# THE ROYAL GUNPOWDER FACTORY

## WALTHAM ABBEY

## **FLOW DIAGRAMS**



Flow Diagram for the Manufacture of Black Powder

Saltpetre Refining

Sulphur Refining

**Charcoal Production** 

Sulphur and Charcoal Pulversied ans Sieved

Mixing 75 parts Saltpetre 15 parts Charcoal 10 parts Sulphur

Incorporating

Millcake

Breaking Down the Mill Cake

Pressing

Presscake

Pebble Powder Cutting

Granulating

Foul Grain

Dusting

Moulded Powders

Glazing

Stoving

Finishing - final glazing & dust removal

Blending and Packing

Storage in Factory Magazine

Shipment to Government Magazines

after: Wardell W H 1888 Handbook of Gunpowder and Guncotton HMSO

Flow Diagram for the Manufacture of Nitrocellulose. For Cordite M.D. or Guncotton

Cotton in Bales

Bale Breakers

**Picking Tables** 

Mechanical Teaser

Drier

Mixed Acid

Nitrators

Waste Acid to recovery

after Nitration, displacement of Acid by water

**Boiling Vats** 

Beaters

Grit Trap, Blanket and Magnet Runs

Potchers

**Blending Tanks** 

Hydraulic Presses

Guncotton Cylinders to Storage

after: War Office 1938 Text Book of Explosives used in the Service

Flow Diagram for Manufacture of Cordites M.D. and W



Samples for volatile matter test

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Blending

Lotting and Gauging

Store - Magazine

after: War Office 1938 Text Book of Explosives used in the Service

### Flow Diagram for Manufacture of Nitroglycerine

### Rintoul-Nathan Process

	Sulphuric Acid 59%   Nitric Acid 39%   Water 2%	Hot Air
	Nitrator - Mixed Acids 2.6 tons	Nitroglycerine
		Glycerol
	Prewash and Labyrinth	
,	Acid Nitroglycerine Washing House - Five washings sodium carbonate added	
	Nitroglycerine run to Mixing Houses	
		Heated by steam pipes ]
	Wash Water Settling House	

after: War Office 1938 Text Book of Explosives used in the Service

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Flow Diagram for the Manufacture of Trinitro-phenyl-methyl-nitramine (aka Tetryl or Composition Exploding C.E.)



after: War Office 1938 Text Book of Explosives used in the Service

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