Lean Manufacturing and the Implementation of Kanban

The morning workshop presentation on Lean Manufacturing and the Implementation of Kanban was given by Tyrone Clack, Operations Manager of the Pin Facility. In sketching out the background to the Company, Tyrone explained that the manufacture of piston pins at Bradford was concerned with producing parts for both petrol and diesel engined passenger cars. The need to adopt lean manufacturing techniques were essential to satisfy ever increasing customer demands for low cost, efficient delivery and the best quality.

Since everything is financially driven, Tyrone suggested that it was necessary to have those who control the finances on board at the start. However, whilst they would primarily be interested in the end "profit" made, it was the responsibility of the engineering staff to ensure that the production route at all stages could deliver the profit. To do this required the identification and implementation of measured targets for improvement.

In essence it was explained that the workers in the pin facility had to change the way they worked, in particular to eliminate waste. Given that they were 100 percent automotive based, a first major problem was to move away from the organisation of production based on often mythical customer schedules. Whilst these needed to be met, the whole Company activities were now "pulled" through the system using Kanban techniques rather being "pushed" as with MRP scheduling. In short, a new system was adopted where people and equipment only produced when there was a ‘demand’ for the product. This policy meant lower work in progress but often gave rise to greater numbers of tool changes etc, and hence the need to introduce techniques of single minute exchange dies (SMED).

Metrics to measure progress were simple and fixed, these included: throughput per hour, inventory turns, production index, downtime etc. To obtain continuous improvement in the areas required the identification of production constraints and agreed, workable methods to break them down. Tyrone said the Company recognised the intellectual assets of the people who worked for them and wherever possible gave them the opportunity to input their own ideas to improve production. The aim was to obtain level flows of work through the system. Clearly, no perfect work flow could ever be obtained therefore at times people and machines would be without work due to restrictions elsewhere. To effectively measure and control this, the workforce completed simple "Bingo Cards" which identified the problem areas and allowed a task force approach to tackle it where necessary. Additionally, where stoppages occurred it was possible to reallocate people to other tasks e.g. total preventative maintenance (TPM) etc. On the supply front, fax messages in the morning or afternoon ensure guaranteed delivery in the following required period.

Tyrone Clack concluded his presentation by informing members of the efficiency savings which had been made by the techniques adopted. This was followed by a full plant tour to see the system at work and to discuss with the operators their experiences and opinions on the methods adopted. Without exception, all expressed very positive views in comparisons with previous production methods employed.

Examples of piston pins manufactured at the Federal Mogul Pin Facility in Bradford.