



**Casting Industry –
the career choice for
makers, creators and
innovators**

Melting Moments – March 2020

Presidents Report

The first quarter of 2021 has certainly been a busy one. Although we experienced a blip on the radar with a 5-day Circuit Breaker lockdown, the outlook seems extremely positive.

Many of our member companies returned to work prior to the Australia Day “long” weekend, with order books solid to overflowing. This is not only as a result of onshoring, as Australian businesses increase their recognition and the importance of supporting local industry and sovereign capability, it is also a direct reflection of the industrial and economic recovery of Australia as we begin the Covid -19 vaccination roll out. In February Manufacturing also reported a stronger than anticipated recovery evidenced in increased production and employment . Australia’s GDP, in the December quarter, also supported this with more than 50% of the growth attributed to Victoria.

I was delighted to see, earlier this month, the Federal Government dedicate more support to the country’s economic recovery announcing an extension to The Boosting Apprenticeships Commencements Program. This is extremely welcome news to industry. In addition to this, the recent confirmation that IBSA has progressed the Patternmaking Qualification and new training package seeking feedback from industry. The current package for our apprentices will remain relevant until December 2022 when the new package will transition in.

The new AFI Website is progressing well with much of the content now in place . We are seeking photos

from our members for the gallery page, so please forward any interesting pictures, and we will look to include them. We are expecting the site to go live in early May.

The Australian Metal Casting Industry promotional video is also advancing, with final filming taking place this week. We are tremendously excited to be sharing our story, enabling those who know little or nothing about who we are and what we do to see firsthand how vital we are to everyday lives.

Amber Maxwell – AFI Victoria President

AFI National

Unprecedented. This word may be overused, but it does best describe the 12 months that we’ve just been through. Sovereign capability and supply chain resilience are now part of the national conversation. Now is the time to reach out to your local MP and present the capability of metal casting in Australia and the constraints we face. By the time you read this I hope to be able to confirm that we have a meeting with a senior Federal Minister locked in. Many sources are reporting that Manufacturing in Australia is booming. A common issue for all types of manufacturing is filling both skilled and unskilled vacancies. We need to explore ways that our industry can stand out from the pack. You can help by talking up our industry within your personal networks.

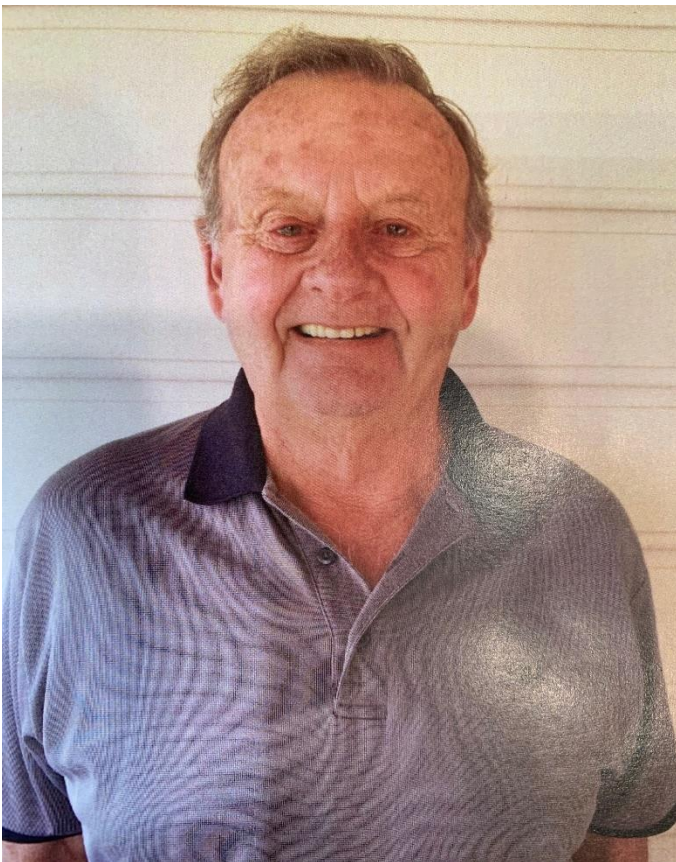
The early March National Council meeting has been rescheduled to early May. The updated website, industry video and the AFI(Vic) version of the

Foundry in a Box will all be available by then. My vision is that all States would have a FiaB to help promote the industry with Australian youth. Improving on the structure and availability of foundry trade apprentice training offerings around the country continues to be a major focus. We will make it happen.

Alan Cooke – AFI National President

Vale – Michael (Mick) Robert Nolan

31st Dec 1941 – 22nd Feb 2021



It is with great sadness we learned of the passing of Michael (Mick) Nolan on Tuesday 22 February 2021. Michael's contribution to the AFI and the Australian Foundry Industry over his lifetime was outstanding. His sense of humour, laughter and quick wit will be sadly missed at future AFI functions. It would only take something like this for him not to attend. Always a pleasure to deal with as a supplier and a person. Just a great bloke!

Mick did his apprenticeship at Bankstown Foundry owned by John McKelvey Senior. He did his apprenticeship with John McKelvey jnr and a lifelong friendship was formed. The story goes that a fellow named Paul Hogan was also an apprentice there and Mick regularly had to help jump start Paul's old Triumph. Mick worked at several other foundries before embarking on a career in sales. Mick's early sales career started in the days when there was a foundry on every corner. He would drive into the inner suburbs, park his car and walk between customers. Mick held jobs with several supply companies before joining Foseco in 1979. Mick left Foseco in 2006, after which he worked for Cast Metal Services and Wes Omega until he retired completely in 2018.

AFI Victoria – Technical Meeting Wednesday 17th February.

Due to the sudden 5-day lockdown enforced in Victoria, the planned meeting at the Village Green was quickly changed to become an online zoom meeting thanks to the quick arrangements from Amber. The meeting was well attended with interesting and informative presentations provided.

GoTafe Apprentice Training

Thanks to Brett Ambrosio and Sam Tyagi from GoTafe for their Foundry Apprentice Training update. There are still several challenges ahead both for Vic/Tas training as well as options for NSW. The National AFI committee are actively seeking to resolve apprentice training for the metal casting industry.

Foundry In A Box

Murray Brown and John Zach provided the entertainment for the meeting with a live demonstration of the Foundry In A Box (FiaB). This is an exciting tool for our industry to use to generate interest in a career in the metal casting industry. The demonstration showed the production of a casting from moulding to knockout – well done to both Murray and John for all their development work and presentation on the night – great work and there is more to come. Following on from the

demonstration the AFI Vic committee are actively working on improvements and a promotional video to further enhance this tool.

Around the Traps...

IXL Metal Casting

Ross James (Production Manager) shared this story of loyalty and passion from the production staff towards the Backwell Family.

We had the original IXL Foundry Anvil stolen from site a couple of years ago. The Foundry Production team took on a passion project to show our gratitude to the Backwell Family for their support by reproducing a replacement and refurbishing the plinth and plaque. We are all very proud of how the result turned out and Matt and Rob Backwell were ecstatic at the effort that we had gone to as sign of our appreciation.

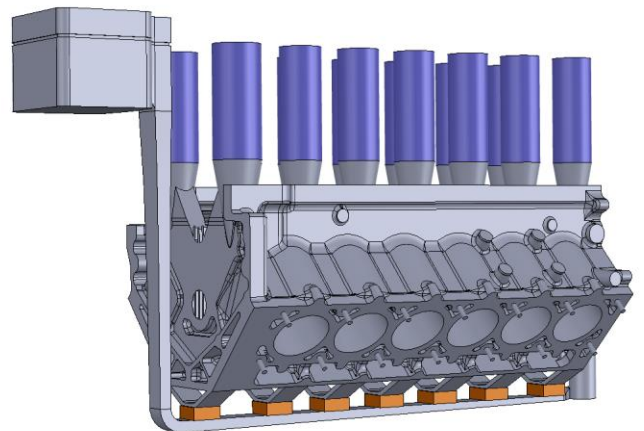


Well done to all involved

Australian 1st – V12 LS Cylinder Block – By Gary Savage

Shane and Matt Corish from Race Cast Pty Ltd redesigned the moulding for their V12LS engine block casting to take advantage of 3D sand printing for the entire mould. Previously only the water jacket core was printed and all other moulds produced conventionally from patterns. This change to all 3D printed mould components enabled 4 main advantages. Firstly, it provided flexibility to offer their clients individually tailored features such different engine mounting configurations without

having to change the patterns. Secondly dimensional tolerances could be tightened because draft was eliminated and thirdly welsh plugs could be eliminated by incorporating the water jacket into the cope and drag. Finally, 3D printing provided an opportunity to test out a full John Campbell methoding approach. The methoding design was done by Gary Savage at CSIRO and reviewed by John Campbell in the UK. To the best of my knowledge this is the first FULL implementation of the Campbell method on a sand casting in Australia. The design included a pouring basin with a hump prior to metal entering the downsprue to push air bubbles to the surface and avoid them entering the casting. The downsprue was designed with a hyperbolic profile to avoid separation from the mould walls and maintain pressurization. The runner bar was tapered along its horizontal length with a spinner at the end to capture any bubbles and slowly pressurize the metal flowing through the filters mounted on top of the runner bar, and then into the gates feeding the casting from the bottom. Gate velocity was maintained at 0.5m/s or less. Within the casting, fins and pins as appendages were used as chills to promote directional solidification. Moulds were printed at CSIRO's Lab22 using a Voxeljet VX1000 sand printer. Casting was done at Beckwith Non-Ferrous in a 601 aluminium alloy. The 120kg casting weight was filled in 65s. The image below shows the casting model.



Save The Date

AFI 2021 National Conference

The Australian Foundry Institute Queensland Division invites you and your organisation to join us at the 56th Australian Foundry National Conference to be held at Rydges South Bank Brisbane from **28—30 October 2021.**

This year's theme, ♪*"Don't Stop Thinking About Tomorrow"* ♪ signals our intention to provide attendees with new ideas, research and networking opportunities that will help the Australian Foundry Industry take the next steps into a bright tomorrow, that whilst ♪*"Yesterdays gone, Yesterdays gone"* ♪, the future ♪ *"It'll be, Better than Before"* ♪.

♪*"Why not think about times to come?"* ♪

Key dates

Registration opens: 28 April 2021

Program available: 5 July 2021

Early bird registration deadline: 3 September 2021

Accommodation booking deadline: 23 September 2021

AFI 2021 conference: 28—30 October 2021

Please use the link below to access all the conference details.

<http://www.aficonference.org/>

*******STOP PRESS*******

On Wednesday 17th March - Kuno Brautigam and Jim Artso were welcomed as legends to AFI Vic.

It was an extraordinary night - the first in person for a while and boy what a great turn out and show of solidarity we saw from our previously awarded Legends. Of the total number in attendance, 31, we had 11 – including the latest additions- Legends in the room! Quite an auspicious occasion.

Note the most "senior" of our Legends was also in attendance and in fine form I might add- William Pratt at the ripe young age of 99!!!



Jim and Kuno are welcomed by existing legends - great time had by all.



Jim Artso



Kuno Brautigam

Jim and Kuno both contributed immensely to the Foundry Industry and are worthy inductees as AFI Victoria's 2020 Legends to recognize their efforts. The night was loaded with stories of their past – many of which cannot be printed here. Both have had long careers within the industry – here are some highlights for both:

Kuno Brautigam **Early influences**

Grandfather was a Chief engineer in a large malt factory maintaining steam engines
Father was a Blacksmith, and was the Maintenance Manager in a Foundry
And with his family background Kuno wanted to study to be a Marine Biologist!

1974 – 1978 University Education

Berg Akademie Freiberg Germany
Master's degree in Foundry and Engineering
During holidays worked in the Drawing Office or labouring in the foundry.

1979 Eisenwerk Arnstadt Foundry (East Germany) approx..650 employees
A large greensand foundry, volume production:

1992-1996 Development Engineering Services
The only Iron Foundry in the South Pacific Islands

1996-1999 Sims Metal – Papua New Guinea

1999 - 2001 Sims Metal Brisbane

2001 - 2005 Mallet Foundry
Foundry Manager

2005 - 2008 Weir Minerals
Meltshop Manager

2008 –2020 IXL Metal Castings
Kuno accepted the role as Foundry manager at the IXL Foundry

Jim Artso

Schooling: Cheltenham High Class of 1970

1971 - 1978 Todd & Artso. (managing Director 1974 – 1978)

Artso Cores 1978 – 2011 At stages included operations in Adelaide and Sydney. Was a key supplier to the automotive industry in particular the Ford Motor Co.

A&H coated Sands 1983 – 1992
Established resin sand coating operation in partnership with the late Ian Hitchcock.

Magnesium Technologies 1985 – 1991
Focus on magnesium castings.

Thermal Reclamation 1995 – 2001

V & F Foundry 1992 – 2011
Producing both ferrous and non-ferrous castings, including cylinder heads for Leopard Tanks for the Australian army

QA Coated sand 2000 – 2016
Resin sand coating operation. Also developed coloured glass manufacturing for anti-skid applications.

Currently retired but still does some consulting work in regard to core manufacture.

The Australian Foundry Institute (Victorian Branch) are pleased to welcome Kuno Brautigam and Jim Artso into the ranks of “Legends”.

**** Special thanks to Sam from GoTafe for offering to be the “official “ photographer for the evening.**



Australian Foundry Institute (Vic Branch) 2021 Program

Month	Date	Location	Topic	Presenter	AFI / ADCA Contact
Feb	Wed 17th	Zoom	Industry Training		Alan C/ John Z Murray B and GoTafe
Mar	Fri 5th	Brisbane	National Council meeting		Rescheduled
Mar	Wed 17th	Village Green	Legends Night		AFI
Apr	Wed 21st	Notting Hill	Site visit – AMAERO Metal Additive Mfg		Gary S
May	Fri 7th	Brisbane	National Council Meeting		AFI National
May	Wed 19th	Rowville	Stegbar site visit		Alan C
June	Wed 16th	Village Green	Apprentice Training model	Craig Hilton, AIG	Alan C
Jul	Wed 21st	Geelong	Environment / Sustainability		David S / Alan C
Aug	Wed 18th	Village Green	Workplace Code of Compliance		Alan C
Sep	Fri 3rd	Sovereign Hill, Ballarat	Annual Technologists Picnic		Gary Bunn – MA
Sep	Wed 15th	Hawthorn	Industry 4.0 Swinburne Tech		Quinn P
Oct	28th – 30th	Brisbane	National Conference		AFI (Qld)
Nov	Wed 17th	Village Green	Legends Night and AGM x 2		Alan C
Dec	Wed 8th		Planning meeting		