One of the least understood problems facing scuba equipment retailers is inventory control. Norm McConnell of H2O Pro Sports in Lincoln, Nebraska recognized the significance of this problem and invited us to analyze the inventory situation for his operation. The findings of our study may very well be applied to the management of similar stores throughout the country.

For the teaching pro, a sufficient equipment inventory is necessary to support and expand his students' new-found interest in the sport. For the pro as a retailer, inventory is really his entire reason for being: the ability to serve his customers with the right items when they are requested.

The first, but probably obvious, point about inventory is that it is expensive. Some estimate the cost of sales at 25% of its replacement value annually. This figure includes a return on the funds invested, insurance, deterioration or obsolescence and other overhead. Not included is the possible loss of immediate and return business when the right items are not currently available from stock and the customer is forced to delay his purchase, make an unneeded substitute, or go elsewhere. It's the job of inventory control to keep the costs of carrying inventory plus the potential losses from not carrying the right inventory to a minimum. The techniques described here will help Norm and others toward that goal.

The ABC method

One common observation is that a minority of a shop's items account for a majority of its sales. At the H2O Pro Store, Norm carried 110 items. The top 20 percent gave him 70 percent of his total sales. The next 40 percent of the items gave another 20 percent of sales while the final 40 percent of the line contributed only 10 percent of sales. Figure 1 shows these relationships and labels the portions of inventory as "A" (the top 20 percent), "B" and "C" (the next 40 percent shares). The point to be learned from ABC analysis is that all items in your product line should not receive equal attention or, more importantly, equal investment. When the scarce resources of time, funds and shelf space are to be allocated, the ABC scheme will help you give the proper emphasis.

Critical value analysis

One weakness of the ABC method is that it may underestimate the importance of some items that don't happen to produce large revenues but which are vitally important to your customers and, in fact, may assist in selling the rest of the line. Norm's pattern of business suggested three distinct or critical values. These were assigned weights of 1, 2, 3, respectively. To combine the critical and ABC value methods, simply assign the ABC categories weights of 1, 2, or 3. Then multiply the two weights for each line item together. When the two weights for each line item are multiplied, the result will range from 1 to 9. As shown in Figure 2, the low values indicate the most critical items and higher values the less important ones. Items rated 1 to 3 can be called A, 4 to 6, B, and 7 to 9, C, in the ABC/critical value combined method.

Multiply ABC values and critical values to get Total ABC values for inventory control.

<table>
<thead>
<tr>
<th>Product Lines Rated by Sales</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Total ABC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Steps in inventory control

The rating system described above will not improve your inventory control by itself, but they will assist you in setting control procedures which are based on the value of different items in your business.

We have often been asked, "How much inventory should I hold?" First of all remember that few customers were ever served by someone who was "holding" inventory. That implies some form of rationing. Customers were served because the store manager had the foresight to order products that should be requested and to make them available for sale. Possibly the only retailers who can get away with "holding" inventory are some gas stations during an energy shortage. After determining the products most likely to be purchased by your customers, the real inventory questions should be: "How much should I buy of an item?" and "When should I buy?" The answers to these questions will be stated in terms of order quantities and re-order points.

While none of us has a reliable crystal ball, a study of past sales records does help anticipate future sales trends. For example, during the summer teaching period, Norm sold 25 sets of masks and fins. If he holds a similar number of classes next season, he may forecast similar quantities. The number to order at a time will depend on the time required to place, receive and stock an order, known as the order cycle. While there are erratic and quantified ways of determining when to order, the scuba pro will probably want to set a convenient time interval, such as every sixth week, to review inventory positions and re-order. Figure 3 demonstrates inventory and order quantities based on a time scale. If delivery is assured within two weeks after order placement, the re-order point is every sixth week, the order cycle is eight weeks. Thus, the inventory at the beginning of each eight week period should be sufficient to serve all customer needs until the next order would be received.

Safety stock

In the case where the sales rate is higher than forecasted, the inventory will be depleted earlier than anticipated and cause stockouts toward the end of the eight week period. When this happens the manager can either place a special order, which is costly in terms of time required and shipping costs or possibly lose a potential customer. Or, the manager can recognize that forecasting is an inexact art and order additional inventory, on the regular order sequence, called a safety stock. This is where the ABC ratings become useful. Items in the A group may be allowed a safety stock of one-half an order cycle (in this example, 4 weeks), B items could get one-quarter of a cycle (2 weeks) and C items, no safety stock. This is in line with the meaning of the ABC groupings, where the normal availability of an A item would harm sales and customer relations while B items are somewhat less important and C items even less.

Order quantities

The amount to order can quickly be calculated from this formula: Forecasted sales for order cycle period + Safety stock

Sub-total:

- Amount on-hand at inventory review
- Gives quantity to be ordered:

The inventory control procedures helped place the proper emphasis on the important product lines at H2O Pro Sports and reduce stockouts. Occasional items did occur more than their forecasted popularity and may have to be backordered. But now, Norm has more time to deal with these non-standard cases because the standard procedures take care of the majority of his inventory problems.

Professional SCUBA Store/School

The theory of professionalism is spreading quickly world wide. Recently, SCUBAPRO initiated the first seminars for diving retailers in Asia. A series of courses were held in Tokyo and Osaka, Japan to enthusiastic and responsive groups of specialized retailers.

The seminars were hosted by SCUBAPRO Asia and conducted by Dick Bonin and Sam Ichikawa of SCUBAPRO U.S.A. Bonin presented the SCUBA philosophy of professionalism, the NAADS business formula for the diving retailer, store lay-out, as well as many other subjects. Ichikawa covered the technical aspects of SCUBAPRO products as well as conducting a repair clinic for the attending dealers.

Bonin reported the Asian Dealers, while reluctant to deal with time, responsive and anxious to learn the methods of the American Dealers.