the OECD OBSERVER

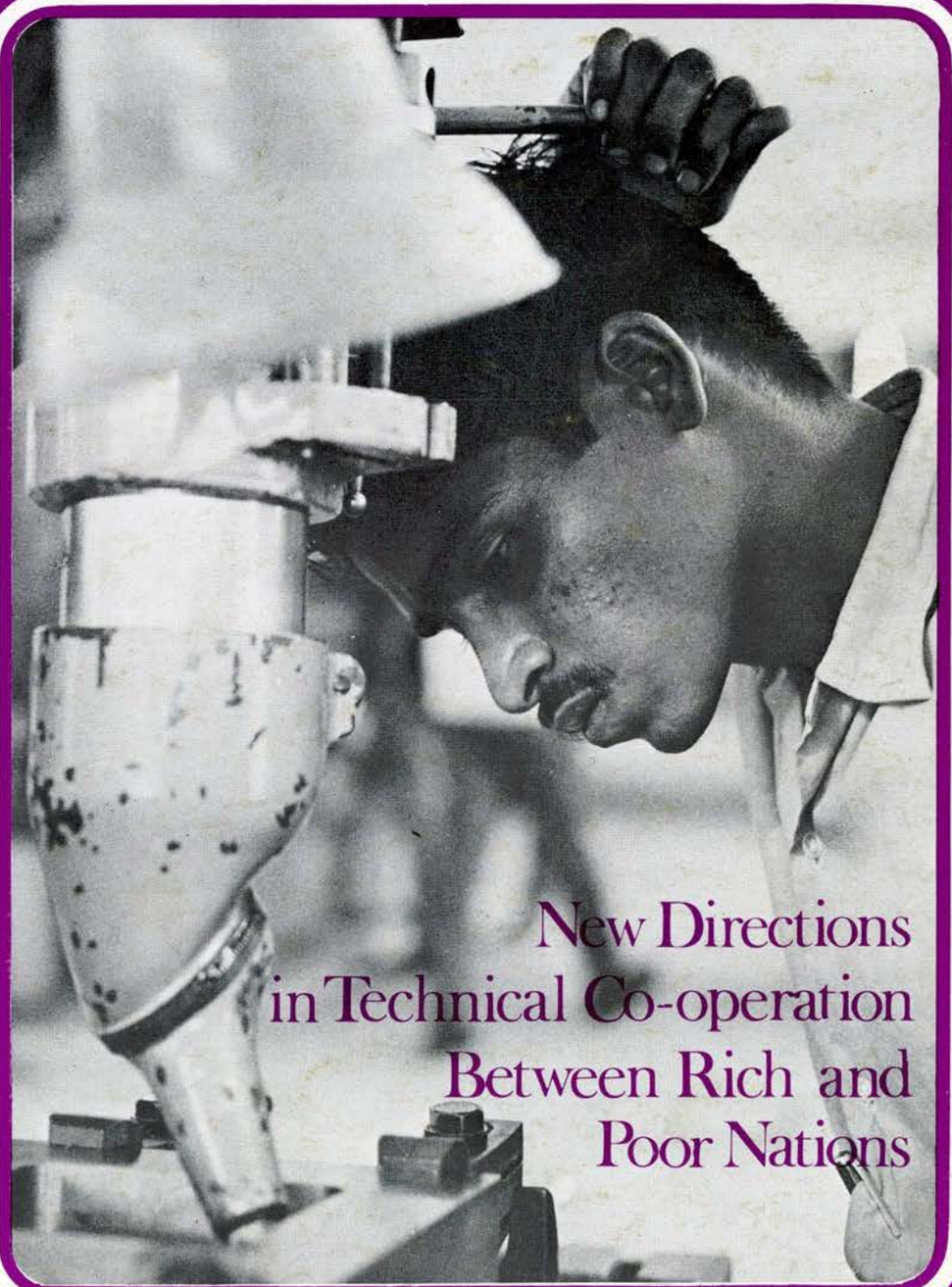
The Economic Pattern of OECD Member Countries

The Challenge of the New Information Technology

Consumer Protection in OECD Countries

Japanese Manpower Policy

OECD Action to Restrict Use of a Hazardous Substance



New Directions in Technical Co-operation Between Rich and Poor Nations

N° 63/APRIL 1973

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CONTENTS

Cover: Technical assistance is being geared more closely to other forms of aid and put on a longer term basis. A five year programme of assistance to the plastics industry in India, financed by the United Nations Development Programme, includes provision for training of workers ; see page 11 (Photo ILO).

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PHOTOS : Cover : ILO ; pages 3-4 : L. Jouan - OECD ; page 6 : Canadian Department of Consumer and Corporate Affairs ; page 9 : (top to bottom, left to right) : NFB, Almasy, L. Jouan - OECD, Japanese Delegation to OECD, IBM, L. Jouan-OECD, Japanese Delegation to OECD, Almasy ; page 14 : Almasy ; pages 16-17 : USIS ; page 35 : Japanese Delegation to OECD ; page 37 : Almasy ; pages 39-41 : L. Jouan - OECD.

SPECIAL SESSION OF THE OECD EXECUTIVE COMMITTEE

THE Executive Committee of the OECD in special session is a forum for the discussion of interrelated issues in fields such as trade, payments, investment and development assistance policy. During its first special session in December last year the Committee drew up broad outlines for its future work. At the second special session of the Committee on 19th-20th March, senior officials from Member countries came together to exchange views on a wide range of international economic issues.

The Committee elected Ambassador Paul Rudolf Jolles of Switzerland, Director of the Commerce Division of the Swiss Federal Department for Economic Affairs, as its Chairman.

A number of important problems were on the Committee's agenda. There was first a valuable exchange of views on the international payments situation, where the Committee heard a statement by OECD Secretary General Emile van Lennep on the general lines of OECD work on the problems of balance of payments adjustment during the transitional period. The Committee asked to be kept informed on the progress of the work of the competent bodies of the Organisation in this field.

At left, OECD Secretary General Emile van Lennep; at right, Ambassador Paul Rudolf Jolles, Chairman of the meeting.

Left to right: Ambassador William D. Eberle, Special Representative for Trade Negotiations, Office of the President of the United States; Hon. William J. Casey, Under-Secretary for Economic Affairs, Department of State, US.

The Committee also initiated a discussion of the complex problems of international investment and multinational enterprises, identifying the most urgent issues. It agreed that priority should be given to the interrelation between direct investment, trade and economic development, and invited the Secretary General of OECD to report to the Council with proposals for the coordination of work in progress on issues related to multinational enterprises and its possible reinforcement.

A third substantive item on the agenda was the commercial safeguard clauses in the context of structural adjustment—a matter of great importance in relation to the forthcoming trade negotiations.

Finally, on the subject of issues related to trade, development and aid, the meeting heard statements by Ambassador Martin, Chairman of the Development Assistance Committee, and Ambassador Herbst, Chairman of the Trade Committee and agreed to resume discussion, at a subsequent session, of the whole range of questions within its competence affecting co-operation with the developing countries.

Further meetings of the Committee will be held on 5th June and 5th-6th July this year.

Finance Ministers and Central Bank Governors at OECD Headquarters

A meeting on March 16 of Finance Ministers and Central Bank Governors of the Group of Ten and the European Economic Community countries took place at OECD headquarters. The purpose of the meeting was to agree on the action required to permit the reopening of the exchange markets in orderly conditions on March 19.

Above: head table left to right: Olivier Wormser, Governor of the Bank of France; Valéry Giscard d'Estaing, French Minister for Economy and Finance and Chairman of the meeting; Pierre-Paul Schweitzer, Managing Director of the IMF; Jeremy Morse, Chairman of the Deputies of the Committee of Twenty of the IMF, and OECD's Secretary General Emile van Lennep.

Below: the delegates and the press after the meeting.

UPHOLDING THE INTERESTS OF THE CONSUMER

Government action to reinforce the consumer's position varies in important respects from one OECD country to another. One of the first tasks of OECD's Committee on Consumer Policy therefore was to review the main features of OECD governments' policies—the differences and similarities between countries, difficulties encountered in implementing the policies and the problems to which they may give rise in regard to international co-operation (1).

The growing importance accorded by governments to consumers' interests in the formulation of economic and social policies has been prompted by such developments as the growth of mass production, the acceleration of technical progress, the increase in purchasing power and the widening of markets. A wider range of goods, more complex and designed to meet a variety of specific uses, is produced in anticipation of demand rather than in response to it and promoted by more vigorous and sophisticated advertising and selling techniques. In such conditions the consumer finds it more and more difficult to identify dangers associated with the goods or to choose those best suited to his particular needs.

Today all governments recognise the need to protect the consumer as well as to reinforce his " countervailing power " and despite differences in approach, there are certain generally accepted objectives which include :

- protection against hazards to safety and health;
- protection against deceptive and other unfair practices;
- provision of adequate rights and means of redress;
- provision of information and education;
- involvement of consumer representatives in the formulation of regulations which concern them.

The Institutional Framework

Consumer policy, as at present implemented in most OECD countries, is generally based on a pluralistic concept which involves the governmental authorities, one or more specialised official or unofficial bodies and the private consumer organisations.

In two Member countries special ministerial departments have been set up—Canada's Federal Department of Consumer and Corporate Affairs and Norway's Ministry of Consumer Affairs and Government Administration. In most OECD countries, however, consumer policy is the responsibility of several government departments, e.g. the Ministries of Finance, Economic Affairs, Trade, Agriculture, Social or Family Affairs, Public Health and Education, the Pure Food and Drugs Administration, etc. In some countries, inter-departmental committees in which consumer representatives participate, have been set up to help ensure coordination of policies and to take consumers' interests fully into account.

Another institutional approach to keeping the administration in close touch with consumer needs is to create " intermediate bodies ", specialised official or semi-official organisations often called consumer councils which generally include representatives of both business and consumers. These councils supervise the implementation of government measures for the protection, education and information of consumers and enjoy considerable independence, even when they are financed mainly or entirely by the authorities; they may subsidise the activities of private consumer organisations or themselves engage directly in protecting, informing or educating consumers.

The consumer organisations themselves are actively trying to exert great influence on official decisions and one way they have chosen is by grouping together. The merger of individual consumer groups has been encouraged and helped by the authorities in the Nordic countries. Federations of private consumer organisations have recently been set up in certain Member countries while in others such organisations are beginning to co-operate actively, but the consumer organisations are still seeking a formula which will give their movement cohesion without denying them the freedom to express their own particular moral, philosophical, political or other views.

In some countries consumer representatives are actively trying to set up some form of permanent confrontation with representatives of the authorities and also with spokesmen for trade and industry.

Consumer Protection

Legislative measures to protect consumers generally antedate an overall consumer policy which is a relatively recent phenomenon. Such laws take two basic forms : protection of the consumer's safety and protection of his economic interests.

(continued on page 6)

(1) Report on Consumer Policies in OECD Member Countries, OECD 1972.

A weights and measures inspector of the Canadian Department of Consumer and Corporate Affairs at work.

- *Safety and Health*

Measures designed to protect consumers' safety and health are widespread and of long standing. The most common approaches to physical protection are, first, to ban the use of dangerous products, second, to limit the quantity of dangerous substances contained in the product and third, if the other two prove impossible (because the product is an essential one or cannot be modified), to maintain safety standards and/or to require compulsory labelling. In most OECD countries safety standards and labelling regulations are applied to toxic, inflammable, explosive or corrosive substances in common use and to both electrical and gas household appliances. The rules are being extended in some countries to cover motor vehicles, toys, certain household detergents and inflammable textiles. In a few instances labels also cover dangers which are likely to arise only in the long run. An example is the United States Public Health Smoking Act of 1969 which requires all cigarettes manufactured, imported or packaged for sale in the United States, to bear the statement " The Surgeon General has determined that cigarette smoking is dangerous to your health ".

- *Economic Interests*

Direct action by public authorities to protect consumers' economic interests with binding regulations has developed considerably in recent years in most Member countries. The main object of such regulations is to protect consumers against fraud and deception by unscrupulous traders, and the measures taken include prevention of fraud, the control of aggressive sales methods, the banning of deceptive or misleading sales techniques, of inaccurate or misleading advertising, and measures to control consumer credit.

Aside from direct regulation accompanied by punitive action, there are other methods of protecting the consumer's economic interests. Most important are the measures taken within the framework of preserving free competition. Competition policy is considered in most countries to be directly relevant to consumer policy because it can reduce prices, enhance the quality of goods or stimulate product innovation.

Complaints and Redress

When a consumer feels that he has been harmed in some way, he may seek redress under general laws governing purchases and sales or he may bring a proceeding against the manufacturer for violating a specific law—on prevention of fraud for example, or misleading advertising.

In addition, certain countries have created special facilities to handle complaints and claims and these are growing in importance. The basic idea is to avoid unnecessary, tiresome and expensive legal procedures on the part of the consumer by offering him the services of a " public complaints board " to evaluate his complaints and either negotiate his claims directly with the trader concerned or advise him of further possible legal steps.

Such facilities exist in Canada, Japan, the Nordic countries and to a lesser extent in Austria, the Netherlands and the United Kingdom. In Canada, consumers' complaints are sent to a special office of the Department of Consumer and Corporate Affairs. In Japan, consumers' complaints are handled by the

Better Living Information Centre and 67 Consumer Life Centres which work in close co-operation with one another. Consumers' representatives handle complaints in the Nordic countries, and consumer advice centres in Austria, Germany and the United Kingdom. Institutionalised facilities for out-of-court negotiation of claims seem to be growing in importance in most OECD countries.

Consumer Information

Various public, semi-public or private institutions encourage the dissemination of objective information on products and services, so as to make the market more transparent and closer to the assumption of classical economic theory that every consumer has complete knowledge of all possible alternatives. Four mutually complementary aspects of consumer information activity are considered to have priority: comparative tests, labelling (2), advisory services and general consumer information.

Comparative testing to determine the characteristics and performance of goods and services is carried out in all Member countries except Greece, Ireland, Portugal, Spain and Turkey, mostly by private or semi-public bodies and resulting reports are published in consumer magazines or other media. Attention focusses on expensive household appliances and other durables, products for which consumers are not in a position to judge accurately the advertised descriptions of quality (pre-packaged foods, toilet articles, etc.) There are, however, a number of problems involved in the comparative testing of products and services: the cost of such tests, their number and frequency, the choice of samples, the description and dissemination of results and the lack of standardised testing methods. The majority of OECD governments consider that increased government financial support would contribute to a solution of these problems. In addition international co-operation between organisations carrying out comparative tests has contributed in recent years to the elaboration and application of more uniform testing methods.

Laws providing for compulsory *labelling* of certain products and for criminal sanctions in case of infringement exist in some form in all OECD countries. The labels give warnings or instructions relevant to health and safety particularly for dangerous goods when outright prohibition is found impracticable, or they provide information with regard to weight, volume, number or composition of the product. In some countries importance is attached to the declaration of retail price, the name and address of the packer, manufacturer or distributor or the indication of origin.

In addition, some countries have voluntary labelling of various types; in particular, informative or "systematic" labelling, devised by special bodies (often with the participation of consumers' representatives) and partly supported by public funds, is common in six countries — Denmark, Finland, Germany, the Netherlands, Norway and Sweden and is being introduced in Austria and France.

Advisory services which counsel individuals on request are particularly numerous and active in Austria, Canada, France, Germany, Japan, the Nordic countries and the United Kingdom and have extended their ranges of activity from home economics (which, however, is still their chief preoccupation) to cover any question of concern to consumers. Increasingly, and especially in the Nordic countries, these centres have come to consider themselves as spokesmen for local consumers as well.

Comprehensive consumer information necessitates the utilisation of the full range of mass communications media. In most OECD countries consumer organisations have access to newspapers and periodicals, particularly women's magazines, in which articles and regular columns are devoted to consumer information; radio and television cover the most topical consumer questions but do not always have full programmes on the subject.

Consumer Education

Educating the consumer — and the prospective consumer — is another task of fundamental importance for consumer policy. Most OECD governments regard it as essential to familiarise young people with consumer problems and to develop their critical faculties, but in most countries consumer education in schools is still not very highly developed. Only in a few such as France, Italy and Japan are consumer problems included in the curricula of primary and secondary schools. In the United States, consumer education programmes are encouraged and coordinated by the Office of Consumer Affairs which is in the Executive Office of the President. As to adult education, in some countries evening classes and correspondence schools have been set up by national education services, by consumers' organisations or by trade unions.

The Difficulties

In trying to put a consumer policy in place, OECD governments have encountered several major common problems amongst which may be mentioned :

- achieving the required degree of coordination between various responsible bodies;
- finding formulas for effective consumer participation in the elaboration of regulations and policy decisions affecting their interests;
- keeping up with new products and hence new hazards and finding a balance between the need for prompt action and the need to reach definitive conclusions about the safety of the product;
- developing standardised markings and symbols of product safety which can be instantly recognised by all groups in the society regardless of age, language or literacy;
- adaptation of laws or enforcement action to constantly changing situations in the field of unfair trading practices;
- allocating the necessary funds for subsidising comparative tests of consumer products;
- finding ways to make adults and young people at all stages of their education aware of consumer problems.

*
* *

The Committee considers that in view of the problems and difficulties encountered by OECD governments in developing an active consumer policy, its future work will have two main focal points:

- to assist Member countries in developing comprehensive and active consumer policies through regular exchanges of information and experience and specific studies aimed at developing common principles and guidelines;
- to consider the most effective means compatible with consumer interests of avoiding or reducing the obstacles to international trade which may arise out of divergent regulations on consumer protection or information.

(2) Report on *Labelling and Comparative Testing, OECD 1972.*

An International Agreement

The Case of PCBs

to Protect the Environment

Concern on the part of OECD countries over the use of polychlorinated biphenyls (PCBs) has led OECD's Council to take an important Decision on an environmental protection measure. This Decision, which is a binding agreement by OECD Member countries to control the production, movement and use of polychlorinated biphenyls, is the result of an 8-months investigation within the framework of OECD's Environment Committee.

The investigation was launched in March, 1972 by the Committee's Sector Group on Unintended Occurrence of Chemicals in the Environment, which collected and compiled information on production, trade and use of PCBs, and the possibility of control measures. In October a special consultative meeting was convened to examine the need for common measures and it was agreed that concerted action was desirable in order to avoid disparate regulations in Member countries. The following month the Sector Group formulated detailed proposals for such action, which after approval of the Environment Committee were submitted to the Council for agreement. In the following article Mariatta Idman of OECD's Environment Directorate describes the background to this OECD Decision.

Member countries of OECD have unanimously decided to control the manufacture and use of one class of hazardous chemicals—polychlorinated biphenyls or PCBs. This is one of the first international agreements aimed at limiting the production and use of chemicals in order to protect the environment. The action is a striking example of how a real threat to the environment and to international commerce can result in political willingness to act.

PCBs are persistent substances that do not break down easily into harmless components; they may build up in living beings and can be directly toxic if ingested. These substances, however, are also very useful for many purposes and widely traded internationally, in bulk or as components of other products. International agreement was necessary both in order to ensure protection of man's health and environment and to avoid differences in regulations, which would have complicated trade between OECD Member countries.

Advantages and Disadvantages

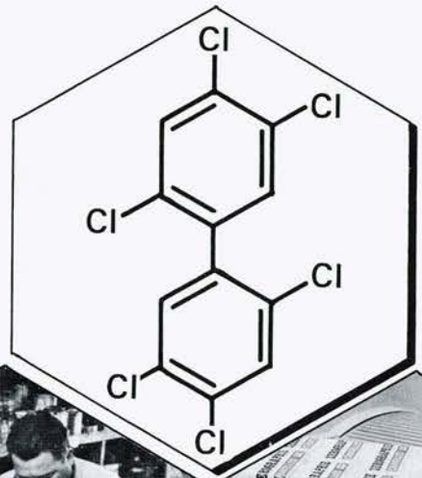
PCBs were invented before the war, but—as is the case with so many modern synthetic products—found their use and usefulness increasing with the post-war industrial surge. They were detected in the environment, together with numerous other persistent chemicals, in the 1960's at a time when the uninhibited use of similar chemical substances, particularly pesticides, started to show adverse results—declining bird populations, massive fish mortality, and in some unfortunate instances, damage to human health.

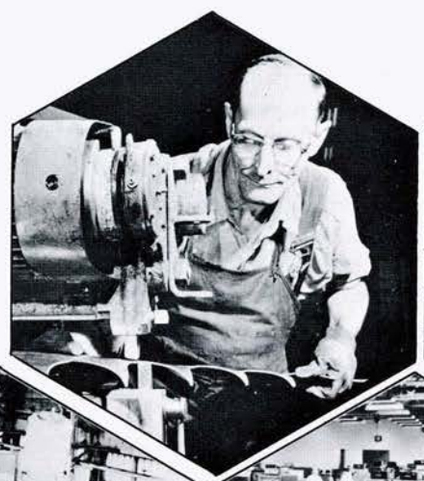
Because of their chemical and physical properties, particularly non-flammability, high dielectric constant and thermal and chemical stability, PCBs are used for many purposes: for cooling and insulation in transformers and capacitors; to replace water or steam for the transfer of heat; they serve in hydraulic equipment and vacuum pumps; as cutting and lubricating oils and as plasticisers of products such as paints, copying paper, printing inks, etc.

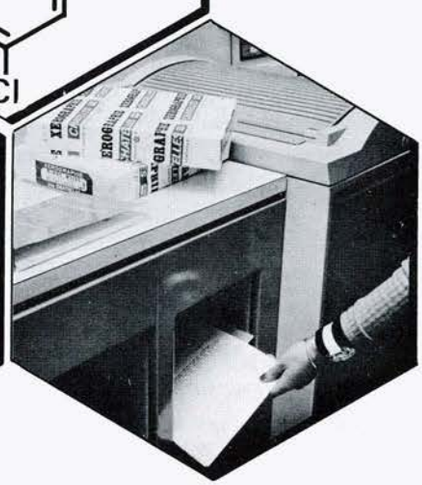
In these uses PCBs have had beneficial effects: preventing explosions and fire, making many processes safer and more efficient, and lengthening the life and improving the quality and finish of a great many products.

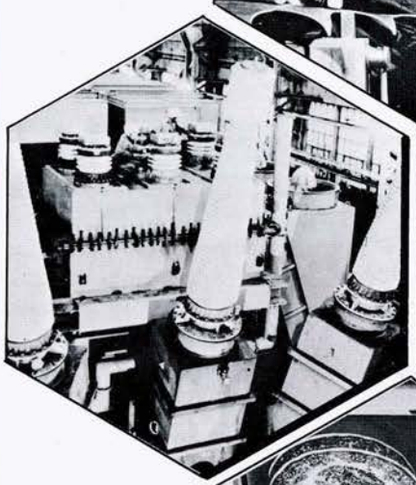
Although concern had been expressed over the years by the scientists who found residues of PCBs throughout the environment, it was not possible to prove with certainty that PCBs were doing any damage. The real danger was brought home

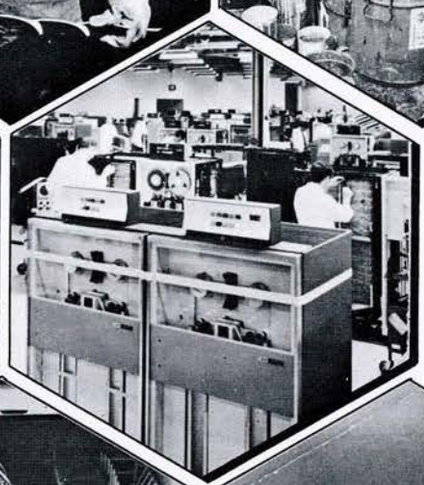
PCBs, which have a chemical structure very close to that of DDT, have been used in a wide variety of applications—as cutting oils, as plasticisers of paints and copying paper, in giant electrical transformers, in small capacitors (in household products such as washing machines and in computers) as hydraulic fluids and lubricating oils in aircraft and marine vessels.

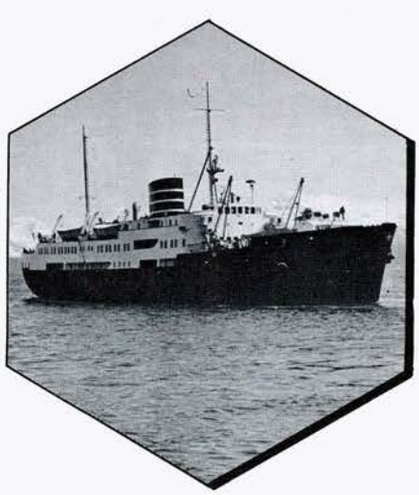












only in 1968 when PCBs used as a heat transfer fluid in a rice oil plant in Yusho (Japan) leaked and contaminated the oil which in turn caused skin disease, blindess, gastro-intestinal symptoms and even casualties in people who ingested the oil. More examples of contamination were subsequently discovered: PCBs in milk from cows given food treated with PCB-diluted herbicides or stocked in silos coated with PCB-based products; PCBs in chicken wrapped with plastic; PCBs in food wrappings made from recycled copying paper.

In 1970 and 1971 the first measures were taken: both legislative action by national authorities and voluntary restriction of supply by some large manufacturers of PCBs. It was suggested at this time that OECD investigate the problems and the possibilities of internationally co-ordinated control of widely used persistent chemicals; PCBs were designated as one of the substances of priority concern. When the

investigation got under way, the risk of damage was considered sufficiently proven, and an examination of production and use of PCBs revealed that the largest part of the problem could be solved by concerted action in the OECD area. It appeared that import of raw PCBs from non-member countries was unlikely, and that imports of PCB-containing products consisted mainly of electrical equipment.

The Range of Uses

Further investigation showed that the uses of PCBs fall into two distinct categories: use in sealed circuits, from which escape can be prevented and therefore used liquids recovered and destroyed; and open uses, which involve such small quantities and so many consumer products that recovery would not be possible. Weighing the hazards of PCBs against the need for using them showed that a partial ban would be necessary, whilst continued use had to be recommended where the risk of explosion or fire outweighs that of environmental contamination. It was agreed, therefore, that PCBs should be allowed in transformers and large capacitors, as heat transfer fluids in plants that do not process food, feed or drugs, and in hydraulic equipment in underground mining. These three categories of use are all such that the risk of escape is small whilst the benefits derived are substantial. The liquids can be recovered and, unless deliberately disposed of into the environment, need not add to the present level of contamination. The quantities used in the most significant category, namely transformers and capacitors, are also such that the users will be encouraged to have the liquids regenerated for re-use.

Finally, PCBs may be used in small capacitors, which pose a different problem altogether. Small capacitors are needed to start up a whole range of domestic appliances, such as refrigerators and washing-machines, for example, and are incorporated into most fluorescent light fittings. Small capacitors are in themselves sealed units, but since for obvious reasons it would be too complicated and costly a process to ensure recovery of them all, some of their content of PCBs will sooner or later reach the environment. It was, however, considered unreasonable at the present time to impose a ban on this use, for which substitute products are not yet generally available and, in any case, existing stocks and equipment are likely to be in circulation for some years to come. Member countries therefore instead agreed to work towards the elimination of this application of PCBs.

All uses of PCBs, other than the four discussed above, are to be phased out. The first priority, which could conceivably be banned under existing health or food laws, is the use of PCBs as heat transfer fluids in the drugs, food and feed industries. As a matter of fact prevention of leakage cannot be guaranteed, and risk of direct contamination of products that will be ingested by man must be avoided at all costs. Since non-flammable fluids in such installations are not indispensable, other fluids can be applied.

The next priority is to abandon the use of PCBs as plasticisers. PCBs are, no doubt, the most efficient plasticisers known, because they can be used with most synthetic resins, which the PCBs also make fireproof and highly resistant to water, acids and alkalis. The products involved include paints, varnishes and lacquers, textile, wire and cable coatings, copying paper, printing inks and pastes, glues, adhesives and sealants, plastic and rubber products, etc. Weighed against the continuous emissions of PCBs from this category —sometimes representing as much as 25 per cent of the total amount used in a country— the need for PCBs as plasticisers is far less important than the risk of contamination of food or feeds for example by recycled copying paper, plastic wrappings or internal surface coatings, or by dispersal into the atmosphere caused by burning PCB-containing products.

A range of industrial, PCB-containing fluids which, taken together, have also added significantly to the environmental burden of PCBs, is to be eliminated too. Such fluids are hydraulic and lubricating oils, vacuum pump fluids and cutting oils. These liquids are used under conditions in which they could theoretically be recovered, but in practice are not: hydraulic and lubricating oils leak to some extent, and the comparatively small quantities used in aircraft or marine vessels for example are more likely to be dumped than recovered. There is the same problem with vacuum pumps, although the fluid is less frequently replaced.

As for cutting oils, it would be virtually impossible to ensure recuperation from the many workshops spraying them as cooling and lubricating agents in metal working, particularly since water constitutes the main part of such oils which would, therefore, normally be drained off.

The last category to be banned is whatever PCBs are still being used in pesticides although it is believed that use of PCBs for this purpose has already been abandoned in most countries.

Impact of the Decision

A rough estimate suggests that these bans would reduce consumption of PCBs by at least 35 per cent. Since the only quantitatively significant allowed use of PCBs is in transformers and large capacitors—which are both longlived and sealed units—the decision taken will, when implemented, have reduced escape of PCBs to very small amounts indeed.

A technique for destroying surplus or waste PCBs does in fact exist (incineration at very high temperatures), so that any problems arising in connection with the allowed uses will be mainly of a technical nature: engineering design, supervision, recuperation systems and transport. The agreement covers these problems too in stating that countries must institute adequate arrangements for recovery and disposal of PCBs, and that containers for transport must meet existing specifications for safety in transport of dangerous chemicals. Countries have also agreed that a system for uniform labelling of all containers, equipment or products that contain PCBs will be developed.

Concerning implementation of the Decision, it is recognised that all countries may not at present have the necessary legislation and may have to use other means of compliance. Member countries have, therefore, decided to assist each other in implementing the agreement by exchanging information at certain intervals on the amounts of PCBs produced, exported, imported, consumed, and incinerated.

The last but not least important implication of the decision is that countries will request their industries to substitute for PCBs materials that are less hazardous to man and his environment. This matter will likewise be kept under review in OECD to ensure that the solution to one environmental problem does not result in the creation of another.

TECHNICAL CO-OPERATION WITH THE THIRD WORLD

a new orientation

Technical co-operation between the developed and the developing countries has been growing more rapidly than official development assistance as a whole and now accounts for about one fourth of all the official assistance provided by members of OECD's Development Assistance Committee (DAC). The effectiveness of this type of aid however has been called into question by both recipient and donor countries. Technical co-operation therefore is being re-examined in the DAC, and, in the policies of individual countries, new patterns are emerging which are described in the following article by Anne de Lattre of OECD's Development Assistance Directorate.

In the field of technical co-operation a search is going on for new structures, new methods and new techniques.

The less-developed countries have themselves given impetus to the reforms. In the last ten years, they have succeeded in training staff, in creating or consolidating their own institutions, in asserting their own identity and defining the objectives they wish to attain. Accordingly, they hope to cut down administrative management and direct training, the so-called " substitute functions " which have been assumed by some donor nations, particularly the former colonial powers, and the occasional exercise of too direct responsibility by such major donors as the United States. Instead they would like to see more discreet action, such as advice on public administration and institutional organisation, a more vigorously selective transfer of scientific and technological experience, and the training of trainers.

The donor countries have also realised that their technical assistance has often been guided by ways of thinking and circumstances peculiar to their own situation.

The wholesale transfer of their methods has sometimes produced unfavourable results for development. The diffusion in developing countries of educational patterns and methods currently used by developed countries has created numerous problems by contributing to cultural and social alienation. The most modern type of training has not always taken into account employment possibilities. The results of pilot projects in agricultural and medical research have been slow to spread because there is often too wide a gap between these models and local circumstances. In many cases, technical co-operation has not been sufficiently innovative to check the alarming development of unemployment and rising birth rates.

More limited and better chosen programmes must be prepared in the light of a comprehensive assessment of the needs of beneficiary countries and the possibilities of assistance. The way in which many donors finance projects piecemeal in response to badly coordinated requests results in a series of local pinpricks with no profound impact on the transformation of economies and societies.

Moreover, the scattered intervention of bilateral and multilateral agencies prejudices the efficiency of technical co-operation. Thus there is growing interest in the establishment of medium- and long-term programmes geared to priorities laid down by the host countries.

Towards country-by-country programming

There is a tendency to group all attempts to renovate technical co-operation methods for convenience under the broad heading of " programming ". Programming consists of forecasting the financial and human requirements of the overall programme and, on this basis, sometimes drawing up pluri-annual plans; preparing schemes tailored to the needs of different countries and sectors, and based on a profound knowledge of particular circumstances; reinforcing the links between technical co-operation and other forms of aid; and institutionalising procedures for the exchange of views and information with the countries receiving foreign aid.

The initiative for laying down more formal rules for the programming hitherto practised empirically by the DAC countries was taken in 1970 by the United Nations Development Programme (UNDP). The Governing Council of the UNDP decided that an indicative amount of aid for a five-year period would be attributed to each country, and that henceforth the UNDP would approve not isolated projects but programmes, usually for five-year periods, drawn up by governments in co-operation with the UN agencies and taking into account technical assistance contributions from other sources.

The majority of the DAC countries have recognised the value of such an approach. Several of them have followed the example of the UNDP and laid down the development over the medium term of their technical co-operation appropriations. In some cases they have negotiated with certain less developed countries provisional figures for pluri-annual contributions, these being subject to periodic revisions and conditional on the programmes and projects being put into concrete form. Some countries are also attempting to identify the sectors on which emphasis should be placed.

To give an example, the Netherlands has worked out a four-year plan giving indicative totals for its technical co-operation contri-

1. THE VOLUME OF TECHNICAL CO-OPERATION - 1971

	Grant disbursements for bilateral technical co-operation ($ million)	*Their share in bilateral ODA (%)*
United States	593.0	20.5
France	488.9	50.9
Germany	206.6	39.0
United Kingdom	129.9	26.6
Belgium	57.4	52.0
Canada	48.8	16.6
Netherlands	42.1	27.6
Japan	27.7	6.4
Sweden	21.2	31.3
Denmark	17.5	48.1
Italy	15.7	11.5
Australia	11.7	6.1 (1)
Portugal	9.0	9.1
Norway	5.8	31.9
Austria	2.9	61.7
Switzerland	2.7 (2)	13.9
TOTAL	1,680.9	26.1

(1) The share of technical co-operation in bilateral ODA is much higher (22.9 %) if Papua and New Guinea are excluded from the latter. (Data are not available on bilateral technical co-operation for these areas).
(2) Includes only technical co-operation "in a strict sense" (fellowships, individual experts). Integrated projects, which amounted to $5.5 million in 1971, also include a sizeable technical co-operation component.

butions to priority countries and has communicated these figures to those concerned.

Denmark and Sweden have drawn up a pluri-annual plan of official development assistance for their principal beneficiaries, leaving the beneficiaries to decide the form—financial or technical—the assistance will take.

In France, the Ministry of Foreign Affairs has set up a programming group to prepare a technical co-operation programme for the less developed countries coming within its purview. The first stage in the group's work has been to review objectives and make medium-term forecasts for priority schemes. The Ministry lays down the broad lines of policy to be followed, decides on the distribution of appropriations by country and by sector, and leaves its local representatives to decide, within the framework of the total annual appropriation allotted to them, which of the projects presented by the governments concerned they will approve.

Sectoral analysis

Other DAC member countries which have not adopted the practice of country-by-country programming have nevertheless undertaken to modify the technical co-operation they provide. Canada, for example, in an effort to limit requests for experts recruited on an individual basis, has taken steps to integrate technical co-operation more closely with financial aid. Italy has just set up a department to administer the technical co-operation appropriations ($80 million) voted at the end of 1972 for a five-year period. The United Kingdom is making forecasts for ten broad sectors of activity with the object of assessing probable changes in their relative importance over the next five years.

All the donor countries have in fact realised that country-by-country programming must be backed up by sectoral analyses which will make it possible to direct technical co-operation towards the most essential activities.

The United States has gone to the greatest lengths in sectoral research. While remaining convinced of the usefulness of country-by-country programmes, it has felt it necessary to recast its official intervention, limit its objectives, and identify bottlenecks common to some or all of the less developed countries, in such areas as agriculture, public health, nutrition, education, science and technology, etc., for the remedying of which a substantial part of American technical assistance can henceforth be devoted. The United States emphasises that the dispersion of efforts adversely affects their efficiency. As an example of effective concentration, it cites discoveries vital to agricultural development and nutrition which have been realised only through the persevering efforts of the Ford and Rockefeller Foundations. It considers that aid agencies, like the Foundations, are in a position to organise vast networks of research and information which can be applied to a limited number of priority development problems. This common programme could offer an opportunity to donor countries to concentrate on specialised fields within their competence, and to coordinate their activities with an eye to more effective resolution of difficulties.

The advantages of programming

Though the programming of technical co-operation is still in its early stages and by no means generally practiced, it has, in the opinion of those responsible for bilateral and multilateral aid, already led to significant improvements.

The bilateral agencies consider that among the advantages programming has brought are the efforts made to obtain a clearer picture of the needs of the less developed countries, to study them in a medium- or long-term perspective, and to estimate on a pluri-annual basis the total appropriations necessary. They also recognise that programming obliges them to make priority differentiations between sectors, and hence improves the quality of decisions taken by aid agencies, and increases their awareness of the interdependence between the various types of development aid.

The officials in charge of the United Nations Development Programme consider that programming has been very useful for the organisations in the United Nations family. It has enabled them to clarify the positions in the various less developed countries, to obtain a comprehensive picture of the aid situation, to offer possibilities for coordination with other aid programmes, principally those of other UN agencies. It also enables governments to make better use of the machinery provided by the agencies.

Improving the instruments of technical co-operation

Improved programming of technical co-operation involves the rationalisation of its instruments, which comprise in the main the seconding of appropriately qualified personnel, the financing of scholarships for studies and training, the granting of credits for capital equipment connected with projects, and, more generally, organising the proper combination of all the various means of aid.

To be able to put at the disposal of the less developed countries the personnel they need, surveys must be made of their requirements, future trends in requirements anticipated where possible,

2. WHERE THE TECHNICAL ASSISTANCE GOES

(a) *Four major recipients of individual DAC Member countries and United Nations Development Programme (UNDP)*

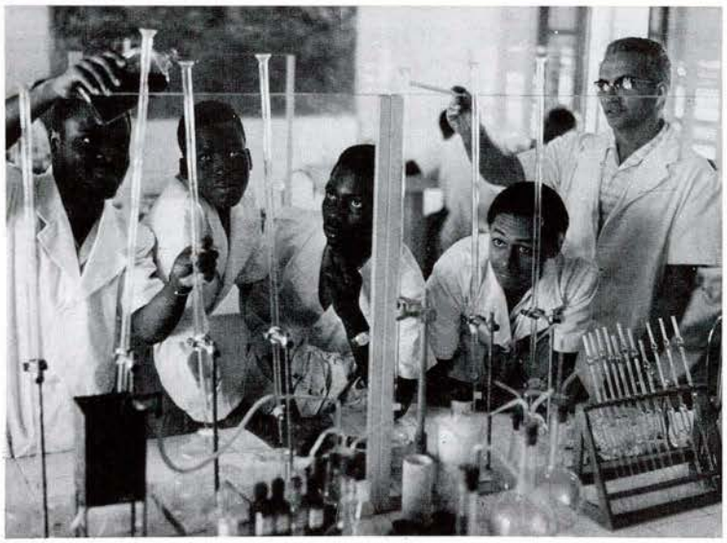
	First recipient	*Other 3 major recipients*
Australia	1967 Malaysia	Vietnam, Thailand, Indonesia
	1970 Vietnam	Indonesia, Malaysia, Thailand
Austria	1967 Tunisia	Iran, Jordan, Pakistan
	1970 Kenya	Thailand, Bolivia, Mexico
Belgium	1967 Zaire	Burundi, Rwanda, Morocco
	1970 Zaire	Burundi, Rwanda, Morocco
Canada	1967 Ghana	Malaysia, Nigeria, Tanzania
	1970 Niger	Ghana, Tanzania, Cameroon
Denmark	1967 Zaire	Tanzania, Korea, India
	1970 Zaire	Tanzania, Kenya, Zambia
France	1967 Algeria	Madagascar, Senegal, Ivory Coast
	1970 Algeria	Morocco, Madagascar, Senegal
Germany	1967 India	Brazil, Chile, Afghanistan
	1970 India	Chile, Brazil, Afghanistan
Italy	1967 Somalia	Libya, Ethiopia, Morocco
	1970 Somalia	Ethiopia, Libya, Morocco
Japan	1967 Thailand	Philippines, Malaysia, Pakistan
	1970 Indonesia	Thailand, Philippines, Taiwan
Netherlands (1)	1970 Indonesia	Kenya, Cameroon, Nigeria
Norway	1967 Kenya	India, Uganda, Tanzania
	1970 Kenya	Zambia, Uganda, Tanzania
Sweden	1967 Ethiopia	Pakistan, Tanzania, Kenya
	1970 Ethiopia	Kenya, Tanzania, Pakistan
Switzerland	1967 Rwanda	Tunisia, Dahomey, Iran
	1970 Rwanda	Cameroon, Madagascar, Dahomey
United Kingdom	1967 Kenya	Zambia, Nigeria, Malaysia
	1970 Kenya	Zambia, Uganda, Malawi
United States	1967 Vietnam	Laos, Thailand, Nigeria
	1970 Vietnam	Thailand, Laos, Nigeria
UNDP and Regular programmer of UN Special Agencies	1967 India	Iran, Nigeria, Zaire
	1970 India	Pakistan, Indonesia, Zaire

(1) 1967 not available.

(b) Distribution of bilateral technical co-operation personnel by sector and region of service, 1970 (Number of persons)

Country	*Total*	*Personnel in Education*	*Total*	*Operational experts and advisers*									
				Economic planning, survey of resources, etc.	*Public administration*	*Power, transport, and communications*	*Industry, mining, and handicrafts*	*Trade, banking, insurance, and tourism*	*Agriculture*	*Health*	*Social services*	*Other and unspecified*	*Volunteers*
EUROPE	1,656	939	531	16	46	56	119	5	97	38	12	142	186
AFRICA	66,597	34,156	22,598	1,106	3,135	5,742	1,381	222	5,057	3,851	368	1,732	9,843
North of Sahara	23,759	17,573	5,386	108	778	999	713	94	1,113	1,364	15	202	800
South of Sahara	42,477	16,386	17,048	997	2,345	4,738	667	119	3,882	2,489	347	1,464	9,043
AMERICA	11,484	2,173	3,379	168	404	304	324	69	922	340	247	601	5,932
North and Central	4,084	667	1,242	52	200	106	84	36	285	172	108	199	2,175
South	7,396	1,503	2,136	116	204	198	240	33	637	168	138	402	3,757
ASIA	17,391	3,068	8,763	351	618	1,194	1,020	102	1,380	980	783	2,335	5,560
Middle East.	1,450	506	586	22	32	80	182	24	127	40	27	52	358
South	4,750	1,005	1,436	69	55	119	231	24	546	110	39	243	2,309
Far East ...	11,147	1,536	6,722	259	530	995	607	54	692	830	717	2,038	2,889
OCEANIA	2,992	199	1,447	44	284	230	6	7	139	100	14	623	1,346
Unspecified ...	370	144	212	1	2	2	41	2	20	16	72	56	14
Total	100,490	40,679	36,930	1,686	4,489	7,528	2,891	407	7,615	5,329	1,496	5,489	22,881

N.B. Regional totals include personnel not distributed by sub-regions.



A chemistry course at the lycée of Niamey in Niger.

and reserves built up of personnel capable of filling the required posts.

Forecast studies of personnel needs for technical co-operation are still in an embryonic stage in the majority of DAC countries. Current work in this connection consists in the main of negotiating with the less developed countries the progressive withdrawal of personnel engaged in direct management who have been classified hitherto under the generic term of " operational personnel ".

The United Kingdom appears to have made the most detailed arrangements. After annual negotiations with the principal recipients of United Kingdom aid, the Manpower Planning Department of the Overseas Development Administration works out forecasts of personnel needs. These annual examinations, based on the analysis of expenditures and on the current and future " output " of local training establishments, have made it possible to improve the forecasting of needs and make better use of technical co-operation personnel already working in the field.

Technical co-operation will have a growing need for " technical advisers " able to provide guidance without becoming involved in the management of public, economic and social affairs. To carry out their tasks these advisers require not only high-level professional training but also teaching ability, adaptability, a readiness to innovate and an open-mindedness towards ways of thinking and attitudes different from their own.

DAC Member countries have not yet succeeded in devising recruitment, selection, and training procedures adapted to these difficult functions, and technical co-operation sometimes comes to grief because of experts' personal characteristics and exigencies.

Certain experiments now going are nevertheless worthy of note. In the selection of its officials, Germany lays stress on psychological motivations and invites representatives of Third World countries to help it in selecting personnel for co-operation work. In its training, Canada makes an effort to prepare the whole family unit for life in the less developed countries. In setting up the Bureau de Liaison des Agents de la Coopération Technique (BLACT), the French Foreign Ministry was responding to the need for providing continuing training for co-operation personnel and for making them aware of local realities. The training given by the United States to its Peace Corps Volunteers is, in some respects, a model for such activity.

Policies for financing scholarships and training courses will have to be revised if better use is to be made of the large sums now being spent for this purpose ($ 171 million in 1970). Procedures for the selection of candidates are often inadequate, and the same is true of methods of ensuring that the training provided corresponds to the needs of the host countries.

Another important question is where to put the emphasis in the financing of scholarships and training courses. Should these be carried out in donor, host or third countries? Even though it is now in principle admitted that increased opportunities for training exist in trainees' countries of origin and in third countries, the majority of scholarships and training grants are still intended for use in the donor countries.

Various DAC countries are striving to improve the integration of technical co-operation with other forms of development aid. They have realised that it is no longer merely a question of financing a road, a dam, a school, of sending experts, teachers, volunteers on isolated assignments, but rather of taking an overall view of development plans or the requirements of a sector, and of combining the various instruments of co-operation in work towards precise objectives.

In Germany, development programmes for the less developed countries must include a summary of regional and sectoral activities, with a list of the principal projects for which financial support can be devoted either to capital equipment assistance or to technical co-operation, and identifying the appropriate means to ensure the right combination of types of aid.

Under the United States AID programme aid to Latin America has for several years now been organised in such a way that technical co-operation, food aid, capital assistance, grants and loans can be combined to work towards one particular goal.

The financing of integrated operations, however, can encounter difficulties such as the compartmentalisation of administrative responsibilities in donor and recipient countries, operational difficulties in the field, insufficient analysis of the overall needs of the less developed countries.

* * *

Technical co-operation with industrial countries and with multilateral organisations has already been of great service to the less developed countries. It has facilitated the spread of education, the training of technicians in all scientific disciplines, the more efficient organisation of public administration and private enterprises, research break-throughs in numerous sectors and particularly in agriculture.

It has made it possible to compile inventories of natural resources, and make good use of the aid funds allocated for economic and social infrastructure and productive investments.

Its role has also been to propagate the ideas and attitudes necessary for economic and social progress to which governments and the public have become increasingly receptive.

With the changes now taking place in the patterns, methods and techniques of action a more efficient type of technical co-operation is beginning to take shape. For developed and less developed countries alike, this co-operation represents a constant opportunity for enrichment and exchange between cultures and civilisations.

To these two groups of nations, co-operation presents the unprecedented challenge of resolving entirely new problems: providing food and nourishment for whole peoples by means of technological break-throughs and modern transport; the spread of industries and agricultural techniques which take advantage of abundant factors of production, often complementary to our own, like manpower; the more equitable sharing of knowledge which makes it possible to speed up progress at a lower cost in human terms than has hitherto proved necessary.

Steps to make the most of
THE CHANGING ROLE OF THE TEACHER

The role of the teacher in OECD countries is under mounting pressure to change. Previous OECD studies on teachers (1) have shown that the priority given to the effort to recruit enough teachers during the last two decades could now be shifted to allow far greater emphasis on quality.

The latest activities within this framework consisted in the preparation of material by a group of educational experts from a number of countries who met at OECD headquarters to discuss the changing role of the teacher and its implications.

The article which follows is based on a review of these discussions and background papers, under the headings of :

- *the direction of change in education*
- *changes in the role of the teacher due to the changes in the teaching-learning process*
- *the organisation for the new role of teachers*
- *suggested areas for future research and development work.*

The contemporary situation in all OECD Member countries is that tensions have arisen in the teacher's role resulting from the co-existence of education systems which have changed slowly and social contexts that have changed fast. Policy measures are called for to improve the effectiveness of the teacher and reduce the conflict that has become a continuing feature of the teacher's role.

Because the increased rate of recruitment has rejuvenated the teaching body, the new teachers are due to spend a long time in education, and without programmes for systematic continuing training little progress is to be hoped for. So, the education of teachers will be at the centre of any programme of education reform. This is a favourable time for changes in the initial and in-service education of teachers.

The Direction of Change in Education

Neither the details of changes in education nor the rate of any such changes can be predicted accurately, but there is sufficient evidence to show that the most likely direction of changes in the immediate future will be directed towards :

- a longer education for all
- a changed structure of authority
- a new distribution of knowledge
- an open education rather than a school system.

The most obvious trend in all countries is for universal, popular education to be extended to older children at one end and to younger children at the other ; the reasons being economic and social as well as purely educational. A growing proportion of the population can match or exceed its level of personal education and the teachers have an important role in satisfying their demand. They will have to be prepared to guide the able, motivated children through to higher education in greater numbers and at the same time to cater for those who will leave as early as possible, and by whom compulsory schooling is often resented.

The difficulties faced by teachers working with under-motivated children from poor social backgrounds are shared with social workers and others. The major task in education in the next decade may be to stop any widening of the gap between the talent of the able and the disadvantages of the under-motivated and less able.

There is no longer a broadly agreed blueprint of values as a guide in the present pluralistic society, and the teacher faces rapidly changing patterns of often conflicting versions of the good life. Parents and children are increasingly in a position to challenge the value and reliability of the curricula, and, indeed, their ideological bases. Teachers are having to establish their

(1) " Training, Recruitment and Utilisation of Teachers in Primary and Secondary Education." " Teaching Resources and Structural Change : conference on policies for educational growth." The volume " Training, Recruitment and Utilisation of Teachers in Primary and Secondary Education " is based on a series of country monographs published by OECD under the title " Study on Teachers / Etude sur les Enseignants " :
— Netherlands - Portugal.
— Denmark - Italie - Luxembourg.
— Suisse - Yougoslavie.
— Austria - Grèce - Sweden.
— France - Ireland.
— Germany - Belgique - United Kingdom.
— Statistical data (Canada, Espagne, Iceland, Japan, Norway, Turquie, United States).
In the same series, OECD has published a study on " Quantitative Trends in Teaching Staff in Higher Education ".

own personal and professional authority, with decreasing support from the traditional agents of socialisation such as church, family, work and local community. Minority religious, racial and regional groups are asserting their right to preserve their own way of life.

To the educational problems raised by a recognition of the values of a pluralistic society must be added those created by the mass media stressing new life styles; the teacher must be the interpreter of these alternatives for the children he teaches.

The increased rate at which new knowledge is being produced makes the continuing efficiency of teaching depend not only on keeping up to date in subject knowledge, but in being aware of, and, implementing new curricula. If knowledge is expanding and the rate of knowledge redundancy is high, what is seen as needed is an education that will enable children to learn for themselves; that extends throughout life; and that stresses personal development and social interaction. Greater emphasis must be placed on interdisciplinarity of subjects; and disciplines helping the affective development of the pupils will play a greater role than in the traditional educational systems.

Available evidence suggests that the effectiveness of school in providing an education that can simultaneously be efficient and humane, economically valuable without exacerbating existing social inequalities, depends on co-operation with other educating agencies outside the schools: parents, local community organisations, social services and employers. The school is often seen as an inappropriate organisation for adolescents.

The education changes mentioned call for a deep modification of the structure of the educational system. A new type of teaching and learning will not be achieved without a break of the traditional frame factors.

Changes in Teachers' Role due to Changes in the Teaching-Learning Process

The experts agreed on the directions in which changes in the learning process was moving and in which acceleration is required. They may be summarised as follows:

- the student must be made really responsible for his own learning
- the organisation of learning must facilitate the acquisition of skills for further learning, not just the acquisition of knowledge itself
- the development of social and personal abilities becomes as important as cognitive learning
- evaluation must become the responsibility of the learner as well as of the teacher
- the efforts of the learner to plan, implement and evaluate his own work must be accepted as legitimate by the teacher.

The emphasis put on each of these general principles will vary according to the level and type of education concerned. The teacher will have to be equipped with a high level of skill which will offer him the possibility to create the best learning environment responding to the individual needs of his pupils.

The role of the teacher in situations governed by an accent on learning rather than teaching will probably change in the following directions:

In the structure of the learning situation, towards

- individually tailored work assignments
- a less rigidly scheduled working day
- final assessment based on ongoing work rather than examinations

Schools without walls: City educational systems now include, libraries, museums, science institutes, art galleries and workshops.

- a more equal, co-operative working relationship between teachers and children.

In the techniques of the teacher, towards
- a greater familiarity of a wide field of knowledge, to be able to guide students and evaluate new developments
- mastery of the sources and methods of knowledge rather than knowledge itself
- the setting of objectives, the motivation of students and the assessment of individual work rather than class teaching
- acceptance of new sources of learning in both media and community
- an ability to work closely with parents, counsellors and social workers.

In the attitude of the teachers, towards
- a fuller recognition of the importance of understanding the processes of child development, social background, the impact which his own attitude and expectation have on the child's performance and development
- recognition that colleagues, outside experts and older children may be essential for the child to use as sources of learning
- recognition of the relevance and legitimacy of some of the knowledge acquired by the children from their own environments and the mass media
- being reconciled to being exposed to the observations and possibly the criticisms of children and colleagues, particularly in team teaching situations
- acceptance of the responsibility of being involved in decision making inside the school
- acceptance of being in contact with educational research, and development activities
- accepting paraprofessionals and auxiliaries in the schools as partners in a common enterprise
- accepting a diminution of traditional authority in relation to children and their parents.

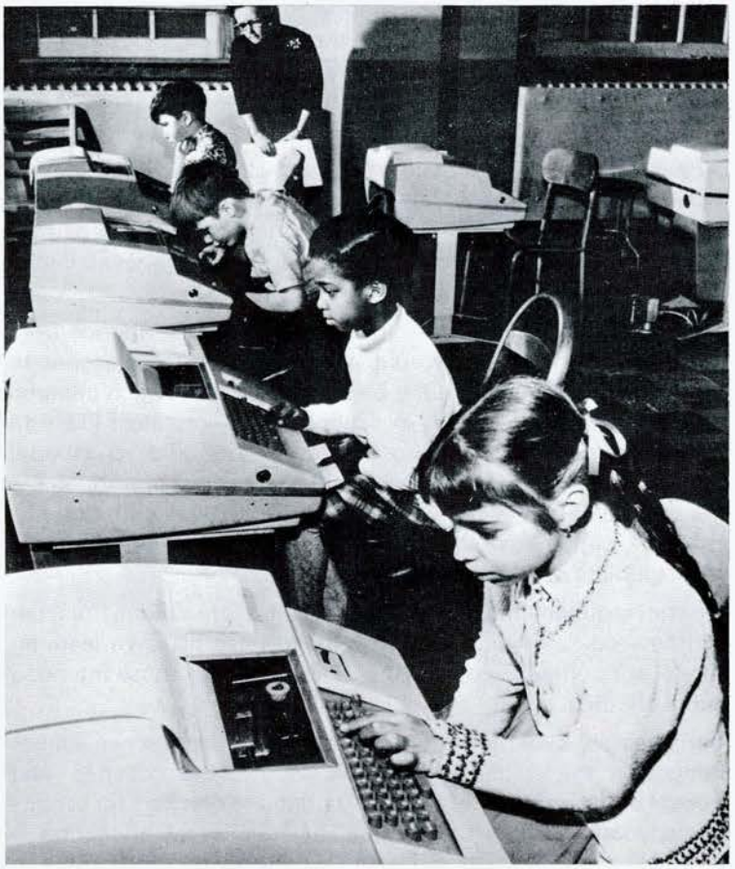
In most cases changes in technique have been accompanied by changes in relationships with children, colleagues and administrators or researchers outside the school. The key feature in the success of these innovations seems to be support for the teachers as they leave the security of traditional organisation.

At each stage of the educational process a high level of skill is required and a new title such as " educator " may be more appropriate than the term " teacher ". The idea of a diversified but unified educational profession is slowly emerging; it will include not only teachers in a restricted sense, but specialists such as career adviser, psychologist, documentalist, re-educator, information specialist, together with headmaster, educational adviser and school district inspector.

The Organisation for the New Role

Based upon the considerations outlined in the previous two sections, the summary review of the experts' discussions goes on to devote its largest section to organisation for the new role, under the headings of
- Resistance to change
- The education of teachers for their new role: priority to in-service training; and changes in the initial training of teachers
- The need for a changed social and political status.

Resistance to change is implied in the traditional role of the teacher, trained as transmitters of culture, as selectors for adult status and the setters of conventional moral standards among children. Change is suspect when it is imposed on teachers who have played no part in promoting it; innovation cannot be a transplant into an unprepared school.



New aids to teachers: instruction in elementary arithmetic, spelling and reading from a computer located many miles from schools it serves.

There must also be visible rewards to overcome resistance to change; there appears to be a threshold of personal investment beyond which the teachers become aware of their part in an exciting experiment; and below this level the commitment to innovate tends to be weak.

Resistance can also come from employers and from higher education — who demand formal examinations as a guide to recruitment — and from parents anxious to ensure the best opportunities for their children. The answer may be to precede and accompany innovation by a skilfully mounted public relations exercise and possibly the negotiation of special entrance requirements into occupations and higher education.

In *educating teachers for their new role* there seems to be international unanimity on the crucial part that should be played by *continuous in-service education* for teachers, for teachers of teachers and for others involved in administration in the education system. Continuity and comprehensiveness — working together as partners — are the key terms.

The establishment of programmes for in-service education, at all points and levels, is a first priority. At present these programmes tend, in most countries, to be built into a hierarchy, which accounts for the isolation of the teachers. Continuous training of teachers should be considered as a normal characteristic of their work; the system should aim at creating a body of teachers who would seek self-development throughout their career.

The switch from teacher-centred to child-centred learning situations will have to involve a switch in teacher education from an

emphasis in transmitting knowledge to one stressing the child as the agent of his own education ; though it will still be necessary for the teacher to maintain a firmly-directed perspective in his work.

Standardised procedures for classroom education will be inappropriate in the education of many older children ; though in the case of early teaching of reading or number skills, such standard techniques may still be important. This means that fewer techniques of teaching can be taught in colleges divorced from the school.

There is a need to accelerate the introduction of evidence from the social sciences that would enable the student teacher to appreciate the influence of the backgrounds from which children come on their performance in school. Subjects most likely to produce sensitivity to environmental factors and to cultural variety are seen as sociology and cultural or social anthropology. This may remove the boundaries between school and community and acceptance of the child's experiences outside the school as a legitimate source of knowledge.

A basic requirement is also to familiarise the student-teacher with new curricula and methods and to base his own learning on relevant curricula learnt by methods similar to those intended for the children.

The necessary evolution of the education of the teacher implies changes in the status and organisation of the colleges, and removal of the anomaly of preparing graduate teachers for secondary education, while the product of colleges of education is confined to primary or lower-level secondary schools. The two groups should, as OECD studies of the training, recruitment and utilisation of teachers have shown, be brought into closer contact with each other as they are prepared for teaching.

The new emphasis on quality in teacher training involves risks as well as gains for the student teachers ; the price of a student entering a teacher career including continuous education should involve acceptance of the chance that he or she might be found unsuitable. Promotion should go to those who prove most skilful and keep up with new developments.

The key to improvement in the training of teachers lies with the training and retraining of those who teach the teachers. In Sweden priority has been given to the education of teacher trainers who are seen as the heart of the system. The Swedish system also involves teachers in the schools in the supervision of teaching practice.

If children are to play a more active part in their own learning, and to spend more time outside conventionally organised classrooms, so must teachers. The actual time for teaching will probably decrease ; the time spent in planning, developing and encouraging new curricula will correspondingly increase.

There was general agreement among the experts participating in the discussions that the teacher, integrated in the service sector and concerned with human development, will need to be related to a *rethought reward structure* at a time when his role is undergoing drastic changes.

The new position of the teacher, implying a share of educational responsibilities with parents, social workers, administrators, and others outside the school, is that of an expert in the learning system, with auxiliaries and paraprofessionals as a reinforcement.

Another feature of the professional attitude of the teacher would be his understanding of and participation in educational research and innovation. The experts agreed that there is need to bring about increased involvement of teachers with researchers, particularly in developing new curricula and techniques and in trying out new forms of organisation. It was also agreed that to be effective the teacher must participate in the planning, development and decision-making processes affecting educational activities.

And — most important — to ameliorate the social and political status of the teacher ; to improve rewards for effort and the present sometimes unfair pay and promotion system, new career patterns seem to be emerging. Hierarchies of teachers ranging from paraprofessionals or technicians at the base of the team to master teachers at its apex may be a way forward.

Areas for Future Research and Development Work

From a number of suggestions made by the experts the areas for future research and development work might cover :

- *changes in staffing standards:* an optimum combination of human and material (technical aids, media, etc.) resources has to be found in the context of a renewed school day during which the teacher could meet on the one hand with one or two pupils, a smaller or larger group of them, and on the other with colleagues, headmasters, pedagogical advisers or researchers for planning the school work, enlarging personal continuous education or developing curricula. Other themes focused on the employment of paraprofessionals and auxiliaries within this framework, and on cost analysis of the introduction of these changes.
- For the *development of a continuous education for all involved in educational activities,* a priority investigation will be needed into the effectiveness of types of in-service courses for teachers. The new structure, content and methods of initial teacher training will have to be considered through their capacity to promote effective continuous education throughout the active life of the teacher. At the organisational level, the role of higher education in initial and permanent education of teachers will need to be studied, with a study of the relation between experience during teacher training with what happens later.
- *New patterns of recruitment and career :* Recruitment policies could be ameliorated if it were possible to know who really wants to engage in teaching and why. This would serve to highlight some of the barriers to co-operation between teachers, parents, employers, social workers, and others, and prepare the ground for an analysis of problems posed by an extension of open education.

Other studies which could usefully be carried out include one on selective attrition from teaching and what might be done to reduce it ; additional investigations into the teaching careers of professionally trained and untrained teachers ; career patterns of teachers who have been involved in innovations (does this in fact lead to rapid promotion ?).

Detailed aspects of teacher policies call for investigations of the increasing work done through professional teams, co-operation among teachers, the bases of mutual evaluation among them and the response of students to contacts with different teachers in the same subject areas.

Finally, there is an overall priority relating to evaluation which should be a part of any programme of innovation in education. Careful monitoring of reforms in the teacher field will not only facilitate the early detection of snags but also provide evidence to guide later programmes.

More than any other single aspect of educational reform, new teacher policies, to be effective, call for a new social contract for education.

THE FUTURE OF INFORMATION : A CHALLENGE FOR GOVERNMENTS AND SOCIETY

by Dr. Georges Anderla

The author of this article, Dr. Georges Anderla, Professor at the Paris Institut d'Études Politiques and the University of Paris, has recently drawn up a report, at the request of the OECD Directorate for Scientific Affairs, on supply and demand in the scientific and technical information field over the next fifteen to twenty years. This study is an important contribution to forecasting the skills and numbers of information specialists required within that period.

The main reason why governments and the general public alike are beginning to take a serious interest in the subject is that the volume and sheer weight of information which has become available over the last few years have implications that can no longer be ignored. This quantitative growth is clearly one of the factors which have recently brought information into the foreground. Information is now recognised for what it is, i.e. a vehicle for the transfer of knowledge and a basic resource, an essential ingredient of both the decision-making process and production processes of all kinds.

The author has used a wide range of methods, from conventional extrapolation and model construction to matrix analysis and morphological research, by way of the Delphi technique and scenario writing. They have led to a set of quantified forecasts, largely coherent, and for the most part either convergent or complementary.

Three general conclusions emerge very clearly from this work on the future of information.

First, nearly all the problems connected with the generation, transfer and use of information have until now been largely underestimated as regards their real dimensions, their complexity and growth dynamics.

Secondly, it is quite evident that information is at present very inadequately handled and managed by a multitude of mutually competitive, fragmentary bodies using outdated tools and operating under the protection of a system which is likewise inefficient and obsolete.

Thirdly, to cope with the extraordinary dynamics of information, vigorous government action accompanied by appropriate technologies and structures are necessary. Action by governments cannot be really effective, however, unless it is based on an overall information policy designed to make use of this invaluable resource for the development of our future society.

The Proliferation of Sources as Proof of Unbridled Growth

Most of the current estimates, which are generally incomplete and have been incorporated without the slightest critical examination even in the official documents of several major international bodies, are gross understatements. To arrive at the volume of information that is in fact available, they need to be multiplied by a factor of 3.

The accumulated stock of some 25 to 30 million documents is increasing at a rapid rate since the annual output of knowledge and/or information already amounts to over two million articles and other primary sources. We are thus continually adding to a notional world library of more than 100 million books.

And this is not the whole story. In addition, there are thousands of millions of raw observations, miscellaneous measurements and basic data which, though elementary, are just as essential for modern management and experimental research since both of these rely on the statistical analysis of major series.

The exuberant growth of information is leading to a situation which is paradoxical, to say the least. While we are being literally submerged under a quickening flood of messages, documents and records of all kinds, there is at the same time a lack of reliable and relevant information in a directly accessible form in every area and at every level. Although our society is a fairly rational one in which administration and regulation play a prominent part, we have yet to learn how to channel the generation of this information wisely or how to organise its distri-

bution. Information threatens to become a source of pollution rather than of greater wealth.

Let us first take a brief look at the generation and dissemination of information. Some 10 to 12 million authors are regularly or occasionally producing new information in the exact and human sciences, technology and engineering, medicine and education. Their papers are published at an increasingly rapid rate in some 50,000 to 100,000 journals and form the subject of more than a million and a half abstracts every year, which in turn are issued by more than 1,800 services specialising in bibliographic description.

Since the value of this literature is by no means uniform, some authorities are now in favour of quality control. The danger here, however, is that the cure may prove more deadly than the disease. On the other hand, it is clear that better coordination would substantially reduce duplication and act as a check on waste, both of which occur on a huge scale and increase in geometric progression.

Another cause of this proliferation is our system of values, which sets a premium on quantity. A doctor's or professor's career, and to an increasing extent an engineer's or a technologist's chances of promotion, largely depend on the number and length of the technical papers, summary reports, studies and articles they publish. It is thus not surprising that their " literary productivity " shows an average increase of 2.5 to 4 per cent each year, and this has a direct effect on the quantity of information put into circulation.

The most serious shortcomings, however, are to be found in the management and organisation of the services engaged in the collection, processing and redistribution of information.

Anachronistic Organisation and Management

It is surprising, to say the least, that in this age of third-generation computers some 98 or 99 per cent of all scientific, technical, medical, administrative and educational information should still be handled by manual or at best mechanical process, whereas banking transactions and the commercial operations of airline companies, for example, are already largely computerised.

The few automatic data processing systems which are in operation have drawn criticism which is often contradictory but there is general agreement on the inadequacy of the services provided. Hence the number of users is ridiculously small while the costly equipment and the associated telecommunication facilities are chronically under-utilised. However, it is clear that current technology, though it may not be able to resolve every problem, is sufficiently developed to allow better performance and a substantially higher degree of automation.

A motley collection of services belonging to central or local government, the universities or the private sector, now deal with information. No two scientific libraries, documentation centres or data banks are alike, nor do any two have similar structures or equipment.

This diversity is partly but not wholly justified by an ever-increasing degree of specialisation. Acting in turn as cause and effect, fragmentation and specialisation tend to preserve the parochial outlook which is a feature of almost all the institutions in this vast sector.

In terms of numbers, information services are springing up like toadstools after a Spring shower. New agencies are constantly being set up, with no thought as to whether an existing service might not be reorganised in order to perform some additional function at lower costs. This proliferation has now reached the point that it is impossible to know whether the specialised libraries now existing in the world must be counted in tens or hundreds of thousands, whether the figure for industrial analysis and/or documentation centres should be put at 30,000 or 100,000, and that for data banks at 400, 800 or 1,200.

The position as regards the number of staff employed is just as obscure. No reliable statistics or even approximate figures are available, nor can any in fact be compiled, since the countries, sectors and institutions concerned have not yet agreed upon criteria as to qualifications or on the definition of job categories.

Depending on whether only certified librarians, university-trained information specialists, computer engineers and systems analysts are considered, whether documentalists, middle-grade executives and technicians of all kinds are included, or whether all the operators and similar staff are counted as well, the permanent staff of information services in all the developed countries may very roughly be estimated at 60,000, 100,000 or over 150,000 persons.

Well over half the flow of information, moreover, bypasses the services which in theory are responsible for this material. On the basis of several estimates which tally, research staff, working individually or in teams spend 10 to 15 per cent of their time on documentation tasks. If this percentage is set against the total count of scientists in the OECD countries, the inference is that information and documentation activities occupy several hundreds of thousands of scientists and their assistants, or at least some 300,000 to 400,000 persons.

Even if this last figure is added to the permanent staff of the established information services, the result is still far short of the total number of people who in one capacity or another also play a part in the transfer of scientific and technical information. This total should also include not only the people, usually junior staff, who have the job of recording fragmentary items of information and data but also the hundreds of thousands of scientists who analyse, summarise, evaluate and translate the writings of their colleagues, in most cases periodically and on a part-time basis.

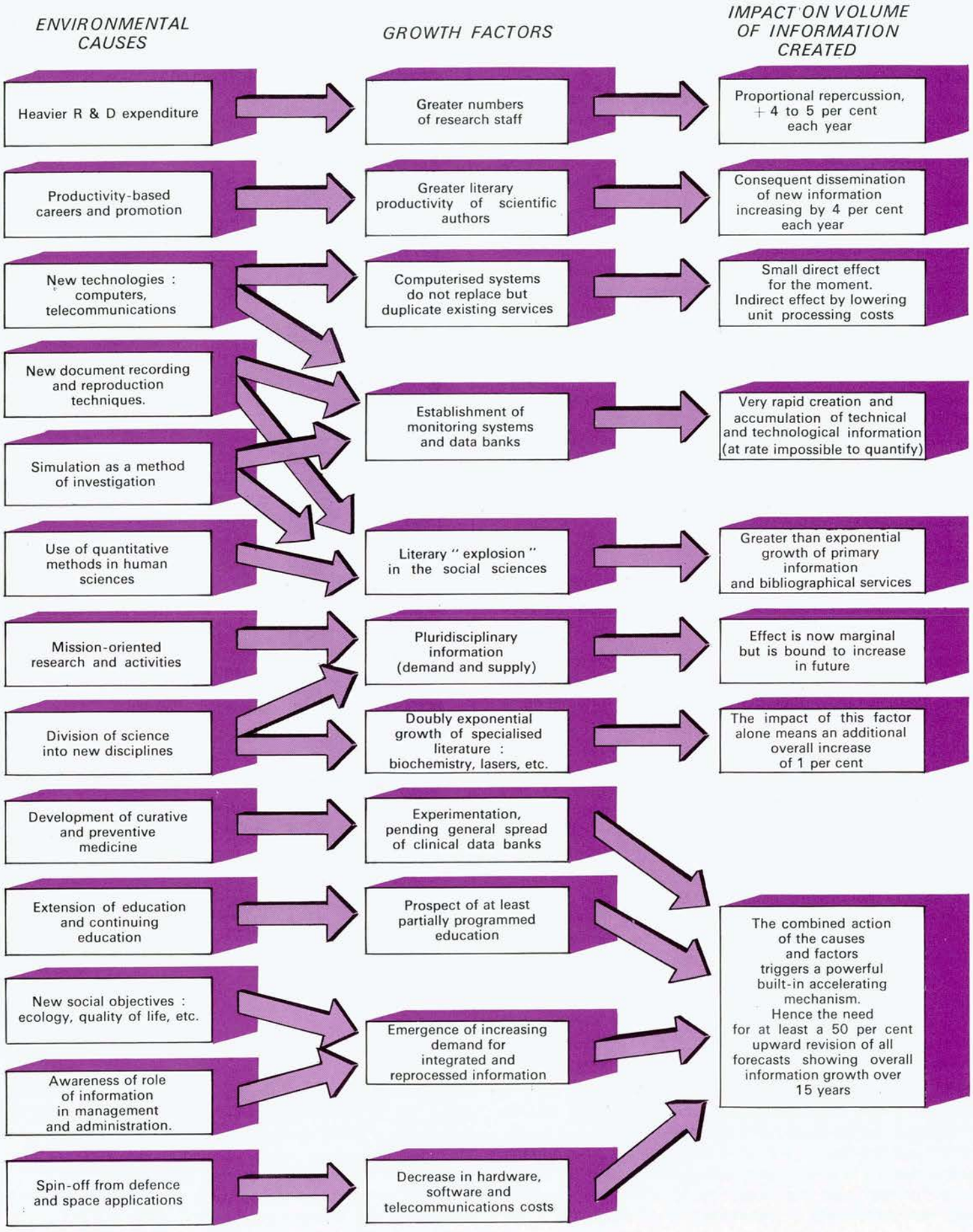
It might be rash to conclude that the management of scientific and technical information already accounts for a million man-years of work by professional and sub-professional staff, but it is well within the bounds of possibility that a comprehensive survey may one day confirm an estimate of this order.

Forecasts Regarding the Growth and Automation of Information

The magnitude of the resources already being used is proof enough that the transfer of information can no longer be regarded as a minor matter which is the preserve of a handful of specialists, or as a simple documentation problem for technicians alone. But to arrive at a complete understanding of the part that information will be required to play in world society, due allowance must be made for the extraordinarily rapid growth and increasing complexity of the phenomenon.

By using various methods it has been possible to calculate a

1. CAUSES AND FACTORS OF GROWTH OF INFORMATION



series of qualitative as well as quantitative forecasts for the next fifteen years. This set of projections shows that by 1985 or so, new information will in all probability be generated and circulated at the rate of some 12 to 14 million " documents " a year, which is six times the present rate and 20 to 25 times the volume of a mere fifteen years ago.

The sole solution to this problem of increasing scale, this veritable avalanche of information, is recourse to intensive automation. By 1985 or thereabouts, automatic data processing systems should be able to cope with at least one fourth and maybe even one third of all transfer operations. In other words, between now and then, the number and processing capacity of systems which are now in operation will have to be multiplied by a factor of 50 or 100.

Comparing these forecasts for 1985 with present quantities, it can readily be deduced that the overall growth of information will certainly be exponential and that the rate of growth will reach some 12.5 per cent a year. However, the use of automation in information processing will also increase, at a rate of some 20 to 30 per cent between now and 1978-80, rising to 30 or 40 per cent from 1978-80 onwards.

The combined result of these two successive geometric progressions will of course be equivalent to an exponential growth, assumed to be constant, of 33 per cent a year. In fact, the manufacturers of the equipment and facilities (terminals, reproduction media, microforms, cable television) for the new automated systems are counting on an even faster rate of market growth over the next ten years, namely, 35 to 50 per cent per year.

The Expanding Role of Information and its Consequences

How can such a high anticipated growth rate for the overall volume of information be explained and, more particularly, what is there to show that the automation of information is likely to make such strides between now and 1985?

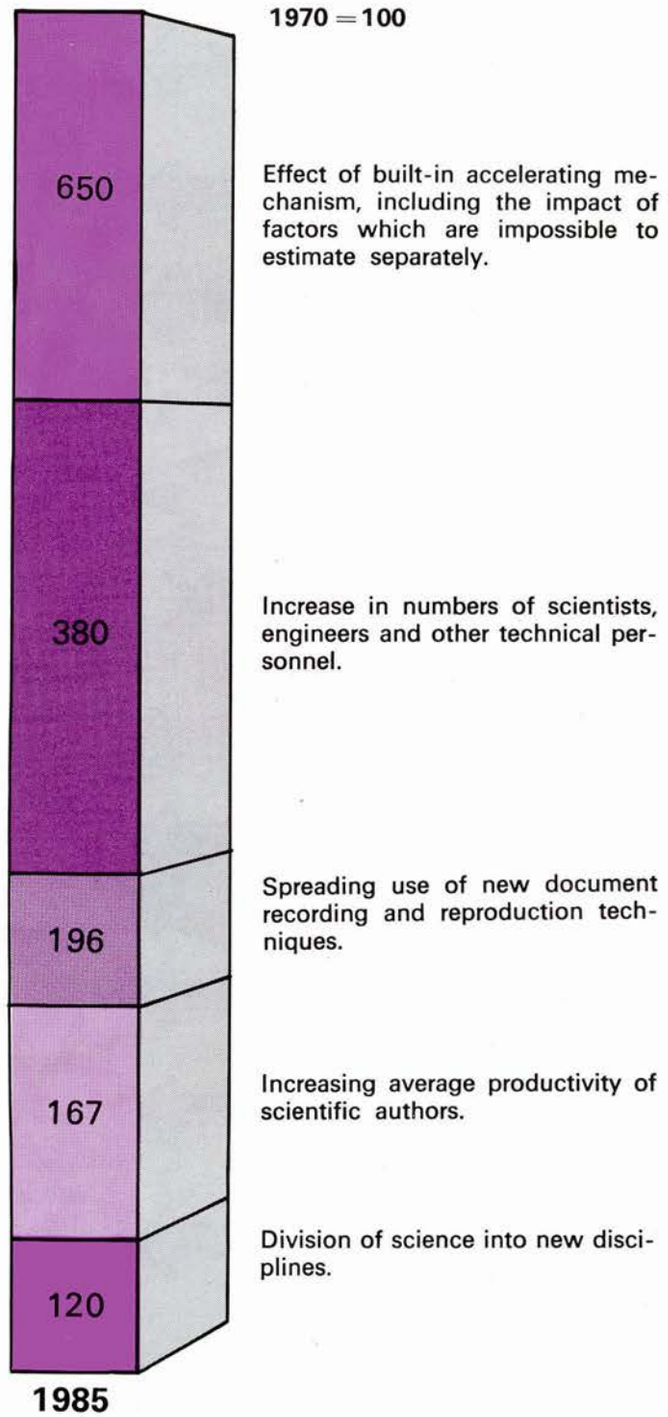
It would be outside the scope of this article to give any detailed prognosis of the information growth process during the next few years. Many different factors will contribute to this expansion but the prime cause will be the scientific, technological, economic and social environment. The part played by the various " environmental causes " of information growth is shown schematically in Table 1.

For example, the growth of R and D funds and activities throughout the world will lead to an increase in the number of scientists, with a corresponding increase in the volume of information produced. Furthermore, our system of evaluating the " output " from scientific work, combined with the emergence of new methods of measurement, recording and document reproduction which will simplify these operations, throws more light on the relatively rapid growth in the " literary productivity " of research workers and engineers, and the corresponding increase in the volume of information put into circulation.

Diagram 1 shows the first step in " disaggregating " growth into its main components and quantifying the contribution made by each of them. For instance, the increasing number of specialisations in science and emergence of new disciplines account for well over one tenth (1.3 to 1.5 per cent) of the general rate of growth of information of all kinds (12.5 per cent).

1. PROJECTED GROWTH OF INFORMATION, 1970-1985

(Semi-logarithmic Scale)



In practice, these factors have a cumulative rather than isolated effect. It is therefore possible to project, by extrapolation, the volume of information in 1985; compared with 1970 (=100) the index for that year will be about 400. However, our work on this subject has shown that the cumulative effect is further amplified by the action of a powerful built-in mechanism in such a way that this index of volume may reach 600 if not 700 by the middle of the next decade.

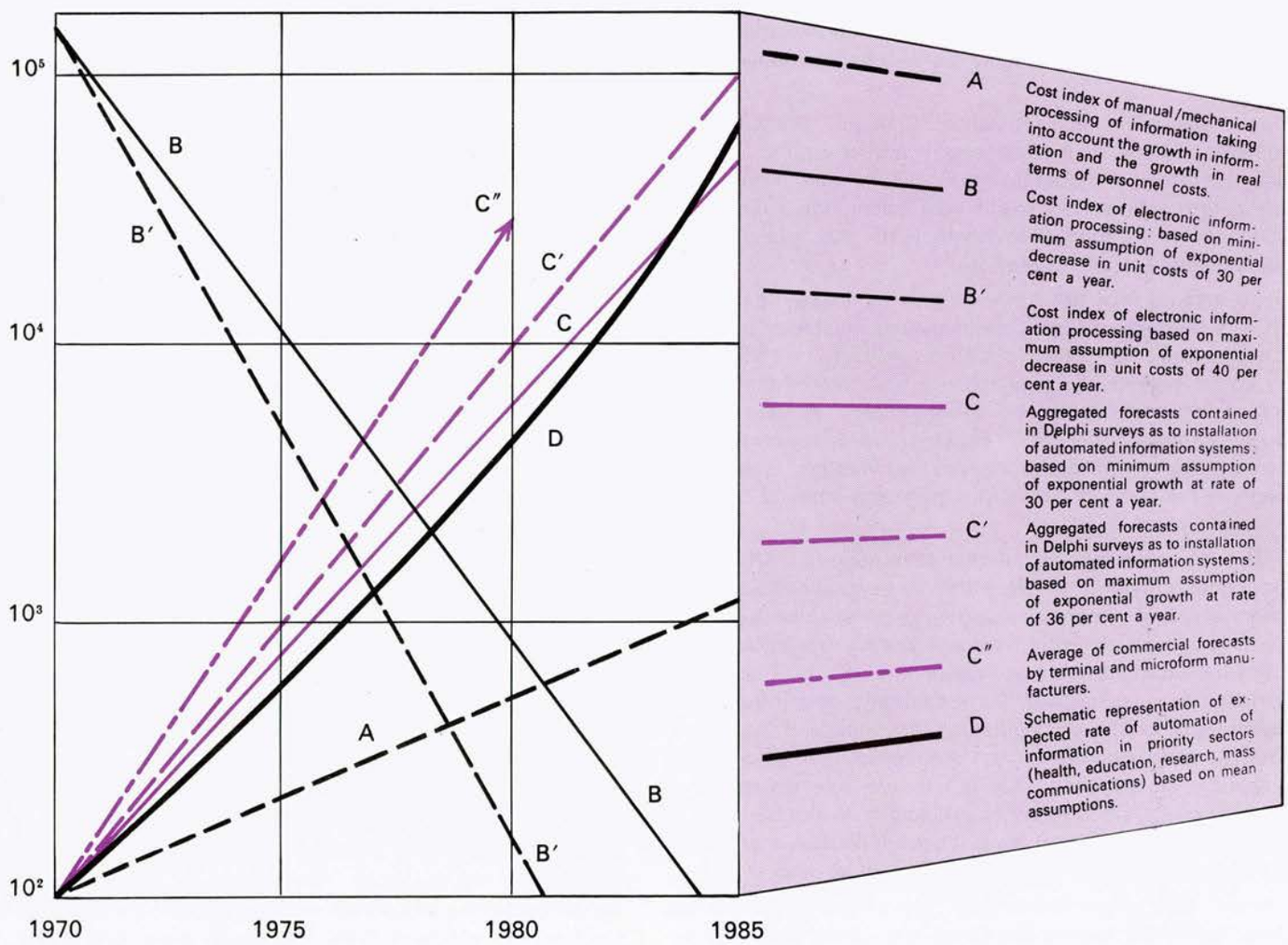
This accelerating mechanism proves in fact to be double-headed. First, the same item of information may well be incorporated into information packages which are themselves increasing in number and complexity. Second, both decision-making and modern production processes are becoming more and more sophisticated, and these require information either of a more detailed type or better integrated, or of a more developed or multidisciplinary type, if not all four together.

It remains to be seen how electronic processing will take the place of manual and mechanical techniques. While this substitution will be gradual at first, it seems very probable that powerful automated information systems and networks will begin to be installed on a vast scale from 1978-80 onwards. The prospects for automation, just as its future pattern of growth, will depend on the rate at which certain new technologies are introduced and come into widespread use, such as very large-capacity holograph memories based on the laser principle, personalised pocket mini-computers, and increasingly versatile video devices.

It would be hazardous to attempt to evaluate the individual impact of each of these inventions. It is easier, and safer, to assess the overall effect of a set of innovations leading in the same direction. Thus, while technological efficiency, i.e. capacity and performance, follows a rising exponential curve, unit processing costs decrease exponentially and almost at the same rate. To date this decrease has been of the order of 30 to 40 per cent per year, and there is every indication that the trend will continue for ten to fifteen years or perhaps longer.

There is every reason to believe that between 1978 and 1980 the cost of processing an item or a package of information on electronic equipment—initial capital outlay and depreciation included—will be no greater than that of performing the same operations semi-manually and semi-mechanically. Thus, although on average, conventional processing techniques are still appreciably cheaper, their cost is rising rapidly under the pressure of the increasing volume of information to be processed and that of real wages (these are bound to rise in the absence of productivity gains). Diagram 2 shows that from 1980 at the

2. SUBSTITUTION OF AUTOMATIC INFORMATION PROCESSING FOR MANUAL AND MECHANICAL METHODS: PROJECTED PATTERN 1970 to 1985



latest, manual-mechanical techniques will cease to be an economic proposition. Automation will then prove all the more advantageous since by 1980 the volume of information to be processed and, it follows, the demand will have more than trebled compared with the 1970 level; in many fields of activity it will then be possible to handle information efficiently along industrial lines.

The Fundamental Principles of a Modern Information Policy

From all these forecasts let us now draw some conclusions of a general nature which could be used in formulating an active, modern information policy to meet the needs at the close of the century.

(1) In fifteen years' time, information activities and the industries within their orbit will have assumed an importance comparable with that of the automotive industry today. Information will become one of the dominant factors of private and public life. It will then be legitimate to speak of a post-industrial or information civilisation, as we now speak of the automobile age.

(2) Massive automation will come about spontaneously under the irresistible thrust of information's exponential growth and technological progress. This development will owe little to government financial aid; it will inevitably take place as soon as certain economic conditions are fulfilled, the most important of these being a unit cost of electronic processing lower than that of manual and mechanical processing. This critical threshold should normally be reached between 1978 and 1980.

(3) Generally speaking, substantial financial assistance by governments will be neither necessary nor desirable. This is because investment and operating subsidies granted prematurely for automating information might well encourage suboptimal, and consequently somewhat inefficient and uneconomic, technologies and technical solutions.

(4) The first duty of governments will be to see that information, as a fundamental resource, is made available as a service to society as a whole. It will thus be necessary to define new priority social objectives, to which the technology and management of information will be subordinated. It also means that an " information market ", as wide and open as possible, must be created and institutionalised, or in other words that the interface between information supply and demand must be rationally organised.

(5) The latter objective implies that each nation and the international community as a whole will have to establish a modern legal framework, eliminate any lingering constraints belonging to a bygone age, proclaim and enforce the right to information, lay down the conditions for exercising this right and define its limits, draw up rules concerning reciprocity, and introduce a system of appropriate procedures, guarantees and sanctions. The ultimate responsibility for the management of information as a resource clearly cannot be left to the sole discretion of specialists or to the good intentions of scientists alone. It must be assigned to an authority at highest government level, although broad autonomy must be preserved at executive level.

(6) Since the government and administrative authorities are undoubtedly the largest producers and consumers of information, their own requirements and resources in this field must be integrated in the overall supply and demand. It follows that central and local government officials will have to obey the rules of the game and accept common constraints.

(7) With the help of highly sophisticated automated information networks it will become possible to assess in advance the implications of any action or decision. This will engender constraints and also new opportunities from which governments will, it is hoped, draw all the relevant conclusions such as the need to adjust their structures and methods of management. Government officials must in turn draw their own conclusions especially as regards their mode of behaviour and their concept of the role they play in the national and international community.

(8) To ensure that the transition towards the information society takes place without social repercussions, governments will have to provide a measure of science education for the majority of the population and not just those at school and university. The public would thus have access to the complex information systems and networks of the future without suffering any psychological block and in full knowledge of the facts. If suitable measures are not taken in time an entire generation of second-class citizens, a new kind of illiterate population, consisting of discontented and hence socially dangerous misfits, might well appear on the scene.

(9) The authorities will also have to assume responsibility in the field of training and fundamental research. The requirements of OECD countries may be put at some 4 or 5 million information specialists to be trained by 1985. Another and more difficult task will be thorough training for the several thousand senior executives who will have to plan, guide and manage future information services or networks in both the public and private sectors. Meanwhile the establishment of an information organisation that is efficient and at the same time capable of providing the utmost in personalised service will call for a huge research effort which will have to be financed largely from public funds.

(10) The plan outlined above corresponds to a mixed-economy system. In particular, there will be an incentive for private enterprise to make a substantial contribution to the creation and further development of a post-industrial society based on the general availability of organised information. But there will always be fields in which the automation of information will not be commercially profitable, such as all forms of education, health and social security, cultural affairs and the environment. Other social needs will emerge later, such as the provision of information to individual citizens and to consumers. Clearly these can only be satisfied by establishing a public service which will have to be financed mainly out of public funds.

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It would be surprising if these conclusions were to receive immediate, unanimous approval. Some may consider that the recommendations unduly favour private enterprise and the industrial and commercial sectors. We would, however, point out to partisans of government intervention that in any case the tasks which governments will have to undertake in organising information for the benefit of society will be considerable, and that they must be tackled without undue vacillation.

Others will probably consider some of our rather staggering forecasts to be too bold. But assuming that the projections fail to materialise as quickly as expected, the immense problems involved will still have to be faced even if we have a few years' respite.

MANPOWER POLICY IN JAPAN

The Japanese manpower situation, like the Japanese economy itself, is moving closer to the Western model. And its most characteristic feature—what may be called the Japanese Employment System—is being transformed, partly in response to market forces, partly as a matter of design. The problem, as seen by OECD's Manpower and Social Affairs Committee in a recent examination of that country's manpower policy (1), is how to gain the adaptability and flexibility of a Western labour market without losing the values inherent in the Japanese system.

WHAT is most striking to the Western observer of the Japanese manpower scene is the attachment of workers in the modern industrial sectors of the economy to their firm and—the other side of the coin—the commitment of employers to maintaining the jobs and incomes of everyone they hire as regular employees. The close and complex relationship between employers and employees is what is known as the Japanese employment system.

In its purest form (which is nearly always tempered in actual situations) it means hiring a worker fresh out of school (or university) with the understanding that he will stay on throughout his working life—generally until the age of 55.

When orders decline, regular employees are not dismissed. Thus labour is virtually a fixed cost to the employer, and the worker has almost complete job security; but by the same token he cannot switch employer—or at least not easily. Pay depends on seniority at least as much as on skill level with the result that there is a considerable differential between young workers and older ones.

Contrary to widespread belief this system is not a remnant of feudal society; although it does incorporate certain elements of pre-war practice, its contours were established after the war by the Japanese firms and their enterprise-wide unions (craft unions are virtually unknown in Japan and the industry-wide unions are relatively loose federations of the enterprise unions).

Under the Japanese system, many of the functions commonly carried out in other countries by the government—training, preventing and compensating for unemployment for example—are largely internalised within the firm. Social protection is privately financed to a much greater extent than elsewhere and public manpower policies have been correspondingly limited although in many cases unique (see box for a list of some Japanese governmental manpower practices which the OECD Manpower and Social Affairs Committee thought would be of interest to other countries).

The Committee's report draws the contrast between Japan and other countries in intentionally exaggerated terms: " Instead of sending the worker off to rely on unemployment insurance, the employer in slack periods keeps him on the payroll, providing intra-firm training or make-work arrangements or extra holidays; instead of children's allowances or stipends for higher education, the worker's wages rise with age and seniority to finance the education of his children; instead of receiving a public pension on retirement, the worker gets a lump sum severance payment at age 55 and accepts a less demanding job at lower pay. "

The Pros and Cons

The merits and demerits of this system are hotly debated within Japan, and OECD's report sets forth some of the current views as well as the observations of OECD's examiners (2). Clearly, the system has not prevented a high rate of productivity growth as the economic record of Japan shows. Moreover unemployment has been kept low ever since the early 1960's when full employment was attained. On the occasions when, for balance of payments reasons, the authorities have been led to apply strong restraints on overall demand, not only has unemployment remained virtually unaffected but employment has fallen by only about 1 per cent below its long-term trend. In any other country, the examiners note, a reduction of overall demand on the same scale would have led to a rise in unemployment of several per cent of the labour force as well as to lower working hours and labour force participation rates.

From the point of view of the employer, the attachment of workers to the firm rather than to an occupation has meant that he could invest in increasing workers' skills without fear of losing the trained employees to a competitor. It has also meant that workers are interested in the productivity of the firm (growth of productivity figures importantly in negotiations between firms and their unions) and have been willing to adopt new occupations and methods of work without the resistance to technological change caused elsewhere by the fear of redundancy or rigid barriers between crafts.

On the other side of the argument there is the implicit restriction on the individual's freedom exerted not only by social and moral pressures but also by the loss of seniority wages (and often pensions)

(1) Manpower Policy in Japan, *OECD April 1973.*

(2) *The examiners of Japan were C.D. Stewart, Special Assistant to the Under-secretary, United States Department of Labor; H. Knolle, Ministerial Director, former head of division for International Social Policy, Ministry of Labour, Germany; and Gösta Rehn, OECD Director for Manpower and Social Affairs.*

in case of a job shift. Moreover hardships have been created by the fact that the lifelong commitment of the firm to its workers ends at age 55 while government pensions begin only at age 60. In practice many employees are hired again by their own firm or by a subcontractor at a lower wage, but there is no statutory provision for income during these years.

Another " demerit " mentioned is that those who are not in the mainstream of life-long employment in the modern sector of industry may have far lower wages and less secure employment than those who are. This " dual economy " has been one of the enduring features of Japanese industry.

The Winds of Change

Whatever the advantages and drawbacks of the Japanese employment system, it is eroding as the economy changes. It grew up in a period of surplus manpower when there was still an important source of labour on the farms as well as among the unemployed. Now there is a shortage of skilled labour (1.8 million vacancies were reported at the time the study was made) and the number of young people available to industry is declining. The result is that young people switch jobs more frequently and are demanding compensation more in line with their skills; as a result wage differentials between the young and the old are narrowing. Increasingly, firms have been resorting to " half way " workers (i.e. workers hired after some years experience in other firms) to supplement the regular labour force and are paying them wages that are closer to those of regular employees, particularly if they have the needed skills.

At the same time there is more concern than in the past that, as a result of the uncertainties in international trade, official tools may increasingly be needed to supplement action by private firms in cases of structural unemployment. A system based essentially on the individual firm cannot easily cope with the adjustments between firms, industries and areas that may become more important now than they have been in the past. Thus there is a consensus that reforms are both necessary and desirable.

There are signs that collective financing of income transfers and social security may become more widespread (a children's allowance was recently instituted). The Economic and Social Development Plan for 1970-75 states that there is a need to change wage and employment practices and that life-long employment and seniority wage systems should be modified with a view to creating greater adaptability in the labour market. OECD's Committee comes to the conclusion that " a stronger machinery for promoting labour market adjustments and counteracting employment disturbances would be warranted... The need is for a flexible system which can be used not merely to reduce unemployment to the lowest possible level but to promote the best possible use of manpower by improving the mutual adjustments between supply and demand in all sectors of the labour market ".

Steps have already been taken in the direction of a more active

SOME FEATURES OF JAPANESE GOVERNMENTAL MANPOWER POLICY

• Talent banks

A feature of the public employment service to assist middle-aged and older workers with managerial or technical competence. The banks are actually offices in central business districts having specialised staff to offer vocational guidance and placement services, usually to "retired" people, and inducements to employers to engage and convert these workers.

• Employment quotas

In 29 occupations in private enterprises there are employment quotas for the " middle-aged and older " persons ranging in size from 20 to 70 per cent of the work force. The quotas are voluntary but subject to moral and administrative pressures by the employment offices which can make its services dependent upon employers observing the rules. In 33 occupations within government service there are similar quotas ranging from 25 to 75 per cent of total employment. A similar system applies to the handicapped.

• A computerised employment service

This system helps with placement by linking the 700 offices and branches of the public employment service and a Labour Market Centre. Japan is a pioneer in this respect.

• Survey of new school graduates

Employers wishing to recruit school leavers must submit their hiring plans to the public employment security offices before a certain date every year. The report suggests that this notification, which constitutes a simultaneous survey of the supply and demand situations for each annual crop of school leavers, could be tried in other countries as one method of increasing the rationality of placement.

• Outfit allowances or starting bonus

When a worker has been unemployed and finds a job well before exhausting his insurance payments, he receives a lump sum bonus. The Japanese authorities regard this system as necessary both to avoid excessive reliance on unemployment benefits (despite the high social value placed on work in Japan) and to increase the effectiveness of placement operations. The examiners however raise the question, whether the bonus may not constitute unnecessary and inequitable rewards for good luck (finding a new job quickly) or error (taking the first-best job which in the long run may prove unsatisfactory in order to obtain the immediate payment) and ask whether such a bonus would not be more equitable and effective if it were related to efforts and costs incurred in finding a job.

• The Employment Projects Corporation

This is a semi-independent institution under the overall responsibility of the Minister of Labour intended to perform such functions as promoting mobility of labour between regions and industries.

• The Act to Promote Industries in Rural Areas *and the* Act for Temporary Measures Against Influences Derived from Special Preference Tariffs

As in most other countries these provide aid to investment and not to employment, a principle that the examiners question in view of the fact that the real task is to absorb human resources. On the other hand the examiners note that Japan is one of the few countries which has special arrangements for preparing in advance measures to promote adjustments in the labour market which may be needed in connection with the reduction of import protection.

Workers in a Yokohama metal working factory.

manpower policy. A Vocational Training Plan is being carried out which aims at trebling the 1971 amount of government financed training for the young and doubling the amount of adult training by 1976.

If the functioning of the labour market is to be reinforced, other areas may need attention in the view of OECD's Manpower and Social Affairs Committee: a more effective employment service to rationalise the switches between firms and areas that are actually taking place; aid to geographical mobility might serve the same purpose. Another area in which further action may be required is employment creation to meet structural changes in demand.

If the trend is to continue towards a Western labour market in which changes as between employers are more frequent and easier, the employment service will have to provide more vocational guidance than it has in the past, the report suggests. Information gathering and dissemination will also have to be developed.

The Opportunities Open

OECD's Committee expresses the hope that, in introducing planned or expected reforms in the sphere of labour market and social policy, the Japanese authorities will not simply follow normal Western practice but will avoid some of its " rigidities and irrationalities " and on the basis of their own experience go towards more forward-looking systems. Japan has particular opportunities to combine efficient labour market adjustment with greater individual freedom of choice.

For example the report notes that although the Japanese employment system undoubtedly implies certain restraints on the freedom of labour mobility, it has also been more natural there than elsewhere to " introduce some elements of flexibility and freedom of choice during working life ". The fact that labour appears as a fixed cost to Japanese employers has led to arrangements for paid home leave or training periods when the need for labour in direct production diminished. And the tradition of early retirements has led to the elaboration of intermediary arrangements for the period between work and full retirement. The gap between retirement age and pensionable age led to demands to raise the retirement age from 55 to 60 or 65. But, the report suggests, Japan could well avoid following the Western pattern of an abrupt once-for-all retirement. " Building on its own traditions Japan could, more easily than other countries, create a system which would give the ageing workers opportunities for a step by step transfer from full capacity work to full retirement without thereby providing less economic security than other systems. " With such arrangements it would also be easier to keep the balance in the labour market in face of variations in the demand for labour.

Similarly if and when Japan moves towards a more " European " system of financing studies, through use of public stipends and easy credits rather than family savings, the system could be made applicable to all age levels and could permit freer switching between work and studies for both young people and adults. This too would facilitate rapid adjustment between supply and demand in the labour market.

Japan, the study concludes, " not being already tied by very big and specific public commitments towards the young (for support of studies) and the old (for retirement pensions), has particular possibilities for creating new systems of retirement and for the transition from school to work. These may then provide for more labour market adaptability and individual freedom of choice between work, study, and retirement-leisure than existing systems in other countries. "

CONFLICTING FACTORS IN WORLD FISH PRODUCTION

The intensity of current fishing activity, often determined by the governments as well as by fishing industries themselves, is not always compatible with available fish resources. A new report, prepared by the Committee for Fisheries of OECD, examines this question in some depth, covering major world fishing areas, the position as regards the main species, and surveying the global fishing capacity. It underlines the different pressures exerted by economic influences and by biological factors. The following article sums up the principal conclusions of the report.

Sea fishing, more than other economic activities, raises the problem of the natural environment which it exploits. Exploitation may be insufficient and leave part of the resource unused; it may be optimum if resources and catches are maintained at their optimum levels, or else it may be detrimental and destroy the resource.

Many fish stocks are considered to be overfished, or very near the overfishing point, in that they are subjected to a fishing effort which cannot, on average, yield larger catches. Overfishing increases costs and keeps in service more vessels and more fishermen than would be needed if operations were kept at the level of the maximum replaceable catch. A still more harmful consequence of overfishing is to reduce the stocks to an unnecessarily low level.

In dealing with these questions, the report emphasises that it would not be sufficient to make assessments of fish production in the OECD Member countries in isolation. Competition in world fisheries is at present totally international, a fact which should serve as a starting point for an assessment of the ruling conditions.

Economic, biological and social factors: the conflicting claims

Member and non-member countries of OECD all compete with each other in the chief fishing grounds, thus making the concourse of factors composing the global fishing effort highly varied and complex. All the more so, because no central economic yardsticks can be found to quantify and qualify the differences fully and coherently.

First is the biological chain, in which the fish adjust to ecological conditions and fluctuations. Then there exist markets where purchasers are prepared to pay a given price for the fish caught, and a variety of production and processing systems: the catch may be converted into meal and oil, salted, dried, smoked or frozen, canned, sold fresh or even live; in every case, the costs and receipts are different. Lastly, an economic chain closely linked with the biological chain regulates the supplies, i.e. the quantities and species made available.

The biologists' best evaluations relate to the state of those fish stocks which have been exploited long enough to yield reasonably accurate historical data. In these cases, subsequent developments have, generally speaking, confirmed rather than belied their predictions.

However, misunderstandings arise over the use to which the biologists' conclusions are to be put. For instance, when biologists say that a given stock is being overfished, it is often assumed, even in fishery circles, that the stock is in danger of annihilation, which may not be the case. Cod in the Barents Sea is considered to have been overfished for many years, but record total catches have recently been taken, because at least until that time the recruitment pattern for cod in the Barents Sea had not been seriously interfered with: the stock was overfished, but not wiped out. In this case, the consequence of overfishing is that the fishing costs are higher than they might be and that the yearly abundances are subject to wider fluctuations.

The fishermen are versatile enough to switch from one depleted stock to other stocks less fished or even not fished. But even when such a switch is possible, which is not always the case, an irreparable loss of natural resources may well have occurred.

As overfishing does not always have readily apparent harmful consequences in the short run, there may be a tendency to minimise its importance. In practice, it often happens that national short-term interests make it expedient to ignore the advice of the biologists or plead that more scientific data is needed before embarking upon any specific course of action. While scientific curiosity may justify such requests for further information, in many cases the evidence provided by the specialists is already quite sufficient to indicate what kind of corrective action should be taken.

The experience gleaned in the course of many years of international negotiations on fishing indicates that the biologists' studies do not carry sufficient weight. Most of their findings relate to individual fish stocks. On the basis of these conclusions a list can be

compiled of stocks which would not yield bigger catches however intensive the fishing effort directed to them, apart from the stocks already partly damaged by overfishing. On the other hand, the inter-relation between the different fish stocks living in the same fishing grounds, and the recruitment and development pattern for individual stocks, are problems to which, in most cases, no scientific answer can be provided.

Even among biologists, there is a growing feeling that whatever the quality of the biological data, it would not constitute a sufficient basis for drawing up satisfactory regulations. Increasing emphasis is laid on the necessity of having economic data on hand as well. It is further maintained that proper attention should be paid to social aspects.

Nevertheless, biological, economic and social data, however desirable they may be as a basis for policy decisions, can never assume the form of irrefutable conclusions, for all fishery questions. The data will always lag behind the requirements, but even if adequate, its complexity would prevent its being reduced to mathematical models. For many years ahead the largely automatic deduction of a sound international fishing policy from a body of scientific findings will probably not be possible.

At this point, it could be said that:

- fisheries research in general, and scientific studies which may enable the available data to be improved in particular, should be encouraged and pursued;
- it is, however, desirable to put forward practical conclusions; even if not backed by full, reliable scientific data, they may pave the way for the adoption of better and more specific regulations on fishing.

The real international aim for fisheries is not so much to protect such stocks as cod or sole for their own sake. The main objective is to meet demand in ways which ensure that fishermen and others living from these fish stocks can continue to do so. If at national level help were provided without due regard to international consequences, risks would arise of increased competition, which is already overkeen and prejudicial to all concerned.

The countries with a long fishing tradition at least wish to maintain their position, and those with deep-sea fishing fleets intend to make full use of their industrial capacity to supply their home markets. Some Eastern European countries plan to increase their catches of fish and justify their plans by the need to obtain

Tuna displayed for sale in Tokyo's fish market.

protein for their population. Developing countries which possess a coastline wish to take full advantage of their geographical situation for the development of their fishing industry.

From the standpoint of each country concerned, all these plans, projects and intentions are perfectly logical. But ocean resources are not sufficient to make them feasible, and in freely accessible waters, the industrialised countries are in the best position to take the lion's share of the common stocks. This could have partly motivated certain countries to extend their authority in contiguous sea areas, with the stated intention of protecting the fish resources.

There are many intermediate possibilities between complete freedom to catch fish beyond territorial waters (three miles, twelve miles...) and the exclusive right of operation reserved to the fishermen of the bordering state in more or less coastal waters. But fishing questions proper represent only one of the factors involved and not necessarily the factor which carries most political weight. There are problems of national sovereignty and the principles of international law, which can obviously only be dealt with at the highest level. Other factors to be taken into account are more accessible, but still, at least to some extent, beyond the purview of the fishing experts:

- incorporation of fishing activities in national and regional economic development policies: a fair number of fisheries are located in remote areas, where no substitute activity is to be found;
- employment policy: technical development and falling catches often result in a reduction in manpower, which involves either costly retraining schemes, or assistance schemes to keep coastal districts alive.

Lastly, there are fishery problems to be dealt with, which can rarely be solved at national level; while it is possible to project the costs and benefits of a specific fishery to be expected from different policies in terms of a national market, the most rigorous calculations would be invalidated if no account were taken of the policies adopted by other countries.

An economic study of fishing cannot possibly suggest complete solutions to the present and future problems of the fishery sector, whether for one group of countries or for the world as a whole. But such specialised studies are essential to indicate the direction that should be imparted to political and administrative decisions in order to put the fishing industries on a sound footing in relation to the economy as a whole. The conclusions that may be drawn are therefore grouped according to the level of approach.

For Fishery Economics Proper

Emphasis is laid in the OECD report on the lack of balance between the fishing capacity and the marketable fish resources, which are often too small for the fishing effort directed to them. Even when such an imbalance does not threaten the conservation of fish stocks, it jeopardises the profitability of the fishing enterprises.

Most if not all Member countries now practise policies which avoid excessive growth of their fishing fleets, but many have adopted modernisation or replanning policies. Especially when these policies involve financial assistance, it would be useful for them to be analysed, not merely in terms of the requirements of the countries concerned, but also with a view to a more satisfactory balance in international fisheries.

If these analyses of international fishery economics are to be made simpler and more accurate, work on definitions and statistical organisation (like the OECD studies now in progress on data on fishing vessels) should be continued and improved. On this point, the mounting urgency cannot be over-emphasised of ensuring the more effective communication of information and data. The biologist often needs the same statistical data as the economist, while the administrator needs to draw on the conclusions of both. It must be possible for the assessments involved to be expressed in coherent, not piecemeal statistics. Progress towards more rational use of the fish resources will be severely hindered if there is no marked improvement in the data as it now stands; this could often be secured without introducing expensive new statistical series by harmonising and above all coordinating the international collection of existing data.

For the Regulatory Bodies

The OECD Committee for Fisheries keeps in close contact with the regulating bodies involved and marine biologists; these relations could be consolidated by more joint studies.

It would be neither justifiable nor logical to recommend that analyses of the international fishing economy should be the subject of formal, institutionalised directives on which the regulating bodies would have to base their action, as is now the case for the biologists' recommendations (c.f. for example, the role of the Liaison Committee between the International Council for the Exploration of the Sea and the North East Atlantic Fisheries Commission, and that of the Research and Statistics Committee of the International Commission for North West Atlantic Fisheries). The economic studies are never economic in the sense that they involve social and even political consequences; they can thus rarely be described as "scientific", and the institutionalisation of the biological recommendations does not necessarily guarantee their greater effectiveness.

There are, however, some gaps in the general information supplied to the authorities required to take decisions on international fishery problems. The biological recommendations are related to geographical areas corresponding to the state of the respective fish stocks, but vessels pass from one area to another for reasons which may be purely economic. It is inevitable that when economic considerations should be invoked, they are always national considerations; the sum total of national economic interests in the fishing sector cannot be equated with the common interest.

For Policies on the Exploitation of the Resources of the Sea in General

The problems of international policy raised at the highest level by fisheries (c.f. maritime law and the problems of national sovereignty) suggest that specialised fishery bodies should supply the fullest and most accurate possible technical data and recommendations. This is all the more necessary because only some 15 years ago, the exploitation of the resources of the sea was almost entirely confined to fishing; now, however, more potent and more covetable resources have come on the scene, with oil heading the list.

If changes in the Law of the Sea and measures adopted in connection with the exploitation of marine resources enabled fishing to be put on a sound footing, this would be of tremendous benefit to the maritime environment. In other words, a relatively modest advance in the rationalisation of international fishing would result in a vastly improved contribution to world nutrition and to the profitability of fisheries as a whole.

AT OECD

OECD's Environment Committee Discusses New Programmes

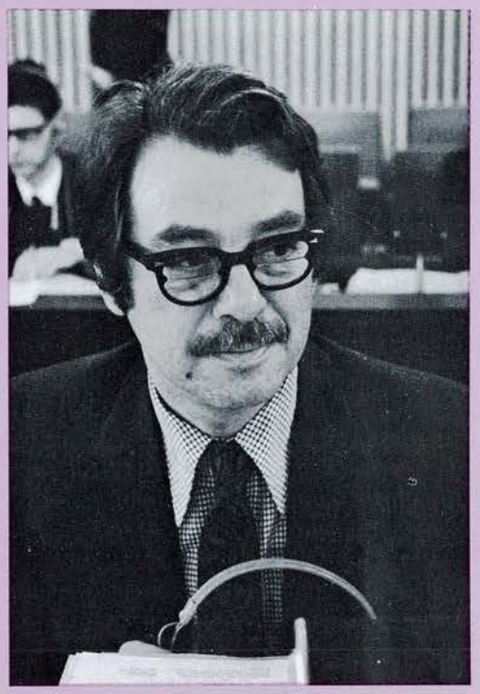
At its latest meeting—21st-23rd February—the OECD Environment Committee elected Ambassador Masami Ota, in charge of environmental affairs at Japan's Ministry of Foreign Affairs since 1971, Chairman of the Committee in succession to Christian Herter, Jr. (US). Four vice-chairmen were elected: David Munro (Canada), Olivier Manet (France), Peter Menke-Glückert (Germany), and Erik Lykke (Norway).

Following agreement by the OECD Council on guiding principles concerning International Economic Aspects of Environmental Policies the Committee adopted a Programme of Work for the implementation of these principles.

The Committee further approved the following proposals:

- consideration of the origin, present status and plans of the Working Party on Environmental Indicators of the OECD Manpower and Social Affairs Committee—a further example of the multi-disciplinary nature of OECD's work;
- setting up of a Joint Policy Issues Group on Waste Disposal, whose mandate will be transmitted to the OECD Committees for Industry and Agriculture, with the proposal that they in turn should appoint national experts in their own

Masami Ota, Ambassador, Japanese Ministry of Foreign Affairs, Chairman of the Committee



David Munro, Canadian Department of the Environment, Vice-Chairman

Olivier Manet, Environment Mission, French Ministry for Foreign Affairs, Vice-Chairman

Peter Menke-Glückert, Federal German Ministry of the Interior, Vice-Chairman

Erik Lykke, Norwegian Ministry of the Environment, Vice-Chairman

fields to work with the environment specialists.

The Committee also took note of a report by an *ad hoc* group concerning automotive air pollution and noise, and their implications for public policy. It endorsed the group's views with respect to the desirability of working towards uniform emission test procedures; seeking agreement on reciprocal recognition of emission test results for purposes of certification and holding consultations on motor fuel quality from the environmental point of view.

Liaison with the Council of Europe

Preceding the meeting of the Environment Commitee, the Liaison Committees of OECD and the Council of Europe met in special session to discuss mutual activities in the environment field.

Left to right: *G. Adinolfi, Deputy Clerk of the Consultative Assembly, Council of Europe; Henry Cravatte, Vice-Chairman of the Council of Europe Committee on Regional Planning and Local Authorities; J.J. Lodewyck, Chairman of the Council of Europe Liaison Committee, Permanent Representative of Belgium; S. Sforza, Deputy Secretary General, Council of Europe; Giuseppe La Loggia, Council of Europe Committee on Economic Affairs and Development.*

Visit of Ambassador Peter G. Peterson to OECD

Ambassador Peter G. Peterson, Personal Representative of President Nixon, met Emile van Lennep, OECD Secretary Genèral, at the Château de la Muette on 20th February, when they discussed the role of OECD in promoting international co-operation among its Member countries on common problems of modern industrial societies, including trade, investment, development co-operation and energy questions.

Meeting of the OECD Secretary General and the Minister for Foreign Affairs of Canada

The Canadian Minister for Foreign Affairs, Mitchell Sharp, in Paris for the Vietnam Conference, had a meeting with OECD Secretary General, Emile van Lennep on 28th February.

ROAD SAFETY: Car seat-belt poster competition organised by the European Conference of Ministers of Transport

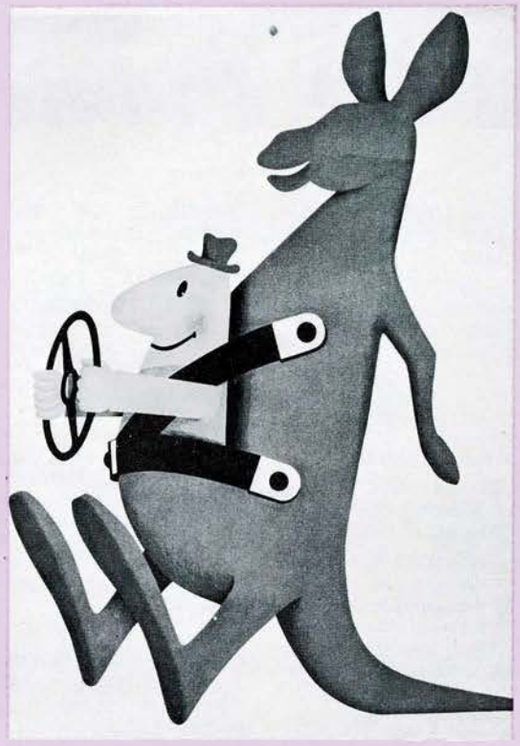
A jury representing the European Conference of Ministers of Transport (ECMT), national affiliates of Prévention Routière Internationale (PRI), and ICOGRADA (an international association of professional graphic artists) adjudged a Belgian entry the winner of a car seat-belt poster competition at OECD headquarters in Paris on 6th February 1973. Runners-up were entries from Sweden, Finland, France and Belgium (in that order).

Rules for the competition were drawn up at a special joint meeting of the ECMT Road Safety Committee and the PRI last year, the winning poster being taken as the common basis of an international road safety campaign to be organised during the 1973 holiday season. Its object is to induce the public in all Member countries to make use of their car seat-belts, which is one of the most efficient means, as shown by various studies and experiments, of cutting down losses in terms of human lives and injuries. Regulations for the compulsory fitting of seat-belts to new vehicles are already, or are about to be in force in most countries; but in some cases certain difficulties stand in the way of enforcing their use by all car-drivers and by passengers.

A first prize of 15,000 French francs was offered to competitors, with 10,000 francs for the second and 5,000 for the third choices.

The ECMT road safety programme proposes a number of other measures designed to decrease accidents and fatalities. In this respect work has been already carried out by the Conference, relating, in particular, to:

- the *standardisation of rules* on road traffic, signs and signals;
- the fixing of a *legal threshold* for the concentration of alcohol in the blood for drivers of motor vehicles;
- *speed limits* in and outside built-up areas;
- measures concerning the *information and education* of road users;
- organisation of road safety education in schools;
- the role of the *police* in road safety;
- *first-aid* for those injured in road accidents.



Above: the 1st prize-winner (Belgium)
Below: the 2nd prize-winner (Sweden)

The strategy behind this programme is linked to the trends in road accidents, kept under review by the ECMT, and has the constant backing of scientific research, since road accident prevention methods should be based as far as possible on scientific studies and checked for their effectiveness. Limitation of available funds calls for the development of the use of cost-effectiveness analysis to help the authorities in their decisions.

For each problem studied under the programme, the appropriate means of action will have to be selected, each specific problem calling for a judicious combination of measures arising from educational techniques together with engineering and enforcement measures —the *three E's*. The ECMT plans, too, to maintain close contact with the international organisations and national institutes concerned with the object, in particular, of acquiring a deeper understanding of the problems involved and of the complex interplay of the many factors affecting the root-causes of accidents.

The new ECMT programme of work covers safety of pedestrians, of young drivers or inexperienced drivers, of riders of two-wheeled vehicles and of occupants of motor vehicles; the training of learner-drivers and the issue and suspension of driving licences; and speed limits.

Links between OECD and the ECMT have been close since the setting-up of the latter organisation in 1953, following proposals put forward at a European Inland Transport Conference. It was then decided to take appropriate steps to secure the best utilisation and most rational development of European inland transport, generally and regionally. Membership of ECMT includes eighteen European countries; the United States, Canada and Japan send observers to meetings of its Council of Ministers and Committee of Deputies. An international staff carries out ECMT work at OECD headquarters in Paris. As regards activities in the road safety sector, a special working arrangement has been established between OECD, which carries out basic scientific research in this field under the direction of its Steering Committee on Road Research, and the ECMT as the body which draws from this research work the appropriate political conclusions on an international level.

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