



A CENTENARY IS A SIGNIFICANT EVENT
AND AN OPPORTUNITY FOR REFLECTION.

MM KEMBLA'S FIRST HUNDRED YEARS HAS BEEN
AN INTERESTING JOURNEY AND IN MANY WAYS
IT MIRRORS THE HISTORY OF AUSTRALIA DURING
THIS TIME. WE BOTH STARTED WITH ENGLISH ROOTS
BUT SOON LEARNED TO STAND ON OUR OWN,
WE SURVIVED TWO WORLD WARS, A DEPRESSION
AND POLITICAL, ECONOMIC AND SOCIAL
HIGHS AND LOWS.

OUR PEOPLE AND OUR CUSTOMERS HAVE ALWAYS
BEEN OUR GREATEST STRENGTH AND THE REASON
FOR OUR SUCCESS. WE ARE VERY PROUD TO SHARE
THEIR MEMORIES WITH YOU IN THIS JOURNAL.

1916-1920

A new national enterprise founded on Australia's natural resources

The Australian copper manufacturing industry was born out of wartime necessity. Commonwealth Government export embargoes on German products in 1912 led the Australian mining industry to partner with British refinery interests to forge a local manufacturing industry.

World War 1

Before the 'Great War' Australia was a copper producer and exporter, but dependent on imports for all articles made of copper. With the restriction of imports and an increasing demand for copper wire due to the expansion of the telephone network and the electrification of the railways, this would prove an ideal time to begin local production.

1915 Site location

An expansive site was chosen at Port Kembla adjacent to the Electrolytic Refining & Smelting Company of Australia which would supply the raw materials and power. With easy access to the harbour and railway, and a central geographic location - MM Kembla was on its way.

1915 Harold Greenwood

A young engineer, Harold Greenwood, was sent from the UK to plan and build the rod rolling and wire drawing mill. He overcame many hurdles to successfully commission a factory that would produce 8,000 tons (8,125 tonnes) of copper wire annually. He died just 10 years later aged only 38, a sad loss for the MM and Port Kembla community.

1916 Metal Manufactures Ltd

Metal Manufacturers Ltd was incorporated on 22nd March 1916 under the Victorian Companies Act and a Board of Directors appointed.

1917 Plant and equipment

The foundations were laid for the factory but the arrival of plant and equipment was delayed when the ship transporting it was torpedoed and sunk in the English Channel. After much lobbying the government arranged an escort to ensure the replacement shipment arrived safely in Australia.

1918 Rod & Wire Factory established

The original Rod & Wire Factory commenced operation and quickly increased production from a first day total of only six bars to 150 bars a day. Orders soon followed with the first official order of '15 miles of hand drawn bare copper cable to English Standard Specifications' received from the Sydney County Council, who became a loyal customer.

1920 New Tube Mill

A Tube Mill was established at the Port Kembla site to produce copper and brass tubes for use in steam locomotive boilers, ships and general engineering work. Finished products were moved from the factory to the warehouse by horse and dray, in wheelbarrows and by hand cart, and sent to Sydney for shipment around Australia and the world.

1920 Harry Badger

Harry Badger arrived from the UK to take charge of the rolling mill. He was probably the only person in Australia at the time with a practical knowledge of copper rod rolling. Harry had to source labour, which was scarce at the time and personally train each employee in how to do their particular job before the mill could begin operation.

His son, also called Harry, subsequently joined the company as a teenage messenger boy and on his retirement after four decades of service was a crane operator at the No.2 Mill Furnace.





H.P. GREENWOOD
First General Manager



In January 1915 I drew up, at the request of Mr. Nicbett, a schedule of the plant required for the production of approximately 8,000 tons of copper wire per annum

In his own handwriting, the first lines of Harold Greenwood's account of planning the works for Metal Manufacturers in January 1915.



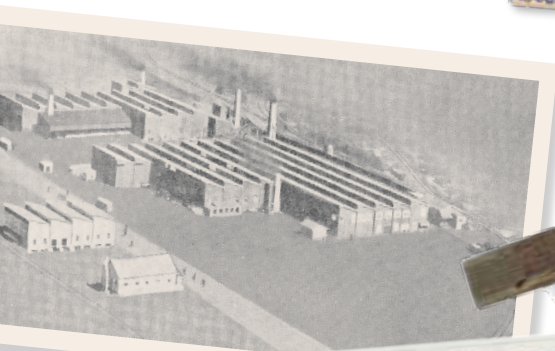


Telephone Cable

In 1921 the wire factory received its first order from the Post Office.



Photos left kindly supplied by the Wilson Watson family. Photograph below of the MM Electricians Shop employees in 1926/28. Wilson Watson is seated in the front row in the middle.



1923 Post Office type porcelain insulator for bare copper telephone wires. The insulator is on a wooden peg which was inserted in a cross bar on the pole.



General view of the tube mill 1927.



1923 The radio age begins. Wirelesses became increasingly popular, creating a need for large quantities of copper wire.

1921-1936

Holding firm through the Great Depression

1921 Copper wire demand

As the demand for copper wire grew and diversified, so did the factory with more wire drawing machines and stranders added to the plant.

1923 Telephone cable factory built

A purpose-built telephone cable factory was established on site to service this fast expanding industry and its new technology. In the same year the company also began producing aluminium wire.

1923 Peak output slows

Three factories – wire, cable and tube – were producing almost 12,000 tons (12,200 tonnes) annually of finished product and the initial workforce of 100 in 1918 had grown to 800. However this peak output would soon slow with a halt placed on the expansion of the General Post Office and electrical generating authorities.

Ken Kirkpatrick

The first manager of the Cable Factory came out from the UK in 1923. A keen trout fisherman, his colleagues soon introduced him to the best fishing locations. When he married he even took his new bride on a trout fishing honeymoon in Thredbo. Ken's son Bruce Kirkpatrick recalls

that the British parent company expected he would return to England once the plant was up and running but he firmly believes his father's love of trout fishing was what kept him in Australia for the rest of his life.

1932 Refrigeration tubing

Australia's contact with American forces during the great war had introduced us to many household appliances that had previously been considered luxuries. So with the growing popularity of kerosene refrigeration a new business opportunity emerged for the tube factory at Port Kembla to begin manufacturing refrigeration tubing.

1934 Hot extrusion

When the hot extrusion process was introduced to the tube factory it vastly improved production quality and enabled the manufacture of seamless brass tubing. The original extruder was a 600 ton thrust vertical press.



Copper boiler tubes were used as steam pipes in N.S.W.G.R. C.38 Class, Locomotives and naval ships. Photo: HMAS YARRA, 1935.



1937-1952

Fortunes of war

1937 Employee welfare

Lost Time Injuries began to be recorded on a large Accident Board on site to increase employee awareness of health and safety matters and instil pride in keeping the workplace accident free.

1939 Demand from defense forces

War placed many demands on the company such as a request from the Defence Department to supply a type of cable to use in field telephones, through to aircraft parts, ammunition, brass buttons and gas masks, all with exacting standards and varying levels of complexity. This led to a joint venture with British cable makers, which would meet immediate wartime needs as well as servicing Australia in peacetime. The new company became Cable Makers Australia Pty Ltd.

1942 Japanese threat to Port Kembla

Japanese troops were approaching Australia. The invasion of Papua New Guinea was followed by the discovery of two midget submarines in Sydney Harbour and a coastal attack by a Japanese submarine on Bondi and Rose Bay.

Key plant and equipment was evacuated from the vulnerable seaside Port Kembla factory, accelerating work on a new plant in Maribyrnong, Victoria.

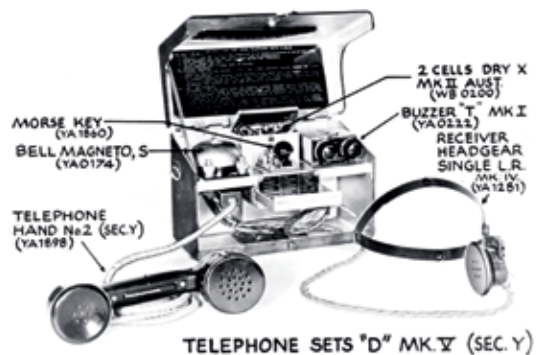
1942 Man power shortage

MM's D Mill at Port Kembla holds a place in industrial history as the only tube manufacturing mill in Australia operated entirely by women. A wartime manpower shortage led to the Department of Labour and Industry granting the company permission to employ female labour.

The tube mill foreman, Fred Walls recalled it as a very challenging time as most of the women employed had never even seen the inside of a factory. The MM Gazette shows that three of the original group were still with the company in 1964.

1951 New Rod & Wire Factory

The Rod & Wire Factory made a major step forward when a new rod rolling mill replaced the old Taylor & Farley equipment. This was brought out from England under war time conditions in 1917, for the production of copper rod. The new mill initially designed to roll 10 tons per hour was improved and modified to roll up to 18 tons.



During WW2 MM was busy making miles of field telephone cables as well as cables for many other army, navy and airforce applications.





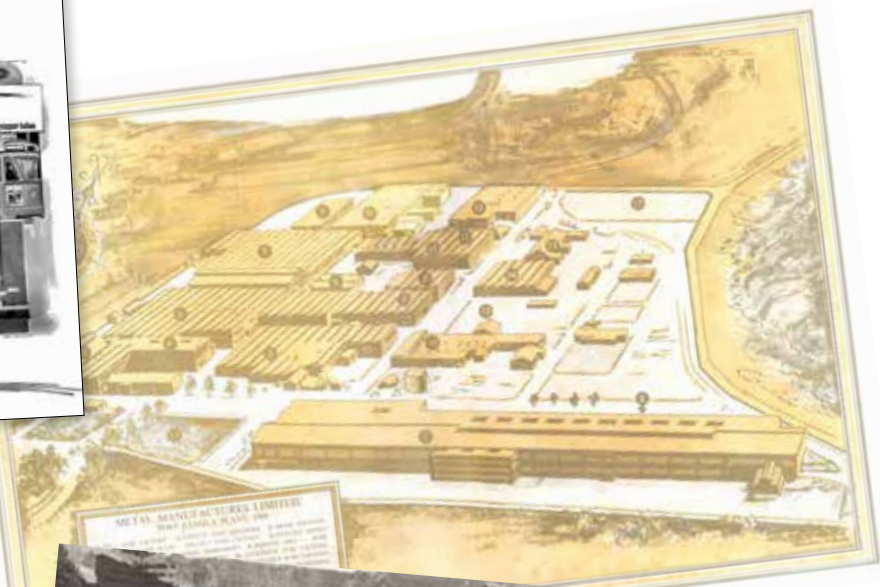
Portrait of Miss Ruby Myrtle Wilks handing over a respirator. Maribyrnong factory, Victoria. By artist Sybil Craig. Australian War Memorial.

The D Mill factory was entirely operated by women during World War 2.





In 1961 Kembla launches its first advertising campaign for Type 5 tubing with the slogan: Plumb Right - Kembla Copper Tube.



By 1966 Metal Manufacturers employed 7,058 people. Of these, 2,549 worked at Port Kembla. A very large proportion were metallurgists, scientists, engineers and highly skilled technicians and artisans.



1953-1968

An immigration wave, expansion and a company milestone

1950s Technical staff

As the industry became more sophisticated there was a greater intake of metallurgists and other technical staff. Research and development had always been a high priority at MM Kembla with a laboratory and analytical facilities on site.

The Mechanics department even housed a section for Metrology – the science of weights and measures – managed by a steel metallurgist, where all tools and measuring equipment within the works was checked and corrected. One of the most valuable items in the section was the Hilger Projector, a precision tool that enabled extremely fine measurements using a greatly magnified image projected on a screen.

1953 MM Kembla immigrant workforce

The MM Kembla workforce reflected the post war immigration wave that was swelling Australia's population. By the mid 1950s, 30% of the plant's employees were immigrants largely from Yugoslavia, Italy, Greece and Germany. Women were also featuring more prominently in the workforce after their wartime working experiences.

1961 New Zealand expansion

Several new associated companies were formed for specialty cable manufacture. This saw the company expand into New Zealand with an Austral Standard Cables factory in Christchurch producing cable for the New Zealand Post Office.

1962 New extruder press

A vacated factory building was extended and converted into the No.2 Tube Factory with the installation of a 2,100 ton extrusion press, heavy drawbenches, bullblocks, automated sawing machines and other state-of-the-art machinery.

1962 Appointment of H.Rogers

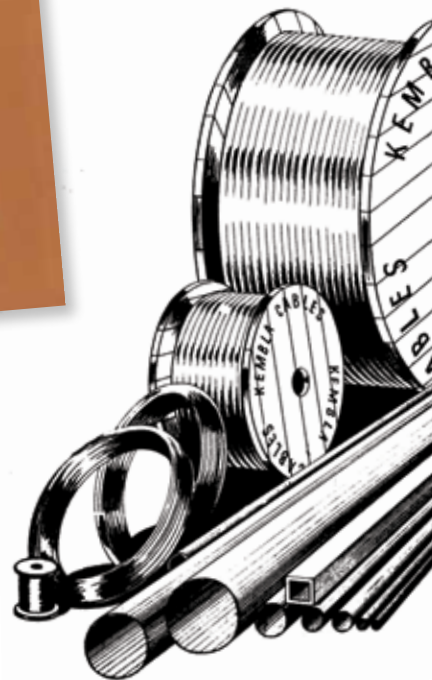
Exporting of copper tube into Singapore and Malaysia began through agent H.Rogers who are still MM's exclusive agents in these countries.

1966 Golden Jubilee Year

MM Kembla celebrated its Golden Jubilee Year by building a new office block at the Port Kembla site as well as publishing a commemorative book and hosting events for employees, customers and the community.



The 1966 Golden Jubilee Book with a foreword by former Prime Minister, Sir Robert Menzies.



1969-1984

High demand, new training and production methods

1969 Tube production efficiency

Tube production needed to be more efficient to meet the high demand for plumbing, refrigeration and air conditioning tubing. Rotary drawing blocks were installed to replace draw benches; these could cope with much longer lengths and the more automated process meant faster production and minimal handling.

1971 Apprentice Training Centre

MM started its own onsite Apprentice Training Centre where all new apprentices would spend their first year under the supervision of an apprentice master and foreman. After learning the basics they were positioned in various departments on a six month rotation, ensuring they gained wide experience across all aspects of the Port Kembla works.

1974 Recession and tariffs

Oil price rises quadrupled in 1973-74, which led the world into recession. In Australia this resulted in high unemployment and a stagnated economy, with the manufacturing sector the hardest hit. Increasing competition from the newly industrialised countries in Asia, sharp rises in wages and tariff cuts compounded the problems facing Australian manufacturers.

1980s Kembla Continuous Rod (KCR)

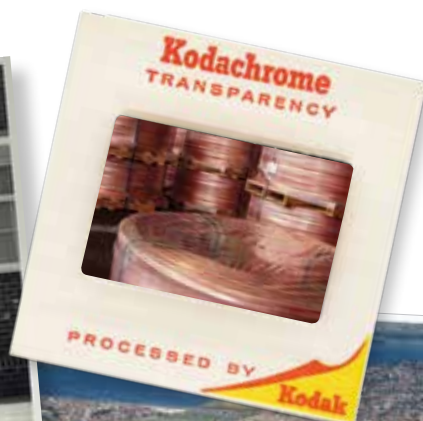
Wire and cable products were growing in demand so new production methods were adopted from the US to begin the continuous production of copper rod. This product was called Kembla Continuous Rod (KCR). Wire bars were no longer needed and cathode was melted, cast and rolled in one continuous operation with 10,000 kg coils of rod now the standard. The benefits of using these large coils of rod flowed through to every stage of cable making.

Supplier of the Year awards

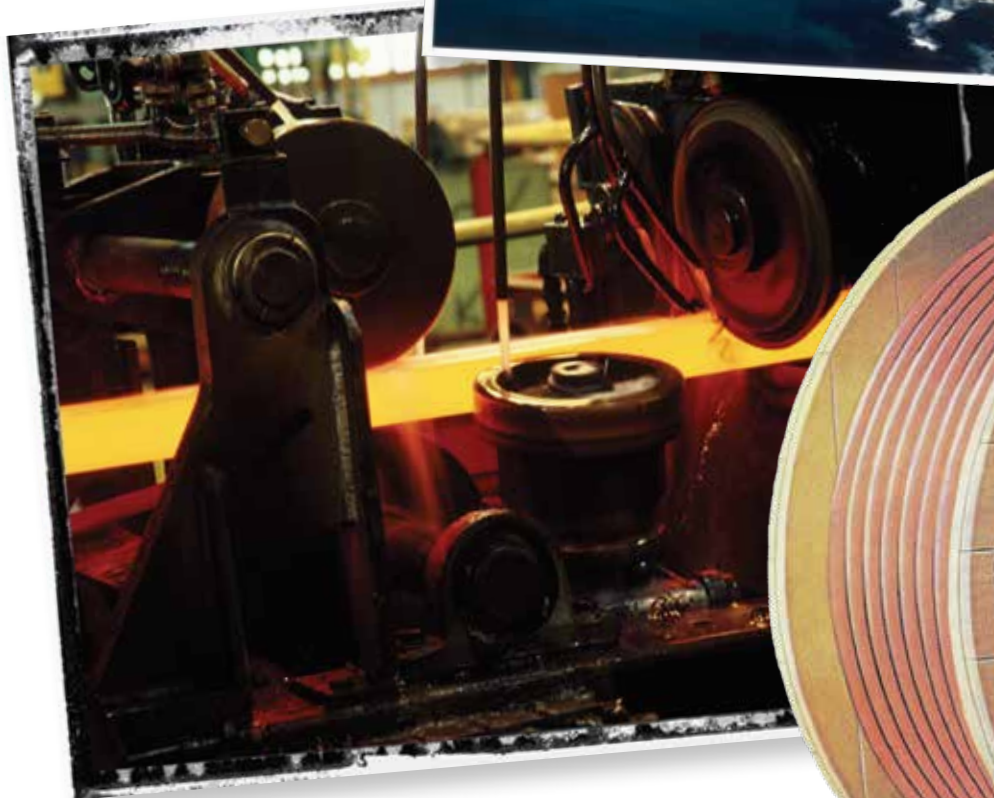
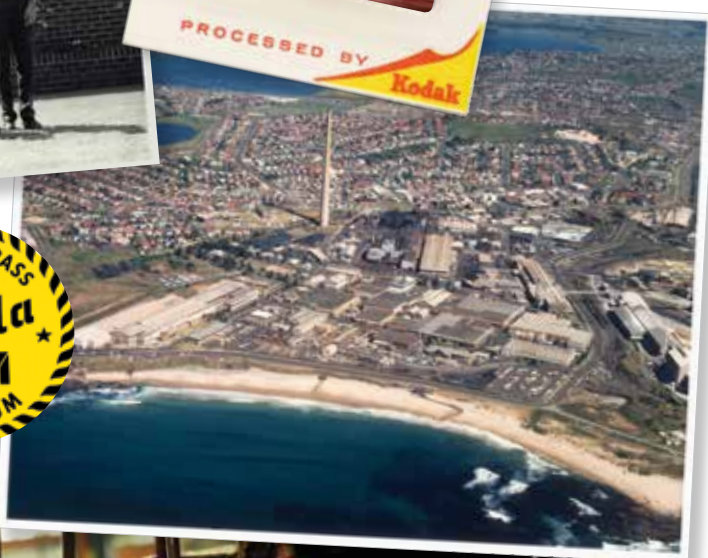
Customer relationships were becoming an increasingly important aspect of the business with MM actively participating in a range of trade nights and events hosted by large customers. The company was often awarded 'Supplier of the Year' at these events and the sales and marketing team made the most of the opportunity to meet large numbers of plumbing contractors and explain the product benefits in a relaxed setting.

The MM 25 Year Club has been one of the longest running in Australia with hundreds of members nationally.





Below: Kembla Continuous Rod (KCR) cathode was melted, cast and rolled in one continuous operation with 10,000 kg coils of rod.

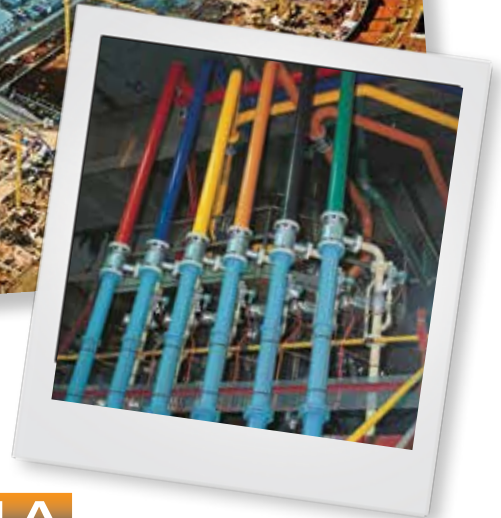




**Metal
Manufactures
Limited**



Below: Kembla Premier copper tube was used in the refrigeration and air conditioning installations throughout the Olympic sporting complex and athletes' village.



KEMBLA
TUBES & FITTINGS



1985-2000

Stock Exchange listing and the Olympic Games comes to town

1986 Optical Fibre Cable

Australia was entering the age of satellites, printed circuits and microchips. One of the major technological advances at the time was optical fibre, which the company had been developing for Australian conditions since the early 70s, it now began to manufacture the fibre itself.

1986 MM lists on the Stock Exchange

This was also the year MM listed its shares on all Australian Stock Exchanges and rationalised its operations into four divisions; Metals (now MM Kembla), Cables, Merchandising and Construction. All these divisions used the MM logo followed by their division name.

1987 Automated production

The upgrade of tube making facilities allowed automated production, which meant more resources could be applied to product quality control.

1988 Manufacture of copper fittings

The company recognised a need to offer customers a complete 'behind the wall' plumbing system and added copper fittings to its manufacturing base with the acquisition of Ideal Tube, New Zealand and Sear & Gunn, Brisbane. This combination of manufacturing facilities resulted in a name change, firstly to Kembla Copper Systems and then to Kembla Tube & Fittings.

1990s Total Quality Management (TQM)

TQM transformed MM's management practice and culture in the mid 1990s. It was seen as the key to the company becoming internationally competitive and its four principles

of Customer Satisfaction, Continuous Improvement, Management by Fact and Respect for People were enthusiastically embraced.

Quality Improvement Process (QIP)

A QIP was adopted to achieve Total Quality and involved teams of employees working on quality improvement projects as well as incorporating quality into their daily work. The QIP process also impacted the company's business and strategic plans by focusing on key objectives around customer satisfaction and the need for improvement.

2000 Sydney Olympic Games

Sydney hosted the Olympic Games and MM Kembla played a major part in supplying product for the mini city that was the Olympic complex at Homebush. Kembla Premier copper tube played a substantial role in the refrigeration and air conditioning installations throughout the sporting complex and athletes' village.

MM operations evolve into two divisions

Following the transfer of the wire and overhead conductor business to MM Cables, the activities of MM Kembla now revolved around two divisions; the Tube Division, Australia's largest manufacturer of copper and brass tubes and a major producer of fittings and the Rod & Wire Division, which supplied redraw copper and aluminium rod to the domestic and export market.

MM becomes privately owned

Metal Manufactures Limited became a privately owned company in March 2000.

2001-2016

Challenging times lead to a brave new world

Dramatically rising copper prices, the easy availability of substitute products such as PEX (cross-linked polyethylene tubing) and increased competition from aggressive Asian manufacturers have all contributed to a significant reduction in the demand for copper tube, challenging the viability of copper tube manufacturing in Australia.

2006 Joint Hong Kong venture

The Kembla brand had built a strong reputation in Asia since it began exporting into Hong Kong in 1987 and this led to MM Kembla forming a joint venture in 2006 and establishing Kembla (HK) Limited. The joint venture now provides the Hong Kong, Macau and Chinese markets with local Kembla presence, further strengthening MM Kembla's reputation in Asia.

2012 Kempres – A new generation of copper Press-fittings

MM Kembla combined the experience and knowledge of almost 100 years of Australian copper tube manufacturing with German engineering to produce the *KemPress* copper press-fit connection system. A range of fittings and the popular *KemPress* press tool were released to provide plumbers with a faster, easier and flame free jointing system that saves both time and money. These products continue to grow in popularity.

2014 The end of an era

In November 2013, the removal of tariffs from ASEAN nations enabled foreign producers to target local markets. This along with the growth in finished cable imports, a high Australian dollar and increased energy and transport costs, forced MM Kembla to announce the closure of its Wire & Rod division in Port Kembla after 95 years of

production. This saw the end of an illustrious era for the division and was a sign that Australian manufacturing faced great external pressures. The final delivery of Kembla copper rod was made in May 2014.

2014 Kempres Stainless Steel

The Industrial Markets division was created and a Stainless Steel Press-Fit and Tube system, *KemPress Stainless Steel* was released.

2015 A brave new world

MM Kembla's Tube & Fittings division continues to ensure the future of the company. Rationalisation and further investment in its copper tube manufacturing has led to record production efficiency levels in its Port Kembla plant in 2015.

Increased focus on safety and welfare

Significant investment and focus on further improvements to safety and welfare took place in an effort to ensure employees '*left work in the same condition as they arrived*'. The introduction of Take 2, Safe Act Observations (SAO) and a range of other initiatives lead to increased engagement and awareness, and record improvements in safety. By the end of 2015, a lost time injury had not occurred for over 800 days (a new record), and a medically treated injury had not been recorded for a record 255 days.

2016 Expanded MM Kembla range

MM Kembla continues to increase the range of products in its portfolio with plans for further additions and product innovation in 2016 and beyond.



2015: Investment and rationalisation of the Tube business led to record production efficiency levels in 2015.



Employee safety: Investment and implementation of safety initiatives have led to a succession of safety records.





A BRIGHT FUTURE

MUCH OF MM KEMBLA'S SUCCESS
CAN BE ATTRIBUTED TO HARD WORK,
THE RIGHT ATTITUDE AND ABILITY.

WE HAVE BEEN KNOWN FOR QUALITY, RELIABILITY
AND SERVICE FOR OVER 100 YEARS. OUR COMMITMENT
TO RESEARCH, INNOVATION AND TECHNOLOGY IS AN
IMPORTANT FACTOR IN OUR SUCCESS IN THIS INCREASINGLY
GLOBALISED MARKETPLACE. OUR SKILLED WORKFORCE AND
PARTNERS MANUFACTURE AN EXCEPTIONAL PRODUCT
RANGE SUPPORTED BY OUR TEAM IN ADMINISTRATION,
SALES, MARKETING AND DISTRIBUTION.

ALTHOUGH A CENTURY IN AUSTRALIAN
MANUFACTURING IS AN IMPORTANT MILESTONE
WE ARE FOCUSED ON THE FUTURE. IT SHINES AS
BRIGHT AS THE COPPER AND STAINLESS STEEL WE
WORK WITH EVERY DAY AND WE LOOK FORWARD
TO SHARING OUR ONGOING SUCCESS WITH
ALL OUR STAKEHOLDERS.