

MINT NEWS QUARTERLY™

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MDC 2016: Change, Challenge and Opportunity



On the final day, the delegates visited the Royal Thai Mint.

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Each Mint Directors Conference includes a substantial number of presentations that focus on the issue of whether and for how long there will still be coins. The changing ways to pay in a society in a state of flux provides an enormous challenge for the entire minting industry. Change is to be expected. Whether this turns out to be an opportunity is something that will depend on the actors.

To that end, nothing is more important than keeping in touch with the latest developments and helping shape these. Over the course of recent years, the Mint Directors Conference has evolved into a panel used by the mints and supplier to exchange views on an international level and prepare their cooperation. Together with representatives from specialised supplier companies, large and small mints form subcommittees to solve problems that concern all.

This way, it is possible to develop new methods and conduct series of tests for which a single mint would have neither the means nor the expertise. This exchange between experts proves fruitful for the entire industry. Accordingly, 360 delegates attended the biennial Mint Directors Conference, which took place in Bangkok from 1-4 May, 2016.

The setting was festive: HRH Princess Maha Chakri Sirindhorn opened the congress personally. The atmosphere was busy: There were not only lectures and bilateral talks, but also a new direction for the future of MDC.

A new Secretary General

While the MDC President changes every two years, the Secretary General is responsible for holding together the organizational threads. For 12 years, Maarten Brouwer, Director of the Royal Dutch Mint, had done this, to the great satisfaction of all members.

However, as reported previously in Currency News, Maarten Brouwer had to resign as Mint Director last year. And now the Dutch government has decided to sell all shares of the Royal Dutch Mint. Therefore, the MDC was obliged to elect a new Secretary General. It chose Ross MacDiarmid, CEO of the Royal Australian Mint.

Ross MacDiarmid was appointed CEO of the Royal Australian Mint in June 2010. Previously, he had worked in the solar industry and, in his capacity as CEO, made Dyesol Australia, global market leader in dye solar cell technology, become successful. He then became CEO of the Australian Capital Tourism Corporation.

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People Give Meaning

If we talk about EU and the ECB, and of course the MDC, we often forget that these organisations are run and filled with meaning by people. We become aware of these actors almost only when they resign from office and have to be succeeded by someone new.

For more than a decade, two of these almost invisible constants of the Mint Directors Conference were Maarten Brouwer, who held the office of Secretary General, and Dr Prabir De, Director of Operations of the Technical Committee (TC) of the MDC.

That the world of mints is currently characterised by a team spirit and, despite the strongest competition, research findings are being discussed among business competitors, is thanks to Prabir De. A model who is constantly promoting collegiality, he inspired dozens of coin technicians in his 14 years as head of the TC of the MDC.

In his farewell speech for Prabir, Dr Peter Huber presented the rough calculation that the active participants in the individual subcommittees of the TC possessed more than 1,000 years of experience in coin minting. That they contribute with this incredible wealth of knowledge work to international projects and find cross-mint solution is not least due to Prabir.

Also Maarten Brouwer, in his capacity as Secretary General, has significantly shaped the MDC for the last 12 years. With his Dutch pragmatism, he worked towards making the MDC become an effective organisation beyond bureaucracy and organizational charts.

What will the future bring, after Prabir's and Maarten's resignation from office? This will depend on their successors. Both Ross MacDiarmid and Dr Manfred Matzinger-Leopold have been deeply engaged in the MDC in previous years. With their personalities, they will now lead the MDC and fill it with meaning.

Ursula Kampmann, Editor

MDC 2016 in Bangkok *(Continued)*

Only two months after assuming office, Ross MacDiarmid hosted the 26th Mint Directors Conference in Canberra in 2010, and took over the office as President of the MDC for two years. Since then, he has promoted the cooperation of mints on an international level.

A new Head of the Technical Committee

For 14 years, between 2002 and 2016, Dr Prabir De, Business Development Director of the Royal Australian Mint, served as Director of Operations of the MDC Technical Committee. In this capacity, he has been very successful in relieving distrust amongst the rival mints and aligning all MDC members to a collaboration based on trust, for the good of the entire community.

He will be succeeded by Dr Manfred Matzinger-Leopold, Director of the Austrian Mint's technical department.



Dr Manfred Matzinger-Leopold (left), together with his colleague Mag Gerhard Starsich after having received the MDC Awards for two coins created by the Austrian Mint.

Dr Manfred Matzinger-Leopold studied engineering physics in Vienna with a focus on metallurgy and production optimisation. After gaining experience as Project Manager at high-tech company Frequentis, the Austrian-based global market leader in secure control centre solutions, Dr Matzinger-Leopold joined Vamed, a public-private partnership which offers services in the healthcare sector. Before he became CEO of the Austrian Mint in September 2012, and thus returned to his former preference of metallurgy, he was Managing Director at Ascom Austria, a solution provider for communication systems in the care sector.

The presentations

35 presentations were given, divided amongst two plenary sessions, as well as four sessions each for the Technical and the Marketing Committees. We would like to focus on the latest developments in the technical department. If you are interested in a short abstract of all contributions, please visit www.coinsweekly.com and search by 'MDC 2016' to find a summary of all the papers presented.

15 presentations on technical issues were given. Topics revolved around three main aspects: cost efficiency, security features, and the development of universal standards to prevent disagreement between the individual actors – commissioner, supplier, and mint.

Automated polishing of dies for commemorative coins

Few countries have higher commemorative coin mintages than the US. This requires a very large number of laboriously-produced coining dies. Because of that, the US Mint has fully automated the time-consuming die manufacture. Ron Harrigal reported on the latest experiences with a fully automated polishing machine made by the Swiss company Gerber Maschinenbau.

To ascertain whether or not this equipment would also be suitable for other mints, the Royal Canadian Mint (RCM), the Royal Australian Mint (RAM), and the Mint of Poland provided dies to test the new procedure.

All three enterprises confirmed that the created product was acceptable when compared against internal standards. Tests conducted by RCM and RAM showed the quality acceptable also for production. The die steels tested turned out to be suited for this procedure to various degrees.

However, the new method is profitable only for those mints that require a substantial amount of coining dies. It takes at least 100 dies per month to arrive at a reasonable 62% return on investment (ROI). With only 50 dies per month, the ROI is negative and amounts to -19%.

Visual checking system for 400 coins per minute

In collaboration with Monnaie de Paris, Schuler, and INDUVIS, China has developed a visual checking system that allows the thorough inspection of up to 400 coins per minute at five optical positions, by checking the coins' obverse, reverse and edge. This checking system also ensures that elaborate security features, such as latent images and micro-text, are without defects. Initial tests have proven the automated checking to be superior to manual checking, both in speed and in accuracy.

A less expensive variant of cupro-nickel

For some years now, Korean blank producer Poongsan has worked on developing an alloy that has a similar colour as the frequently used cupro-nickel alloy but that is considerably less expensive. In 2014, on the occasion of the MDC in Mexico, it reported on an alloy that met all requirements in terms of color and price, but nevertheless had some limitations: It

was not possible to recycle the material which, despite a 20% saving of costs, rendered it unable to compete in mass production.

Subsequently, Poongsan has developed this material further. The new alloy is now on a par with cupro-nickel in many aspects. However, more research will have to be conducted until this new material can be used for the manufacturing of blanks.

The finite element method for minting

During the minting process there is the occasional problem that some types of coins have a significantly higher die wear than anticipated. The reason for the die cracks that keep occurring at the same locations has been investigated by the Japan Mint, using the so-called 'finite element' method.

This involves the computer-based breakdown of a three-dimensional object – the coin – into a very large number of partial bodies in their simplest form (hence finite elements) and the determination of the effect the pressure has on each of these elements.

Using this method, it has been possible to analyse the reasons for the regular die cracks for the examined circulation coins and commemorative coins. By reducing the relief height in the affected areas, the die life was prolonged by a factor of 2.5.

The Japan Mint plans to implement this method during the planning stage, so as to eliminate problems prior to manufacture.

Tri-metal minting

Monnaie de Paris has tested if a) the manufacture of a tri-metal coin is technically possible, with reasonable effort, and b) within existing sensor technology, whether it meant a security enhancement over traditional coins.

Monnaie de Paris has successfully proved the former by producing a tri-metal coin. It turned out that this new technology can be achieved with the existing minting equipment, provided the joining and the minting are done separately:

In Step 1, the pill and the inner ring are joined. In Step 2, during the process of minting, the outer ring is joined as well. Of course, it would be faster to join the pill, the inner and the outer ring, and to mint in one single step. This could be achieved by a special trimetal press. However, only very few mints are equipped with such a special minting press.

Preliminary measurements, taken in collaboration with Crane Payment Innovations, have prompted promising results. Further research will be done.

A multi-clad material for the flip flop effect

For six years, a working committee has been developing a new material. Thanks to the different colours of the obverse and the reverse, this multi-layer clad material makes it possible to achieve the so-called 'flip-flop effect' that serves as an overt security feature: During the coin processing, more specifically during the piercing of the blanks, the pill stamped out of the core can be used for the minting as well, resulting in a relevant scrap saving. For the joining, the pill and the core must have different orientations in order to achieve the bi-metal effect.

Furthermore, a multi-clad coin has a much more differentiated EMS than conventional coin materials, which makes it much easier to authenticate by the vending industry.

After about five years of research, two different materials suitable for mass production are now available: a three-layer material (EMSecure)/Ni /CuNi25) and a five-layer clad material (EMSecure/Cu/Ni/ Cu /CuNi25).



The Flip Flop coin: bi-metal-effect with only one material. © Wickeder Westfalenstahl GmbH.

The Minties leadership program

Change – Challenge – Opportunity: That was the motto of the 2016 Mint Directors Conference. But what if your institution's staff has a rather underdeveloped motivation for change?

That was the problem the Royal Australian Mint was faced with, and it came up with a highly successful program to make the change happen, together with the personnel.

Through seminars, the Mint's employees are trained to become 'agents of change'. The 11 month program aims to enable them to promote and facilitate the desired change, in their capacity as informal leaders. In the first five months, they form small groups and are taught theoretical knowledge which they then apply in role-playing and discussion groups. During the next six months, a mentor supervised every participant's learning journey.

The result is impressive. To date, one in four employees volunteered to undergo the program. There have been 17 internal promotions. Commitment has increased, as has the staff's interest in external training.

The upcoming Mint Directors Conference will take place in Korea in 2018.

Farewell Speech of the Outgoing Secretary General

Dear Friends

At the end of my 12 year tenure as Secretary General of the MDC, it gives me great pleasure to address some words to all of you who I have learned to know and I have met during so many conferences.

Let me start by saying that I have proudly served the MDC during the past 12 years to the best of my capabilities, with enthusiasm and drive. You have always encouraged me to do so.

The MDC offers a unique platform between suppliers, coin related organisations, customers and the mints. Through worldwide cooperation, applied technical research and marketing related discussions, the MDC committees have contributed much to better insights in our business.

We all are very much aware that we depend on fair and healthy business conditions. Yesterday, at the occasion of my last MDC Internal Affairs meeting, I have shared strong arguments with the mint directors for starting a professionally-staffed Public Relations Committee in order to at least counterbalance the presently biased public communications with regard to the utility of cash. The voice of the mint industry in the many discussions about cash/non cash deserves to be intensified.

I wish to express my sincere gratitude to the presidents and vice presidents of the MDC during my years as Secretary General. The dedication, and professional skills that are required for organising the conferences have been remarkable every time. The friendship that resulted from this cooperation even more.

There were so many of you that I came to know better through the years; you have meant a lot to me. You have kept me sharp, you gave me energy and you brought me unique friendships that will last many years after I leave behind my duties as the Dutch Mint Master.

I regard it as a favor that you have asked me to be your Secretary General for the past 12 years. It was worth the effort every single day.

'Change, Challenge and Opportunity' – the theme of this 29th Mint Directors Conference – applies not only to the conference but to me personally.

The Change is evident, as from the end of this week my tenure as Secretary General will have come to an end. I am not the sort of person that will sit still. Ross, I fully entrust the important MDC duties into your hands.

That will definitely lead to changes, you will give content to these duties in your own way. May you be successful with fulfilling the inspiring responsibilities as the new Secretary General of the MDC. You can rely on my support also in future whenever you call on me.

The Challenges for the mint industry in the decade ahead of us are commonly recognised, waiting to be addressed under new leadership. My challenge consists of finding new and interesting roads for the years to come.

In the good spirit that we all share, let us not wait to enjoy harvesting all the fantastic Opportunities already identified.

I wish all of you good health, success and hopefully we see each other again soon.

Maarten Brouwer



Ross MacDiarmid (left) honours the outgoing MDC Secretary General Maarten Brouwer.

The Winners of the MDC Awards

Recognising the best products, the MDC Award is the prize given by mints every two years under the program of the MDC. The jury consists exclusively of the world's leading experts – the mint directors. On the occasion of the Mint Directors Conference in Bangkok, the following coins were awarded.

The Mint News Quarterly congratulates all winners, but also those participants who did not receive a prize. The wealth of innovative and beautiful issues entered to competition is an impressive presentation of the achievements of the coining industry.

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Singapore. 250 Patacas 2016

1/4 ounce in gold
Mintage: 5,000

The Singapore Mint received the award for the Most Beautiful Coin.



France. 200 Euros 2015

1 ounce in gold
Mintage: 500

France. 10 Euros 2015

Silver
Mintage: 5,000

The prize for the Most Technologically Innovative Gold Coin and the Most Beautiful Silver Commemorative Coin was accepted by Christophe Beaux on behalf of the Monnaie de Paris.



Royal Canadian Mint \$25 2016

Mintage: 6,000

The Award for the Most Technologically Advanced Silver Commemorative Coin went to the Royal Canadian Mint.



Germany. 5 Euros 2016

Mintage: 2,000,000

In the recipients of the award for the category Most Innovative Circulating Coin were the German mints.



Austria. 10 Euros 2015

Mintage: 130,000

Austria. 25 Euros 2015 'Niob'

Mintage: 65,000

With its experienced team of coin designers, Austria is always a promising candidate for winning the prize for the Most Beautiful Coin. This year, it was also amongst the winners: in the category Circulating Coin as well as in the category Other Coin.



Mennica Polska. 7 NZD 2016

Mintage: 1,007

A technological masterpiece is the minting of a spherical coin, for which the Mennica Polska won the Award for the Most Technologically Advanced Coin in the category Other Coin.

