



History of time tracking jobs & staff in Australian and NZ manufacturing

Sean O'Sullivan shows how embracing technology has substantially increased productivity on the factory floor

As time and technology has progressed so to have the systems that NZ and Australian manufacturers have and are using to track times on jobs. Four generic systems have progressed over time, namely;

1. Manual job cards that factory staff filled in their times worked on jobs
2. Cardex card system that staff punched holes in cards to confirm their times worked on jobs
3. Swipe card and bar code readers on the factory floor and time tracking software
4. PCs on the factory floor and time tracking software

Each of these systems are expanded on below;

1. MANUAL JOB CARDS

Factory staff write on job cards their times on jobs. Job cards are mostly filled in by factory staff at the end of the day or the end of the week. Actual times are compared to budgeted times by admin staff in earlier years by hand writing all times into journals. In more recent years admin staff started inputting all times into their finance software in order to check times on jobs and to job cost.

Early 1950s

Hygrade Furniture (Auckland)

One of the largest and most profitable furniture businesses in NZ at the time. The owner "Snow" kept a journal of products and processes and their respective actual times against budgeted times then paid base wage rate plus bonus to individuals based on their individual output.

Early 1970s

Hopkins Construction and Joinery (Hastings)

The largest and most progressive construction and joinery company on the east coast of the North Island in the 1970's – employing some 120 carpenters and 12 join-

ers. After comparing actual times to budgeted times Hopkins Joinery paid base wage rate plus bonus on work that exceeded what was budgeted and expected of them.

1978

Hamilton Joinery

Owner Campbell Reese Pioneer in the NZ aluminium window and door manufacturing industry developed the labour management system used extensively throughout New Zealand today – where individual staff are paid base rate for hours worked plus bonus based on their individual output. This work type and payment system was and today is still referred to as "Piecework". The company used well formatted job sheets where factory staff would hand write in the jobs they completed and their respective times.

1986

Rylock Aluminium (Hamilton)

Rylock Aluminium is a large progressive window manufacturer based in Frankton, Hamilton the owners are Dave and Sue Shattock. Dave worked for Campbell Reese at Hamilton Joinery in 1978 and had experience with the bonus system in his role. When Dave and Sue purchased Rylock Aluminium in 1986 Dave adopted the same job tracking and bonus system for their business.

1988

Toop Aluminium (Hastings)

Toop Aluminium is one of, if not the, largest window manufacturer based in Hastings and Napier the owner is Roger Toop. Roger used to work as a joiner at Hopkins Joinery in the early 1970s and had experience with the bonus system in his role. When Roger purchased Toop Aluminium in 1988 he adopted the same bonus system for his business.

2. CARD SYSTEM (MARKETED BY "CARDEX")

Factory staff recorded their time on jobs by punching holes in a

formatted cardboard card. Factory staff punched their cards at the end of the day or the end of the week. The completed cards would be taken through to Cardex's Offices in central Auckland and Cardex would "run" the cards through their computer, which would "read" all the cards, then run the all the respective production and labour reports. Those production and labour reports would then be sent back to each manufacturer and they were received back on average one week after production occurred.

Early 1970s

Some 200 NZ manufacturers used the Cardex system in the 1970s to record jobs in progress and times factory staff spent on jobs. NZ Furniture manufacturers who used the Cardex system in the early 1970s include: Laloli Brothers, Funnells, Morgan Brothers, Airst Industries, Smith and Maple and Baron Furniture. Many of these companies paid base rate plus bonus to individual factory staff based on their individual output.

3. SWIPE CARD READERS & HAND HELD BAR CODE READERS ON THE FACTORY FLOOR AND TIME TRACKING SOFTWARE

Factory staff swipe their cards through swipe card readers or they would use hand held bar code readers and this would track jobs, staff and their respective times on jobs.

Swipe card readers and hand held bar code readers provided substantial advantages over the 2 Cardex system and 1 Manual job card system (outlined above) by reporting production and labour information to the production manager "Live" in real time (production management did not have to wait a week for reports). "Live" real time information enabled production management to;

1. monitor all jobs and staff on the

factory floor 'Live' (production management can see on their PC screens time remaining on jobs compared to budgeted time)

2. immediately act on all issues to keep production progressing as planned

Mid 1980s

Major Finance Software vendors in Europe and the US developed modules within their Finance Software to track and report on production and labour in the early 1980s. These software systems typically have factory staff use swipe card readers and hand held bar code readers throughout the factory floor. One such Finance Software package is "Oracle" which was used at electronic components manufacturer Infosys Electronics in Christchurch.

1994

Freedom Furniture Australia

used bar code readers on the factory floor to time track jobs and staff - and report actual times against budgeted times for all processes and furniture items in 1994. Freedom Furniture New Zealand then started using the bar code readers on the factory floor and time tracking in 1996.

4. PCS ON THE FACTORY FLOOR AND TIME TRACKING SOFTWARE

Factory Staff would start and finish jobs on PCs on the factory floor. (PCs on the factory floor is simply an alternative to Bar Code readers on the factory floor. Both track and report the same production and labour time information "Live" in real time)

Mid 1980

XAL and Exactor are Finance Software packages used extensively throughout Europe and the US which both used PCs on the factory floor to track jobs and staff. Accurate productivity reports enabled management to pay staff their base rate plus bonus based on their individual output.

1994

Fairview Aluminium for their group of 80+ window and door manufacturers throughout NZ and Australia. Most Fairview window manufacturers using PCs on the factory floor pay base rate and bonus to individual staff based on their output. Some Fairview window manufacturers pay contract rates to individual staff based on their respective output. Phoenix Aluminium manufacturers Fairview windows and is one of the largest and most progressive window manufacturer in New Zealand - the owners are Jon Martin, Geoff Glass and Steve Cowan. Phoenix reduced their factory staff from 24 to 10.5 - without any reduction in output. Jon advised a manufacturers productivity conference held in Auckland earlier this year that this substantial gain in staff output and productivity was solely from using PCs on the factory floor, time tracking software and paying bonus to individual staff based on their individual output. [Notes from this conference are available on request from Sean on 027 2284211 or seansos@ihug.co.nz]

1995

Criterion Manufacturing NZs largest and most progressive furniture maker (300 staff working 365 days a year 24 hours a day). Criterion have developed their own production and labour tracking software system in house.

1997

Fletcher Aluminium for their group of 80+ Nebulite, Vistalite, Rylock and Fisher window and door manufacturers nationwide throughout NZ and few in Australia. Most manufacturers of these brands of windows using PCs on the factory floor and time tracking software pay individual staff base rate plus bonus based on individual output.

2002

Empower Software commenced development of PCs on the factory floor and time tracking systems suited to most manufacturing industries in 2002. Manufacturing industries currently using PCs on the factory floor and Empower time tracking software include; kitchens, shop fitting, furniture, timber joinery, windows, project boats, production boats, engineering, sheet metal, and fibre glassing.

Gains in staff output and productivity from NZ manufacturers using PCs on the factory floor and time tracking software include;

Homeplus Southland	80%
Asset Kitchens	63%
Pat Gavin Kitchens	53%
Circa Engineering	50%
Wingspan	40%
Reflex Boats	38%

Empower is currently being used by 69 manufacturers throughout NZ and Australia.

2007

Schiavellos Joinery (Melbourne, Australia) Australia's largest joinery manufacturer with some 1000 factory staff are this year implementing PCs on the factory floor and time tracking software.

The following summary from Reflex Boats based in Christchurch highlights the real and substantial benefits of using PCs on the factory floor and time tracking software.

Don Hanson the production manager at Reflex Boats advised a manufacturers conference in Christchurch earlier this year that they have gone from 25 factory staff making some 200 Haines Signature boats per year - down to 18 factory staff making the same number of boats. Don explained that the sole reason they have achieved this 38% gain in staff output and productivity (and some \$280,000 per year in wage cost savings) was they replaced their manual timesheets (time cards) that their factory staff filled their times in on with PCs on the factory floor and Empower time tracking software.

[Reflex Boats notes from the conference are available on request from Sean on 027 2284211 or seansos@ihug.co.nz].



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