

The Crucible

MMTA Launches Training Programme
in partnership with NAMTEC





Maria Cox, MMTA General Manager

MESSAGE FROM THE MMTA EXECUTIVE

By Maria Cox, General Manager

Dear Members,

Welcome to our Summer edition of the Crucible. We received some extremely positive feedback about April's edition, both in terms of content and the new layout, but we always want to hear what you think! In the Spring, we asked members to get involved and contribute to the Crucible, and as you will see this time, quite a few have, so many thanks! We will soon begin

being the size of our room. For those of you who thought it was only for new entrants to the sector, Anthony Lipmann ([Lipmann Walton](#)) has written a short review of what new entrants and experienced practitioners all thought was a worthwhile event. I am really keen to develop our educational programme, and am looking forward to being able to put on more courses for members. We do need to know what you would like us to

We are very keen to receive your contributions to the Crucible!

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looking for contributors for the Autumn edition. Whether you agree or disagree with their comments, I'm sure our volunteer authors would love to hear what you think.

Firstly, I would like to welcome our 2 new members since the last edition: [Metraco NV](#), based in Belgium, and [A & R Merchants](#) from the USA.

In this edition, you will hear from Roy Walton ([Darton Commodities](#)), outlining some of the activities of the MMTA committees, as well as introducing you to the new members who have decided to get more involved, and we are very excited about working with all of them.

I hope you will agree with me that our main interview with Dr Alan McLelland of the [National Metals Technology Centre \(Namtec\)](#) is a fascinating read. We are really looking forward to developing this relationship further, and as a start, our recent Metallurgy for Beginners course was a big success—the only limit on numbers

put on and where.

I would like to draw your attention to my update on one of our major projects for 2011/12, our new website, which is nearing completion. We are in the process of updating information for the members' directory, which will massively improve the search function. We have a large number of visitors to the site, as well as phone enquiries, so the more information we have on each member company, the better we can promote you.

I will be using the Crucible to keep you informed of the projects we are involved in, whether just for information, or in case any members wish to become involved in a particular project of interest. This can be a fulfilling activity, and helps make the MMTA more effective.

Finally, I hope you enjoy this edition of the Crucible. You can read it online or print it off to read at your leisure. Following feedback, I have hopefully made it more printer friendly this time.

MINOR METALS INSIDER

Accuracy of published prices for minor metals — an important responsibility



Every contract needs to have a price; preferably this price is a fair price for both buyer and seller.

Unlike for exchange-tradable metals such as those traded on the London Metal Exchange, or metals traded in regulated markets such as the London Bullion Market Association or the London Platinum and Palladium Market (both with official fixings), no transparent market exists for minor metals.

The main reason is the global size of the market and the limited number of daily transactions, both too small to justify initiating contracts on official exchanges or metal markets.

In general, the market price should rule in function of supply-demand dynamics. However speculation, position-taking and investment stocking and destocking exist.

Publishers such as Metal Bulletin, Metal Pages, Asian Metal and MetalPrices.com publish a weekly -or twice per week- metal price quotation.

These publishers issue prices for a specific metal and for a specific purity, delivered at a specific location. Pricing is in €, \$ or in another currency, and references usually include a Low, Aver-

age and High price reference.

Price setting is unfortunately not well-documented hence not very transparent. Usually the publisher applies some internal rules, such as to contact producers, end users, traders and distributors to hear their opinion and ask for price information related to deals that were booked in the past few days. Appropriate filtering of the information is necessary to distinguish the facts from the tales, and requires experience. The market analyst will also seek to evaluate current and future supply-demand balance/imbalance, analyze import/export statistics, follow trends in the market (eg follow current and future use of a specific metal in its main applications) and implement current and future regulatory/government interventions into the price model.

As market participants in the minor metals industry often refer in one way or another to a published price when negotiating a spot deal or a long term contract, it is of great importance that those prices are a good reflection of the current market. The published price should preferably take into account a global perspective (rather than country or region based), should consult a broad enough spectrum of market participants and should act/react quickly according to market changes (though not over-react). ...

Not an easy assignment, I agree. But for all those engaged in trading (whether you are a producer, end-user, distributor or trader) a representative price is an essential element of the business!

Looking forward to seeing accurate price publications.

Kris Van den Broeck

[Umicore Precious Metals Refining.](#)

DIARY DATES

- **Legal Aspects of Contracting Seminar followed by Lunch, London, UK, 13th September 2012**
- **39th Anniversary Dinner, Intercontinental Hotel, Park Lane, London, UK, 16th October 2012**
- **Dinner and site visit to Firth Rixson, Sheffield, UK, 14th—15th November 2012**
- **New York Dinner, Cornell Club, New York, USA, 5th December 2012**
- **MMTA Christmas Lunch, Pewterers' Hall, London, UK, 12th December 2012**

DO YOU AGREE WITH THE POSITION OF THIS ISSUE'S MINOR METALS INSIDER?

If you wish to comment or provide an alternative point of view, please contact

maria@mmta.co.uk



Roy Walton, new MMTA Chair

WELCOME FROM THE MMTA CHAIR

By Roy Walton, MMTA Chair

It is my pleasure to write to you after the tremendous sell out success of the Cologne Conference and my first Main Committee meeting in the Chair.

During the Conference and subsequently I am delighted to report that several members came forward interested in being more actively involved and accordingly I would like to welcome the following new Committee members:

Volker Mertens from [Womet](#) of Germany joins the Main Committee and the Conference Committee.

Rob Bolton from [Aon Risk Solutions](#) joins the Main Committee and a new Insurance

This Insurance Task Force may have its brief extended to cover marine, transport and stock insurance. The Insurance Task Force group will be established over the coming weeks and we would very much like to hear from any other members who are interested in being involved.

The Conference Committee is working in conjunction with [Metal Events](#) planning the 2013 conference scheduled to take place 24th to 26th April in Washington DC, USA. Please put this event in your diaries and make sure you take advantage of the early bird member only delegate rates. I look forward to working with the Conference Committee with input from the North American Sub Committee to make the Washington conference every

"I urge anyone who is an employee of an MMTA member who is interested in becoming more involved to discuss this with Maria Cox or myself".

MMTA'S 2013 INTERNATIONAL MINOR METALS CONFERENCE



Mandarin Oriental
Hotel

Washington DC

April 24th—26th
2013

Task Force.

Chris Edler of [Lambert Metals](#) joins the Conference Committee.

Denise Denney of [AMC Group](#) joins the Warehousing Committee.

Charles Reynolds-Payne of [C Steinweg](#) of Antwerp joins the Business & Social Events Committee.

Tony Gunst of [Sovereign International Metals & Alloys](#) of the USA joins the Mediation & Arbitration Committee

I would like to take this opportunity to thank all those who serve on the MMTA Main Committee and various Sub Committees past and present for the time and effort they commit. One recent development I would like to mention is the availability of telephone conferencing which has made participation in MMTA Committees less onerous in terms of time spent out of the office. I urge anyone who is an employee of an MMTA member who is interested in becoming more involved to discuss this with Maria Cox or myself. For a full list of MMTA committees and their make-up please see the back page of this edition.

Rob Bolton has agreed to work with Deborah Stott of [Firth Rixson](#), Neil Poulter of [Wogen](#) and myself to form a new Insurance Task Force with the initial purpose of monitoring and communicating with the main credit insurance underwriters in these difficult economic circumstances.

bit as good as Cologne. If any of you are interested in presenting papers or have interesting and creative suggestions on topics and speakers please do not hesitate to speak to [Metal Events](#) or any of the Conference Committee members.

The Business & Social Events Committee is continually raising both the number and quality of the events the MMTA organises. The MMTA recently very successfully extended activities to cover training and ran a very successful Metallurgy for Beginners training day. I believe this is a useful service for Members and was delighted by the good attendance of younger members at the first formal training event. The Business & Social Events Committee will be sitting down, in conjunction with the North American Committee to plan a varied programme of both business, educational and social events for 2013. As ever, they would be interested to hear from members with ideas of what they would like to see as part of next year's events programme.

Over the coming months many of the projects the MMTA has in progress will be reaching their conclusion, including the new website, which we firmly believe will enhance existing member services and benefits. I am very much looking forward to working with my colleagues on the Main Committee and all those who serve on the various Sub Committees and the Insurance Task Force to deliver high quality services to members.

LETTER FROM AMERICA

Dear Members

For we members of the MMTA in North America, one of the most rewarding benefits of membership over the past several years has been not only the significant increase in the number of members (the association now has 27 members in the US and two in Canada), but also that of association events held on US soil.

Kicking off with the annual winter holiday season dinner at the Cornell Club here in New York, we had the first MMTA annual conference in the US, in Philadelphia, last year. And we have another coming up in DC next year. More immediately, though, in mid June, there were informal drinks here in New York – a first for such an occasion.

There are few institutions like an English “association”. The MMTA is no exception. Consummately good at promoting conviviality, where else, if not at an association event, might you find, for example, the major traders of a number of different metals kicking back, quaffing their beverages, shooting the breeze, *and all round the same table*? And when better than at an MMTA event to share with others not only what’s going on in the market, but also in the world of minor metals at large? (Furthermore, any demands for satisfaction, have only required the consumption of bumpers in toasts!)

So much of what a really good association is about is communication, not least the sharing of ideas, news, concepts and thoughts. As not only the North American contingent, but also those from other continents, grows, I believe it behooves us all to ensure that, as MMTA members, we trade between us not just metals but intelligence, solutions, initiatives and concerns that affect us all. Whilst I love to hear what’s going on in the UK, I know that many there (and in mainland Europe) would like to know what’s going on with us here.

So, hopefully, as the first such exchange of news etc, here is just one current US domestic initiative that could have quite important long-term consequences for association members.

As a guest lecturer up at Yale University the other month, I was the invitee of the Center for Industrial Ecology (at the Yale School of Forestry and Environmental Studies) where Professor Thomas Graedel (guest speaker at the 2010 MMTA winter dinner in New York) and his research team are doing both extremely important and fascinating work with their “[Criticality of Metals](#)” project. Professor Graedel developed the minerals “criticality matrix” that originally appeared, back in 2007, in the seminal report [Minerals, Critical Minerals, and the U.S. Economy](#) from the US National Research Council. His matrix concept was, subsequently, developed and used by the European Commission in its report [Critical raw materials for the EU](#) from the Ad-hoc Working Group on defining critical raw materials. Now, he and his team have further developed the assessment procedure and are actively applying it to examine the criticality of what they call “specialty metals”, for example, molybdenum, cobalt, niobium, tantalum and hafnium, with the long term goal of evaluating “*the criticality of the entire suite of some sixty metals used in modern technology.*”

With the high esteem in which both Yale and Professor Graedel are held, not only by government here in the US, but also at the UN (in particular UNEP) and in Europe, the project’s results will no doubt be carefully scrutinized by policy makers on both sides of the Atlantic, with possible long-term implications for all of us involved in the world of minor metals.

From New York

Tom Butcher

[*Hard Assets Investor*](#)

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NEW MEMBERS

The MMTA would like to extend a warm welcome to its two newest members. For more details, visit www.mmta.co.uk/members

A & R MERCHANTS INC

A&R Merchants Inc is involved in tantalum and niobium for the electronics and aerospace industries. Its main markets are Eastern Europe, North America and the Middle East.

METRACO NV

www.metraco.be

Metraco specialises in the trading and distribution of non-ferrous metals and ferro-alloys in general.

MMTA INTERVIEWS DR ALAN McLELLAND

By Maria Cox, General Manager



I recently had the pleasure of interviewing Dr Alan McLelland, CEO of Namtec ([National Metals Technology Centre](#)) over breakfast at the MMTA office in London. Dr McLelland gave a brief overview of the work of Namtec, which covers three distinct areas: consultancy, its business forum, and training.

Namtec supports companies with a wide range of issues, from specific technical questions, questions around how to design or supply a particular product to market, through to companies wishing to diversify but not knowing how to go about it. Training is about 1/3 of Namtec's business, and he highlights the problem that "there is a real lack of skilled metallurgists within the industry ... and fewer and fewer companies are recruiting metallurgists and metals experts". I venture that this is precisely why offering our first metallurgy training course in partnership with Namtec is an exciting development for the MMTA.

Technological Developments

I wonder what role Namtec plays in keeping a view on technological developments to identify anything coming over the horizon which could lead to the serious commercialisation of

"Technology innovation is a double-edged sword – as quickly as a new development can push up demand for one metal, it can just as easily and quickly remove demand for another."

MMTA'S INTERNATIONAL MINOR METALS CONFERENCE 2012 REVIEW

I hate to admit how many metals conferences I have attended during the past 38 years; but the recent MMTA Conference in Cologne Germany was exceptional. First off, my sincere congratulations to all involved with coordinating the logistics; speakers, and entertainment. As you say in the UK, "it was over the top".

I know how difficult it is to arrange quality speakers, and to keep the audience focused throughout each presentation, but the committee scored an A +. (See Over)

an under-utilised minor metal, and Dr McLelland responds that they are involved in a lot of high growth market areas, "so immediately get visibility of where these trends are going. Let's take offshore wind, it's got a huge [and] growing potential, but at the moment it is based on current onshore technology being moved offshore. But offshore turbines can be made much bigger. Onshore turbines are between 2 and 3 MW, whereas offshore is starting at about 3.5, the next generation will go up to 5, and people are now looking at offshore turbines of about 10 or even 20 MW. Currently there are several technology solutions being explored. One of them that we use is permanent magnet generators, which rely on neodymium and dysprosium".

"The same is true of photovoltaic devices. In many instances, the technology is still in its infancy and a number of possible solutions are under development. In the background in relatively small volume is thin film, which has a lot of advantages, particularly in the efficiency of its materials. It relies on a number of minor metals, tellurium being one of them... Eventually one of these [solutions] is actually going to come out as the dominant technology. Ultimately you might end up with one or two solutions, but I don't think you will end up with half a dozen."

"The other point to mention is that technology will not stand still – what we perhaps foresee today could well change, and in a relatively short timeframe. There are many examples where a technology innovation has come through and dramatically affected demand – we can think of lithium and its application in battery technology, which over a relatively short period pushed demand and prices considerably. Of course, technology innovation is a double edged sword – as quickly as a new development can push up demand for one metal, it can just as easily and quickly remove demand for another. With such a rate of change, a constant eye is needed."

Transformative Minor Metals Applications

We discuss whether one or more minor metal applications can be regarded as having been transformative during the period since the MMTA was founded in 1973, and why that might be so. "There are a couple of obvious examples," he says.

"Firstly one can think of Platinum and Platinum Group Metals (PGM) in general. As costly metals, their usage was somewhat restricted to specialist areas such as the chemical industry. However, the passing of legislation for emissions transformed usage such that virtually every vehicle in the world is now fitted with a catalytic converter based around these metals.

While driven by costs, it is nevertheless pleasing to see that these are an excellent example of a closed loop system with very high rates of recovery and reuse”.

“Another obvious metal is Neodymium. It is hard to underestimate the impact of this metal which, until recent price and availability concerns, was almost unheard of.

However its application in high strength magnets has revolutionised so many products, and its use is only forecast to increase. Here is an example of where recovery and reuse are in their infancy but increases can be expected”.

What About Our Old Mobile Phones?

I wonder whether he can expand on how improved recovery and reuse rates might be achieved, as it seems to be a real stumbling block. “There are some very big challenges, the first being actually getting hold of material to recycle. We have a very ill disciplined waste recycling mechanism, so there is no really good source of capturing these materials at end of life; for example, there was a study done in Germany on mobile phones a few years ago, of 2,300 tonnes of mobile phones that ought to have become available at end of life, only 100 tonnes found their way into the recycling chain. So what happened to the rest? Typically, because they are so small, people tuck them away in a drawer as a spare, or they get thrown away into landfill waste. So that’s the first thing, actually getting hold of the material”.

“The second thing is these metals that we really need to start capturing have only been used relatively recently, so we have a fairly high demand, but many of the products are not yet at end of life. People talk a lot about recycling and quote a lot of statistics but many products are actually still in use and not yet ready to be recycled”.

“The third thing is how do you capture all of these very low quantities of very broadly spread metals? If you take a smart phone, it has about 20mg of gold in it. It’s not an awful lot of gold, but with 1.6 billion produced each year that equates to some 30 tonnes! It also contains a lot of other components: silver, a fair amount of copper, palladium, tantalum, and tungsten, but all in very small quantities, typically as a plating or a film, or combined with other materials. How on earth do you extract tiny quantities of what is extremely valuable? They are mechanically or chemically integrated, and a lot of metals are reactive: Rare earths for example - give rare earths a bit of heat and a breath of oxygen and you have an oxide which disappears pretty quickly. So there is a lot of technology development required in order to efficiently and cost effectively extract relatively small volumes of a very large number of compo-

“Everyone says ‘Oh, the key is to recycle it’, but there is still some real work to make it an effective process”

nents. However, it not only makes good environmental sense, it can also make good commercial sense. If all you are pulling out is gold, then you are losing a vast quantity of very valuable material”.

“The other consideration is, whether it is environmentally positive. Is it less environmentally damaging to mine more of the material out than to try to recycle what’s already out there? Think of the energy, the chemical process you have to use to recycle. If it becomes a wet chemical process route, typically some fairly harsh chemicals are used. Part of the challenge is making that process not just efficient and cost effective, but also environmentally positive, so that it’s better to recycle than it is to go and buy. Everyone says ‘Oh, the key is to recycle it’, but there is still some real work to make it an effective process. If it can be achieved – great! If someone could solve this problem, they would be on to an absolute winner. There are vast amounts tied up in these components”. I ask whether anyone is there yet. He replies: “There are a couple of organisations that are setting up much more specialist, dedicated recycling facilities, focussed around electrical waste. They are trying to really capture a larger number of the elements, and even so, it is very difficult”.

CONFERENCE REVIEW... CONT'D



The hotel location, and its facilities were perfect, and allowed for comfortable informal meetings. I never had the sense of being uncomfortable or compromised in any meetings, similar to that of other major International conferences, for example. The meetings that took place, as in my case, were brand new, and provided an “expanded window” to certain aspects of my business, that I never experienced before.

The very fair and intelligent questions asked by the moderator (Rachel Carnac) to the speakers, encouraged further explanation and clarification of the topic presented, which provided a relaxed atmosphere, and critically important.

Congratulations to Guy Darby for his leadership in guiding the MMTA to a higher level, and good luck to Roy Walton, who I know will continue the success of his predecessor. Now, it is up to us, the North American Committee of the MMTA, to make the Washington D.C. 2013 event even better.

Paul J. Helsel

Sr. Partner

[Phoenixx International](#)

KEEPING YOU INFORMED

The MMTA will soon be launching its new website, which will contain many new features which we hope will make your interactions with the Association easier and more effective.

Apart from offering the ability to book and pay for events online, the new website will include a members' only area and improved exposure for members via the enhanced members' directory. There will be other new features added over the coming months, and we hope it will become a well-used and informative resource for the membership.

One of the main features will be regular updates on the work of the MMTA's committees, keeping you, the members, informed of what your Association is doing. We will look forward to hearing what you think.

The new website has been an important project for the MMTA, beginning with a formal tender, where 3 companies were chosen to submit proposals. The Main Committee and Executive examined the proposals, choosing Cyber, the company that offered the best value for money and most appealing design.

INTERVIEW...CONTINUED FROM PAGE 7

"What is really needed is a solid recycling philosophy. We recycle at home - the plastics, the glass, the paper and so on. But all the other material isn't collected. So what tends to happen is either people put it in the black bin, and it goes to landfill, or the expectation is that people will take this to the local recycling source". We agree that you have to be quite committed to do that; some people will, but a lot of people won't bother. So what is needed is a very effective collection mechanism; it has to be made easy for people.

"People are busy, it takes time, you have got to make it a very easy process, where it gets collected and there is an effective mechanism post collection to separate and segregate and then efficiently process it. I think to make it effective you have to have economy of scale; without the volume, it simply doesn't work. Somewhere down the line we have to adopt this philosophy".

Commercial & Scientific Collaboration

I ask about how the commercial business side and the research technology side must work together in the future, and to what extent Namtec is playing an important role in that process? We agree that it is essential for the worlds of business and scientific research & development to come together. Dr McLelland points out that "today, the term 'minor metal' seems inappropriate given the importance that these metals now hold. While we may use relatively small quantities of these metals, these are truly 'technology' metals which have a key part to play in our future, not least within a low carbon future when we consider wind and solar energy, electric vehicles, low energy lighting and so on. They have progressed to become key enablers in pushing technology boundaries, and there is nothing to suggest this will change in the near future. However, their application needs a much more holistic view – truly considering the full cradle to grave to rejuvenation in the next generation of application with a far greater focus towards effective capture from waste streams and reapplication".

"We mine copper down to about 0.2%, which if you look at a landfill site, it's much, much higher than that!"

"It is interesting though to think that not so many years ago, these metals were almost unheard of and yet we see neodymium, dysprosium, tantalum and other such metals appearing in our daily press. The rise in our awareness is partly a reflection of current availability concerns, but it also highlights the growing importance that we place upon these metals for everyday products – our phones, our TVs, and so on".

Are All The Metals Running Out?

This leads us neatly onto the subject of metals scarcity, and I wonder whether this is simply a reflection of price and a relationship between what is economically viable to extract and what the consumers of the metals are prepared to pay. With recycling set to increase due to the value of metals, I wonder whether he believes we should in fact be positive about the future.

He responds that in some ways he feels "disappointed that it takes an impending threat of availability constraints to make us take resource efficiency more seriously" but he remains positive. "The fact that the geological community considers we have enough of these raw materials doesn't preclude us, technically, commercially or morally, from being efficient with what we have. We are seeing a growth in the recovery of waste materials, which is now including these technology metals but we still have a long way to go. We need a truly effective closed loop system to be developed which can capture much greater volumes of this waste and direct it towards more efficient and effective recovery methods. We are making great strides forward but the reality is we still have very low recycling rates for these metals – a few per cent is common. Commercially, with price increases this is becoming more viable".

He is convinced that this "will inevitably have to happen because there's now such a pressure on resources that people are going to have to start being aware when products are designed, of what the source of this raw material is. So ultimately, as technology developments come through, people are going to have to start to make the linkage.

They are now starting to go one stage further and talk about things like material supply security and trying to build that in, so these issues are considered right at the design stage of the product. It is essentially a commercially driven activity; one doesn't want to get tied into a very expensive and constrained supply chain around a particular metal or technology source".

"There are so many reports that talk about metal scarcity, and they all rank different metals, it can be very confusing, and the reality is that much of it is not well founded".

Phew! Sun reports on Tungsten

"What we at Namtec try to do is raise awareness in organisations, so that they start to consider what the threats are to their business, but in an objective manner, not scaremongering. I have a press cutting from the Sun talking about Tungsten. I would never have expected that to appear in the Sun! It is a good story, but it is not necessarily giving people information they can act upon. You talk to a lot of companies, particularly SME companies, and they say 'well, I can't do anything about it, it's too big a problem and it's government intervention', and actually there are things they can do".

"They can look at what it is they do today, how much they use, how much wastage occurs in their current processes, whether they have a second source of supply if one becomes difficult or whether they are utterly dependent on one source. If you are using a particular metal, is it mined as a primary source or does it come as a by product? We have lots of people saying 'the price of this is all over the place', and part of it is because it is a by product; it is not mined itself, for example copper mining produces by products. And the miners make the money out of selling the copper, not really this fairly low volume material. So these are all things that business can think about that might help them plan.

Landfill—Mines of the Future

And finally we turn to landfill sites. "In the future we will have to mine them. If you look at the percentage of these metals in the landfill sites, it is at a much higher percentage than in the ore! We mine copper down to about 0.2%, which if you look in a landfill site, it's much, much higher than that! There isn't a huge volume, but it's much, much higher! No wonder people are buying them up as an investment. In 20, 30, 50 years' time, they could well become a prime source of resources".

BENEFIT FROM SPONSORING AN MMTA EVENT



Sponsoring an MMTA event is not just about one evening.

MMTA communications and marketing reach the inboxes of

decision-makers and key influencers within the MMTA membership and outside it for the entire duration of the marketing of an event, as well as in post-event reviews.

Our current website has over 4,000 visits per month from across the globe, and our soon-to-be-launched new website offers even greater opportunities for sponsors.

Take advantage of the MMTA's contacts and distribution channels by using us to help target your marketing activity within the

minor metals sector.

MMTA sponsorship also offers the opportunity to work with a trusted partner over an extended period of time, maximising return on your financial investment.

We have 2 remaining sponsorship opportunities for 2012:

Our flagship [39th Anniversary Dinner](#), this year taking place at the InterContinental Hotel, Park Lane on 16th October.

Our [Minor Metals in New York Dinner](#) taking place on 5th December at the Cornell Club offers a fantastic sponsorship opportunity to someone wishing to focus specifically on the US membership.

Details of specific sponsorship packages are available on request by contacting

maria@mmta.co.uk

MMTA INFORMAL DRINKS

During June, the MMTA held informal drinks in both London and New York.

For London based members, informal drinks are not new, so it was good to see some familiar as well as some new faces on June 21st.

Earlier in the year, we held drinks in Brussels for the first time, and on 14th June the Wheeltapper Patio in New York was host to over 30 US-based MMTA members. By all accounts it was a very enjoyable evening, and we look forward to building on this and the New York dinner and putting on more events in the US.

Any ideas for future events?

Contact

emma@mmta.co.uk

CONFERENCE PHOTO GALLERY



THE WAY WE WERE.....

*Founding father of the MMTA, **Peter Robbins**, remembers how the Association came into being.*

The idea of 'swinging London' tends to conjure up visions of mini-skirts and flower power rather than stuffy Victorian offices full of clerks clacking away on typewriters and mechanical calculating machines. The City's metal merchants had recovered from the war and were carrying on their ancient trade in iron and steel, base metals and gold and silver. But as the 60s turned into the 70s and John Lennon's 'Imagine' was climbing the charts, another technical revolution was taking place. Innovations in aerospace, the chemical industry and most of all electronics, was creating a new demand for metals most traders didn't even know how to spell.

There were several other commonly used metals like nickel and aluminium which were rarely traded through the City's merchant houses because consortia of the major producers controlled the market, deciding among themselves who to sell to and at what price. The producers grip on these and many of the minor metals markets began to weaken, however, as smaller producers broke away to reap the rising prices caused by increasing demand. The new industries needed traders to source their raw materials and many of them naturally beat a path to the City – still the largest commodity trading centre in the world.

“creating a new demand for metals most traders didn't even know how to spell.”

A few City companies marketed minor metals as agents for mining companies and others had for many years specialised in this trade with China, Russia and other more mysterious countries but trading-room bosses, brought up on a diet of copper, zinc, lead and tin, weren't particularly interested in finding out where to buy half a ton of indium and they tended to hand over the minor metals book to junior traders such as myself.

Faced with the prospect of getting an earful of abuse from some crusty old war veteran of a boss, I had to burn the midnight oil to find out where all these weird metals came from and what they were used for. I quickly found out that I was not alone. Young men in other companies (they were all men in those days) were desperately trying to find new sources and to find holes in the producer price system. I quickly found that I could get to know much more about the markets if I talked to this growing band of minor metal specialists. And the more we talked, the more business we did. Someone would have tungsten from China and someone else a customer for it in Sheffield, and so on.

Talking on the phone is one thing, but since we nearly all worked within a few hundred yards of each other – a lunchtime pint became an obvious way to seal a deal.

And so the one-to-one meeting became a great opportunity to gossip about the market and all the other market players.

Some of us were invited to the annual London Metal Exchange dinners where we met each other in larger numbers but the LME only traded four base metals in those days and we were trading dozens of them. The dinner wasn't our event and we found it rather easy to get bored listening to the Chilean trade attaché grinding on about a new copper contract.

THE WAY WE WERE.... CONT'D

Without bothering my bosses about it I decided one day to send off a telex (don't laugh) to all my City trading mates suggesting a social gathering in a pub next to Southwark Bridge that has since been pulled down. Quite soon afterwards one of my bosses heard about my idea and hauled me in for a grilling.

Although he had little idea of how the minor metals business worked he was convinced that all the people I'd invited were my competitors and that they would steal all our business. The truth was, of course, that we needed to trade with each other not only to be more efficient but also to provide the critical mass of trade to hedge and speculate.

I don't remember much about the first meeting apart from one trader walking back home along the parapet of the bridge 200 feet above the murky waters of Old Father Thames but, needless to say, it was so popular that it led to others.

From that very first day everyone started talking about formal membership, designing agreed contracts, writing constitutions, and all the other things that the MMTA has now achieved. But all that for another day, perhaps.

MMTA'S INTERNATIONAL MINOR METALS CONFERENCE 2012

The most interesting aspect of the MMTA conferences is the camaraderie. Whether walking through the general session, relaxing in the lobby, or enjoying the always lively hotel bar scene, you can find close friends, long time customers and even fierce competitors laughing, recounting famous stories, talking about the markets and perhaps completing new business. The appeal should not simply be the discussion sessions; it's about hearing the buzz on the street from both friend and foe.

Personally I love the cities which the MMTA chooses to host the annual conference. Each has its own style, from a major metropolitan area to a smaller city with loads of culture. Having dinner at the Brauhaus FRUH am Dom was one of the most enjoyable and entertaining events of the conference. The live music, the incredible beer, the overflow of

food... all cultural and competitive lines were crossed to simply have an amazing evening. The overall architecture of the city was also very impressive; we were always passing a building/cathedral/museum offering a unique glimpse into German history.

Of course, I also enjoy the focused group of metals the MMTA targets. When traveling around the world on tight schedules or budgets, it is important to meet people who can quickly understand the metals and alloys you are working with. I certainly left feeling more knowledgeable about some markets, and even more confused about others! For anyone who has not traveled to Washington D.C. (MMTA Annual Conference 2013), plan a few extra days, check out the Newseum, and bring comfortable shoes...

David Gussack, [Exotech](#)



CONFERENCE PHOTO GALLERY



MMTA UPDATE

Jill Fitzgibbon of [Metal Events Ltd](#) is standing down from the Business & Social Events Committee. We would like to thank her for all her hard work and commitment to the team.

WHAT MUFULIRA MEANS TO THE MMTA

Anthony Lipmann visits Mufulira in Zambia's copper belt to see progress on the installation of sulphur capture equipment.

Arriving in Mufulira

I am travelling to a country that had in September 2011 elected a new President. One of the most peaceful transitions of power seen in all Africa saw Michael Sata elected as President and Dr Guy Scott, a white who retained Zambian nationality at Independence in 1964, installed as Vice President.

Arriving at the end of March, the country is still celebrating the victory of the *Chipolopolo* football team (the copper bullets) in the African Cup of Nations, 19 years after its young team was lost in a plane crash in 1993. This is a nation still far too used to tragedy. Two days before my arrival, a loader, during refuelling underground at the mine in Mufulira, had caught fire and exploded, causing choking smoke from burning tyres.

The Times of Zambia (19.03.12) reported "170 miners choke, survive underground fire"

"the country is still celebrating victory of the Chipolopolo football team (the copper bullets) in the African Cup of Nations"



Glencore's promise to install new converters to capture sulphur in Mufulira

The Doctors who treated the men told me that, although the miners were taken to hospital, almost all were discharged the next day. Whether their release was quickened because of the arrival of a delegation of MPs from the UK Parliamentary Select Committee for International Development is not clear, but this accident was a reminder of what metal business can mean in communities far from London.

Sulphur capture scheduled for end 2013

MMTA members may be heartened to know that our Association's involvement with Mufulira has resulted in progress and change. Representations made to Glencore Intl AG about fugitive sulphur emissions from the copper smelter have had an effect and were followed by a Glencore announcement in November 2011 that installation of capture equipment would be completed by the end of 2013.

On Tuesday 27th March I was part of a group collected at 7.00 am in a white brand new Mopani Copper Mines (MCM) bus, which escorted us for a visit to the Mufulira mine, smelting and heap-leach operations, not more than a mile or so from our base at 7 Julius Nyerere. Part of the group was to go underground while others toured the surface operations.

Chairman of MCM, Emmanuel Mutati, made a presentation in which we were invited to ask any questions and told we could take as many photos we wished.

Our visit lasted the whole day, to show non-metal people and metal people alike the whole process – charging concentrates to smelter, conversion, anode-making and refining as well as, separately, heap-leaching and electro-winning.

At the heart of the smelting process lie the three converters responsible for the fugitive emissions. I was able to see one new converter in position and operational, another on the ground being prepared for installation and told that a third was on its way. The terrain for the acid plant - key to the ultimate safe recovery of sulphur and particulates - was being prepared, awaiting the arrival of acid plant equipment from abroad.

MCM officials accompany us into the townships

When we finished the plant tour, the bus, now occupied by Chairman Mutati and other officers of MCM, continued to the poorest areas of Kankoyo which is the township that receives the brunt of the sulphur fall-out.

WHAT MUFULIRA MEANS TO THE MMTA .. CONTD

There we visited first *Muleya School*, one of the poorest schools with 38 teachers catering for 1668 pupils, including 371 orphans. Then on to *Mine Basic* the school whose children wrote letters in 2009 describing what it was like to live with sulphur. This school caters for 1492 children with 37 teachers. Finally we went to *Kamuchanga Hospital* where we saw conditions under which a catchment of 90,000 people receive medical treatment – water and electricity only intermittently available, roofs broken which had recently caused flooding to maternity and children’s wards, and broken laundry equipment.

Upon return to the MCM meeting rooms for summing up, Chairman Mutati said that MCM was now holding monthly board meetings to allocate funds for works in the community, and that well-presented, costed, projects would be considered for action.

During the visits, Headmaster, Mr Solesole, of Muleya Winter Basic School, had handed a document prepared by the Parent Teachers Association (PTA) for the building of new classrooms, and Mr Mutati confirmed funding for this project of \$30,000 at this meeting.

Why fund an ‘exchange programme’ rather than objects for the community?

The philosophy of *Intro Zambia*, the Eco Tourist group run by Dr Laura Tilling, and *CMCPT* (Cary Mufulira Community Partnership Trust) is dedicated to exchange and partnership rather than hand-outs. Amongst our number on this trip were teachers preparing for future exchange trips between schools in Somerset, UK and their counterparts in Zambia who have been twinning for up to 20 years.

The main anchor of the exchange programme, towards which the majority of funds raised from MMTA members go, is between Ansford Academy & Mufulira High School. It is an expensive business – up to £45,000 per exchange – to send 14 pupils and teachers from UK to Zambia, and 14 back, and that is why the funds given by MMTA members are such a lifeline.

It is a large sum and members are perhaps entitled to ask whether £45,000 spent in this way is value for money. Would it not be more effective to spend this money on items such as bore-holes, teaching equipment or medicines?

“the exchange philosophy produces partnership rather than charity...there are things to be learnt on both sides”

It all depends upon what value you put on the exchange programme. It is true that an exchange programme does not directly put more food on tables, improve sanitation, or directly lead to better health. But it does result in friendships which have now lasted two decades, and the exchange philosophy produces partnership rather than charity, illustrating that there are things to be learnt on both sides. Another way of looking at the matter could simply be this – without the intelligence and commitment that generations of students and teachers from UK and Zambia have provided, it would not have been possible to obtain the evidence to show that sulphur pollution was perhaps the single most correctable problem affecting the health of all citizens of Mufulira.

So, if our link does eventually result in the removal of sulphur pollution from the population of 300,000 people of Mufulira for the first time since copper mining and smelting started in the 1930s, then it will have been more than worth it.

The mine owners claim they are spending \$145 million on the three new converters and an acid plant. So, set against the costs of the exchange - perhaps not a bad return after all?

Anthony Lipmann, [Lipmann Walton & Co](#)



New Converter in place and working at MCM, Zambia



Godfridah Mwimbe, a teacher at Mine Basic School, outside her home in Kankoyo which suffers the brunt of sulphur emissions. It was the children from her Eco Group who wrote their letters addressed to ‘Mr Glasenberg’ asking for sulphur to be captured.

MMTA LEGAL ASPECTS OF CONTRACTING



This not-to-be-missed half day seminar on September 13th is an introduction to contracts for traders, and will cover the following:

What is a contract?

When is it made?

Does it incorporate your standard terms?

Why are standard terms useful?

Variations

What happens if one side doesn't perform?

To register your interest, please contact:

emma@mmta.co.uk

COMMODITY TRADE FINANCE—NOTHING NEW!

Commodity trading houses have played an integral role in the global economy for centuries. Collectively, they ensure that key resources flow efficiently from areas of surplus supply to areas of excess demand. As long as merchants have existed, banks have supported the physical commodity trade by providing necessary loans and trade services.

Utilized prudently, a well-structured line of credit can help traders leverage their capital and expertise, often resulting in increased turnover, business growth, and enhanced returns on invested capital.

The outstanding economic growth

Generally speaking, commodity finance banks are better equipped to support commodity trading businesses than generalist lenders. The benefits of partnering with a commodity finance bank are derived from the institutions' understanding of traders' liquidity needs and the markets in which they trade. This knowledge often enables commodity finance banks to provide more flexible loan structures, quicker decision making, higher advance rates against commodity inventory, and greater stability in volatile price environments. Further, specialized commodity finance lenders appreciate that traders need a bank that can adapt at the speed with

“As long as merchants have existed, banks have supported the physical commodity trade...”

during the Italian Renaissance, for example, traces its roots to the communion of traders and banks. During the late 13th century, merchants in Florence transformed the local wool producing industry into a center of the international textile trade with the capital support of local banks. The confluence of the Arno River, entrepreneurial traders, and a supportive banking system had an alchemic effect on the Florentine economy.

Centuries later, this symbiosis between banks and commodity traders remains intact.

But that is not to say that finding a well-structured line of credit for a commodity trading company is simple.

Today, there are very few banks throughout the world (about 10) that specialize in lending senior debt to international traders and merchants of metal, energy, and agricultural products.

which counterparties, sourcing/selling geographies, and pricing dynamics evolve.

Whether in 13th century Florence or modern-day New York City, banks have always provided commodity traders with essential loans and trade services. While the only certainty in commodity markets today may be uncertainty, traders will be well-served by finding financial partners with a long-term orientation and time-tested commitment to the commodity finance business.

Jeb Burchenal,

Brown Brothers Harriman & Co

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MMTA HOSTS ITS FIRST TRAINING COURSE— METALLURGY FOR BEGINNERS

Hosted at MMTA's offices in Islington, London, on June 21st The National Metals Technology Centre (www.namtec.co.uk) in Rotherham delivered its inaugural training course to MMTA members – Metallurgy for Beginners.

Mindful that not all those of us involved with metal merchanting are metallurgists, the MMTA bravely chose the above course to test the water and discovered that a full quota of members was ready to improve their knowledge.

Delivered by Geoff Bolton of Namtec, Geoff's experience included working for Sheffield Forgemasters. At seven hours, the course was not for the faint hearted covering Structure of Metals, Properties of Metals and How to Measure them, The Metals Lifecycle: Processing, Applications and Quality.

This was an excellent course which some companies used in order to send younger members of staff for a widening of their metals knowledge, while others used it to brush up, or backfill, missing gaps. Creep, toughness tests, impact tests, ductile-brittle transition, fatigue, grain orientation, phases, crystal structures – much ground was covered and this was a highly worthwhile way in which the MMTA is delivering real value to members.

Anthony Lipmann, [Lipmann Walton & Co](#)

ANYONE FOR 5-A-SIDE FOOTBALL?

If you would be interested in taking part in an MMTA 5-a-side football team, please contact Sam Carne at Darton Commodities, who would like to set this up. Sam can be contacted on:

scarne@dartoncommodities.co.uk

“Our next course will be Legal Aspects of Contracting. We are developing our training offer, so please let us know what you want to see, and where.”

REVIEW— Periodic Tales *The Curious Lives of The Elements*

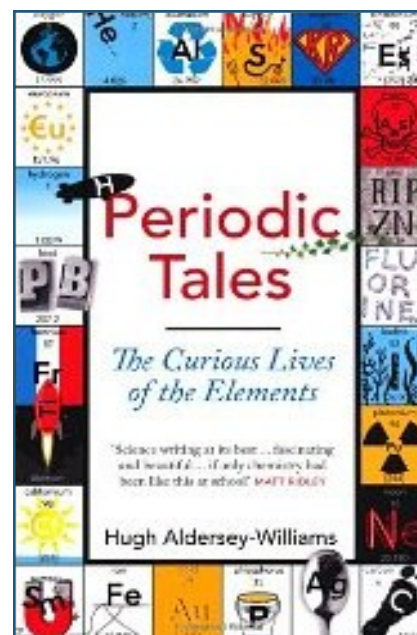
By Hugh Aldersey-Williams

Published by: Penguin Viking 2011

In our present society where we appear to have moved away from a world of ‘making things’, here is a book to awaken the soul of all those who wished they’d paid more attention in the physics and chemistry class. It is one of a series of recent popular science books by various authors all making a great play for redressing the balance between a media-centred culture and the world of science. For those engaged with metals as a hobby (or work), this book makes engaging reading. With Chapter headings such as ‘Pee is for phosphorous’, ‘El Dorado’ and ‘Going Platinum’, the reader knows it is going to be sugar-coated fun and, for the scientifically challenged, a most deliciously presented can-opener to lost worlds of missed opportunity caused by not having studied it properly first time around.

All Minor Metal merchants, for example, have, I am sure, heard of the 192 year-old Wieland-Werke, but how many of us knew that *Wieland* was the name for the Anglo-Saxon God of Blacksmithery? Or that the *brimstone* of the threatened visitations of ‘Fire and Brimstone’ in the Bible and Milton is none other than ‘sulphur’? Or that the last ‘charcoal burner’ was still making a living supplying the grill rooms and eating houses of London as recently as 1939? (An interesting side angle into the sufferings of Zambia – brimstone from the copper smelter in Mufulira and deforestation caused by charcoal burners who ply a trade in the 21st century that should have been made redundant years ago with other more palatable renewables.).

For anyone even slightly interested in the folklore of elements, this is a book that I would defy any metal merchant, minor or otherwise, not to enjoy.



MMTA ON THE ROAD

On 26th April, Maria Cox attended the dinner of the [Verband Deutscher Metallhändler](#) (VDM) as the guest of Ralf Schmitz, their Chief Executive. VDM is not only an MMTA member, but is also an organisation with similar aims to the MMTA.

On that day, VDM had elected a new President, Thomas Reuther, as well as a new Board. MMTA member, Gunther Maassen, of Haines & Maassen has joined the VDM Board, with special responsibility for Minor Metals. Congratulations to Gunther.

It was a wonderful evening with entertainment from an excellent and highly professional group of Polish singers and dancers.



Maria Cox with VDM Chief Executive, Ralf Schmitz and his wife, Friederika, and Christina Janos at the VDM dinner.

The MMTA was represented alongside members of the VDM membership, including some MMTA members, and a wide range of other organisations active in the metals field within the German-speaking area, and also a representative of the German governing party. Many thanks to VDM for organising such a wonderful evening!

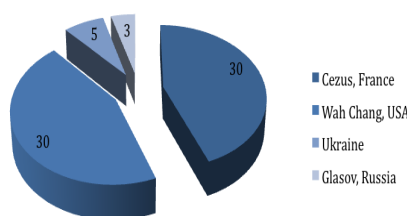
HAFNIUM SUPPLY AND DEMAND

The pie charts for Hafnium show an imbalance between supply and demand which is further exacerbated by its disjointed structure – that is to say that out of the total supply of 68mt only 30mt of production is made by the Van Arkel process to make Hafnium crystal bars. Wah Chang is thought to produce about 20mt and Cezus about 10 mt via Van Arkel.

As with Zirconium, Hafnium, which is refined out of Zirconium when nuclear grade pure Zirconium sponge is required, is dependent on the nuclear industry for its route to the market. Without a nuclear industry there would be no Hafnium. Its presence within zircon sand at an average ratio of 1:50 versus Zirconium makes it extremely rare and not worth refining for its own sake.



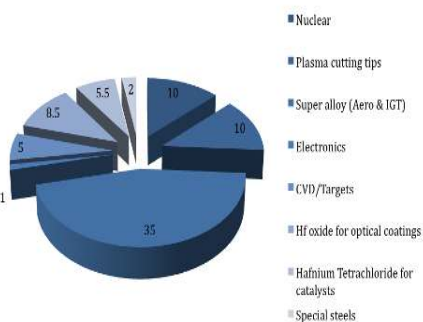
Hafnium - Total Supply 68 mt



Notes

1. Unlike the listed Zirconium producers, Westinghouse, USA, does not generate Hafnium by-product during Zirconium sponge production
2. India and China have some Hafnium production for domestic use but do not export
3. Out of total 68mt supply, not more than 30mt is produced via the Van Arkel process, which provides the bulk of demand for very pure low Zr-bearing crystal bars of Hf preferred for super alloys

Hafnium - Total Demand 77 mt



Notes

1. Nuclear includes power generation for electricity as well as for submarines and aircraft carriers

What the supply pie chart tells us is that the recovery of Hafnium as a by-product is only generated in parts of the world where Zirconium is produced. France and USA are the leaders in the West, and Russia/Ukraine in the CIS region. No Hafnium was traded East to West before 1991.

Hafnium's historic use for control rods within nuclear plant and equipment (for repelling neutrons), is in decline and is satisfied by a supply of Electron Beam ingots which can tolerate up to 2% of Zr impurity. However, following the Fukushima disaster in 2011 further safety requirements in BWR (Boiling Water Reactors), where a hafnium skin is being mooted, may cause greater use of Hafnium in the short term.

Hafnium's dominant application in the modern world is not for nuclear but for super alloys; both in aerospace turbine blades (rotating parts) and vanes (stators), as well as their equivalents in larger cast parts required for industrial gas turbines. It is thought that more than 35 mt of Hafnium goes into this sector one way or another via the production of complex nickel base alloys containing approximately 1.5% Hf.

The super alloy industry prefers the purest form of Hafnium (crystal bar produced by the Van Arkel process), the supply of which is limited to 30 mt. While supply and demand of Van Arkel in this field is close to balance, the specific demand for very pure hafnium with low Zr contents of 1%, 0.5% or <0.3%, all commanding various premia, keeps this sector volatile.

Anthony Lipmann, [Lipmann Walton & Co](#)

PMI: CHINA vs EUROPE vs US, WHERE IS THE WAY OUT?

On May 24th, HSBC released its Flash Purchasing Managers' Index, the earliest indicator of China's factory activity, came in at 48.7 for May, 0.6 lower compared to April's final reading of 49.3. It also marks the seventh consecutive month the indicator has languished below the threshold of 50, which separates growth from contraction. Breaking down that number, the new orders sub-index shrank in the month, indicating there was an even sharper slump in the new export orders.

Unexpectedly weak economic data for April released earlier this month was followed quickly by the central bank's third cut since November in the amount of cash that banks must keep in reserve, to allow more credit to flow into the economy.

Beijing has recently signalled its biggest push since joining the World Trade Organisation to boost private

landing in the coming quarters."

However, without the support of new orders from its major export markets like Europe and the US, it would be difficult for China to tackle the problem simply by boosting domestic demand and liquidity.

Markit's European PMIs released on the same day are not offering much good news. French manufacturing PMI fell to 44.4 in May from 46.9 in April, a 36-month low and well below estimates of 47. German manufacturing PMI fell to 45.0 in May from 46.2 in April, a 35-month low, and below estimates of 47. For the Eurozone as a whole, the PMI composite comes in at 45.9, again, missing estimates of 46.6. All these disappointing PMI figures are pointing to a deeper recession in Europe.

In the meantime, the US May Markit manufacturing PMI came in at 53.9 vs 56.0 in April, its lowest figure

"Beijing has recently signalled its biggest push since joining the WTO to boost private investment"

investment into areas previously reserved for the state sector, like rail, hospitals and energy transmission. It also intends to fast track infrastructure investment to combat the slowdown, state media reported.

"Policymakers have been and will step up easing efforts to stabilize growth, as indicated by a slew of measures to boost liquidity, public housing and infrastructure investment and consumption," HSBC's chief economist Qu Hongbin, wrote in a statement accompanying the PMI release.

"As long as the easing measures filter through, China will secure a soft

since February, which was pulled down by output, new orders, inventories of purchase and employment all rising at slower rates than April, signalling a slower rate of manufacturing expansion and indicating a long road ahead for US' recovery.

By looking at these discouraging figures and the deteriorating Eurozone debt crisis, we just can't help wondering. where is the way out, for everybody?

Vicky Zeng

Vital Materials Co., Ltd

MMTA VISITS THE UNITED NATIONS, GENEVA



On May 23rd, the MMTA visited the United Nations in Geneva, Switzerland. Alongside a presentation on the role of the United Nations Conference on Trade and Development (UNCTAD), and the role of rare earths, with particular reference to their importance in green technology, the group took a guided tour of the Palais des Nations.

Over a working lunch, they met with a representative of Sidley Austin, who gave an informative overview of the WTO trade dispute and resolution process.

MEMBER BENEFITS

Members-only early-bird discount on tickets for the MMTA's International Minor Metals Conference, offering substantial savings on the full conference fee

Significant member discount on all MMTA event tickets, including the prestigious Anniversary dinner

Access to free meeting/training room space in central London

Free advertising in members' directories on the MMTA website and other MMTA marketing publications

25% discount on Gold level membership of REACHReady

A range of educational & social events offering extensive networking opportunities

A dedicated Mediation & Arbitration service for MMTA members

A network of MMTA-approved warehouses, each independently inspected and having Indemnity Insurance to cover unexplained losses

Regular updates on the activities & accomplishments of the Association

Use of the MMTA logo & 'Member of MMTA'

Trade Regulations

Awareness raising on a wide range of issues of importance to the minor metals sector

The MMTA promotes essential elements that add quality, safety and enjoyment to our lives.

The MMTA is the world's leading minor metals industry organisation.



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