

Tomago Aluminium

Volume 1 / 2020

# news

**BRODIE SUPPORTS  
THOSE ON THE  
FRONTLINE**

**INVESTING IN  
THE FUTURE**

**THE  
IMPACT OF  
COVID-19**



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# CEO MESSAGE

**Matt Howell**  
Chief Executive Officer

## COLLEAGUES, WELCOME TO THIS EDITION OF TAC NEWS.

### **What an unforgettable and challenging start to the year we have all had!**

Record summer temperatures, calamitous bushfires, statewide power outages threatening major disruptions to homes and essential services and then, with hardly enough time for any of us to catch our breath – we were pulled into the global COVID-19 pandemic, plunging into a national state of uncertainty that affected lives at every level.

In the case of the bushfires we at Tomago Aluminium, like everyone else in Australia, were able to help. Some did it physically as Rural Fire Service volunteers, most of us did it financially and we were not backward in coming forward.

We dug deep to help our ‘firies’ and as a group raised an impressive \$50,000 which was divided equally between our four local RFS units – Salt Ash-Williamstown, Medowie, Thornton and Raymond Terrace.

Looking after each other is what Australians do; it’s an extension of Tomago’s ‘Mates looking After Mates’ philosophy and when the state’s lights threatened to go out in January we rose to meet that challenge.

The summer heatwave put huge pressure on the NSW electricity supply, compromising grid stability and undermining reliable power supply. When we were asked for help by the Australian Energy Market Operator and AGL we did so by carefully cycling the potlines, cutting our power usage and becoming almost a spare power station at critical times.

In January we stopped all three lines for over ten hours in total and put a staggering 600 megawatts of electricity back into the power grid, enough to power around half-a-million homes. We also dealt with two separate substation component failures that caused widespread outages across the whole site.

We owe a big debt of gratitude to everyone who worked hard in tough conditions to ensure we recovered quickly and with as little production loss as possible.

Just as we were recovering, the COVID-19 crisis bared its teeth and even before the full effects of the disease were being felt around the country we were making plans at every level to bring the business through the pandemic using methods that would keep everyone safe at work while maintaining production.

I am extremely pleased to say our careful planning paid off, despite everyone having to work with a constantly changing situation and it should come as no surprise to anyone that we dealt with COVID-19 the Tomago way – together.

As a group we adapted to new work practices without changing our methods or altering the end result. We changed rosters and split working groups, we staggered meal breaks, we practiced social distancing and we drenched the place in hand sanitiser.

Many employees worked from home or revised their hours and everyone worked to manage their health, even lifting our free influenza vaccination from the usual 400 shots to over 600 this year. A big shout out to Sarah Page!

A few simple precautions went a long way towards arresting the virus. I’m happy to say that, at the time of writing, we have not recorded a single positive test.

While everyone should, quite rightly, be congratulating themselves I would like to acknowledge some impressive efforts, people like Occupational Health and Hygiene Advisor Dean Crossthwaite who, when hand sanitiser was at critical lows nationally, found the extra time needed to formulate his own and manufacture 150 litres of it for use onsite.

Our first-year apprentices, still finding their feet after starting work in late January, were tasked with designing and making lockable dispensers for Dean’s hand sanitiser and their efforts can be seen everywhere around the smelter.

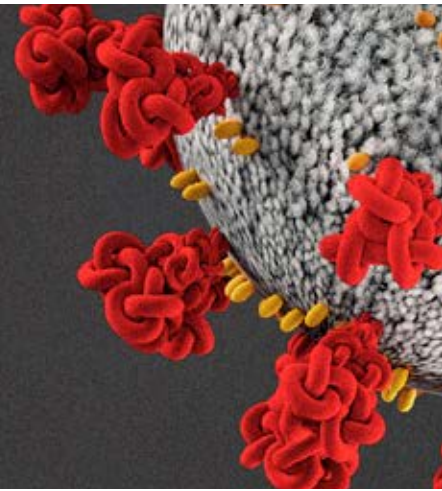
One of our engineers, Brodie Fairhall, dived into community-based manufacturing of medical grade face shields for use in hospitals and we were pleased to be able to support his efforts.

Has COVID-19 been beaten? Not yet. Will it come back? None of us really know, but if it does, I am confident we will get through it safely and together.

I hope you enjoy this edition of TAC NEWS and let me say thanks, once again, to everyone for the ongoing support and the great effort put in to help meet those incredible challenges.

Best regards,  
**Matt**

# HOW COVID-19 HAS IMPACTED TAC



## ‘HOPE FOR THE BEST, PREPARE FOR THE WORST’, IS A SAYING THAT PERFECTLY SUMS-UP OUR APPROACH TO THE COVID-19 PANDEMIC THAT HIT AUSTRALIA THIS YEAR.

COVID-19 ran a course often predicted in science fiction movies and books, emerging seemingly out of nowhere and efficiently spreading around the world on ships and planes.

In Australia, interest in what was happening overseas turned into concern. Federal and state governments started making plans and as a national cabinet was being formed to deal with the looming crisis, businesses everywhere started making their own plans, Tomago Aluminium among them.

“It was involved and intense”, said Tomago’s People, Safety and Environment Manager, Simon Mitchell. It was also complicated because of the planning needed to not only look after employees and contractors onsite but also to ensure production was maintained.

“We saw what was happening overseas and reviewed and amended our plans to mitigate risks. We ordered additional PPE and other supplies. We had a series of management team meetings and worked-out our necessary equipment and cleaning requirements. We had meetings with the unions onsite and with other businesses.

Everything was happening quickly and changing rapidly. People were scared and needed reassurance. CEO Matt Howell was holding weekly online Zoom conferences with employees working from home to discuss, in open forum, any and every concern regarding the crisis and recording site-wide video

messages to keep everyone up-to-date, while at the same time working with the New South Wales and Federal governments to reinforce the fact that TAC was an essential service and needed to stay operational.

The company embarked on an employee protection program, instituting social distancing measures, encouraging regular and thorough handwashing and discouraging casual contact – handshakes, hugs, backslapping and even congratulatory high fives.

Occupational Health and Hygiene Advisor Dean Crossthwaite was wrapping-up a long, time-consuming and very involved thermo-regulation (heat stress) study of potline operators when COVID-19 became a reality.

“I was planning on easing back a bit but that didn’t happen,” Dean laughed, “and I was still finishing that study when I became involved in planning for a pandemic.”

Dean’s first task was to learn all he could about the virus; its symptoms, its effects, how to kill it and “even understand what its victims might look like”. Weekends became research time as Dean researched infection control and brushed-up on epidemiology.

He procured several thousand respirators and was tasked with managing their use. He also had to find good supplies of hand sanitiser but by mid-March, with suppliers unable to deliver, he looked at a more involved and inventive alternative – making his own.

Falling back on methods learned while working in hospital pharmacies, Dean sourced as much ethyl alcohol as possible and set to work.

“In a period of two days I think we cleaned-out every Bunnings store between Newcastle and Singleton of ethanol and plastic spray bottles, brought it back here, mixed it up and put it in the containers.

“I could see the COVID-19 bow wave approaching so we were working pretty frantically on the PPE,” he recalled.

One supplier, he said, offered to sell him five litres of hand sanitiser for a cool \$850. He made 150 litres onsite for a fraction of that amount.

If that supply company was thinking only of itself, Tomago Aluminium Innovation Engineer, Brodie Fairhall, was taking a different tack and considering the needs of those on the COVID-19 frontline, the healthcare workers.

Thinking about the virus from a broader perspective, Brodie realised that hospitals and other medical facilities might not have enough PPE so set about forming a collective to manufacture, using 3D printing, 50,000 face shields.

We’ve covered Brodie’s remarkable efforts (on page 6-7) in this edition of TAC NEWS.

COVID-19 not only galvanised thoughts, it also changed some of our operating methods.



Dean Crossthwaite with his self-made surface sanitiser

Rohss Wilson receiving his flu vaccine from Sarah Page

For supply chain Procurement Manager Gordon Wilson and his eight-strong team, the first signs of the virus becoming a pandemic meant securing supplies to keep the smelter operating, chief among them the petroleum coke used in anode manufacture.

That meant finding it in China, Italy, Belgium, Canada and the United States. With support from Meegon Maundrell and the Brisbane-based Rio Tinto Supply Support group it was sourced, ordered and placed into an already heavily-congested supply chain.

“It wasn’t until we had confirmation that the product was actually on the water that we could rest,” Gordon said. “We spent several weeks on tenterhooks.”

PPE was another area of focus for Gordon and became problematic when the US and Europe decided to stockpile rather than sell. The solution called for some creative thinking with consumption reduction chief among the ideas.

Onsite access to supply was restricted and frugal use encouraged. A call was put out for employees to return unused protective clothing and people rose to the occasion.

“Everyone onsite was great and we used half our anticipated amounts. Now we are starting to see regular monthly shipments and we’re regaining control. We prepared for the worst while hoping for the best and we came through.

“I’m very proud of the whole TAC team, every single person,” he added.

While Gordon Wilson was finding resources, others were working-out how to distribute Dean Crossthwaite’s hand sanitiser. That task fell to some of the company’s newest employees – its seven first-year apprentices.

“The apprentices were challenged to design and build a working model of a theftproof, lockable hand sanitiser bottle holder that could be fitted and used around the site,” Apprentice Training Supervisor Greg Wall said.

They split into groups, brainstormed the problem, drew-up a cleansheet design and fabricated it, the prototype ready for trial within 24 hours. With a few modifications after a day of testing the unit was ready to go into production.

“They made two for the main gate, then it was suggested the dispensers could be used in other areas. Within three or four days I had orders for 30 of them and they made those in a week. Currently, we have orders for another 60.”

As the hand sanitiser dispensers started appearing around the site other plans were coming into effect.

Work crews and shifts were split, non-essential employees were encouraged to work from home while those in critical administration roles changed and staggered their work hours. Meal and crib breaks were also offset in a drive to avoid physical contact.

Dean Crossthwaite expanded his horizons and looked at Tomago’s cleaning needs, taking the time to educate and train two special deep-cleaning teams.

A drive to increase influenza vaccinations was successful, jumping from the average 400 annually to over 600. Why a flu shot? To eliminate one source of COVID-19’s symptoms and to keep everyone as healthy as possible.

Importantly, everyone was given clarity regarding ongoing work, their pay and personal leave during the crisis via

their Supervisors, regular site-wide communications and video messages from Matt Howell.

“The first month (from around mid-March) was really tough on all of us but it started to ease-up when people saw the (infection) curve flattening,” Simon Mitchell said.

At the end of May, Tomago was moving carefully and steadily to the next phase of its COVID-19 planning – bringing people back to work and returning the smelter to “some kind of” normal.

Dean Crossthwaite has been involved with developing ongoing processes to help deal with the virus and everyone is acutely aware of the precautions that need to be taken in the workplace.

The most telling sign that all of the work and planning was successful, is that not one single person has been infected with COVID-19 (at the time of writing).

Sadly, even though medical science teams are working furiously on a vaccine for the virus, it is set to be with us for the foreseeable future and that means keeping abreast of the situation, further planning and pandemic policies for Tomago’s management.

More recently the site has been practicing how to protect workers should an employee test positive. Further to this a specifically trained team onsite has been established to support deep cleaning if required. Every department will run a scenario to fine tune their implementation in a worst case scenario.

For Simon Mitchell though it is a little simpler: “We’ll keep prepared and by working together we’ll do our best to beat this thing.”



# BRODIE SUPPORTS THOSE ON THE FRONTLINE

**WHEN COVID-19 DECLARED WAR ON THE WORLD AND FORCED US INTO LOCKDOWN SOME CHOSE TO STAND AND FIGHT THE PANDEMIC IN ANY WAY THEY COULD. TOMAGO'S BRODIE FAIRHALL WAS ONE OF THEM.**



If, at the start of this year, anyone had asked Tomago Innovation Engineer Brodie Fairhall about his 2020 plans, it's doubtful 'developing a community-based manufacturing industry and helping fight a global pandemic killing thousands' would have been on his list.

That was then, this is now and six months into the crisis Brodie has started getting some normality back into his life after creating an alliance of 3D printer owners, both individual and corporate, to make medical-grade face shields for use on the COVID-19 frontline, in hospitals and by other sections of the medical industry.

Working from home once COVID-19 restrictions were introduced, Brodie anticipated that the shortage of Personal Protection Equipment facing hospitals in Europe and the United States would become a problem for Australia.

No stranger to 3D printing, he turned his skills to not only designing and making protective face shields for health workers but also devised a plan to have them made in large quantities and distributed to those who needed them.

Rightly, Brodie reasoned that making shields the usual way would take eight weeks or more just to get started while 3D printing was immediate, perfect for the COVID crisis.

He contacted his superintendent, Mal Muddle, and asked if Tomago could supply the plastic products he needed to manufacture his prototypes, a request with which the company was only too happy to assist.

Knowing that one 3D printer was limited in its output, Brodie started tracking down and contacting 3D printer owners in Australia and New Zealand, everyone from individuals with 3D printers at

home through to large companies with hundreds of printers, or printer 'farms', bringing them onboard and up to speed with the manufacturing processes involved.

"Initially I got stonewalled at every turn because so many people were trying to do the same thing," Brodie recalled. "I thought it made sense to form into a co-operative so we became the Open Manufacturing Alliance which now has 308 members who, combined, could produce 50,000 face shields in a few weeks."

As that was happening he was dealing with doctors, hospitals, state and federal politicians and a range of public servants across a number of levels in an effort to determine the best way to manage the acceptance and distribution problems, hastening the red tape cut-throughs necessary to have the shields accepted for widespread use.



“  
*Once we had TGA approval and could get the product out, there was suddenly demand*  
”

For several weeks Brodie worked a punishing schedule, performing his regular Tomago tasks on his rostered work hours, switching to the manufacturing alliance between 4pm and midnight, grabbing a few hours' sleep then starting all over again when his alarm went off at 6am.

Sleep, he reasoned, was overrated. Weekends? They were for other people – he had to deal with things like design and manufacture, quality control, product approval, certification and use; problems and issues needing solutions yesterday.

“There were hoops to jump through and I was getting conflicting information. Frontline medical workers were telling us they needed equipment, some procurement officers were telling a different story,” he said.

And when they were ready to be distributed, hospitals were unsure if they were allowed to use equipment sent by individual suppliers.

“That problem was sorted when some large medical companies became involved and were able to get Therapeutic Goods Administration approval for a design that alliance members were producing.

“Once we had TGA approval and could get the product out, there was suddenly demand,” Brodie said.

At that point his role changed from manufacturer to administrator, stepping outside his area of expertise to manage the alliance's huge team of volunteers, a major challenge that took him out of his personal comfort zone.

Brodie is now keen to progress work with Newcastle-based Sparkhaus, a maker's co-operative managed by health professionals who are themselves working on creating intensive care ventilators, using 3D printing to make some of the parts.

Reflectively, he says the COVID-19 outbreak should prove to governments and businesses alike that democratised manufacturing is a reality.

“It's obvious the manufacturing sector is capable of responding quickly and that should help in future crisis situations, where people will not only be able to learn from this experience but understand and accept that it is possible to team up, innovate and manufacture products locally.”

“We're currently exploring ideas of sending product to places like Indonesia and the United States and we've been looking at other areas, other types of product. It will be demand-driven. There is scope for post-COVID-19 manufacturing and it's not just 3D.”

Brodie Fairhall's Open Manufacturing Alliance could even stand as an introductory model for restarting widespread Australian manufacturing in a post-COVID world.



# KEEPING THE LIGHTS ON ACROSS THE STATE

**MANY ARE SURPRISED TO KNOW THAT TOMAGO ALUMINIUM IS A MAJOR ELECTRICITY CONSUMER BUT FEW REALISE WE PLAY A MAJOR ROLE WHEN IT COMES TO KEEPING THE STATE'S LIGHTS ON.**

Over summer, as the weather hit record temperatures, bushfires were doing their worst and air-conditioning units were running overtime, the pressure on the NSW electricity supply was enormous.

With the stability of the grid under threat and a reliable supply uncertain, Tomago was asked to help out by the Australian Energy Market Operator and energy supplier AGL.

And help we did, carefully cycling the potlines, shutting them down as necessary and acting as a 'virtual battery' to redirect that considerable load during the peak afternoon period.

Over three critical days in January we stopped all three lines for just over seven hours. On top of that, we had two separate substation component faults that led to widespread outages across the whole site. In real terms, Tomago was able to put a staggering 600 megawatts of electricity back into the power grid.

In total, we experienced almost 11 hours of interruptions to the potlines and that, said Tomago Aluminium CEO Matt Howell, is unheard of.

"We've never had that many outages in one month, but it is better to do it that way than to have a cascading series of (electrical system) trips," he said, adding: "There are many things that can cause outages and if you don't have an aluminium smelter handy, who do you call on?"

The alternative is, rolling blackouts for households. In a worst case scenario, if the whole NSW system shut down, it would take more than five hours to re-energise us, which is about two hours too late to prevent a potline freeze. A truly sobering thought.

While strategically switching-off the potlines was able to keep the power on for the rest of the state, it did cause its own set of problems for Tomago.

Each shutdown put the smelter several hours behind on its work schedule and the thermal instability took many weeks

to recover. "I take my hat off to the men and women who were working in extraordinary heat to recover from these unplanned outages; their efforts saved all our jobs."

Matt says smelters interrupting operations to secure electricity supplies for the broader community are not unusual, adding that co-ordinated interruptions, better known as load-shedding, are best done in a planned way rather than in ways that will cause blackouts.

"We can take a potline off for an hour but beyond that the risk of bringing it back online successfully increases dramatically. In January 2016 a failed restart came within a whisker of freezing that potline."

The biggest problem in the future, according to Matt, is that the summer shutdowns needed to help the state stave off power outages will not simply continue, but increase in their regularity. And that is food for thought.



# INVESTING IN THE FUTURE

**ONE OF THE HARDEST TASKS FOR ANY BUSINESS IS TO PLAN FOR THE FUTURE, KEEPING THE PROCESS MOVING FORWARD TO MEET THE CORPORATE VISION.**

Any business moving forward needs to constantly update its equipment as a means of futureproofing and at Tomago Aluminium some of that forward investment involves replacing essential vehicles.

With some of these specialist machines worth more than \$500,000 each, the annual replacement cost can run to between two and three million dollars annually.

Right now, the challenge is to spend the money carefully. Since the unwelcome arrival of COVID-19 at the start of this year we are facing challenging times financially and every department has been asked to cut costs wherever possible without compromising safety.

Despite the challenges facing us right now we are following the advice of employees in regard to the type of equipment needed to increase production and invest in our future.

These new vehicles mark the start of a major change in the Tomago fleet.

Tomago currently has nine metal-hauling trucks which are required to work around the clock, transferring molten metal from the Potlines to the Casthouse via the TAC Station.

To ensure the demands of transporting almost 600,000 tonnes of metal each year is met with minimal downtime and delay, the fleet needs to be well managed and reliable.

Currently, the company is budgeting for four new metal haulers, specialist trucks which will be used to tow ladles of molten metal around the site, which are being brought in to replace four existing units.

Built by Kalmar as specialist industrial trucks with the tight turning circle needed to manoeuvre in close confines, the new haulers have been chosen for their robustness. Also known as ‘terminal tractors’, they are used at wharves to move containers from ships to storage areas.

“We had to work closely with Kalmar and developed systems to build trucks that could handle our unique environment onsite,” said Central Reliability Engineer, Jason Giddens, who has been instrumental in ensuring that our suppliers are aligned with TAC’s requirements.

There will soon be some more interesting new vehicles onsite with Tomago preparing to start trialling a new ‘Lids on Ladle’ load transfer vehicle, so called because its molten metal load is securely covered during transport around the site.

New to Tomago but already in use at other smelters around the world, the Ladle Transfer Vehicle will work in conjunction with another new unit, a Pressure Discharge Vehicle, that will pump liquid metal into the furnaces rather than using a CHFTA pouring crane to tip the contents into the furnace via the filling door, which is located several metres above the floor.

The benefits of the Pressure Discharge Vehicle include reducing operator exposure to molten metal while pouring. There is also less waste by reduced dross because of lower agitation of the metal in the furnace and a reduction in the time spent by full ladles waiting to access an empty furnace because of restricted access to the hot metal aisle.



*One of the new Tomago Metal Haulers*

These vehicles, which are expected to be commissioned in January 2021 and go into full service in the first quarter of the new year, do not come cheap but they will have a lengthy service life. The ladle vehicle costs between \$850,000 and \$1 million and the pressure discharge unit around \$1.2 million.

It is all about spending wisely and carefully, or “futureproofing”, according to Senior Asset Engineer Antonie Jacobs.

“Our five-year plan,” Antonie says, “is to replace our current nine molten metal transfer vehicles with five LTVs and three discharge vehicles, which will be used instead of cranes.”

Other vehicles on the long-term wishlist include an eight-tonne capacity Casthouse Tending forklift. Effectively the Swiss Army Knife of forklifts, it is a multi-purpose vehicle featuring several quick connection tool heads that can be fitted in place of the conventional lifting tynes.

“We also revaluated all other forklifts as part of the health assessment of our fleet” said Jason “and discovered that Tomago required larger forklifts with a greater capacity.”

“We have a robust vision of where we want to be,” said Site Services Maintenance Superintendent Mal Muddle, “and part of that vision is safety. Safety is our most important consideration when purchasing new equipment.

“We are driven by the saying ‘how can we do it better?’ so, importantly, we are buying equipment that is tried and proven in industry. By doing that we become safer and more productive.”





The Offline Thimble Stripper

# ROD SHOP INNOVATIONS

**A CARBON ANODE AND STEM FUSED IN CAST IRON TO FORM A COMPLETE ANODE ASSEMBLY, IS GREAT FOR MAKING ALUMINIUM BUT WHEN THE PROCESS IS OVER, THE CLEAN UP BEGINS.**

When the remains of the anode covered in bath (the butt), comes back to the Rod Shop for recycling, the carbon block is stripped off, leaving the original stem with six cast iron thimbles attached to the remaining yolk.

The Rod Shop team uses an inline thimble press to remove the cast iron thimble but when that unit breaks down, reinforcements have to be called in. An excavator is used to remove excess bath and a shot blaster employed to remove the fine layer of bath adhered to the carbon before it, too, is removed using the excavator, leaving a yolk with its thimbles attached.

The problem, according to Carbon Improvements Superintendent Andrew Thurlow, was that there was no onsite method for easily and quickly removing the thimbles, requiring them to be either sent to Kurri Fabs for thimble removal – which created its own set

of problems – or put back into the Rod Shop process with the possibility of slowing-down production.

Teams from the Rod Shop, Engineering and Mobile Workshops worked on a solution, developing a machine capable of removing the thimbles onsite in less than 15 minutes.

Using the shop's spare thimble press, located in the Midal building, they added safety guards, and utilised a hydraulic power pack, connected to the correct power supply and brought-in storage bins for waste collection.

Trials started in late February when 27 assemblies were stripped on the first day of trials, each one taking around eight minutes.

In further trials the rate was 54 assemblies daily over a 7.2-hour period and the target was set at completing 200 anode assemblies offline in a week.



Trial stems in the welding bay

## IMPROVING STEM SUPPLY

**ROD SHOP INGENUITY IS BEING DEMONSTRATED WITH STEM SUPPLY AS WELL AS THIMBLE REMOVAL, OVERCOMING A SUPPLY PROBLEM THAT CAUSED A SHORTAGE.**

“We are currently buying new yokes to replace or replenish those we already have. The challenge for us is that we don't have enough stems to attach to the yokes needed for the spiders,” Andrew Thurlow said.

The answer to that problem? To cast, cut and machine our own TAC aluminium slabs to the required dimensions.

That simple measure meant the Casthouse was able to start trials in early March and ensure the required silicon content was attainable during the cast without causing any operational problems.

With the help of Jeremy Ireland and Andrew Withers (Business Improvement Specialists), proof of concept was sought regarding engineering and fabrication of the trial stems.

Following those initial trials, the Casthouse successfully poured enough metal to make a production batch which was converted into 100 stems by the Performance Engineering Group.

Offcuts from the machining of the slabs have been repurposed, utilised as arc repair inserts, saving on material costs for the arc repairs and reducing the slab scrap percentage of waste.

And yes, that simple measure led to an impressive cost saving.





# BUSINESS IMPROVEMENT

WE ALL WANT TO DO THE BEST DEAL AND ACHIEVE THE BEST OUTCOME BUT HERE AT TOMAGO ALUMINIUM, IT GOES A LITTLE BIT DEEPER THAN THAT.

For Tomago Procurement’s Senior Sourcing Advisor, John Fraser, achieving the best outcome is a two-way street, more a case of delivering value through collaboration than getting a win to the detriment of the other party.

John’s job is to improve processes and deliver value by exploring alternatives while always keeping in mind that the best price is not always the best value.

Using the example of anode yoke assemblies (including the stems), John says examining the alternatives meant asking Brooke McBride if they could be made here from our own aluminium.

We are now trialling stems, made here with our own material and local machining, delivering a product in three weeks that would normally take three months to source out of China.

For John, working with other stakeholders, including those selling the equipment or materials, is important and his mission statement – ‘To be the partner of choice for procurement services and, together with all stakeholders, create sustainable value through innovation and excellence considerate of the total cost of ownership’ – says as much.

“We encourage people to do things differently,” said John. “Prove the concept can make the component to specification.”

He is also a strong supporter of bipartisanship, of involving everyone from every department and carrying-out collaborative work with vendors.

“Developing relationships with all stakeholders is key. You have to have a good relationship with vendors and you have to ask: ‘is there a better way?’”

He recalls a project from some years ago that involved using a 10mm stainless steel plate. The plate was always being bent and had to be straightened or replaced, so a thinner 6mm plate was used to reduce cost.

“That was then reduced to a 3mm plate because we could straighten them easily and reuse them before trialling thick cardboard, which worked – to a point.

“Then someone suggested using pieces of rubber so we tried that and it worked. Now we are recycling used conveyer belt and the price has dropped from around \$50 per unit to two or three dollars.”

John is currently working with a number of departments, encouraging each one to make its own cost savings.

**“ We’re looking for innovative ways to improve the process and get better overall value. ”**

Importantly, safety is always front-of-mind for John and ensures rigorous oversight for everything, especially safety clothing and PPE.

Business Improvement Specialist, Jeremy Ireland, is effectively the ‘feet on the ground’ when it comes to implementation.

Largely office-bound, John is the ears of the operation while Jeremy, mostly out asking questions, is the eyes.

Together they listen to contractors in an effort to understand any frustrations and help increase throughput by reorganising procedures, schedule and routines.

Working from the ground up, they can implement process changes quickly by working both on and off-site and ensuring equipment is up to standard.

Jeremy and John, who like to be seen as trusted advisors on projects, are involved with a number of projects annually and believe they have generally managed to achieve a happy balance.

“We’ve saved the company money – millions of dollars – over the years and we are also keeping people happy.”

A win all round.

# 2020 COST AND WASTE MANAGEMENT

**FOR SOME BUSINESSES, CUTTING COSTS MEANS USING INFERIOR PRODUCTS, ALLOWING FEWER HOURS FOR A JOB OR USING INFERIOR EQUIPMENT. AT TOMAGO, WE PREFER TAKING AN ANALYTICAL APPROACH.**



*Katrina Whitely (L) chats to Michelle Whyte (R)*

Things are done differently at Tomago Aluminium with a balanced, more holistic approach preferred to simply cutting corners and hoping for the best.

Tomago is currently working with industrial management consultancy Aquila to develop an ‘improvement pipeline’ in a bid to cut departmental waste and costs.

Business Development Superintendent Michelle Whyte said the company is taking a broad approach to the task. On the one hand setting-up departmental teams around the site to look at management material use and on the other hand to examine alternative materials, alternative suppliers and a reduction in consumption.

“We need to understand why there is waste because we don’t want to slow-down our operations or restrict access to anything. We have to spend our money in a wise way,” Michelle said.

Rather than taking a ‘Scrooge’ approach, Michelle says the program is helping identify problem areas so that they can be managed correctly and the right decisions made.

Michelle is being helped in the job by Aquila’s Sandy Quirino who, as well as helping develop an implementation

program, is attending all toolbox meetings to give assurances that all decisions being made are fully transparent.

“We want the operators to be more accountable, we want to show them the results of their efforts, show them the data and explain to them how to save,” Sandy said, adding that operators sometimes add their own suggestions to the process for discussion.

The Cost and Waste Management teams are currently working on 18 projects aimed at saving the business an impressive \$7 million this year. Another 38 are still to be implemented. Some of the projects will save a few thousand dollars, others will save hundreds of thousands but, says Michelle, they are all important.

Last year, when the program was introduced, an impressive \$29 million was saved through a variety of changes and Michelle is proud of the fact that nothing compromised Tomago’s strict safety or integrity policies.

Michelle and Sandy attend a lot of meetings – as many as four each day – listening, guiding and mentoring team leaders, maintaining the momentum and breaking-down barriers between departments.

Is there an end point? Michelle Whyte suggests that is probably unlikely.

“There are new procedures. Some we learn from other companies, some we develop here.”

Tomago has also engaged data analyst Tridant in an effort to improve data analytics and management reporting.

Tridant has been working with our managers and superintendents to work out exactly what individual departments and the business overall need in terms of systems and spreadsheets.

At the end of the workshops Tridant will compile a two-year ‘road map’ covering the seamless integration of all our systems and software applications relating to management reporting.



*Sandy Quirino from Aquila*





Dean Crossthwaite



Measuring environmental parameters during a shell exchange

# WORKING IN A HOT ENVIRONMENT

**DEHYDRATION IS NOT UNCOMMON IN OUR CLIMATE AND IT IS A PROBLEM WE DEAL WITH REGULARLY AT TOMAGO WHERE HOT WORKING CONDITIONS NEED THEIR OWN SPECIAL MANAGEMENT.**

Every year at TAC, potline operators experience problems with heat stress, the condition sneaking-up on them because they forgot to do something as simple as take regular drinks of cold water.

It is called thermo-regulation and Occupational Health and Hygiene Advisor, Dean Crossthwaite, has been studying exactly how working in a particular part of the smelter can affect core body temperatures.

Dean has been carefully monitoring a team of 25 volunteers from potlines 1 and 3 and the Reline area since August last year, using monitoring methods and technology similar to that used to study performances in professional athletes.

“We’re trying to understand how the kinds of jobs we do affect core body temperatures. We might need to re-think the way people work,” Dean said.

The study, which finished in February, measured volunteers’ hydration levels when they arrived onsite and then five more times during the shift. Liquid intake and output was also closely monitored so fluid loss and job-related heat loss could be measured.

Key to Dean’s study was a small ‘smart pill’. Fitted with electronic monitoring equipment, the harmless device is swallowed by each volunteer before it starts sending real-time data about core body temperature, hydration levels, heart rate and fluid intake.

Preliminary findings have already been surprising, showing that around 85 per cent of employees are starting work dehydrated, needing to drink as much as one-and-a-half litres of water just to bring them up to scratch.

Because of the heat involved in particular work areas, Dean said, some people are drinking between six and nine litres of water daily.

“ *One of the really interesting things is that people are finding-out just how much water they need for the type of work they are doing and it comes as a surprise to them.* ”

Dean has also noted that dehydrated people are not cooling down as quickly as their hydrated counterparts during their breaks, effectively cancelling-out the benefits of the break.

And while the study has been time-consuming with Dean putting in 55 or more hours a week and 14-plus hour days during the study period it was enjoyable.

“I really loved the cool gadgets I got to play with and I got to see people doing some really interesting stuff. It was quite exciting work.”

All the results from the study have now been collated and they will be fed back to the participants and the departments over the next two months.

# A SUMMER TO REMEMBER

**IT WAS A LONG, HOT SUMMER WITH HEAT RECORDS BROKEN, AN AWFUL, ONGOING DROUGHT AND FEARSOME BUSHFIRES.**

In New South Wales alone 43 sites broke their own high temperature records and on December 17 Australia recorded its hottest average daytime record of 40.9C – only to break it by one degree the very next day.

So how did we cope with all of that at Tomago Aluminium?

“This summer seemed to drag on and the ongoing hot weather made the working environment, which is already hot in some areas, feel even hotter. This can be increased even more with the heavy safety clothing that is worn, personal protection equipment and sometimes heavy humidity,” Tomago’s Occupational Health and Hygiene Officer, Anthony ‘Cookie’ Cook, said.

“It’s a challenge,” he added, “but one that Tomago employees have been dealing with for more than 30 years. We have to remember that, in the hot parts of the smelter, even winter can be uncomfortable.”

The company and employees have developed good work practices to help deal with the conditions we experience in hot weather.

“A lot of people are drawing on their own experiences and those of co-workers to develop good heat tolerance techniques,” Cookie added.

Those practices include regular rotations between tasks that expose people to high heat environments, good habits with sleep, exercise and diet, self-monitoring for signs of heat stress and keeping an eye on each other.

Adopting these habits, he said, explain why there has been no obvious increase in heat stress presentations at Tomago.

“When you ask people how they are meeting the challenge, a common and successful strategy is to stay in good shape regarding fitness and wellness,” says Cookie.



***One way to help with that is to take advantage of the corporate wellness program Fitness Passport, which is available to Tomago employees.***

Fitness Passport membership means employees and their families get discounted memberships at a huge number of gyms not only in the Newcastle, Lake Macquarie and Port Stephens areas but across the state.

Most large and many smaller facilities are on the Fitness Passport program, so finding a pool, gym or wellness centre close to home, with the necessary equipment, is not difficult.

Following the recent COVID-19 restrictions, all Fitness Passport gyms are now back open and operating as normal.



**For more information about the Fitness Passport, contact Health Services.**





# TOMAGO BUSHFIRE APPEAL

The song suggested that great things can be achieved with a bit of effort and this year, in the wake of the bushfires that devastated an incredible 5.4 million hectares of land and destroyed 2,439 homes, we did just that.

Australians dug deep to help and at Tomago we weren't backward in coming forward, raising an impressive \$50,000 to help our local Rural Fire Service brigades.

Tomago's Bushfire Appeal started from a little thing, a simple request from Mitchell Keen, Liquid Metal's Line 3 Team Leader and volunteer Williamtown-Salt Ash fire.

He asked if the company could do something as simple as donate \$500 for an ice machine for one of his brigade's fire trucks.

"As an associate of the Williamtown-Salt Ash brigade and not being as active as I used to be, I wanted to do something to help the RFS during the

**THE SONG LINE 'FROM LITTLE THINGS BIG THINGS GROW' HAS RESONATED WITH AUSTRALIANS FROM THE DAY WE FIRST HEARD IT BACK IN 1991.**

bushfire crisis. I knew the guys were in need of an ice machine for their truck so I approached Tomago and asked if anyone wanted to donate," Mitch said.

To his complete surprise the entire workforce – in his words – "jumped on the back of it" and, once the funding program was established, the money rolled in.

Employees and contractors combined to tip-in an impressive \$21,000 and company management, as so often happened, matched the amount dollar-for-dollar, bringing it to \$42,000.

But why stop at \$42,000 when \$50,000 is a far nicer number? And that is exactly what the RFS received.

Accepting a cheque for that amount at a special morning tea presentation on February 17, RFS District Co-ordinator for Infrastructure, Inspector Glenn Byrnes, said the money would be divided equally between four local brigades with Raymond Terrace,

Medowie, Thornton and Mitch's own Salt Ash-Williamtown each getting \$12,500.

"Those units will identify how the money will be allocated and spend it accordingly, possibly on their stations or on equipment such as thermal imaging cameras, portable radios or computer equipment that will help them into the future," Inspector Byrnes said.

Suggesting that looking after each other is what Australians do, Tomago CEO Matt Howell perfectly summed-up the feeling of everyone who helped.

"We have a large number of employees who are RFS volunteers so it was a cause that resonated with so many of us. The RFS has worked tirelessly over the last few months and it is good for us to be able to show our support," Matt said.

And with all that, did Mitch get the ice dispenser for the truck? Too right he did!

# ERT TRAINING

**‘PREPARE FOR THE WORST, HOPE FOR THE BEST’ IS A SAYING TOMAGO’S HEALTH, HYGIENE AND EMERGENCY SERVICES SUPERVISOR, SIMON TREYVAUD, LIVES WITH ON A DAILY BASIS.**



Scott Morante (L) presenting the two leaders with their trophy – Mitch Sharpe and Craig Jones

Simon Treyvaud heads up the smelter’s Emergency Response Team (ERT), a 52-strong group operating in four squads of 13 people, ensuring the smelter is protected day and night.

Effectively the first responders to any onsite emergency, the ERT crews are the people who manage the dangerous situations while the rest of us are getting away from them.

There are three levels of emergency for TAC’s first responders, according to Simon. Level One is something that can be dealt with by staff in the area and checked by team members; Level Two is classified as a departmental emergency, such as a small fire. Level Three? That is a whole different kettle of fish.

“A Level Three emergency is effectively plant-wide and involves bringing in external services and evacuating employees. Our priority is keeping people safe,” Simon said.

It may come as a surprise but team members are not employed solely as emergency responders. They work in other positions around the site. Each team is made up of maintenance shift personnel and operators from different departments.

Because of that the Emergency Response Teams need training, not just in equipment use and correct response techniques but in uncomfortable situations like working at heights or in confined spaces or using breathing apparatus.

“We’re not only teaching core competencies, we’re upskilling everyone and teaching new team members,” Simon said.

“Each person gets nine training sessions a year with each one five hours long and a mixture of theory and practical work, often scenario-based.

“We run a scenario session at the end of each year – it might be a fire in the

paste plant and there will be a missing person as part of that – so we make it a competition between the teams,” Simon said.

“So fire, search and rescue, first aid and security response.”

All four teams took part with an extra incentive added by Focus on safety CEO Scott Morante in the form of an annual trophy for the winning team.

Crew 1, comprising members Mitch Sharpe, Craig Jones, Dane Elkins, Todd Jory, Henry Szulc, Dave Harwood, Mal Reynolds, Chuck Luck, Bill Kelly, Anthony Attard and Stuart Walsham, won the trophy.

Do the teams ever put their training into practice? Indeed they do.

“We had a fire in the Casthouse that needed the ERT and the fire brigade. It was serious and the potential was there for hands-on management and the team rose to the challenge.”

**If you want to join the Emergency Response Team contact  
Simon Treyvaud (4966 9095 or [Simon.Treyvaud@tomago.com.au](mailto:Simon.Treyvaud@tomago.com.au))**



# STRIVING FOR EXCELLENCE

## STRIVING FOR RESILIENCE MEANS INCREASING SUPPORT FOR TOMAGO'S SUPERVISORS AND LEADERS TO BETTER EQUIP THEM FOR HELPING THEIR TEAM MEMBERS.

Operating as a team leader is no easy task. As well as properly carrying-out their own duties, leaders also have to know each member of their team, know each person's job and know how to do it.

Leaders are also, at times, called on to work at a more personal level, to counsel or advise a member of their group on more personal matters, such as problems within their family or social issues.

Tomago Aluminium's People, Safety and Environment Manager, Simon Mitchell, says helping people deal with their problems while managing your own work and home life is always difficult for anyone in a senior position.

"A leadership role is quite challenging because they need to be there always to support their team members," Simon said. "It's tough."

Because of that, supervisors and team leaders need greater mental health support as well as the skills needed to help the people around them to develop the levels of personal resilience necessary to deal with situations that arise.

"It is about people developing good habits, being positive in their own mindset and knowing when and how to reach out to those in need of support," Simon added.

"As many as 50 per cent of those in leadership positions are dealing with people suffering from mental health issues and it's not just a matter of telling them to 'harden-up' or 'have a few drinks'. It's like an extension of R U OK Day."

Even personal fitness is important for those in leadership positions, adding to an individual's capabilities because of its strong link to positive thought.

"Leaders on the frontline have to help others on a daily basis and also look after themselves so we have to give them the right tools," Simon said.

To that end Tomago Aluminium has instituted the Resilience Project, which will be launched later this year due to COVID-19. This project includes an emotionally engaging presentation to the company's leaders to help them

build the leadership resilience needed to foster positive mental attitudes.

Through storytelling and sharing experiences the program, which includes a two-hour workshop involving all of our leaders at each session, helps attendees learn to develop practical, thoughtful strategies for creating workplace and personal wellbeing by focusing on such factors as gratitude, empathy and mindfulness.

Simon says the Resilience Project is an extension of other mental health programs we have run in the past.

**“It's all about caring and helping others, like the 'Mates Look After Mates' program. Working together is critical to the success of our business.”**





# CHANGING THE WAY WE

**LIFE IS FULL OF CONFUSION BUT WHEN IT COMES TO TOMAGO ALUMINIUM'S CHARITY PROGRAMS, MUCH WORK IS BEING DONE TO ACHIEVE A POSITIVE CHANGE.**



SUPPORTING THE COMMUNITY SINCE 1985

Tomago employees have been 'ticking the box' on their paperwork for a long time now and over the past 33 years have donated more than a million dollars to over 40 local charities, with a similar amount raised for the Westpac Rescue Helicopter in the last 20 years.

The problem, says Australian Workers' Union site delegate Wayne Pringle, has been that some employees have been uncertain about exactly what they are donating to; the charities, the chopper or both.

"It was confusing. Some people thought they were paying to one or the other but not both and some thought they were in both when they actually were not," Wayne said.

To end the ongoing confusion Wayne and Tomago's Communications Advisor, Katie Burns, devised a new charity management plan which will merge the two out of pay donation schemes into a single entity. Known as The Tomago

Workplace Giving Fund, it will be a more easily managed scheme cutting through the confusion.

The new-look fund launched on Wednesday, July 1. From that date all current donations automatically rolled over into the new fund and everyone was given the opportunity to increase the amount if they wish.

To help with this we are also introducing an option for our new starters. The default donation for them will be \$3 per week but the amount can be changed and all donations are tax deductible.

The new arrangement also means employees will be able to use T-Net to sign-up to the program or change the amount they wish to pay.

Tomago currently has 1000 employees. Currently only 600 employees donate to either the Westpac Rescue Helicopter or Out-of-Pay Charity scheme and Katie and Wayne are hoping to lift that number significantly.





# GIVE BACK

Our current donation equates to approximately \$1.50 per employee per week or \$74,880 a year. We have the opportunity to provide a truly substantial amount of funding to charities if we doubled that to a mere \$3 each per week.

That would mean an annual donation of some \$120,000 to the Workplace Giving Fund.

“Every new employee will automatically join the scheme on sign-up although they will be able to opt out if they wish,” said Katie, adding that one-off charity drives, such as the Tomago Bushfire Appeal, will still continue outside of the revised program.

Every employee will receive formal notification in the run up to the change and Wayne, a regular visitor to all areas of the site, will not only talk about it with everyone he sees but will be able to answer any questions.

## Charities Supported by Tomago Aluminium Employees over the years

Autoimmune Resource & Research Centre  
 Hunter Prelude Early Intervention Centre  
 Airways, Infection and Immunology Group  
 Friends of Cameron Park Special School  
 Hunter Medical Research Institute  
 Hunter Breast Cancer Foundation  
 Children’s Leukemia Foundation  
 John Hunter Children’s Hospital  
 Hunter Prostate Cancer Alliance  
 Sudden Infant Death Syndrome  
 Variety – The Children’s Charity  
 Starlight Children’s Foundation

Hunter Melanoma Foundation  
 Maitland Hospital Foundation  
 Juvenile Diabetes Foundation  
 Hunter Valley Cancer Council  
 Families Supporting Families  
 Humpty Dumpty Foundation  
 Nican – Stroke and Disability  
 Cystic Fibrosis Foundation  
 Helicopter Rescue Service  
 Mark Hughes Foundation  
 Ronald McDonald House  
 Newcastle Youth Service  
 Hunter Brain Injury Unit  
 Newcastle City Mission  
 John Hunter Hospital

Life Without Barriers  
 Dementia Research  
 Royal Blind Society  
 Charlie’s Run 4 Kids  
 Telstra Child Flight  
 Salvation Army  
 Camp Quality  
 Stuart Centre  
 Kaleidoscope  
 Carrie’s Place  
 Our Backyard  
 Live For Kids  
 Oz Harvest  
 Soldier On  
 Canteen  
 Lifeline  
 Soul Cafe  
 Got Your Back Sista  
 Headspace



# INTERNATIONAL WOMEN'S DAY

**TOMAGO ALUMINIUM HAS LONG BEEN A SUPPORTER OF THE ANNUAL INTERNATIONAL WOMEN'S DAY CELEBRATIONS, HELD EACH YEAR IN MARCH.**



Not content with having an involvement with just one function, the company this year swung its weight behind two.

The first was as a major sponsor of the annual Port Stephens International Women's day Breakfast held on Monday, March 9, at the Murrook Cultural Centre, Williamstown and hosted by Federal Member for Patterson Meryl Swanson and Kate Washington, State Member for Port Stephens.

The event brought together hundreds of women, among them local secondary school students, business leaders and women of influence from within the local community. It also included a panel discussion.

Proceeds from the breakfast went to Port Stephens Family and Neighbourhood Services, a community organisation providing free counselling, domestic violence support, legal clinics, financial assistance, mentoring and homelessness services for the community.

International Women's Day was also celebrated at Tomago Aluminium on March 9 with free coffee provided by the popular Sprockets coffee cart, which was strategically located near the front gates to greet everyone.

Cupcakes with lashings of pink icing were also served-up by some of Tomago's team leaders.



*L-R Stacey Sleeman, Jacques Cronje, Luke Rankovich and Amanda Gill*







## 2020 APPRENTICES

**TOMAGO ALUMINIUM IS ONE OF THE REGION'S BIGGEST NON-GOVERNMENT EMPLOYERS AND WHEN IT COMES TO THE QUALITY OF OUR APPRENTICES WE HAVE A FEARSOME REPUTATION.**

Every year the company takes-on seven trainees and every year the selection is a protracted one for Site Services Maintenance Supervisor Mal Muddle and Apprentice Training Supervisor Greg Wall, who have to attack the application pile.

"It's a two-month process," Greg said. "Every year we get around 350 applicants and because we aim for the best it is an extremely hard job choosing them and, I think, it's getting harder every year, which is great for us."

Of the seven selected for this year's intake three are being trained as mechanical fitters, three as electrical fitters and one as a plant mechanic.

Tomago hired its first apprentices some 36 years ago, training around 350 – including Mal Muddle – to become skilled tradespeople.

"TAC has a proud history of producing quality, skilled tradespeople and engineers over this time and there are now past apprentices employed right across the business, from the obvious trade positions through to skilled operators and leaders across technical and management areas," Mal said.

He believes that taking the time to train and nurture young people has been very important for the business and says that, looking towards the future, such quality training will only become even more valued.

"We require skilled people to support innovative industries like ours to ensure Australia stays as a nation that can make things," Mal added.

Every year, a large portion of graduating apprentices – around 70 per cent according to Greg – are retained by TAC. Of this year's seven graduate apprentices, six accepted job offers from the company. Other businesses, keen to snap-up Tomago's apprentices, start calling Mal and Greg at the end of each year with hopes of getting a TAC graduate.

Greg describes the apprenticeship program as a robust, successful process that has been finetuned over the years to give the apprentices maximum exposure to the entire smelter rather than just some small part of it.

Since clocking-on for the first time on January 21 the apprentices themselves – Joel Lucas, Nelson Mulley, Damon Boland, Bailey Meir, Jaimeson Barnes, Todd Cooper and Jack Price – have settled into the training routine, finally coming to grips with their 6am start.

The satisfaction at getting their apprenticeships is palpable, getting paid for their work is enjoyable and their professional futures unlimited with the training they will get here.

"Our new apprentices are not as bewildered as they used to be," Greg said. "The induction process, where the successful applicants and their families come in for a walk-around late last year meant the socialising had already started and I think, too, that their general attitude and demeanour is different to what it was 30 or so years ago."

The company has a reputation for quality apprentices who become quality tradespeople and it is not a reputation Greg Wall or Mal Muddle plan on surrendering any time soon.



# SUPPORTING THE NEXT GENERATION

**TOMAGO ALUMINIUM HAS ONCE AGAIN SWUNG ITS SUPPORT BEHIND THE PORT STEPHENS MAYORAL ACADEMIC SCHOLARSHIP PROGRAM, A PROGRAM HELPING LOCAL STUDENTS UNLOCK THEIR FUTURE.**

The company has been involved with the Scholarship Program since 2013 and this year we joined with 13 other local businesses to help youngsters realise their potential.

Between them the 14 businesses gave a total of \$36,000 to the Mayoral Scholarship program, the money shared among 18 students, each receiving a scholarship worth \$2000 as a financial boost to kickstart their tertiary education programs.

This year's Tomago Aluminium scholarship recipient, Jahli Magick from Tanilba Bay, has recently started a double degree in chemical engineering and mathematics at the University of Newcastle.

Jahli, 19, a former Hunter River High School student, applied for the scholarship after being told about it by her school's Career Advisor.

Jahli is grateful to Tomago Aluminium for the financial support given to her via the scholarship program.

"I used the money to buy a new computer, a laptop, a really good one. I haven't had a computer since I was 10 and it's really essential for what I'm doing at uni," she said.

Incidentally, as well as finding the time to study for two degrees, Jahli is also shoehorning some extra hours into her days to learn computer programming, a skill she says is essential to her studies.

And while she has no firm plans for her academic future, Jahli says she is leaning heavily towards environmental science.

"I think, in the future, that will become so important to us," she said.

Thanking the local business community for taking part in the program, Port Stephens Mayor, Councillor Ryan Palmer, said the investment in one scholarship from a local business makes a big difference to a young person starting out on the next stage of their academic journey.

***“ Whether it's a year's worth of text books, a laptop computer or student accommodation, this contribution will go a long way to support local students and encourage lifelong learning ”***

Cr Palmer said.

"The program has highlighted the remarkable talent and drive to contribute and succeed within the people of Port Stephens and I wish all our recipients the very best in achieving their goals and fulfilling their ambitions," Cr Palmer added.

Tomago Aluminium HR Advisor Amanda Gill attended the presentation ceremony at the Port Stephens Council Chambers at which Jahli was presented with her scholarship.

TAC has been a strong supporter of the scholarship program for the past eight years.



**35 YEARS**

**Carbon**  
Daryl Cartwright  
John Castell

**Liquid Metals**  
Kole Talevski

**Maintenance**  
Phillip Martin

**30 YEARS**

**Cast Products**  
Barry Pedersen  
Barry Mungoven  
Dale Sanders

**Liquid Metals**  
David Cook  
Michael Murray

**Procurement**  
Michael Tolhurst  
Brad Lawton

**25 YEARS**

**Carbon**  
Geoffrey McCredie  
Jason Elliott  
Kenneth Denholm  
Stephen Bramble

**Cast Products**  
Boyd Edwards  
Garry Lloyd  
Gavin Tripp  
Mark Welch  
Martyn Blomfield  
Michael McLean  
Michael Tom  
Stephen Webber  
Trevor Nicholls

**Liquid Metals**  
John Shepherd  
Karl Ivancevic  
Patrick Cunningham  
Richard Alley  
Stefan Wilson

**Procurement**  
William Dawson

**Human Resources**  
Scott Fauchon

**20 YEARS**

**Cast Products**  
Anthony McQueen

**Liquid Metals**  
Troy Martin  
Wayne Price

**Maintenance**  
Darren McGilvray  
Jason Couper

**Procurement**  
Tanya Priestley

**10 YEARS**

**Carbon**  
Kelvin Sheehan  
Michael Mueller

**Cast Products**  
Dean Bennett  
Jamie Gilroy  
Jarrod Roberts  
Justin Hine  
Kelvin Wratten

**Liquid Metals**  
Adam Cook  
Allan Fitzgerald  
Brandon Graham  
Joshua Brooks  
Luke Mansfield  
Michael Mittmann  
Michael Towns  
Scott McFarlane  
Tate Murray

**Procurement**  
John Fraser

**Env & Lab**  
Robert Besoff

**Human Resources**  
Ben Cook



**THOMAS  
LESCOFFIT**

**What is your current role?**  
IT Support Officer

**If you had \$100 to spend on yourself what would you do with it?**  
I'd spend it all buying music on bandcamp.com

**Biggest regret?**  
Trust me, you don't want to know.

**Favourite food?**  
Pizza. And generally anything involving bread and cheese

**What were your first thoughts on TAC?**  
Oh wow, it's definitely the original carpet!

**What's the best piece of advice you've been given?**  
Always look on the bright side of life  
(Whistle)  
Always look on the light side of life  
(Whistle)

**ALUMINIUM FACT**

Aluminium is the most abundant mineral on Earth after oxygen and silicon.

**SUPPORTING LOCAL CHARITIES AND COMMUNITY EVENTS...**

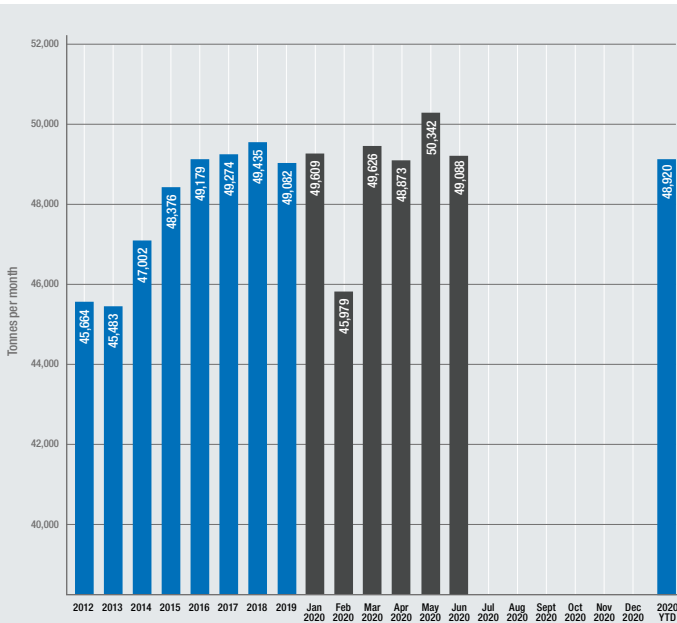
Every year we support a number of local charities, community events and local schools through sponsorship and donations.

In 2020 Tomago Aluminium have supported the following:

- Port Stephens International Women's Day Breakfast
- Tomago Bowling Club
- Royal Fire Service (RFS)
- City United Cricket Club
- Immune Deficiency Foundation Trust
- Breast Cancer Awareness
- Make a wish Australia
- Rathmines School Breakfast Club

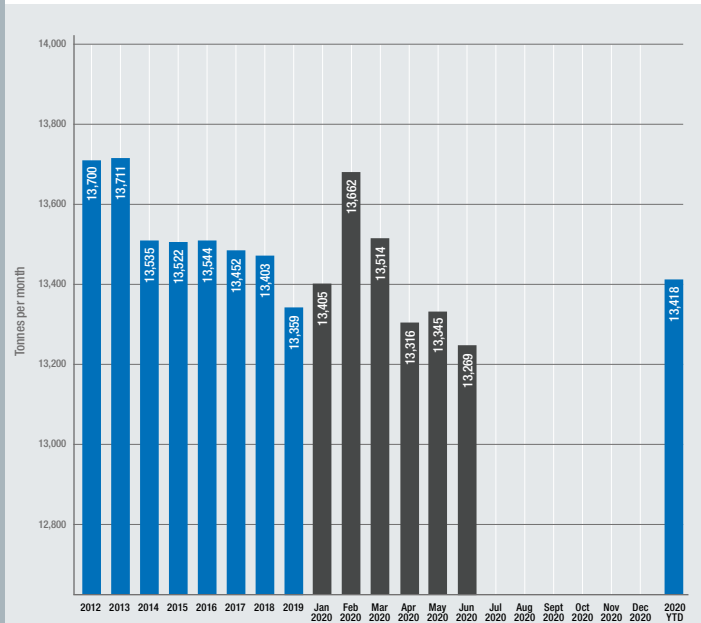
# KEY PERFORMANCE INDICATORS

**EFFECTIVE METAL PRODUCTION (Tonnes/Mth)** ■ Yearly Actual ■ Monthly Actual



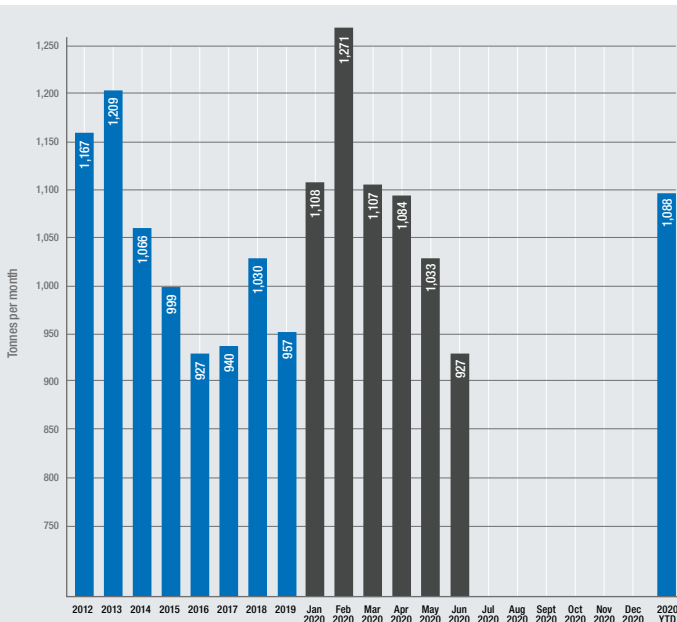
The Effective Metal Production is the total amount of hot metal tapped from the pots. It includes both hot metal tonnes delivered to Cast Products plus any reclaimed cold metal

**DC ENERGY CONSUMPTION (kWh/t Al)** ■ Yearly Actual ■ Monthly Actual



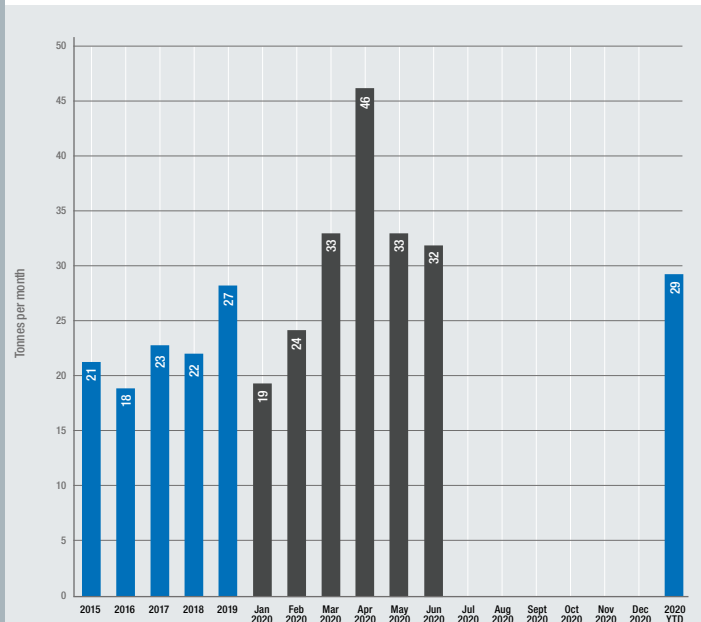
Energy Consumption measures how much power we use to make one tonne of aluminium. The lower this number the better!

**IRON IN METAL (Fe ppm)** ■ Yearly Actual ■ Monthly Actual



Iron in metal is our main measure of quality and purity. The lower the iron content is, the better.

**HAZARD EVENT RATIO** ■ Yearly Actual ■ Monthly Actual



The Hazard Event Ratio measures the number of injuries in proportion to the number of safety related events.