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INNOVATIVE MERCHANDISING PROGRAMS FROM RESEARCH - CASE EXAMPLE

by
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Introduction

The Corporate Industrial Engineering Department of the Stop & Shop Companies is responsible for all industrial engineering work performed in the stores in our four divisions, the distribution centers that service those stores, and the various company offices.

This responsibility brings many varied assignments which in the past few years have ranged from the design of a 107,000 square foot perishable distribution center to the evaluation of electronic scales for our delicatessen departments. The time to complete these projects ranges from a few days to over three years.

In the time available, I am going to describe the history of three projects:

- The design of a new scanning checkstand for our supermarket stores.
- The design and the various features of a general merchandise store checkstand.
- The innovative answer to an everyday problem in alleviating crowded store storage areas.

Supermarket Checkout Booth

Several years ago our supermarket company made the decision to test the scanning system utilizing the U.P.C. symbol. One of I.E.'s assignments was to

evaluate and recommend which scanning checkstands to install in the scanning test stores.

For background, a typical checkout booth in use in our stores at the time of the decision to test scanning and is still widely used. It provided two belts - one to bring the merchandise to the checker, which is controlled by an electric eye or foot pedal, and a belt to take the merchandise away from the checker to the bagger. It was equipped with a bar to separate items which had been entered on the register from those which had not.

It was equipped with a separate bar to permit the checker checking a second order while a bagger completed bagging the initial order. A security drawer and coupon drawer, bag storage, and a bagging shelf completed the features of the booth. It quickly became apparent that this booth would not work with scanning equipment. It also became apparent that the major checkout booth manufacturers did not have much to offer at that time.

A decision was made to design, using wood, our own scanning checkout booth, and to be built in our woodworking shop.

Some of the elements that were considered in designing a new booth were:

- The amount of belt area required to handle order sizes - including the appropriate belt width.

- The height at which the merchandise should be presented to the checker.
- The space required by the scanner.

The need for positive input belt control is a prerequisite. It must stop in a position that allows the checker freedom of access to the scanner window but with an easy reach for the operator. An electric eye was used to accomplish the required control. A set-aside area for perishable or high breakable items was also provided.

A bagging shelf to be used when the checker works alone was provided at a height where the top of the bag is slightly below the top of the checkout booth. Also provided is a produce and special price listing in a convenient place.

A coupon drawer and cash security drawer and waste containers were conveniently placed. Various sized small bags were located within easy reach of the checker. The electric switch to control the electric eye is also seen.

The checker is in position to "Scan and Bag" using both hands. Again, the bags are at a convenient height and the carriage to transfer the merchandise to the customer's car is in good position. There is a flat clear plastic surface to be used by the customer to write a check.

The booth in its final design, is set up for a two-person operation. There is a portable slide to transfer merchandise from the scanning point away from the checker. Also the belt to bring merchandise to the bagger and away from the bottom of the slide. A full range of bag sizes is available to the bagger. Regardless of how much designing you'll do, someone will find a better place for 1/6 barrel bags. There is a protective hardwood board along the side of the booth and the bagging shelf.

The second project that I will present is the design of a new checkout booth for use in our general merchandise stores with electronic terminals.

When the decision to introduce electronic terminals into our Bradlees Division was made, it presented us with an opportunity to design a new booth that would incorporate a group of features that would improve the efficiency of the checker completely separate from the improvements that could be achieved by the introduction of electronic terminals. It was necessary to build a false base to obtain the proper operating height of the terminal. Bags were conveniently placed. The booth was too big for a checker alone and too small for a checker and bagger. The slots of the booth surface were for a no longer used inventory control system.

The new booth was shorter so the bagger must bag outside the booth. It was taller, the terminal is at the proper height, the slots on the booth surface have been left out of the new design. Space for credit card imprinter, cash security drawer, waste container, telephone, and a drawer for other storage were provided. The shorter booth permitted staggering of the booths using less floor space - a valuable side benefit. A bar for sorted empty hangers was provided for the first time. Various sized bags were accessible from inside the booth for checker use and outside the booth when a bagger was required.

My third topic is an innovative answer to a different storage problem. The store was constructed on swampy land and when we investigated the possibility of a building addition, the cost was prohibitive - it required piles to be placed under the foundation. The construction of a dock to place storage trailers against was also out of the question for the same reason. When a senior industrial engineer visited the

store, the backroom was solid merchandise. Outside storage trailers were in use; however, they were located on the other side of the building from the receiving storage room and required the merchandise to travel half way around the store to use the trailer and when they were used the most modern material handling techniques were clearly evident. Reorganization of the backroom work methods and a revised delivery schedule helped but were clearly not the short or long term answer.

In discussing potential practical solutions, it was pointed out that an innovative solution to a lack of shipping doors at our bakery should be investigated. We used a 32 foot trailer with four eight foot wide doors cut into its sides. This approach permitted four trailers to be loaded where one previously was the limit. After some investigation, it was determined that for approximately 10 percent of the cost of the next cheapest option, we could provide a six-trailer storage area which incorporated several features. The dock contains a scissor lift to handle inbound trucks - a ramp to move garden shop items to display without going through the store. The pallets coming off the truck onto the lift were lowered to the dock level and taken into the store - could go down the ramp to the garden shop, or be placed directly into the storage trailer.

A problem that required solution before the trailer park could become a reality was how to compensate for the difference in height between the dock and trailer floor. In flow charting the use of a single scissor lift, it was evident there was too much cross-traffic and a second lift was required. The solution, included in the group of six trailers is one equipped with an elevator. It happened about that time that several old elevator trailers were being replaced by our transportation people.

It was necessary to reinforce the roof when we cut six doors into the side of the elevator trailer. We provided lighting, fire protection and security protection. The product moves from the incoming trailer or from the store backroom onto the elevator trailer and placed in the appropriate storage trailer. An inventory control sheet was maintained in the store and on the wall of each trailer showing the location of merchandise. The new doorways were covered with metal stripping. Diamond plate covered the space between the trailer floor and weatherproofing was installed on the roofs of the trailers to keep out moisture. The tires were removed to minimize vandalism and 2x6 and 12x12 supports were installed along with a concrete pad for stability.

Some further improvement was accomplished inside the building. This installation is now over two years old. The store manager's latest comment was "I knew you industrial engineers were good and you've proved it to me."