BIN RESERVE

A Bin Reserve stock control program is an extremely effective weapon in the application of "ABC" principles to stock control. "ABC" refers to the analysis of yearly purchases in terms of its dollar value so that primary attention may be placed on the "A" and "B" items where the greatest value lies. Bin Reserve involves the setting aside of a certain quantity of a part in such a way as to provide notification of the need for replenishment without the necessity of maintaining detailed withdrawal records.

The following advantages can often be realized in the proper installation of an effective bin reserve plan:

1. Reduction in the clerical expense of posting transactions.
2. Reduction in the stockroom expenses associated with the preparation of transaction documents, where floor stocks combine with Bin Reserve prove practical.
3. Reduction in the stockroom expenses associated with providing parts and materials to the factory or shipping areas, where window service or demand service must be provided.
4. Permit additional time to be spent in the analysis and control of "A" and "B" items, by higher caliber people.

Bin Reserve should be applied primarily to "C" items because only in this way can the non-profitable build-up of inventory be prevented. A corallary to this is that procurement quantities of the Bin Reserve items should be large in comparison to those for the "A" and "B" items. However, since these are, by definition, small value items, the inventory impacts will be negligible.

In determining the specific items to be placed on Bin Reserve, five factors should be considered:

1. The value of the item; this refers not to the value per piece but rather to the yearly value of the item. Even within the "C" item category preference should be given to those items of the lowest yearly value.
2. The handleability of the item; since large quantities will frequently be involved, it is important that the item can be handled in a convenient manner.
3. The space requirements for the part; this again relates to the ordering of large quantities. Bin Reserve is most effective when used for items of inherently small size. In addition, it should be noted that for parts of extremely small size such as washers, screws, and nuts, the value of not preparing withdrawals may be great enough to even permit the usage of fairly large storage areas.
4. The procurement cycle of the item; the longer the procurement cycle the larger the Bin Reserve quantity and therefore the less sensitive the control is to changes in usage. If the procurement cycle is erratic or non-predictable then large protective stocks are needed which may not be justified by the bin reserve savings.
5. The stability and predictability of the usage; if the usage of the item is of an erratic or non-predictable nature, bin reserve is not sufficiently adjustable to provide maximum operating efficiency.

A description follows of a simple Bin Reserve plan as used in a large job shop factory. It works well under the conditions existing and may well offer clues to other plants.

Using the principles outlined above it was decided to place 1600 items on Bin Reserve. The items which were selected were reviewed with the production units responsible for their stock maintenance. After agreement was reached that it would be advantageous to place these items on Bin Reserve the Inventory Control Analyst prepared for each item a Bin Reserve Tag

BIN RESERVE TAG

Identity

Name

Prod. Sect.

Location

Quantity Ordered	Reserve Quantity	Date Due	Date Received	Date Broken

Attach this tag physically to the reserve quantity. When this bin reserve is broken, immediately date this tag and give it to the "A" stockeeper.

Receipt Ack'd. Date

These were forwarded to the stockroom in blocks of 100 and the proper quantity was packaged, if available, with this two part tag on the package. If the material was not available the tag was returned with a recount posted to it; this would require action by the production unit to insure availability of the item. On each item that was packaged a recount slip was submitted to the production unit so that the records would be correct as of that date.

The package was located in the same tray with the loose quantity and these in turn were right in the regular stockroom areas. For convenience most of the Bin Reserve items were placed in adjacent racks but this was not essential to the system. For these Bin Reserve items it is no longer necessary to prepare withdrawal documents. All that is necessary is for the stockkeeper to remove the quantity desired from the tray.

When the loose quantity is used and it is necessary to break into the package reserve, the two part form is removed from the package; once a day these forms are taken to the production unit responsible for that item where an authorized representative signs that he has received notification of the package break. After the form is signed one copy remains in the production unit while the card copy goes back with the stockkeeper; this second copy is taped to the front of the tray as a record of the package break notification.

The original copy goes to the stock ledger clerk who posts the break and then turns the activity card and order card over to the stock order clerk.

Since the Bin Reserve package quantity was at least equal to the procurement cycle plus protective stock (in weeks) multiplied by the anticipated usage per week the notification came through in sufficient time to allow replenishment prior to the withdrawal of the protective stock quantity. In some cases the package quantity is increased based upon the way material is sent by the vendor. If the vendor packs 10 to a box, for instance, the Bin Reserve package would be a multiple of 10 such as 20, 30, or 40. For the purposes of this analysis procurement cycle is defined as the total time required from the discovery that an order is needed until the date that the approved material is available to the stockroom; this would include ordering, purchasing, vendor's cycle, transportation, and inspection release. Protective stock is the quantity which is set aside to provide insurance against late delivery or excessive demands; the size of this protective stock will be dependent upon the stability, the reliability, and the quality standards of the vendor as well as the stability of usage.

The order clerk will then re-compute the weekly usage and after placing the order initiate a new two part Bin Reserve Form which is sent to the stockroom. There, it is placed in the stock location file in front of the location card for that item.

When the material is received, the stockkeeper must check the file to determine the proper location for the item; when he does so he sees the Bin Reserve Form. When placing the material in its proper location the stockkeeper will package, in a box, envelope, separate bin or barrel, the quantity required on the Bin Reserve Tag.

The most common difficulty which is experienced in the operation of a Bin Reserve system is the failure of the stockroom to notify the production units upon making a package break. First of all the system described above makes it easy for the stockkeeper to make the notification since the Bin Reserve Form is all filled out and it is only necessary for him to sign and date it. Secondly, the placing of the card portion back on the tray provides an opportunity for auditing the effectiveness of the operation. This is done at present by a 100% audit every month. A list is prepared by location of all Bin Reserve items (using punched cards) and then a two man team checks each Bin Reserve item. If the item has either the package intact or a card on the front of the tray it is checked as OK; if not, a red check mark is used. At the completion of the audit all of the red check marked items are questioned with the production unit responsible. If they have not previously received notification of a

break this is done automatically as part of the checking process. If they have received notification, an effort is made to discover why the tag was not returned to the stockroom. This is a very simple insurance plan which, at low cost, guarantees that no package break can be made without failing to notify the production unit at least within one month.

A further advantage to using the audit approach for error control is that the items may be kept in the regular stockroom thereby providing for a cost advantage over keeping the Bin Reserve items in a separate locked area.

Another common difficulty with a Bin Reserve system is the handling of items on which the usage has decreased. In the example cited above this is taken care of by quarterly reviews of the activity cards for each Bin Reserve item. Those on which there has been no receipt of material or package break over a nine month period are submitted for recount and will then be considered for deleting from stock. In some cases an item which has not had any package break or material receipt over a nine month period may still be carried on stock because of order quantities.

Another difficulty is the handling of items which have increased usage. There is no automatic manner of providing this type of insurance, however, it should be possible by quarterly stock requirements explosions to determine if there has been a radical change in the rate of usage. A second safeguard is that procurement cycles as used in determining the package quantity are for normal circumstances. With effective expediting these cycles can frequently be reduced 50% or more. The protective stock quantity also provides a buffer to guard against increased usage. However, what this does bring out is the importance that should be placed on the paperwork dates of Bin Reserve items. On these even more so than on other parts it is essential that every effort be expended in meeting the scheduled date.

Finally, a lengthening of the procurement cycle will affect the operation of the Bin Reserve system since insufficient notification will be given of the need for a new order. One effective way of meeting this difficulty is by reviewing procurement cycle reports regularly to pick up those items on which the cycle has lengthened appreciably. Efforts should then be made to re-package a larger quantity for those Bin Reserve parts affected. This indicates one of the reasons for having periodic procurement reports issued. This should cover not only purchased items but also items which are internally manufactured.

All of the techniques described above can be applied equally well to internally manufactured items, allied plant items, and outside vendor items. The benefits tend to be realized in a greater proportion than the percentage of parts placed on Bin Reserve since these items are typically those which have heavy common usage of large quantities. It is recommended that in the installation of a Bin Reserve system sufficient time be allowed for employee training and education. To back this up it is essential that comprehensive instructions be prepared to describe the exact method of operation and that copies of these instructions be given to all stockroom employees working with Bin Reserve items. It is not wise to depend upon verbal instructions alone particularly with the employee turnover which exists in many stockroom areas.

The plan described above covered 20% of the stock parts in this job shop. However, even after increasing the order quantities and the protective stocks of the Bin Reserve items the inventory of these items was only 2% of the total stock inventory value. In addition the number of shortages on these Bin Reserve parts is far less than it was on the individual control basis.

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3/11/54