IRVING OIL LUBRICANTS

Executive Summary

Irving Oil Lubricants is a motor oil blending facility producing a vast array of lubricating products. Irving Oil Lubricants is a division of Irving Oil located in Saint John, New Brunswick, Canada.

The warehouse facility was out of room, they had inventory control problems, product rotation issues, picking errors, loading errors and the picking and loading process was too slow. Raw materials delivered into the production facility were paper work cumbersome and error prone. Management felt the only solution was a facility expansion. However, rather than a costly expansion we re-aligned the existing facility, changed the picking concept, added Warehouse Management Software (WMS), added push back rack and changed the loading concept.

The results were, we increased pallets to storage by 50%, eliminated all paper work, increased picking efficiency by 40%, decreased picking errors by 99.8%, decreased loading errors by 99.8%, gained complete inventory control, gained solid rotation of inventory and reduced the warehouse/clerical staff from 30 to 20. The return on investment was 1.8 years.

Detail

Irving Oil Lubricants engaged Distribution Consulting to review the overall facility including production, raw materials storage, delivery of raw materials into production, pallets to storage, picking and loading. Management told us they felt we had to have a facility expansion and as part of our overall scope of work we were to determine how large an expansion was needed.

Irving Oil Lubricants did not have a good drawing of the existing facility. Therefore, we did all of the measuring and developed a good AutoCAD drawing of the existing facility. With the drawing in hand we then took the existing SKU file for both raw materials and finished goods to develop storage types and total pallets to storage. Once we developed the overall storage needs we then started developing storage types and the total number of storage types needed. We also applied a 10% growth factor per year for five years developing an overall five year plan. Under this scheme this gave us the necessary information to determine if we indeed had to have a facility expansion.

Based on the number of SKU's that had multiple pallets to storage it became apparent that there was a lot of push back rack required. At that time all of the rack within the facility was single deep selective rack. By a rack re-alignment and applying a large amount of push back rack along with the growth factor, we increased pallets to storage by 50%. This eliminated the need for a facility expansion.

Raw materials was scattered over a large part of the warehouse. We took the raw materials SKU base and converted it into storage types and pallets to storage. We applied new selective rack, some push back rack and shelving for small items. We also used a 10% growth factor for five years giving us an overall five year plan. Once this was complete we placed the storage types out of the entrance door going into production to shorten travel distances.

Everything within the facility was paper driven and a huge amount of clerical was being spent on keying in data. There was also a large issue with lost inventory mainly due to paper work and keying errors. Picking errors was a constant on-going problem along with loading the wrong pallet onto the wrong truck. Irving Oil Lubricants used their own trucks for delivery. Consumption/production issues within the production department were slow, cumbersome and paper driven.

After looking at all the issues within the facility on lost inventory, picking errors, shipping errors, clerical, product rotation and consumption/production in the blending area we made the decision to purchase a Warehouse Management System (WMS) software package which would eliminate all of these issues. The

WMS chosen was HAL Systems.
http://webserver.halsystems.comwarehousemanagementsystem.aspx

We purchased the WMS package immediately to get it installed to help us with all of the other changes. The first step we made with the WMS system was to start receiving in an online process. We eliminated all of the clerical at receiving with this move. At this time we also started placing license plates/master unit labels on all incoming raw materials. This allowed us to track license plates/master unit labels into their locations with a scan using radio frequency devises.

All of the finished product from production travel on conveyor to automated palletizers. We installed a print and apply applicator on the exit side of the pallatizers. The print and apply applicaor placed a license plate/master unit bar code label on each pallet. This allowed us to move the pallet into the facility with a scan using a radio frequency device.

Once we had the WMS on-line we started adding in the racking structure and moving product into its new location by scanning with radio frequency. This was going on at the same time for raw material and finished goods.

We started picking raw materials with radio frequency. We picked the raw materials by the production line and scanned the pick into the line. By using case counters off of the line we gained production. At the end of the run we counted the remaining raw materials and associated the new counts to a license plate/master unit label. With this data we gained consumption thus eliminating all of the associated clerical. We then moved and scanned to raw materials back into storage locations within the raw materials storage areas.

Once we completed raw materials we started installing the finish goods push back rack. The hard part was the first install as we had to displace several rows of selective rack to make the first push back install. Once we did the first one we gained so much room that we were able to remove pallets from the next back to back row of selective rack and the finished goods move became extremely easy.

Once we had all of the push back in place the room was then available to set up the forward pick areas that were a combination of selective rack and floor stock positions. This allowed us to reduce the travel for picking by 50%. Once we got this area into place we started picking with radio frequency thus eliminating the paper pick ticket and the associated clerical. This allowed us to fluid load onto the outbound shipping trailer in stop sequence or to stage to the dock. In either of these cases we did a radio frequency load routine by scanning the dock door to assure that we placed the right pallet onto the right truck.

Once we had license plates/master unit labels on all of the finished goods and raw materials this forced us into product rotation. Replenishment to the forward pick area was accomplished by min/max by location thus automatically producing replenishment using radio frequency.

The overall results from this project were drastic. The first result was no facility expansion. This saved an estimated 5M dollar investment right at the start. Internally, we gained a five year plan within the confines of the existing facility. All of the clerical was eliminated from receiving, production and distribution. Lost inventory dropped by 99.9%. Pick errors dropped by 99.8%. Loading errors dropped by 100%. Warehouse/clerical personnel dropped from 30 to 20. Issues with errors that had hampered them from securing private label customers disappeared. Thus private label customers have increased by 50%. The return on investment of this project was 1.6 years not counting the non-expansion of the facility.