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PROGRESS ON THE SHANNON

3rd YEAR

SEPTEMBER 1929

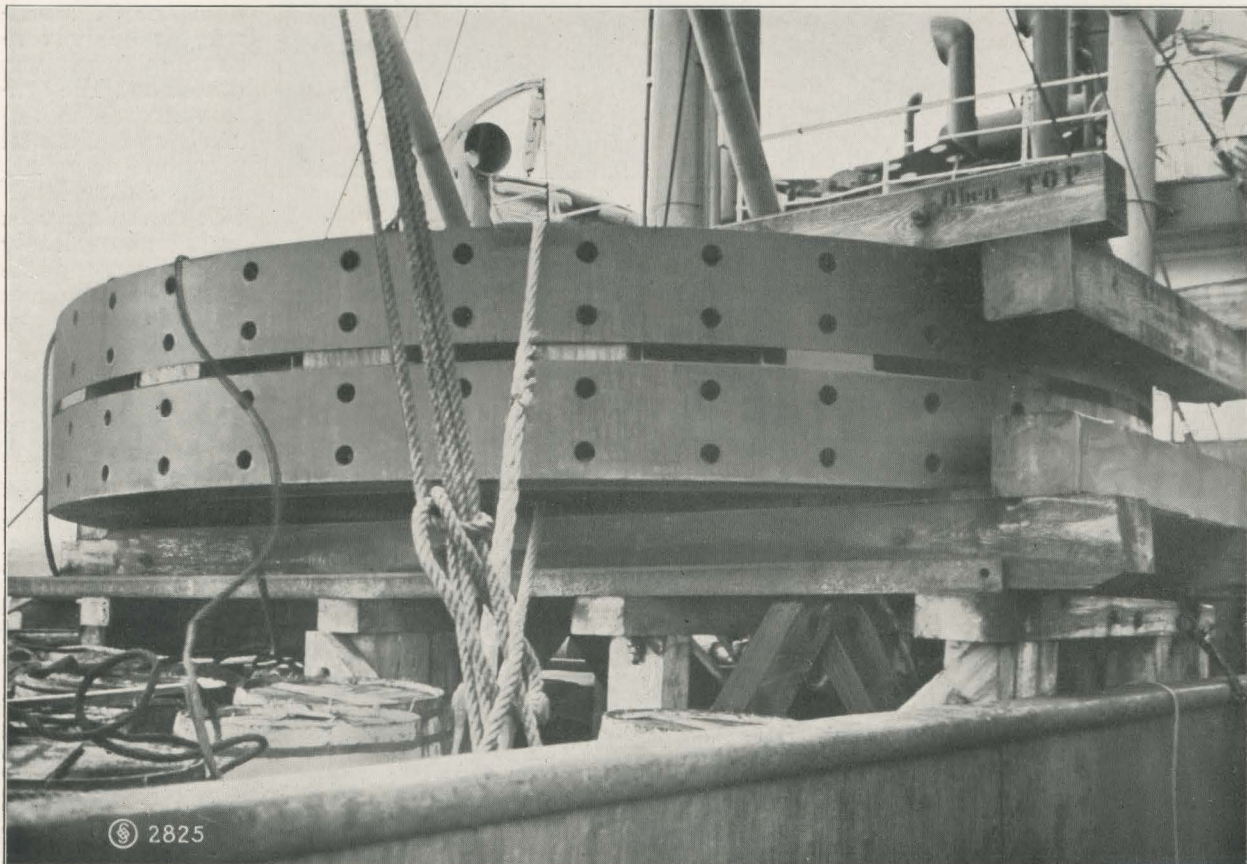
NUMBER 12

Power Station

Transport of Material

The initial stages of the erection of any power station really means the organisation of a system of transport to the building sites. This is frequently very intricate on Hydro-Electric Plants

as their sites cannot be chosen with regard to road or rail facilities. Practically all of the material shipped from Germany for the Power Station had to be landed in Limerick. The original intention



Picture 1. A generator rotor section aboard the steamer.

was to build a full gauge railway from the Power Station directly to Limerick Harbour via Longpavement. This idea was not completely carried out, as the railway line was brought only half way from Ardnacrusha to Limerick Harbour i. e. as far as Longpavement and connected there with the G. S. R. main line, so that all the material arriving at the Limerick Docks has had to be transported by lorry to Longpavement.

The total equipment for the electrical and mechanical part of the whole Shannon Scheme includes 34000 tons of material. About 6000 tons of this amount had to be unloaded and transported to the Power Station and Weir. During the design and construction of the Scheme transport possibilities played a very important role; the limit for the heaviest part of the machinery to be handled having been worked out at 50 tons. As there was no crane of this load

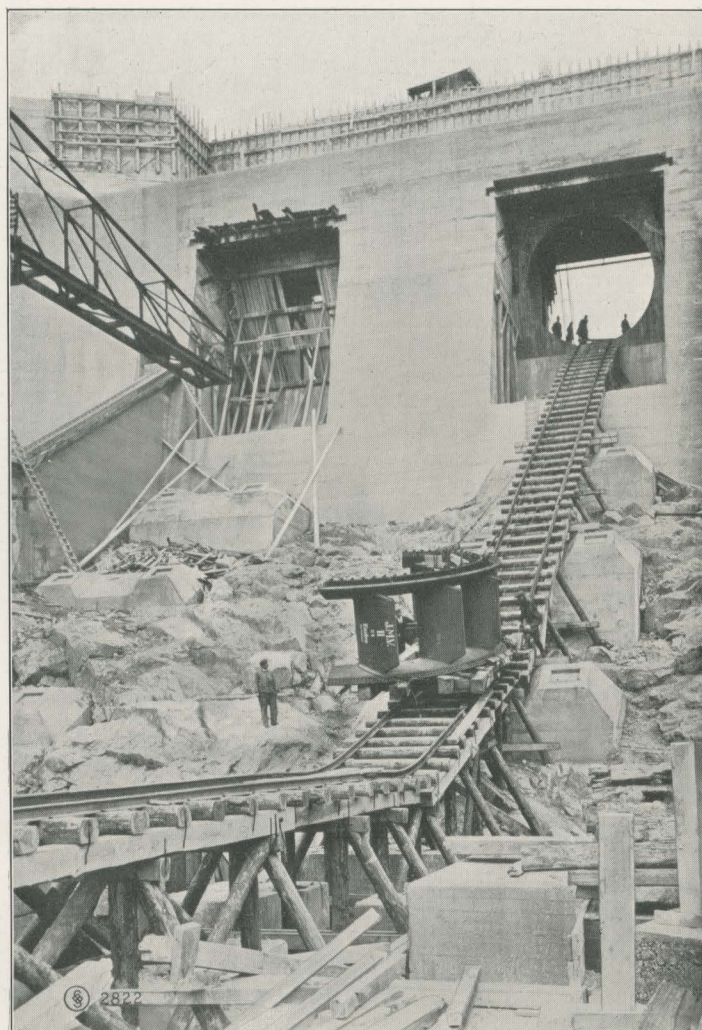
capacity in Limerick, these heavy parts were un-

described there. The unloading and transport of the bulky parts of the machinery necessitated a different

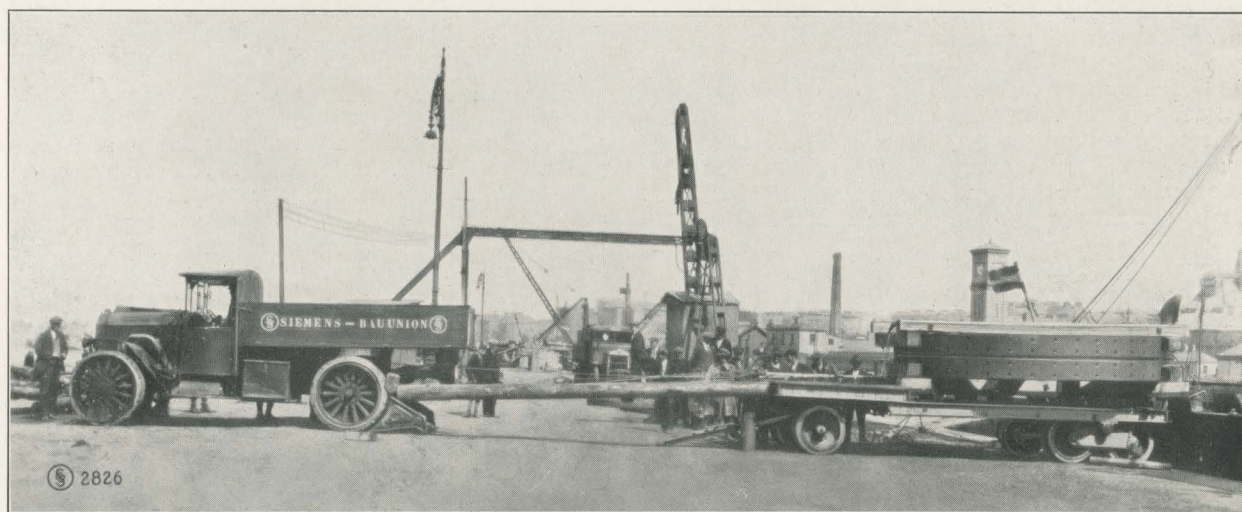
loaded in Dublin Harbour where a 100 ton crane is available. For transport from Dublin Docks via Limerick — Longpavement to Ardnacrusha a rail truck of 50 tons load — capacity with a specially deep well had to be provided.

Some of these heavy parts, weighing up to about 35 tons were however of such dimensions that they could not be transported from Dublin by rail as they exceeded the railway gauge. These parts which had to be unloaded without using a crane, and about 5000 tons of other machinery weighing less than 20 tons per piece were unshipped at Limerick Docks.

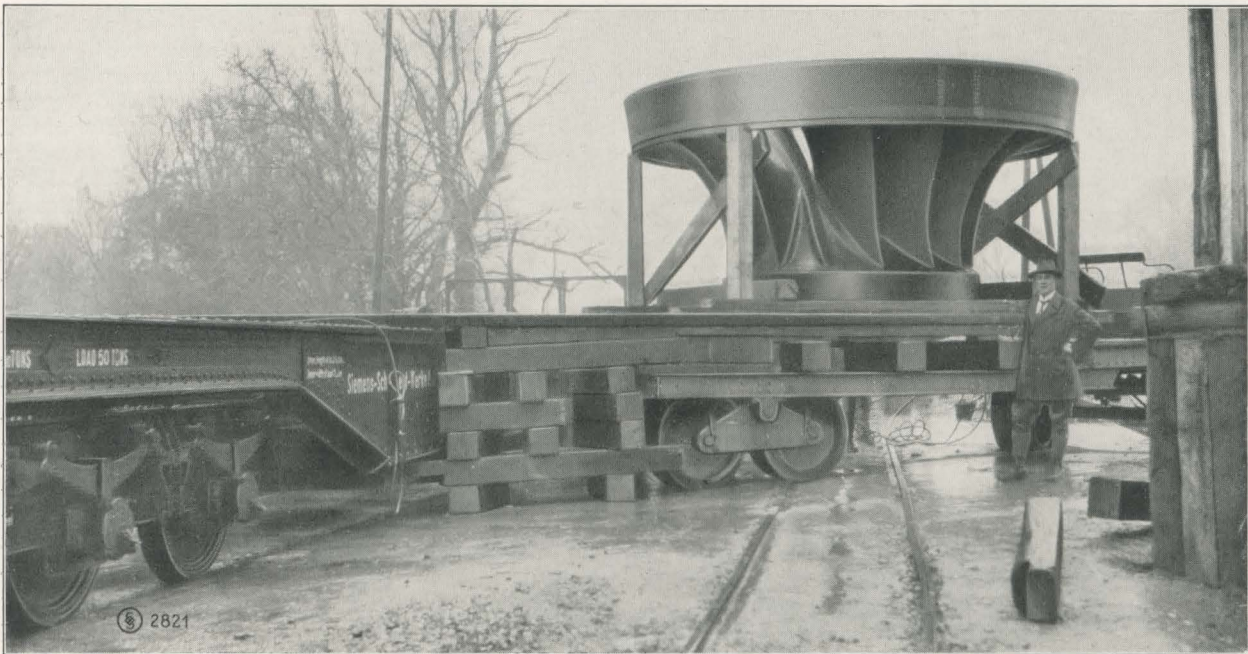
In a previous article dated August 1927 we described how the transport of machinery for the civil construction work was carried out. The lighter parts of the mechanical and electrical equipment were brought from Limerick to Ardnacrusha in the manner already



Picture 2. Lowering a speed ring section into position.



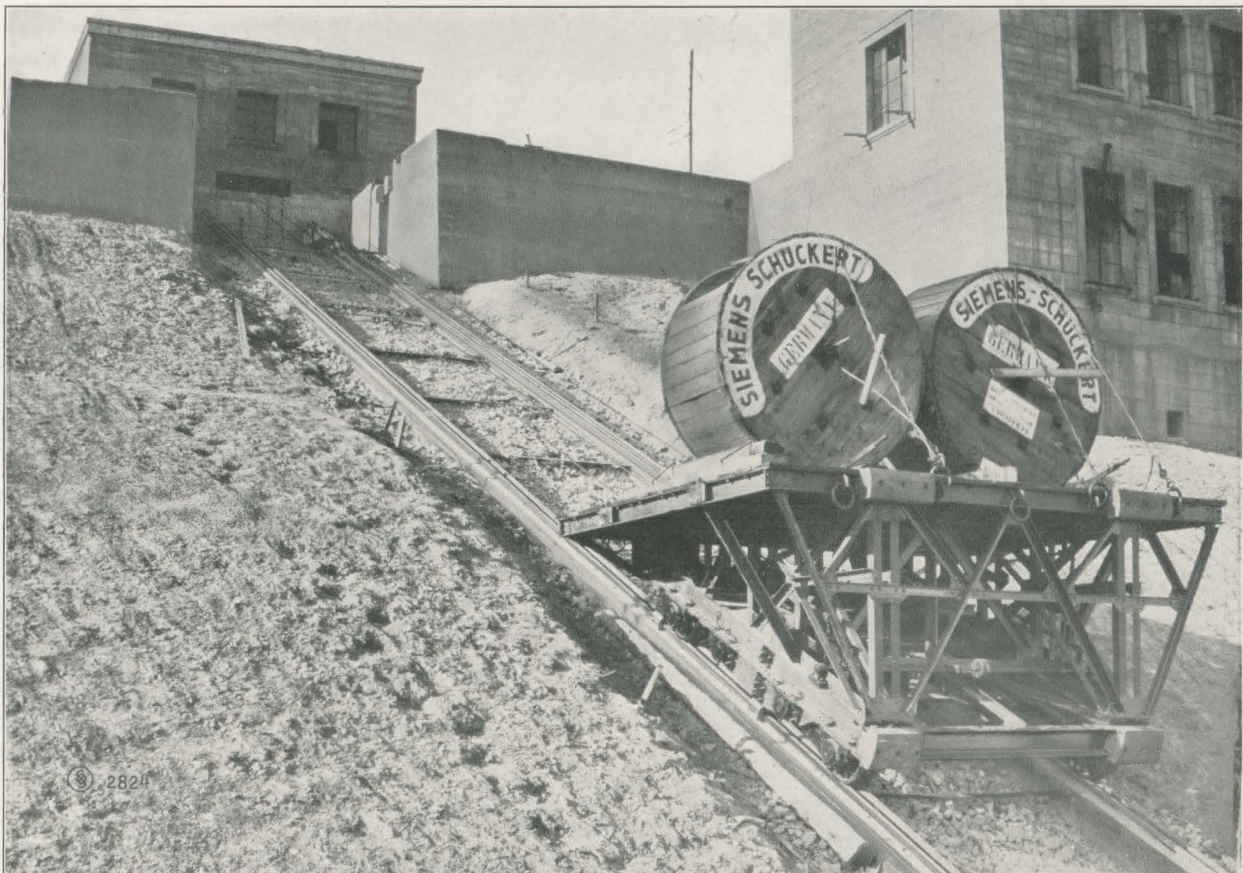
Picture 3. Unshipping of 35 ton rotor section.



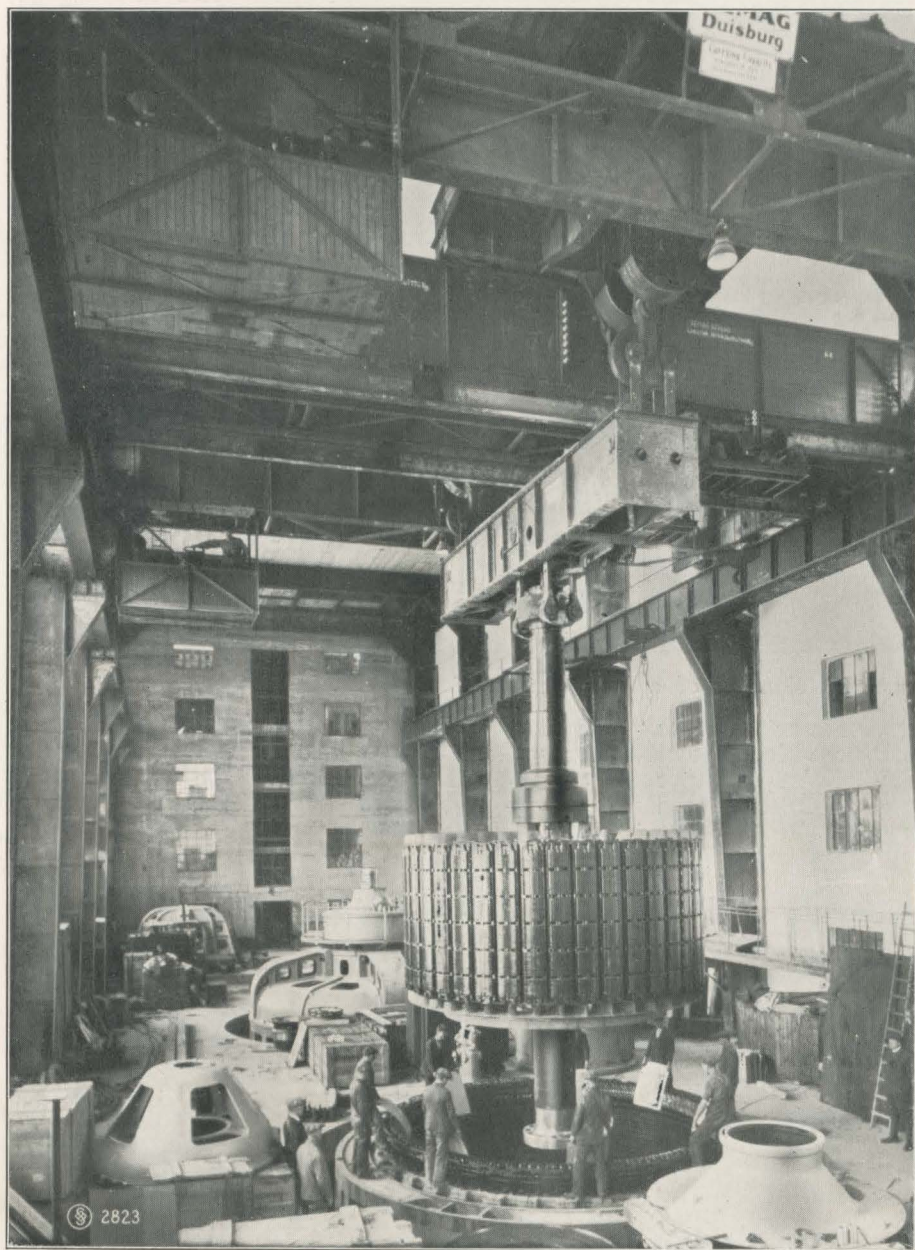
Picture 4. Unloading of a turbine runner from trailer.

method of procedure. A special trailer carrying 35 tons was built for transport by road. Picture No. 1 shows one of the large rotor sections 30000 KVA Generator aboard the steamer. It has a weight of 35 tons and a

diameter of 15 feet. The method in which these rotor sections had to be unloaded, owing to the fact that the Limerick Dock Crane has a capacity of 20 tons, only is clearly illustrated in Picture 3,



Picture 5. The inclined hoist in operation.



Picture 6. Placing a generator into position.

which shows the rotor section being unloaded from the deck of the S. S. "Ambria". After constructing special rail and iron supports, the section was drawn from the steamer on to the trailer by means of a 100 h. p. Daimler lorry, which had been fitted with a special winch for this purpose. The loaded trailer was then conveyed to Longpavement. Before the first transport could be effected careful investigations had to be made as to the carrying capacity of the streets and bridges. During the survey it was discovered that spacious cellars existed under the streets in many parts of Limerick and that in some cases the ceilings of these cellars were only 1 ft. thick, so that a special route avoiding such difficulties had to be found.

The heavy parts arriving at Longpavement from Limerick Harbour by road are there unloaded on the 50 ton railway truck and conveyed directly into the Power House where for unloading and construction purposes two 100 ton cranes are available. These two cranes can be coupled by means of a specially designed crossbeam so that it will always be possible to lift the rotor with turbine runner, a maximum total load of about 240 tons. Picture 6 shows the two cranes in operation. Picture No. 4 shows the transferring at Longpavement of the turbine runner, 38700 h. p., from the road trailer on to the special railway truck on which it was transported into the Power House. The vertical movements are carried out by oil jacks and the horizontal movements by the winch of the 100 h. p. Daimler.

The transport on the building site of the Power Station was greatly facilitated by the cable crane which could span the site for a distance of about 1000 feet and could be loaded with 5 tons. Some special difficulties had to be overcome during the transport of the speed ring sections for the spiral casings which sections weighed 11 tons, as this transport had to be carried out in the beginning of the Power House construction, when the 100 ton cranes were not yet erected.

Picture No. 2 shows how a speed ring section was conveyed from the intake building through the penstock opening down to the Power House on an inclined elevator specially constructed for this purpose.

A 3 ton lift had to be installed in the staircase of the Power House for conveying persons and small loads to the different floors of the building.

An inclined hoist of 45 tons carrying capacity is provided for the transport of material, transformers and oil switches from the Power House and Oil workshop up to the 38 kV Switch House and 110 kV Outdoor Station, a difference of level of about 50 feet (Picture 5).