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Organizing for Inventory *

By ROBERT IGLAUER

My first reaction to a request for a paper on inventories was concern lest the subject might be too commonplace to arouse general interest. But on further reflection it became evident to me that the theme deserves attention, although my attempt must necessarily be confined to a discussion of a few of the major problems of this vast subject. It is particularly the purpose of this paper to supply fuel for a free interchange of opinions on some of the more interesting phases of inventory tasks with which the corporation accountant and the outside auditor are confronted.

I might have discussed the retail method of inventories in department stores versus the cost method. A great deal of literature is available on this subject and congresses have been held to consider it. Or I might discuss the problems of inventory procedure and valuation principles in other specialized lines of business. But I decided to select a topic that will be of wide interest, so I shall first consider the organization of inventory activities that may be termed to apply to non-specialized lines of industrial enterprise.

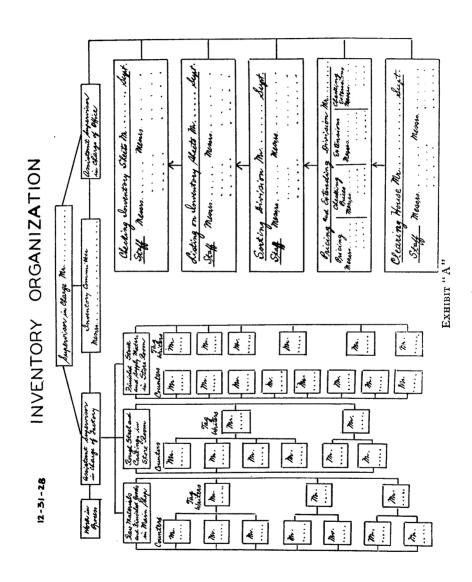
Inventory time usually comes once a year, and to the uninitiated this is a time of plant shut-down, counting the stock in the storeroom, repair of machinery and catching up on clerical work that is behind schedule during this period of slowed-down activity. To the initiated this inventory period means something different. To them it means that a temporary organization must be whipped into shape, instructions issued, plans, preparations and rules formulated and a supervisory control exercised in the taking of the inventory. All these labors carry with them much criticism and no reward. Because of this fact, inventory tasks are greatly neglected in many instances. The work is often looked upon by the management as just so much lost motion and just so much extra expense. It is hard to arouse enthusiasm and the outcome often is that the result falls far short of what the inventory is always intended to accomplish and what it could be made to accomplish if the right kind of effort and intelligence were put behind it.

 $^{^*}$ Address delivered before the Maryland Association of Certified Public Accountants, January 9, 1929.

To begin with, the inventory work is too often not planned at When it is planned it is often planned far too late. supervision is left to subordinates, the temporary organization which must do the work is given perhaps a day's notice, perhaps only a few hours' notice, to the effect that they have been drafted for inventory duties, and all enthusiasm is lacking. In fact, there is often great reluctance and resentment and certainly no feeling of responsibility. People drafted from other departments object to working under a temporary boss and the inventory supervisor often lacks the broad experience and viewpoint that he should possess, for it must be remembered that the inventory is usually one of the largest items among the assets of a balance-sheet. The inventory supervisor ought to be one with a complete knowledge of the company's system and organization as well as of its products. At the same time, he ought to be one who understands the important part the inventory will play not alone in the accounting department but also as a source of valuable information to the purchasing, production and sales departments.

The first essential in planning an inventory procedure is the appointment of an inventory supervisor of the right caliber. and this choice had best be made by the general manager. inventory supervisor should then appoint an inventory advisory committee of which he might or might not be a member, and, depending upon the size and complications of the business, the inventory committee should meet from two weeks to eight weeks in advance of inventory time in order to make plans and prepara-These plans and preparations should be reduced to the form of an inventory manual containing personnel charts, in which the specific assignment of each person drafted for inventory work is clearly indicated. It must also contain explicit rules for performing the various inventory duties. I have prepared a chart (marked exhibit "A", page 194) of an inventory organization in a medium-sized plant, in which the personnel assignments are reflected and the routine to be followed is indicated.

It will be seen that some men are assigned to the physical counting and that there are some tag writers. The tag writers should be of a caliber somewhat higher than the men who count the goods. The tag writers should probably be the foremen of the various departments in the factory, or the storekeepers in a merchandising establishment. Where large quantities have to be counted or where the material has to be shifted for facilitating



count, the tag writer might take care of the work of a number of counters or weighers.

The clearing house is an organization appointed by the inventory committee to receive the tags from the tag writers and to pass them on to the pricing staff. Then there are the people who extend the values, and the tabulating or sorting table where the inventory tags are sorted, and, finally, the division listing the tags on inventory sheets.

12-31-28	INVENTORY	TA6	NO			
	PART NAME		SIZE LENGTH			
	PAINTED GALVANIZED BLACK QUANTITY. UNIT PRICE TOTAL PRICED BY PRICE CHECKED BY EXTENDED BY EXTENSIONS CHECKED BY					
	CLEARING HOUSE O.K.		GINAL COUNT BY			

Ехнівіт "В"

And now, permit me to dwell somewhat on the manner in which the control is exercised and on the routine of procedure. Some twenty or thirty years ago, most inventories were listed on sheets while the goods were being counted and if, through a disarrangement of the stock or because of the peculiarities of a business, the stock of an individual article was scattered, the same items might appear a number of times on the inventory sheets. The rotation of the items appearing on the inventory sheets was anything but logical and to help solve the difficulties elaborate indices had to be prepared, which sometimes served the purpose of finding items sought, but more often did not. We have here, of course, the same arguments in favor of individual tags on each individual lot of merchandise as we have for loose-leaf ledgers.

The chart marked exhibit "B" shows a sample of a very simple inventory tag, and it naturally depends upon the nature of the business whether the inventory tag might be simplified still further or whether it should contain much more information.

The tags are printed in duplicate and numbered serially, the first copy being white and of paper and the second copy being colored and of cardboard. The inventory tags are bound in pads of 25 or 50 with carbon paper attached to each. Then all the pads are listed by their serial numbers on an analysis sheet with the numbers arranged in the vertical column as shown in exhibit 'C" and the names of the employees to whom the pads are issued arranged horizontally.

12-31-28

PAD CHARGE SHEET

Tag No.	J. Black	M. White	F. Green	P. Ellis	H. Norris	
1–24						

Ехнівіт "С"

When the number of employees is too large, the names may be placed opposite the pad numbers. Thereafter strips are prepared as shown in exhibit "D," preferably by using a numbering machine, with the numbers running consecutively up to the last number found on the pads, or they may be bought in any commercial stationery store.

As stated before, when the pads are issued the men to whom they are issued are charged, and when the tags come back to the clearing house the first function of the clearing house is to cross the number of the individual tags off on the numerical strips. In this way the clearing house must at the end of the inventory period have unused tags for all open numbers on the numerical strips and if any are missing they can be traced from the pad charge sheet to the men to whom the respective pad was issued. The principal function of the clearing house, besides this control on the use of tags, is to ensure that each tag shows that the material has been counted and rechecked, that it is properly classified and that the designation is complete so as to enable the pricing

12-31-28	TAG NUMBERS	
1		
2 3		
4 5		
6		
7 8		
9		
11		
12 13		
14 15		

Ехнівіт "D"

division to find the inventory price among their cost records without having to refer the tag back to the shop for correction. rejection for correction is in this way done at the source and much delay is avoided. The clearing house will initial each tag and pass it on to the pricing division continually without waiting for accumulation. The pricing division will insert the price from the cost records and recheck the tag. The tags are then passed on to the extension clerks and they must be rechecked as to extensions. Thereafter the tags are sent to the sorting tables which are prepared in advance of the receipt of these inventory tags. sorting tables might be marked off with chalk or in some other suitable way in accordance with the classifications in which the inventory sheets are intended to be prepared. The tags can not leave the sorting table until after all the inventory tags have been sorted, but since physical counts in the shop and the work of the pricing and extension divisions are carried on concurrently, the work can be handled with the utmost dispatch. After all the tags are classified on the sorting tables they are listed on the inventory sheets by groups as outlined. The listing has to be rechecked and then the extensions are footed and the footings are rechecked. Where the inventory contains a large number of different articles, the "Hollerith" or "Powers" system of punched cards may be employed for sorting and tabulating. Under this method the inventory tags would be designed to fit these devices and experienced operators would punch on the tags the information which had previously been recorded thereon in writing. The sorting machine would then be substituted for the sorting tables, where tags are sorted into the intended groups. From there they would go to the tabulating machines where they are added and the machine would automatically run a report. These reports by groups might then be used for listing the complete inventory on summary sheet by these groups, and the punched tags would have to be carefully kept in indexed drawers for ready reference to support the inventory summary sheet.

Just a few words about the physical preparations that have to be made in the shop before the physical count is actually begun. It is extremely important that work in progress be completed as far as it is possible to do so, to the end that this portion of the inventory, which causes the greatest difficulties as far as both listing and valuing are concerned, be reduced as much as possible. Frequently a large amount of scrap material is accumulated during operations and it is advisable to try to dispose of any such scrap material before the inventory period.

The current and salable stock should be physically separated from obsolete, damaged or otherwise unsalable materials. Any raw-material stock which has been requisitioned out of the storeroom for current work but has not been completely used up should be returned to the raw-material stores, unless it consists of heavy materials that can not be moved without considerable expense.

Finally, merchandise that may be on hand on consignment, that is, belonging to others, should be separated from the merchandise owned and should be specially marked. Such materials must, of course, be excluded from the count. As far as out-of-town inventories are concerned, the company may have goods at branch plants, at branch warehouses, at public warehouses, or on consignment in agents', distributors' or customers' hands. Under a proper accounting control, a listing of all stores out of town can be readily assembled from the book records, and the question then to be determined is which of the stocks must or can be physically verified by the company's own personnel or traveling auditors and which should be confirmed by correspondence with distributors, agents, etc.

It might seem trite for me to speak about the accounting procedure with regard to the cut-off of purchases and sales, but I find that while there is as a rule a thorough understanding of the principle involved, there is usually much time lost in determining the procedure in each case because of a lack of an orderly plan. For this reason, it may be well to rehearse briefly the instructions to the personnel concerned during inventory time with these two subjects.

Dealing first with purchased materials, we may establish the following rules:

(1) Goods received before starting the inventory count, for which purchase invoices from vendors are received dated as of the new business year:

Under a proper business routine the presence in the inventory of goods under this heading is evidenced by receiving tickets on file in the accounting or cost department, dated as of the old year. All such receiving tickets should be priced and extended and the liability should be set up as an account payable, before the close of the business year, as a total figure This entry can be reversed on the first day of the new business year and the individual invoices, as received, can be entered in the accounts-payable register or purchase record.

(2) Goods received during the inventory count for which purchase invoices from vendors are received dated as of the old business year:

If facilities at the receiving door permit, the latter should be locked against incoming goods during inventory count and the receiving ticket should be dated as of the new business year. Purchase invoices received, however, should be entered on the purchase records and charged to goods-intransit account.

If facilities for storing outside of the receiving door are inadequate, the receiving clerk should be supplied with inventory tags and it would be his duty to prepare tags for all goods received. Great care must be exercised to see that the colored copies of the inventory tags remain attached to the goods when the latter are moved to the storeroom.

(3) Goods received during the inventory count for which purchase invoices from vendors are received dated as of the new business year:

If the conditions of the receiving department permit, such goods should be excluded. No problem would be encountered in the office since the vendor's invoice will naturally be entered during the new business year.

Where it is necessary to admit such goods, however, the receiving clerk should prepare receiving tickets dated as of the new business year and copies of these receiving tickets must be attached to the goods with a prominently visible notation on them. "Not to be inventoried."

(4) Goods received in the new business year for which purchase invoices from vendors have been received during the old business year:

All invoices from vendors dated as of the old business year, but the goods for which have not arrived when the inventory count is completed, should nevertheless be shown as a liability as of the close of the old business year, the offsetting entry to be recorded against goods in transit.

As to the cut-off of sales, the following rules apply:

(5) Outbound shipments (sales):

In order that there may be no confusion between inventory and accounts receivable, all materials shipped prior to the start of the inventory must be evidenced by invoices with that prior date, and the same rule applies to goods packed and ready for shipment on the shipping platform, even though they may not actually have been shipped.

A little more difficulty is experienced with materials removed from stores during inventory time. In these cases, the shipping order must have the approval of the inventory supervisor, who will see to it that the goods reach the shipping department with the inventory tags attached to them. The sales invoice covering such shipment must be dated as of the first day of the new business year, as otherwise there would be a duplication of assets and an overstatement of the surplus account on the balance-sheet.

Any of the rules and procedures must, of course, be adapted to the particular business in each case, and the larger and more ramified the business, the more detailed and explicit must be the rules and instructions to be incorporated in the inventory manual.

The pricing of the inventory offers scope for some very interesting observations. There is a cardinal rule in accounting about the valuation of inventories, at least as applicable to most businesses and industries. This cardinal rule is: cost or market, whichever is lower. That is a very fine and clear-cut principle and I have no fault to find with it as a principle, but I do find it hard at times to apply the principle to an actual given case, for the simple reason that the research labors in terminology conducted by the Institute have not crystallized to a point where we can say with positive assurance what cost is and what market is.

Dealing with raw materials first, we may ask ourselves whether the cost to be used is the average cost of the year's purchases, the cost of the last purchase or a figure arrived at by applying the averaging principle to individual perpetual-inventory records. Income tax stands on the principle of first in, first out, and contends, therefore, that we must assume that the goods purchased the earliest were disposed of the earliest, when the identity of individual purchases is lost through intermingling.

Cost accounting, however, permits and in fact favors the average theory, which means the establishment of a new unit price each time the cost of a new purchase differs from the previous average valuation. Another problem is encountered when a standard-cost system is used and particularly when it extends its standards to the valuation of raw materials. Under the standardcost plan the perpetual-inventory value of any given raw material, once it has been set, is used for the cost records, and any variation from this fixed value of new purchases is treated as a variation and is closed out to cost of sales or to profit and loss. Obviously, when a closing inventory is priced at standard costs, therefore, these standard costs are likely to differ from the actual cost determined upon any of the above bases and they are also likely to differ from the market prices at the close of the business year. If we apply to work in process this standard method of valuing raw materials at predetermined rates and if we apply predetermined standard labor rates to the cost of production as well as predetermined overhead rates, we arrive at standard predetermined rates for finished materials.

It is, of course, possible under standard-cost procedures to determine actual costs on any particular production order or product, and this is in fact one of the important purposes of the standard-cost system. When a number of production orders have been completed during the year, it would be a laborious task, however, to retrace the steps and arrive at a valuation for inventory purposes based on actual costs. Moreover, the valuation at actual costs would cause complications, inasmuch as these costs could not be used to continue the cost system in the new business year. Even under the actual-cost method, unit costs are usually established by assuming predetermined rates for factory overhead, and the difference between the factory overhead incurred and the amount absorbed is closed out to cost of sales or to profit and loss. It remains then a question, when inventories

at the end of the year are valued at the unit costs established by the cost records of an actual-cost system, how the over-absorbed or under-absorbed factory overhead may affect the unit costs used for the valuation of the inventory at the end of the year. In my opinion, while I, of course, unhesitatingly accept the principle of cost or market, whichever is lower, we must be openminded regarding the definition of the word "cost" and we must accept the rates established for inventory purposes by the system in use by the company concerned, provided that we find the system of cost accounting scientific and fair in its main features. We must be ever watchful, of course, to take into consideration the relative importance of any probable variation to the total volume of business done, to the value of the total inventory as ascertained and last, but not least, to the financial condition of the company.