Renold Gears Ltd. – A case study in delivering National Supply Chain Process Improvement

Skills ⟷ Productivity ⟷ Competitiveness ⟷ Profitability

<1> The Customer.

The Host

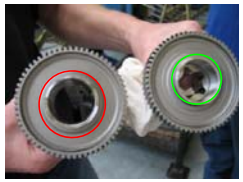
Perkins Shibaura is a joint venture company supplying water-cooled compact engines for the construction, agriculture, marine, materials handling and power generation sectors in Europe and North America. The Peterborough site employs around 140 people and has a sales turnover of around $250M

The Supplier

The principal activities of the Renold Group are the manufacture and sale of industrial chains and related power transmission products. The Group revenue for 06/07 was £159M and the group employs 2,500 people in 19 countries worldwide.

<2> The Customer's Need.

In April 07 out of a total of 2,700 Gear 10's supplied to Perkins Shibaura they received 30 products with their vane inserts missing.

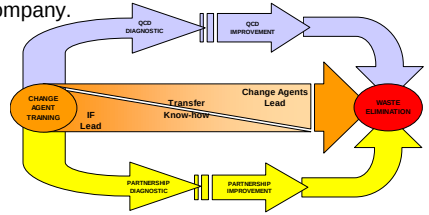


This was a repeat concern.

The defect rate due to this was 0.4% (4166 ppm)
The Perkins Shibaura target was 0.005% (50 ppm)

<3> The IF Solution.

Supply Chain Groups provided a structured framework approach bringing together customers and suppliers from different tiers in the Supply Chain. Developed by Industry Forum the 3 pronged approach enables individual businesses not only to see real gains in Quality, Cost, Delivery (QCD), but also to improve the level of partnership between companies and to develop the improvement skills capability within each company.



<4a> Overview of Activity Structure.

Supply Chain Group – Activity Programme

6 – 12 months duration (company dependant)

Preparation & Training	QCD & Partnership Diagnostics	Workshop	Rollout Support

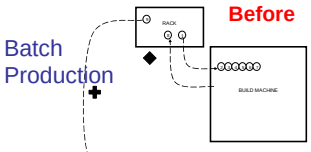
Host & Supplier Change Agent only — Change Agents + Supplier Team

7 days | 4 days | 5 days | 3 days

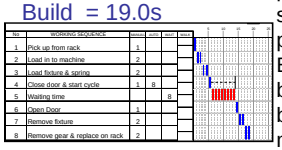
<4b> Description of Skills to Profitability Link

Batch Production

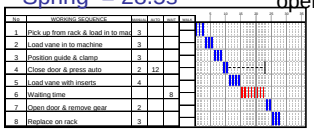
Before



Build = 19.0s



Spring = 28.5s



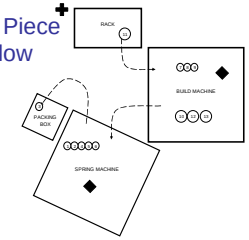
Build & Spring performed as separate batch processes. Batches could be dispatched by mistake missing the 2nd operation.

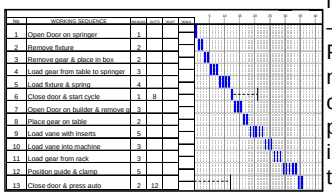
Creating flexible production and manpower systems

Creating standard operating procedures

After

1 Piece Flow





Build & Spring = 36.0s

Parts are now built & sprung in 1 piece flow – no batches. Parts cannot miss the 2nd operation, and productivity is improved through reduced handling

<5> Return on Stakeholders' Investment.

Seven Measures of QCD Competitiveness

	Quality	Cost	Delivery
Not Right First Time	●	●	●
Delivery Schedule Achievement	○	●	●
People Productivity		●	
Stock Turns	○	●	●
Overall Equipment Effectiveness	○	●	●
Value Added Per Person		●	
Floor Space Utilisation		●	

● Primary impact on the process ○ Secondary impact on the process

Non Right First Time
Before : 4166 ppm *After* : 0 ppm

People Productivity
Before : 72.7 parts per operator hour *After* : 100 p.p.o.h.

Financial Benefits

For Gear 10, the People Productivity improvement will save £4,600 per annum (over 2700 parts per week, with a saving of 13.5 seconds per part).

For Gear 8, currently built by hand, converting to the new method would save £20,800 per annum (over 800 parts per week, saving 204 seconds per part).

Renold estimate the cost of dealing with previous Gear 10 bad quality (stock checking, warranty claims, reworking etc.) to be £3-4,000.

Upskilling for Sustained Continuous Improvement

The activity also supports the introduction of a Pull production system at Renold for the supply of Perkins Shibaura Gears. The change in the Build & Spring process forms part of the Future State Value Stream that has been used to design a Pull replenishment system using kanban

Company Testimonial

"It is not just the achievement of the solution, which wouldn't have been possible otherwise, but the learning of methodologies through team work that will have long lasting benefit to ourselves and our customers."

Alan Charles – Quality Manager, Renold Gears

Established *by* Industry *for* Industry

Working in Partnership