



## Derby's Iconic Industries



Rolls Royce early days: Capstan and Turret lathes in use.



Rolls Royce Silver Ghost



Woman working a lathe - Rolls Royce



Ambulance Train Plaque, Midland railway.



Leys Malleable Castings



Chain Making - Leys



Aiton's factory

### Leys Malleable Co Ltd.

Francis Ley set up the malleable iron casting process next to the Midland Railway line. He focused on supplying iron machinery parts for the farming industry. He partnered an American firm, Ewatts to share procedures on producing malleable casting. Work with the USA convinced the company to change and expand. New land was purchased. In new buildings 6 reverberatory furnaces with blowers were installed. By 1914 eight were in operation and two more were added in 1917. Ore was purchased from the USA and Sweden. The companies metallurgical & chemistry laboratory improved. Products were being supplied to the rail industry, commercial vehicle industry for cranes, Agricultural Engineering (tractors & frames), shipbuilding and many more.

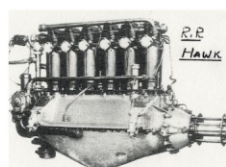
From his time in the USA Francis became passionate about Baseball. He converted part of the Firms recreation ground to be able to play the game and formed a professional

### Rolls - Royce an iconic Derby company.

The Rolls - Royce factory opened in 1908. It was located with good access to rail, tram and bicycle transport. The company workforce increased from 400 in 1908 to 1,850 in 1919. Initially the company focused on the production of the Silver Ghost motor car. In 1908 it produced 90 increasing to 565 by 1914.

The declaration of war in 1914 caused panic in the Board Room as the Board had on previous occasions opposed being involved in producing aero engines. This was now required by the Government. Inevitably the company had to change direction so aero engines and armoured cars began to be produced.

During the war period Royce designed and oversaw the development of three new engines, the Eagle, Hawk & Condor.



Rolls Royce Hawk Engine



Early Rolls Royce Armoured car



Rolls Royce Assembly



Ambulance Train and staff.



Women making metal moulds - Leys



Pouring molten metal into moulds - Leys



Bomb Drop

### Midland Railway

With the exception of Rolls Royce no other Derby company did more for the war effort than the combined companies of the Midland Railway Locomotive Works (which made engines) and the Derby Carriage and Wagon works. They manufactured rolling stock (carriages and wagons). These were already huge employers with tens of thousands of workers, with up to date factories at the start of the war.

During the war the Locomotive works manufactured Howitzers, shells and their components. Shells were reconditioned and the manufacture of fuses grew from 3,000 a week at the outset of hostilities to 30,000 in the later stages of the war. Most of the labour used in this type of work was female, though much of the process became automated as the war progressed.

The Derby Carriage and Wagon works produced 10 and 12 ton wagons in large numbers. At the start of the war the daily timetable would be to produce the components for a wagon which would be assembled the next day. By the end of the war American mass production methods had been introduced so that 200 wagons a week could be produced.

In 1914 the company began producing ambulance trains and army wagons as well as parts for rifles.



Troop Train

### Aiton & Co.

The firm in Stores Road was initially engaged in the manufacture of prefabricated cast iron piping of many diameters and forms. With improving technology the market for piping changed to a demand for piping capable of standing high pressures and temperatures. Very skilled craftsmen carried out percussion welding of valve bodies and junctions. Seam welding of the pipes being part of the then fabrication process. Where applicable, electric arc or gas welding was part of the process.

As the number of men employed reduced due to the war Aiton's were prepared to take on women with particular aptitude and retrain them as required. The job vacancies were filled by wives and mothers of the men's families. Within a short period production throughput increased.

In 1915 a new welding shop was built being extended in 1917. With the new facility available, munitions were manufactured. These consisted of bombs,

grenades and various delivery devices in which pressure piping was used. Particular piping and valve assemblies were constructed capable of taking significant pressures and were for use in ship construction, repair and replacement.

Aiton's pay rates were the same for male and female and attracted war bonus. The government edict that women taking on male skilled occupations should be paid the equivalent rate was followed. Good welding procedures were not diluted and in consequence working in this factory attracted female labour.

The reputation of this firm was worldwide. In 1923 a Mr W Kosowski of Warsaw Poland approached Aiton's with new process to manufacture corrugated pipe that would withstand high pressures. Aiton's following negotiations obtained the sole right to manufacture and sell this type of pipe.

(for ref; This type of pipe was used in naval ships in WW2).

