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AFTER-SALE SERVICE 1/

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1/ The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been translated from an unofficially edited text.

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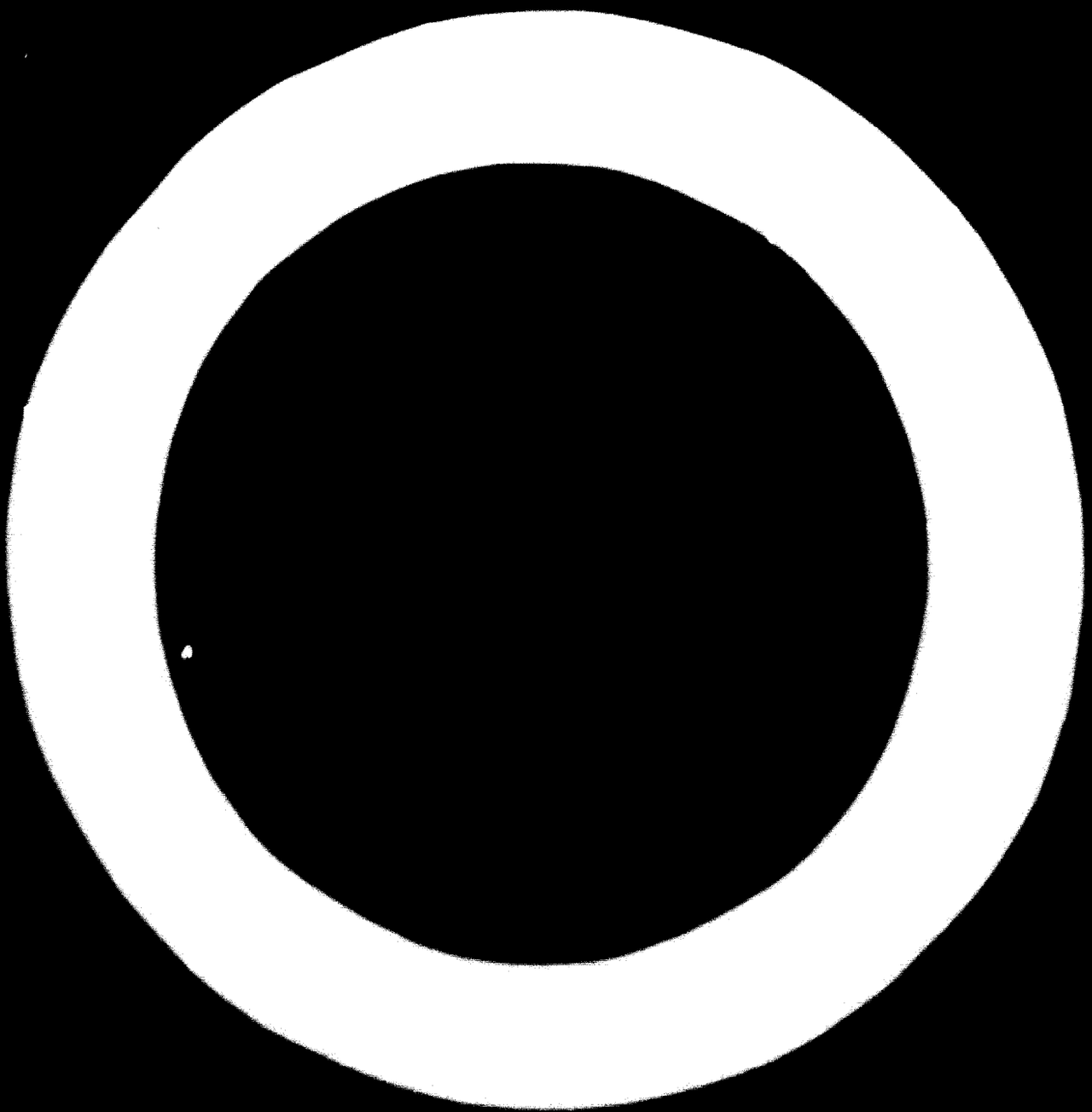


DEFINITION

The term "after-sale service" is self-defining, and clearly locates - chronologically speaking - the action and activities it refers to with respect to the other more important services of the enterprise such as manufacturing, production and even sales.

JUSTIFICATION AND GOALS

The complexity of machine tools, which is constantly increasing owing primarily to the tremendous development and ineluctable ascendancy of automation, increasingly makes necessary a great deal of maintenance service activity, and above all a reservoir of skills which enterprises now owe it to themselves to possess or acquire.

Considering the substantial and sometimes very high cost of some machines and, consequently, their hourly operating cost, it is perfectly understandable that there should be a concern for and an endeavour to achieve maximum operating time, something which cannot be done or even envisaged without a strict - let us say even jealous - limitation of unproductive time for work on equipment or its repair or conversion.

It is very obvious that the manufacturer of the machine is really in the best position to assume this obligation entirely or at least to assist as much as possible in it, on the one hand owing to his full knowledge of the equipment involved, being its "father" and, on the other to the fact that he may have in his possession any part, component or accessory indispensable for making a repair or meeting a request for additional equipment. We might even add that, in a case where the part is not available owing, for example, to the obsoleteness of the machine, it is of course from the manufacturer that the user should still be able to obtain the technical information required to repair his machine or put it back into operating condition.

Although the law does not compel the manufacturer, after the guarantee period has passed, to have or supply spare parts, but only to keep the technical specifications of those parts in his files for a period of ten years, it is a fact - perhaps of recent date, but now widespread - that the major machine tool manufacturers have become aware of this moral obligation in connexion with after-sale service.

It might be said that the machine manufacturers, learning from their own experience, have very quickly become aware of the many practical difficulties with which their customers and users were coming face to face when confronted with the newness and multiplicity of techniques used in the automation of machine tools and also to the inadequateness or absence of really qualified maintenance workers. How could they fail to see that, whatever the nature of the technical branch concerned - electrical, pneumatic, hydraulic, electronic, etc., - it no longer fell within the sphere of a single mechanic, whose competence had, however, sufficed up to that time to maintain production equipment which was often even highly sophisticated, but always based on traditional mechanics.

Thus there appeared, first in the planning offices of the manufacturers, next in their demonstration services, and finally in their after-sales services, a new type of technician trained in the new and manifold disciplines of automation. It is so true that, with regard to machine tools, it is no longer possible to dissociate the components, dealing with them separately, in order to be able to judge their individual operation.

EXAMPLE OF THE ESTABLISHMENT OF AN AFTER-SALE SERVICE

In order to convey a better understanding of the organization and operation of an after-sale service, we thought it advisable to refer to a particularly successful example of nearly ten years' standing in the European machine tool industry.

H. BERNARD SOMUA (HBS) company

HBS, a French company, and the leading European manufacturer of machine tools, is in its present form the result of the merger in 1962 under the sponsorship of the Schneider group of several enterprises which were more or less exclusively machine tool manufacturers with a century of experience behind them.

HBS has eight industrial establishments located at Velizy near Paris, Cholet (Maine et Loire), Lisieux (Calvados), Montceau (Cote d'Or), Moulins (Allier), Saint-Denis near Paris, Saint-Etienne (Loire) and Nehun sur Yevre (Cher). They have a total roofed area of more than 100,000 m^2 and employ nearly 4,000 persons. In its seven factories, HBS manufacture a remarkably varied range of machine tools operating by stock removal. These are either conventional or automatic mass-produced machines or special large-size machines.

For several years, the company's annual production has exceeded 3,000 machines. In 1971, for example, it produced 3,361 machines and had a turnover, before taxes, of 246 million francs.

These results make HES the most important European enterprise in its field and place it in the front ranks of this branch of industry throughout the world.

Establishment of the HES after-sale service

When it was set up in 1962, HES had no centralized after-sale service. At the request of the commercial service, which was the only body with customer contact, each plant was made responsible in its own speciality for manufacturing, supplying and delivering spare parts, both for machinery being manufactured and for old models of machinery no longer being produced.

With this system, it is easy to imagine, first of all the extremely long periods of time required to fill orders owing primarily to a deluge of orders transmitted to the factories, and then the incredible complexity of accounting operations for invoicing or charging depending on the age of the machine, for which the information had to be sent from the plant to the commercial service, and lastly the inconvenience and many disturbances in the factories, which were poorly organized to take care of retail consignments and above all were reluctant to undertake, among other things, to resume manufacture of very small runs of spare parts for obsolete models of machinery.

In view of the operation which left so much to be desired and was in addition running a deficit, and also alerted by many complaints, which greatly threatened to prejudice the growing reputation of the new company and, lastly, desiring to free the factories of all constraints so as to ask them to take a full part in the company's expansion drive, the General Directorate at the time decided to establish an entirely autonomous after-sale service placed, however, under the direct supervision of the commercial management and accommodated entirely in its establishment at Saint-Denis, the current manufactures of which were then distributed among the other factories.

Establishment and installation of the first after-sale service

Under the impetus created by a Directorate which was particularly active and sensitive to customer needs, the service was quickly established by a broad consolidation in the Saint-Denis establishment of all the manpower and equipment which had hitherto been scattered in both the commercial service and the factories.

Pending the establishment of files, which will be discussed further on, but which were started at the very outset, it was at first necessary to rely entirely on technical personnel clearly specialized by type of equipment and by that very fact able quickly and competently to identify requests concerning a given type of machine, which often even dated back several years.

The same was true for all the other storage, shipping and billing operations, which were gradually built up by an experienced personnel, which was unfortunately too small at the beginning and, above all, did not have adequate facilities suited to these activities.

Once this starting up period was past, each section was able to reinforce its personnel and equip itself, at first with rudimentary facilities, then with more sophisticated ones, eventually - but only after four years of operation - achieving total mechanization of identification, stock management, shipping and invoicing operations.

This having been said, there is none the less one point which deserves special mention, and it is the surprising spirit of great efficiency with which this remarkable undertaking was able to establish itself and develop, which could be summed up by this motto - or rather command: "Give fast service".

It is hard to imagine the imbalance which had to be accepted at the beginning between the real cost of supplying a given part and the invoice price. But although the service ran a deficit during the very first months, the experiment was none the less continued, and improvements made, to the point of quickly achieving the first financial equilibrium at the end of the first year.

In fact, it was by keeping the double concept of service and promptness always in the mind of each of the employees in the undertaking that it was possible to achieve this result.

THE HES AFTER-SALE SERVICE

As has just been explained, the HES after-sale service was planned, organized and set up in its present form to respond quickly to requests from users of the firm's machine tools by supplying accessories and spare parts, getting new machines into operation, carrying out demonstrations and repairs, giving advice and, possibly, rebuilding used machinery.

Organization

This service, which was established in [illegible] as a non-profit making body, has converted into a directorate, now has complete autonomous management. It is composed of two main elements, namely the spare parts and accessories division and the repair service. It also rebuilds machine tools.

At its Saint-Denis establishment, it has a showroom and a small workshop for urgent repairs.

It directs and manages a large annex at Lyons, which is a major regional centre of industrial activity.

The Saint-Denis establishment has 180 employees and covers an area of 3,500 m^2.

Spare parts and accessories division

The stock of spare parts embraces around 60,000 types of parts for machine tools which may have been manufactured as much as 30 or sometimes even 40 years ago. There is no cut-off date of manufacture, supply is normally provided for when two or three parts are ordered in the course of a year.

The spare parts are also supplied by machine sub-assembly, assembly or unit.

They are supplied by the company's factories specializing in the manufacture of certain types of machinery.

The parts for old machinery are produced mainly by the firm's factories and, when necessary, by sub-contractors. In the latter case, they are subjected to testing when received.

When a machine comes off the production line, the specialized factory producing it sends the following to the Saint-Denis establishment:

- The descriptive card, showing its number in the batch, the list of accessories, etc.; this card might be thought of as the machine's identity card;
- A list of all the parts of the machine;
- The general plans;
- The detailed plans.

This substantial documentation is kept in the form of micro-fiches - more than 200,000 - which can be pulled, for example, for the forms of orders to sub-contractors.

The stock includes not only spare parts of the company's own trade mark, but also all components supplied from outside, such as couplings, motors, electrical fittings, etc.

The spare parts division consists entirely of technical officers, all specialized according to type of equipment, and stock management which is supervised as regards both value and quantity by the technical officers, but is strictly separated from the shipping service.

As regards accessories, the factory manufacturing a machine supplies the accessories ordered with the machine to the user. The Saint-Denis establishment, for its part, has a large stock of supplementary accessories selected, tested and guaranteed by the firm which can be delivered as quickly as the spare parts.

Lastly, the accessories section has a light van for demonstrations to introduce the tested accessories to industrialists and technical training establishments.

Delivery of parts

The service is organized with a view to reducing delivery times in every instance. There are two sections, the Metropolitan Section for users in metropolitan France and the Export Section for users abroad.

Metropolitan Section

The means of delivery are different depending on whether the user is in the Paris area or in the provinces.

In the Paris area, customers can either come and pick up the parts at the sales counter of the Saint-Denis establishment (average supply time: 1½ minutes), or have the parts delivered free of charge to their address (maximum supply time: 24 hours).

For the provinces, shipments are made every evening by express service at railway stations and airports by delivery vans belonging to the service.

In addition, at Lyons there is a large annex of the Saint-Denis establishment providing in particular after-sale service for the Rhône-Alps Saint-Etienne area, which has a stock of parts.

Lastly, some of the firm's agents in metropolitan France keep a limited stock of parts.

The average period elapsing between receipt of the order and shipment of the parts is always short; for spare parts, for example, in the last four years, this average time has not exceeded 12 hours in 75 per cent of all cases and 24 hours in 85 per cent of all cases.

Export Section

The Export Section handles a fairly large volume of shipments. The average time elapsing between receipt of the order and shipping to a foreign country is approximately the same as for metropolitan France.

In addition, some representatives of the company, for example in the Federal Republic of Germany, Belgium, the Netherlands, Denmark, Great Britain, Spain and the United States, have stocks of parts.

In contrast to the annex at Lyons, these stocks are managed autonomously and are replenished from the Saint-Denis establishment.

At present, the Metropolitan and Export Sections make approximately 35,000 shipments a year.

Supervisory planning of delivery times

Apart from the orders which are immediately filled at the delivery counter, all orders are the object of planning, which takes place in a special room, where technicians specializing in given groups of equipment work.

Mechanic Service

The Mechanic Service comprises a Demonstrator-Mechanic Section and an After-Sale Inspector Section.

The demonstrators are responsible for the installation of equipment, demonstrations and the end-of guarantee examinations which take place after four to six months. The mechanics are responsible for the breakdown service.

The inspectors study difficulties arising in getting the equipment operating or during utilization and supervise the work of the demonstrators and mechanics.

The demonstrators, mechanics and after-sale inspectors are all specialized.

The missions of the demonstrators and mechanics, of whom there are 57, are coordinated and planned by the Saint-Denis service, which follows them at a distance and dispatches them in accordance with needs. The demonstrators and mechanics usually have a car equipped with a set of spare parts for repairs and tools. On an average, calls are answered in no more than 24 hours.

Furthermore, demonstrators and mechanics are permanently stationed at some of the firm's agencies, such as those at Lille, Nancy, Strasbourg, Agen, Toulouse, Lyons and Saint-Etienne, and also at some agencies abroad, such as at Frankfurt, Brussels, Amsterdam, Copenhagen, the United States, etc.

The jobs done by the mechanics are entered on the descriptive card for the machine tool concerned.

Their mission reports are thoroughly examined by the inspectors and then transmitted to the Technical Directorate, the Directorate of the factory which produced the machine, the Commercial Service and the regional agent.

[illegible] specialist [illegible]

Lastly, the demonstrators and mechanics undergo refresher training, which is also planned by the Saint-Denis service.

It should be pointed out that the Lyons annex of the Saint-Denis establishment has a Mechanic Service in addition to its Spare Parts and Accessories Service.

Showroom and repair shop

The Saint-Denis establishment also has a room for demonstrating some models of machine tools made by the firm such as lathes, millers, grinding machines, etc., and a small repair shop for doing urgent work for users so that they need not send equipment to the factory which manufactured the machine concerned.

Rebuilding of machine tools

The rebuilding of machine tools bearing the firm's trade mark can be carried out in two ways:

- Either by a rigorous overhauling;
- or by a complete renewal accompanied by some modernization of details, with a guarantee.

This work can be carried out in the factories producing the relevant machines, but is usually performed by the Saint-Etienne factory.

The Saint-Denis establishment receives the orders from users and takes charge of administrative matters. It supplies the spare parts to the factory carrying out the rebuilding and has the work followed by one of its after-sale inspectors.

Thanks to the systematic utilization of part and mass production of the machine tools, it is possible to quote the customer minimum and maximum prices for rebuilding in advance.

OPERATION OF THE SPARE PARTS SERVICE

Having examined the structure of the after-sale service and discussed the respective functions of each of its sections, we shall now study the operation of the service in order to gain a better understanding of the [illegible] for its efficiency.

The attached chart shows both the [illegible] relating to delivery and also the return of [illegible]

Receipt

When an order has been received, a photocopy is immediately made for the Secretariat so that it can be registered, then the original is sent directly and without delay to the technical officer specialising in the type of equipment concerned.

Identification

The technical officer first checks the "part" card, if available. Then referring to his "price" file, he pulls the punch card relating to the part concerned and then affixes a reference to the officer or commercial sector concerned to the order before transmitting these documents to the data service.

Data service

When the data service has received the annotated order and the "price" punch card, it pulls the relevant punch card from its customer file. This card shows, in coded form, the following:

- Exact name and address of the customer;
- Means and place of shipment;
- Individual terms of payment.

With the machines thus programmed, the operator then prepares, partly automatically and partly manually, in several copies the documents required for the information of all the sections concerned, and in particular:

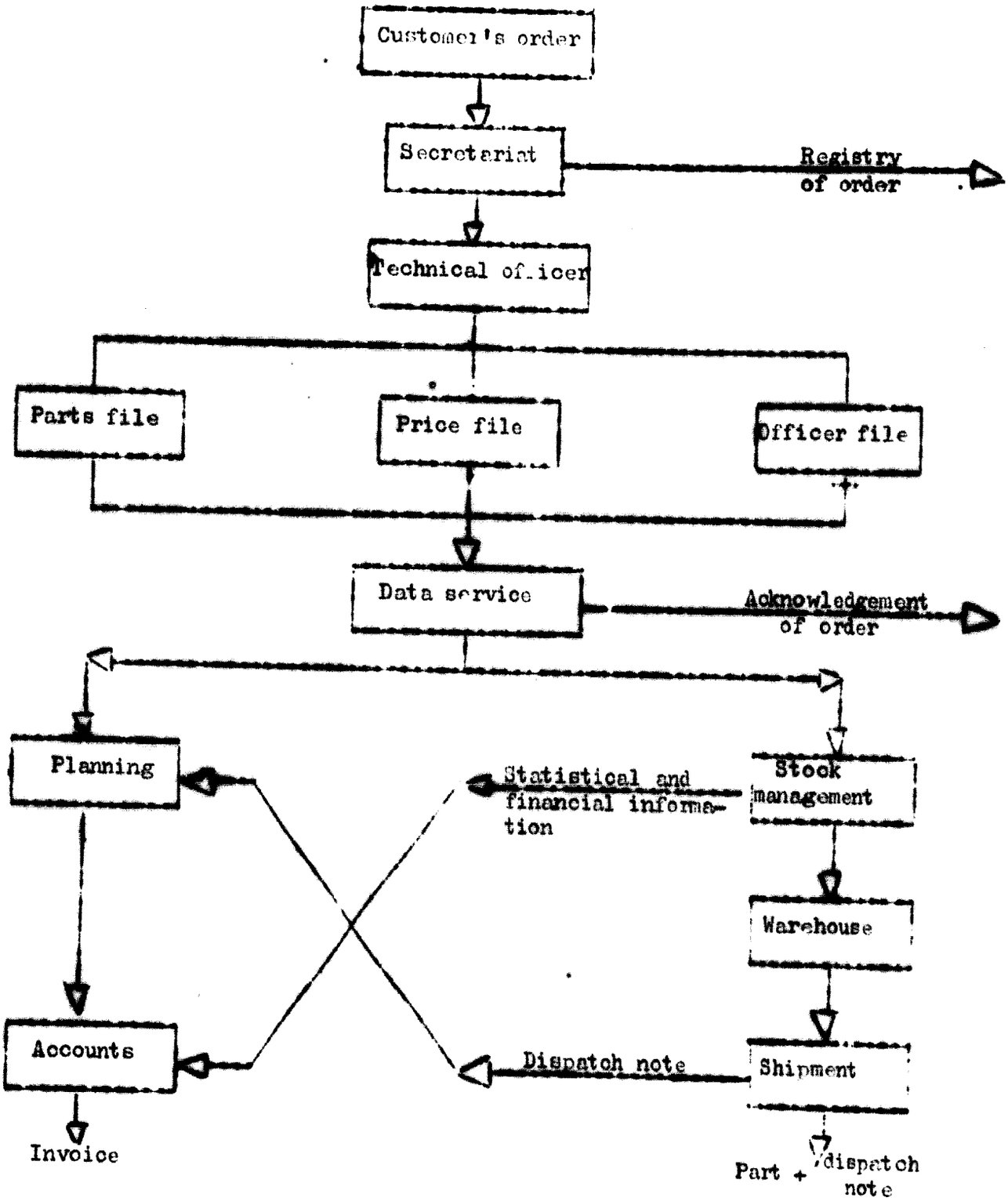
- A "stock management" withdrawal document;
- The dispatch note;
- The document required for dispatch;
- The acknowledgement of the order;
- The invoice;
- A charge in account document.

The acknowledgement of the order is sent off immediately to the customer and all the copies of the other documents divided up to pass through two different channels.

Filling of the order

The first channel for filling the order passes successively through stock management, the warehouse, packing and shipment. The second, shorter, channel comprises planning, the role of which is to supervise the way the first channel operates, and accounts.

OPERATION OF THE SPARE PARTS SERVICE



It should, however, be noted that movement through the second channel can only start after planning has received a copy of the dispatch note identical to the one attached to the separate parcel.

Thus, planning, informed of the shipment in question, closes its supervision file and in turn informs accounts so that they can make the invoice official, then send it, bringing the customer's account up to date.

Supervision of stock management

Apart from the filling of the order, as described above, there is an important point which should be mentioned, and that is the information transmitted directly by stock management to accounts for each of the actions taken. This information transmitted to accounts includes both the production price of the part or accessory in question and a stock record, so that it is always possible for accounts to know at any given moment the exact value and size of the stock in the warehouse.

OPERATION OF THE MECHANIC SERVICE

By the very nature of its activities, the Mechanic Service, as described above, operates independently, linked with the Spare Parts Service only by the fact that it is a special customer of the latter.

In this connexion, for any parts requirement, the Mechanic Service manually prepares an order note addressed to the Spare Parts Service showing the following:

- The name and address of the customer;
- The mission number;
- A list of the parts required with their numbers.

This document is transmitted to the date service in the same way as an order from a customer, and will be dealt with in exactly the same way, with the part or unit required for the mechanic's job being handed over immediately or shipped to him.

The cost of the actual repair work (mechanic and travel) is calculated by the Mechanic Service with reference to the time sheet prepared by the mechanics in the customer's premises after finishing his job; this document is checked and certified correct by the customer.

When he knows all the expense factors involved in the job, namely the cost of parts supplied, salary of the mechanic and cost of travel, the chief of the Mechanic Service examines the amount and itemization of charges to be made both to the customer and to the company, in the light of the age of the machine (guarantee period) or the nature of commercial relations with the customer.

The result is then transmitted to the data service so that it can directly inform accounts of the type of invoicing decided on and, in particular, whether or not the customer has taken delivery of the parts supplied and also of the amount of expenditure entailed by the mechanic's travel and work.

Lastly, we should add that the Mechanic Service has and uses a complete identification and description file for all the machines produced by the company. This file contains details concerning the date and nature of every job done during the life of the machine.

There is no doubt that these arrangements provide both the technical service and the commercial service of the company with an excellent instrument of information.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