

# MQP – The Melt Quality Partnership

*MQP has been in business for only six years but during that time it has established a well earned reputation within the aluminium casthouse industry for the provision of innovative products and processes.*

By M Bryant\*

Sometimes in business, as in life, enforced change can turn out to be a blessing in disguise. Such was the case, in 1999, when Foseco's casthouse aluminium business unit was sold by Burmah Castrol.

Former marketing and technology director, John Courtenay embarked on a new working life as owner and managing director of a new company, MQP – 'the Melt Quality Partnership'.

In forming the new company John Courtenay wanted to take advantage of the vast general knowledge and experience of worldwide business gained in his 32 years with Foseco. He also wanted in particular to follow the principles used when Foseco set up their casthouse aluminium business unit in the mid 1990s.

Accordingly MQP was to operate as a truly international business through a small, highly motivated network of experienced people not located in a traditional by country structure but instead centrally located and regionally supported by strategic alliances, partnerships and research at leading academic establishments.

The guiding philosophy of his new company would be to develop and introduce innovative technology for casthouses worldwide with the overall aim of improving quality and reducing operating costs. The MQP company mission statement endorses this commitment and also emphasises the need to develop close partnerships with key customer and suppliers to achieve shared business objectives.

The success in following this strategy is reflected in the way that MQP's product portfolio has developed since its formation and its standing in the casthouse industry today.

One of the first innovations to be introduced was the *Opticast* System which is a unique technology and methodology for the in line control and optimisation of grain refinement (see *AIT Sept/Oct 07* p46), developed from research carried out at Stockholm University.

In another example, collaboration with BDH Industries Inc of Canada resulted in the introduction, of the patented *Proxipro* system, an environmentally friendly, induction based, liquid metal level sensing system for casthouses.

Continuing collaboration with BDH, in 2005 MQP launched *Batch Pilot*, a

novel patented system also developed by BDH Tech of Canada, for accurate electronic measurement of furnace heel weights and transfer weights based on the principle of measuring changes in the furnace hydraulic cylinder pressure with furnace tilt angle. The system is now fully established in production environments with 19 systems installed or under installation and commissioning in casthouses around the world with a further 28 systems under discussion.

Today both *Proxipro* and *Batchpilot* systems marketed by MQP are manufactured by Hades Instrumentation Incorporated, a new joint venture company formed between MQP and the former owners/directors of BDH after the sale of that company to Sefar and subsequent transfer to Hades of BDH's

former instrumentation technology business and assets.

One of MQP's objectives is to promote environmentally friendly solutions and the *Refinal* range of fused granular refining agents provides an effective alternative to chlorine fluxing in the furnace to remove alkalis and inclusions.

MQP has established *Refinal* as a product brand worldwide and this activity has excellent synergy with the STAS rotary flux injector. The RFI, together with *Refinal* fluxes, provides the ideal product and application system for furnace stirring and fluxing.

MQP through its relationship with STAS, and as its European representative, plays a significant role not only in the introduction of the RFI/*Refinal* system, but also other sophisticated STAS casthouse equipment, using Alcan casthouse technology. This includes the Alcan compact degasser (ACD), the inert gas dross cooler (IGDC), the siphon reamer and crucible cleaning equipment.

## FUTURE DEVELOPMENTS

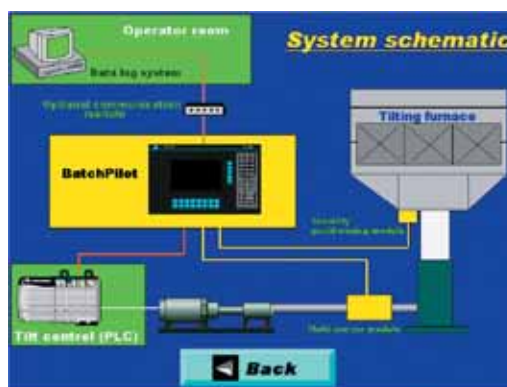
The next few years will see the introduction of other innovative products into the MQP product portfolio including a new concept of aluminium filtration techniques and equipment for the challenging field of metal cleanliness.

One of these new products is *Optifilter*, a technology for delivering ultra high filtration efficiency, that is superior to that obtainable from the best deep bed filter practice. Importantly, *Optifilter* is also without the practical difficulties and high costs associated with operating large bed devices with their high hold up volumes and reliance on the manual preparation of the particulate bed. MQP holds all the relevant intellectual property rights on this exciting new development and has filed patents in 123 countries.

This new filtration technology is being developed in partnership with Trimet Aluminium, Drache, N-Tec, and the University of Delft. Now in the



"Proxipro" Molten metal level sensor works on the induction principle



"Batchpilot" furnace heel and transfer metal weight weighing system.

Product Name	Description
OPTICAST	Unique system for in-line control and optimisation of grain refinement
PROXIPRO	Induction based molten metal level sensing system
BATCHPILOT	Novel system for accurate measurement of furnace heel weights and transfer weights
REFINAL	Fused granular refining agents based on magnesium chloride and potassium chloride
OPTIFILTER	New technology for ultra high efficiency filtration

## MQP current product portfolio

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# SECONDARY

## KEY PERSONNEL

MQP is based at Knowle, Solihull, in the West Midlands, UK, and operates through a small, experienced, team of employees supported by a worldwide network of local specialists.

John Courtenay heads up the global sales and marketing effort backed up by direct sales representatives in Europe and the UK

and by local agents/ distributors in Norway, Iceland, South Africa, Australia, USA, and Canada.

Richard Courtenay, is responsible for the day to day running of the business as general manager and project manager – batch pilot.

Three of John Courtenay's former Foseco

colleagues are involved in the company; Clive Johnson is finance director, Barry Lightfoot is UK sales representative and Michael Bryant is marketing manager.

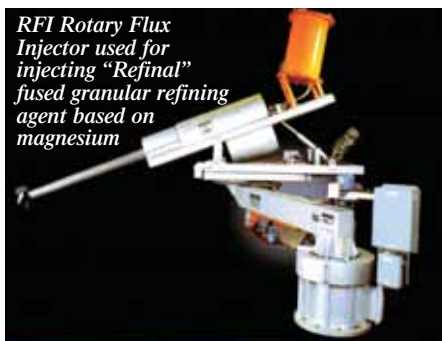
Recently, Martin Taylor, former vice president marketing at STAS, has joined MQP as consultant, marketing and technology, North America.

final stages of development it will begin extensive production testing at Trimet Aluminium, Essen, during late 2007.

### R&D

There is a strong recognition within MQP that companies involved in downstream aluminium activities require access to research and innovation to remain competitive. Up to about ten years ago this support was provided from within by the large multinational companies but that practise has now almost ceased mainly due to restructuring of these companies – as reported at the Alumax conference in 2007<sup>(1)</sup>.

MQP is committed to helping to



provide this support by collaborating with academic and industrial research establishments and sponsoring programmes of work related to casthouse

technology. Among current examples of this are:

- Computer modelling of aluminium cleaning processes at Birmingham University;
- Flow modelling of a cyclone for molten metal filtration at Delft University;
- Detailed study of binary and ternary equilibrium diagrams related to fluxing systems at Freiburg University and Clausthal University.

MQP's participation in some of these projects is being supported by UK Regional Government Bodies, BRDL (Birmingham Research and Development Ltd) and Advantage West Midlands.

MQP also places a high value on its strategic relationships with N-Tec and Drache.

(1) Mario Conserva, Alumex, Opening Address at Edimet Conference, Dubai, April 2007, summarised by TG Smith, Aluminium International Today, May/June 2007, p48.

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### 23►Hindalco-Novelis...

especially from China and India. Rapidly increasing semi-fabrication capacity in China is adding to the primary metal demand.

### HINDALCO'S EXPANSIONS

Hindalco's aluminium capacities are all committed to its existing customers and Novelis has tied up its scrap and semis supplies from sources in geographical proximity to its plants. Hindalco does not intend to upset the current contracts so it is unlikely that the two companies will do much business with each other until 2011. That is when a big part of Hindalco's present INR125bn (\$3bn) expansion projects will go on stream. It also has a further Rs125bn (\$3bn) expansion planned.

### SYNERGY OR NOT?

While Hindalco could provide Novelis with much of its metal needs, on the face of it, this seems like a perfect synergy, but it is not. For one thing, Hindalco estimate it would cost \$12bn to build assets that match Novelis' 3.3Mt/y demand from its 29 plants in four continents. Also, much of Novelis' feed stock is recycled material which offers an energy saving of close to 95% compared with primary metal production, and therefore a significantly reduced CO<sub>2</sub> footprint. But Novelis is a strong acquisition for Hindalco because of the technology it brings with it. It is

tough to develop such technology and even harder to get customer certification.

It is probable that some of Hindalco's primary aluminium may find a home in Novelis as not all of its needs can be met from scrap recycling; but only in the long run; after 2011, when Hindalco has more

aluminium capacity at its disposal. Then, Hindalco may find greater synergy with Novelis. Most of Hindalco's new capacities are being built on India's eastern seaboard with easy access to Novelis' plants in Malaysia and South Korea.

### HINDALCO INDUSTRIES LTD

Hindalco Industries Ltd is the flagship company of the Aditya Birla Group, with a turnover of Rs49 755M (\$1194M) it ranks among India's top ten companies in terms of market capitalisation. A non-ferrous metals powerhouse, Hindalco's operations are organised into two strategic business units – aluminium and copper.

Hindalco's integrated operations and operating efficiency have enabled the company to be among the world's lowest cost producers of aluminium. Its integrated operations include a power generation capacity of 619MW and 450kt/y alumina

refinery. Hindalco's product range includes primary aluminium ingots, extrusion billets, rolling slabs, redraw rods, alloy wire rods, sheet products and extruded profiles.

To further strengthen its presence in the aluminium sector, the company is implementing a Rs18bn (\$732M) brownfield expansion plan at Renukoot. In line with the original expansion plan, aluminium smelting capacity will be increased by 100kt to 342kt/y, alumina refining capacity by 210kt to 660kt/y and power generation capacity is to be enhanced to 779MW from the present 619MW.

### NOVELIS

Formed as a Canadian corporation in January 2005 following its spin-off from Alcan in 2005, Novelis became a wholly owned subsidiary of Hindalco Industries Ltd in May 2007.

Novelis is the world leader in aluminum rolling, producing an estimated 19% of the world's flat-rolled aluminum products. Novelis is the No 1 rolled products producer in Europe, South America and Asia, and the

No 2 producer in North America.

Novelis is also the world leader in the recycling of used aluminum beverage cans recovering over 38bn used beverage cans annually.

Novelis is globally positioned, operating in 11 countries with approximately 12 900 employees. In 2006, the company reported net sales of \$9.8bn.