

WASC 2305

WAI 636

Description of
Schmid Nitration
Process

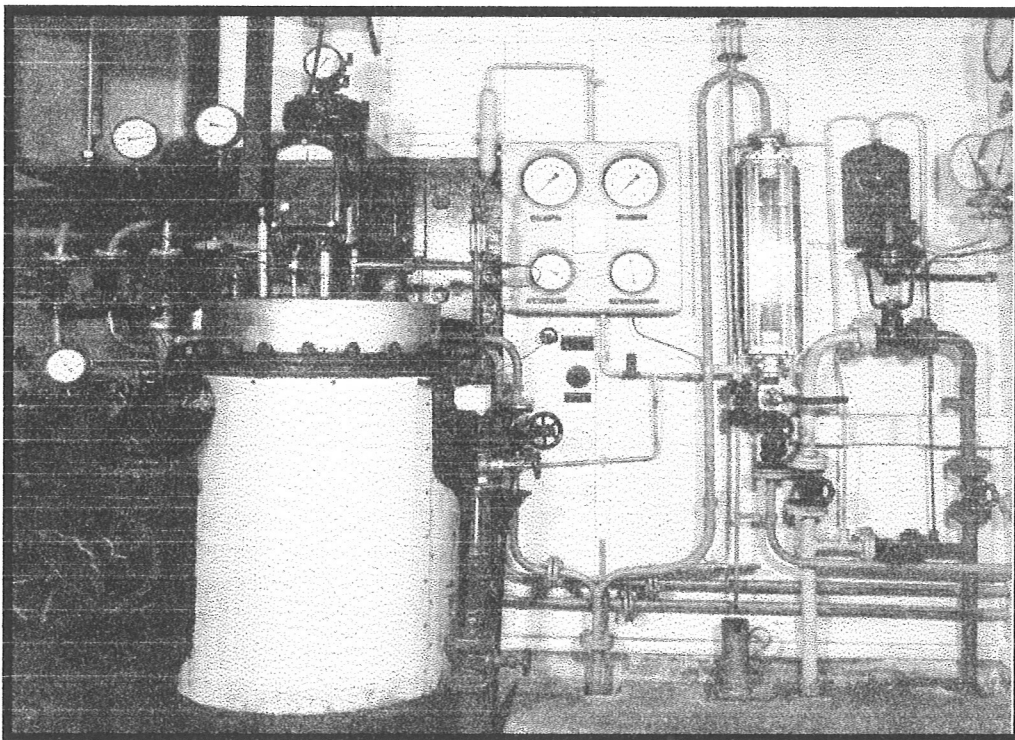
THE ROYAL NAVAL CORDITE FACTORY-

HoltonHeath

This shows the Schmid nitrator, housed in building AB2 which was underground, by virtue of having a hill built on top of it! The Schmid unit replaced a batch production system of nitroglycerine manufacture, the previous equipment having been destroyed in the explosion of 1931, when 1.5 tons of nitroglycerine was accidentally detonated and ten men lost their lives.

In this arrangement, glycerine and mixed sulphuric/nitric acid enters from the right via flow control equipment. Glycerine is sprayed on to the acid in the large vessel left of centre. This vessel (the nitrator) is cooled by chilled brine to keep the reaction temperature within bounds. A stirring mechanism is used to ensure thorough nitration. Nitroglycerine overflows the top of the nitrator to the primary separator to the left, and out of the picture. The production flow is continuous.

Following separation of the NG from acid, the NG is extensively washed in condensed water and soda in long glass columns which are fed with air. Eventually the NG is piped as an emulsion with water to further washing processes, after which it is delivered to the mixing house to be combined with nitrocellulose, at which point the cordite production starts.



The Schmid unit is of German design, and ironically, was installed by the Germans shortly before WW2.

