

ENGLISH STEEL CORPORATION, LTD.

Visit of Her Majesty Queen Elizabeth and His Royal Highness the Duke of Edinburgh.

27th October, 1954.

PRESS INFORMATION.

During the tour, Her Majesty will visit the Siemens Melting Department, where she will watch steelmaking in a Siemens Acid Open Hearth Furnace of 90 tons capacity and subsequently, a furnace tap. Ingot casting operations will also be in progress and a 230 ton ingot still in its mould will also be on view.

Next, the Royal Party will go to the Heavy Forge where Her Majesty will watch the Cogging operation in the manufacture of a hollow forged boiler drum.

The third destination is the Heavy Machine Shop, where a range of finished products, boiler drums, pressure vessels, pipe moulds, marine shafting, etc., will be on view.

Facts and Figures.

GENERAL.

English Steel Corporation, Ltd. is the largest steel making and engineering works within the city boundary. The Company has six works in Sheffield covering a total of 157 acres and finding work for some 10,000 people.

Siemens Melting Department.

Four Siemens Acid Open Hearth Furnaces; three of 90 tons capacity, one of 50 tons. Making high grade alloy and carbon steels, ingots 30 cwt. to 275 tons, the latter the heaviest ever made in the British Commonwealth and requiring three furnaces. The ingot mould for these weighs 195 tons; 29 ft. high and 14 ft. in diameter. Ladles used of up to 105 tons capacity. Temperature of steel when tapped in region of 1600°C.

Forge.

No.5 Press, 7,000 ton Electro-Hydraulic Forging Press, largest general forging press in British Commonwealth. World's biggest one piece hollow forged boiler drum recently produced here for B.E.A. Power Station at Willington (on view in South Machine Shop). Made from 275 ton ingot, required 6 weeks' annealing. Billet required for forging weighed 190 tons after removal of top and bottom discards and trepanning

a hole through the centre. Fourteen 'heats' required in forging process, taking two and a half weeks. When finished, the rough forged cylinder was 46 ft. long with an external diameter of $80\frac{3}{4}$ ins.

Other forgings regularly produced include Reduction Gear Forgings up to 14 ft. diameter and propeller shafting over 85 ft. in length for marine engineering. Turbine shaft forgings for Hydro-electric power installations up to 25 ft. long with collars, 86 ins. diameter and weighing 95 tons. Amongst most recent was one for Canada's new plant at Kitimat, which the Duke of Edinburgh visited on his recent Canadian tour.

Amongst exhibits on view in the Forge will be a 275 ton ingot with an overall length of 26 ft. 3 ins., a number of parted and trepanned ingots weighing up to 180 tons and a hollow forged high pressure Boiler Drum Forging 44 ft. 6 ins. long and weighing 122 tons.

South Machine Shop.

Quarter of a mile long with over a mile of bays. 230,000 sq. ft. in area. Long enough to take the 'Queen Elizabeth' and 'Queen Mary' side by side. Considered to contain one of the finest collections of heavy machine tools in the world.

Amongst the machines which the Royal Party may see is a double ended boring machine 190 ft. long, capable of boring simultaneously two boiler drums of up to 7 ft. diameter. Other machines in the shop include a 72 ins. lathe driven by a 450 h.p. motor, others capable of taking drums up to 60 ft. in length and removing four tons of steel turnings an hour. Also a vertical borer with 18 ft. turntable and shapers, slotters, planers and smaller lathes for dealing with a wide range of forgings made by E.S.C.

A display of products includes the partly machined world's largest one piece hollow forged boiler drum, which is being made for the new B.E.A. Power Station at Willington. When completed it will be 46 ft. long with an internal diameter of 66 ins. and an external one of $76\frac{3}{8}$ ins. Finished items include High Pressure Vessels for the manufacture of Polythene and capable of withstanding pressures up to 15 tons per sq. in., marine diesel crankshafts and shafting and moulds for the centrifugal casting of pipes.