



The Cutting Edge Team Wins Silver

Standardisation saves \$51,000

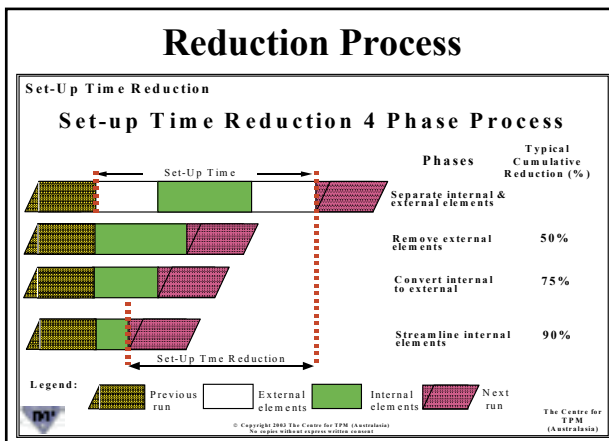
The Cutting Edge Set-Up Time Reduction Team from Fletcher Challenge Forests Rainbow Mountain site in New Zealand won Silver at this years TPM³ Best-of-the-Best Competition at the Annual TPM³ Action Forum in August 2003.

The team focused on the Stetson-Ross planer, which was built in 1956. It has four planing heads, one on each side, along with a top and a bottom head. The knives on each head need to be changed when they become dull or when there are different product profiles and types. Early in the cycle the team estimated that each minute of lost time cost them \$10.39. Using this information, the team was able to easily estimate the savings each of their improvements was likely to achieve.

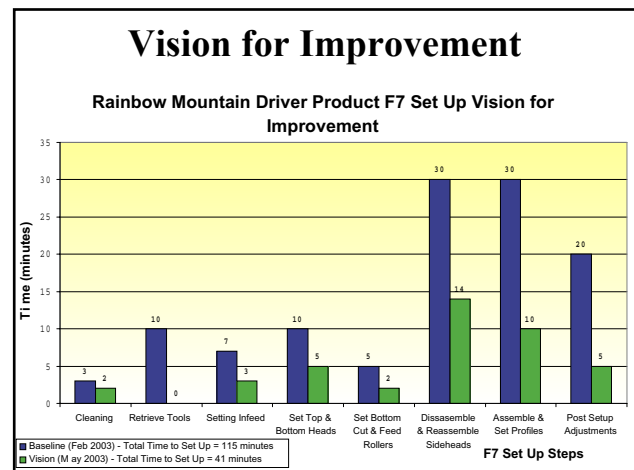


Craig Bulford, Mike Purcell, Dale Towers, Ian McNab and Ratai Ratai

Set-up Time Reduction involves four phases, the first being to accurately measure the set-up process and determine internal and external elements, with an ultimate goal of a 90% reduction in set-up time.



The team's mandate was to achieve an initial 50% reduction in 12 weeks. Following pareto analysis, video analysis and an operator survey, the team developed a vision for improvement. Their F7 Grade is an important product and they wanted to reduce each set-up from 115 min to 37 min.



Using an improvement matrix, the team prioritised their improvement ideas.

Approach: Improvement Matrix

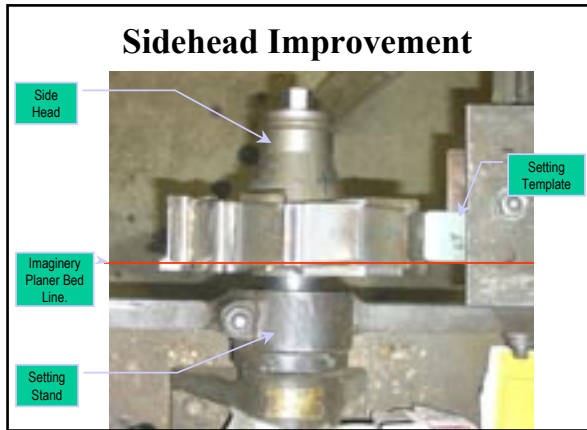
#	Problem	Suggested Improvement	Impact on Availability	Impact on Operator Safety	Cost Ranking	Ease of Implementation	Total	Completed
1	Difficult to change knives	Bottom Head - Jig & Swap	5	4	4	4	17.0	✓
2	Time lost due to "guess-work"	Attach Calibration gauges & Tooling Standardisation	5	5	3	3	16.0	✓
3	Tooling -Availability -leaving	Machine Tool box/trolley / Shadowboards	4	4	4	4	16.0	✓
4	Run size small - Increased # of Set-ups	Awareness - explore with Scheduling	5	4	5	2	16.0	✓
5	Run Product Sequencing - Increased # of Set-ups	Awareness - explore with Scheduling	5	4	5	2	16.0	✓
6	Tooling -Speed	Pneumatic Wrench	4	4	3	3	14.0	✓
7	Lack of standardisation	Poor technical data/SOPs	3	3	4	3	13.0	✓
8	Lack of standardisation	Training/ensure time available	4	4	2	2	12.0	✓

This matrix proved to be a powerful tool as the team had a long list of improvements, but wanted to maximise their efforts. By ranking them this way they were able to focus on the priorities and work down the list without over stretching resources.

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Some of the improvements the team made were:

- Having calibration guides and gauges set-up. For example the photo below shows how they used a stand and simple imaginary line for setting the side heads eliminated on machine adjustments. Standardisation saved them 4 minutes each time = \$51,000.



- The photo at rights shows how they change the bottom head jig rather than the 10 knives and 120 bolts. The team were told by equipment manufacturers and other industry experts that it could not be done (talk about throwing out a challenge!) but with some help from the maintenance team they have recently completed a trial removing and replacing the whole head, taking 5 minutes compared to 35 minutes to replace the knives=\$37,500.

Bottom Head Improvement



- A production run sequencing was implemented to follow the products from least overall set-up time.
- Easy to follow operating procedures with the use of photographs and diagrams were written by the machinists and operators for themselves.

Prior to the team starting the Set-up Reduction cycle, a large amount of maintenance was done over the Christmas shutdown to restore the planer. The team started in March 2003 and since then, have transformed the Stetson-Ross planer. Previously the Planer area was a bottleneck on the site, and the management team was sending feedstock offsite for processing as well as thinking of adding an extra shift before TPM³ started. Now the planer area is constantly running out of feedstock! Set-up times on the F7 have been reduced from over 90 min to around 30 min, with a total downtime savings of \$134,000 per annum.

CALENDAR OF EVENTS

INTRODUCTION TO TPM³ (AUSTRALASIAN 3RD GENERATION TPM)

2 DAY INTERACTIVE WORKSHOP

Auckland	4 & 5 March 2004
Adelaide	9 & 10 March 2004
Perth	11 & 12 March 2004
Brisbane	18 & 19 March 2004
Sydney	25 & 26 March 2004
Melbourne	1 & 2 April 2004

TPM³ ACTION 2004

ANNUAL NETWORKING FORUMS

Rotorua	
Centra, Rotorua	25 & 26 May 2004
Melbourne	
Rydges, Carlton	25 & 26 August 2004

TPM³ PILLARS

SERIES OF THREE, 1 DAY WORKSHOPS

Auckland	5, 6 & 7 May 2004
Melbourne	12, 13 & 14 May 2004
Sydney	19, 20 & 21 May 2004

- Day 1** - Cross-Functional TPM³ Core Pillar (FE&PI)
- Day 2** - Area-Based Core TPM³ Pillars (WAM / OEM)
- Day 3** - Support TPM³ Pillars (MEM / L&SI / NE/PM)

TPM³ INSTRUCTOR'S / LEADERSHIP COURSE 5 DAY LIVE-IN WORKSHOP

Wollongong	
Quality Hotel City Pacific	21 - 25 June 2004