

D.NAPIER AND SON

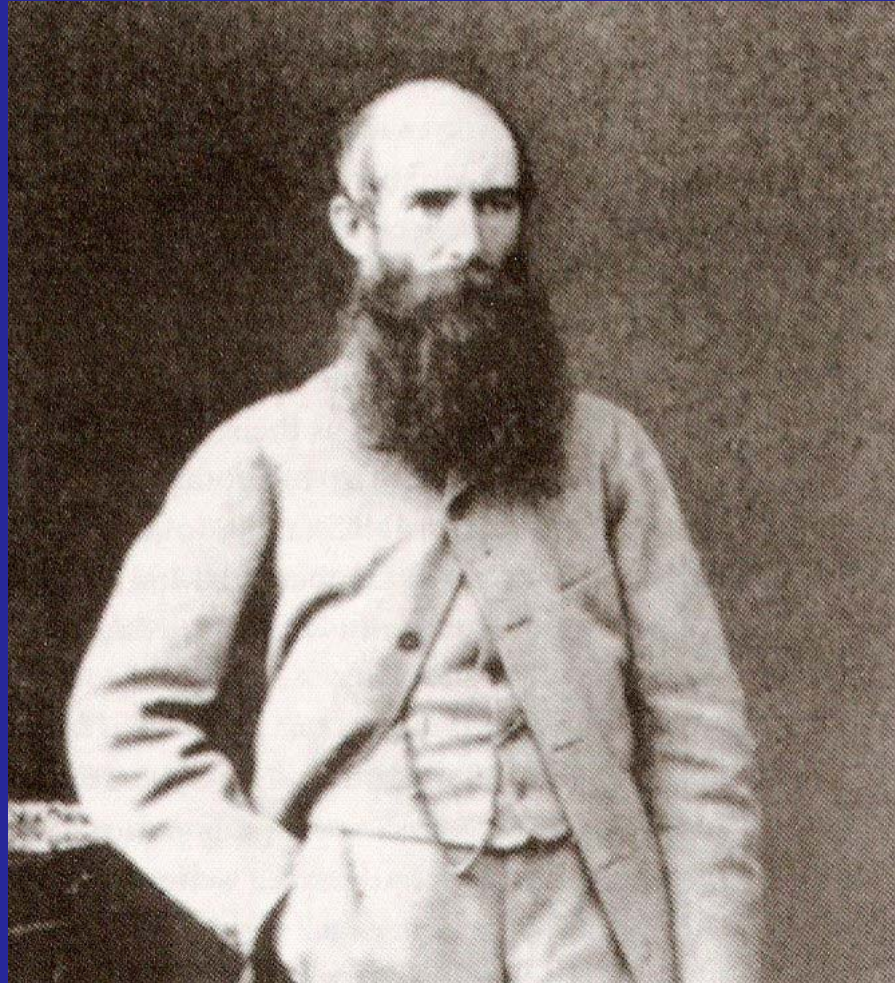
I suspect that most of you here have heard of the Napier name as being responsible for a series of Aero Engines produced in the period surrounding the two World Wars. However, I will be surprised if many of you are aware of the historical importance of the achievements of The Company spanning more than two centuries.

D Napier & Son

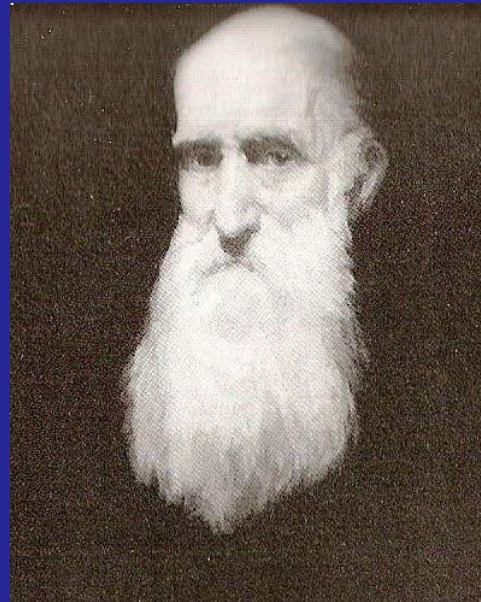
Precision Engineers

A brief timeline tracing the history from it's family origins in 1783 to the last remaining Company to-day, to carry the famous Napier name.

James Napier (1823 – 1895)



David Napier 1785 - 1873



D Napier & Son

Precision Engineers

David Napier was born in 1785 at Inveraray, Scotland, son of the blacksmith to the 5th Duke of Argyll in Scotland.

Several members of his family were engineers and his cousin Robert Napier was the well known Clyde shipbuilder.

David Napier served his apprenticeship as a blacksmith at his uncle's metalworking plant at Dumbarton in Scotland.

At the age of 21, in 1806, he moved south to London where he worked for Henry Maudsley, machine tool engineer and manufacturer. It was here he developed his precision engineering skills.

1808

Aged 23, David established his own engineering business, *D Napier*, in Lloyds Court, St Giles, Soho, London.

He undertook the accurate construction and repair of printing presses, firstly for others, then to his own patented precision engineered designs. Early machines were manually operated but later incorporated steam power. The “Nay-Peer” printing press was used by Hansard, the producer of the official verbatim records of Parliamentary proceedings.

1833

Napier constructed a machine for making compressed musket and rifle balls. This greatly improved the accuracy of small arms fire.

A number of these machines were later sold to The Royal Arsenal in Woolwich in 1842.

1840

A variety of hydraulic equipment was supplied to the renowned engineer I. K. Brunel for the construction of the Great Western Railway for the Bristol Terminus and later, overhead travelling cranes for the Swindon Depot.

1842

Work started on the “Automaton”, This was a precision monetary coin sorting and bullion balances coin weighing machine.

The prototype was supplied to the Royal Mint for testing. The following year they purchased a further three machines.

1847

David Napier took his son James Murdock into partnership and they embarked on a period of growth and prosperity with a well organised factory employing around 400 people.

Over the following 20 years a wide variety of equipment was delivered throughout the world, including;

David Napier's "Captains' Patent registering Ships' Compass" came into use.

This was a great aid to marine navigation as it registered, on paper, the exact course of the vessel over the preceding 24 hours.

A quantity of gun boring machines for the Spanish government and the Imperial Arsenal of St. Petersburg, Russia and the English board of Ordinance.

Tide gauge measures for the Admiralty.

Hydraulic presses for hot forging.

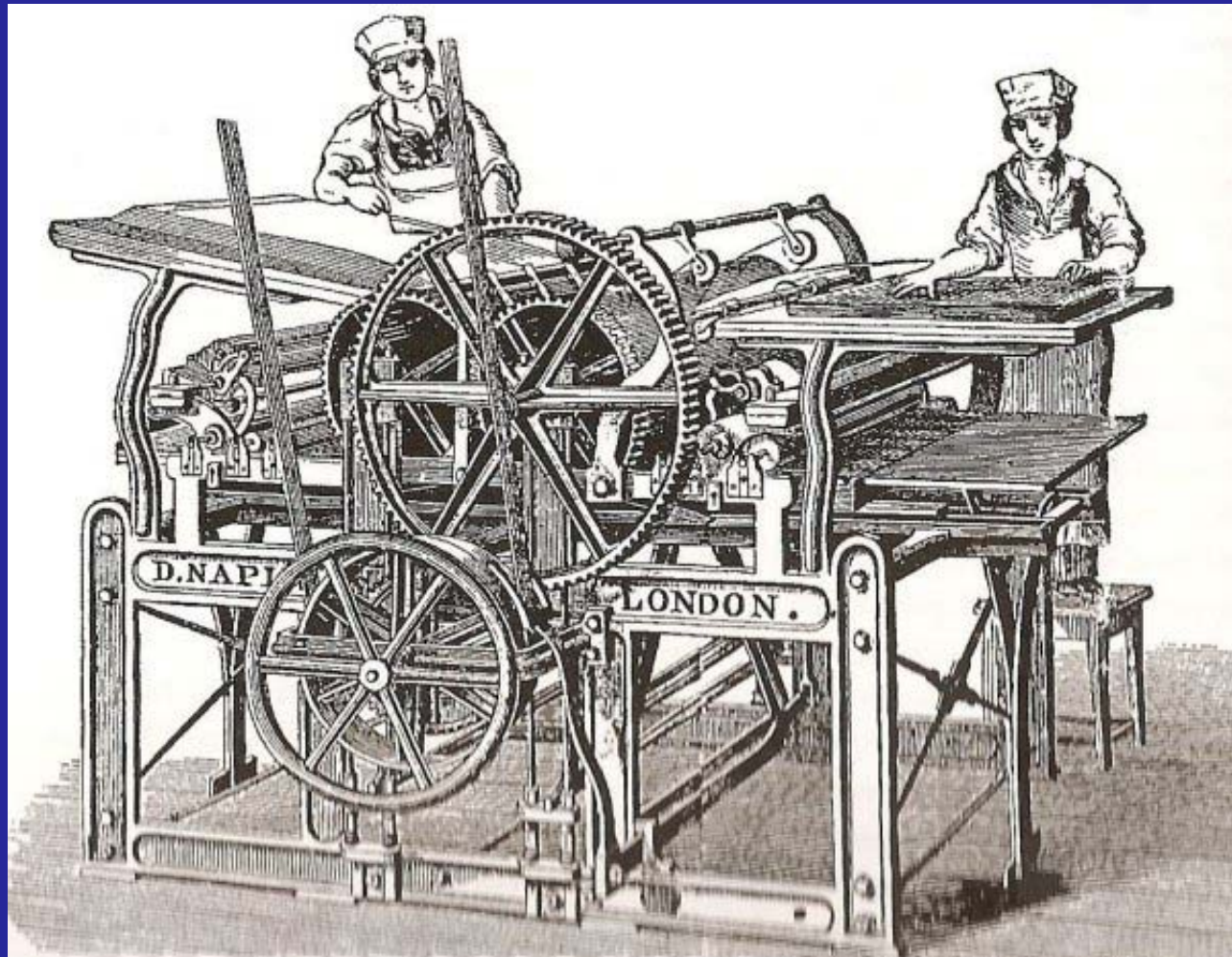
An Astronomical Telescope.

An Envelope Printing Machine.

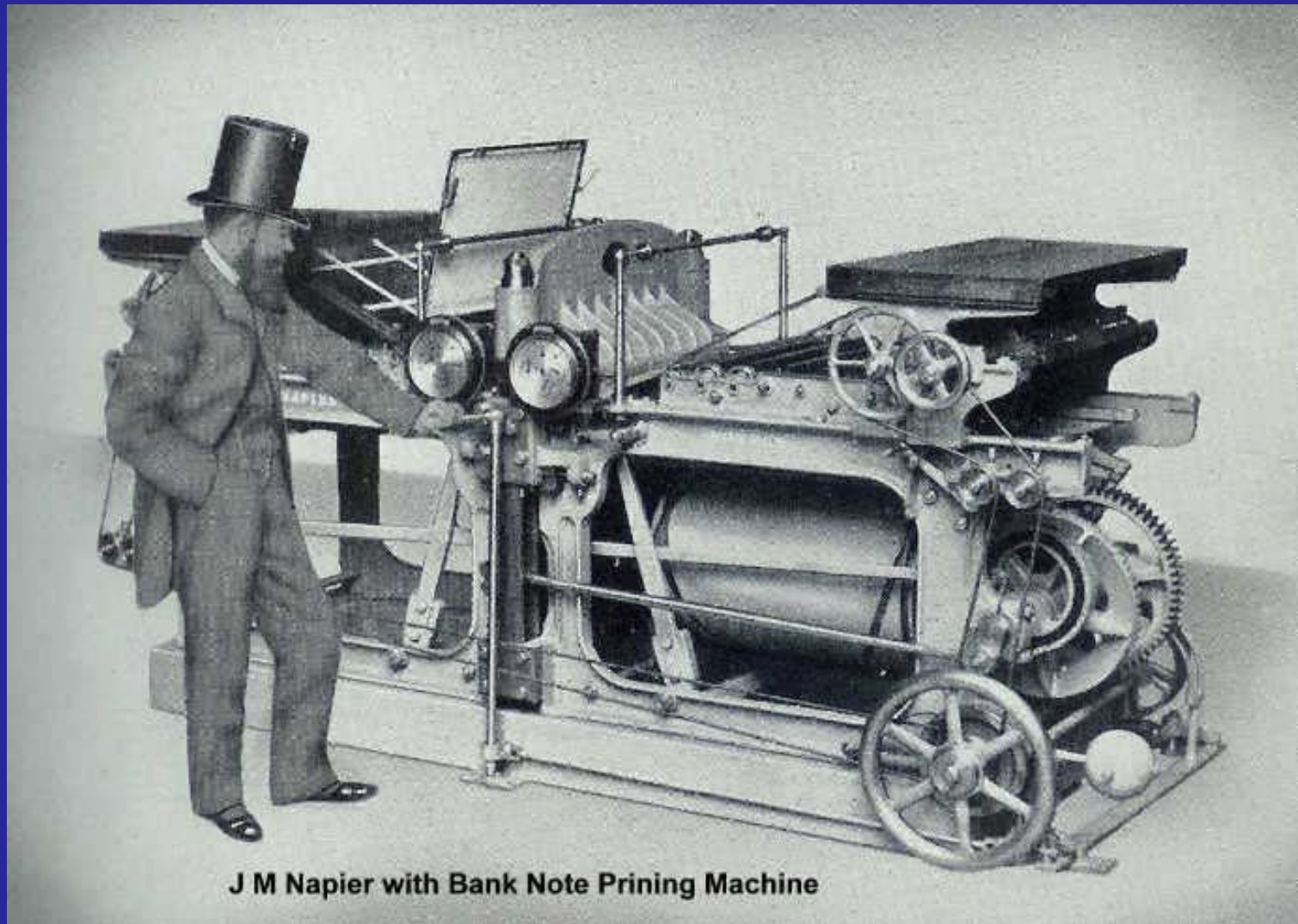
A Sugar Mill.

The first postage Stamp Perforating Machine.

Steam Perfecting Press

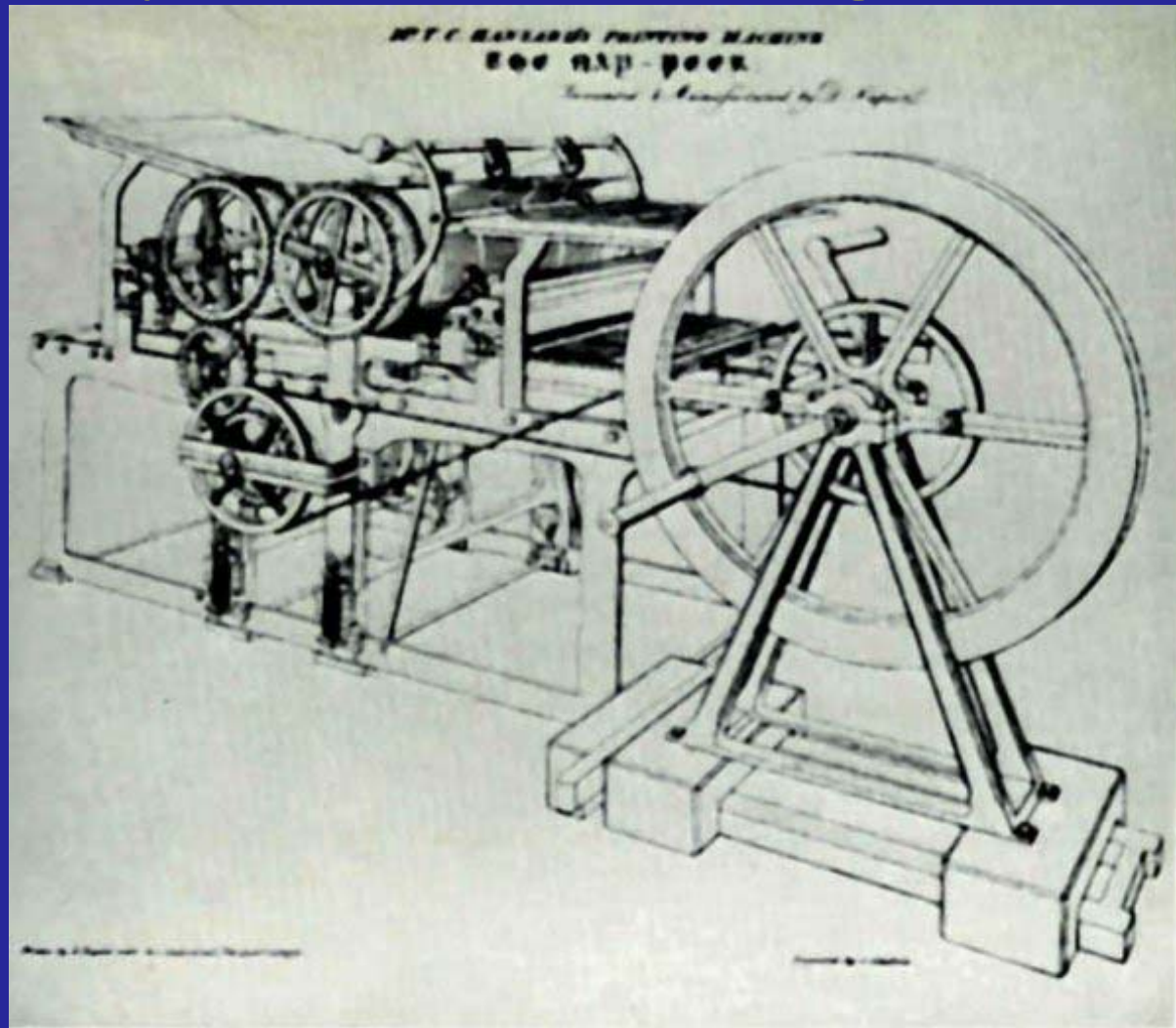


Bank Note Printing Machine



J M Napier with Bank Note Printing Machine

Nay-Peer Printing Press.

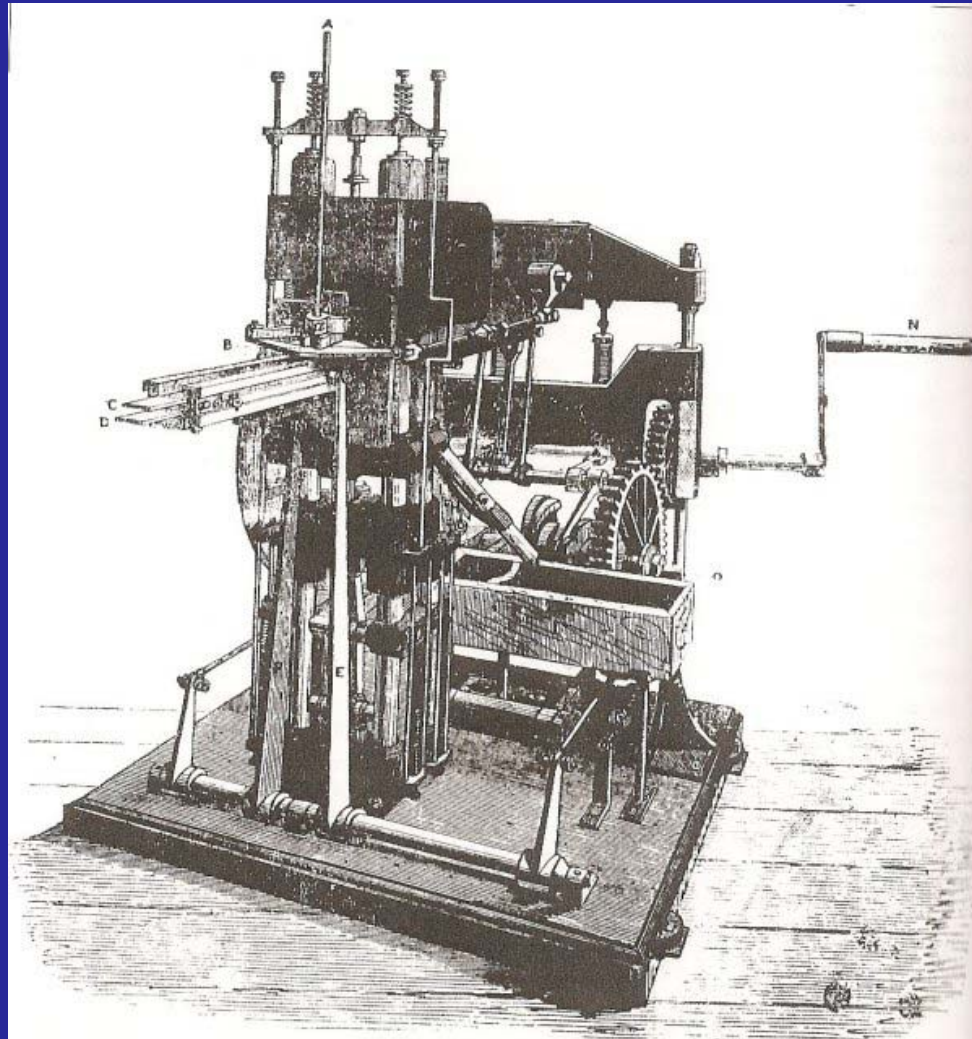


Coin Weighing Machine

"Automaton" Coin Weighing Machine for the
Bank of England 1842



Bullet Compressing Machine



1854

The Crimean War brought considerable orders for ship reversing Quadrants, Bilge Pumps and Rifle Rods.

They also had equipment for boring 30.ft. cannon barrels including the rifling grooves.

1867

David's younger son James succeeding him as head of the business in 1867

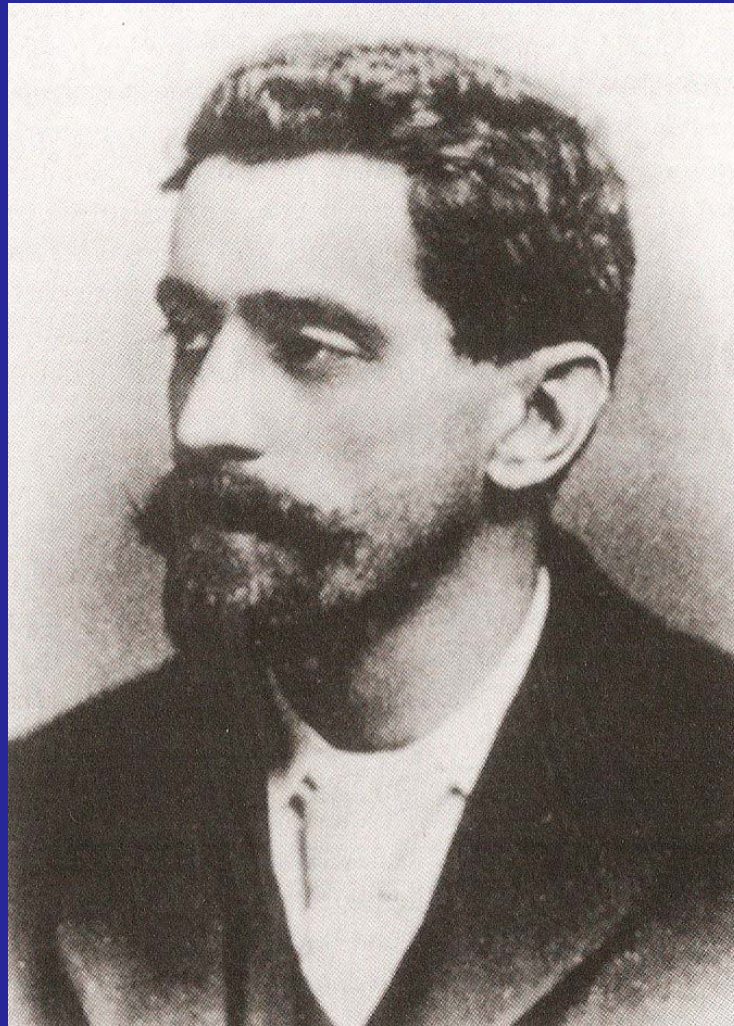
Like his father, James proved to have exceptional engineering skills and became a Member of The Institution of Mechanical Engineers. M.I.Mech.E.

Following his father's death in 1873, James specialised in beautifully crafted precision machinery for making coins and printing stamps and banknotes

James proved not to be a good businessman, considering Salesmanship as an undignified business. Sales volumes Declined such that there were as few as 7 employees by 1895 when he attempted, unsuccessfully, to sell the Company.

1895

Montague Stanley Napier, The Grandson of David, Purchased the York Road, Lambeth factory including the Goodwill and all Patents and Plant.



Montague Stanley Napier
(1870 – 1931)

AUTOMOBILES

1895

On The Road To Recovery

Montague immediately set about the rebuilding of the business.

Montague's hobby was cycle racing and at London's Bath Road Club he met Australian born cycling champion Selwyn Francis (SF) Edge. Edge held several British distance speed records including London – York a distance of 210 miles covered in 12 hrs. 49 min.

Edge was London manager of the Dunlop Tyre Co. He owned Panhard car No 8, winner of the 1898 Paris-Marseilles Race. He persuaded Montague to improve the car by converting it from a tiller to wheel steering and to improve the engine. This encouraged Edge to further persuade Montague to set up car production at Napier's Acton works..

1898

Montague Napier started development of the first Napier car engine, a 2 cylinder, 9hp. Unit which weighed over 300lbs.

1899

S.F.Edge formed The Motor Power Company to promote sales of the entire production output of Napier's Motor carriages.

1900

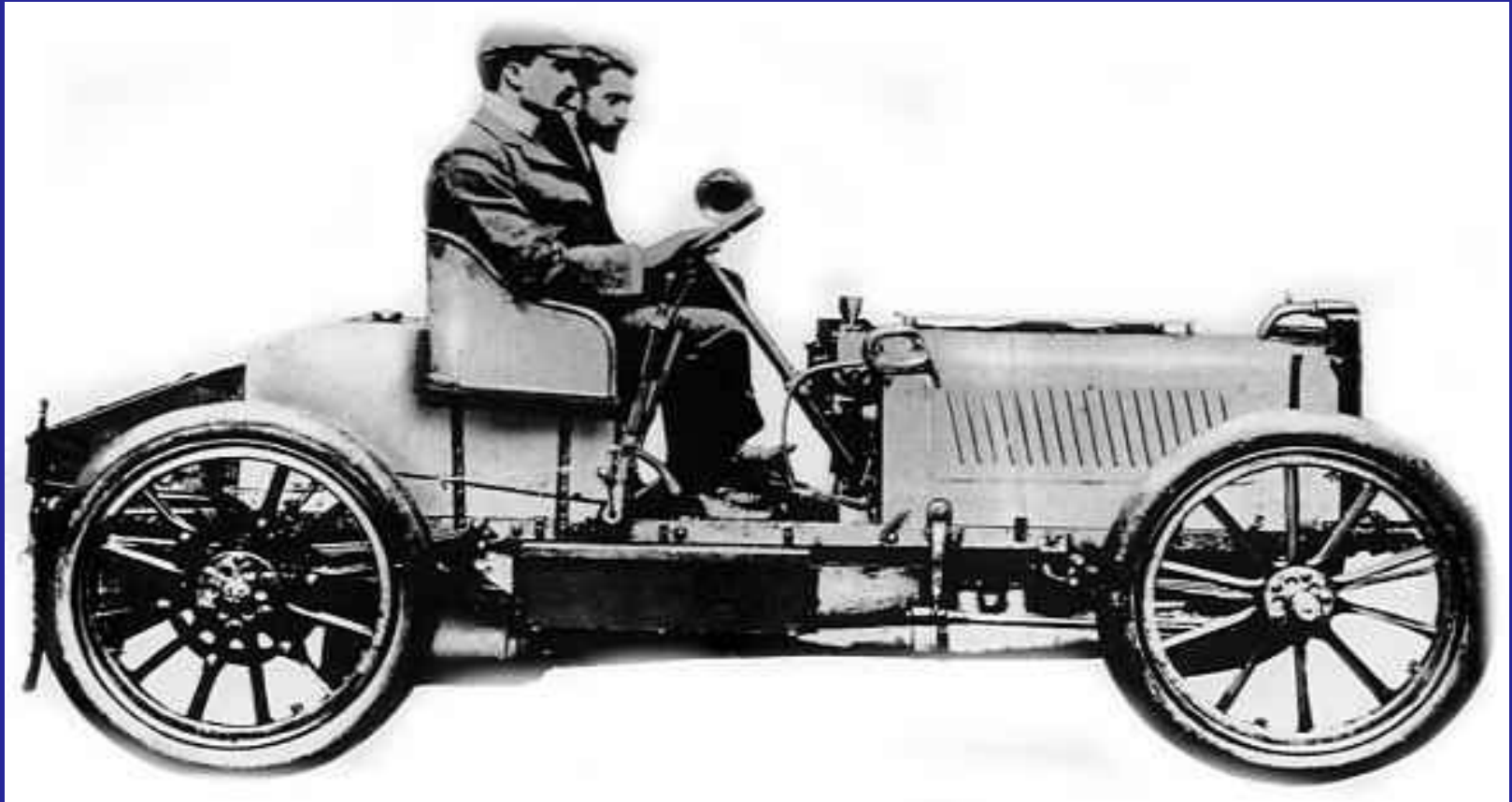
The first to be built Napier car, driven by Montague's good friend S.F.Edge took part in the Automobile Club's 1000 mile trial around Britain and successfully completed the course.

There followed a 16hp. Engine incorporating a cast aluminium cylinder-block with integral, pressed in, cast iron liners. There was also a detachable head with overhead valves.

This early beginning led to over 200 engine designs of both piston and gas turbine types utilising petrol and diesel fuels as well as rocket engines. Most of these designs were pioneering and class leading engines.

1902

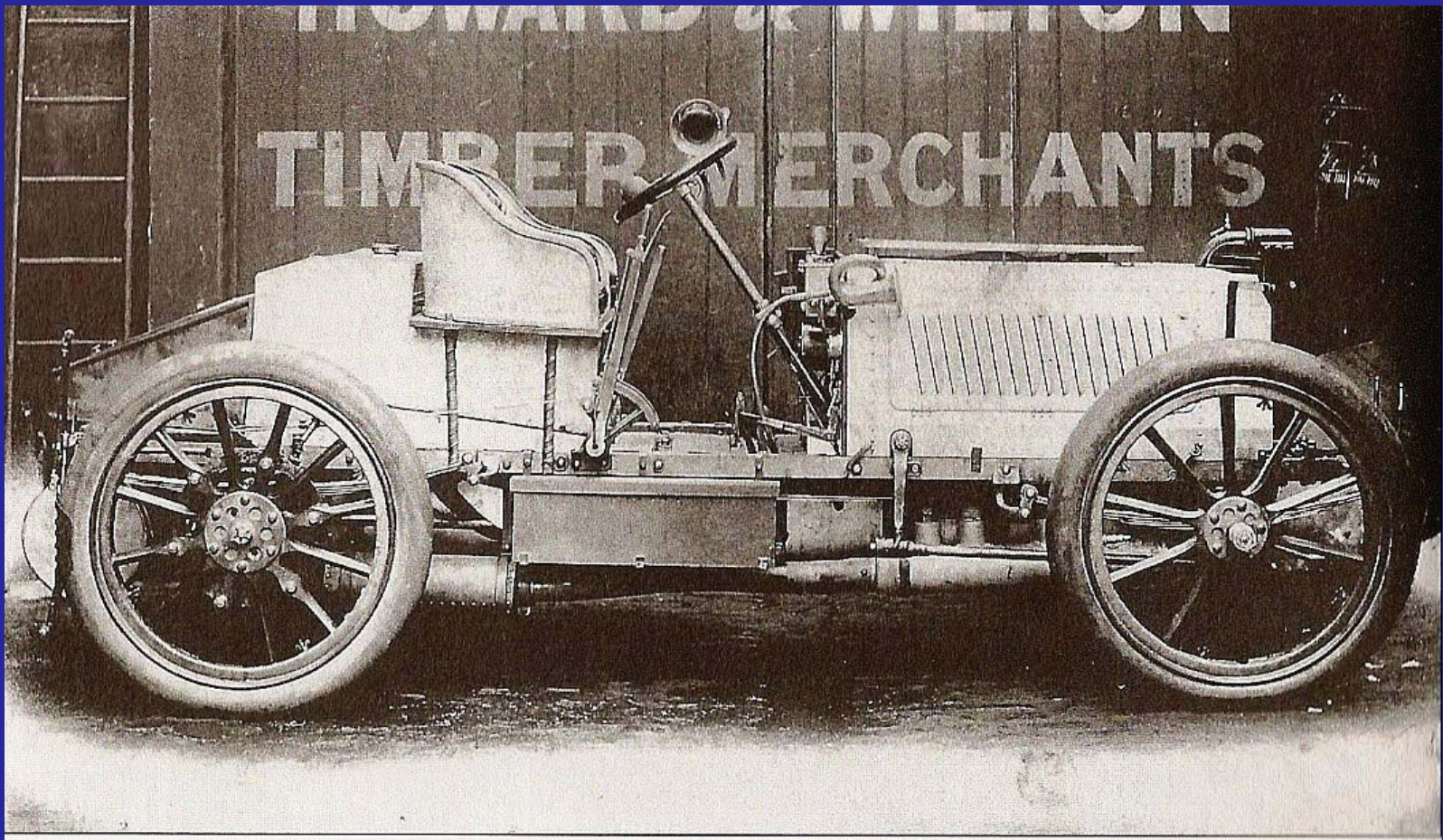
S.F.Edge driving with Montague Napier as riding mechanic won the Gordon Bennett Trophy motor race between Paris and Innsbruck with the Napier light racing Car. This was Great Britain's first International Motorsport Award.



S.F.Edge with Montague Napier and the Gordon Bennett Trophy winning Napier light racing car.

1903

Having outgrown the York Road site a further 3.5 acres was purchased in Acton followed a year later by another 2.75 acres as business continued to expand



In 1903 the Gordon Bennett team were all Napier cars, most having 7.5 litre engines with over-square 5.5 inch bores and a low driving seat position!

1904

Napier produced the worlds first 6 cylinder car engine.

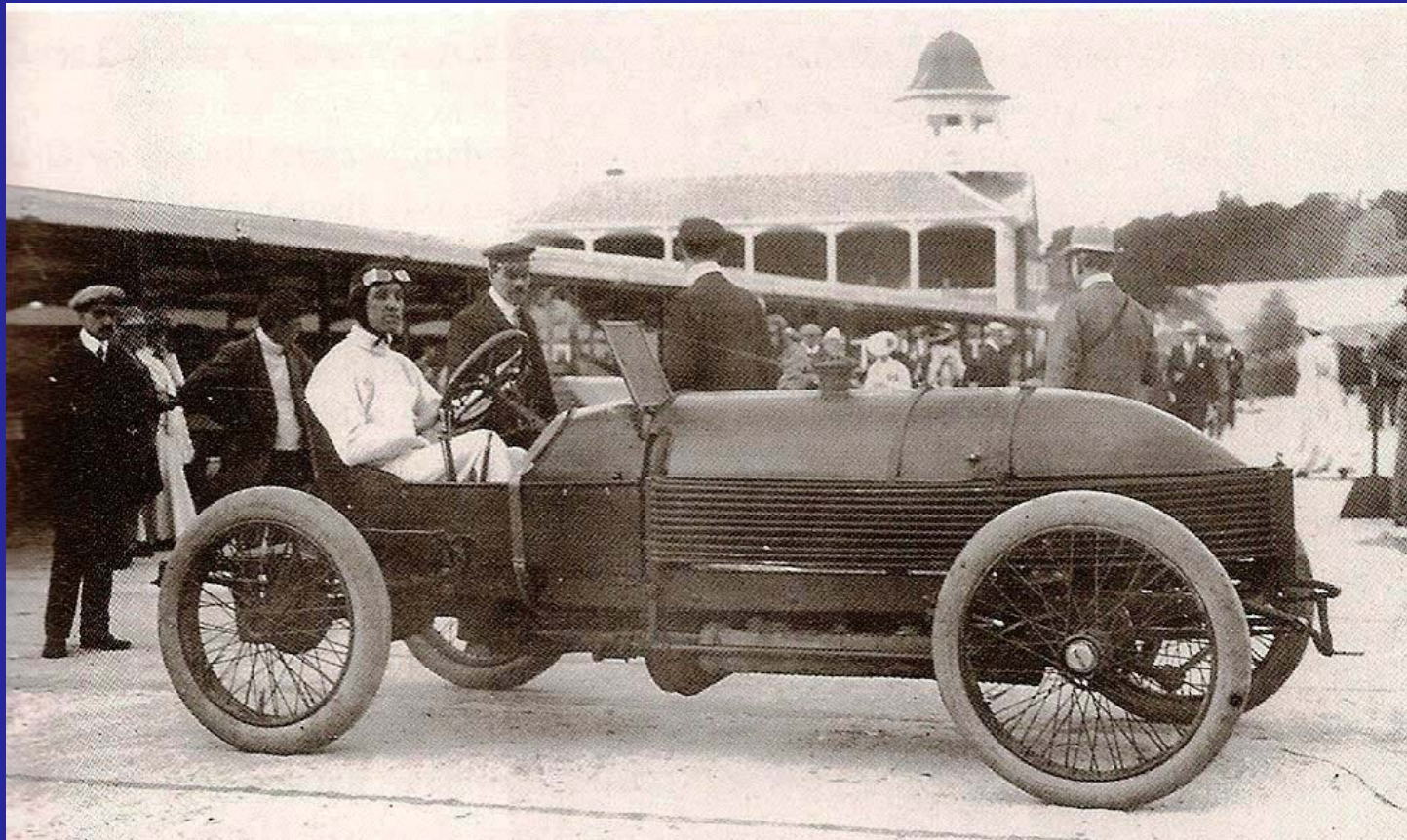
They continued to build a reputation for power and reliability.

1905

“Samson” the first Napier racing car with a 6 cylinder engine took the World land Speed Record at 104.65mph.

During this period car engines were being used in cruising launches and high speed motor boats. Napier took this challenge and set a number of speed records with launches numbered 1, 2 and 3.

A Selection of Napier Racing Cars

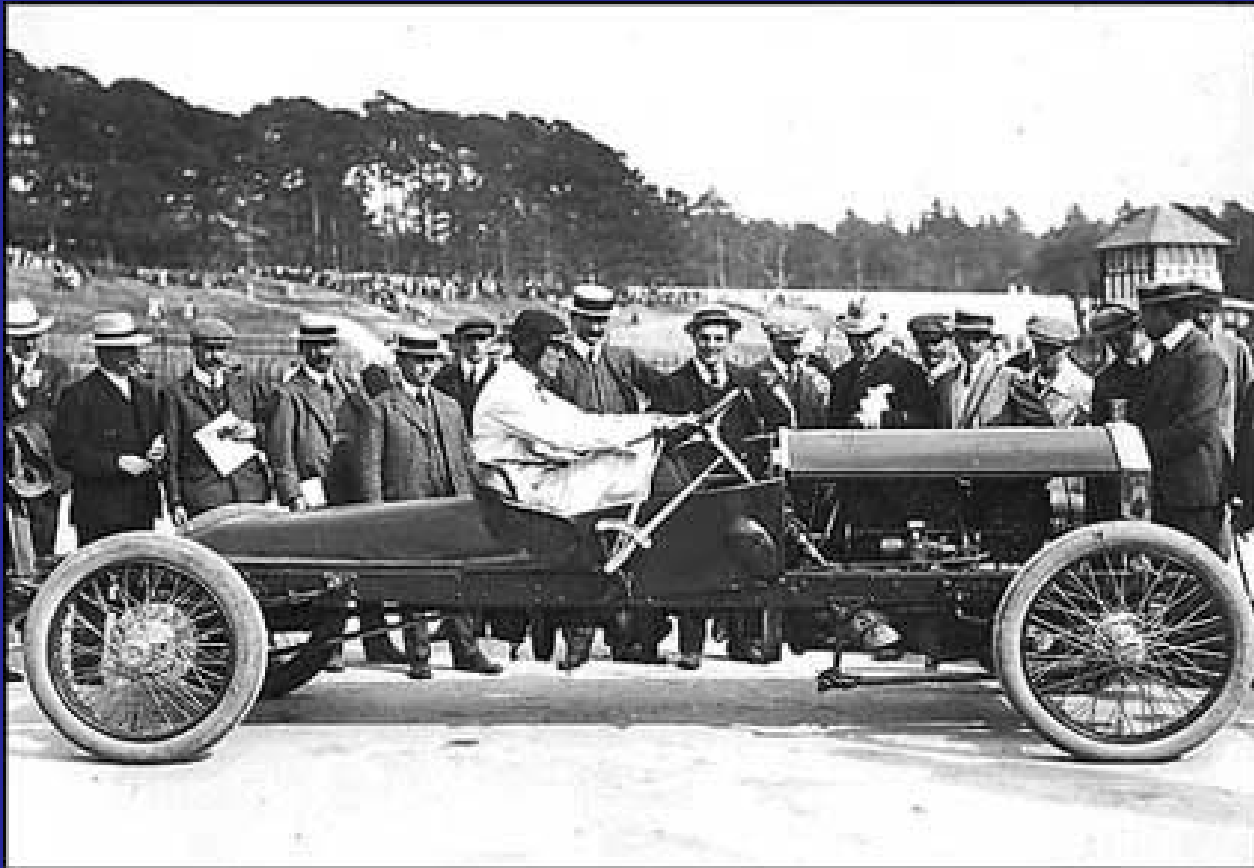


**Streamlined Napier L48 *Samson* at Brooklands in 1907.
This car broke the World Land Speed Record
at Daytona Beach in 1905**

1907

A week before the official opening of the Brooklands circuit, S.F.Edge took 3 Napier works cars to set the 24 hr. distance and speed record at 1581 miles at an average speed of 65.8 mph.

A Selection of Napier Racing Cars



Napier 6-cyl 65 Hp at Brooklands in 1907. The first car to set a 24 hour endurance record covering 1,582 miles at an average of 65.8 mph

1908



Britain's first specially built Grand Prix racing car. Painted in Napier's own British Racing Green, this 6 cyl 11.5 litre (702 cu. Ins) Was built to compete in the 1908 T.T. race in France.

1914

The First World War

Car production was curtailed as emphasis switched to the war effort. Only 300 car chassis of a planned 500 were produced during 1914 and no more were built until 1919.

The War Office placed orders for 200 4-ton capacity trucks and a further order for 250 smaller 1.5 ton capacity vehicles.

1915

From the 2nd August The Ministry of War designated Napier as a “Controlled Establishment”. This meant that the Company was managed by the government and had to comply with the manufacturing requirements of the War Machine.

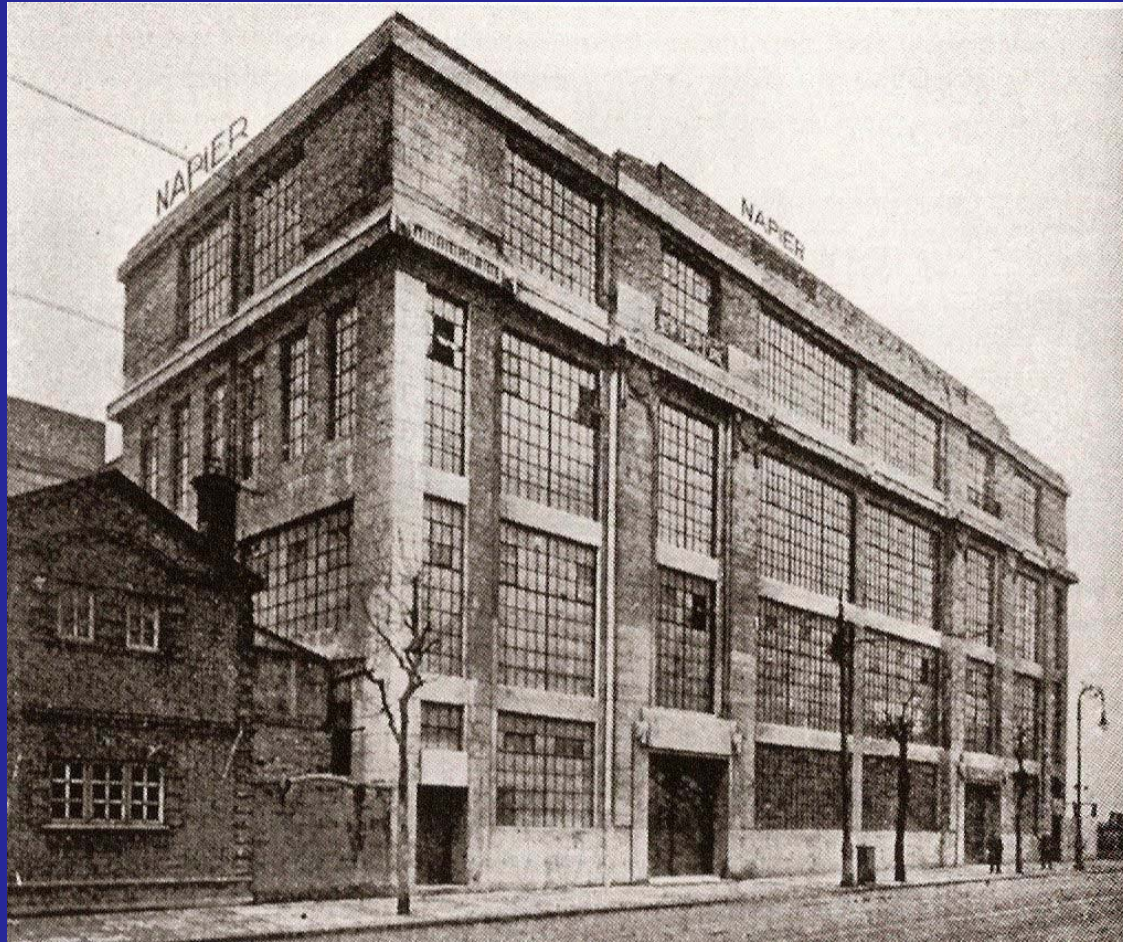
This included Vehicles, Aircraft and due to the company’s precision background, Aero Engines.

Acton remained busy for the duration of the war. Vehicle production continued apace and between 1915/18 over 2,000 trucks and ambulances were supplied to the War Office.

During this time The RAF “saw to it” that Napier had a new four storey reinforced concrete building erected from which to administer Napier’s war effort.

This building included offices for the Directors, a Drawing Office and Canteen amongst other facilities.

Napier's New Acton Works 1916



1917

Montague's health deteriorated and he moved to a health Spa in Cannes. He continued to take an active role in the company until his death in 1931 aged 87.

1919

Civilian car production restarted with the 6 cylinder T75.

These were very expensive cars, costing more than the Rolls Royce Silver Ghost.

During the '20s, sales declined and the last Napier car was produced in 1924.

NAPIER AERO ENGINES.

A revolutionary form of mechanical warfare was by now being employed over the battlefields of Europe utilising the armed warplane.

Napier began manufacturing and testing examples of existing types of aero engines, including the V8 Sunbeam Arab and V12 RAF type 3a.

These engines proved indifferent and troublesome so that in 1916 Napier decided that they could do better and so began the design of their own Aero engines.



Napier realised that the fundamental features of an aero engine were low weight, smallest possible frontal area and maximum power. Their approach was to utilise multiples of smaller cylinders to allow greater engine speeds. This began with the “Lion” and progressed via the “dagger” through to the 24 cylinder “Sabre”

The Lion, originally designed as an aero engine, was further developed for marine use and as a high powered racing car engine.

World air, land and water speed records were regularly broken, particularly during the 1930s, by Henry Seagrave, Malcolm Campbell (in Bluebird) and John Cobb (in a Napier Railton) all in vehicles powered by Napier Lion engines

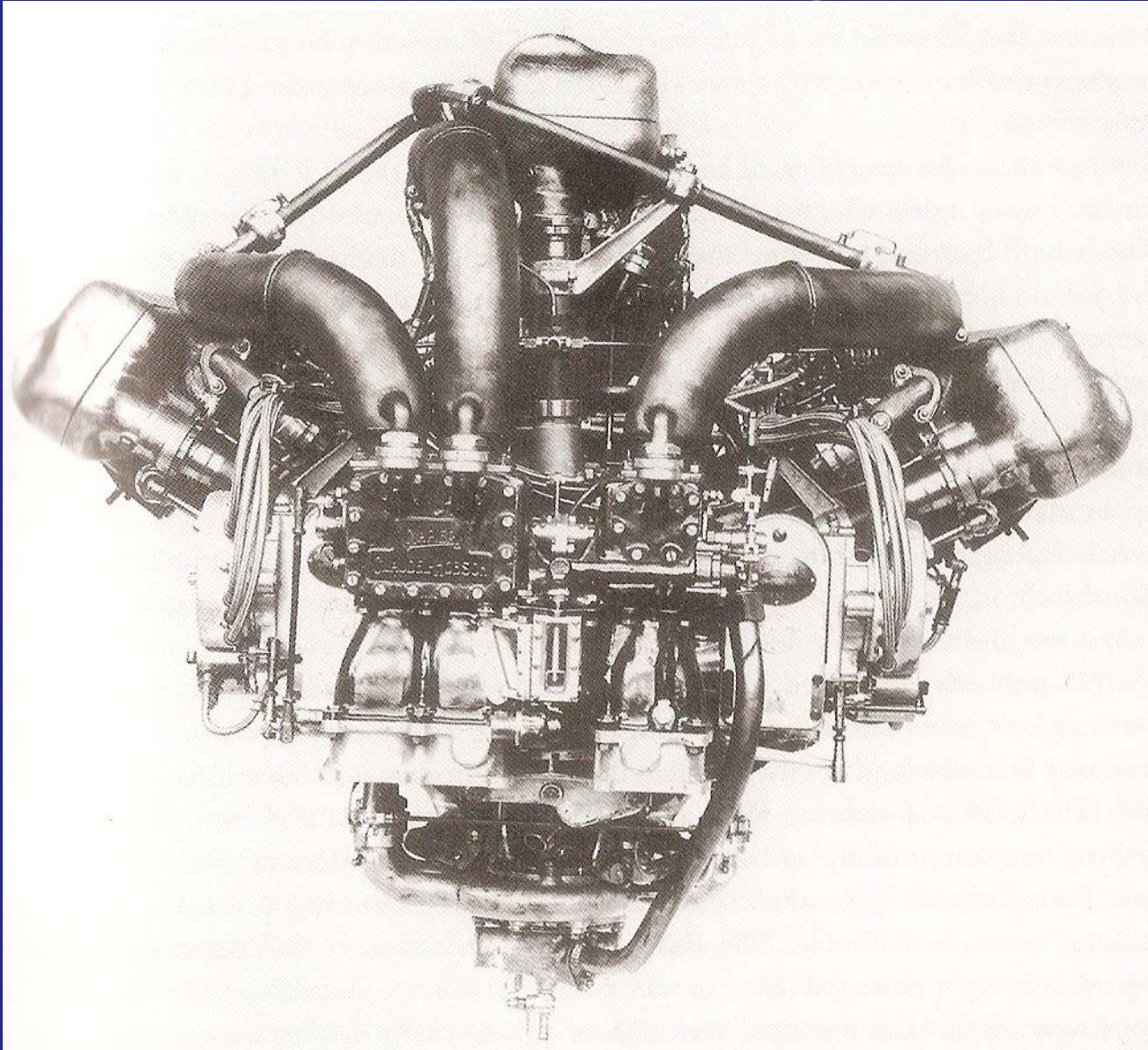
1917

The design and development of the Napier Lion Engine was commenced.

This was not completed before the end of hostilities but went on to power over 130 Military and Civilian Aircraft Worldwide.

This included the first Civilian Cross Channel Service between Croydon and Paris.

The Napier Lion Engine



World Records gained with Napier Lion Engine Power

1919 - Height record of 30,000 feet

1929 - Land Speed Record at 231.3 mph

1929 - Air Speed Record at 336.3 mph

1930 - Water Speed Record at 100.13 mph

1931 - Land speed record at 246.1 mph

1932 - Land speed record at 253.9 mph

1933 - Air Long Distance Record at 5,309 miles

1939 - Land Speed Record at 369.74 mph

1947 - Land speed record at 394.196 mph

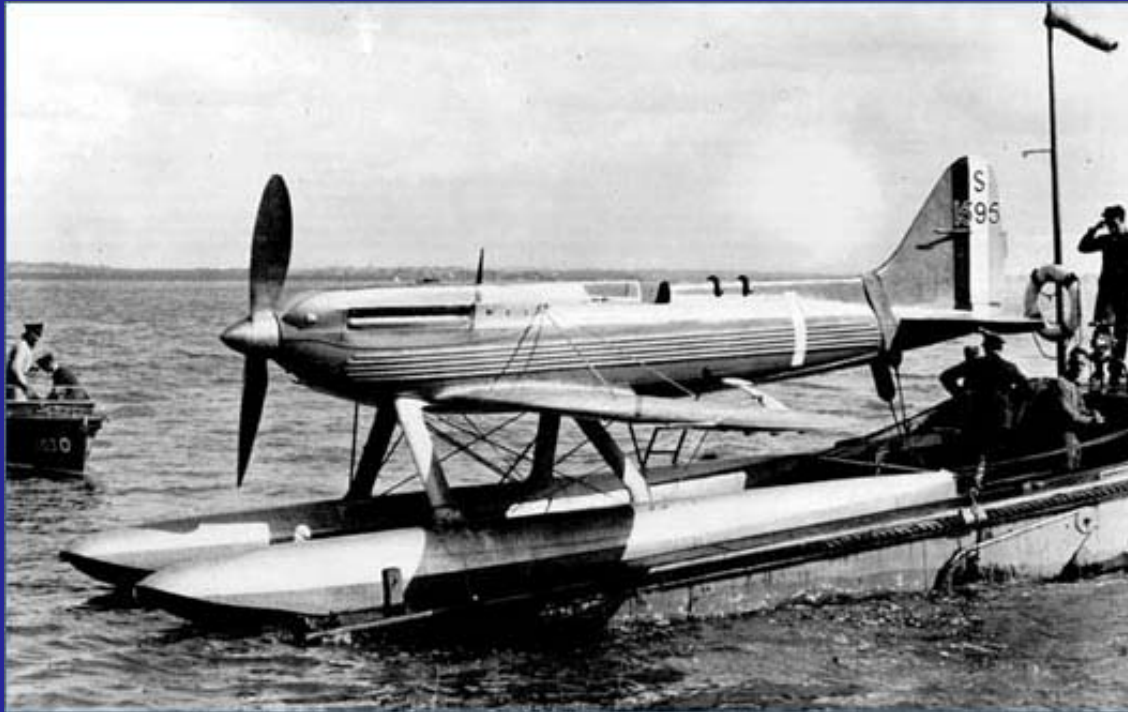
1920

The Air ministry issued a requirement for a single engine for Bombers.

Napier responded with the 16 cylinder, “X” configured, “Cub”. This had a capacity of 60ltr. (3,700u.ins) and a power output of 1050hp.

6 engines were built and test flown in a Blackburn “Cubaroo” prior to cancellation of the program.

Napier Lion Powered Schneider Trophy Winners



Winner 1922

Developed by Reginald Mitchell who later designed the Supermarine Spitfire for the RAF

1930

Major Frank Halford's designs of high revving, multi-cylinder engines came into being: initially the 16 cylinder "Rapier" followed by the 18 cylinder, 1000.hp. "Dagger".

These were both air-cooled "H" configurations.

When World War II broke out it soon became clear that the then current aircraft were too slow and the immediate demand was for aircraft to be fitted with engines having in excess of 1,000.hp to match the enemy's fighter aircraft.

Fortunately Rolls Royce had their Merlin engine in production for use in the Hawker Hurricane and the Supermarine Spitfire, but Napier's answer, the Sabre, was not yet fully developed.

The 2,000 hp. Sabre engine completely out-performed any other aero engine then available and was fitted to the new Hawker Typhoon. Capable of 450 mph it replaced the Hurricane and proved to be more than a match for the new Focke-Wulf 190, giving the RAF air superiority when it entered service in 1940.

When Hitler launched his new terror weapon, the V1 Ramjet, un-manned flying Bomb the Typhoon was the only aircraft that could catch and destroy them in level flight.

With the outbreak of World War II, Napier returned to being Under the control of the War Office and from 1st January 1943 became a wholly owned subsidiary of The English Electric Company. The long-standing chairman of EE Co, Sir George H Nelson, the first Lord Nelson of Stafford, appointed his son, H G Nelson, Managing Director of Napier.

Under the direction of EE Co, Napier expanded their Manufacturing facilities by opening new plants at Luton and Liverpool where they built the well known Deltic engines for use in Fast Torpedo Boats, the Deltic powered locomotives for British Railways modernisation plan and for other uses.

The Hawker Typhoon and its successors the Tempest and Fury were built in large quantities and served in all theatres of war with distinction including Europe and the Far East. They were active, providing air cover from D-Day until VE day in 1945 and made a significant contribution in bringing the German and Japanese surrender and the end to conflict