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EXPERT GROUP MEETING ON THE ESTABLISHMENT OF
AN ADVISORY SERVICE FOR THE SUPPLY OF INDUSTRIAL
EQUIPMENT TO DEVELOPING COUNTRIES

New York, 20-24 November 1967

UNIDO ADVISORY SERVICE FOR THE SUPPLY OF INDUSTRIAL EQUIPMENT TO DEVELOPING COUNTRIES

Background paper prepared

by

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The opinions expressed in this paper are those of the author and do not necessarily reflect the views of the United Nations Industrial Development Organization.

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FOREWORD

The Economic and Social Council of the United Nations has recognized that lack of information on industrial equipment is a major factor in slowing the industrial growth of developing countries. Without accurate data on prices, sources of supply, quality and performance of such equipment, buyers in developing countries are not able to get full value for their money. This inability to get the proper return on their investment in turn affects their industrial growth.

ECOSOC's concern over the difficulties the developing countries face in purchasing industrial equipment at competitive prices on the world market led to the following request to the Secretary General (E/4265, page 8, 5(a), Resolution 1183 XLX):

> "To study the feasibility of setting up, within the United Nations Industrial Development Organization or any other appropriate United Nations body, an advisory service which could provide information to developing countries on the source of supply, the cost and the quality of equipment needed for their development."

In response, the United Nations Industrial Development Organization has taken these steps:

-- Preliminary meetings have been held with officials of a number of national and international bodies engaged in financing and purchasing of industrial equipment. Their purpose is to identify alternative possibilities for meeting the ECOSOC request. UNIDO plans to continue such consultations.

-- A meeting of experts in the field of purchasing equipment, who also have particular experience in the collection and processing of data, has been called for 20-24 November 1967.

-- UNIDO is continuing its efforts at advising developing countries on equipment procurement within the Special Industrial Services programme, and through UNDP's technical assistance projects in the field. Between 10 and 20 per cent of UNIDO's field activities involve projects to provide assistance in the selection and procurement of industrial equipment.

-- Plans are being made for the establishment of an advisory service on industrial equipment, as part of the general industrial advisory and reference functions to be assumed fully by UNIDO in 1968. In such a

centre, UNIDO would make full use of information from specialized source throughout the world. This would include the collection, analysis and dissemination of data to supply managers in the developing countries who presently do not have access to the kind and volume of information they need. This paper deals with the additional types of services such a centre could provide, and the methods and techniques that would make the centre most valuable to supply managers in developing nations.

The purpose of this background paper is to outline the importance of adequate information to professional supply management in the developing nations, and to suggest means of broadening the skills and knowledge of procurement and supply personnel in those countries.

It deals specifically with possible methods of providing supply management officers with professional assistance, training and information on supply sources, with particular reference to the possibility of establishing a central, international supply management advisory service.

The emphasis throughout the paper is on the procurement of equipment, but the principles outlined apply equally well to other types of purchases (e.g., raw materials, repair and maintenance supplies, and services).

Only highlights can be covered in a paper of this type and length. The paper is by no means exhaustive and is intended only to define the main points, which call for further elaboration and discussion.

Throughout the paper, the terms purchasing, procurement, and supply management, are used interchangeably.

Paul V. Farrell

I. Importance of Supply Management

Some idea of the potential importance of professional supply management to the progress and growth of the developing nations can be gained by examination of the position, responsibilities, and accomplishments of supply managers or procurement officials in industrialized nations.

A large majority (67 per cent) of industrial companies in 39 countries (excluding U. S.) spend more than 50 per cent of their income on purchased equipment, materials and services. In 84 per cent of the companies, the purchasing or supply department is responsible for determining and investigating possible sources of supply for equipment. In 70 per cent of the cases, the supply department makes the actual selection of the supplier from whom the equipment is to be bought. (Source: Survey by Purchasing International Magazine, February 1966 - 200 replies).

Other surveys indicate that purchasing has a similar position and responsibilities in the United States.

The contribution good purchasing can make to the success of a company can be judged by these typical comments from company presidents participating in a recent survey by the National Industrial Conference Board (U. S.):

> "We believe that a dollar saved in purchasing goes directly and uninhibited to the profit column". - Chairman of a steel company.
>
> "Purchasing is a service unit, but it also has important profit-making activities and its contributions at the management level should be many. We will continue to see significant changes in procedures and techniques to increase purchasing effectiveness". - Chairman of an electrical company.

The success of procurement and supply organizations in the industrial nations has been based on their:

- Ability and authority to question requisitions from other departments and, where applicable, to suggest alternative or substitute products or materials.
- Ability and authority to find, wherever possible, several alternatives, competitive suppliers of a given product.
- Ability and authority to analyze suppliers' prices and capabilities.
- Ability and authority to negotiate contracts with suppliers.

It is assumed throughout this paper, that supply managers in the developing nations, to be fully effective, would require the same kind of ability and authority as outlined above.

It is not difficult to draw a rough parallel between the situations in the developing and industrialized nations. A large part of the export earnings of less developed nations must be spent on equipment and supplies purchased from other countries. Without these purchases, the developing nations cannot hope to achieve the industrialization and economic development they need to survive and grow.

Yet the developing nations are faced with a dilemma: prices of primary products, which are their chief exports and source of foreign exchange, have not kept pace with the increasing prices of manufactured products, which are their chief imports and for the purchase of which they must spend a large part of their income.

It becomes clear then that, if purchases from abroad can be made more efficiently, i.e., at lower cost without sacrifice of quality or performance of the equipment purchased, the developing countries will benefit.

Thus, supply managers are faced with the responsibility and opportunity to make an important contribution to their national economies. The more they can do to keep down the cost of imported products, the more capital they free for internal development or additional purchases.

Cost reduction, however, is only one phase of the cycle of improvement that scientific supply management generates. In seeking new sources of supply, procurement departments stimulate competition, which in turn leads suppliers to do more research and develop new and better products to hold their markets. Good supply management is a very practical and efficient method of obtaining the benefits of new technology for use in countries that previously did not have access to them.

Good supply management plays a key part, not only in the industrialization of the developing nations, but also in the growth of world trade:

-- It locates sources for the capital goods needed to support industrialization.

-- It brings new technology into the industrialization process.

-- It helps conserve export earnings by obtaining equipment at lower cost than heretofore.

-- It stimulates the expansion of world trade as it helps its own country, since trade grows most rapidly among nations where internal development is moving at a fast rate.

II. Improvement of Supply Managers' Skills and Techniques

Good supply management, like any other business function, is only as good as the people who perform it.

In this section, we will deal generally with the basic personal, educational, and professional qualifications of the supply manager. We will also discuss some of the techniques and systems that will help him perform his duties more efficiently, particularly with respect to the procurement of equipment.

Since he is entrusted with the expenditure of large amounts of money, the supply manager must obviously be a person of integrity, analytical skill, initiative and imagination. Because his work involves service to others in his organization and negotiations with sales and management personnel of supplying companies, he must be able to understand other persons' requirements, attitudes and motives.

Educationally, he should have a strong business background and, wherever possible, some technical training in the field in which he works. Ideally, he will be well grounded in such subjects as general economics, accounting principles, business communications, commercial law, statistics, business organization and management, marketing, sales forecasting, finance, warehousing and inventory management, price policies, traffic and transportation, production planning and control (particularly when he is working in a manufacturing organization) and cost accounting.

To carry out his specific procurement responsibility, the supply manager should have:

-- Wide knowledge of sources of supply, prices and availability of products;

-- Knowledge of his own company's or organization's processes, equipment and products;

-- Familiarity with the production and maintenance of the products he buys, and with their uses;

-- Understanding of the flow of materials, and the techniques of maintaining records and controls;

-- Knowledge of other departments and their work, and of the relationship of his department to theirs;

-- Knowledge of company or organization policies and of purchasing policies.

Although traditionally the seller seeks out the buyer, modern supply management requires aggressive research of supply sources on the part of the buyer.

This would be particularly true in the developing nations, where foreign producers or equipment have not been able or willing to develop sales or marketing organizations. Location and selection of competent vendors is the keystone of good supply management.

Even before exact specifications for a piece of equipment are established, the supply manager should be told of the general requirement. This will enable him to begin immediately to search for possible supply sources, and thus reduce the delay that is involved in processing a requisition.

For supply managers in the developing countries, access to published information on suppliers, their products, and their capabilities is of utmost importance because of the difficulty in making personal contact with a number of supplier representatives. (The types of information available to supply managers are discussed in Section III and possible methods of handling the storage, retrieval and distribution of the information through a central data service are covered in Section V).

Before a supplier can quote on a piece of equipment, he must have a description--a specification-- of the product needed. Some types of equipment are made to national, or even international standards, and can be ordered accordingly. These are few, however, and generally the buyer must either select according to brand name and a specific manufacturer's model number, or develop his own specification. Development of specifications is generally best done by a group comprising representatives of technical or other departments concerned, the supply management department, and ultimate users of the product.

Supply managers generally prefer specifications that give them a chance to choose from a number of suppliers for a given type of equipment. Specifications that describe the performance that is expected from the equipment are better than those that describe every element in the machine down to the last detail.

Extremely restrictive specifications can defeat the purposes of good supply management by forcing the purchase of a single brand of equipment; by excluding suppliers whose normal standards cannot meet the specifications at higher cost, but whose equipment might actually be superior; by increasing a supplier's costs (and therefore the price); by lengthening the engineering time needed to prepare bids and to design special components; by endangering the benefit of a supplier's warranty, since the equipment purchased may not be his standard product.

Even more than requests for bids, purchase orders for equipment, particularly those sent to suppliers at great distances, must be carefully prepared. The following check list, while not applicable to all types of purchases made by supply managers of developing nations, could well serve as a guide for developing their own procedure:

1. Have you specified the correct model number as shown by the manufacturer?

2. Have you accurately specified all performance features required?

3. Do the specifications accurately describe the equipment as represented by the manufacturer?

4. Are all variations or attachments to the standard product specified and included?

5. Have you specified that local, state, or national requirements (such as safety requirements) must be met?

6. Are you certain the supplier can meet the delivery date you specified? Can he do better?

7. Have any other verbal or oral commitments been made by anyone in your organization that are not involved in the contract?

8. Have you stated that the vendor must supply you with copies of all required drawings, parts lists and operators' manuals?

9. What provision has been made for servicing the equipment?

10. Is the guarantee on the equipment suitable for your needs? Does it provide maximum protection to your company against all contingencies?

11. Are the hydraulic, electrical, mechanical, pneumatic, lubricant and painting specifications fully clarified?

12. Are the shipping terms fully specified?

13. Are you and the supplier agreed on how the equipment will be shipped? What carriers will be used?

14. Have you specified any special type of packaging?

15. Have standardized controls been specified?

16. Are the installation charges and acceptance responsibilities fully clarified?

17. Are you and the supplier fully agreed on inspection responsibilities and procedures?

18. Are you fully agreed on terms of payment?

19. Has provision been made for cancellation of the contract at your option? Under what conditions and terms?

In respect to almost any of the points covered above, the supply manager in a developing nation is in a much more difficult position than his counterpart in an industrialized country. If, for example, the wrong piece of equipment is shipped

because of inadequate description, or because of supplier misunderstanding or carelessness, the time lost and the transportation costs involved in rectifying the error could cripple a whole project.

The overnight service available from suppliers or distributors in industrialized countries is not common in the developing countries, so it must clearly understood at the start of negotiations how problems of service, and replacement parts, are to be handled.

Standardization of classification and nomenclature should then be a continuing matter of concern for the supply manager. A programme for obtaining and developing standards on machinery and equipment should be one of the responsibilities of a central advisory service of the type discussed in Section V.

Standardization has many benefits for the supply manager. For example, ease in ordering; elimination of disputes with suppliers over names, numbers and specifications of purchased products; better availability and quicker deliveries of products; broader competition among suppliers; reduction in number of expensive "special" items; more interchangeability of parts among different machines; prompt availability of service, and even more important, of replacement parts; relative ease of training machine operators; broader market for machines that are no longer needed and could be sold elsewhere as surplus.

Data on standardization are available from many sources, and particularly from governmental agencies and industrial associations like the American Standards Institute and the British Standards Institute. Appendix "J" describes a directory of standardization activities that are important to engineers, supply managers, and specification writers. This volume, and similar ones issued in other countries, should be a basic part of any central advisory service library.

Terms and conditions of sale, pose another problem. Individual suppliers generally desire to have a sale completed on their own standard contract terms, while individual customers generally have <u>their</u> terms and conditions printed on the acknowledgement copy of the order. In a highly industrialized economy, where long-time business relationships exist between buyers and sellers, agreement on which set of terms will prevail is not difficult to reach.

Misunderstanding may develop, however, where there is unfamiliarity with trade customs, either on the part of the supply manager or on the part of the supplier unaccustomed to marketing in a developing area.

Formal attempts to standardize contract terms and conditions have been made in industrialized countries, but have not been successful. Informally, however, some approach to standardization has been made over the years as the economies of the industrialized nations have become more coordinated and business customs and practices have become accepted through long usage. One formal method that could be investigated by any central advisory service established for supply managers of developing nations is the set of "General Conditions" for the

Supply of Plant and Machinery for Export", prepared under the auspices of the United Nations Economic Commission for Europe in 1953. (See Appendix C). The conditions set forth cover drawings, packing, inspection and tests, risks, delivery, payment, guarantees, reliefs, limitation of damages, rights at termination, arbitration and law applicable. A supplement covers price revision. (Appendix D illustrates the cover of a 30-page set of standard terms and conditions used successfully by a major industrial company for equipment purchases).

Any expenditure of money must be carefully documented, recorded, and controlled. Following are the basic forms and records needed in a supply management department to attain those objectives. No attempt at elaborate description of the forms and records, or the activities they are used in, has been made. It is sufficient to say at this point that a central advisory service should have as one of its responsibilities the development of a standard framework on which individual supply managers could design basic forms applicable to their own operations. Guidance and assistance in the preparation of forms and procedures could be provided in a basic purchasing manual, prepared by personnel of the central advisory group. (See below).

Basic forms:

REQUISITION - Sets forth what is needed: product designation, by number of specification, number of items needed, time of delivery, etc. Issued by operating departments.

REQUEST FOR BID OR QUOTATION - Sent to prospective suppliers by purchasing or supply department. Contains same basic details as carried on requisition, including amendments or changes suggested by purchasing and approved by operating departments.

ANALYSIS OF QUOTATIONS OR BIDS - Lists individual bids by suppliers for ready comparison by supply department. Gives name of bidder, date of bid, quantity involved, unit price, special charges (e.g., tooling), FOB point, cash discount terms, delivery promised. Buyer indicates on this form which bidder is successful, and lists reasons for award of business if it is made to other than the low bidder.

PURCHASE ORDER - Basic legal document committing company or organization to purchase of specific product. Contains all information included on requisition and request for quotation, plus any special attachments or changes made since need originated.

PURCHASE RECORD CARD - Card maintained by purchasing department for each class of item purchased, showing vendor, amount purchased, delivery date, price paid, etc.

STORES RECORD CARD - Permanent record of purchases and receipts for stores department. Shows amount ordered, date, amount received, amount on hand, etc.

FOLLOW-UP OR EXPEDITING FORMS - Letters, cards or other forms of inquiry sent to suppliers to determine progress made on orders - probable date of delivery, reasons for any delay, etc.

RECEIVING REPORT - Record of what has been received from supplier against a given order--date of receipt, amount received, location of material after receipt.

SHORTAGE OR DAMAGE REPORT - Supplement to receiving report--used as a basis for complaint to supplier.

As a supply department grows and assumes more responsibilities, as it becomes more deeply involved in policies and procedures, the more use it has for a purchasing manual. A purchasing manual can: clearly define the scope and authority of the department; explain purchasing policies to other departments, and in some instances to suppliers; standardize departmental organization and procedures; describe the duties and responsibilities of department personnel; serve as a means of training new employees; provide detailed instructions on how to purchase certain types of equipment and supplies.

It would be difficult and probably wasteful of time and effort for most of the supply managers in developing companies to attempt to develop elaborate procurement manuals similar to those used in large companies in the industrialized nations. However, many supply managers already have simple manuals, or the beginnings of manuals in the form of a collection of policy statements, departmental instructions, and memoranda.

A central advisory group could perform an outstanding service for supply managers in developing nations by providing suggestions on format and content of manuals, instructions on how to write manuals, and sample or illustrative pages from manuals produced by established companies. (Samples of such manuals could be obtained from the companies concerned, or from professional purchasing publications).

General procurement manuals should contain a statement of policy outlining the supply department's authority and indicating that top management endorses the spirit and contents of the manual. From these general principles the manual can proceed to discuss specific purchasing activities: who determines the need for material to be purchased; who decides on the quantity and quality required; who has the authority to requisition materials; the relationship between purchasing and other departments. Job descriptions, outlining duties and responsibilities of department heads, buyers, etc., should also be included. (Sample pages from industrial company manuals, including a typical job description, are in Appendix A and Appendix B).

A manual should include details on organization and procedures. This section would list the specific duties of the supply department, including such subjects as buying, expediting, checking of invoices, and reporting to management. The section on procedures should include instructions on handling of various forms (see list above). Samples or illustrations of forms should be shown whenever possible.

Once a general manual has been developed, the supply manager or the central supply management advisory service, should consider developing a specialized manual for equipment buyers. In purchases of large, complex and expensive equipment, it is practically impossible for even the most experienced buyer to consider all

elements that must be included in negotiations.

Manuals of this type used in industrial companies generally cover four main subjects; general equipment buying policies and procedures; commercial considerations in equipment buying; contractual clauses; and buyers' check lists.

The policies and procedures section covers the authority of the purchasing agent as the sole negotiator for equipment; the use of competitive bidding in developing supply sources; and the evaluation of bids.

The section on commercial considerations supplies the buyer with specific material on such subjects as advance and progress payments (when they are allowed and to what extent), handling of claims for equipment damage and loss, deviation from standard purchase order terms, escalation, letters of intent, pricing methods, etc.

The section on contractual information includes sample paragraphs, which can be modified easily and included in specific contracts. The clauses, which should be drafted only with the help of the legal department, usually relate to warranty, safety requirements, inspection, crating, patent protection and infringement, etc.

Check lists for buyers, similar to the one described earlier in this section, are an essential part of any manual. The lists not only assist the buyer in preparing requests for bids and purchase orders, but can also be used as a check on his performance.

The possibility of developing specialized manuals dealing with individual classes of equipment is indicated in a UNIDO Aide-Memoire, prepared in connection with an Expert Group meeting on the selection of equipment for the textile industry in developing countries (scheduled for Vienna, 23-28 October 1967).

The Aide-Memoire points out that The First Interregional Workshop on Textile Industries in Developing Countries, issued the following recommendations:

> That the United Nations Centre for Industrial Development meet with a group of textile machinery experts with a view to formulating a set of guidelines on the selection of textile machinery.

It also includes various selection criteria for cotton spinning and weaving equipment to be discussed at the meeting, such as desirable characteristics for product flexibility, space, maintenance, spare parts (inventories), equipment compatability, etc.

The report of the Expert Group Meeting should provide an excellent basis for investigating the feasibility of writing specialized equipment procurement manuals. It is to be expected, however, that development of a general equipment purchasing manual would be a more appropriate immediate project for a central advisory service

III. Sources of Information for Supply Managers

As mentioned earlier, the fundamental responsibility of a supply manager is to locate competent, competitive sources of supply for the equipment needed for his organization. In industrialized nations, the most useful sources of information for locating and selecting suppliers of equipment are the salesmen who call on the companies. But other sources are also important: respondents to the Purchasing International Magazine survey, previously referred to, mentioned the following as most important, after salesmen's calls:

Manufacturers' catalogues

Industrial Directories

Professional and trade journals

As noted, supply managers in developing countries have fewer opportunities to see sales representatives in person than do their counterparts in industrialized nations. So it follows logically that the information sources listed above assume even more importance for them.

Ideally, then, each supply manager in the developing countries should try to build his own information library containing individual company catalogues, trade directories from all the industrial nations, and copies of professional and trade journals relating to the field of supply management and to particular types of products.

Because of the tremendous volume of catalogues, directories, etc., issued every year, this would be a practical impossibility for the average supply manager. A practical solution would be to collect these publications at a central point, and provide for the distribution of necessary information to individual supply managers upon request. Suggestions on how this central data file could be set up are listed in Section V. Catalogues, particularly, would have to be collected and maintained centrally, because of the enormous problems faced by the average supply department in finding the space to house the thousands of publications available, and in finding the time and manpower to obtain the necessary catalogues, index them and keep them up to date.

Ideally, machinery classifications and nomenclature used in industrial directories should be standardized to simplify selection and avoid misunderstandings and errors. Informal discussions with publishers of such directories in industrialized nations, however, indicate that such a goal is not easily attainable. Because of the competitive nature of the publishing industry, individual companies shy away from cooperative ventures of this sort. They prefer, at this point, to emphasize their differences, rather than their similarities, with competitive publications.

Nevertheless, standardization of classification in directories and catalogues should be a continuing objective once an advisory service has been established.

It could, indeed, be one of the important programmes of such a service. Efforts should be made, with the assistance of officials in the various economic groupings in Europe and Latin America, to persuade publishers of national directories to correlate and standardize the information in their publications, so that it can be understood and used at least in the regional areas what the various trade and economic groups represent. Initially, these efforts could be directed toward standard layout and presentation. Moves toward standardization of classifications would logically follow.

It would be well to mention at this point, some of the other sources of information available to supply managers:

TRADE DIRECTORIES - Almost every industrialized nation has at least one trade directory that lists manufacturers and their products. Typical examples:

Privredni Pregled Adresar FNRJ - Complete trade directory of Yugoslavia, in five languages--Serbo Croat, English, French, German and Greek.

BDI Germany Supplies - Official export register of the Federation of German Industries. 70,000 industrial items, indexed in four languages.

Canadien Trade Index - More than 12,000 manufacturers listed alphabetically, geographically and by products.

Conover-Mast Purchasing Directory - Complete listing of U. S. manufacturers of industrial products, completely cross-referenced by company name, address and telephone number, trade names, and products produced.

Nordisk Handelskalendar - 100,000 names covering 1,500 lines of business and groups of goods in Denmark, Finland, Iceland, Norway and Sweden. A commodity index is in English, with section headings in the language of each country, English and German.

Two specialized directories that should be available to anyone dealing in world markets are:

International Yellow Pages - A guide to buyers and sellers all over the world by product classification. (Published by Pan-Terra Directories, Inc., New York), and:

World Trade Telex Directory - 86,000 listings, classified by trade groups and countries, and alphabetical cross-reference, listing teletyping enterprises on all five continents with postal address, codes, telex numbers, etc.

(See Appendix E for additional partial listings of directories and similar sources).

Supply managers should also avail themselves of the information and opportunities presented by trading companies in various countries. Products of the

Soviet Union, for example, are sold through foreign trade organizations such as Techmashexport, which handles a broad range of products from pumps and compressors to machinery for sewing and shoe factories; Tractoriexport, which deals in agricultural and road-building machines and related equipment, and Avtoexport, which handles passenger cars, buses, dump trucks, etc. There are approximately 40 such organizations handling U.S.S.R. exports and imports.

Similarly, Technoimpex is the foreign trade company of Hungary responsible for marketing machine tools; Elektrim is the Polish foreign trade company for electrical equipment; and Stalexport is the foreign trade enterprise for export of steel products made in Poland.

Japanese trading companies, like Mitsui and Company, provide a complete buying service for customers. They will seek out suppliers of needed products not only in Japan, but also in other countries, and supervise the transaction from contract negotiations to delivery of the goods to the buyer. This includes all services involved in the movement of goods, such as customs clearances, obtaining proper permits, covering import-export duties, marine insurance, etc.

ECOSOC Resolution 1185(XLX) called for the provision of cost information, as well as product information, by a central advisory service.

Cost or price information on equipment is of great importance to the supply manager, particularly in developing nations, but it appears at this time that the development of an organized body of information on prices should be a long-range rather than an immediate objective of such a service. Realistically, a central service should concentrate first on the availability of supply, since the final price on a particular piece of equipment is not negotiated until both customer and supplier have come to terms on special accessories to the equipment, method of shipping, discounts for volume purchases, and several other factors. Simply compiling list prices from catalogues is only a beginning.

In addition, accurate information on industrial prices is difficult to obtain at this time. In this connection, the following comments from an article in Finance and Development (March 1966), a publication of the International Monetary Fund, and the International Bank for Reconstruction and Development, are pertinent:

"At the present time international price information is much better organized for raw materials than for manufactured goods. It is time to push for an improvement in the availability of price information for manufactured goods. There will be the usual objections that there are so many difficulties in interpreting price quotations that it is better not to publish them. But whenever important projects are proposed in any country, a considerable effort has to be made to establish the international prices against which domestic production costs will have to be measured. This effort has to be duplicated in many countries, by many institutions, on many different occasions. With the pace and breadth of industrialization bound to accelerate over the years ahead, would it not be useful to establish a regular price-reporting service for the more standardized manufactured goods that move in international trade?"

A start on such an effort had indeed already been made in recent work done the (private) National Bureau of Economic Research in New York. (See the NBER's study, Measuring International Price Competitiveness: A Preliminary Report, Occasional Paper No. 94, by I. B. Kravis, R. E. Lipsey, and P. J. Bourique, New York, 1965, 37 pp.).

The time is ripe to build on these beginnings. The resulting information would help businessmen judge their absolute advantage (how their costs compare with the delivered cost of imports) and would help development agencies judge th vital matter of comparative advantage, i.e., discovering the direction in which national resources should be pushed to move the country up to higher levels of living.

IV. Improving Supply Management through Education

Training is a continuous process in all successful procurement or supply management departments. The necessity for educating and training new personnel is obvious, but even for experienced and competent supply management there is considerable benefit from a continuing programme of training. (An outline of the subjects covered in a typical purchasing training programme conducted by an industrial company is shown in the Appendix).

The greatest impetus for specialized training and education over and beyond the programmes instituted by companies themselves, has come from purchasing associations in the industrialized nations. Independently, and in conjunction with local universities, organizations like the National Association of Purchasing Agents (USA); the Institute of Purchasing and Supply (UK); the Materials Management Institute of Japan, and various other national associations have sponsored innumerable programmes, both fundamental and advanced, in supply management.

Purchasing or supply managers in developing nations can benefit from the experience of these organizations in several ways:

By requesting advice and assistance from one or several of the many associations now in existence (see Appendix G). Purchasing executives in many countries have been notably generous in making available to others in the profession training materials, literature and general information on education.

By enrolling, whenever possible, in association or university courses in supply management, when such courses are opened to other than members of the associations sponsoring them.

By forming, with the advice and assistance of established organizations, their own procurement or supply management associations. A group of African supply managers, for example, has already taken steps to form such an association, after having followed an eight-month course of study in procurement and supply management in the United States. The group has already conferred with leaders of the National Association of Purchasing Agents on how to implement the plan.

Supply management training on a broader, more international scale, under the sponsorship and control of a central advisory organization, is a project worthy of serious consideration. Such a programme might be patterned after that conducted by the Afro-American Purchasing Centre, Inc., a private, non-profit corporation which acts as a purchasing agency for African governments and quasi-public institutions, and trains employees in modern procurement techniques that will enable them to buy effectively in international markets. The following excerpt from an AAPC brochure describes the programme in general:

"The basic eight-month training course offered by the AAPC begins with nine weeks, or the equivalent of 12 credit hours at a major university. In this phase, students cover such subjects as international trade, relations and procedures, inventory control, supply management, negotiation and contract administration, transportation and packaging, and purchasing procedures and practices.

"The classroom education is followed by practical on-the-job training at AAPC headquarters in New York. Participants actually handle the purchase of items through the entire procurement cycle, starting with the preparation of specifications, solicitation of bids, negotiation with suppliers, placement or orders, arrangement of transportation and shipping, and ending with the payment of invoices and freight bills.

"An important phase of the on-the-job training programme is in the trainees' visits to various types of business organizations. In addition to observing manufacturing operations, they study efficient industrial and governmental purchasing departments at first hand. They also visit and consult with the personnel of banks, transportation companies and commodity exchanges."

Regardless of the type of training programme undertaken, supply managers have a wide variety of educational aids and services available to them.

The leading purchasing associations will sell, at nominal cost, many pamphlets, booklets and film strips that can be used in intra-company, association, or university educational programmes. Among the publications available from the National Association of Purchasing Agents (US), for example, are the following:

Bibliography of Industrial Purchasing; Basic Steps in Value Analysis; Evaluation of Supplier Performance; Inventory Management of Purchased Materials; Standardization Manual; Training Purchasing Department Personnel.

NAPA also offers a number of visual aids--slides, film strips and motion pictures--on various purchasing subjects.

The number of books on purchasing and supply management continues to grow each year. Supply managers in either developing or industrialized nations should have at least a copy of the Purchasing Handbook (published by McGraw-Hill) and one good textbook in their personal libraries. Any central advisory service for supply managers should have several copies of the books listed in Appendix I for reference and for loan to supply managers using the service.

Purchasing publications (magazines, journals, etc.) are an excellent source of practical information and educational material. In some cases, supply managers might wish to subscribe to one or more of the magazines listed in Appendix G, despite the fact that the editorial material is generally limited to descriptions of relatively sophisticated purchasing departments (and subscriptions are costly). In any case, a central information agency should definitely subscribe to the

publications, maintain back copies, and distribute copies of specific articles on request.

Special Note: A comprehensive review of educational programmes conducted by the purchasing associations in the International Federation of Purchasing (membership of which is listed in Appendix G) is available from IFP, 30 Fleet St., London E.C. 4, England.

V. Organization of Central Advisory and Information Service

The primary function of an advisory service on the procurement of industrial equipment, should be to collect and disseminate information on the worldwide availability of such equipment. A secondary function should be to provide supply managers with assistance and information on procurement and supply techniques, administrative problems, and supply management education.

Since the great bulk of information on supplier products and specifications comes from the suppliers themselves in the form of trade catalogues and bulletins, a definite step-by-step programme would have to be undertaken to develop a basic catalogue library. In outline, the procedure would be as follows:

1. Determine the products - or product types - which supply managers in developing countries most likely would want information. There are literally thousands of product classifications that may eventually be covered by such a service, but the initial listing will be relatively primitive and incomplete, and limited to rather general classifications - e.g., compressors, electrical equipment, materials handling equipment, pumps, machine tools, vehicles, welding equipment, etc.

2. Solicit general catalogues directly from suppliers to use as the foundation for a catalogue library. Identification of suppliers of types of equipment, their names, and addresses would be obtained from national directories (see Appendix E for typical directories) or from governmental trading organizations, as outlined in Section III.

In a few cases, combined catalogues - i.e., a bound collection of catalogues relating to specific industries, or types of products - are available. (See Appendix K for a description of a computerized catalogue of hospital equipment and supplies.)

Similar volumes, published in various European countries, cover such product classifications as railway equipment, scientific supplies, etc. Catalogue collections of this type are indispensable in the library of a Central procurement information service. The central service would have as one of its objectives, of course, the collection of and listing of individual supplier catalogues. Already existing collections of the type described, however, may be used to supplement such listings, and in some cases eliminate the necessity for them.

3. Decide on a classification system for orderly arrangement of the multitude of catalogues that will ultimately be carried in the library. Classification systems used by industrial company librarians vary widely. The simplest is to file the catalogues alphabetically by supplier name, then index each one on a supplier's name card, and a commodity or product reference card. These cards (generally 3" x 5") are filed alphabetically in separate card files. The name card would carry, in addition to the vendor's name, the general subject matter covered in the catalogue, and the vendor's catalogue identification (for clear identification in correspondence with the vendor). The commodity or product reference card carries the general classification (e.g., transformers) and the names of suppliers who have sent in catalogues relating to that type of product.

This simple approach has been used successfully in companies that have between 3,000 and 5,000 catalogues in their libraries. Storage space for that number of catalogues is relatively easy to obtain, and the library can be maintained by one person, even on a part time basis.

The accumulation of many more thousands of publications - which would be inevitable under the proposed centralization of information - would present a number of problems. Classifications would have to be continually refined to cover the many variations in products. Space requirements would grow rapidly. (Product, catalogues available from just one company in the international market, Westinghouse International, fill several six-foot bookshelves). The increasing size and complexity of the library would require more personnel, including eventually, professional librarians. Existing catalogues would have to be reviewed regularly to see that additional pages, changes, revisions, etc., were properly filed and obsolete or outdated catalogues removed.

Meanwhile, professional, experienced supply management personnel would be required to analyze and interpret requests for information from procurement departments of countries using the service. If the volume of requests continued to grow, the volume of correspondence would grow accordingly - possibly to unmanageable proportions, unless a system of duplicating catalogue pages rapidly were installed. Translation of the material on these pages from the supplier's language into the language of the supply manager requesting the information would present a major problem. Similarly, converting non-metric specifications into metric equivalents would call for a great expenditure of time and effort.

How rapidly these problems would arise depends, of course, on how soon the centralized data service became popular among supply managers. Meanwhile, automated systems of information handling - particularly suited to supplier catalogues - are being developed, refined and widely used.

A typical automated system, Visual Search Microfilm File, involves reproducing supplier catalogue pages on microfilm. Literally, thousands of catalogues can be stored on film cartridges that occupy only a few feet of storage space - as compared to the rows of shelves that the original catalogues would require.

Personal seeking product data simply insert the microfilm cartridge in a viewing machine. A few simple adjustments enable them to see a number of enlarged catalogue pages, from competing suppliers, side by side. The machine produces duplicate copies of the data needed, which can then be sent to the supply manager interested in the data.

The supplier of the system keeps the catalogues up to date by sending customers of the service regular revision filmings. The comprehensive index, provided by the supplier, is also revised regularly. The supplier uses a computer to store, classify and organize the information that is provided on the microfilm.

VSMF and suppliers of similar systems and equipment are moving into the international market. They establish the classification system, which can then be used throughout the world. At present, VSMF is in use in U.S., Japan, and the United Kingdom. Plans are being made for expansion into the Scandinavian, German and French markets.

The major limitation on the system at present, as far as a central data service is concerned, is that suppliers must pay to have their catalogues included in the system. This would necessarily limit the number of supplier names that would be available. There is some indication that the policy may change and permit free listing in the near future.

The foregoing discussion is definitely not intended as a recommendation of any specific automated information handling system. It was presented in detail simply to indicate how advancing technology in data handling may overcome the problems inherent in developing an international catalogue libary.

Use of the Buyer's Guide to Machinery (published by the Organization for Economic Cooperation and Development, 1962) should be of great value in the initial stages of setting up a procurement advisory center.

As pointed out earlier, just the simple act of requesting catalogues from every manufacturer of hundreds of types of equipment would be an enormous task, assuming their addresses were already known. The Buyer's Guide simplifies this task by making available in one place names and addresses of associations of manufacturers of machinery, equipment and metal manufacturers in Europe, United States and Canada.

As the Guide points out, the associations listed do not necessarily include all the manufacturers of a particular type of equipment. However, many of them will provide membership lists to qualified buyers (or such procurement-advisory agencies as the proposed centre), and in some cases will notify their membership of business inquiries from other countries.

The guide further points out that although the associations do not act as commercial agents, they will provide buyers with information on delivery possibilities. As a procurement advisory centre developed, such information would be particularly useful for dissemination on a regular basis to supply managers in developing countries to assist them in their planning.

The associations are also a good source for much of the reference material needed in an advisory centre: catalogues, directories, and technical reviews.

Expansion of the guide to include associations or agencies in countries other than those listed could be one of the important early projects of service centre personnel. The additional compilation would not present extraordinary problems, and would result in the most comprehensive guide of its kind.

There are a number of additional services a central advisory bureau could provide for supply managers in developing countries. These suggestions are based on the discussion earlier in this paper, of the supply manager's needs in respect to skills and techniques, information and education.

Administrative service - Procurement experts in a central bureau could prepare sample manuals, forms and checklists, as described earlier. In addition to providing information on suppliers, they could recommend changes or simplification of specifications. They could advise buyers on opportunities to buy standard rather than special equipment - equipment that would give the performance desired, but at a lower cost. (See discussion of standardization).

Educational service - A central bureau could establish and maintain a complete library of purchasing literature, not only for reference purposes, but for circulation to supply managers. This would include not only all the standard textbooks, but pamphlets, bulletins and other material prepared by associations or independent publishers.

The bureau, after some experience with the needs of people using the service, could originate its own instructional material (e.g., on such subjects as international trade customs, legal aspects of international buying, inventory control, etc.) and disseminate it. This material could be prepared by staff members or by arrangement with consultants.

A particularly good example of an educational bulletin is the Management Aid Newsletter, "Pointers on Raw Materials Inventory Control", shown in Appendix I. The bulletin, issued by the Small Business Administration of the U.S. Department of Commerce, covers the basic principles of various business subjects, and provide further references for readers who want additional information.

A system for reviewing purchasing publications, and duplicating and distributing pertinent articles could be established.

Central staff personnel could act as liaison between supply managers in developing countries and purchasing associations in industrial nations in respect to supply management education.

The central office could publish a regular newsletter for supply managers, giving news of recent developments, listing courses open, and possibly including lists of surplus equipment other supply managers have available for sale or exchange.

Plans could be made immediately for the development of a training centre, similar to that described in Section IV.

APPENDIX A

Sample pages from a purchasing manual prepared for internal use by a major industrial company.

SECTION I - Functions, Organization and Responsibilities

PART A - GENERAL

8. 1-1 The general functions of the Purchasing Department are as follows:

— Supervising the system for requisitioning supplies and services.

— Procuring these supplies and services.

— Storing and issuing these supplies.

— Disposal of surplus or scrap material and equipment.

8. 1-2 The above functions are defined briefly as follows, and are performed by the branches of the Purchasing Department.

a. System of Requisitioning:

This department supervises the system of requisitioning all supplies, property, equipment and other purchased items or services. Forms and procedures are prescribed to assure necessary review and approval and to give the quickest possible service.

b. Procurement:

All commitments to buy or contract for goods or services are made by this department. The Purchasing Department alone has the authority to commit the Company to make sure that Company policies and over-all best interests are adhered to. (This function does not include employment or traffic matters.)

c. Storage and Issue

Receipt of goods and materials is handled at one point to provide needed control. Storing of "general items" used on a continuing basis and . . . .

APPENDIX A

Page 2

SECTION IV - Basic Principles

PART B - MAKING THE DECISION TO PURCHASE

4-7 Factors Weighed

Each purchase is a separate decision. Deciding which is "the best source of supply" involves weighing these factors:

a. Price -

Important, but only one factor in several.

b. Quality -

Brand names are helpful in selecting quality, but are not controlling. Buyers must check carefully for actual quality.

c. Delivery -

Time and arrangements are important.

d. Past performance by vendor -

Good past service and reliability are very important factors.

e. Time element -

Speed may be the primary factor at times.

f. Service -

Servicing of equipment may be a controlling factor in some purchases.

g. Reciprocity -

We should try to buy from those who buy from us when possible.

h. Distribution among vendors -

We try to build up at least 3 reliable sources of supply for each item, by placing volume orders where possible.

i. Alternate specifications -

Each buyer should check the possibility of changes or substitutions to get equal value at lower cost.

Each buyer should be able to explain his procurement decisions in terms of the above factors and Company policies.

SECTION V - Identification of materials

PART A - MATERIAL IDENTIFICATION NUMBERING SYSTEM

8.5-3 Purpose

Materials of any type (except raw materials) used by the various department must be identified by some means, so their cost can be properly charged, and so they can be requisitioned and kept track of. For these reasons, a rather elaborate coding system is used, since the types of items are numerous. The code number used is called "KACC control number", and is assigned according to several breakdowns. Numbers are assigned for:

a. Stores Items
b. Capital Spare Parts
c. R & M Special Order Items

8.5-4

Since the cost of Special Order items other than R & M is charged directly to the using department, no material identification code is given them.

8.5-5 Basic Code Groups

The accounting code number 350 is used Company-wide to indicate stores items. This code applies to the above three groups. (The accounting code 329 applies to other Special Order items. Also, other accounting codes are used for raw materials — see Accounting Unit.) A further coding within the 350 code identifies the three groups.

a. Special Order Items (R & M)

The code number "90" is assigned to these items at Ravenswood. To facilitate TAB use of the code, this is referred to as code "9".

APPENDIX B

Job Description for a
SENIOR BUYER

Position Objective

Reporting to the Purchasing Agent, provide a supervisory level for conducting purchasing activities for an assigned group. To negotiate for and purchase items requiring extensive buying and/or technical experience.

General Responsibilities

1. Responsible for purchasing and receipt of materials with respect to requisitioned items within one or more of the following commodity groups: office supplies and equipment; plant supplies and petroleum products; tools and machinery; plastics, glass, rubber and soft goods; electrical and electronic goods; mechanical goods and systems; furnishings and structures; mill metals; forgings and castings; chemicals and finishes; hardware; and research and development project materials. Responsible for the work of personnel assigned to assist, plan, assign, instruct, co-ordinate and review their work.

2. Is empowered to execute purchase orders for raw materials, purchased parts and supplies with a limitation of $ 10,000.00 per single order; review and approve purchase orders initiated by subordinate personnel. Whenever possible, combine requisitions to minimize paper work procedures and develop "blanket order" placement to obtain maximum economic advantages.

3. Screen and assign requisitions for purchase in accordance with complexity or procurement and specialized technical abilities required; undertake the procurement of items requiring a high degree of buying knowledge and extensive co-ordination with buying personnel.

4. Subject to instructions by management; purchase items requiring negotiation of non-standard terms and conditions; purchase items requiring revision of purchase requisitions to take advantage of quantity or delivery discounts; determine selection of vendor when price and delivery variants demand wide experience or management co-ordination for their determination; expedite manufacture or delivery of items within assigned commodity group in situations critical to production.

APPENDIX B

5. Assure that advantages of competitive bidding are realized by issuing bid invitations to potential vendors; select vendor after review of such factors as price, quality, quantities, past delivery performance, discounts, conformance to specifications and purchasing policies.

6. Review vendor items rejected by Receiving Inspection and/or Factory Engineering; when required and possible assign responsibility to vendor or company for rework or scrap charges; negotiate such charges with vendor; cancellation of purchase orders or contracts with vendors and arrange for return of rejected materials to vendors.

7. Arrange for interviews and contracts and participate in conferences between vendors and engineering, tooling and production personnel.

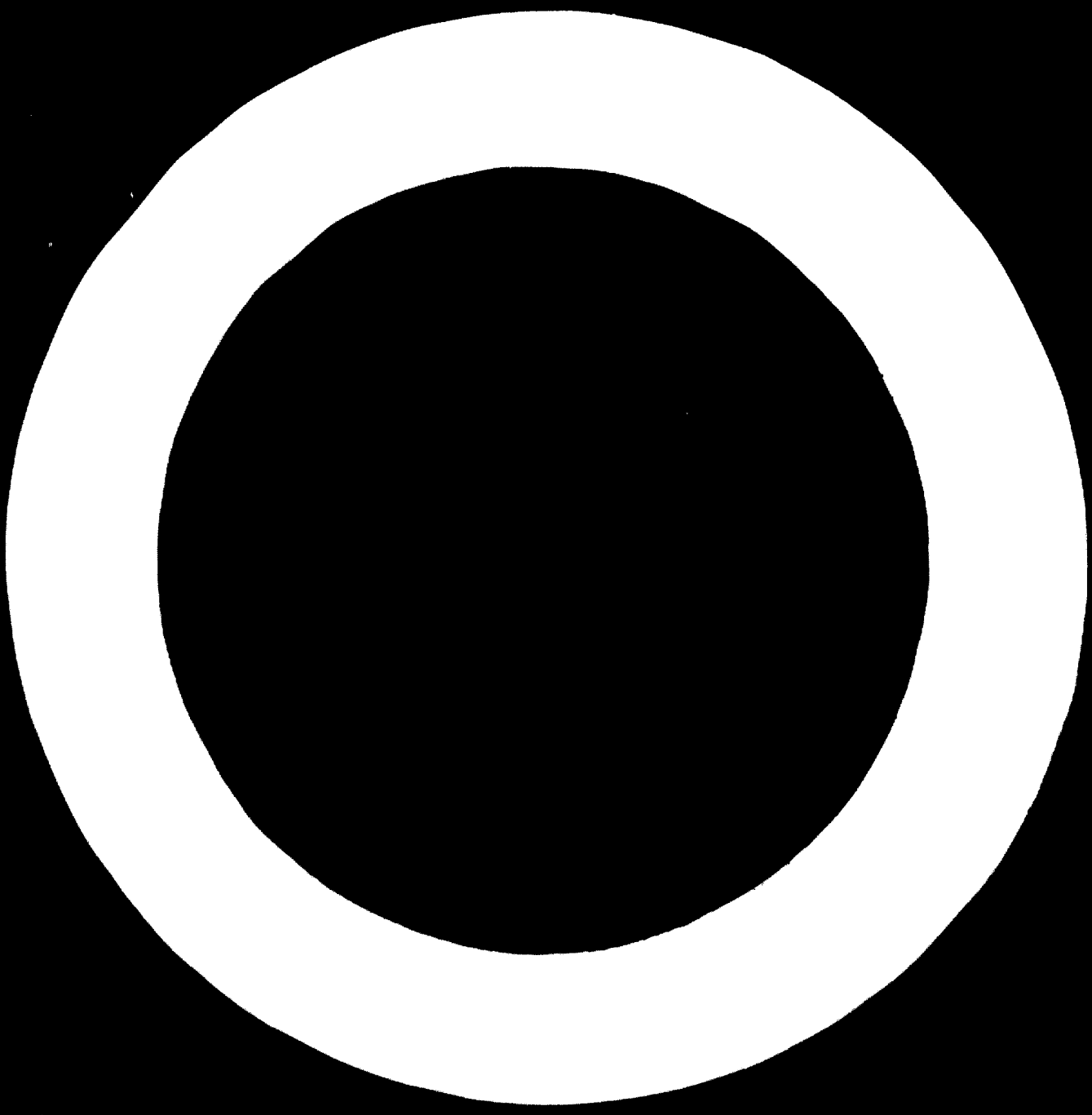
8. Train subordinate personnel in the methods of performing the purchasing function for the purpose of promoting organizational depth within the Purchasing Department.

9. Prepare statistical information for Commodity Group Buying efforts and submit to Purchasing Agent for evaluation and ultimate use in "Reports to Management".

10. He will endeavor to promote positive thinking and leadership through personal contact with his subordinates and associates. Also encourage a high degree of extra effort which will assure success for the individual and ultimate gain for the Company.

APPENDIX D

Table of Contents as presented on the cover page of a 30 page set of Standard Terms and Conditions being applied by a major industrial company in purchasing.



APPENDIX E

LIST OF SELECTED TRADE DIRECTORIES

Bottin International (Paris) - An international register, covering 1000 kinds of trade and business, and including names, addresses, and products of 250,000 manufacturers.

Europa Year Book (London) - A world survey and directory of all countries and principal international organizations.

International Directory of Fairs and Exhibitions (Athens) - Details of 1900 events scheduled to take place in 31 countries during the coming year.

Marconi's International Register - Alphabetical list of registered firms of the world having international contacts.

Reference Book for World Traders (Queens Village, N.Y., U.S.A.) - Looseleaf service with monthly amendments. Lists foreign trade information sources, market research organizations, advertising agencies, banks, customs brokers, freight forwarders, etc.

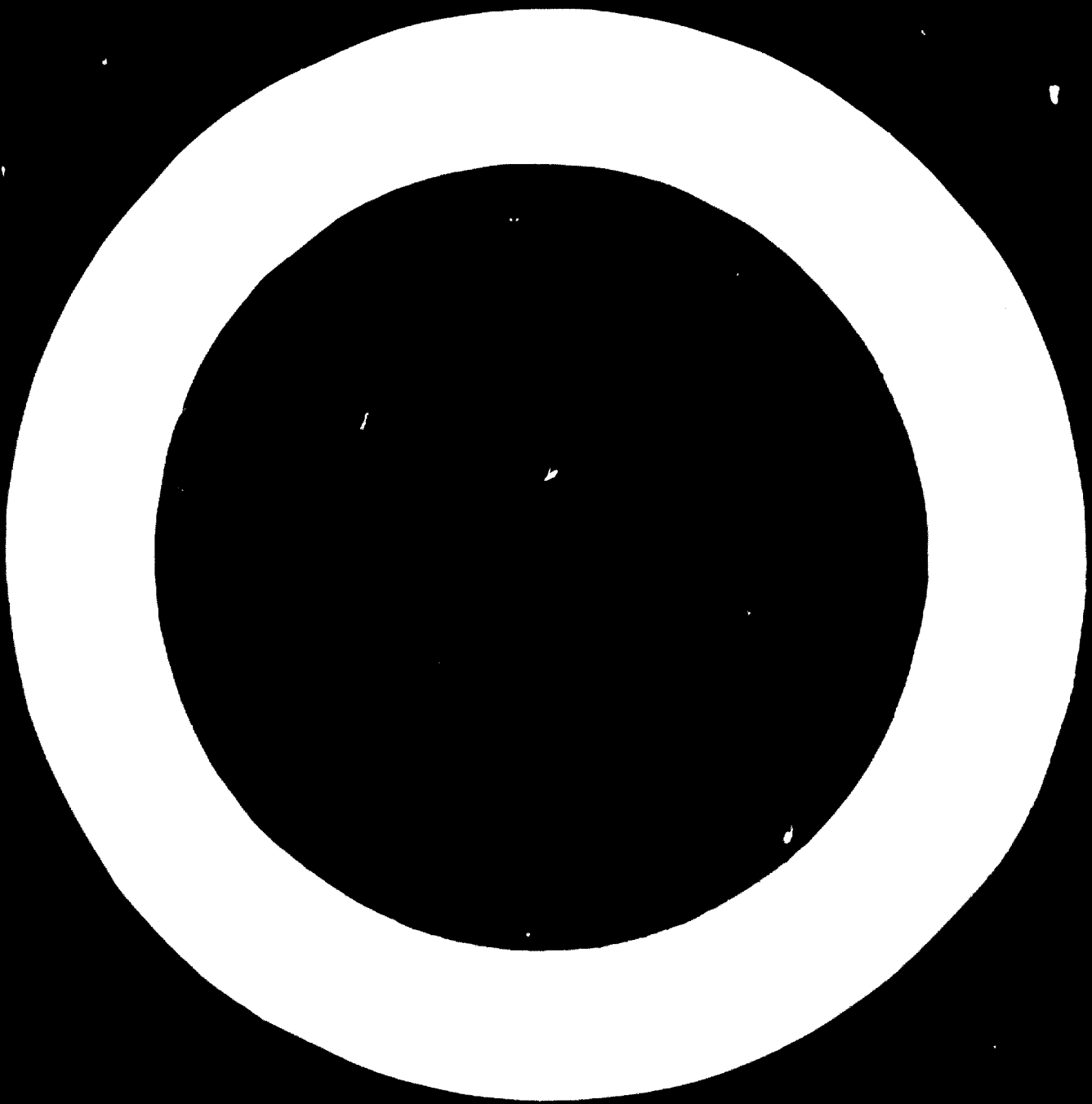
Swedish Export Directory (Stockholm)

Thomas's Register of American Manufacturers (New York)

Trade Directories of the World (Published by Croner Publications, Queens Village, N.Y.) Complete details on manufacturers' and suppliers' lists from all countries.

Overseas Directories (Publishing and Distributing Co., London) - Complete listing of trade directories of many countries.

Sweets Manufacturing Engineering Catalog File (New York) - Bound collection of manufacturers' product catalogs, assembled and indexed by product categories - including machine tools, accessories, attachments, tooling, cutting tools, heating, welding, etc.



APPENDIX F

TYPICAL TRAINING COURSE OUTLINE FOR SUPPLY MANAGEMENT PERSONNEL

I. Introduction

1. Responsibilities and objectives of supply management

   a. Procurement
   b. Supplier development
   c. Cost reduction
   d. Analysis
   e. Scrap and surplus disposal
   f. Staff advice and assistance
   g. Integration of procurement with other departments

2. Supply management organization

3. The procurement cycle

   a. Receipt of requisition
   b. Inquiries and quotations
   c. Placing the order
   d. Preparation of the purchase order
   e. Distribution of the purchase order
   f. Filing
   g. Expediting or follow-up

II. Policies and Procedures in detail

1. The requisition

   a. Definition of requirements
   b. Origin
   c. Authorization
   d. Types

2. The purchase order

   a. Essential information
   b. Financial commitment
   c. Conditions and terms of sale and purchase
   d. Acknowledgments

3. Selection of sources

   a. Single sources
   b. Competitive bidding
   c. Local sources
   d. Type of suppliers (distributor or manufacturer)

4. Analysis of supplier

   a. Reliability
   b. Ability to meet specifications and quality requirements

c. Service
d. Price

5. Analysis of quality

a. Standards and specifications
b. Samples and tests

6. Analysis of service

a. Sales service
b. Delivery
c. Product service and warranties

7. Price determination

a. Inquiries and quotations
b. Published price data
c. Negotiations
d. Unpriced orders

8. Factors affecting price

a. Industry prices
b. Discounts
c. Terms of payment
d. Shipping points
e. Cancellation charges

9. References

a. Catalogs
b. Directories
c. Trade Journals

10. Relations with suppliers

a. Interviewing
b. Ethics

11. Duplicating and filing

12. Helps for the buyer

a. Buyer's cards
b. Commodity files

c. Coding and statistics
d. Supplier address book

13. Service contracts

14. Construction contracts

a. Special forms
b. Essential information
c. Special clauses
d. Insurance
e. Bonds and liens

15. Sale of scrap and surplus material

a. Methods of disposition
b. Invitations to bid
c. Selections of dealers

16. Expediting or Follow-up

a. Purpose
b. Total or selective follow-up
c. Techniques
d. Follow-up file
e. Relation to other departments (e.g. production)
f. Relation to supplier
g. Outside expediting

17. Stores

a. Material disbursement
b. Record keeping
c. Order points

18. Inventory control

a. Turnover
b. Economic order quantity

19. Receiving and inspection

a. Function of inspection
b. Inspection and rejection
c. Receiving reports

20. Legal insurance

a. Purchase order as a contract
b. Warranties

c. Indemnity and insurance
d. Penalty clauses
e. Patents and licenses

21. Transportation

a. Rate analysis

22. Types of products and materials bought

(Sub-contracting, machinery and equipment, steel, motors and turbines, castings, etc.)

APPENDIX G

INTERNATIONAL FEDERATION OF PURCHASING

MEMBERSHIP ROSTER

Officers

Chairman

Mr. Paisley Boney (N.A.P.A.)

President

Mr. H.F. Themoin (C.C.A.A.F.)

Vice-President and Treasurer

Mr. Alan S. Colston (P.O.A.)

Secretary General

Mr. John R. Blinch

Vice-President

Mr. George W. Baker (N.A.P.A.)

Vice-President

Dr. G. Wehling (B.I.E.)

Vice-President

Mr. Nobuo Noda (J.M.M.A.)

Vice-President

Mr. Murray Tyler (A.P.O.A.)

AUSTRALIA (Australian Purchasing Officers' Association)

Senior Delegate: Mr. Murray Tyler
Australian Purchasing Officers' Association
Broughton House
181, Clarence Street
Sydney, N.S.W., Australia

BELGIUM (Association Belge des Chefs d'Approvisionnement)

Senior Delegate: Monsieur M. Landenne
48 Rue Albert de Cuyck
Liege, Belgium

CANADA (Canadian Association of Purchasing Agents)

Senior Delegate: Mr. I. Keith Macdonald
c/o Texaco Exploration Company
P.O. Box 3333
Calgary, Alberta, Canada

FINLAND (Suomen Ostopäällikköiden Yhdistys)

Senior Delegate: Mr. R. Ilvesviita
c/o Rauma-Repola Oy
Snellmaninkatu 13
Helsinki, Finland

FRANCE (Compagnie des Chefs d'Approvisionnement et Acheteurs de France)

Senior Delegate: Monsieur H. Dreyfus
Ingenieur-en-Chef, Service des Approvisionnement
S. N. C. F.
100 Avenue de Suffren
Paris 15, France

FRANCE (Association pour le Perfectionnement des Achats dans les Services Publics)

Senior Delegate: Monsieur J. Bour
President, A.P.A.S.P.
9, Rue Croix-des-petits-Champs
Paris 1, France

GERMANY (Bundesverband Industrieller Einkauf Ev.)

Senior Delegate: Dr. G. Wehling
Bundesverband Industrieller Einkauf Ev.
600 Frankfurt-am-Main/Sud
Waidmannstrasse 25, Germany

GREAT BRITAIN (Institute of Purchasing and Supply)

Senior Delegate: Mr. A.S. Colston
Kodak Ltd.
Wealdstone
Harrow, Middlesex, England

INDIA (National Association of Purchasing Executives)

Senior Delegate: Mr. P.K. Palit
19, Union Park
Pali Hill
Bombay 52, India

ISRAEL (Israel Purchasing Officers Association)

Senior Delegate: Mr. J. Tsur
Israel Purchasing Officers Association
3, Beth Hakerem Street
Jerusalem, Israel

JAPAN (Japan Materials Management Association)

Senior Delegate: Mr. Nobuo Noda
Japan Materials Management Association
Terashima Building
2-1 Hon-cho, Nihonbashi, Chuo-ku
Tokyo, Japan

NEW ZEALAND (Purchasing Officers Association)

Senior Delegate: Mr. R. McSporran
33 Wilkinson Road
Ellerslie
Auckland, New Zealand

THE NETHERLANDS (Nederlandse Vereniging voor Inkoop-Efficiency)

Senior Delegate: Mr. C. Jobse
Troelstralaan 37 II
Utrecht, Holland

NORWAY (Norsk Innkjøpslederforbund)

Senior Delegate: Mr. K. Stavnsborg
Aktieselskapet Union
Postboks 409
Oslo, Norway

SWEDEN (Svenska Inkopsledares Forening)

Senior Delegate: Mr. G.I. Bergqvist
Valhallagatan 18
Vasteras, Sweden

SWITZERLAND (Union Suisse des Acheteurs)

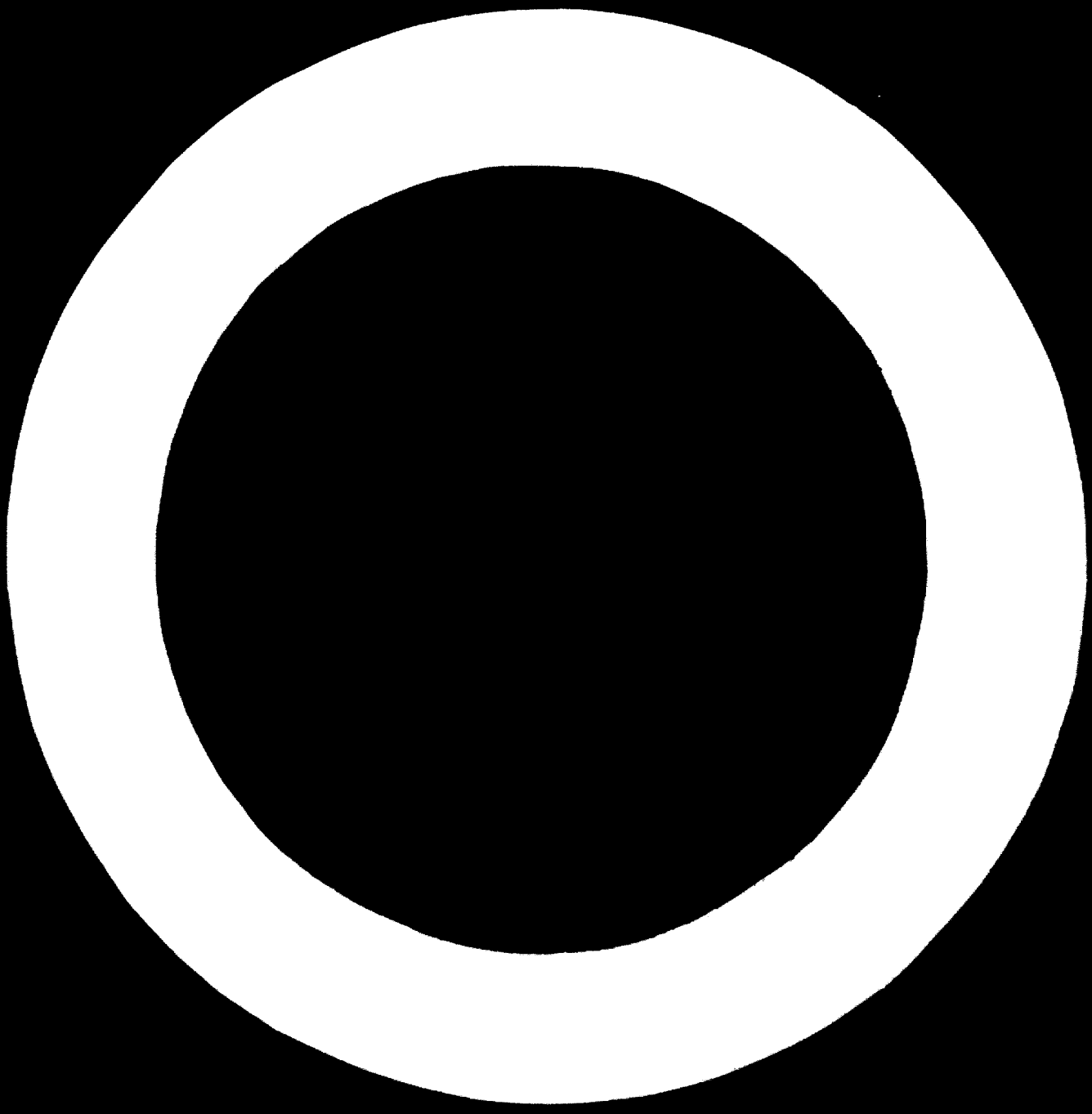
Senior Delegate: Mr. J. Schmid
Union Suisse des Acheteurs
Postfach 545
Schaffhausen, Switzerland

U.S.A. (National Association of Purchasing Agents)

Senior Delegate: Mr. G.W. Baker
The Port of New York Authority
111 Eighth Avenue
New York, New York 10011, U.S.A.

U.S.A. (National Institute of Governmental Purchasing, Inc.)

Senior Delegate: Mr. Albert H. Hall
Executive Vice President
National Institute of Governmental Purchasing, Inc.
1001 Connecticut Avenue, N.W.
Washington, D.C. 20036, U.S.A.



APPENDIX H

MAGAZINES PUBLISHED BY VARIOUS PURCHASING ASSOCIATIONS
(Monthly unless otherwise specified)

Purchasing Journal - Institute of Purchasing and Supply (England)

N.A.P.A. Bulletin (Weekly) and Journal of Purchasing (Quarterly) - USA

Acheteurs - France

Innkjøp - Norway

Shizai-Kanri - Japan

Inköp - Sweden

Inkoop - Holland

Canadian Purchaser - Canada

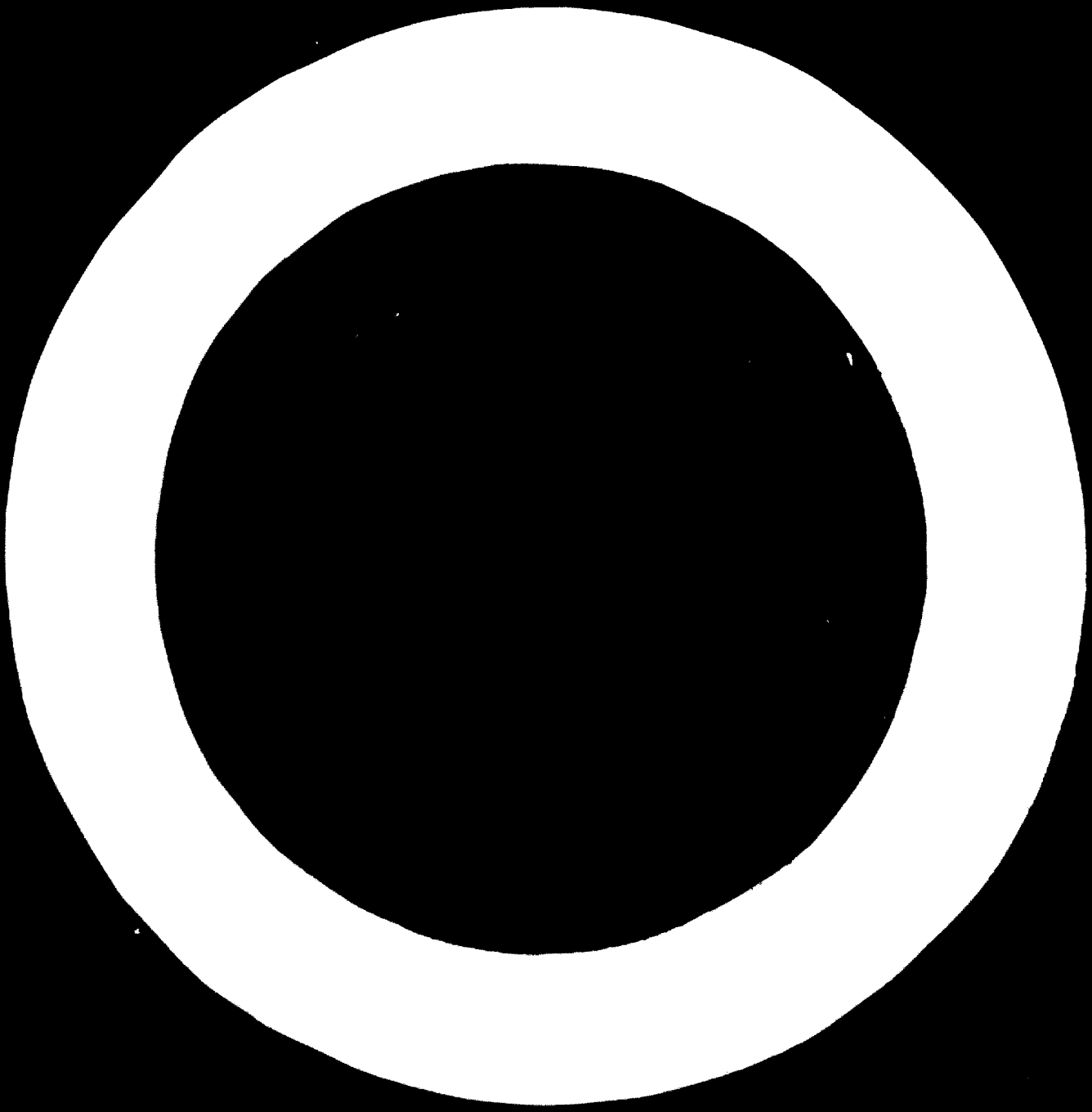
Australian Purchasing - Australia

Materials Management Journal - India

Several independent purchasing magazines are also published. Among them are:

Purchasing Magazine - New York
Purchasing Week - New York
Modern Purchasing - Toronto

The Purchasing Agent's Bookshelf, a listing and complete description of 116 educational aids, including books, pamphlets, and records, is published by the Niagara Frontier Purchaser, 802 Kenmore Avenue, Buffalo, New York 14216, USA, at $1.50 a copy.



APPENDIX I

LEADING TEXTBOOKS ON SUPPLY MANAGEMENT AND RELATED SUBJECTS

Aljian, G.W. - Purchasing Handbook (McGraw-Hill)

Ammer, Dean S. - Materials Management (Irwin) (also available in French)

England, W.B. - Procurement: Principles and Cases (Irwin)

Heinritz, S.F., and Farrell, P.V. - Purchasing, Principles and Applications (Prentice-Hall) (also available in French and Spanish)

Ritterskamp, Abbott, and Ahrens - Purchasing for Educational Institutions (Columbia University)

Westing, J.H., and Fine, I.V. - Industrial purchasing (Wiley)

Lee and Doebler - Purchasing and Materials Management (McGraw-Hill)

Books published under auspices of Institute of Purchasing and Supply (formerly Purchasing Officers Association), London:

Practical Purchasing Problems in Large Development Schemes - A.L. Beard

Purchasing for Stock - Peter Baily

Operations Research Applied to Purchasing and Stores Problems - R.W. Bevans

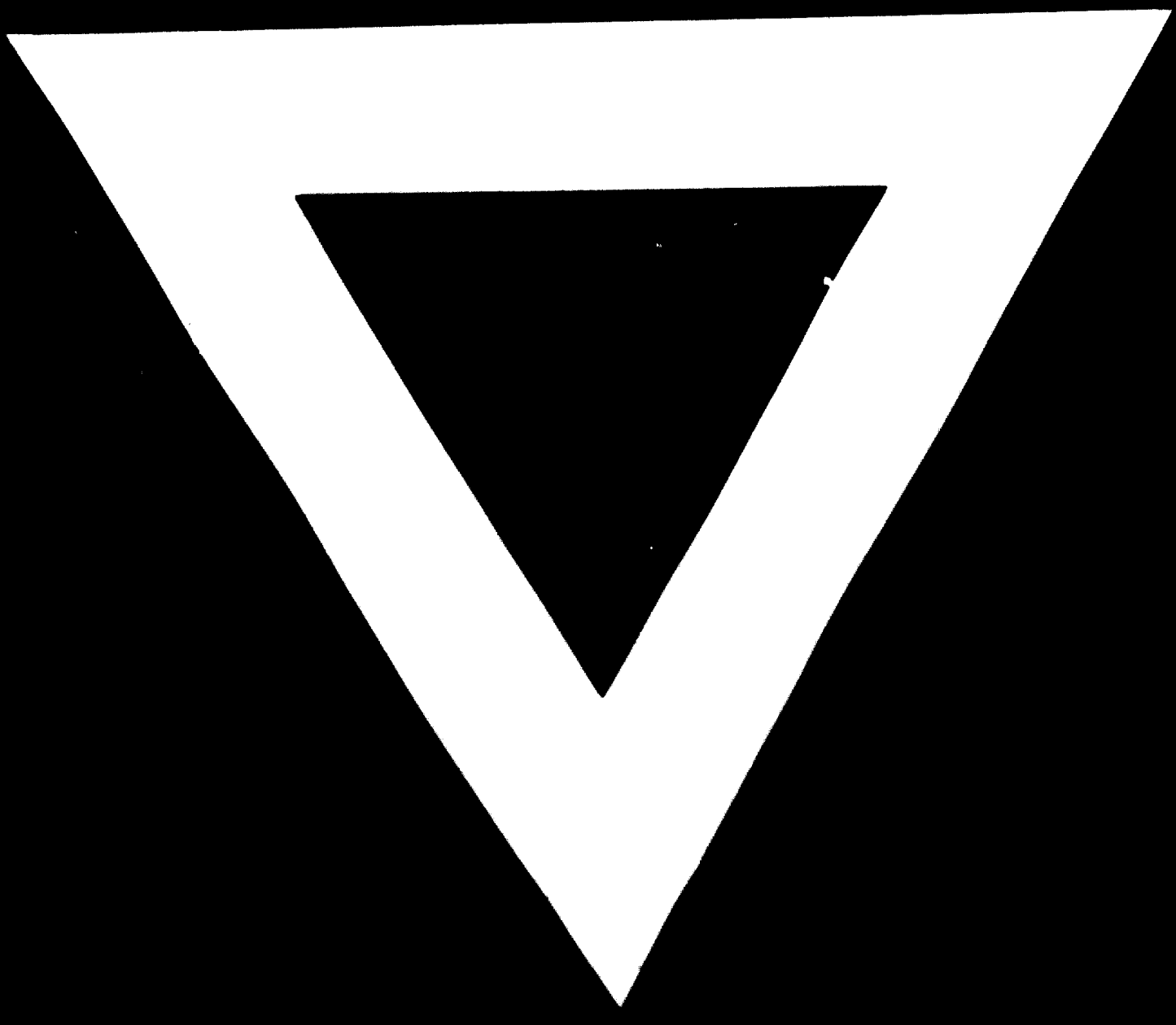
Purchasing in Industry and Public Undertakings - Kay

Purchasing and Supply Management - P.J.H. Baily

Storage and Control of Stock - A. Morrison

Glossary of Purchasing of Supplies Management Terms - H.K. Compton

Rump-Degelman - Handbuch der Einkaufsleitung (Munich)



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