www.3-wheelers.com - The online A-Z of 3-wheelers.

This was originally an essay I wrote in 1992; just before heading off to university. As it was starting to show signs of age it was updated in 2001. I have left the essay in that same format with its original typos.

The History of the 3-wheeled Vehicle

By Elvis Payne.

Section 1: The Steam Age.

Love them or loathe them the 3-wheeler, Cycle-car or even Tri-car has had an important impact in the development of the present day motor car. From the beginnings of the Industrial Revolution in 1760 to the Concept cars of the future, these vehicles can hold their headlamps up with pride. They were present at the birth of motoring and possibly may well be the the answer to the future with the constant depletion of the Earths energy resources.

Through the centuries there have been many attempts to build a self-propelled vehicle, and whilst many of these ideas have failed one way or another, all have made small contributions to the final result; Names such as Huygens, Volta, Leonardo DaVinci, Hans Hautsch, Du Quet and Father Verbiest are among many whose work has been used by later engineers to produce a self-propelled vehicle. One of the first experimenters was a Frenchman, Denis Papin who in 1698, after seeing a
Dutchman fail by attempting to move a vehicle with a gun powder propellant, took this method and modified it replacing gunpowder for steam. He then built his first model engine, but due to the poor construction of roads, combined with their meandering nature, it became difficult to navigate. He did however find success later by applying his knowledge to the marine sector, as most laws then governed self-propelled vehicles as, "carriages to plough landes and make voyages upon the oceans as swifte as boates that sayl in faire windes."

It was in Paris that the" first mechanically propelled vehicle" which performed was made. Nicholas Joseph Cugnot was the builder and driver of this new steam machine, which was a full size prototype of his light weight model made six years earlier in 1763. At this time steam engines were employed as pumping and winching devices, and it was a couple of generations before the first railway was to be seen.

Cugnot's steam wagon was a huge 3-wheeler carrying a front mounted boiler and a two cylinder engine located over the front wheel. The wagon worked in a fashion with a top speed of 2 mph with enforced stops every 12 minutes to rebuild pressure. He later made a larger boiler and even though his steam vehicle (fardier a'vapeur) was tested he never became officially recognized. His vehicle eventually caused the worlds first motor accident when it ran out of control and demolished a garden wall. Twenty years later in England William Murdock (a former pupil of James Watt) who had seen Cugnot's plans learnt from his mistake by designing a model steam 3-wheeled vehicle with the engine over the rear wheels to improve stability. It was said that this model first ran in 1784 in Redruth,Cornwall and on one occasion was tested at dusk, the machine ran hissing and sparking past the vicar who then thought the devil was paying him a visit!

Murdock's machine was also seen by Richard Trevithick in London, who decided to develop a high-pressure engine powered by steam and on Christmas Eve, 1801, he rolled it out for its

first test. The vehicle, no more than a boiler on 3-wheels, took Trevithick and a number of his friends half a mile up a hill. However as he sat in his local pub one day, the boiler burnt dry and destroyed the vehicle, and so undeterred Trevithick built another steam carriage, this time complete with seats and a real carriage like appearance. He drove it through London's Oxford Street on demonstration runs but nobody was interested and so he sold the power unit to a local Miller.

As a result of the Industrial Revolution, Steam trains and coaches were successfully being developed in Great Britain As well as Murdock and Trevithick, James Goldsworthy, Gurney, Hancock, Macerone and Squire all produced steam vehicles which were used with great success on public roads. One reason for Britain's lead was the fine hard-surfaced roads constructed by Thomas Telford (1757-1834) and McAdam (1756-1836) who during their lives built many miles of roads and canals suitable for these new machines. McAdam's contribution to the new roads was a new surface, although his surface was a development of Telfords. Telford made the greatest contributions with his bridges. These two factors combined made Britain's roads much more durable, whereas few roads in other countries were more than rutted tracks joining together the towns and cities. Steam coach/car development in Britain was at least forty years ahead of its nearest overseas rival, but then declined into virtual oblivion due to two main factors: The first was for the levies imposed on steam vehicles using the Toll roads network. These tolls were raised to cover the cost of building better surfaced roads, and so it was not unheard of for a steam coach to have to pay a toll fifteen times greater than that imposed on a horse drawn carriage. The second and final blow came in 1865 with the introduction of the Road Locomotives and Highways Act, more commonly known as the 'Red Flag Act', which stated that every road locomotive must have three persons in attendance, one to stoke, one to steer and one to walk ahead with a red flag to warn oncoming traffic, and to help control horses. The speeds also became restricted and the maximum speeds allowed were 4 mph in open country and 2 mph in towns. This drove the vehicles off the roads and as a result the development of self propelled vehicles in Great Britain came to a virtual standstill.

Section 2: The First Petrol Engines

Although advancements in England declined due to their new laws, advancements in other countries were flourishing. Between 1885-1886 two Germans Karl Benz and Gottlieb Daimler built what many people regard as the first petrol driven car. Although at the same time an Englishman, Edward Butler was building a 3-wheeler powered by an engine, which worked by mineral hydro-carbons. It is said that his plans were exhibited two years before Benz and Daimler, and the first recordings of his work with improvements for further hydro-carbon engines came in 1887. Three years later on the 12th December 1890 with regard to his vehicle (The Butler Petrol Driven Cycle) he wrote:

> *"…the authorities do not countenance its use on the roads,and I have abandoned in consequence any further development of it.*
> *(Butler.The English Mechanic. 1890)*

His machine had two large wheels at the front which steered the vehicle, and one rear wheel powered by a two-cylinder engine. The water-cooled engine worked by a spray of Benzoline or petroleum product carburetted with air. The braking device was simply achieved by pressing a pedal that forced two small rollers on to the ground and so lifting the drive wheel from the road!

Benz, who by sheer coincidence lived just fifty miles from Daimler, was granted a patent for his motor vehicle on 26th January 1886, and a few months later Daimler installed one of his experimental petrol engines into a horseless carriage. Benz's patent application simply and precisely read, 'A vehicle operated by a gas engine ... whose gas is generated from vaporizable substances by an apparatus carried on the vehicle'. His car was a 3-wheeler with the single wheel at the front. The vehicle was fitted with a gas engine driven by the vapour of Ligroin or Benzine and was water-cooled. Even though Daimler's car was a 4-wheeler, Benz continued with the 3-wheeled configuration for many years producing a number of models before he eventually turned to the 4-wheeler models. One reason for this was that on the

continent Daimler's car with the added wheel had a much greater advantages owing to the roads being mud tracks, most had two ruts either side carved in by carriages continuously using them. The centre of the road therefore was a pile of churned up ground, and for a 3-wheeler, the central wheel travelling through this made the journey very uncomfortable, as well as placing a great deal of strain on to the body of the vehicle. Another disadvantage for the 3-wheeler was that even though it may have been perfect in its power to weight ratio, its shape (at the time) provided limitations to the body design on it.

The wealthy purchasers of these early motor cars insisted on keeping all the comforts and weather protection they had become accustomed to with the horse or steam-drawn carriage, and so motor manufacturers built cars they knew would sell, despite being large and cumbersome. Motoring was legalised by the passing of the "Emancipation Act" in 1896. This act at last defined the 'light locomotive' (under three tons.) and relieved it of the three persons in attendance requirement. This act also increased the speed limit to 12 mph (19 km/h). This in turn encouraged many manufacturers to develop lighter vehicles with little or no bodywork on them

John Henry Knight of Farnham, Surrey (UK) is recognised as being the maker of the first British built motor car of which he exhibited at the Crystal Palace show in 1896. His car, a small 3-wheeler made to seat two, was billed as the only British built car propelled by internal combustion. Before Knight's car there is some dispute as to the first petrol car to be driven on British soil. Benz's Patent Motor Wagen is one contender of which Mercedes-Benz tell me it was the Roger Benz 3-wheeler which was imported to Britain in 1894, though no one knows how. The first records of this car are in 1913 when the Science Museum in Kensington brought the vehicle from a Miss.E.Bath for the sum of £5. Kensington Science Museum's minutes of 8th May 1913 state:

> *The car came into the possession of Miss Bath from her brother, a motor engineer, who probably took it in exchange, but at present nothing more is known of its history. It Is,of course not possible to say with certainty when it came into this country, but I should be inclined to the idea that it was ordered by someone who saw the Roger car at Paris in 1889. [Emile Roger made the Benz car under licence in Paris.) It may even have been imported by Roger himself in order to exploit the cars in this country. In any case it is highly probable that it was the first petrol motor car to be imported,and there is little doubt that it is the earliest period car we are likely to have an opportunity of acquiring.I have no hesitations the refore, in recommending that the car be purchased for the sum of £5*

However the National Motor Museum at Bealieu (UK) say more records exist for the 1895 3-wheeler of John Knight. In the same year that Knight was producing his car, a chap called Georges Bouton developed his high revolution engine. This 137cc air-cooled single cylinder engine was capable of 2000 revolutions per minute and was extremely successful and efficient. The engine was used to power numerous makes of 3-wheelers all over the world, the influence of which developed even further the motorcycle and 3-wheeler. By 1900 3-wheeler manufacturers were numerous, many sprouting up over night and even bicycle makers tried there hands at producing their own 3-wheeler.

One of these companies was the Riley Cycles Company. At the National Cycle Show in 1900, Riley's stand displayed not only bicycles, but a Royal Riley motor tricycle powered by a 2.5hp De Dion type engine. By the end of 1902 the directors at Riley believed that such 3-wheelers were in great demand and so experiments began to build a light 3-wheeled vehicle for two persons. In 1903 whilst Riley were building the Moto-bi motorcycle, the 1903 Motor car act was passed which raised the speed limit from 12 to 20 mph and required all cars to carry a number plate, and so 1904 saw a new 3-wheeler based upon this machine. This tri-car was fitted with a larger engine and an extra seat placed between the two front wheels. An article in the' Motor Cycle Magazine 1</I>904, after testing the vehicle summed up with:

> *'Altogether we can confidently say it is a thoroughly practical and road worthy tricar" (The Motor Cycle Magazine.5th September 1904.)*

After numerous changes it was not until 1906 that the vehicle took on a definite car shape, the cycle seat was exchanged for a bucket seat and a steering wheel replaced the handlebars. By 1907 Riley had reached the pinnacle of their development, the 1907 model being basically the 1906 version, except for a cleaner external appearance and fully enclosed engine. It was Riley's 3-wheelers, along with numerous newly acquired competition results that made Riley a profitable business. However since 1905 a 4-wheeler was being developed and this proceeded the 3-wheelers in 1907.

Section 3: Between the World Wars

In the first year after the First World War there were seventeen 3-wheeler manufacturers World wide, though in Great Britain there were only four models available to the public. These were the Premier, the M.B, the Wooler Mule and the Morgan. The first three of these were only able to go into limited production and were discontinued before the end of the year. However in the ten years after the war 3-wheelers were to enjoy.a tremendous boom as apart from being cheaper than the 4-wheeled models many people during the war had learnt to drive motorised transport and so afterwards they wanted their own vehicle. (Even my granny took her driving test in a tank!!) The choice of vehicle they chose was governed primarily by the amount of money they had, as well as the vehicle's running cost. Whilst most single men chose a solo motorcycle, the choice for a married man was more difficult as a motorcycle combination offered weather protection for the passenger but not for the driver. It was also anti-social as both the passenger and driver were separated.

A 3-wheeler therefore offered in most cases a hood for protection from the weather, side by side comfortable seating, easier steering and a windscreen shielding everyone on board. to this the running cost were not much greater than that for a motorcycle combination and considerably less than the 4-wheelers. One of the lightest cars of post-world war one 3-wheeler era was the 1921 Economic, this was a simple two-seater 3-wheeler with a single front wheel. Contradictory to the above it had no hood, windscreen or springs; as it was claimed that the resilience of the ash frame absorbed all road shocks. Surprisingly though its engine was a two-stroke flat twin of approx 200 cc and the final drive was by chain to the off side rear wheel. Weighing only 150lb its maximum speed was 30 m.p.h and it cost £60. In contrast the Castle Three Motor Company in Worcestershire (UK) were trying to get away from the frail 3-wheeler image and in 1919 they produced their Castle Three. Apart from being a serious attempt to rival Morgan, the Castle Three was described to have 'that proper car look'. It was fitted with a water-cooled, four cylinder side-valve 1094 cc engine which later uprated to 1207 cc. The car had all the equipment expected on a 4-wheeler car; dynamo lighting, a spare wheel and tyre and steel artillery-type wheels instead of wire or wooden disc. The problem was however that succeeding in producing a true car like 3-wheeler, the vehicle was extremely heavy and very expensive for a 3-wheeler and so any advantages the buyer obtained in low taxation, he lost in extra fuel consumption and purchase price.

The major cost saving, derived from buying a 3-wheeler was its low taxation. Up until 1920 taxation of motor vehicles was based roughly on a guinea per 4 horsepower, this was in addition to a petrol tax of 3d per gallon. However on the 21st January 1921 the Motor Taxation Act which taxed private cars at £1 per horsepower was enacted. This was created by using a complicated R.A.C formula; it was worked out that one horsepower was equal to 2 square inches (12.9sq.cm) of piston area, and came to be known as the 'Treasury Rating'. 3-wheelers were taxed; providing that they weighed less than 8 hundred weight (406kg) at the flat rate of £4 per annum.(Regardless of engine size) This compared to £8 for an Austin 7 and £9 for a Rover both classed as 4-wheeler light cars. A report was later published to show the cost of these 4-wheelers, and apart from finding the 3-wheeler less expensive to garage, it gave statistics to show how economical 3-wheelers were. Taking into account tyres, oil, petrol, insurance, grease, tax, garaging, repairs and a club subscription the following figures were published (Based on an annual mileage of 6000.(9656km)

Morgan. £54 12s 3d; Austin 7. £65 14S; Rover. £68 15S 5d

This was a saving of almost £1 per month to the 3-wheeler owner and as my father often says, "A pound was a lot a money in those days you could buy a dinner for eight and still have change". Needless to say these figures were displayed with others by many cyclecar manufacturers. It was the depression of the late 1920's and 1930's that had a devastating effect on the manufacturers of 3-wheelers and light 4-wheelers. It was the "less well off" who were the main purchasers of 3-wheelers and so as a result it was these people who were affected most, both socially and economically Ironically however, mass production was on the increase with both Ford and Austin producing motor vehicles more cheaply and faster. Despite the falling prices of the 3-wheelers during the 1920's to rival mass production the decline in the market prices caused many 3-wheeler manufacturers to go bankrupt within a year of starting production. It was in 1931 that Morris produced the first £100 motorcar, closely followed by two other mass producers. Still sensing a demand for the 3-wheeler models,a small number of businesses introduced 3-wheelers in the 1930's.

The first was the B.S.A which was produced by the motorcycle division of the Birmingham Small Arms Company, B.S.A. Cycles limited. The car was displayed at the 1929 Motorcycle show, ready for the 1930 season. This 3-wheeler was available as a 'two seater' or family model, and had a electric starter, car type controls, all round weather protection and independent front suspension. With a production figure of nearly two thousand a year and a new water cooled 1100 cc engined version in 1933 the B.S.A 'Beeza' became a popular sight on British roads. By its success, the company had proved that the public were ready to buy the right type of vehicle, especially when it was proven to be a good reliable all round vehicle.

In the same year another cycle company, Raleigh also started to produce 3-wheeled vehicles, though this was not their first attempt. In 1904 they had produced the Raleighette, a motorised tricycle powered by a 3.5 hp water-cooled engine and then in 1906 a 6.5 hp twin version. Unfortunately the company was soon making a loss and were nearly broke, when in 1908 Frank Bowden brought up all the shares and ran the company with his own capital, stating they were to produce bicycles only. In 1930 the 'Karryall parcel van' was introduced with a 500 cc motorcycle engine, reverse gear and a differential chain drive axle, enclosed in a 5 cwt van body. A number of van versions were offered until finally in 1934 a Raleigh car was produced; The Raleigh Safety Seven. This 3-wheeler ,powered by a 742 cc vee-twin engine had a full four seater body. The car was designed by T.L.Williams who subsequently brought the manufacturing rights from Raleigh to form the Reliant Motor Company.

For a 3-wheeler the Raleigh Safety Seven was extremely spacious (being wider than some light 4-wheelers), but after only two and a half years of production, and having earned a name in competition the Raleigh was one of many of who were to succumb to the mass production cars. It is said that the Austin 7 did more to abolish the 3-wheeler car than any other vehicle. Raleigh however are still in business today as one of the worlds largest bicycle companies.

As Britain began to recover from the depression the major motor manufacturers were taking up a large percentage of the lower end of the market with the introduction of cars like the Austin 7, Ford 8, Hillman Minx and Morris 8; the public were offered 4-wheeler motoring at cost of only £3 - £5 a year more in taxation than a 3-wheeler. It is evident also at this time that unlike earlier years the public were not choosing vehicles for speed, due to the ever increasing volume of traffic and the poor condition of roads. When the Road Tax fund was introduced in 1910, the government had promised that the revenue raised would go to build new roads whilst upgrading others. However Britain was falling a long way behind Europe and the United States in their road building and maintenance. Performance therefore was no longer a selling point and many manufacturers changed their advertising accordingly, now advertising comfort as apposed to competition results. Interestingly though most light 4-wheelers of this period were only sedate in performance whilst their 3-wheeler rivals were very sporty vehicles.

To try and capture the public 3-wheeler companies offered numerous family, economy and sports models to try and corner each market. This was shown in 1932 as now B.S.A. now offered six versions of its earlier Beeza. Also in 1932,Morgan offered five different models. Every model now had electric lighting (replacing the Acetylene lamps), electric starting, a hood and a suction windscreen wiper. A year later Coventry-Victor also introduced six

models, but the mass production of the 4-wheelers was slowly killing the 3-wheeler and by 1935 at the Motorcycle show at Olympia only five manufacturers exhibited their cars compared to eleven in 1929. The final blow came in 1936 when in his budget Nevill Chamberlain announced that the road fund tax was to be abolished. The effect of this was shown in 1936 when only Morgan and B.S.A exhibited a 3-wheeler. Morgan and B.S.A had however introduced 4-wheeler models before the budget and so only managed to stay in production by producing these. The worst was not over yet though as three years later in September 1939 World War Two broke out, completely crippling the motor industry.

Section 4: 1945 – 2001

The second world war had a devastating effect not only on 3-wheelers but the entire motoring industry world wide. The lack of materials caused many problems for manufacturers. Sheet steel was at first supplied only to companies who had export orders, though a small percentage of this was allowed for home markets. As a result most vehicles of this period had aluminium shells and with the fear of the reintroduction of the 'Treasury rating' road tax, many companies designed and built small bodied vehicles that would use less steel and other materials. Fuel was also still rationed and so the need for mini-cars and bubble-cars was very much so in demand.

One of the first mini-cars was the 3-wheeled Allard Clipper built by Sidney Allard. Although production was limited these 3-wheelers, powered by a 346cc Villiers engine, had a lightweight reinforced plastic body. It was also fitted with the new Siba Dynastart unit, which replaced the flywheel magneto. The Dynastart combined electric starter motor, dynamo and cooling fan all into a single unit and became invaluable to the 3-wheeler mini-car industry. In 1949 Laurie Bond began the production of a Bond mini-car. This was introduced when petrol rationing was very much in force and any other form of transport was both scarce and expensive. The 3-wheeled Bond 'Mk A' was fitted with a 125cc engine, and although very basic in design, lacking virtually all refinements and no suspension the car was fitted with a aluminium body.

A letter in the “Yorkshire Post “1949 read;

> *I have just got to London from Preston with the wife, the dog, and the weekend luggage...200 miles at an average 31.4mph. It cost us 2 gallons of petrol and 7 penny worth of oil ..total four shillings and nine pence*
> *(The Yorkshire Post 1949.)*

This quotation summed up the concept of the Bond mini-car industry and the car itself was to prove a great success. As rationing died away, June 1951 saw a new Bond model, the 'Mk B'. This vehicle had suspension incorporated into it and then in 1954 a four-seater version was available. Bond continued its development producing Bond 'Mk C,D,E,F and G in September 1961 The Mk G was the last line of the mini-cars and was powered by a 250 cc, 4 speed engine. The idea of Bonds being slow in the past was shattered in August 1965 with the introduction of the '875' model. The 875 was fitted with a 875cc Hillman Imp engine which gave enough power to push the needle, with ease, off the 90 mph speedometer. ln 1969 Bond was brought out by the Reliant Motor Company who discontinued all the existing Bond range, in favour of their own sports 3-wheeler marketed under the Bond marque as the Bond Bug

After the second world war many large German companies suffered from the disarmament of their country, and by entering the motor industry provided work for thousands. Two of these companies were Messerschmitt and Heinkel who along with the Italian lsetta, all found a market in Britain. The Messerschmitt introduced it's 3-wheeler 'KR175' in 1953, and was built and designed by lng. Fritz Fend. (Professor Messerschmitt was only concerned indirectly.) The seating was tandem and steering by handlebars, powered by a 175 cc two-stroke engine. The Heinkel was introduced in 1954 and was designed and built by Ernst Heinkel. However after only four years of production the design was sold to Dundalk Engineering in the Irish Republic, and in 1962 it was made in Croyden with the Trojan name. This vehicle had a large

front opening door and was powered by a 175 cc four-stroke engine. The Isetta was made under licence in France, Germany and England with the original being manufactured in Milan, Italy. These 3-wheelers did not sell well until 1954 when B.M.W obtained a licence to build them and fitted their own four-stroke engine. These were manufactured until 1962.

The Suez crisis in 1956 brought another demand for 3-wheelers and light 4-wheelers as the price of petrol soared. One vehicle to fill this demand was the Frisky introduced in 1959. Designed and built by Captain Raymond Flower for the Meadows engine manufacturers, the 3-wheeled car was powered by a 197 cc engine and gave a petrol consumption of 75 mpg. In 1960 a Frisky Family 3 'Mk 2' model was introduced with the choice of a 197cc or a 244cc two-stroke engine. This was upgraded again in 1966 to 325 cc in the Frisky 'Prince', though it was produced in very limited numbers. Like many 3-wheeler manufacturers Frisky also produced a 4-wheeled sports car and family coupe which between them held a number of records. Frisky however stopped production of their vehicles in the 1960's and apart from specialist 3-wheelers, Reliant Motor Company were to remain the only main three-wheeler manufacturers in Great Britain for a number of years.
As mentioned earlier the Reliant Motor Company was formed in 1935 when Mr T.L.Williams brought the manufacturing rights from Raleigh. After moving to Tamworth, Williams started to build the first prototype vehicle in his back garden, which he completed and licensed on 1st January 1935. This vehicle was a 3-wheeled 7 cwt van powered by a 600 cc Jap. Its design was similar to the Raleigh Karryall van, and a year later a 10 cwt version was produced. It was during a visit to the 1937 Commercial vehicle show that Reliant acquired the supply of the Austin 7 engine for their vehicles and continued to use them until 1939 when Reliant copied the Austin 7 engine. In 1963 they were replaced by Reliant's own die-cast alloy 600 cc four-cylinder engine. With the onset of the second world war, Reliant continued to produce vehicles until early 1940 when their attention was then turned to machining parts for the various ministries. At the end of the war Reliant had machined over one and a half million parts for the war effort, and in 1946 started to reproduce vehicles. In 1952 T.L.Williams decided to modify the body of the Reliant van to accommodate four people, and so in 1952 the Regal 'Mk I' was exhibited at Earls Court. The Regal 'Mk 1 ' was a 3-wheeler powered by a 7 hp engine and the introduction of the four seater aluminium body gave Reliant an immediate advantage over Bond. The price of the'Mk I' was £352. With the introduction of the 'Mk 2'in 1955, experiments with glass-fibre were first shown with the hard top, bonnet lid and rear end made from it. The'Mk 3' in 1956 was a complete one piece glass fibre moulding fitted on to an Ash framework. Over the following years Reliant continuously modified and improved the Regal with the'Mk 4'in 1958, 'Mk 5' in 1959 and the'Mk 6' in 1960. With the Regal 3/25 in 1962 a major step forward had been taken with the introduction of a unitary construction body of re-enforced glass fibre. Polyester Resin was moulded in two major units (outer and inner.) and then bonded together and bolted to a steel chassis. A year later Reliant developed their own 600 cc overhead valve unit which was Britain's first flowline production light alloy motor vehicle engine. In 1968 the 750 cc engine was introduced, and Reliant's production was such that the fifty thousandth 3/25 <model was delivered and a year later Reliant took over the Bond motor company. In 1973 a new 3-wheeler was introduced; the 'Robin'. This vehicle showed ccompletely different styling (by Ogle) and was available as a saloon, estate or super saloon. These first 'Robins' were only produced until early 1975 when the 'Robin' received more minor changes and a larger 850 cc engine with a S.U carburettor. In 1981 another new model the 3-wheeled 'Rialto' was produced followed by the'Robin LX' in 1990 and then another Robin in 1999. The 1990's however were a tough time for Reliant which saw the company going into receivership several times and after moving premises in 1999, they stopped producing 3-wheelers in December 2000 after 65 years of producing 3-wheelers

Although Reliant has ceased production the 1990's, especially in the UK, saw a mini boom of 3-wheelers for leisure purposes based as "kit cars". The vehicles produced by Reliant were always four seater family 3-wheelers stemming back from the needs of the early 1950's motorist. Today companys such as Grinnall, BRA and Triking (to name just a few) have all emerged that create two seater 3-wheelers strongly based on the original Morgans. These are also joined in the United States by companies like Corbin Motors who produce electric 3-wheelers for commuters.   It seems therefore that even some 230 years later since Cugnot's steam vehicle, the 3-wheeler isn't dead, its just biding its time until society suddenly realises that it needs them again

Thanks and Bibliography.

My original essay thanked the following people who also provided information for the essay. In the end I used only a fraction of the information in the essay, hence the web site at www.3-wheelers.com.

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Annice Collett (National Motor Museum, Bealieu).

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Sadly, I wrote this essay before my university days when I discovered how you are supposed to write a bibliography so I apologise for the vagueness of it.

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