



Corus of Approval!

125 years of high quality rail making on show in Workington

The awesome and violent forces involved in reshaping huge steel 'blooms' into precision rails that meet the intensive and demanding standards of a worldwide rail industry were dramatically demonstrated during a recent visit to the Corus Rail plant in Workington. This was the first event of the new programme organised by the IMechE West Cumbria Branch, and was supported by 'Mechanicals' from all over the county, including the newly embraced Carlisle area.

The tour coincided with celebrations marking the 125th anniversary of railmaking at Workington, and although the old photos on display showed a time when the full process – from ore through Bessemer blast furnaces to finished product - dominated the 'working town', the factory today is inevitably part of a multi-national enterprise competing in a global market. As such, it now focuses entirely on the conversion of the 4.4 tonne steel blooms imported from another part of the Corus empire.

The gas furnace, now engineered to maximise energy recovery, heats the bloom to over 1,300 degrees before the journey through the rolling process begins. For anyone not accustomed to more than the few hundred degrees of a domestic oven, the experience of seeing and *feeling* material at such temperature being automatically passed back and forth between the series of substantial rollers that change its shape is an awesome experience. The synchronisation of the rollers and guides that divert the rails from one set of rollers to another was highly impressive, as was the fact that the whole process is so automated, it can run with just a handful of men.

De-scaling the surface of the material is effected by dramatic blasts of water that ricochet and drive away the surface contamination, but the very process of rolling, which provides exothermic activity, maintains the working temperature of the steel.

Once brought to the required finished shape by a series of progressive rolling operations from 'roughing' to fine finishing, the rail section is cut to length, stamped with the information to provide full process traceability and then cooled according to the temper requirements. The temperature of the rail 'bank' being normally cooled in air, a considerable body of rails, was truly incredible.

A rigorous and thorough inspection of the rail section is then undertaken, using ultrasonic, eddy current and visual flaw detection systems that mark out and ultimately segregate any beams that are less than the perfection demanded by modern high-speed rail systems. The rails are taken on to other areas of the Workington plant to be welded into 216 metre lengths for use in continuous welded installations. Sleeper section is also made by the same process for ultimate formation into the replacements that are so badly needed in this country. Indeed, the need to renew the national rail system has brought significant orders that have sustained the economic viability of business at Workington for the immediate period.

We were very grateful to the enthusiasm and genuine pride shown by the Corus Engineering staff to the IMechE party, in particular Mike Moffat (Mills Engineer) and Bob Bell (Capital & Development Engineer). It was a humbling experience to witness the often unsung but vital branch of engineering that truly lives up the IMechE statement: "Nothing Moves Without Mechanical Engineers".

The next meeting for the IMechE West Cumbria branch is an insight into the complex project management behind the large-scale regeneration of Whitehaven harbour, to be given by Terry Pontin. The presentation is open to all and takes place at the Graduate Lecture Theatre of the Westlakes Science & Technology Park near Whitehaven on Wednesday, October 2nd, commencing at 7pm. Places are limited, so anyone interested should contact Ron Graham (01900 600261) to reserve a place in advance. The event is organised in conjunction with the Westlakes Research Institute

ENDS.



Bob Bell (Corus Capital & Development Engineer) and Mike Moffat (Corus Mills Engineer) receive thanks from IMechE West Cumbria Vice Chair, Ron Graham (left), and Chair, Adrian Norendal (right)

FOR FURTHER DETAILS OR INFORMATION

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