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## **CASE STUDY**

### **AMERICAN PRODUCTS CASE STUDY**

The American Products Pool Division, is located in Moorpark California about one hour drive north of Los Angeles. The American Products Pool division manufactures a wide range of products for the commercial swimming pool industry. The Moorpark facility, manufactures Pumps, Heaters, filters, Lights, and small Hot water products used in spa's.

The Processes involved include, Injection moulding of many parts used in the assembly of all of the before mentioned products, small very time intensive assembly, and large and cumbersome assembly, and a shipping and receiving function.

The plant is located in some of the most expensive property in the United States, and utilises 150,000 SQ.FT of space. When Worldwide Business Solutions was engaged to assist American Products, It seemed that the plant was very constrained for space. The shipping and receiving docks were being used to store raw material as well as finished products being assembled for shipping causing a very unsafe workplace, as well as causing confusion to the shipping and receiving crew, and causing a number of shipments either to be late, or incorrect, Not to mention that the shipping bays were fully utilised at peak loading times.

American Products engaged Worldwide Business Solutions In October of 1997, to review its overall operation, and assess what could be done to improve the overall business operation and gain market share in its respected area.

During the first stage analyses, It became apparent that lack of space was not an obstacle, but rather their were many more significant problems with the Moorpark facility, there was no scheduling system to handle the seasonal swings in production, thus causing shortages across the entire supply chain. The Moorpark facility also had excesses in finished goods, work in process, and many weeks worth of raw material, much more than what was required, due to Poor planning, and purchasing systems, as well as very inefficient manufacturing areas, stock turns were under four, and much of



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the inventory was either obsolete or damaged from being in storage for long periods of time.

Manufacturing areas were, set-up in the batch mode style system, they took up sixty percent more shop floor space than was needed, their order fill rates were less than fifty percent, due in large part to poor material replenishment systems, and there quality was very poor, due to poor communication and training.

American products distribution centres were also having trouble in receiving finished products, and spare parts due to the poor manufacturing, and material systems at the Moorpark facility, which affected customer fill rate and market share, it also caused the distribution centres to place larger than needed orders, to insure they would have enough product on hand to fulfil their customers orders. Causing excessive inventories, at the Moorpark facility and making it impossible for the manufacturing areas to keep up.

American products also leased two outside warehouses, due in part to the excessive inventory that was on hand at the Moorpark facility, Rather than build, or lease more space American Products, with assistance from Worldwide Business Solutions, realized the existing site was sufficient in the short term if they could increase operational efficiency: and so began their journey towards world class performance.

In parallel with the World Class Manufacturing improvements on the shop floor, an essential ingredient in the overall program of change was the introduction of world class planning techniques. The goals of this project were to increase customer service, reduce stock and drive the operational improvements.

Karl Frykman, Now the Vice President of operations at PacFab West, takes up the story.

“Worldwide Business Solution’s recommendations asked us to rethink fundamentally the way we plan and control our production. Our starting point was a traditional environment which monitors stock levels, forecasts and orders and raises work orders at each stage to tell the shop floor what to make and the sequence. Despite all our best



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efforts, finished goods and most of our major materials were often out of the demand profile. In other words we had lots of product that was not selling and not enough of the products the customers wanted. Service levels suffered.

“A significant part of the buyer planner’s role was engaged in day to day fire fighting and rescheduling of individual orders. Of course, it is all too easy to blame the buyer Planner. Often production issues and inflexible systems are the root cause of the problem. These, however, were not visible. Our approach was one of trying to steer around the problems rather than addressing them. “In February, of 1999 we went live with our first cellular designed production area, since then we have designed twelve highly productive manufacturing cells, that has helped us achieve a 40% increase in production, and saving over 60% in shop floor square footage.

“Along with cellular manufacturing we started working with Kanbans in the early months of 1997, in our case it can be summarized as a change in approach in planning to a highly visible, shop floor managed process, designed to facilitate and drive continuous improvement in the manufacturing processes. The kanban replenishment system that we established helped us reduce our raw, WIP, and finished goods inventory, levels by 50%. The first part in developing the new process is improving the old process itself. Clearly the role of the planner is also subject to change, In the summer of 1997, we changed our business organization to a business unit style type of structure, thus expanding the role of the planner, to that of a buyer/planner role giving the business unit more power to solve problems and issues, in their area, and to start to develop the supply chain partnership.

Since adopting World Class methods of operation, we have moved to a fully order less system of production for kanbans and continually aspired to reduce the work content in all areas.

With the help of Worldwide Business Solutions, we have defined the buyer/planner functions here at American Products, buy developing models to strengthen the supply chain, such as eight week revolving forecasts that keep our suppliers abreast of our volume, and it also highlights any production spikes, or lows ahead of time so as not to affect our customers. Worldwide Business Solutions also assisted our buyer/planners in creating the framework, which steers the business, and instructed the buyer/planner in



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setting high-level policies within the supply chain and trained them to monitor changes in their market.

Worldwide Business Solutions was instrumental in helping us to understand the mechanics of the systems that we wanted to use here at American Products, such as the sizing and numbering of kanbans, and the rules, and conventions the production teams had to adopt and follow. WWBS Group was also instrumental in the development of a meaningful set of metrics that could be used across the board, in helping us measure our vendors, our customers, and ourselves, so we could understand how to continually improve ourselves.

When we at American Products decided that we had to improve our overall business operation. We had six major objectives, we new we did not have the talent in house to tackle such a complex project, so we turned to Worldwide Business Solutions for assistance.

#### American Products Objectives

- ❑ Improve customer fill rate.
  
- ❑ Improve inventory turns to reduce overall cost and improve cash flow.
  
- ❑ Reduce and optimise space usage to allow area for new products and continued volume growth.
  
- ❑ Improve overall cycle time to fill orders.
  
- ❑ Understand and improve the planning process.



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- Develop a World Class supply chain.

Worldwide Business Solutions did not let us down, their team came in and worked very close with, our own personnel in every department. They started several, self directed teams, and lead each team to its objectives, through training such as problem solving, data collection, brainstorming, process flow, and many other forms of training, such as cellular manufacturing, kanban replenishment systems, and rate base scheduling. In our Injection Moulding department, Worldwide Business Solutions, worked very closely with our engineering department, and our operators in developing a SMED team, to reduce the time it took us to change out our moulds, they were successful in reducing our longest mould changes that took 7.5 hrs and reduced them to 15 minutes. This reduction in machine down time, gave American Products the flexibility to make to order, instead of having to run large batches to compensate for the 7.5 hrs the machine would have been down, and it also allowed us to close two outside warehouses, due to the reduction in WIP Inventory that we would have normally had to have to supply our assembly areas.

The acquisition:

In June of 1997, American Products was purchased by the ESSEF Corporation a large multinational conglomerate with fourteen divisions in five countries. Their aim was to strengthen their Pacfab pool products division, and increase their market share on the west coast of North America.

Karl Frykman V.P. of Operations takes up the story.

It was very fortunate that American Products had started heading its operation toward World Class operating principles, That was one of the main selling points, that persuaded Pacfab, to acquire us, they themselves had started implementing world class manufacturing principals about a year before we did, they were very much impressed with the progress we had made in such a short period of time, they have also adopted most of the new manufacturing systems, that WWBS Group has helped us put into



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place, and now that WWBS Group, is assisting Pacfab's operations on the east coast, I am sure that we will have an excellent operating relationship.

The acquisition also presented a number of challenges for us at American Products. Pacfab, has a pool products manufacturing plant, just fifty miles from our location here at Moorpark. The new owners wanted to know if it would be possible to combine the two operations, at the Moorpark facility.

So my staff and, I went to work, thinking about reducing the area that we used, to manufacture, and store finished goods, and inventory, Worldwide Business Solutions was a very important part of that team. They showed us that we had already reduced are manufacturing areas by 60%, and eliminated 50% of our WIP and finished goods Inventory. WWBS Group helped us design new manufacturing areas for the product coming from the Pacfab plant, and worked with our vendors, and the new Pacfab vendors to set up Just In Time replenishment systems, kanban replenishment systems, and new scheduling techniques to reduce the level of inventory we would need to carry in our facility, WWBS Group also helped us qualify are new vendors through strategic sourcing, helping us develop world class vendors.

In a four month period we were able to move the Pacfab manufacturing plant, into the Moorpark facility, which in turn allowed Pacfab to close its out dated facility saving 120,000 sq. Ft of manufacturing space. We thought that we would be very crowded for space but with the help of Worldwide Business Solutions, we have a very streamlined and efficient World Class manufacturing plant that we are continually trying to improve.

Since the move was completed in the fall of 1997, we have managed to obtain all the goals that we set for ourselves. Are stock turns in excess of 12 turns per year, we reduced our inventory by 50%; we increased our production by 40%, and decreased our operating space by 60%. We are very satisfied with the assistance that we received from Worldwide Business Solutions in helping us reach our goals.



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