private undertakings or to restrict the transfer of foreign capital encouraged the investment of foreign capital and consequently made measures such as those referred to under (*b*) and (*c*) above superfluous. (*Translation from French.*)

TURKEY

As indicated above, there is a Turkish Patents Act currently in force. In addition, the necessary first steps are being taken towards the preparation of a draft European Patents Act covering the continent of Europe which would facilitate access to and utilization of technical processes (know-how) coming into existence in consequence of new requirements. However, Turkey being a country which is a recipient of foreign patents, it is essential under articles 36 and 37 of the Turkish Patents Acts currently in force that where the right to exploit a patent in Turkey is purchased that patent should have the character of novelty. Accordingly, the inventions which Turkey purchases must have this character of novelty on the date on which they are purchased.

Since Turkey is not a country which undertakes original research, if it buys a patent on which no original research has been done, or the novelty of which has not been established, it is obliged to have this research carried out by the International Patent Institute at The Hague. This is both time-consuming and costly. Secondly, it must be noted that the absence of an impartial international body responsible for assessing the value of the technical processes purchased and fixing a market price for them makes difficult the transfer to Turkey of technical processes where the payment of compensation is involved. (*Translation from Turkish.*)

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Rather more than half the applications for United Kingdom patents now come from abroad. A large number of United Kingdom inventors seek patents overseas. This country falls, therefore, in a sense, into both categories A and B.[k]

From very early days the British Law recognized the advantages to the economy in making known, and exploiting, new inventions in the country. It has encouraged foreigners as well as its own nationals to do so. The following is a quotation from the second interim report of the Committee on Patents and Designs (1944):

"The Patent law of the United Kingdom originated in the Statute of Monopolies, enacted in 1624 (21 Jan i, c.3). The Statute had as its object the suppression of monopolies, which before that date were conferred by the Sovereign as a convenient means of raising revenue. These monopolies related for the most part to every day necessities, devoid of novelty or invention. The Statute in general terms declared monopolies, grants and letters patent for the sole buying, selling or using of anything within the realm to be contrary to law, but Section 6 excluded patents for inventions from that general prescription in the following terms:

"Provided also that any declaration before mentioned shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made, of the sole working or making of any manner of new manufactures within this realm to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law, nor mischievous to the State, by raising prices of commodities at home, or hurt of trade, or generally inconvenient; the said fourteen years to be accounted from the date of the first letters patent or grants of such privilege hereafter to be made, but that the same shall be of such force as they should be if this Act had never been made, and of none other.

"The theory upon which the patent system is based is that the opportunity of acquiring exclusive rights in an invention stimulates technical progress, mainly in four ways: first, that it encourages research and invention; second, that it induces an inventor to disclose his discoveries, instead of keeping them as a trade secret; third, that it offers a reward for the expense of developing inventions to the stage which they are commercially practicable; and fourth, that it provides an inducement to invest capital in new lines of production which might not appear profitable if many competing producers embarked on them simultaneously. The history of industrial development seems on the whole to have justified this theory."

It is almost certainly true that these advantages outweigh the disadvantages inherent in granting monopolies and they apply to a country which falls into category A[k] as well as to one in category B.[k]

UNITED STATES OF AMERICA

The United States is primarily a supplier of inventions and know-how to other countries. . . . American enterprises have large numbers of licensing arrangements with foreign firms all over the world. Because of the extensiveness of United States supply of inventions and know-how to less developed countries and the fact that the supply is effected essentially through private arrangements, the United States Government does not maintain data that would enable us to particularize in answering this quesion. Certain general statements, however, can be made. Private investment from industrially highly developed countries is a significant factor in accelerating industrialization in less developed countries. One element that is considered by a potential investor with respect to an investment involving a patent licensing agreement for production in a particular country, is the matter of effective patent protection in that country. Theoretically, a country could have free access to all of the technology embodied in patents without maintaining a patent system. Often the information disclosed in patents is not sufficient, however, to be of much utility to the potential user. He needs to have the related technology to "work" the patent. Since patent licences today usually involve commitments for the provision of technical assistance, the licensee obtains much more than naked patent rights. The local economy benefits by the acquisition through the agreement of valuable industrial techniques and know-how. In addition, dollar costs arising from royalty payments to United States firms are often more than offset by earnings of foreign exchange from increased exports or savings of exchange due to the availability from domestic sources of a product or service previously imported. This is not to say, however, that a foreign investment project involving licensing arrangement in a less developed country is always beneficial to the less developed country. On the one hand, it may mean that a particular less developed country may be giving up cheaper imports and may be diverting some of its economic resources from other activities in which it might be more efficiently engaged. On the other hand, the project may contribute in one way or another to

[k] See part F of the Questionnaire (annex B).

general economic development and broadening of the industrial base in the less developed country. These are factors which the less developed country must weigh in arriving at decisions on an investment project involving a patent licensing arrangement

Patent protection is also generally regarded as an important factor in fostering domestic inventions, in that it increases incentive for inventing. It is particularly important to recognize the role of patents in encouraging investment in research programmes which are often very costly.

Further, patents assist agricultural countries to industrialize. Historically the patent systems of most of the highly industrialized countries date back to the early 19th century and before. For example, the United States enacted its first patent law in 1790. Thus these laws generally predated the great surge of industrialization that took place in the 19th century. Although no firm conclusions can be drawn that the highly industrialized countries have made rapid technical progress because they have had patent laws for a long time, or that their progress would have been slower without patent laws, the implication is that the protection of inventions has been a significant factor in their rapid and far-reaching industrial growth.

Annex D appears overleaf

ANNEX D

Synoptic table of major provisions of patent

Prefatory note

This table is based on a survey of national patent legislation prepared by the International Bureau for the Protection of Industrial Property; where appropriate, information supplied by Governments in response to the Questionnaire circulated by the Secretary-General (annex B) has been inserted.

The table covers patent legislation in the following thirty-four countries:

AFRICA

Ghana, Liberia, Morocco, Nigeria, Tanganyika, Tunisia and the United Arab Republic.

ASIA

India, Iran, Japan, Pakistan and the Philippines.

EUROPE AND THE MIDDLE EAST

Czechoslovakia, France, Federal Republic of Germany, Israel, Italy, Lebanon, Netherlands, Spain, Sweden, Switzerland, Turkey, United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics.

NORTH AMERICA

Canada and the United States of America.

SOUTH AND CENTRAL AMERICA

Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT LEGISLATION

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
ARGENTINA	Patent Law of 1864 as amended to 1957	Independent patents of invention are granted for new discoveries and inventions in all classes of industry, specifically defined as new industrial products, new means, and the new application of known means for obtaining an industrial result or product. Patents of addition are granted for improvements on already patented inventions. Importation or revalidation patents are granted for inventions already patented in another country, and must be based upon the first foreign patent issued. No patent will be granted if the invention was publicly known anywhere before application to such an extent that it could be worked *Not patentable*: pharmaceutical compositions, financial schemes, theoretical discoveries or inventions having no industrial application and inventions contrary to law or public morals	Examination as to formal requirements and novelty. Examination as to novelty with search only through prior domestic patents. Inventions relating to military and petroleum must be referred to the respective departments before the Patent Office examination	For independent patents, five, ten or fifteen years from date of grant. A fifteen year patent is granted only for inventions considered by the Commissioner to be of outstanding importance. For patents of addition, the unexpired term of the main patent but not more than ten years. For importation patents the unexpired term of the basic foreign patent but not more than ten years

Prefatory note (*continued*)

The table does not include countries which have no national patent legislation (see e.g. Indonesia, Sudan, chapter II (2) (F) above).

Not included in the table, moreover, are any of the following twelve countries, members of the African and Malagasy Union for the protection of Industrial Property, namely: Cameroon, Central African Republic, Chad, Congo (Brazzaville), Dahomey, Gabon, Ivory Coast, Madagascar, Mauritania, Niger, Senegal, Upper Volta. These countries have not in the past had separate national patent legislation. Prior to their independence, they gave recognition to French patents. The patent law of these countries is being governed now by the African and Malagasy Industrial Property Convention which is in effect as from 1 January 1964. The Convention provides for uniform patent legislation, the centralization of administrative procedures in a regional office, the grant of national treatment to foreign patent applicants, and adherence by the signatory parties to the Paris Convention. So far, the following countries have adhered to the Paris Union: Cameroon, Central African Republic, Chad, Congo (Brazzaville), Gabon, Ivory Coast, Madagascar, Niger, Senegal and Upper Volta. (For a more detailed discussion of the Afro-Malagasy Accord, see above, chapter II (1) (B).)

LEGISLATION IN SELECTED COUNTRIES

5 *Adherence to international patent conventions*	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents; sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
Convention of Montevideo of 1889 (since commencement)	National treatment. Foreign filing priority under conventions referred to in 5. A domestic agent must be appointed by an applicant residing abroad	Patents must be worked within two years from the date of grant, and thereafter working must not be interrupted for two years, except in special circumstances. Any interested person may apply for revocation of the patent for non-working. No provision for compulsory licencing	

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT LEGI

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
BRAZIL	Industrial Property Law (Decree Law No. 7903) of 1945 as amended in 1945 and 1961	Any new invention susceptible of industrial utilization can be patented. An invention is considered new if it has not been deposited, patented or publicly used in Brazil and if it has not been described in publications in such a manner that it might be realized. Also new are the inventions which up to one year before the filing of the application in Brazil have not been abroad, patented or described in publications in such a manner that they might be realized *Not patentable*: inventions contrary to law, morals, health, public safety; substances or food products, all kinds of medicine, products obtained by chemical means or process (new processes for the manufacture of such substances, products or materials are patentable), theoretical ideas, juxtaposition of known organs, mere change of form, proportions, dimensions or materials (unless new technical effects are achieved), commercial and financial systems; speculation or propaganda plans	Examination as to formal requirements (legal aspect) and technical examination regarding novelty and suitability for industrial utilization	Fifteen years from grant of patent. Extension of five years possible. If compatible with national interest

EGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents, sanctions for non-working*	8 *Other cases in which patents are subject to public use*
aris Convention (7th July 1884). Convention of Buenos Aires of 1910 (9th November 1914)	National treatment. Foreign filing priority under conventions mentioned in 5	If the invention is not exploited in Brazil during two years after grant of patent, or if use is discontinued for two years, without good reason, patentee must grant licences to any applicant. The Director of Patent Office will decide. If an invention has not been worked in Brazil for three consecutive years, without excuse, any interested party may apply for revocation	Patents may be expropriated in national interest with compensation to owner. A committee makes an appraisal and the expropriation is by an act of the Government. A disagreement with the appraisal is decided by the courts

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
CANADA	Patent Act, 1952 (S.R. 1952, Ch. 203) Patent Rules, 1948-1959	Any new and useful art, process, machine, manufacture, composition of matter or improvement thereon may be patented. No patent will be granted, if the invention is described in any patent or publication in any country, or in public use in Canada, more than two years before application in Canada. If application has been made for a patent in another country, the application in Canada must be filed either within one year from the foreign filing or before the foreign patent is issued. *Not patentable*: inventions having an illegal object and mere scientific principles and abstract theories; products made by chemical processes and intended to be used for the preparation of food and medicine (processes for making such products are patentable)	Applications are examined as to formal matters, novelty and inventiveness	Seventeen years from grant
Chile	Industrial Property Law of 1925; as amended to 1946	Any new and useful invention capable of industrial application; combinations and new processes and new improvements producing superior results Patents are also granted on the basis of foreign patents. An invention is not novel and cannot be patented if it has been sufficiently publicly known in Chile or elsewhere before the date of application *Not patentable*: medicines, pharmaceutical products, foods, beverages, financial schemes, theoretical inventions and inventions contrary to public order	After thirty days from publication in the official journal and in a newspaper, applications are referred to an examiner, who is not necessarily an official of the Patent Office	Five, ten or fifteen years from the date of grant, and may be extended from one of the lower terms to one of the higher. In exceptional cases, limited to residents, the initial or extended term may be twenty years. Patents of addition expire with main patent. Where a patent is based upon a foreign patent, the term is the unexpired term of the first granted foreign patent

(continued)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents; sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
Paris Convention (1st September 1923)	National treatment. Foreign filing priority under Paris Convention, and other reciprocal agreements	Compulsory licensing may be ordered by the Commissioner after the expiration of three years in the following conditions: if invention is not worked commercially in Canada; if working is hindered by importation; if demand for patented article is not reasonably met; if development of commercial or industrial activity in Canada is prejudiced by refusal to grant licences on reasonable terms or by conditions attached. If licences are insufficient, the patent may be ordered revoked, subject to the conditions of any treaty or convention	In the case of a patented invention intended for or capable of being used in the preparation of food or medicine, the Commissioner is required, unless there is good reason to the contrary to grant to any person applying for the same a licence limited to the preparation of food or medicine. The three-year limitation period (see 7) does not apply in this case

National treatment

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
COLOMBIA	Patent Law of 1925, amended 1931	New discoveries, inventions, improvements in industrial machinery, new industrial products, and new methods, or application of methods, resulting in industrial products. Confirmation patents on the basis of foreign patents are also granted. Invention is not novel if sufficiently known in Colombia or elsewhere so that it can be carried out. Foreign patents may be confirmed or revalidated at any time if invention has not yet been used or made public in the country *Not patentable:* inventions contrary to public health, safety or morals, and natural materials of foreign or domestic origin. Medicines, pharmaceutical preparations, foods and beverages may be subjects of patents only after examination by a qualified Commission	Application examined as to form and published in the official journal with opposition period of thirty days during which private parties may oppose the grant of the patent	Patents are first granted for a term of ten years from date of grant with two possible extensions of five years each. Confirmation patents expire with basic foreign patent
CZECHOSLOVAKIA	Law of 5th July 1957 relating to Inventions, Discoveries and Improvement Suggestions; Governmental Order of 2nd August 1957 relating to Inventions; Governmental Order of 2nd August 1957 relating to Discoveries; Governmental Order of 2nd August 1957 relating to Improvement Suggestions; Various Directives issued by the President of the Office for Patents and Inventions, and by the Ministries of Health, Agriculture and Forestry	Inventions susceptible of industrial application. The solution of a technical problem is considered an invention if it is new or represents a technical advance. No patent is granted if the invention is already known in Czechoslovakia or abroad, or has been operated, exhibited or presented to the public *Not patentable*: food products, medicaments and substances produced chemically (but processes for the production of such products or substances are patentable); new methods of medical treatment and prevention of disease; new varieties of seeds and plants and new animal breeds	Examination as to novelty and technical progress	Fifteen years from date of application

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non working*	8 *Other cases in which patents are subject to public use*
Convention of Caracas of 1911 with Bolivia, Ecuador, Peru and Venezuela (1913) Reciprocal agreements with France (1901)	National treatment		
Paris Convention (5th October 1919)	National treatment on the basis of reciprocity. Foreign filing priority under Paris Convention		Exploitation in the public interest (for example, national defence). If no agreement regarding remuneration is reached, the court decides this issue

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 *Official title and date of current patent law and regulations*	2 *Patentable subject matter*	3 *Examination by Patent Office*	4 *Duration of patent*
FEDERAL REPUBLIC OF GERMANY	Patent Law as amended in 1961; the Law on Utility Models, as amended in 1961, Patent Office Regulations, as amended in 1961; Rules on Patent Applications, 1945; Law on fees of the Patent Office and Patent Court, as amended in 1961; Law on Employees' Inventions, 1957; Orders for the application of the Employees' Inventions Act, 1957	Patents and patents of addition are granted for new inventions which permit industrial utilization. Utility models are registered with examination as to novelty *Not patentable*: inventions the utilization of which would be contrary to law or public morals; inventions of articles of food and taste; medicines; substances, which are produced by chemical processes, in so far as the inventions do not concern a specific process for the preparation thereof	Examination as to novelty and inventiveness	Eighteen years from date of application. Utility model patents are granted for three years from the day following the date of application, and an extension of three more years may be granted upon application and payment of fees
FRANCE	Patents Act of 5 July 1844, as amended; articles L 603 and 604 of the Public Health Code, which, as amended by the Order of 4 February 1959, institute "Special Patents for Medicaments". Various decrees	Invention of new industrial products; invention of new methods, or new application of known methods, for obtaining an industrial result or product. Patents of addition are also granted *Not patentable*: pharmaceuticals are not patentable under the Act of 5 July 1844, which allows only the processes or means of production to be protected, but they may be the subject of "special patents for medicaments". Financial schemes and combinations, and inventions contrary to public order, morality or law, are likewise not patentable	No examination as to novelty, except where special patents for medicaments are concerned	Twenty years from filing date
GHANA	Patents Registration Ordinance, Chapter 179 (came into force on 1st January 1925, with various subsequent amendments)	The only patent protection available is by means of the registration in Ghana of a United Kingdom patent, which must take place within three years of date of grant of the United Kingdom patent	Examination only as to form	Ghana patents expire with United Kingdom patents (i.e., sixteen years). If United Kingdom patent is extended a corresponding extension is obtainable in Ghana

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents; sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
Paris Convention (1st May 1903) European Convention on Patent Applications of 1953 (17th May 1955); European Convention on Patent Classification of 1954 (28th November 1955)	National treatment. Foreign filing priority under Paris Convention. Foreign applicants must be represented by a German lawyer or patent attorney	See column 8	If working is of public interest, compulsory licence, and possibly revocation. Revocation by Federal Patent Court two years after grant of compulsory licence is possible if the invention is exclusively or mainly exploited outside Germany and if compulsory licence does not sufficiently meet the public interest. Free use of the invention by order of government in the interest of public welfare or security. Appeal to Federal Administrative Court possible
Paris Convention (7th July 1884). European Convention on Formalities of Patent Applications, 1953 (18th January 1962). European Convention on Patent Classification, 1954 (July 1955). Agreement on the International Patent Institute of The Hague, 1947 (6th June 1947)	National treatment. Foreign filing priority under Paris Convention and other reciprocal arrangements	Any patent not effectively utilized for three years may be the subject of an application for compulsory licence. The conditions under which the licence is granted are fixed by the court. Working must not be discontinued for three successive years, in which case it may be subject to compulsory licence	Special licences may be granted if pharmaceuticals which are protected by special patents for medicaments, or the production processes for which are patented under the 1844 Act, are supplied in insufficient quantities or at exorbitant prices or are deficient in quality. Licences may be granted for the benefit of the State in respect of patents affecting national defence, which are also liable to expropriation against compensation
	The only foreigners who can obtain protection in Ghana are those who comply with the procedures in column 2	No provision for obtaining a compulsory licence against a registration in Ghana of a United Kingdom patent	On application by any person alleging his interest to be prejudicially affected, a Divisional Court of the Supreme Court has special powers to revoke certificates of registration in Ghana, on any of the grounds upon which the United Kingdom patent might be revoked (for which see U.K. below)

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
INDIA	The Patents and Designs Act, 1911, as amended to 1956. Patents and Designs Rules, 1933, as amended to 1960. Secret Patent Rules 1933	Any manner of new manufacture or improvement of alleged invention: an invention should result from inventive ingenuity and should be novel and useful and not contrary to law or morality *Not patentable*: inventions relating to atomic energy	Applications are examined as to form, novelty and general compliance with Patent Act and Rules	Sixteen years from date of application
IRAN	The Registration of Trade Marks and Patents Act, 1931. Regulations for the application of the Act, 1958	Any discovery or new invention *Not patentable*: credit or financial plans or combinations; inventions contrary to public policy, morals or public health; pharmaceutical formulae and compounds (however, pharmaceutical processes may be patented)	Examination as to form only	Five, ten, fifteen or twenty years, at the request of the inventor, but not exceeding the term of a corresponding foreign patent
ISRAEL	Patents and Designs Ordinance, 1925, as amended to 1962. Patents Rules, 1933, as amended to 1955. Patents (International Convention) Rules 1935, as amended to 1962	Any new product or commercial commodity or the application in some new manner for any purpose of industry or manufacture of any means already discovered, known or used *Not patentable*: inventions contrary to law, morality or public order. Agricultural or horticultural operations. New strains of living creatures (except microbiological methods)	Examination as to novelty and patentability	Sixteen years from date of application

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions[b]*	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents; sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
None other than certain reciprocal arrangements with the United Kingdom and some of the Commonwealth countries	National treatment. Twelve months foreign filing priority is provided on a reciprocal basis under arrangements referred to in column 5	At any time after the expiration of three years from the date of the sealing of a patent any person interested may apply to the Controller for a licence under the patent upon the ground that the patented invention has not been commercially worked to the fullest extent that is reasonably practicable; or that the demand for the patented article in India is not being met to an adequate extent or on reasonable terms; or that by reason of refusal of the patentee to grant a licence on reasonable terms, the efficient working in India of any other patented invention is unfairly prejudiced or a market for export of the patented article manufactured in the country is not being supplied	The Central Government may make use of, or exploit, any invention for the service of the Government on terms to be agreed Where the Central Government is satisfied that it is expedient or necessary in the public interest that a licence under a patent should be granted, it might place a notice to this effect in the Official Gazette and the Controller shall thereafter on application made to him by any person interested order the grant of licence on such terms as he thinks fit. Where a patent relates to inventions in respect of food or medicine the Controller shall on application made to him order the grant to the applicant of a licence under the patent The Central Government may revoke a patent where its grant is declared prejudicial to the public
Paris Convention (16th December 1959)	National treatment based on reciprocity. The applicant must elect domicile in Iran or appoint a representative resident in Iran. Foreign filing priority under Paris Convention	When the invention has not been worked within five years from the date of issue of the patent, the Court may, on the application of an interested person, declare the patent null and void	
Paris Convention (24th March 1950)	National treatment. Foreign filing priority under Paris Convention	At any time after the expiration of three years from the sealing of patent, any person interested may apply to the Registrar for a compulsory licence or for the revocation of a patent if the patented article is not being supplied to an adequate extent on reasonable terms; or trade or industry or the establishment of any new trade or industry in Israel is unfairly prejudiced; if any trade or industry is unfairly prejudiced by conditions attached by the patentee for the purchase, use or working of patented article or process; if patentee does not manufacture in Israel or refuses to grant local manufacturing licences on reasonable terms. A patent may not be revoked before the expiration of two years from grant of first compulsory licence	On being advised by the Registrar, the Government may ensure that certain defence patents remain secret or be licensed to the Government. Under a state of emergency, the Government may postpone or not grant certain patent applications; appeals against such decisions are possible; compensation may be claimed. Similarly, any Government Department or any person authorized by it may use any patented invention for defence purposes, against compensation

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 *Official title and date of current patent law and regulations*	2 *Patentable subject matter*	3 *Examination by Patent Office*	4 *Duration of patent*
ITALY	Civil code. Decrees concerning patents, 1939: containing regulations relating to patents, 1940; concerning patents for industrial models, 1940; containing regulations for industrial models, 1941; containing amendments to certain articles of the Regulation for patents of industrial inventions, 1953; Act to amend the 1939 decree containing legislative provision with regard to [illegible] of industrial inventions, 1959	Any new invention utilizable in industry *Not patentable*: inventions contrary to law and public policy; pharmaceutical products and processes	Examination as to form only	Fifteen years from date of application
JAPAN	The Patent Law (No. 121, of 1959). The Law for the Enforcement of the Patent Law (No. 122, of 1959)	Any new invention capable of being used for industrial purposes is patentable. Utility models patents are granted for devices involving technical improvements *Not patentable*: articles of food and drink; medicines; substances manufactured by chemical processes, or by a process of nuclear conversion; articles injurious to public order, good morals or public health	Full examination as to general requirements of Patent Law and for novelty and patentability	Fifteen years from date of publication; the term of the patent may be extended but in no case is the term to exceed twenty years from date of application. Utility model patents are granted for ten years from date of publication of the application in the Utility Models Gazette, or fifteen years from the date of filing, whichever is shorter
LEBANON	Order HC No. 2385 to regulate the Rights of Commercial and Industrial, Artistic, Literary and Musical Property, 1924/1946	Creation of any new industrial product, discovery of a new process for obtaining a known industrial product or result, new application of a known industrial process *Not patentable*: financial combinations; inventions contrary to public policy or morality; pharmaceutical formulae and compounds	Examination as to form only	Fifteen years from date of application

(continued)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions[b]*	6 *Treatment of foreign nationals*	7 *Requirements for working of patents, sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Paris Convention (7th July 1884). European Convention on Patent Applications of 1953 (17th October 1958). European Convention on Patent Classification of 1954 (9th January 1957)	National treatment. Foreign filing priority under Paris Convention	Revocation is provided for if the invention is not worked within three years following the patent grant, or if working is discontinued for three years. In neither case, however, is the patent revoked if the failure to work was due to causes, other than lack of funds, beyond the control of the patentee	Expropriation against compensation in the interests of national defence or for other reasons of public utility
Paris Convention (15th July 1899)	National treatment and foreign filing priority under Paris Convention In other cases, national treatment and foreign filing priority is available only on the basis of reciprocity. Foreigners must submit a certificate of nationality to ascertain their status and appoint a representative resident in Japan	If patented invention has not been properly worked within Japan for three consecutive years or more, any person may request a licence to work the patent subject to approval of the Director-General of the Patent Office. Failing agreement, applicant may ask the Director-General to order a licence	The Minister of International Trade and Industry can order a licence for working in the public interest
Paris Convention (1st September 1924)	National treatment. The applicant must have a representative domiciled in Lebanon. Foreign filing priority under Paris Convention	Revocation for non-working within two years from the date of the patent grant, unless the patentee proves that he has made direct offers to industrialists capable of working the invention and has not refused, without good reason, requests for licences made with reasonable conditions	

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 *Official title and date of current patent law and regulations*	2 *Patentable subject matter*	3 *Examination by Patent Office*	4 *Duration of patent*
LIBERIA	Patent Act of 23rd December, 1864	Any new and useful art, machine, manufacture, process or composition of matter; any new and useful application of any known substance, machine, matter, composition of matter, article of manufacture, device or apparatus. No provision for specific exclusion from patentability	Examination as to form only	The term of the grant shall not exceed twenty years from the grant. However, in practice the grant is for fifteen years
MEXICO	Industrial Property Law of 1942 as amended to 1949 and Regulations thereunder	New industrial products or new compositions of matter; new methods or application of known methods for obtaining an industrial product or result; improvements on prior inventions producing an industrial result; new forms of industrial products. An invention is not novel if it has been previously patented in Mexico or abroad; if it has been sufficiently publicly known in Mexico or elsewhere to be put into execution or has been exploited commercially *Not patentable*: chemical products (but chemical processes are patentable), discoveries, theoretical principles, ideas with no industrial application, inventions contrary to law, public health or safety or contrary to good morals, commercial or financial schemes. The juxtaposition of known inventions, unless it represents a combination for uniting them	Applications are first examined as to formal compliance with patent law and as to whether they infringe a Mexican patent in force, followed by ordinary examination as to novelty extending to prior Mexican patents. Special novelty examinations of wider scope can be carried out on request of any interested party by the Ministry of Economy	Fifteen years from application date with no extension. The patent expires at the end of the twelfth year if not commercially worked, except when working was impossible
MOROCCO	Decree of 23rd June 1916, 22nd October 1930, 18th July 1933 and 16th January 1941	Inventions *Not patentable*: financial schemes and calculations; inventions contrary to law, morality or public safety; pharmaceutical compounds. (However, pharmaceutical processes are patentable)	Examination as to form only	Twenty years from the date of application

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions[b]*	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non-working*	8 *Other cases in which patents are subject to public use*
	National treatment, but aliens must work patent within three years of grant (see 7)	If a patent owned by an alien is not worked in Liberia within three years of issue, the patent falls into the public domain	The Government has the right to use, without charge, certain patents which may be of use to the services of the Republic
Paris Convention (7th September 1903)	National treatment. Foreign filing priority under the Paris Convention. Also, on the basis of reciprocity, an application may be filed within twelve months from the publication of the first foreign patent and obtain priority	Patent expires at end of twelfth year if not worked. Also, compulsory licences may be granted if patent was not exploited industrially in Mexico, or it was improperly or insufficiently worked, within three years from the date of application, or if working was suspended for more than six months during said three year period. The patentee must notify the Patent Office of his working and obtain a certificate of working. The parties to a compulsory licensing arrangement may agree between themselves on the remuneration to be given the patentee. In the absence of such an agreement, the patentee is entitled to half the profits of the licensee. The licence may be revoked if the licensee ceases to work the patented invention. The owner of a dependent improvement patent may obtain a compulsory licence from the owner of a basic patent	Patents may be expropriated on grounds of public interest. Inventions relating to defence may be expropriated or kept secret by Government
Paris Convention (30th July 1917) Agreement on the International Patent Institute of The Hague 1947 (1st January 1956)	National treatment for citizens of countries members of the Paris Union, and other foreigners with a permanent residence or industrial establishment in Morocco Foreign filing priority under Paris Convention	Patents must be worked in Morocco or in a country Member of the Paris Union within three years from the date of application in Morocco; working must not be discontinued for more than three consecutive years. Failure to work may result in revocation of the patent at the instance of an interested party	Expropriation against compensation is provided for in the case of an invention being required for national defence

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 *Official title and date of current patent law and regulations*	2 *Patentable subject-matter*	3 *Examination by Patent Office*	4 *Duration of patent*
NETHERLANDS	Patent Act, 1910, as amended to 1956. Industrial Property Regulations, 1914, as amended to 1957. Patent Regulations, 1921, as amended to 1957. Patent Agent's Regulations, 1936, as last amended in 1959	Any new invention or inventive improvement resulting in a product or a process applicable to industry *Not patentable*: inventions contrary to public order or morality; substances as such; chemical products; methods of cultivating and breeding plants and plant varieties (special law deals with this latter subject)	Examination as to compliance with Patent Act and for novelty and patentability	Eighteen years from date of grant. No extension possible
NIGERIA	Registration of United Kingdom Patents Ordinance, Chapter 182 of the Laws of the Federation of Nigeria, 1958	United Kingdom patents may be registered in Nigeria within three years of the date of the grant of the United Kingdom patent	Examination only as to form	A Nigerian patent expires with the United Kingdom patent. If the United Kingdom patent is extended, a corresponding extension is obtainable in Nigeria
PAKISTAN	The Patents and Designs Act, 1911, as amended to 1960 The Patents and Designs Rules 1933, as amended to 1956 The Secret Patent Rules 1933, as amended to 1956	Any manner of new manufacture or improvement of invention; an invention should result from inventive ingenuity and should be novel and useful and not contrary to law or morality *Not patentable*: chemical products (not including their process of manufacture); admixtures of known ingredients: inventions contrary to law or morality	Applications are examined as to form, novelty and general compliance with Patent Act and Rules	Sixteen years from date of application. Patents of addition are granted for the unexpired term of the original patent

(continued)

LEGISLATION IN SELECTED COUNTRIES[a] *(continued)*

5 *Adherence to international patent convention*[b]	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents, sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
Paris Convention (7th July 1884); European Convention on Formalities of Patent Applications 1953 (9th May 1956); European Convention on Classification of Patents, 1954 (12th January 1956); Agreement on the International Patent Institute of The Hague, 1947 (6th June 1947)	National treatment. Foreign filing priority under Paris Convention	Compulsory licences are granted, subject to reasonable compensation, three years after grant of patent if patent is not being worked on a sufficient scale in the Netherlands or if a licence is needed to work a subsequently patented invention (dependent patent)	A patent may be expropriated by a special law if in the interest of national defence or on grounds of public interest; or may be subject to compulsory licences, upon reasonable compensation, if the Crown requires a licence for defence purposes, in the interest of industry or for other reasons of public interest
Paris Convention (2nd September 1963)	The only foreigners who can obtain protection in Nigeria are those who can comply with the requirements set forth in column 2[c]		
None other than reciprocal arrangements with the United Kingdom and certain Commonwealth countries	National treatment. Foreign filing priority on basis of reciprocal arrangements	Any person may petition the Central Government for a compulsory licence or the revocation of a patent if the demand for a patented article is not being met to an adequate extent or supplied on reasonable terms in Pakistan; or an existing trade or industry or the establishment of new trade or industry in Pakistan is unfairly prejudiced by default of the patentee to manufacture. The Central Government may also order revocation or grant a licence on ground that patented article or process is manufactured or carried on exclusively or mainly outside Pakistan. Compulsory licence or revocation may not be ordered before expiration of four years from date of patent application	In certain cases the Government may make use or exploit invention for the service of the Government on terms to be agreed. The Central Government may revoke a patent if it is found to be prejudicial to the public

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
PERU	Patent Law of 1869 as amended to 1954; Industrial Promotion Law of 1959, Chapter 6; Regulations of 1956	Inventions or discoveries in any branch of industry, including new industrial products and new methods or new applications of known products for obtaining an industrial result or product. Inventions are not novel if publicly known in Peru or elsewhere sufficiently to be put into practice. Official publications of corresponding foreign patents do not bar novelty; a confirmation patent may be applied for any time during life of foreign patent and must be based on first one granted *Not patentable*: pharmaceutical preparations; remedies except those made with native plants; inventions contrary to law, public safety or morals, financial schemes, scientific principles, discoveries of things existing in nature	Examination as to form only, and if in order the application is then advertised in a specified journal for ten days. Grant follows in absence of opposition	Ten years from filing of application; extension of five years on application if invention is being worked in the country. A confirmation patent expires with basic foreign patent, but term cannot exceed ten years
PHILIPPINES	Republic Act No. 165 of 1947, as amended by Republic Act 637, 1951. Revised Rules of Practice before the Philippines Patent Office (1953)	Any invention of a new and useful machine, manufactured product or substance, process, or improvement of the foregoing *Not patentable*: inventions contrary to public order or morals, public health or welfare; mere ideas, scientific principles or abstract theories or any process not directed to the making or improving of a commercial product	Examination as to formal requirements only	Seventeen years from date of issue

(continued)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Convention of Montevideo of 1889 (since commencement). Convention of Caracas of 1911, with Bolivia, Colombia, Ecuador and Venezuela	Examination fees and granting fees are higher for foreigners. Foreign filing priority under the Convention of Montevideo	Patent must be worked within three years after grant; if not worked the rights are lost unless the patentee advertises his willingness to grant licences to anyone in a specified journal. If no reasonable offer is made within sixty days the patent remains in force. If a reasonable offer is refused, the interested party may apply to the Ministry of Industry for authority to use the invention. Compensation to the patentee is statutory and fixed at half the income from the licence in the absence of agreement	The Government may subject individual patent to special conditions when its exploitation is covered by special laws, national security or public interest. Conditions are in the discretion of the Ministry of Industry
None, but certain reciprocal arrangements	National treatment. Foreign filing priority is granted on the basis of reciprocity	At any time after the expiration of three years from date of grant, any person may apply to the Director for a licence if the invention patented is not being worked commercially in the Philippines to fullest satisfactory extent; if the demand for patented article in the Philippines is not being met to an adequate extent and on reasonable terms; if by reason of the refusal of the patentee to grant a licence or licences on reasonable terms, the establishment of any new trade or industry is unduly restrained	The Government may use any patented invention, at any time, for Government purposes, subject to compensation to the patentee. After the expiration of three years from date of grant, any person may apply to the Director for a licence if the patented invention relates to food or medicine or is necessary for public health or safety

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
SPAIN	Royal Decree-Law of July 26, 1929, as revised and amended to 1962	Inventions relating to apparatus, instruments, processes (mechanical or chemical), which are totally or partly unknown in Spain or abroad if directed at obtaining an industrial result or product; scientific discoveries if recognized as unique and original; improvements in economic-commercial processes if of a practical and workable nature. Products not patentable as such may be protected as utility models	Examination as to patentability and form, but does not include novelty or usefulness. Patent Office may require conversion of a patent application into a utility model application, or *vice versa*	Patents of invention: twenty years; patents of importation: ten years; patents of addition: for unexpired term of parent patent; utility models: twenty years; commercial or economic patents: twenty years. All terms run from grant
SWEDEN	Patent Act, 1884 as amended to 1962. Act relating to the Rights to Inventions made by Employees of 1949. Act containing special provisions as to Inventions connected with National Defence of 1946, as amended to 1962. Royal Ordinance of 1960 on the Protection of Foreign Patents, Designs and Trade Marks. Rules for the Patent and Registration Office	New inventions relating to products or processes which can be utilized industrially *Not patentable*: inventions contrary to law or morals; food products, medicines or chemical compounds (though a patent may be granted for special processes of manufacture)	Full examination as to formal requirements, novelty and patentability	Seventeen years from date of application

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	*6* *Treatment of foreign nationals*	*7* *Requirements for working of patents; sanctions for non-working*	*8* *Other cases in which patents are subject to public use*
Paris Convention (7th July 1884)	National treatment on a basis of reciprocity. Foreign filing priority under the Paris Convention	In order to keep the patent alive, the patentee must record, before the end of the third year following the grant of the patent, proof of actual working of patents of invention, patents of importation or utility models. In lieu thereof, he may (except in the case of patents of importation) present a declaration of willingness to grant licences. The recorded declaration of willingness may be withdrawn, provided an application for licence has not been filed and the patentee submits proof of actual working. Licences under the above procedure must prove actual working within one year from the date of licence. If the working of a patent is suspended beyond a year and a day, without justification, the patent may be declared invalid by the Courts on the application of an interested party	In the interest of the general public, a patent of invention or utility model may be expropriated by law and used exclusively by the State or declared available to anyone as a public utility, subject to compensation being paid to patentee
Paris Convention (1st July 1885). European Convention on Formalities of Patent Applications, 1953 (28th June 1957) European Convention on Classification of Patents of Invention 1954 (28th June 1957)	National treatment. Non-resident applicants must appoint an agent resident in Sweden. Foreign filing priority under Paris Convention	If, on the expiration of three years from the grant of the patent, the patented invention has not been worked adequately in Sweden, any person wishing to use the invention may bring action against the patentee before the Court. If the patentee cannot justify non-working, the Court, exercising its discretion, shall determine the conditions and the compensation under which the invention may be used by the party interested	In the interest of the State, the Crown may order that use of an invention be free or may appropriate the invention subject to full compensation being paid to patentee. In the interest of national defence the Government may order that the invention be exploited by the State, or remain secret patents; in both cases due compensation will be paid to the inventor or patentee

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 Official title and date of current patent law and regulations	2 Patentable subject matter	3 Examination by Patent Office	4 Duration of patent
SWITZERLAND	Federal Patents Act, 1954. Enforcement Regulations, 1959	New inventions industrially utilizable. The invention must solve a technical problem, be susceptible of industrial application, be new, represent a technical advance and be based on a creative idea *Not patentable*: inventions contrary to law; inventions contrary to morality; chemical substances (not applicable to alloys); medicines, foods, animal foodstuffs, beverages — even when they are not chemical substances; processes for the manufacture of medicines by other than chemical methods	Prior examination as to novelty, technical advance and level of invention if the invention affects the industries for the finishing of textile fibres or chronometry. Otherwise, no examination as to novelty, technical advance and level of invention	Eighteen years from date of application
TANGANYIKA	Patents (Registration) Ordinance, Chapter 217, of the Tanganyika Laws	A United Kingdom patent may be registered in Tanganyika. This must take place within three years of the date of grant of the United Kingdom patent	Examination as to form only	A Tanganyika patent expires with the corresponding United Kingdom patent. If the United Kingdom patent is extended, a corresponding extension is obtainable in Tanganyika
TUNISIA	Decrees of 26th December 1888, 22nd September 1892 and 31 August 1902	New industrial products, new means or the new application of known means for obtaining a result or an industrial product are patentable *Not patentable*: financial schemes or calculations; inventions contrary to law or morality; food or pharmaceutical products (however processes for their manufacture are patentable)	Examination as to form only	Twenty years from date of application
TURKEY	Patents Act, 1897. Instructions concerning the application of the industrial property laws, 1955	Any invention or discovery and any improvement relating to the arts and industry; invention of new products and industrial results; invention of new methods; new application of known methods. Patents of addition and patents of importation are also granted *Not patentable*: credit or financial schemes; inventions contrary to public policy and morality; pharmaceutical compounds and medicines	Examination as to form only	Five, ten or fifteen years from date of application at the option of the applicant if he is prepared to pay increased fees for the longer term

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Paris Convention (7th July 1884). European Convention on Patent Applications, 1953 (28th December 1959). Agreement on the International Patent Institute of The Hague, 1947 (1st January 1960)	National treatment. A domiciled agent in Switzerland is required. Foreign filing priority under the Paris Convention	On request, compulsory licences may be granted by the court if the invention was not adequately worked in Switzerland within three years from the date of registration of the patent. The patent may be revoked if after the expiry of two years from the issue of the original licence, the granting of licences is not sufficient to satisfy the needs of the Swiss market. Where the legislation of the foreign country of which the patentee is a national or in which he has an establishment provides for revocation on grounds of failure to work after three years from the date of issue of the patent, revocation may be sought in Switzerland in lieu of a compulsory licence	Total or partial expropriation in the public interest against compensation to be fixed by the court if necessary
Paris Convention (16th June 1963)	The only foreigners who can obtain protection in Tanganyika are those who comply with the provisions of Column 2[d]		On application by any person alleging his interests to be prejudicially affected, a Divisional Court of the Supreme Court has special powers to revoke certificates of registration in Tanganyika on any of the grounds upon which the United Kingdom patent might be revoked. (See U.K. below)
Paris Convention (7th July 1884)	National treatment. Foreign filing priority under Paris Convention	Patents may be revoked if not exploited within two years of issue or during any two consecutive years	
Paris Convention (10th October 1925). Agreement on the International Patent Institute of The Hague, 1947 (28th September 1955)	National treatment. Foreign filing priority under Paris Convention	Revocation if the invention is not worked within two years from the issue of the patent, or if it ceases to be worked for two consecutive years, or if the patentee introduces into Turkey objects manufactured abroad and similar to those covered by the patent. An action for revocation may be brought before the Courts by any interested party	

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
UNION OF SOVIET SOCIALIST REPUBLICS ..	Statute on Discoveries, Inventions and Rationalization Proposals (1959). Regulation on Compensation for Discoveries, Inventions and Rationalization Proposals (1959)	The solution of a technical problem distinguished by the essential novelty, in any field of national economy, culture, public health or national defence, which produces a positive result, is considered to be an invention. Such inventions are protected by granting either certificates of authorship or patents. Inventors may according to their choice request either: (1) a certificate of authorship, in which case the State acquires the exclusive right to use the invention, and the inventor is entitled to compensation and other rewards specified by law; (2) a patent, in which case the inventor acquires the exclusive right to the invention *Not patentable or eligible for certificates of authorship:* substances chemically obtained (however, this does not apply to new processes). The following categories are eligible for certificates of authorship but not for patents: medical, flavouring and food substances obtained by non-chemical processes (though patents may be issued for the methods of preparation); new proven methods of treating diseases; new and improved species of agricultural animals, birds, etc.; varieties of agricultural crops obtained by selection	Full examination as to substantial novelty and usefulness of invention. Examination for novelty is based on prior Soviet certificates of authorship and Soviet and foreign patents and publications	Patents: fifteen years from date of filing, no extensions. Certificates of authorship: unlimited duration

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents, sanctions for non-working*	8 *Other cases in which patents are subject to public use*
	National treatment on a basis of reciprocity. Non-residents are required to use the All-Union Chamber of Commerce as their agent in connexion with granting the certificate of authorship or patent		It an invention is of special importance to the State, the Council of Ministers of the USSR may, failing an agreement with the State on public organizations concerned, grant permission to use the invention to an interested governmental agency and establish the compensation to be paid to the patentee. The Government may ensure that certain discoveries, inventions or rationalization proposals concerning defence remain secret in the interest of the State

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 Official title and date of current patent law and regulations	2 Patentable subject matter	3 Examination by Patent Office	4 Duration of patent
UNITED ARAB REPUBLIC	Patent Law No. 132 of 1949 as amended to 1958. Rules and Regulations No. 230 of 1951	New creations industrially exploitable, whether in connexion with new industrial products, new industrial ways or methods of new applications of industrially known ways or methods *Not patentable*: inventions involving immorality or public disorder; foodstuffs; medical drugs or pharmaceutical preparations. Chemical processes are, however, patentable	Examination as to form only	Fifteen years from date of application; in special cases the patent is renewable for a period not exceeding five years. In the case of inventions covering processes relating to foodstuffs, medical drugs or pharmaceutical preparations, the patent term is ten years from the date of application, and there is no provision for extension of term

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Paris Convention (1st July 1951)	National treatment, on basis of reciprocity. Foreign filing priority under the Paris Convention	At any time after expiration of three years from grant of patent, the Patents Directorate may grant a compulsory licence in the following instances: if patentee fails to exploit invention sufficiently; if exploitation is stopped for two consecutive years; if patentee has refused to grant right of exploitation or has imposed exorbitant conditions. The patentee is entitled to remuneration. The Patents Directorate has discretionary power to allow a patentee a period of two years' grace before authorising the grant of a compulsory licence. If invention is not exploited in Egypt within two years following the grant of a compulsory licence, the Patents Directorate may, on request, cancel the patent Compulsory licences may also be granted to owners of "dependent" patents and *vice versa*, if invention is of great importance	Government may oppose the grant of a patent or, as the case may be, expropriate invention for its own exploitation, if it is of military value, concerns national defence or relates to public utility. In such cases, the patentee is entitled to just compensation

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	*1 Official title and date of current patent law and regulations*	*2 Patentable subject matter*	*3 Examination by Patent Office*	*4 Duration of patent*
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Patents Act, 1949: Defence Contracts Act, 1958; Patents Rules, 1958; Atomic Energy Act, 1946	Any manner of new manufacture and any new method or process of testing applicable to the improvement and control of manufacture *Not patentable*: well established natural laws; ingenious ideas or discoveries with no industrial application; inventions contrary to law or morality; substances of food or medicine which are mixtures of known ingredients; plant and animal varieties	Examination as to compliance with patents acts and for novelty and patentability	Sixteen years from filing of complete specification, with provision for extension by five years, or in exceptional cases ten, on the grounds of inadequate remuneration

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (continued)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents, sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Paris Convention (7th July 1884). European Convention on Formalities of Patent Applications, 1953 (5th May 1955). European Convention on Classification of Patents, 1954 (28th October 1955)	National treatment. Foreign filing priority under Paris Convention	At any time after the expiration of three years from the sealing of a patent any person interested may apply to the Comptroller-General for a licence under the patent or for the endorsement of the patent "licences of right"; if the invention is not being worked commercially in the United Kingdom to the fullest reasonable extent; if demand for patented article is not being met on reasonable terms or is being met to a substantial extent by importation; or if by reason of the patentee's licence conditions an export market for the patented article is not being supplied, or the working of some other patent is hindered, or the manufacture, use or sale of materials not protected by the patent or the development of commercial or industrial activities is unfairly prejudiced The Comptroller shall consider nature of invention, time elapsed since grant, and efforts of patentee fully to work, ability of licensee to work invention to public advantage and risks to be undertaken by him The Comptroller's powers shall be exercised to secure maximum working of inventions, suitable remuneration to patentee and protection for any person working an invention under the protection of a patent. Patent may be revoked after the expiration of two years from an order for a compulsory licence if such licence or an endorsement "licences of right" would not be effective for the purposes set out above. An appeal lies from any orders of the Comptroller made under the above provisions to a Judge of the High Court No Order may be made which is at variance with the Industrial Property Convention	Any Government department and any person authorized by it may use any patented invention for the services of the Crown (including the production or use of atomic energy). Applications for patents relating to defence may be withheld from publication. Applications relating to atomic energy uses may similarly be withheld from publication until certified by the Crown as not being required for defence purposes. Provision is made for the payment of compensation by the Crown. The Comptroller-General must grant compulsory licences in respect of patents relating to foods, medicines or surgical or curative devices unless it appears to him that there are good reasons for refusal. An application for such a licence may be made at any time after grant and an appeal lies to a Judge of the High Court

SYNOPTIC TABLE OF MAJOR PROVISIONS OF PATENT

Country	1 Official title and date of current patent law and regulations	2 Patentable subject matter	3 Examination by Patent Office	4 Duration of patent
UNITED STATES OF AMERICA	Patent Act of 1952, amended to 1962; United States Code, Title 35, Patents. Rules of Practice of the United States Patent Office, 1949-1962. Atomic Energy Act of 1954	Any new and useful process, machine manufacture, composition of matter, or any new and useful improvements thereof. Inventions must not be publicly known or used in the United States, or patented or described in a printed publication in the United States or elsewhere, before the invention was made by the applicant, and, regardless of the date of invention, the invention must not be in public use or on sale or patented or described in a printed publication more than one year before the date of the application for patent in the United States *Not patentable*: inventions contrary to public morals; business methods and scientific principles or discoveries not applied to a useful purpose; atomic weapons	Examination as to formal requirements, novelty and inventiveness	Seventeen years from date of grant. No extensions except by special act of Congress
VENEZUELA	Industrial Property Law of 1955	Independent patents of invention granted for new and useful products, machines, tools, etc., processes for industrial or commercial use or processes for preparing chemical products, improvements and any other invention or discovery suitable for industrial application. Invention is not novel if publicly known anywhere prior to filing ***Not patentable***: medicinal and pharmaceutical products; foods, beverages, chemical preparations; financial schemes; use of natural forces, theoretical ideas; inventions contrary to public health, safety, order or morals; the juxtaposition of known inventions, unless it represents a combination for uniting them	Examination as to formal requirements only; opposition period of sixty days from publication in the Bulletin for Industrial Property	Five or ten years at choice of applicant in respect of independent patents; for confirmation patents, the unexpired term of foreign patent but not longer than ten years; for importation patents, five years. All terms take effect from the grant of the patent

[a] Reference is made to the following chapters in the report dealing with the various above items: items 2, 3 and 4—part One, chapter I; items 5 and 6—part One, chapter II; items 7 and 8—part One, chapter III.

(*continued*)

LEGISLATION IN SELECTED COUNTRIES[a] (*continued*)

5 *Adherence to international patent conventions*[b]	6 *Treatment of foreign nationals*	7 *Requirements for working of patents; sanctions for non-working*	8 *Other cases in which patents are subject to public use*
Paris Convention (30th May 1887). Pan-American Convention of Buenos Aires of 1910 (21st March 1911)	National treatment. One year foreign filing priority under Paris Convention, Pan-American Convention of Buenos Aires (see 5) and under any other reciprocal arrangement	No provisions in patent law. Atomic Energy Act of 1954 contains a temporary provision, expiring in 1964, for the grant of compulsory licences under a patent when there has been a declaration after hearing that invention is of primary importance in atomic energy field and that licensing of the invention is of primary importance in effectuating the policy and purpose of the Atomic Energy Act	Where violation of the anti-trust laws by means of patents is found, the court may provide for the granting of licences on reasonable terms and in some cases, the grant of royalty free licences
Convention of Caracas of 1911, with Bolivia, Colombia, Ecuador, and Peru (19th December 1914)	National treatment. The owner of a foreign patent has a one year preference, from grant, in obtaining a corresponding patent, and may object to any application for an importation patent applied for during this period, or may have such a patent declared null and void	Patent must be worked within two years and working not discontinued for more than two years, except in case of accident or *force majeure*; the patent may be revoked on application by an interested party	An invention of interest to the State or of basic public interest may be expropriated, in accordance with the provisions of law regarding the expropriation of property

[b] The date in brackets indicates the date of adherence.

[c] The situation might be modified in view of Nigeria's recent adherence to the Paris Convention.

[d] The situation might be modified in view of Tanganyika's recent adherence to the Paris Convention.

ANNEX E

Patents applied for and/or granted during the period 1957-1961[a]

Country		Nationals						Foreigners						Grand total	Foreigners as a percentage of the Grand total
		1957	1958	1959	1960	1961	Total	1957	1958	1959	1960	1961	Total		
Australia	[b] *	4,097	4,274	4,398	4,026	4,312	21,107	5,794	6,273	7,032	7,802	8,586	35,487	56,594	62.70
	**	No information provided													
Belgium	*	No information provided													
	**	1,483	1,581	1,709	1,661	—	6,434	8,261	9,075	10,037	10,739	—	38,112	44,546	85.55
Brazil	*	No information provided													
	**	2,022	583	901	1,814	838	6,158	1,184	642	1,562	1,979	930	6,237	12,395	50.31
Canada[c]	*	1,154	1,348	1,506	1,310	1,613	6,931	21,105	21,564	22,786	23,214	28,834	117,503	124,434	94.42
	**	772	899	1,219	1,258	1,207	5,355	15,489	17,394	20,802	20,756	20,465	94,906	100,261	94.65
Ceylon[d]	*	20	22	22	30	34	128	92	84	196	126	120	529	657	80.51
	**	16	23	21	19	8	87	80	67	91	104	95	437	524	83.39
China	*	601	602	548	526	553	2,830	56	72	101	130	176	535	3,365	15.90
	**	160	146	88	104	125	623	22	11	48	57	49	187	810	23.08
Cuba	*	400	358	349	228	38	1,373	486	551	567	369	219	2,192	3,565	61.48
	**	125	57	113	397	72	764	107	13	547	1,563	298	2,528	3,292	76.79
Czechoslovakia	*	4,483	5,960	6,634	6,714	6,573	30,364	643	887	1,008	1,159	1,169	4,866	35,230	13.81
	**	1,080	1,355	4,854	3,801	3,335	14,425	230	185	646	579	474	2,114	16,539	12.78
Denmark	*	1,349	1,255	1,082	1,007	1,008	5,701	3,041	3,476	3,676	4,188	4,257	18,638	24,339	76.57
	**	473	432	359	343	409	2,016	1,582	1,488	1,771	1,512	1,866	7,719	9,735	79.29
Federal Republic of Germany	*	36,513	37,133	36,954	36,461	35,895	182,956	6,489	17,369	19,657	20,662	22,293	86,470	269,426	32.09
	**	14,684	12,850	15,029	12,974	13,123	56,537	5,783	5,987	7,527	6,692	7,427	33,416	89,953	37.14
Finland	*	799	867	869	714	728	3,977	1,185	1,239	1,298	1,444	1,584	6,750	10,727	62.92
	**	187	177	153	138	105	760	473	475	587	571	601	2,707	3,467	78.07
France[e]	*	13,500	13,440	14,500	13,460	15,221	70,121	15,765	17,622	20,601	22,579	22,806	99,373	169,494	58.63
	**	10,431	10,665	17,063	12,932	12,994	64,085	12,569	14,287	24,537	22,068	20,156	93,617	157,702	59.36
Hungary	*	—	2,135	2,112	1,858	1,847	7,952	—	320	439	594	665	2,018	9,970	20.24
	**	—	1,147	887	959	818	3,811	—	249	267	355	407	1,278	5,089	25.11
India	*	527	529	671	663	706	3,096	2,929	3,043	3,294	3,840	4,583	17,689	20,785	85.10
	**	249	299	267	261	325	1,401	2,063	2,712	2,166	2,252	2,601	11,794	13,195	89.38
Ireland	*	117	129	119	109	103	577	568	546	657	758	856	3,385	3,962	85.43
	**	12	14	14	10	20	70	475	351	389	393	331	1,939	2,009	96.51
Israel	*	323	397	416	465	422	2,023	577	702	836	1,049	1,274	4,438	6,461	68.68
	**	No information provided													
Italy	*	7,528	7,418	7,723	7,222	7,524	37,415	11,231	12,058	14,144	15,445	16,094	68,972	106,387	64.83
	**	6,950	5,627	5,200	4,918	6,168	28,863	10,650	10,073	9,002	8,478	10,632	48,835	77,698	62.85
Japan	*	26,371	30,622	31,924	31,893	34,758	155,568	6,817	7,869	9,613	11,591	13,659	49,549	205,117	24.15
	**	6,286	6,614	6,932	7,676	13,570	41,078	3,527	3,358	3,346	5,576	7,376	21,183	62,261	34.02
Republic of Korea	*	1,480	1,974	2,398	2,082	2,958	10,892	23	44	68	65	53	253	11,145	2.27
	**	292	401	605	625	617	2,540	21	38	64	53	15	191	2,731	6.99
Lebanon	*	No information provided													
	**	35	32	33	25	23	148	76	82	109	111	120	498	646	77.08

Luxembourg	*	No information provided													
	**	58	84	83	91	74	390	759	978	1,295	1,401	1,352	5,785	6,175	93.68
Netherlands	*	2,355	2,365	2,408	2,220	2,302	11,650	7,075	8,673	9,839	10,409	11,159	48,055	59,705	80.48
	**	921	779	805	796	861	4,162	2,972	2,567	3,098	3,457	3,473	15,567	19,729	78.90
New Zealand[f]	*	685	738	1,012	788	782	4,005	1,713	1,618	1,772	2,105	2,066	9,274	13,279	69.83
	**	No information provided													
Norway	*	1,219	1,211	1,209	1,243	924	5,806	2,402	2,511	2,790	3,086	3,135	13,924	19,730	70.57
	**	492	475	435	392	333	2,127	1,656	1,972	1,701	1,592	1,590	8,511	10,638	80.00
Pakistan	*	43	27	48	61	54	233	981	1,023	1,103	1,082	1,063	5,252	5,485	95.75
	**	No information provided													
Philippines[g]	*	62	95	123	114	126	520	338	421	497	492	592	2,340	2,860	81.81
	**	31	33	61	75	93	293	120	126	130	154	209	739	1,032	71.60
Poland	*	2,186	1,722	1,655	2,023	1,784	9,370	461	562	604	698	740	3,065	12,435	24.64
	**	758	541	745	742	759	3,545	216	359	561	520	512	2,168	5,713	37.94
South Africa	*	1,275	1,356	1,453	1,536	1,591	7,211	3,030	3,377	3,701	3,762	3,721	17,591	24,802	70.92
	**	342	473	444	485	526	2,270	2,928	3,189	3,630	3,632	3,098	16,477	18,747	87.89
Sweden	*	4,891	4,622	4,302	4,014	3,804	21,633	6,968	7,552	8,082	8,730	9,382	40,714	62,347	65.30
	**	1,349	1,281	1,310	1,177	1,127	6,244	2,988	2,821	2,911	2,622	2,758	14,100	20,344	69.30
Switzerland	*	4,890	5,078	5,285	4,874	4,821	24,948	8,237	8,538	9,321	9,790	10,354	46,240	71,188	64.95
	**	3,162	3,022	3,011	2,487	2,766	14,448	5,338	5,611	5,465	4,782	5,406	26,602	41,050	64.80
Trinidad and Tobago	*	4	3	12	4	6	29	88	85	92	91	110	466	495	94.14
	**[h]														
Turkey	*	No information provided													
	**	30	52	27	75	18	202	292	328	786	590	245	2,241	2,443	91.73
Union of Soviet Socialist Republics	*	21,600	28,300	36,300	44,100	53,800	184,100	—	285	364	585	513	1,747	185,847	00.94
	**(i)[i]	8,100	8,200	10,100	10,800	10,500	47,700	64	67	99	62	56	348	48,048	00.72
	(ii)	3	1	1	1	1	7	3	29	123	76	35	266	273	00.97
United Arab Republic	*	95	84	102	95	763	1,139	340	392	484	569	620	2,405	3,544	67.86
	**	14	18	22	48	40	142	127	285	312	469	698	1,891	2,033	93.01
United Kingdom of Great Britain and Northern Ireland	*	22,672	23,878	24,123	22,773	22,683	116,129	17,826	18,399	20,372	22,141	24,128	102,866	218,995	47.00
	**	No information provided													
United States of America[j]	*	60,278	63,234	63,302	63,090	66,335	316,239	14,020	14,305	15,406	16,631	17,061	77,513	393,752	19.69
	**	36,728	41,079	44,297	39,574	40,247	201,925	6,145	7,371	8,212	7,712	8,229	37,669	239,594	15.72
Republic of Viet-Nam	*	No information provided													
	**	55	28	52	50	68	263	46	57	61	57	68	289	552	52.35
Yugoslavia	*	837	825	848	810	734	4,054	685	835	880	991	1,100	4,491	8,545	52.55
	**	173	265	301	308	224	1,271	459	401	306	389	382	1,947	3,218	60.50

[a] Information provided by Governments in response to the Questionnaire.

[b] One star indicates *patent applications* whereas two stars indicate *patents granted*.

[c] The years in the table are fiscal years ending March 31 of the year following the indicated year. The data refer to residence rather than nationality of applicants.

[d] The data for foreigners include both British and other foreigners.

[e] The data for nationals refer to France and overseas territories (*territoires d'outre mer*).

[f] The years in the table are fiscal years ending March 31 of the year following the indicated year.

[g] The years in the table are fiscal years.

[h] All patent applications were registered.

[i] (i) Refers to Certificates of Authorship; (ii) refers to Patents. (See part One —chapter I (2).)

[j] Data refer to residence rather than nationality of applicants.

UNITED NATIONS NATIONS UNIES

MONTHLY BULLETIN OF STATISTICS

Prepared by the Statistical Office of the United Nations

The *Monthly Bulletin of Statistics* is more than ever the foremost source of current official statistics on world economic and social conditions.

Each issue contains the most recent official statistics on 64 subjects, from about 180 countries and territories, in these fields:

- **Population**
- **Manpower**
- **Forestry**
- **Industrial Production**
- **Mining**
- **Metals**
- **Chemicals**
- **Building Materials**
- **Transport Equipment**
- **Textiles**
- **Food**
- **Electricity and Gas**
- **Construction**
- **Plastics**
- **Transport**
- **Internal Trade**
- **External Trade**
- **Wages and Prices**
- **National Income**
- **Finance**
- **Paper**

The *1963 Supplement* containing definitions and explanatory notes relating to the series **published in the *Bulletin* is also available to subscribers.**

The *Bulletin* includes also statistical tables on special subjects of current interest. In addition to the data shown for individual countries and territories, world aggregates are shown for more than 80 important series for recent years and quarters in a special table each month.

The subscription price is $10.00 per year. Subscriptions may be paid in local currencies to the National Sales Agents for United Nations publications. For list of distributors, see end of volume.

BULLETIN MENSUEL DE STATISTIQUE

Préparé par le Bureau de statistique de l'Organisation des Nations Unies

Le *Bulletin Mensuel de Statistique* est un recueil de statistiques officielles à jour sur les conditions économiques et sociales du monde.

Chaque numéro contient les statistiques officielles les plus récentes de 64 sujets et provenant de quelque 180 pays et territoires, relatives aux domaines suivants:

- **Population**
- **Main-d'Oeuvre**
- **Forêts**
- **Production Industrielle**
- **Industries Extractives**
- **Métaux**
- **Produits Chimiques**
- **Matériaux de Construction**
- **Matériel de Transport**
- **Textiles**
- **Aliments**
- **Electricité et Gaz**
- **Construction**
- **Plastiques**
- **Transports**
- **Commerce Intérieur**
- **Commerce Extérieur**
- **Salaires et Prix**
- **Revenu National**
- **Finances**
- **Papier**

Tout abonné au *Bulletin Mensuel de Statistique* reçoit aussi le *Supplément 1963* donnant des définitions et des notes explicatives se rapportant aux séries publiées dans le *Bulletin*.

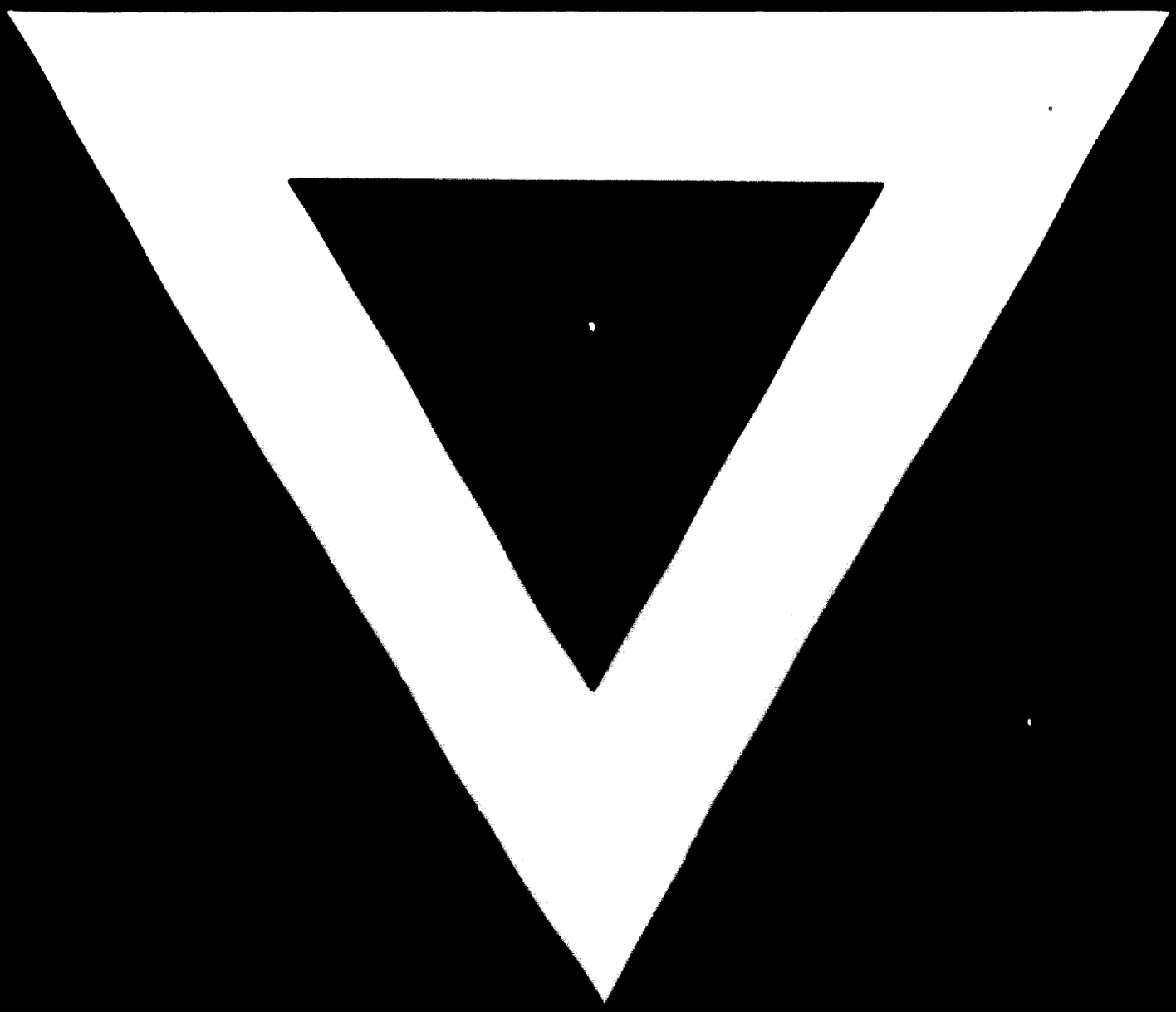
Le *Bulletin* contient aussi des tableaux statistiques sur des sujets particuliers d'intérêt actuel. En outre des données relatives à chaque pays et territoire, un tableau spécial présente chaque mois des totaux mondiaux pour plus de 80 séries importantes englobant les années et trimestres récents.

Le prix de l'abonnement est de 10 dollars par an et peut être payé en monnaie nationale aux dépositaires des publications des Nations Unies. La liste de ces dépositaires se trouve à la fin du volume.

Printed in U.S.A.
20,200 - October 1964 - 6,800

Price: $U.S. 1.50
(or equivalent in other currencies)

United Nations publications
Sales No.: 65.XVII.1
E/3861/Rev.1



15. 7. 74