

OTHER ASPECTS OF THE DARLINGTON FORGE

THE FOUNDRY

Next door to Siemens department was the foundry where very complex shapes were cast. A full size wooden pattern was made which was then placed inside a large steel box of shallow depth. Special moulding sand was hand rammed around the pattern up to the top of the box. A second box was then clamped on top of the first and the ramming continued adding more boxes as necessary up to the top of the pattern. The damp sand was then allowed to dry, at which stage the boxes were carefully lifted off one at a time and the pattern removed. The boxes would then be re-assembled which left a void the same as the pattern. After careful drying the molten steel would be cast into the empty mould resulting in the required product. Ship's keel and rudder mountings were typical products. The Darlington Forge also pioneered the casting of one piece steel chains for ships. When cooled the moulds were stripped and the casting transported to the next department for fettling.

THE FETTLING DEPARTMENT

The complex castings when stripped from the moulds were covered in moulding sand which had fused into solid lumps under the heat of the molten steel and clung to the moulding. In the fettling shop these solid lumps and moulding flashes (runs of steel which had penetrated the joints between the boxes) were removed by teams of men using pneumatic chisels. The sand broke off and fell to the floor to be trampled back down into fine black sand and powder. Everything was covered in black dust. The feeble artificial lighting high up in the roof was totally inadequate at penetrating the endless plumes of rising dust. The constant noise and oppressive atmosphere of stifling black fog must have made this the most unhealthy and un-enviable job in the factory.

THE FORGE

Across the yard from Siemens department was the forge where a huge (steam powered?) hammer/press was situated. Ingots would be re-heated in ovens to become malleable and then forged under enormous power into shape. Because the whole of the ingot needed to be worked, it was necessary to support it beyond the body itself, hence the 'porter bar'. In the early 1960's The Darlington Forge received from the battleship H.M.S. Vanguard, a 15 inch gun barrel which had apparently been manufactured previously in this factory. H.M.S. Vanguard had been commissioned and built towards the end of the second world war and reputedly never fired a shot in anger before being de-commissioned and scrapped. The gun barrel was huge, something in the range of 50 feet in length, and the rifling a work of art (how did they machine that inside a barrel of such length?) The outside was coated in so

much grey paint that it was possible to chip off a piece and count the layers which measured about 1/4-3/8 inch in thickness. This gun barrel was earmarked to become a 'porter bar' in the drop forge. Using what could be described as a gigantic, motorised, multi width motorcycle chain slung beneath the overhead crane, the whole ingot and 'porter bar' were balanced and rotated as required. As perfect balance of the ingot was essential, and difficult to achieve, several men would hang on the end of the 'porter bar' and shuffle back and forth acting as 'fine tuning' to the equilibrium, a very 'hairy' occupation one would assume.

Malcolm Mowbray 2015