



## Apprenticeships for the Injection Moulding Industry

Lidcombe TAFE is offering an **Injection Moulding Apprenticeship** course at **Certificate 4** level for new entrant employees and existing workers who are interested in becoming tradesmen and tradeswomen.

All apprentices sign a training contract with an employer and are paid under an appropriate industrial agreement. A training plan is developed with TAFE listing the training required in order to achieve the nationally recognised qualification relevant to the apprenticeship.

Employers nominate a **New Apprenticeship Centre (NAC)** to act on their behalf in representations to the State and Commonwealth Governments. The NAC will help the employer and apprentice complete the training contract, provide advice on eligibility for Commonwealth and State financial incentives and assistance, advise employers and apprentices on their rights and responsibilities as well as many other areas of support. NAC services to employers are free of charge and a full range of services can be seen at <http://apprenticeship.det.nsw.edu.au>.



The training undertaken at TAFE covers areas of study in:

- OH&S
- measurement and calculations
- injection moulding machine control
- die setting and troubleshooting
- polymer chemistry
- quality control
- engineering drawing
- electives chosen to compliment each apprentice's workplace

The apprenticeship period is for **4** years with the training component at TAFE taking **3** years to complete, with apprentices attending TAFE for one day per week over **36** weeks per year. This attendance period and pattern can be varied to suit apprentices who may have previously completed some form of polymer processing training and/or for those who have workplace experience gained over a number of years.

The next intake of new apprentices will be on the **22 July 2005**, with enrolments for this intake occurring on the **30 June 2005** at Lidcombe TAFE between **11:00am** and **7:00pm** in **Building M**.

For information on the Injection Moulding Apprenticeship or any other training in injection moulding, please contact:  
**Lidcombe TAFE**

**Stephen Dawkins**  
**Phone 9643 4688**  
**Mobile 0423 099 934**  
**Email [stephen.dawkins@tafensw.edu.au](mailto:stephen.dawkins@tafensw.edu.au)**

## The cost of longer working hours

The increased use of 12-hour shifts in enterprise agreements has major implications for the health and work-life balance of employees, according to the latest Agreements and Database Monitoring (ADAM) report by acirrt at Sydney University.

The *ADAM report 44* says companies have often used enterprise bargaining over the past decade to restructure working patterns to run plant and equipment around the clock to achieve major productivity gains.

It says two major reasons are cited for the improved productivity of 12-hour shifts:

- the reduction of time lost due to shift changeovers, particularly in manufacturing and mining; and
- improved shift efficiency – workers get into a rhythm as the shift progresses.

But over extended periods of work, there is also the possibility of lost productivity because of worker fatigue, errors, accidents, and the turnover consequences of burned-out workers. The report says a number of studies over recent years have examined the impact of 12-hour shifts.

### Error rates

The studies have shown employees are prone to increased error where constant attention is required. Increased error also occurs where there is prolonged inactivity or where tasks are repetitive or monotonous. Workers on 12-hour shifts can develop fatigue, which leads to “nodding off”, lapses in concentration and frustration. The report says the findings have major implications for all workplaces, but particularly those in the transport industry and in industries with heavy machinery. The studies have also found shift workers to be at higher than average risk of gastro-intestinal disorders, chronic fatigue, anxiety, depression and drug use. These are costs for society, especially the effects of shift workers’ irritability on family life.

### Duty of care

*ADAMreport44* says employers need to be aware of their duty of care to employees from changes in shift patterns. It says any changes to working hours need to take into account the occupational health and safety laws in each state or territory.

The report gives examples of measures employers are taking to oversee changes.

One way companies are responding to the implementation of 12-hour shifts is by setting up monitoring committees, with union and management representatives, to observe workers moving to new shift patterns.

These are often introduced – with the 12-hour shift itself – in enterprise agreements.

Medical checks also are part of the process, with one company in the building and construction industry allowing workers to have medical checks by their own doctors to determine their suitability for the new shift pattern. The cost of the medical checks is reimbursed by the company.

Rostered days off are another simple way of compensating for the longer hours pattern, although 12-hour shifts are often introduced as part of a 36-hour week or nine-day fortnight, especially in the building industry.

*This is reprinted from Occupational Health & Safety Bulletin May 25<sup>th</sup> Edition*

*The editor wishes to thank Peter Mandavy from ASP Plastics Pty Ltd for submitting this article.*

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## Australian Plastics Industry - the early days by Les Dalton (Part 3)

(This account is based on personal recollections and a manuscript by Austin Laughlin recording his researches of the Dalton and Nally ventures. The Australian Science and Technology Heritage Centre now hold the manuscript).

**Due to the length of this article has been presented in three installments. Part 1 was in the April PIMA PRESS, Part 2 in May PIMA PRESS.**

### Starting up with a T -Model timer

On the ground floor of the Evening News a small group from the newsroom were clustered around a fleet of T -Model Fords -some twenty of them. They had become hard to start.

Wally Wakeham, maintenance engineer, had come up with a bright idea and this day it was to be tried out. Nat Fienberg, an amateur weightlifter, approached the nearest of the Fords. A driver jumped into his seat, the weightlifter took a handhold on the vehicle and lifted a rear wheel off the floor. The driver put the engine into top gear and signalled with his hand. The foreman and mechanic between them seized the wooden spokes of the rear wheel and twirled it; the engine coughed and raced. The driver threw out the epicycle gear with his foot and gave a shout. The weightlifter lowered the wheel to the floor and away went the first of the fleet. The weightlifter moved to each Ford in turn until the whole fleet was moving along the loading ramp.

Wakeham had traced the problem to short-circuiting along ridges worn in the timer. When he met Fienberg that evening for a drink they discussed the electrical problem of the timer. Fienberg was working up an electrical business. He showed Wakeham a slab of a curious-looking material. Wakeham pinched off a corner of it. It crumbled in his fingers. "What is it?" he asked. "Looks like burnt ground-up leather".

"It's Condensite," said Fienberg, "a kind of bakelite. I got it from Warburton Franki. One of their bosses who had just returned from America brought it back" He showed Wakeham samples of bakelite switches and terminals he was using. He had been reading the technical journals and concluded that this new material would revolutionise the electrical business. "It might be the very thing for the Ford timer".

They might manage to make a moulding by grinding up the sample of Condensite into a fine powder and applying pressure and heat to it in a mould. But being technicians they were realistic enough to know it would not be quite as easy as that. Then ensued 6 months of experimenting using the pressure of a bench vice and heating with a blowlamp to obtain a few roughly moulded cubes. These were then shaped in a lathe and with a hacksaw to make a timer. They fitted one in a Ford. It worked.

They discussed the next step. They would make a mould and go into production. Wakeham produced a discarded letterpress from the News office. The carbon copy had displaced such presses. They replaced the handle with a gear wheel and ratchet leaving provision to attach a long timber beam. Wakeham calculated they would need a beam, 16 feet long. It would give a pressure of one ton to the square inch. With the press placed in one corner of Fienberg's workshop they would have a few feet for movement at the end of the beam in the opposite corner.

They now needed a supply of Condensite. A few enquiries to importers and they realised there was nothing but to order overseas.. Months later Fienberg had a telephone call from a customs officer saying there was a drum of Condensite down at the wharf consigned to him. The first phenolic moulding powder imported into Australia, it had aroused the suspicions of customs officers. Fienberg's youthful enthusiasm won the day and the officials, now more enlightened about synthetic resins, allowed the material in duty free.

Fienberg remembered vividly the night in 1922 when they filled their mould with the powder, inserted a thermometer in its hole and wedged the blowlamp so that its blue flame impinged on the mould. When they judged the temperature right they hastened to the end of the wooden beam. Fienberg believes he accomplished a military press of over 150 pounds and Wakeham might have done the same. The ratchet caught and held.

Going over to observe the mould. They could see molten material oozing out of the mould. When it ceased flowing they released the pressure and removed the moulding. Except for the fins, still to be filed off, the moulding appeared a perfect job. In the evenings they moulded a score or more. As they were made they were used in timers to replace the existing ones on the Ford News fleet.

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## Advertising & Contributions

Advertising is now available in the PIMA PRESS.

Advertisements should be submitted as a WORD file

Please contact Ralph Cable (Ph: 02 9387 6610 or [pima@pima.asn.au](mailto:pima@pima.asn.au) ) for more information.

Advertising rates are \$50 + GST for a quarter page.

**We still need articles to be contributed.** As PIMA PRESS is read by a large cross-section of the plastics industry articles do not need to be specific to Injection Moulding. Information on insurance, OH&S, raw materials, latest news on people and companies etc..

## The Early Days (cont.).

### Nally Products floated

Fienberg especially was convinced that phenol-formaldehyde plastics had a great future. As a start, why not market the Ford timer. The partners approached Bennett & Wood the leading distributor of cycle and motor accessories. T -Model Fords and Chevrolets

represente.d the greater proportion of cars on Australian roads. They were interested in selling the Ford timer and would buy it at 5/- each. As Wakeham & Fienberg reckoned their cost at 2/6 this price satisfied them.

The timer sold well and soon the partners decided to form a company. They jotted down possible names for the proposed company. The name that appealed was one coined from the conjunction of the 'N' of Nat and the 'ally' of Wally. So Nally Products became the name for their company. Drafting their prospectus they reckoned £3,000 capital was ample. The partners set about raising the capital while still working at their usual occupations. They put in their own modest savings but investors made no rush to invest and the float hung fire. The partners went on turning out Ford timers in their spare time and Bennett & Wood went on selling them.

During the next two years capital came in slowly. Their bank manager invested a small amount. A very useful shareholder was a gentleman, by name Meister, who had been growing tobacco in New Guinea. He lent the struggling company four tobacco hand presses, which adapted slightly, were used as presses in the Nally factory .Meister's contribution to the company financed the next order for moulding powder -a half-ton of Condensite. Larger premises were rented in Gould Street, Redfem.

So with more space and four presses Fienberg and Wakeham, while still remaining gainfully occupied elsewhere, turned their experience moulding timers to moulding other useful articles. They made terminal blocks, the first moulded from a phenolic plastic in Australia.

### The unbreakable cup

Late in 1924, Fienberg and Wakeham produced the first moulded cup and saucer. It was Fienberg's 'baby'. From its beginnings the company has been pre-eminent in moulding table and picnic ware.

This historic cup and saucer was fragile looking, deep chocolate in color. It had no moulded handle. Instead, it had a light bronze handle attached to a copper ring, which fitted under a fluted lip and was detachable. At the time this was a necessary improvisation. They could not afford to engage a die maker to make a more intricate mould for a cup with an attached handle.

Whether inadvertently, or by design, one day a cup and saucer fell to the roadway from out of a third floor window and was unbroken. A journalist observed the occurrence and wrote about how the cup and saucer did not shatter.. The few published lines in the press caught the attention of Lindsay Thompson, who happened not only to be a city councillor but a large shareholder in the popular caterers, Sergeants Limited.

Breakages are an important item of expense in the catering business. Thompson became a shareholder in Nally Products. The company received an order from Sergeants for a gross of the new phenolic plastics cups and saucers to be used on trial at one of Sergeant cafes.

The order delivered, there followed what must be one of the earliest examples of a consumer survey. For several weeks Fienberg and Wakeham could be found seated at a table in a Sargent's cafe munching a pie and drinking coffee or tea and listening intently for any comment from customers about the new tableware. They overheard plenty and they knew it to be true comment: when filled with hot beverage the cups developed a phenolic odour and taste.

The problem of odour and taste of phenolic tableware was to plague not only Nally but also others who attempted to market phenolic plastic table and picnic ware. Various expedients were tried. The problem was only solved when Beetle-Elliot began making urea-formaldehyde plastics, also in the family of thermosetting plastics.

*The editor wishes to thank Keith Monaghan of R E Davison Pty Ltd for submitting this article.*

## Twenty litre Pail and Lid Tooling For Sale



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**Email: [grant@ramjetplastics.com](mailto:grant@ramjetplastics.com)**

## Drop out rate hits skills

*(Australian Associated Press)*

A soaring drop-out rate in trades training has worsened the skills shortage in Australia.

New government figures show that for every three people who completed trades training courses last year, four more dropped out.

The National Centre for Vocational Education Research reported that while the number of people entering trade training surged by 8900 or 14% last year, the number dropping rose by 10,400 or 14%.

The number of people training rose for the third year in a row. But growth in the number quitting has led to little change in completions.

These declined in 2004 to just 30,000, including 21,700 apprentices.

The figures come as the Master Builders Association is urging builders to hire more apprentices.

Chief Executive Officer Wilhelm Harnisch says that without such initiatives the future looks very bleak with a drastic national shortage of traditional tradespeople looming.

*This is reprinted from Workstation and The Age Newspaper*

*The editor wishes to thank Peter Mandavy from ASP Plastics Pty Ltd for submitting this article*



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## Is outsourcing the answer?

*(The Australian Financial Review)*

Companies planning to head down the outsourcing road should closely examine the move.

Many businesses underestimate the costs involved in outsourcing, particularly overseas. Executive travel costs, staff turnover and cultural differences must be taken into account.

Gary Anderson, managing director of consulting firm Protiviti, says firms underestimate the costs of outsourcing by 12 to 52%, especially when a move offshore is involved.

He says businesses often overlook legal and management costs and fail to recognise the need to analyse processes and introduce more reporting requirements.

*This is reprinted from Workstation and The Australian Financial Review*

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## **“Advanced Asset Protection... How to legally secure your assets against unjust lawsuits”**

I am sure many of you, at one time or another will have seen the newspaper and media releases depicting the ruin that can occur when an unexpected lawsuit forces hardship or bankruptcy on a person. Health issues, the breakdown of relationships, fire sale prices for property and heavy legal fees are among some of the more devastating effects. When you see the impact of an unjust or vexatious lawsuit on others, you can more easily imagine its effects on yourself and your own hard earned personal and business assets.

You might think it can't happen to you... think again. Professionals and business owners are in the firing line every single day, and you probably didn't even know it. It could be an ex-employee or an unhappy patient, but suddenly your profitable business is faced with an unexpected lawsuit. You don't have to do anything wrong to be in court! Like it or not, there are people in Australia who want to take your money and property away from you. One lawsuit could take away everything you've spent a lifetime to acquire.

It's easy to make the dangerous mistake of assuming that professional and personal Liability Insurance is all you need to protect your assets against such lawsuits.

Good insurance coverage is critical these days, but it's only a step in the right direction. How would you feel if your insurance company denies your claim for coverage, or you are sued for an amount above your insurance limits? Your insurance company could even become insolvent, or go broke like HIH, leaving you liable. Even if you win; the legal bills could cripple you. The business you've worked hard to build and the money put aside for your retirement or for your family's future could be suddenly gone. Consider your insurance as only you're first line of defense.

One of the best ways to legally protect your assets is not to “own” anything directly. With careful asset protection planning, you can legally put important assets out of reach of litigants and still retain complete control over those protected assets. Many professionals use basic family trusts for tax advantages and asset protection. Unfortunately legal loopholes and poor borrowing strategies can make these very vulnerable to future lawsuits. Advanced asset protection techniques use top quality trust deeds and integrated debt and borrowing strategies to make you an unpalatable target to litigants.

Advanced asset planning and protection is not about “hiding” assets or illegally transferring them to your family. Unless the ownership transfer occurred long before the lawsuit claim the court will consider it a fraudulent conveyance. Advanced asset protection is about looking at your legal options and planning your business and personal investment structures well ahead. To protect your assets once you are “attacked” is useless; you have to do it well before anything goes wrong.

Author: Bill Thomson  
Asset Protection Consultant  
Advanced Asset Protection

For readers interested in learning more about Asset Protection, Bill has arranged to make available copies of a free report and DVD entitled: **“How to Legally Protect Your Assets”**. You can find out how to get these by listening to a recorded message at **1300 762 950**. In addition to the report and DVD, Bill is also happy to offer PIMA Press readers a complimentary “Risk Analysis and Assets at Risk Survey” (normal value \$220). Remember, you need to mention the PIMA Press when you call **1300 762 950**.

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## PIMA Charity Golf Day – The Plastics' Industry digs deep again

It is now official – the golf day raised \$20,000 for the Burns Unit at Westmead Children's Hospital. This means that PIMA is able to purchase the Anaesthetic Monitor valued at \$19,985 that was requested by Dr. John Harvey.

This piece of equipment is vital to monitor the ECG, oxygen saturation levels and the CO2 expired by children whilst receiving treatment, particularly burns baths. Burns baths are painful and it is important that they are able to monitor the anaesthetic agents given to the child to reduce pain. This must be done with a special battery operated device which is small enough for the relatively confined area and poses no risk of electrocution to the child. This model is the one similar to other anaesthetic monitors around the hospital leaving staff familiar with its use.

### Photos Now Available

Many incriminating photos were taken on the day. These have all been placed on disc. If you would like a copy please contact Ralph Cable at [pima@pima.asn.au](mailto:pima@pima.asn.au)

and he will arrange for a copy to be sent to you. Due to the size of the file and the number of photos it is not possible to either email the whole or part of the file. The cost of the disc is \$ 5.00 including postage & handling (and GST)



## Free Research Guide for PIMA Members

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## Apprenticeship Update at next Dinner Seminar

As previously advertised the next PIMA Dinner Seminar is on Tuesday 5<sup>th</sup> July at Riverwood Legion Club. The topic is 'Putting some numbers on it!' with presenter Ray Brown from Polymers International Australia.

Ray will be showing how simple calculations can be used to determine the correct gate size, runner size and demoulding temperatures. These techniques help to eliminate visual defects and optimize the moulding process.

In addition to this Stephen Dawkins from Lidcombe TAFE will be bringing us up to date on the Injection Moulding Apprenticeship scheme (article on page 1 of this edition of PIMA PRESS).

Stephen will be speaking on the current level of enrolments (at this stage disappointing) and he will be giving information that will assist and hopefully encourage companies to embrace this scheme.

It is also hoped that we will have someone from one of the NACs (New Apprenticeship Centre) who will also be able to show you how they can help.

Remember – apprentices will be the life blood of our industry. If the industry does not get behind this formalized system of training young people then it will be destined to stumble along in the hap-hazard way it has in the past. PIMA fought hard for 9 years to get this apprenticeship scheme up and running. Don't let apathy or the 'it's all to hard' attitude destroy our efforts.

## Trade Directory

Have you placed a FREE listing in the PIMA Trade Directory? You will find it attached to the PIMA website. Go to [www.pima.asn.au](http://www.pima.asn.au) and click on Trade Directory. If you have any problems contact Ralph Cable on (02) 9387 6610.

This directory has the potential to assist the industry with fast access to providers of goods and services to the industry but to improve this we need even more listings.

Advertising space is available in the PIMA PRESS.  
 This sort of space (approx. 1/4 page) is available for advertising and only costs \$55 (GST inclusive).

# ADVERTISE HERE

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Supporting the Burns Unit at The Children's Hospital at Westmead

Should you wish to support the foundation or find out more about it please visit their website at [www.dayofdifference.org.au](http://www.dayofdifference.org.au)



## Day of Difference Foundation Fundraising Gala

President Mick Leabeater and Secretary/Treasurer Ralph Cable represented PIMA at the Day of Difference Fundraising Gala at Luna Park. The MC for the night was Foundation Patron, Alan Jones, and during the wish list segment PIMA was able to present the cheque for \$19,985.35 to purchase the Anaesthetic Monitor for the Burns Unit. The wish list segment received pledges for more than \$200,000 worth of equipment and took the figure of funds raised by the foundation for the Burns Unit to over \$1 million dollars in the 6 months since they began. Ron Delezio should be very proud of his efforts to acknowledge the generosity the people of Australia showed towards Molly & Sophie. We wish the foundation all the success in the future. PIMA PRESS will keep members informed of upcoming Foundation events.



Ralph Cable, Dr. John Harvey, Mick Leabeater, Ray Martin, Ron Delezio  
 Olympian Mark Tonelli, Para-Olympian Karni Liddell



The Koru, The Day of Difference Foundation Logo, represents the unfolding of a new life. Symbolising renewal and hope for the future.



## Important Diary Dates for 2005

Dinner Seminar	Tuesday	5/07/05
Dinner Seminar	Tuesday	9/08/05
Plastics Pioneers Lunch	Thursday	25/08/05
Dinner Seminar & AGM	Tuesday	11/10/05
Plastics Pioneers Lunch	Thursday	24/11/05

26-29 September 2005

## PIMA

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