Autocycle ABC

Autocycle ABC was originally published in monthly instalments on the NACC website during 1998 and 1999. The 21 articles have been gathered together here and updated to produce a booklet that gives an introduction to the history of the British autocycle.

East Anglian Cyclemotor Club

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1: Introduction

The best way to start will be to define what an autocycle is...

What is an autocycle?

In the pioneering days of motor cycling the term 'autocycle' meant any powered two-wheeler and was, therefore, synonymous with motor cycle. This early usage is perpetuated today in the name of the Auto Cycle Union, which is the governing body of motor cycle sport in the UK.

Between the two World Wars a utilitarian style of motorcycle with pedals and a small engine, of between 75cc and 100cc capacity, was developed and this the type of machine these articles will consider. The term autocycle has also been applied to other types of machine at various times. Bicycles powered by auxiliary engines became popular After World War II; these were initially classified as autocycles until the term 'cyclemotor' was applied to them. Later, purpose built under-50cc machines were described as 'light autocycles' until the word 'moped' was imported from Germany in the mid 1950s. Neither of these types is now thought of as being an autocycle. Finally, the VéloSoleX must be mentioned: this machine is to all intents and purposes a cyclemotor but it has frequently been classified as an autocycle because it was only sold as a complete machine; the engine could not be 'clipped-on' to any bicycle. Perhaps, in reality, it should be in a class by itself.

To summarise, what this booklet is about is the 'British-style' autocycle that began with the Cyc-Auto in 1934 and died out with the New Hudson in 1958; typified by the many marques that used the Villiers Junior, Junior De Luxe and 2F engines as their power plant.

A Brief History

The story of the autocycle begins with the Budget of 1931 when a reduced annual tax rate of 15/- [75p] was introduced for motor cycles with engine capacities under 150cc. Machines of the autocycle type were already popular on the European Continent and the aim of this concession was to stimulate the British industry to produce something similar. At first, manufacturers only took advantage of this new taxation class by producing small capacity motor cycles, or 'pip-squeaks' as they became nicknamed. When autocycles did appear it was, probably, inevitable that the nickname 'Wilfred' would be given to them, derived from the title of the popular *Daily Mirror* cartoon strip 'Pip, Squeak and Wilfred'. This nickname was often seen within the pages of *Motorcycling* but whether its use extended far beyond that magzine's readership is somewhat doubtful.

Wilfred's ears: the badge of the Wilfredian League of Gugnuncs.

The first real autocycle didn't came onto the scene until 1934, this was the Cyc-Auto.

The Cyc-Auto was a somewhat peculiar design and never achieved great popularity; it remained the sole example of an autocycle on the British market until Excelsior and Raynal both introduced their Villiers Junior powered autocycles in 1937.

The next step forward from the Cyc-Auto came in 1936. This was a one-off prototype designed by George H Jones in conjunction with the Villiers Engine Company. In many ways, it was similar to the Cyc-Auto: the frame was similarly proportioned and it used concentric shafts for the pedals and power drive. The design was taken up by Raynal but modified to make the machine cheaper to produce. The re-design altered the proportions of the machine, apparently much to Mr Jones's annoyance, to what was

to become a *de facto* standard for Villiers Junior equipped machines. It has been said that the Villiers Junior was designed specifically for the Raynal but Villiers, apprehensive that the Raynal would not achieve a high volume of sales, 'leaked' the design details to Excelsior to ensure a larger market for their new engine.

Following the introduction of these two machines, production of autocycles blossomed with James, Rudge, Coventry-Eagle, Francis–Barnett, Norman, Three Spires, Dayton, Sun and New Hudson all producing similar, Junior-powered autocycles.

Production of these marques continued to 1940, when most factories turned to doing war work, to be resumed after the war. However, a few manufacturers continued in production. The autocycle was one of the few types of motor cycle that continued in production during World War II. This is because autocycles were found to be extremely useful during the war, providing transport for those engaged in essential services: district nurses, ARP wardens, armament workers, etc.

The main impact of the autocycle was that it brought motorised transport to people who could not afford to run a car and who would never have considered riding a 'proper' motor cycle. Women in particular enjoyed the freedom of having their own transport which the autocycle gave them and which would not have been available to them otherwise.

2: Aberdale

The Aberdale Cycle Co. Ltd., Bridport Road, Edmonton, London N18 announced its autocycle in *Motorcycling* in March 1947.

The Aberdale was a typical autocycle of the period, being powered by a Villiers Junior de Luxe engine. This 98cc, single-speed engine was hung from a simple tubular frame with dropped top tube and no rear suspension. At the front was a basic blade girder fork. Both wheels had small drum brakes and heavy-duty 26×1¾ bicycle rims and tyres.

The petrol tank held about 1½ gallons of fuel (16:1 petrol/oil mixture) and fitted into the space formed by the top, down and seat tubes. Below the tank, detachable side panels covered the engine while, behind these, there were guards for both the pedalling and power chains. A toolbox was provided, together with a tubular steel carrier over the rear mudguard. The pedalling gear revolved in the bottom bracket to the rear of the engine.

Equipment included lights, a bulb horn and, optionally, a speedometer driven from the front wheel. The controls were simple, with a throttle lever on the right, clutch on the left and inverted levers on each side for the brakes. There was also a catch to hold the clutch out and a decompresser.

All told, it was a smart example of the type and able to cruise at around 30mph, while fuel consumption could be almost 150mpg, which gave a good range for working journeys. The finish, in maroon with gold lining, gave the machine a smart appearance. It continued in production until 1948 with probably fewer than 2,000 machines being built.

Back in the 1930s, Aberdale had absorbed the Bown company and, consequently, William A R Bown had a seat on the Aberdale board. 'W.A.R' was commissioned to design a replacement model for 1949; this would incorporate Villiers's new 2F engine. The new model was exhibited at the 1948 Cycle & Motor Cycle Show, when the *Motor Cycle* magazine declared it to be 'one of the smartest autocycles at Earls Court'.

The new frame was an exceptionally well engineered cradle type with duplex down tubes, but otherwise the machine was cast in the normal autocycle mould. The petroil tank was fitted between the upper and lower down tubes, there was extensive panelling beneath the tank to shield the engine. As before, a

pressed-steel blade girder front fork was provided for the rigid frame, and there was a saddle, rear carrier and rear stand. The lighting was powered directly from the engine's flywheel magneto.

Although the 2F-engined model at the show carried the Aberdale name, this machine was sold under the name of Aberdale's subsidiary Bown company and is examined more fully in chapter 4.

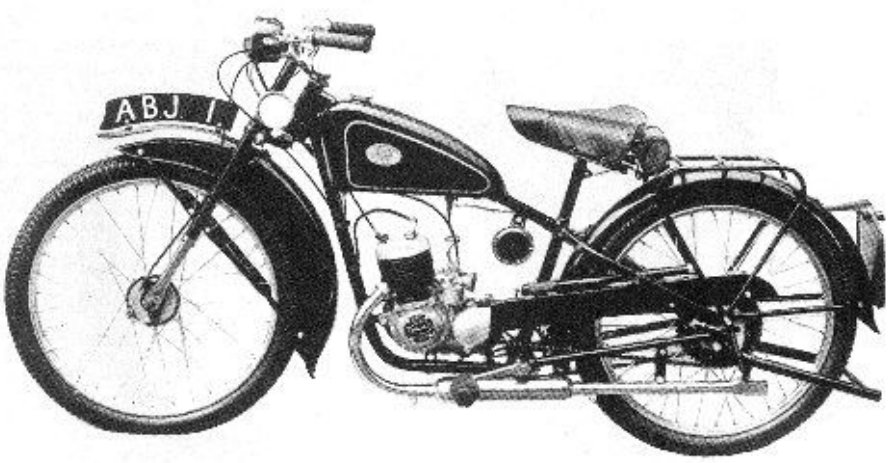
3: ABJ

The initials ABJ were those of A B Jackson, one of the three directors of the Raynal company that produced the Raynal Auto. Raynal ceased production in 1950 but, in July 1949, two new machines were announced by A B Jackson (Cycles), based at 300 Icknield Port Road, Birmingham B16.

Like many other makes, the ABJ based its machines around Villiers engines. These two machines were 98cc models; they were very similar in appearance, the first being an autocycle powered by a 2F engine, and the second, a motor cycle with a 1F engine. Both had the styling of a motor cycle rather than an autocycle, making the ABJ autocycle unlike any of its contemporaries. The saddle tank, telescopic front forks and simple, rigid loop frame all contributed to this appearance.

The telescopic forks, unique in an autocycle, had two springs in each leg: one controlling the depression and the other limiting rebound; an arrangement of cones and split bushes acted as progressive frictional dampers. They were packed with grease and had seals to retain the lubricant. The front mudguard was attached to the upper tubes of the fork and was deeply valanced to allow for the movement of the front wheel.

Although the rear mudguard was a simple blade, it was hinged to allow easy wheel removal. The stays of a luggage rack supported this mudguard, and a rear stand was provided. The wheels were shod with 2.25×21 tyres, as was usual for 2F-engined autocycles. Fuel was carried in a 1½ gallon rubber-mounted saddle-tank. The lights were powered by the flywheel magneto but unlike the motor cycle, the autocycle did not have a rectifier and battery; nevertheless, it was equipped with an electric horn—another unusual feature for an autocycle.



The autocycle's controls were all mounted on the handlebars, both brakes being operated by hand levers rather than using a 'back-pedal' mechanism for the rear brake. The clutch lever could be locked in the disengaged positions and the throttle was controlled by a twist grip. The finished was black with gold lining—although other colours were advertised as options. Both autocycle and motor cycle continued in production until 1952. In July of that year they were joined by another machine, a motorised bicycle named the Auto Minor. This was a *vélomoteur* in the style of the VéloSoleX—ie: it was sold as a complete machine rather than as a 'clip-on' engine unit.

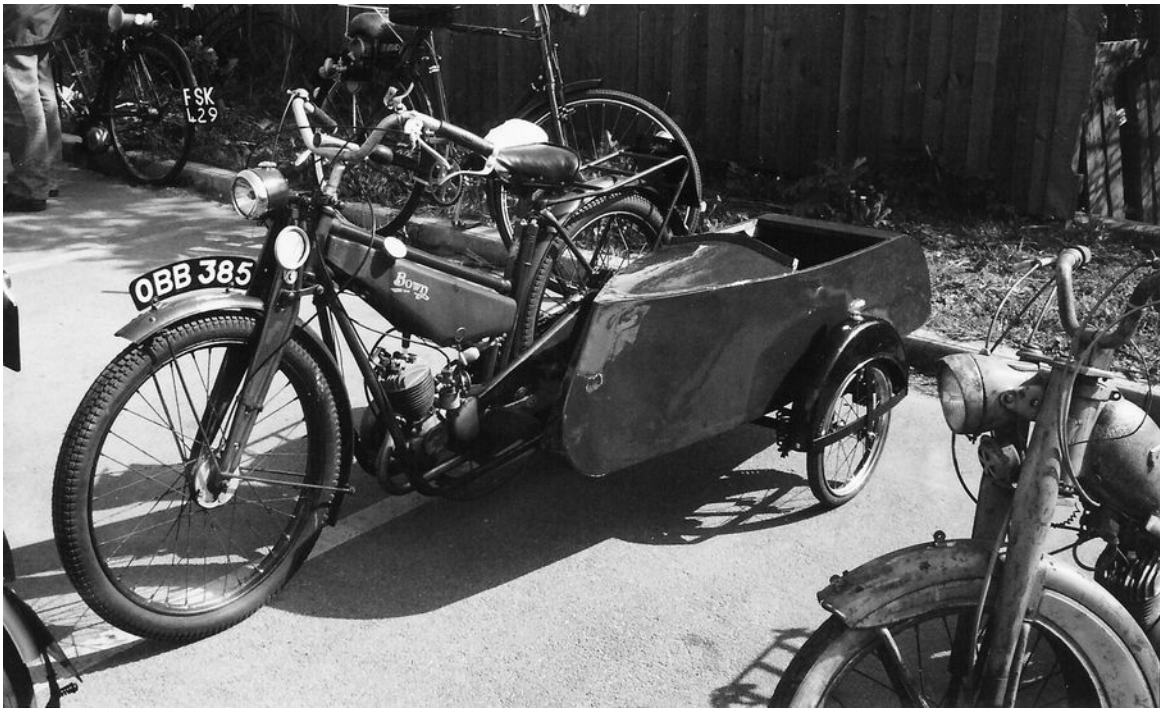
Although it was announced that the two bigger machines and the cyclemotor would all be produced for 1953, the range had been reduced to the Auto Minor alone before that year began.

4: Bown

Bown was a cycle and motor cycle manufacturer that became part of the Aberdale Cycle Company in the early 1930s. William A R Bown had a seat on Aberdale's board and was commissioned to produce a replacement for the Aberdale autocycle (the subject of chapter 2 of this book). The replacement was needed because of the introduction of the Villiers 2F engine and all makers of Villiers-powered autocycles were redesigning their Junior de Luxe engined machines to use the 2F.

Aberdale was provided with a factory at Llwynypia in 1949 under the Labour Government's Advanced Factories Scheme. This factory produced both autocycles and motor cycles, which were originally launched under the Aberdale name at the 1948 Earls Court Show with production scheduled to begin in March 1949. February 1950 saw the autocycle's appearance on the market as a Bown product.

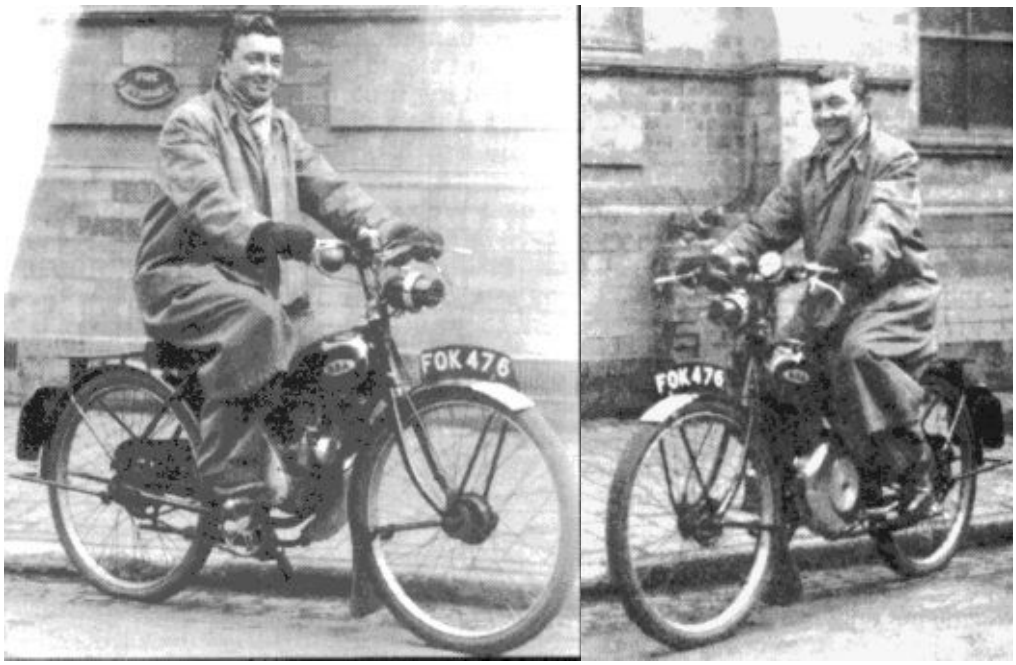
The new frame was unusually well engineered for an autocycle, being a cradle type with duplex down tubes. Otherwise, the Bown had all the usual features of the 2F 'family' of autocycles: 4-inch [102mm] hub brakes front & rear, Villiers lighting set, lever operated throttle, strong rear carrier, rear stand and pressed steel girder forks. Some more individual features were inverted brake levers, a box silencer mounted between the frame rails under the bottom bracket and a spring loaded jockey wheel to tension the pedalling chain. The colour was maroon with gold lining and its price (in March 1950) was £58 15s 8d [£58.78], which included £12 10s [£12.50] Purchase Tax. Production ceased when the factory closed in 1954 with about 2,000 autocycles having been produced.



A Bown autocycle fitted with a Watsonian sidecar

5: BSA

BSA did not have any production autocycles in its range. It did, however, get as far as producing a prototype. This machine is depicted in these two photographs.



As can be seen, BSA's autocycle did not follow the standard practice of most other manufacturers. It does, however, bear a striking resemblance to the Levis-engined HEC Power Cycle: too much of a resemblance to be accidental. But the BSA is not simply a re-badged HEC. There are enough differences to show that BSA built this machine itself, but following the major design points of the HEC. The Levis and HEC engines are very similar: the layout is the same, the primary drive cases are the same shape and in the same position, the same style of flywheel magneto is used and both engines have the distinctive curved exhaust expansion chamber sweeping around the flywheel. Again, comparison of these expansion chambers shows that, although they look the same, they are different castings.

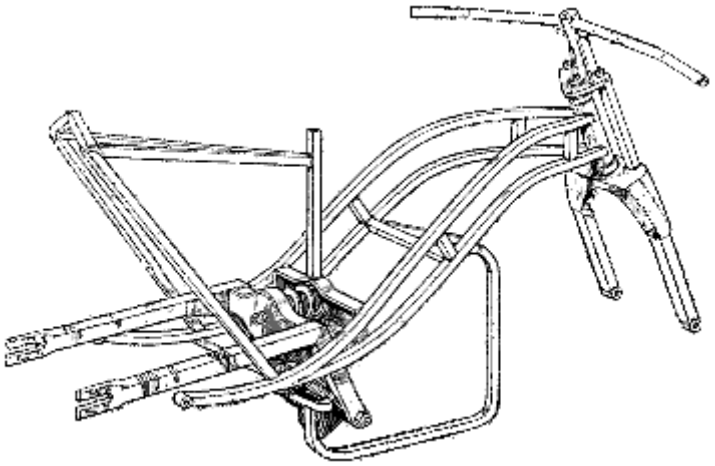
The frame is proportioned much more like a pedal cycle that the conventional Villiers-powered autocycle. The wheel-base is shorter and the bottom bracket is in the correct position for pedalling. The curved down-tube can be seen in the pictures. The curvature creates extra space to accommodate the engine but it is also a feature found on some BSA pedal cycles and may have allowed the use of some common components. The petrol tank is like a motor cycle one and is obviously designed to conform to the BSA 'house-style'.

What became of this machine? The mask on the headlamp and white patches on the mudguards show that these are war-time photographs. In fact, they were taken outside the BSA works in Armoury Road in 1940. Essential war work took up all of BSA's efforts in the following years and the autocycle project was shelved. The prototypes have not survived. They were probably used by war workers at BSA's works until something went wrong when, being prototypes, the lack of spares would mean they were consigned to the scrap heap.

BSA did produce another autocycle, but not under its own name. New Hudson was part of BSA's cycle division and the New Hudson autocycle was the most popular example of the genre.

6: Commander

The most distinctive of the Villiers 2F powered autocycles, the sole example of the Commander I was built by the General Steel Group (part of EMI) at Springfield Road, Hayes (Commander II and Commander III were, respectively, 98cc and 122cc motor cycles based on the same frame design). The 'works' of Commander I were fairly conventional: a Villiers 2F engine, 4-inch [102mm] drum brakes front & rear, Dunlop 2.25×21 tyres. However, the frame was fabricated from square-section tubing and was totally enclosed in steel pressings.



The leading link front suspension used rubber bands as the suspension medium and the rear suspension —a unique feature on a British autocycle—used a single coil spring giving 4½ inches [114mm] total travel. The colour scheme was ivory and light blue, with a blue saddle to match the bodywork. There were copious amounts of chromium plate, including the large cage that enclosed the engine, and not only the wheel rims but the hubs and back plates too. The handlebar levers were the inverted type and controlled the clutch and front brake. The rear brake was applied by back-pedalling. A knob on the right side of the body controlled the fuel tap and another knob on the left could be pulled to close the choke or twisted to 'tickle' the carburettor. The direct lighting set was styled to match the bodywork and was controlled by a handlebar switch. A tool kit and tyre pump were housed in a compartment below the saddle. Despite the enclosure, access to the engine was simple, a sixpence being the only tool required.

The entire Commander range was on show at the Earls Court show in 1952. After the Earls Court Show, the Commanders were put on display at the Edgeware Road Showrooms of Marble Arch Motor Supplies. In December 1952 Marble Arch advertised the Commander range; their cash price for an autocycle was £74 19s 6d.

The final reference to the Commander range in the motor cycling weeklies was on 16th April 1953. *The Motor Cycle* 'Lightweight Buyers' Guide' did not, however, list the autocycle—a larger Commander 4 had taken its place. Because of a reduction in Purchase Tax on motor cycles in the 1953 Budget, *The Motor Cycle* had to list revised prices in the following week's edition. The entire Commander range had been quietly dropped from this list.

A new British Leader:

the Commander

3 revolutionary machines powered by Villiers

Modern low-cost motoring in armchair comfort

8 reasons for Commander superiority:

construction progress, design distinction built into all models

1. Square-tube patented Beam Frames: for strength and stability
2. Motorcar front and rear suspensions: complete riding comfort on foam rubber saddles
3. Patented bonnets, easily removable: protect engine, rider, passenger
4. Powerful brakes: encased cable controls
5. Ultra-modern safety lighting: increased front-rear visibility
6. Low centre of gravity ensures stability at all speeds
7. Easy to clean cowlings: streamlined for unique riding protection
8. Car-body beauty: two colour metallic finish

Commander I

Auto-cycle—*Economy:* pedal start. Villiers Mk. 2F engine. Brake h.p. 2.05 at 3,750 r.p.m. 160 miles per gallon! 40 m.p.h. **£74.19.6**

Commander II

Ultra lightweight motor cycle—*Versatility:* two-speed gear box. Villiers Mk. 1F engine. Brake h.p. 2.08 at 4,000 r.p.m. 160 miles per gallon! 45 m.p.h. **£84.19.6**

Commander III

Lightweight motor cycle—*Power:* three-speed gearbox. Villiers 10D engine. Brake h.p. 4.8 at 4,000 r.p.m. 120 miles per gallon! 55 m.p.h. **£95.16.8**

All prices include Purchase Tax

Stand 108A

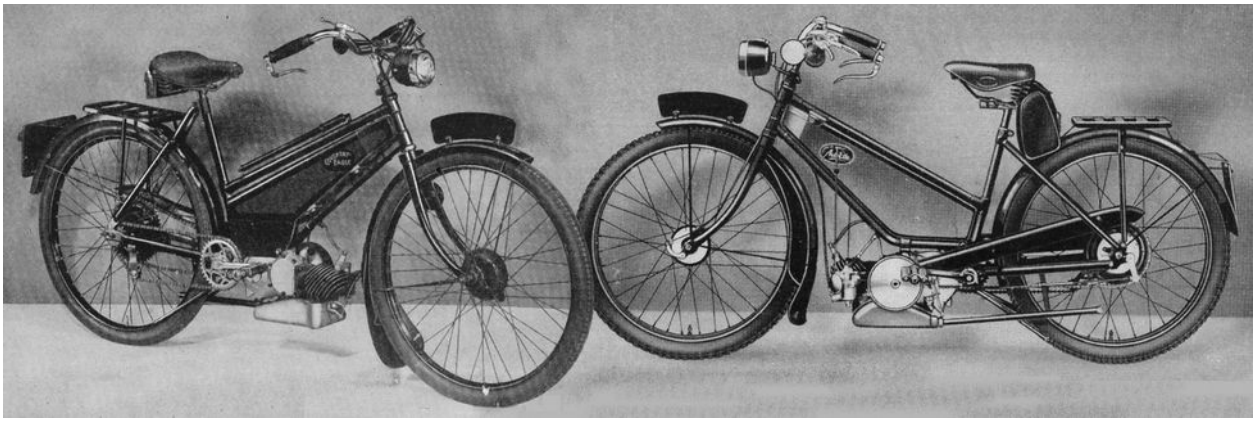
CYCLE & MOTOR CYCLE SHOW EARLS COURT

Made and marketed under International Patent-Design Protection

by the ***General Steel Group*** *of* ***Hayes*** *Middlesex*

7: Coventry-Eagle

The name Coventry-Eagle has appeared on pedal cycles from Victorian times right up to the present day. As the name implies, the company was formed in Coventry. During the 1920s, Coventry-Eagle began manufacturing a range of motor cycles; from big V-twins to little lightweights with pressed steel frames. The first Coventry-Eagle autocycle was produced towards the end of 1938 and was designated the model name *Q12 Auto-Ette*. (Coventry-Eagle model numbers have a prefix to indicate their year of manufacture; Q for the 1939 season, R for 1940, and so on.) The Auto-Ette followed the standard layout for a Villiers Junior powered machine. The fuel tank was a large one, filling the frame; most of its contemporaries had small tanks and did not adopt this feature until later. It was not sprung and did not have engine covers. The model continued in production for 1940 (renumbered, of course, to R12); the engine fitted was the improved Junior de Luxe.



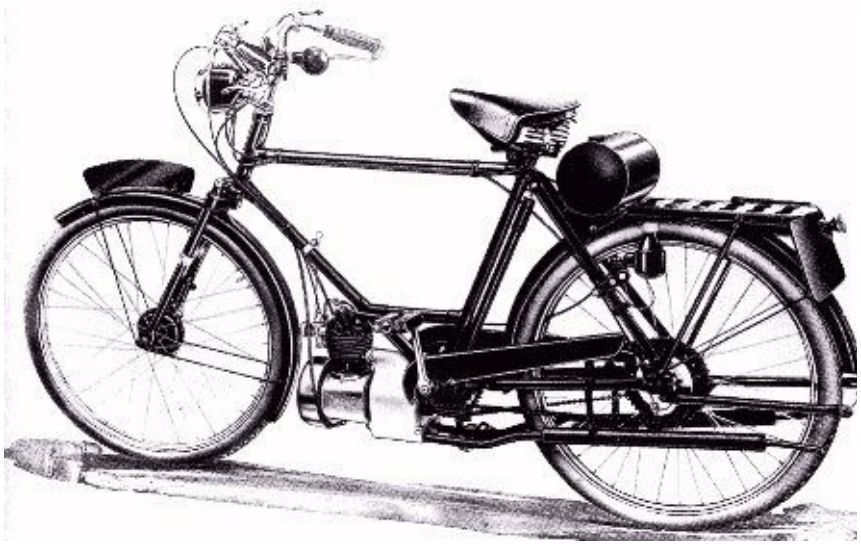
A Coventry-Eagle Q12 Auto-Ette (left) and R12 (right)

In March 1940 it was joined by second model: the R14 Fly-Ette. This had engine covers that curved outwards at the front, protecting the rider's feet from any spray thrown up by the front wheel. The R14 was also unsprung. Production of these autocycles (along with the rest of the motor cycle range) was halted by World War II and, although pedal cycle production continued, no Coventry-Eagle motor cycles were produced after the war.

1940 Coventry-Eagle

8: Cyc-Auto

The Cyc-Auto has an important place in British motor cycle history because it was the original autocycle. The road taxation system in Britain after the Great War did not encourage the production of really lightweight machines like those produced on the Continent. It was only after Philip Snowden's Budget of 1931, which introduced a tax concession for machines under 100cc, that it became worthwhile to produce a motorised bicycle. Mr Wallington Butt's Cyc-Auto was the first on the scene.



1939 Gent's de Luxe model Cyc-Auto
with Webb 'telescopic' fork and Lucas dynamo lighting

Announced in March 1934, the Cyc-Auto was the machine that started the autocycle boom. It was, however, quite different to all the subsequent makes of machines that appeared on the market. The crankshaft of the 50mm×50mm, 98cc, two-stroke engine ran fore & aft and drove the final drive chain by way of a worm & wheel in the bottom bracket. Cyc-Auto Limited built the machine in Abbey Road, Park Royal, London NW10. The company later moved to Bashley Road, Park Royal and then to 107 Westbourne Grove, W2. Despite being so different to other manufacturers' machines, it was nevertheless the starting point of autocycle development and many of its features were taken up by the Jones prototype autocycle, which, in its turn, led to the standard pattern of autocycle that followed.

The first model, Model A, had a frame that, apart from the oversize bottom bracket, was virtually a standard bicycle frame. The saddle was at normal bicycle height and it had a normal bicycle chain-wheel: features that indicate that it was designed as a bicycle with motor assistance rather than a motor cycle with pedal assistance. The engine of the earliest models was built by the Cyc-Auto company and had a cast aluminium 'beehive' silencer behind the engine. The crank-case was enlarged at the front to enclose a flywheel. There was no clutch or lighting and the fuel was carried in a small cylindrical tank mounted behind the saddle on the front of the carrier. Ignition was supplied by a Wico magneto mounted ahead of the engine and it had an ETC carburettor. A dog-clutch allowed the engine to be disconnected. In 1935 a second model, Model B, joined the range. This was a lady's model with an open frame. These models were replaced by models C and D in 1936. The main change was the alteration of the frame geometry to lower the saddle. The new frames were two inches [50mm] lower than their predecessors. On the gent's Model C this meant that the top tube joined onto the headstock about half way down and on both models the new design permitted a riding position more suitable for a powered machine. There were other changes, including oil lubrication of the worm & wheel instead of grease and a Burgess silencer and tailpipe added to the exhaust system. At the same time there were also four sidecar versions offered. The S1 had just the sidecar chassis, the S2 had a commercial box carrier, S3 was a child's touring sidecar and S4 was a child's sidecar of 'air-flow' design. All the sidecar models used a modified form of the Model D lady's frame and Cyc-Auto's own sidecar chassis. This was a banking sidecar that could be quickly detached without tools by removing the hinge pin. The sidecar wheel could pivot with a castor action to

reduce tyre wear and to make cornering easier. An adjustable damper was provided to prevent the wheel from wobbling on poor road surfaces. The S models had special attachment points for the sidecar and Cyc-Auto's literature warned that Models C and D were unsuitable for sidecars. Cyc-Auto also warned that "The fitting of any sidecar other than those supplied by Cyc-Auto Ltd. invalidates our guarantee".

A new engine was introduced for 1937 and the models using it were designated CV and DV. The magneto was changed for a flywheel type so the design of the crank-case was also changed because it no longer had to contain a separate flywheel. The reason for the change was that the engines were now being made by Villiers (hence the V in the model names) who fitted their own magneto rather than the Wico unit. Despite the change in manufacturer, the external appearance of the rest of the engine was unchanged and the exhaust arrangement remained the same. The same models continued into 1938, but in that year the Cyc-Auto company sold out to Scott Motors, Saltaire Ltd. The Cyc-Auto Works Company's office moved to 381 Uxbridge Road, London W3. Scott produced its own engine for the Cyc-Auto but for a while continued to produce Villiers-powered machines as cheaper models than the Scott-powered ones. Although the Scott engine followed the same general layout it was quite different in its detail design. It still had an aluminium expansion chamber for the exhaust but this now led into two tail pipes. The Scott take-over saw some long overdue additions to the machine: a clutch and a rear stand. They also introduced the option of a hub brake on the front wheel, all previous models having had a stirrup brake.

For 1939 there was a range of five models: a gent's and a lady's, both available in Standard and de Luxe versions, and a tradesman's carrier model. All models were powered by the Scott 98cc engine. The fuel was carried in a 5 pint [2.8 litre] cylindrical tank that was mounted behind the saddle. The standard models still had a rigid front fork and stirrup brake on the front wheel but the de Luxe specification included a spring fork and front hub brake.

The outbreak of World War II ended further development 'for the duration'. For 1948 there was only one model, which was basically the same as the pre-war lady's de Luxe except that the post war engine had its twin exhausts emerging from the front of the cylinder. This model continued in production until 1958.

1956 Cyc-Auto

9: Dayton

The Dayton Cycle Co Ltd at Dayton Works, Park Royal Road, North Acton, London NW10 originated at 221–222 Shoreditch, London E1 as Chas. Day & Co and was a well-established manufacturer of high quality bicycles. Although primarily a pedal cycle manufacturer, Dayton made occasional forays into the motor cycle arena. The first of these was the *Dayton Motorised Bicycle*, a 162cc machine produced in 1913 and, as its name suggests, little more than a stengthened bicycle frame with an engine attached.

The name 'Dayton Motorised Bicycle' was resurrected when Dayton produced its autocycle, just before the Second World War. This machine was very similar in appearance to most other pre-war autocycles, having inverted brake levers, rear stand and the smaller style of fuel tank. It was also fitted with a rear carrier and a curved toolbox mounted low down between the left-hand chain and seat stays. Both brakes on the Dayton were cable operated and the machine retailed at 17 gns [£17.85] in 1939, a guinea cheaper that most other autocycles. The autocycle was only produced for the 1939 season; Dayton did not produce any autocycles after the war although they continued as producers of pedal cycles.

Dayton's final excursion into motorised machines was a scooter, the Dayton Albatross, produced from 1954 to 1961.

Very few Daytons were made; it is probably the rarest of all autocycles (excluding those that never made it past the prototype stage). At the time of writing, the EACC has only heard of one surviving example of the Dayton autocycle.

1939 Dayton autocycle

Note:

There was also a 'Dayton' produced in the USA. This was a strengthened bicycle with a modified Smith Motor Wheel as its front wheel. It was built by the Davis Sewing Machine Company of Dayton, Ohio and was not connected in any way with the British Dayton.

10: Excelsior

The shades of night were falling fast,
As thro' an Alpine village passed
A youth who bore 'mid snow and ice
A banner with the strange device,
'Excelsior!'

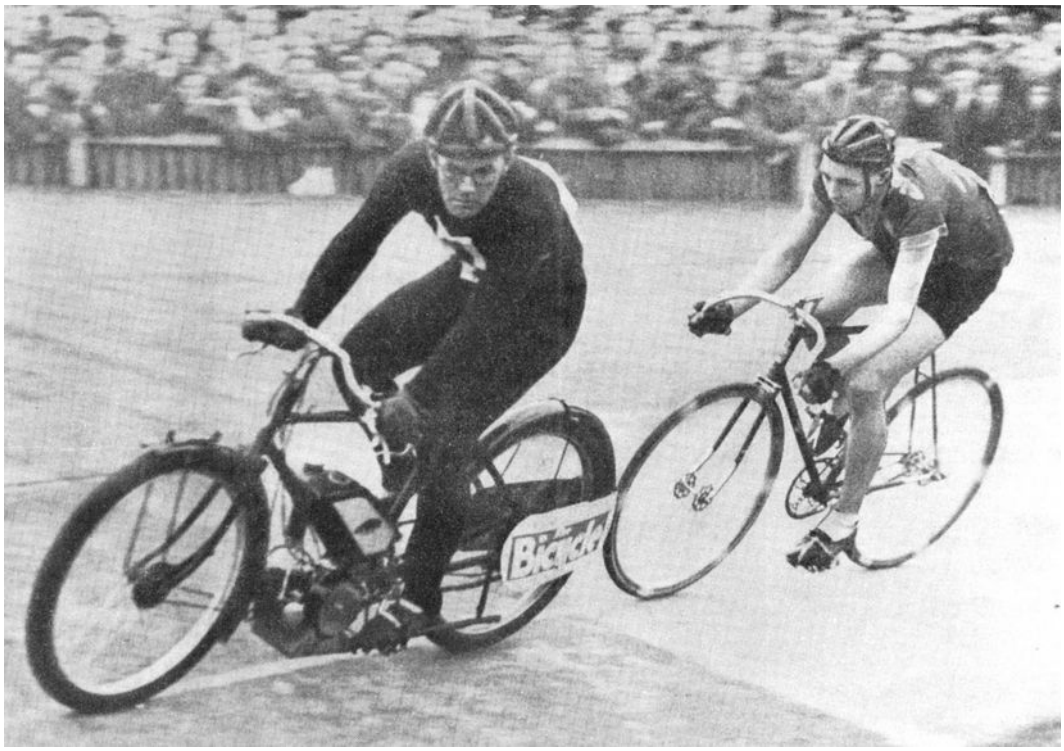
Longfellow's poem provided the inspiration for the trademark of Bayliss, Thomas & Co., which depicted the youth and his banner. Bayliss, Thomas & Co. were established in 1874 and were well-known makers of bicycles and tricycles at the Excelsior Works in Lower Ford Street, Coventry. Excelsior was only one of several trademarks used by the company but, by the time the Autobyk was launched, the name of the company had become 'The Excelsior Motor Co. Ltd. (Proprietors of Bayliss, Thomas & Co.)' and the factory was at Kings Road, Tyseley, Birmingham 11. The Bayliss, Thomas name was still used for some exports since there were other companies in Germany and the USA which had rights to the Excelsior name; conversely, The Excelsior company in the USA had to put the name 'American-X' on its motor cycles exported to Britain. Launched in 1937, the Excelsior Autobyk was one of the first two Villiers Junior powered autocycles, The other being the Raynal Auto. The story is that Villiers were worried about Raynal's selling potential so, much to Raynal's annoyance, they 'leaked' the design to Excelsior to ensure sufficient sales.

1938 Excelsior Autobyk

Early Excelsior Autobyks were unsprung, with a short fuel tank that incorporated a separate oil tank. No engine covers were fitted but there was a round tool box between the seat tube and seat stays. Inverted handlebar levers controlled both brakes. A back-pedalling mechanism for the rear brake was introduced later. The price of an Autobyk in 1939 was 18 gns [£18.90]. In 1940, a second model of Autobyk—the de Luxe—was introduced. This had a larger fuel tank, engine covers, and a telescopic fork.

A few examples of the Autobyk were made with a gent's frame style. This was at the behest of the weekly cycling newspaper *The Bicycle*. Nicknamed 'Midges' by *The Bicycle*, these were used as pacing machines for track cycle racing. Lightweight 'Derny' pacing machines were used in France and *The Bicycle* was keen

to introduce similar events to Britain. 'Midge' paced races proved popular but were brought to a halt by the outbreak of World War II.



Excelsior 'Midge' at Herne Hill in 1939

1940 Excelsior
Autobyk

After the war, production of the Autobyk continued, now including engine covers and a pressed-steel spring fork as standard. The Autobyk was finished in black with cream panels on the tank sides and the engine covers. The price in March 1946 was £35 15s plus £9 13s 1d Purchase Tax [£35.75 + £9.65] but, because of the difficulties in obtaining raw materials in the immediate post-war period, this price could not be held and was increased to £39 10s (P.T. £10 13s 4d extra) [£39.50 + £10.67] on 17th June.

When the 1947 models were announced in August 1946, the Villiers-powered Autobyk had been given the model number 47/V1 and a new model had been added to the range: the Super-Autobyk, at first given the model number 47/S2 but re-designated 47/G2 in November. This did not use the Villiers power unit but had Excelsior's own 98cc 'Goblin' engine incorporating a two-speed gearbox. Excelsior's engine was equipped with an Amal 359/001B carburettor and Miller FWX flywheel magneto that also powered a 9W direct lighting set. The recommended petrol to oil ratio was 20:1 and the tank would hold 11 pints of fuel. The price of the Super-Autobyk was set at £48 10s (P.T. £13 1s 11d extra) [£48.50 + £13.10]. A useful feature incorporated into the Autobyk at this time was that the carrier, rear numberplate and part of the rear mudguard could be easily removed in one piece to give access to the rear wheel. A new spring fork was introduced with the 1947 models; this had fork blades each made of a single Reynolds 531 tube and used four rubber bands to provide the springing. Again, raw materials prices were reflected in the price of the autocycles when, in March 1947, they were increased to £45 for the 47/V1 and £55 for the 47/G2 (P.T. was extra on both these). The Super-Autobyk was the only British production autocycle to feature a 2-speed gearbox.

98 c.c. SUPER (2-speed) AUTOBYK
Model G.2

At the end of May 1947 yet another autocycle was added to the range. The Model 47/S1 Autobyk de Luxe was powered by Excelsior's 'Spryt' engine, which was the same as the Goblin except that it did not have a gearbox. The new model retailed at £47 10s plus £12 16s 6d P.T. [£47.50 + £12.83].

Prices of the Excelsior powered models remained stable until 1951 although the Villiers powered machine was increased in price to be the same as the 48/S1 during 1948. In 1949 Villiers replaced the Junior de Luxe engine with the 2F. Other manufacturers redesigned their autocycles to incorporate the new engine; Excelsior dropped the Villiers model from their range and carried on with their own engines only.

For the 1950 models, the flywheel magneto was changed to the Wipac 'Genimag'. This provided 21W lighting power and enabled the fitting of an 18/18W dipping headlight: the Autobyk was the only British autocycle so equipped. Until early 1953, the light switch was remotely operated by Bowden cable from a lever; late 1953 and subsequent models had the more conventional arrangement of a main switch on the headlamp shell and a handlebar mounted dip switch. When the 1952 range of Excelsiors was announced in September 1951 it was stated that the S1 de Luxe Autobyk would remain in black & cream but all other models would be maroon & cream, the implication being that 1952 G2s were painted maroon. However, a March 1952 review of autocycles lists both Autobyks as being finished in black. The evidence of surviving machines shows that practically every one was black. However, there is at least one existing machine in beige—a colour that was used on other motor cycles in Excelsior's range.

98 c.c. DE-LUXE AUTOBYK
Model S.1

As the 1950s progressed, the autocycle market dwindled in favour of the new under 50cc mopeds. The two Excelsior models were dropped from the range in 1956.

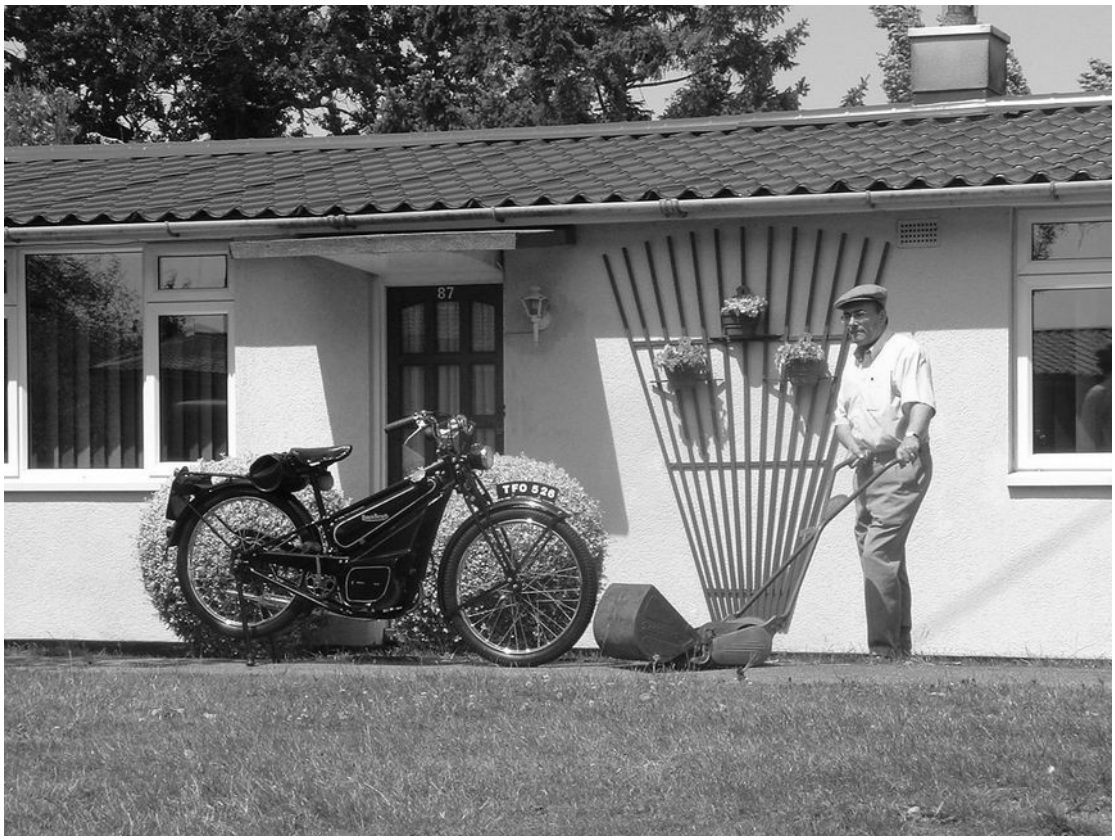
11: Francis–Barnett

Francis and Barnett Ltd of Lower Ford Street, Coventry was formed in 1919 by Gordon Francis and Arthur Barnett. They were motor cycle manufacturers who, for the 1939 season, produced an autocycle called the 'J50 Powerbike'. The Francis–Barnett Powerbike followed the usual pattern, the first model having the Villiers Junior engine. Just after the K50 was announced for the 1940 season, the engine was changed to the new Junior de Luxe. The earliest models were unsprung but during 1939 a rubber-cushioned fork that pivoted at the crown was introduced. Another feature of the Powerbike was a rear hub brake actuated by back pedalling. This had a trip action that allowed it to be disconnected when wheeling the machine but automatically re-engaged it when the machine was ridden. The round toolbox in the rear bend of the carrier was introduced during 1939, earlier models having a flat toolbox on top of the front portion of the carrier. At the same time, the design of the engine covers was simplified, earlier ones having a curved depression to provide clearance for the pedal cranks. The J50 Powerbike was priced at 18gns [£18.90] in 1939. Francis–Barnett used their own expansion box and tail-pipe rather than the standard Junior de Luxe ones.

Powerbike J50

1939 Francis–Barnett Powerbike 50

When the war ended the Powerbike was quickly re-introduced but it now had a girder fork that used rubber bands to provide the springing. In June 1947 Francis Barnett was amalgamated with AMC. Price of the 1948 Powerbike was £55 17s 7d [£55.88]. The Powerbike 56 replaced the Powerbike 50 in June 1949, a Villiers 2F powered model. The frame, fuel tank and engine covers were all redesigned to suit the new engine, and the smaller and wider 2.25×21 wheels and tyres were fitted but the Powerbike 56 still retained the form of the traditional autocycle. The unusual 'rubber band' front suspension was also retained.



Francis–Barnett Powerbike 56

Frame numbers

The frame number is on the left-hand side of the steering head of pre-war models. On later models it is immediately below the saddle. A letter H after the frame number on the post-war Model 50 indicates that is has Harwil hubs; otherwise British Hub hubs are fitted. A two-letter prefix to the frame number indicates the model and year of manufacture. The first letter shows the 'model year' (traditionally, motor cycle makers introduced their new models around October or November of the preceding year, or even earlier); the letters are:

J	1938/9
K	1939/40
L	1946
M	1946/7
N	1947/8
O	1948/9
P	1949/50
R	1950/51
S	1951/2

The second letters used on autocycles were:

G	pre-war Powerbike
H	post-war Powerbike 50
N	Powerbike 56

12: HEC

There were two UK companies using the name 'HEC' for motor cycles. The HEC we are considering was the *Hepburn Engineering Company*, which set up HEC Power Cycles Ltd of 234 Pentonville Road, London N1 to manufacture autocycles. There was no connection with the *Hewins Engineering Company* of Taunton that produced HEC motor cycles from 1922 to 1924.

The HEC Power Cycle was machine that differed from the Villiers powered 'norm': it had an 80cc Levis two-stroke engine. The die-cast crankcase incorporated an oil-bath primary chain-case that enclosed the clutch and the duplex chain primary drive. The final drive was also by chain. This was unusual in using the same size chain as the pedals. Overall gear ratio was 14:1.

Introduced in 1938, the prototype machines differed only slightly from later production models. The usual controls were fitted, using inverted levers to operate the brakes. The improvement of a back-pedal brake was later offered as an option—HECs fitted with this had a conventional brake lever. A rear stand and a carrier were other useful features that had not been included on the prototype but were incorporated on the production version. To accommodate the rear stand the exhaust had to be changed. On both models the engine exhausted into a large alloy expansion chamber; the long tail-pipe of the earlier machine continued to the back of the rear wheel but later models had a second tubular silencer and a short pipe to leave room for the stand to be lowered. A less obvious improvement was a change to a three-point, rather than two-point, mounting for the engine. Before World War II the HEC was marketed at the price of 17gns [£17.85].

1939 HEC Power Cycle

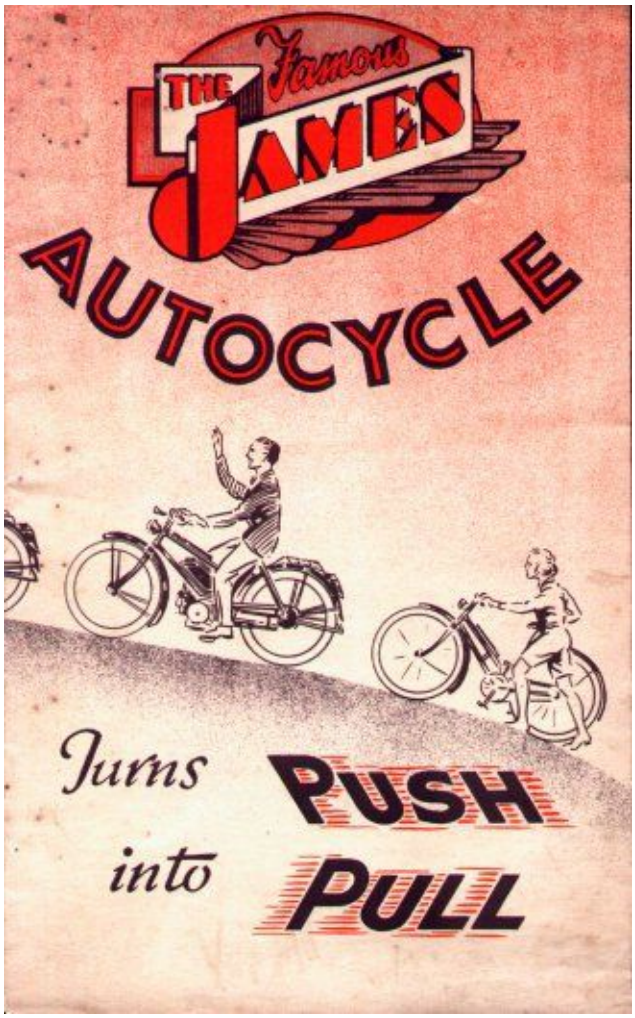
According to employees of HEC, there were some special versions of the Power Cycle. These were a 'racing' version, which had smaller wheels—about 20 inches diameter, normal machines had 26 inch wheels—and dropped handlebars; and a tandem.

HEC moved to Thorp Street, Birmingham in 1939 (at the rear of the Hippodrome theatre). Production of the HEC stopped at frame number 885 on 3rd May 1940 when the Thorp Street works was bombed. The remaining bits and pieces were removed to the Levis works at Stechford, where the engines for the HEC had been built.

The Power Cycle did not reappear on the market after the war, although the Levis engine was still available and used in some foreign machines, the Swedish-built *Apollo* for example.

13: James

The James Cycle Company Ltd of Greet, Birmingham was founded in 1880 by Harry James and was, therefore, a well-established manufacturer of both pedal cycles and motor cycles when it introduced its model J18 autocycle for the 1938 season. The early version had a small fuel tank, no springing and no engine covers; inverted levers were used for the brakes. Like all of James's machines at the time, a Villiers engine powered it.



Brochure for the 1939 James autocycle

The autocycle continued for 1939 as model K18 and at a price of 18 gns [£18.90]. A tradesman's version was also available. For 1940 it became the L18 and was joined by a de Luxe version: the L20. This used the new Villiers Junior de Luxe engine instead of the Junior and also had the luxury of engine covers.

1939 James autocycle

The James factory was very busy during World War II. Although this production was mainly armaments and aircraft fittings, motor cycles were still being produced. Over 6,000 lightweight motor cycles were supplied to the armed forces. The autocycle too was still being made in limited numbers; these machines were probably supplied to civilians undertaking essential war work. The factory was bombed and very badly damaged in December 1940. It was completely rebuilt within three months; however, nearly all of the company's records were lost in the bombing.


1947 James autocycle

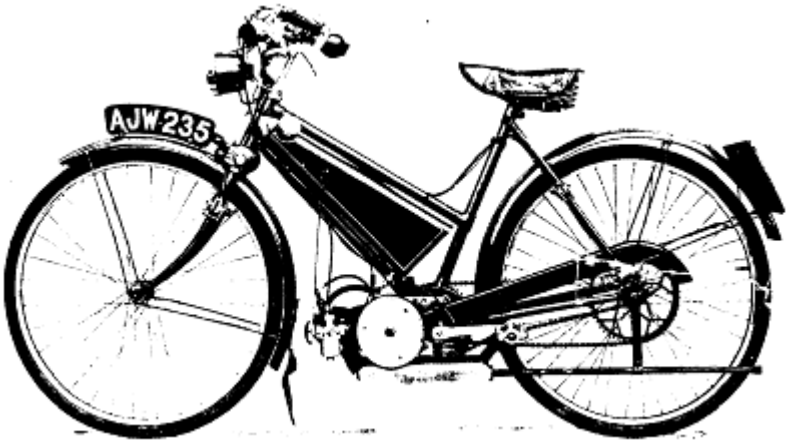
After the war the autocycle was re-introduced and given the name 'Superlux'—at a price of £53 6s 10d [£53.34] for 1948. It continued until 1949 when it was replaced by a new, Villiers 2F powered model. Both models were exhibited at the 1948 Earls Court Show, the new one being given the 'Superlux' name and the older model becoming the 'Standard'. The Standard model was soon dropped from the range. The new Superlux continued until 1953.

1951 James autocycle

14: Jones

The Jones autocycle was not really a marque in its own right, being a one-off prototype whose design was offered to several companies. It can be seen as the missing link between the early Cyc-Autos and the later Villiers-powered machines.

George Jones produced his machine in 1936, working in conjunction with Villiers. It was a machine of bicycle proportions, designed as a power-assisted cycle with pedalling in mind. The sprung front fork pivoted at the fork crown and was controlled by a leaf spring. Resilion cantilevers, both front and rear, provided braking. The brake levers were conventional whilst a single inverted lever was used for the clutch. At first glance, the engine appears to be very similar to the production Junior, but closer inspection reveals that the cycle frame has no bottom bracket and that the pedal shaft is part on the engine, concentric with the clutch shaft. The feature of concentric power and pedal shafts was also used on the Cyc-Auto and was what enabled both designs to retain the proportions of a bicycle.

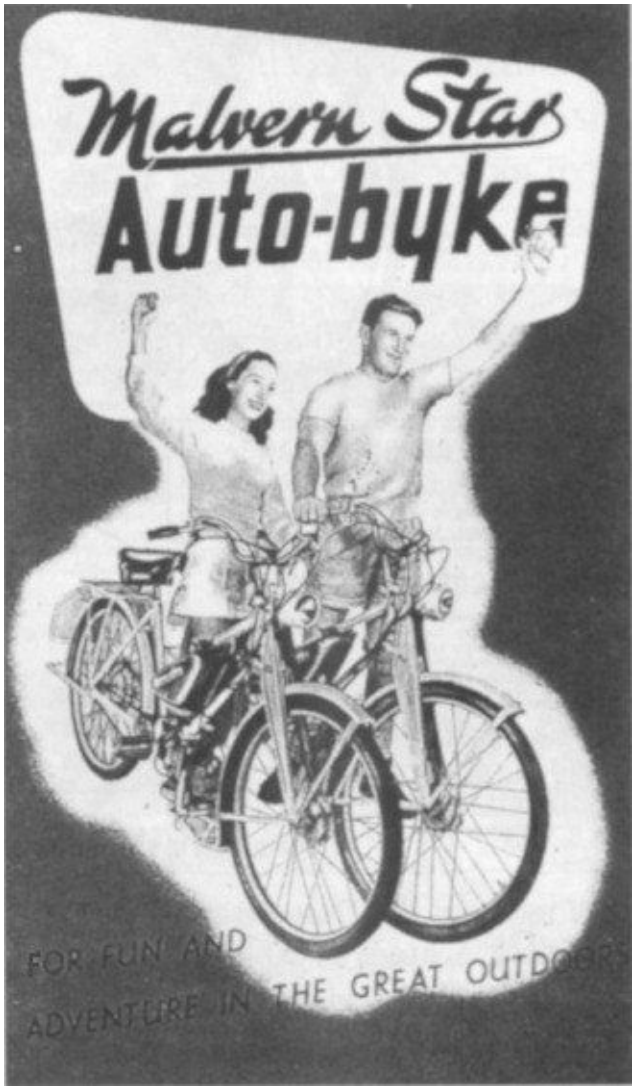


The Jones prototype autocycle

Raynal adopted the Jones design when it produced its first autocycle but the idea of concentric shafts was dropped. This redesign, whilst making the engine cheaper to produce, also destroyed the proportions on the machine. The wheel-base had to be lengthened to accommodate the extra shaft and this also meant moving the pedal back from the ideal pedalling position. George Jones did not approve of these changes to his design but, in practice, the design changes were vindicated. The Junior engine and its successors proved powerful and reliable enough to ensure that pedalling was rarely required.

15: Malvern Star

Although not a British make, the Malvern Star, both in its history and appearance, closely follows the pattern of its British cousins. Malvern Star Bicycles was founded in the early years of this century by Tom Finnegan who ran a small bicycle shop in Malvern, a suburb of Melbourne, Australia. Tom Finnegan retired in 1920 but, under the ownership of Bruce Small and with the publicity gained from its association with the renowned racing cyclist Sir Hubert Opperman, Malvern Star grew greatly in size from producing five bicycles a week in the 1920s to having 100 branches and 1,000 agencies throughout Australia by 1945. Through a series of mergers and take-overs it became part of General Accessories, Australia's largest cycle maker in 1980. Although different sources dispute the date when Malvern Star began production of autocycles in Australia, the Malvern Star followed the pattern of British autocycle and it is most likely that their first model was a Junior de Luxe powered machine, built just before the War. The evidence of surviving machines indicates that a number of autocycles was built during the war years and, as in Britain, these were intended for essential workers such as Civil Defence wardens. There were two models, an unsprung Economy model and a de Luxe version with a pressed steel girder fork. The Malvern Star carried the small type of fuel tank, like many of its pre-war British counterparts, and was finished in black with cream tank panels. After the war, the Junior powered model was replaced by one using the Villiers 2F engine. This 2F-engined model was identical to the British-built Norman (or Rambler) autocycle; its manufacture was short-lived, ceasing in 1952. Although the Malvern Star name survives it is now carried by Taiwanese-built bicycles.



Brochure for the Post War,
Villiers JDL version of
the Malvern Star Auto-Byke

16: New Hudson

New Hudson built motor cycles from 1903 until the early 1930s, when the company changed to the manufacture of Girling brakes. New Hudson also produced an extensive range of pedal cycles. Early in 1940 they returned to powered two wheelers with an autocycle, but the New Hudson autocycle is chiefly remembered as a post-war machine. This is probably because the later models were the most popular of all the autocycles and New Hudson continued autocycle production much later than any of its competitors did.

The autocycle was launched in March 1940 and was powered by the Villiers JDL engine. It was unsprung and had no engine covers but was otherwise typical of a JDL-powered autocycle. When production recommenced after the war New Hudson had become part of the cycle division of BSA. For 1948, the machine was fitted with pressed steel blade girder forks, plus engine shields and other detail improvements.

The New Hudson was one of the cheapest autocycles available—priced at £48 17s 11d [£48.90] for 1948. In 1949 the New Hudson, in common with other makes of Villiers-engined autocycle, was redesigned to accommodate Villiers's new 2F engine. The appearance remained much as before, however, as the alterations were hidden by the engine shields. The rest of the cycle parts continued unchanged. In this form, the machine ran on for some years. There were, however, several minor variations in the 2F powered models throughout the years. The initial colour scheme was black with red panels on the fuel tank lined in gold. For 1953 this changed to all green with cream tank panels and the following year to maroon with cream panels. 1955 models reverted to the green colour scheme. The front fork started off with pressed steel blades but these were changed to tubular blades around 1955. There were also variations in handlebars, levers, pedals etc; many of these variations seem to have been determined by the availability of components rather that deliberate design changes.

In May 1956 when the machine was revamped the 2F engine remained as before but the frame was amended to make it easier for the rider to mount. The shape of the fuel tank and the side panels was new and much more modern, while the chains were well enclosed. Both leg shields and a windscreen were available as options.

This 'Re-styled' New Hudson was an attempt to update the old design, giving it an appearance more akin to the mopeds that were rapidly taking over from the autocycles. At this time, most of the other makes of autocycle were disappearing from the market in the face of the moped onslaught. The New Hudson continued to be sold until 1958, but that year saw the end of the Villiers 2F engine, so the New Hudson also left the market.

In all, about 24,000 New Hudson autocycles were produced: 5,000 JDL machines, 14,000 of the earlier 2F design and 5,000 'Re-styled' models. New Hudson put their frame numbers on the left-hand rear fork end and each model had its own prefix: MC for the JDL, ZE for the 2F and N for the 'Re-styled'.

A row of New Hudson autocycles.
From left to right:
1957 ‘Re-styled’ model,
1951 model (black),
1954 model (green) and
1955 model (maroon)

17: Norman and Rambler

Norman

Norman Cycles Ltd of Ashford, Kent was a pedal cycle manufacturer that entered the motor cycle arena in 1938 with both an autocycle and a 125cc motor cycle. The autocycle was called the "Motobyk" and followed the usual pattern of a Villiers Junior powered machine. It was unsprung and had the smaller style of fuel tank like many other pre-war autocycles. A back-pedal brake was available as an option. The basic model Motobyk cost 17gns [£17.85] in 1938. In 1939 Norman changed over to the Junior de Luxe engine and also introduced a tradesman's model (the Carrier Motobyk). Production of the Motobyk continued during the war with a batch of 230 being built for the War Office.

1941 Norman Motobyk

The Norman factory was also responsible for building Rudge autocycles during the early war years.

After the war the Motobyk remained in production until 1949, costing £53 6s 9d [£53.34] in 1948. It was not fitted with engine covers but these were available as an extra. Also, in the immediate post-war years, Norman continues to produce further examples of the Rudge autocycle but, with no rights to the Rudge name, these were branded as Norman.

1948 Norman Motobyk

1945 Norman made from Rudge components.

In 1949 The Junior de Luxe engined Motobyk was replaced by a 2F version: the Model C.

1949 Norman Model C

This continued in production for several years until it was withdrawn in 1957, having been effectively replaced by the Sachs-powered 'Nippy' moped that had been introduced at the end of 1955.

Rambler

Rambler autocycles were the same as Norman autocycles, Rambler being the name used by Norman for its export models.

Rambler autocycle
(Compare with the Norman version above)

18: Raynal

The earliest mention of the Raynal Mfg.Co.Ltd. in Kelly's Directory for Birmingham appeared in 1936, listed as cycle manufacturers at Woodburn Road, Handsworth, B21. The final entry was in 1950. Woodburn Road together with Foundry Lane, Booth Street and Anne Road forms a square that enclosed much engineering activity. Just to the south of Foundry Lane stood the Soho Foundry where James Watt developed and made the steam engines that were to change the landscape of our cities and alter the lifestyle of millions. A 1949 map shows a cycle works on the north side of Woodburn Road but Dunelt also had premises in the same road. The cycle works stood beside Hockley Brook—once an important requirement for any industrial activity, initially as a direct source of power, later as the 'raw material' for steam. Raynal's autocycle, the Raynal-Auto, was the original Junior powered machine, and was launched in 1937 for the 1938 season. At the 1938 Earls Court Show Review there were two Raynal machines on offer: the 'de-Luxe' and the 'Popular'. The 'de Luxe' had a 98cc Villiers Junior engine; 9 pint [5 litre] fuel tank; 1¾ inch [44mm] tyres; price with lighting, horn & licence holder £18 18s od [£18.90]. This model employed a leaf spring front fork suspension, the upper end of the spring was secured in the lamp bracket and the lower end was held by an attachment to the fork crown. There were friction discs between the moving parts of the fork assembly and twin grease nipples were fitted. For a guinea less, the 'Popular' model came without the spring fork. The design of the Raynal was derived from the prototype autocycle built by G H Jones in 1936. Although the proportions of the frame differ from Mr Jones's machine, many features of the Raynal betray its ancestry. The leaf spring fork in particular is the same as on the Jones. The design of the tank and frame, along with the use of forward-facing dropouts for the rear wheel, also reflect George Jones's design. Being derived directly from the Jones prototype, the Raynal should have been the first production model of a Villiers Junior powered autocycle to hit the market. However, Excelsior also brought out their 'Autobyk' at the same time. Popular rumour suggests that Villiers, being unsure of Raynal's ability to make a success of the autocycle, leaked the design to Excelsior to increase the chances of large volume sales for the Junior engine.

Colour scheme was all black with a cream fuel tank carrying gold block letter transfers either side. Clips attached to the large rear carrier carried the tyre inflator. Villiers supplied the lighting set and a long tail pipe ran from the cast alloy expansion box beneath the engine to the rear of the machine. Although the rear brake was a conventional drum, it was applied by back-pedalling, leaving the rider free to concentrate on the decompressor and clutch on the left handlebar and the throttle and front brake levers on the right. An additional handlebar lever disengaged the rear brake mechanism—so the machine could be wheel backwards without locking up. Heavier gauge spokes were employed on the brake side of the rear wheel. A rod on the left side of the tank linked to the carburettor air filter which could be 'choked' from the saddle, without dismounting. The low riding position due to the frame geometry inspired confidence in spite of the 26' wheel size.

1939 Raynal-Auto 'Popular'

In December 1939 prices had risen to £22 0s 0d [£22.00] for the 'de-Luxe' and £20 10s 0d [£20.50] for the 'Popular'. All-up weight was quoted as 95lbs [43kg] and ground clearance 4 3/8 inches [111mm]. The power unit was the new 5-port Villiers Junior de Luxe with improved performance. In December 1947, details of the new central spring controlled front fork were announced. At this time engine side covers and built-in leg-shields were also fitted. Ground clearance at the pedals was 3½ inches [89mm]. The colour of the fuel tank had changed to black and the price was now £52 19s 6d [£52.48].


Post-war Raynal-Auto

In 1949 Villiers introduced the 2F engine to replace the JDL but Raynal never produced a machine using this power unit. Production stopped in 1950, a total of about 8,000 machines having been produced. However, A B Jackson, one of the directors of the Raynal company, produced a 2F powered autocycle under his own name.

19: Rudge

Rudge–Whitworth Limited was founded in Coventry in 1894 by the merger of two cycle making companies: the Rudge Cycle Company and the Whitworth Cycle company. Rudge–Whitworth produced many very high quality cycles and motor cycles but, in the early 1930s, began to fall upon hard times. One of its major creditors was the Gramophone Company, part of the EMI Group. The Gramophone Company bought the assets of Rudge–Whitworth from the liquidator at the end of 1935.

So, the company continued and, in 1938, production was moved from Coventry to a new factory at EMI's site in Hayes, Middlesex. Before the move, the company decided that it would produce an autocycle. However, it was not until February 1940 that the Rudge autocycle was launched onto the market.

The final product of Rudge–Whitworth's 'two year's development work' was little different to any other Villiers Junior de Luxe powered machine. There were two models, the Standard and the de Luxe. Both were unsprung, although a spring fork was available as an extra. The Standard was priced at £22 and the de Luxe, which had engine covers, at £22 15s [£22.75]. The spring fork cost an extra £1. The Rudge had a carrier and rear stand, both brakes were cable operated by inverted handlebar levers and the large fuel tank would hold 1¾ gallons [7.9 litre]. The frame, tank, mudguards, etc, were all finished in maroon enamel.

1940 Rudge autocycle

With the outbreak of war, autocycles were one of the few types of motorised transport that would remain in production for civilian use. Rudge–Whitworth was also geared up to produce a large batch of 250cc motor cycles for military use. However, the factory next door to Rudge–Whitworth was one of the Gramophone Company's electrical equipment plants. With a huge demand for the newly-invented radar systems, the Gramophone company needed all the space it could get to produce radar equipment, so motor cycle production was stopped. The Norman Cycle Company at Ashford, Kent was given permission to continue the production of the Rudge autocycle. The Rudge concern was sold off in 1943 and the Rudge trademark was acquired by Raleigh Industries. Raleigh produced some Rudge cycles, but the Rudge autocycle was the last powered two-wheeler to be produced under the Rudge name.

20: Sun

The Sun Cycle & Fittings Co. Ltd., Aston Brook Street, Birmingham 6 produced its first Sun–Villiers motor cycle in 1931. However, it had not produced any motor cycles for several years when it launched its autocycle range in February 1940.

A surviving example of the Sun autocycle

Three models were announced: the Standard had a rigid fork and was powered by the Villiers Junior engine. It retailed at a price of £21. An extra pound would buy the de Luxe with a Villiers Junior de Luxe engine and a spring fork whilst another 10/- made up the price of a Super de Luxe machine. The Super de Luxe model was the same as the de Luxe but with the addition of louvred engine covers.

The Sun followed normal autocycle practice with the larger style of fuel tank, 'non-inverted' handlebar levers for both brakes, rear stand, Brooks saddle and a long straight tail-pipe from the Villiers engine's expansion box. There was no tool box, the tool kit being carried in a small leather saddle bag. A pump was supplied and this was mounted above the frame top tube. Two-inch section 'Oversize' tyres were fitted to 26 × 1¾ wheels. The Webb spring fork was not a girder type: it was a telescopic fork.

After the end of the war, the Sun autocycle was re-introduced with very few changes. The tank had been slightly modified and the telescopic fork had been replaced with a more conventional Webb girder fork. That was about the only change—the machines were similar enough for Sun to still be using the picture of the 1940 Super de Luxe in its advertisements as late as 1949.

1947 Sun autocycle

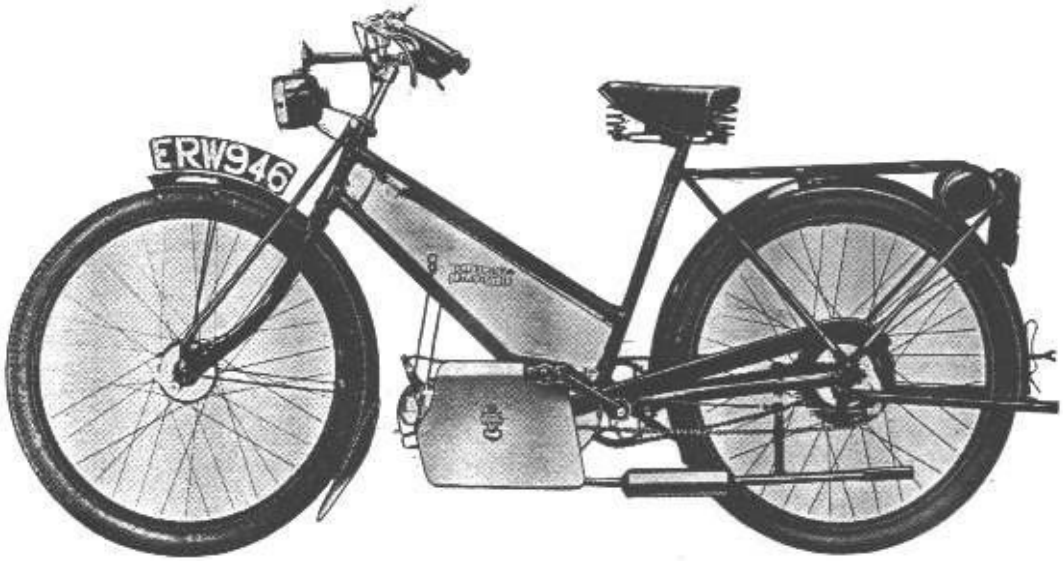
In common with other autocycle manufacturers, Sun changed to the Villiers 2F engine in 1949. The distinctive features of the 2F-engined Sun were its motor cycle style saddle tank and its diamond-shaped exhaust silencer with a fish-tail.

1949 Sun autocycle

Surviving Sun autocycles are less common in the UK than other makes of the time. This is because a large proportion of Sun's output went for export.

21: Three Spires

'Three Spires' was a trade mark used by Coventry Bicycles Ltd, of Priory Street, Coventry. The name, and the design of the badge, came from the three spires that dominated Coventry's skyline until the bombing of the city during World War II. The autocycle produced under the Three Spires marque was called the 'Petro-Cycle'. This machine, announced in 1939 followed the usual layout of autocycles, being designed around the Villiers Junior power unit. The front fork was unsprung and was distinguished by extra braces running from the spindle to the top of the steering head—following the pattern often found on tradesmen's bicycles. A round toolbox fitted into the rear bend of the carrier. Equipped with a rear stand, Villiers lighting, rear stand and engine covers it was priced at 18gns [£18.90]. A back-pedalling brake was offered as an optional fitting. The colour scheme was a black frame lined in gold with a silver tank and engine covers with blue panels.



Although a prototype model was certainly produced, it seems quite likely that the prototype was the only one ever made.