EVERGREEN

JAWA

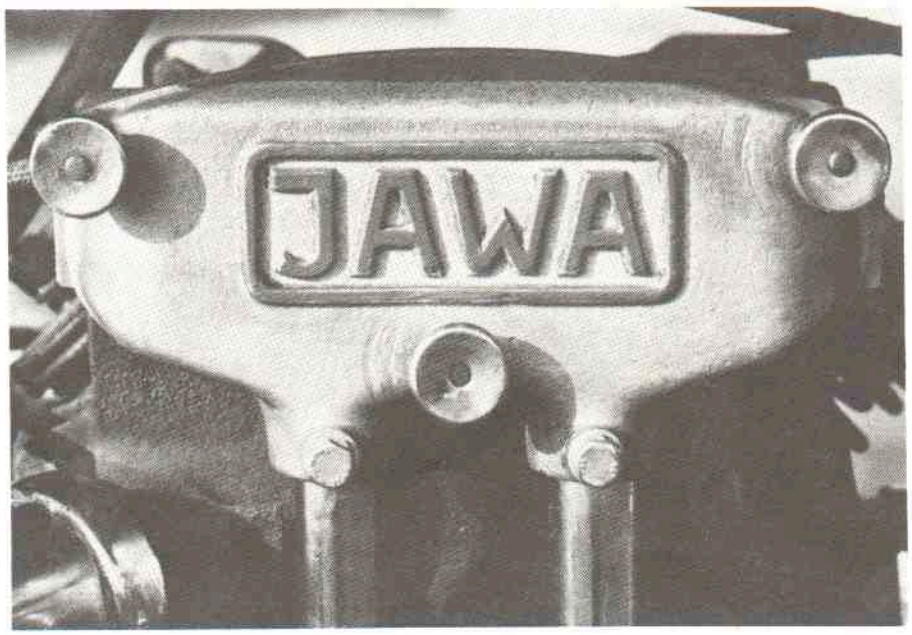
JAWA 60

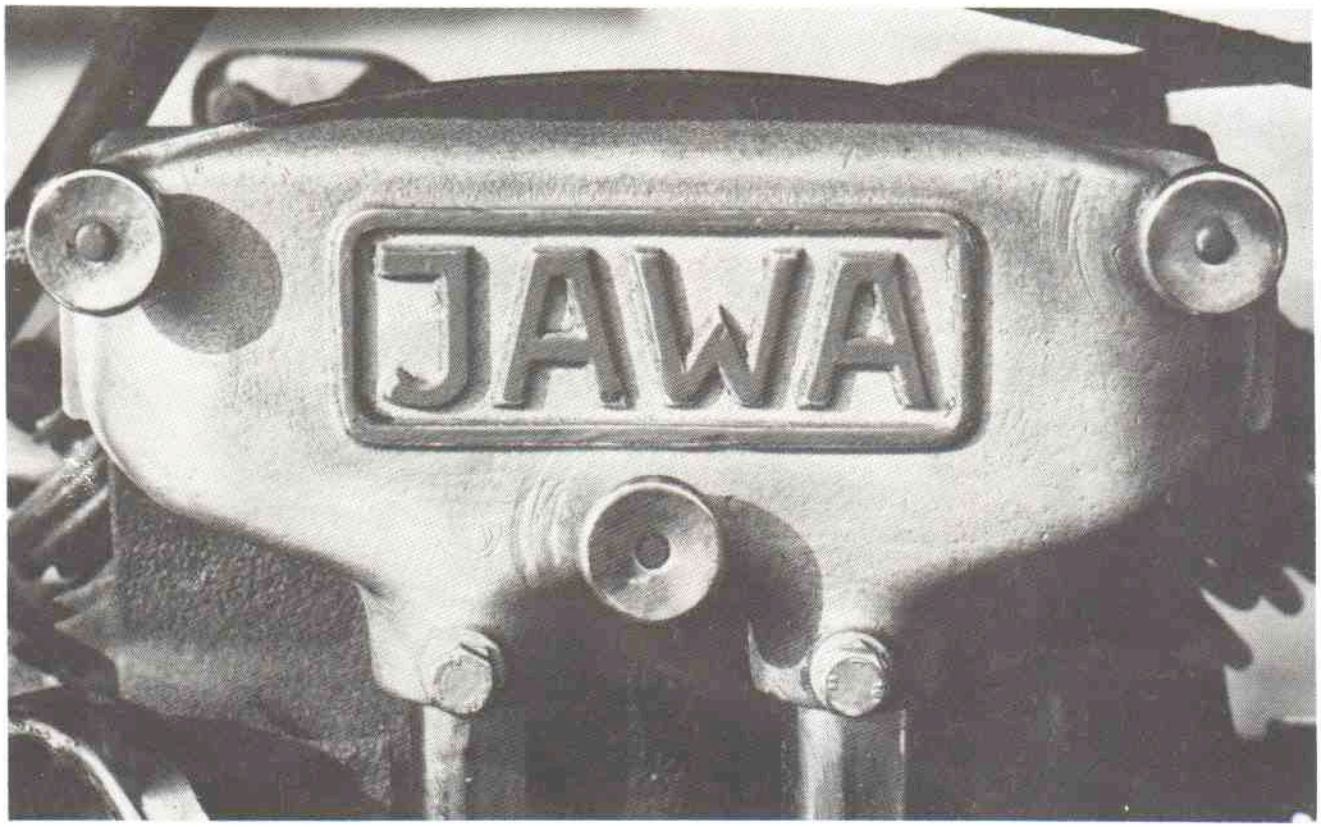
1929-1989

AEROS AVON ACHILLES ALFA AM AVIA AZA B.A.F. BARTELME BARRY BAS BCY BD BEKAMO BEZDĚZ BRILANT-ALCYON BŘEZINA BUL BV ČAS ČASLAVIA JAWA ČECHIE ČZ DURIN DVOŘÁK EDO-SKAUT EISLER ES-KA FISCHER FORTIS GH GRIZZLY HERMANN ITAR JAC JAWA JBP JELÍNEK J.F.K. JKB JKP JOLI JULES JUPITER KAN KASÁK KIELAR KOCH KOHOUT KONSTANTIE KR KSÁSEK L & K LINSER MAI MAT MB MC MEISSNER-METEOR MIKULÁŠEK MORAVA NECO NORICUM NOVO OGAR ORION PAVLÍČEK PERUN PETA PLICKA JAWA POUSTKA PRAGA PREMIER POSPÍŠIL & SMÍŠEK PZ RADWAN REPUBLIKA RÖSSLER & JAUERING RULLIERS RŮŽIČKA SAGITTA SATAN S-PORTIS SCHNEIDER SIROCCO SKO JAWA SMETANA SLAVIA SPORT STADION START STAŠEK STP SVOBODA ŠKODA ŠTÍSKO ŠROUBEK TERROT TORPEDO TRIPOL TRUSTY UTÍKAL VAJA VEČEŘA VELAMOS VELOX VIGOR VULKAN WACEK WAGNER WALLENSTEIN WALTER WEBER & REICHMENN Z ZÁSADSKÝ ZÁVODSKÝ ZEUS ● AEROS AVON ACHILLES ALFA AM AVIA AZA B.A.F. BARTELME BARRY BAS BCY JAWA BD BEKAMO BEZDĚZ BRILANT-ALCYON BŘEZINA BUL BV ČAS ČASLAVIA ČECHIE ČZ DURIN DVOŘÁK EDO-SKAUT EISLER ES-KA FISCHER FORTIS GH GRIZZLY JAWA HERMANN ITAR JAC JAWA JBP JEL9NEK J.F.K. JKB JKP JOLI JULES JUPITER KAN KASÁK KIELAR KOCH KOHOUT KONSTANTIE KR KSÁSEK L & K LINSER MAI MAT MB MC MEISSNER-METEOR MIKULÁŠEK MORAVA NECO NORICUM NOVO OGAR ORION PAVLÍČEK PERUN PETA PLICKA POUSTKA JAWA PRAGA PREMIER POSPÍŠIL & SMÍŠEK PZ RADWAN REPUBLIKA RÖSSLER & JAUERING RULLIERS RŮŽIČKA SAGITTA SATAN S-PORTIS SCHNEIDER SIROCCO SKO SMETANA SLAVIA SPORT STADION START STAŠEK STP SVOBODA ŠKODA ŠTÍSKO ŠROUBEK TERROT TORPEDO TRIPOL TRUSTY UTÍKAL VAJA JAWA VEČEŘA VELAMOS VELOX VIGOR VULKAN WACEK WAGNER WALLENSTEIN WALTER WEBER & REICHMENN Z ZÁSADSKÝ ZÁVODSKÝ ZEUS ● AEROS AVON ACHILLES ALFA AM AVIA AZA B.A.F. BARTELME BARRY BAS BCY BD BEKAMO BEZDĚZ BRILLANT-ALCYON BŘEZINA BUL BV ČAS JAWA ČASLAVIA ČECHIE ČZ DURIN DVOŘÁK EDO-SKAUT EISLER ES-KA FISCHER FORTIS GH GRIZZLY HERMANN ITAR JAC JAWA JBP JELÍNEK J.F.K. JKB JKP

JAN KRÁLÍK

EVERGREEN JAWA




JAWA

In the Illustrated Motor Cycle Encyclopedia you would find more than 2500 different makes from all over the world. Come to light would famous, well-known as well as quite forgotten manufacturers, machines of various shapes and concepts, revolutionary and orthodox motor cycles just as cycles which were obsolete even before they started to run. Among all the makes only a few score have made history. Their designs moved the technical standard forward, their success in the sport was breathtaking. They had to pay dear for their place in the sun. They had to battle their way to the image of outstanding motor cycles on roads and off the beaten track.

One of the makes to have succeeded is JAWA. Sixty years of motor cycle production is sixty years of successes, triumphs and setbacks. It is sixty years of hard work that was worth-while.

This is what the following narrative is about.

The JAWA story.

MOTOR CYCLE

Frame, two wheels, engine, handlebars and saddle.
Do you sense the magic of this bewitching word? The motor cycle became the promise of speed, adventure and freedom. In more than a hundred years of its existence it underwent unbelievable development winning devotees as well as opponents, but nobody is indifferent to it.
People become addicted to motor cycles.
No other vehicle can give you that delight in riding, the intoxicating sensation of the wind in your face and the power over the machine you are on. Though it had changed in the course of years beyond recognition, it is the same all along. Frame, two wheels, engine, handlebars and saddle.
How many ever-young boys had dreamt of the wonderful machine? The first of them — Gottlieb Daimler: "It would be marvelous beyond thought to have a vehicle with power drive enabling at least one person to travel freely along the road." This he said in 1884. A year later, on August 29, 1885, he applied for registration at the Patent Office in Berlin a design and twelve drawings of such a machine. He was granted Patent No. 36 423 for it. According to the official specification the whole vehicle was made with wood, only the wheels were equipped with iron tyres. The engine installed in the frame under the saddle was an air-cooled single cylinder producing 0.5 HP at 700 r.p.m. and was to drive the rear wheel by means of a belt.
In the actual construction Gottlieb Daimler with his collaborator Wilhelm Maybach changed many details, beginning with the saddle and handlebars to the drive of the rear wheel by gears. Since the spring 1885 Daimler tested his powered two-wheeler on the paths in the garden of his house at Cannstatt. After many changes at long last the inventor's eldest son Paul left on November 10, 1885, Taubheimstrasse setting forth to Untertürkheim, distant exactly 3 kilometres. Just think of it — such a long way negotiated without pushing, without pedalling, without draught ....
Though a miracle was brought off, there were no celebrations, no fireworks, no music. In the wooden cycle without pedals, but with supporting wheels the internal combustion engine proved capable to drive a vehicle and that was the end for him. He continued to construct horseless carriages never returning to his first experiment. And which is more, the world's first powered two-wheeler came to an end in a 1903 fire.
The three kilometres were the beginning of a way taken by the marvellous invention consisting of a frame, two wheels, engine, handlebars and saddle.
The motor cycle.

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THE BIRTH OF THE ENTERPRISE

FOUNDER OF THE FIRM

František Janeček was born on January 23, 1878, at Klášter nad Dědinou, one of the smallest villages in the whole of East Bohemia. His father made him to take interest in engineering and so he studied mechanical engineering at the State Technical School in Prague and after leaving school he went in for electrotechnics. His way took him first to Berlin's Technical University and after that he took up employment with the Schuckert establishment. Following a short practice he came back to Prague and went to work at Kolben, one of the largest electrotechnical manufacturers in Bohemia. Janeček was a capable, talented man, who proved his worth at the job. At the age of twenty-three he was entrusted with the management of a newly constructed plant in the Netherlands where, in addition, he continued his studies at the Delft Technical University. After four years outside the frontiers of Austria-Hungary of that time he was recalled by his principals to Prague and appointed manager of mechanical workshops.

Janeček, well aware of his ability, aimed higher than promotion of seniority was offering. After two years, in 1907, he went abroad on his own gathering experience at German and English companies. He returned once more to Prague in 1908, but not to his former employer — aged thirty-one he gained independence starting his own mechanical engineering laboratory and workshop. He obtained the foundation capital from the sale of two arc lamp device patents, bought by two German establishments for the sum of 70,000 marks. This was not Janeček's first great invention — earlier, during his stay in the Netherlands, he came at the age of twenty-four with a new method of current supply for tramways, which was purchased by the English for £ 2,000. In his laboratory and workshop with thirteen employees Janeček began to realise many of his ideas, which he offered to various companies. From today's aspect his activity at the time could be described as trading in know-how.

The situation changed in the course of the First World War. After short active service on the Italian Front Janeček returned to the rear and to the drawing board and, within a short time, lodged 60 patent applications. Noticeable is his artillery ammunition detonator testing device and mortar coupled with aircraft engine. Best known at that time was Janeček's hand grenade owing above all to its updated safe detonator, though its origin was a matter at issue.

After the war Janeček started grenade manufacture at Žižkov in Prague. Soon, in 1920, he launched production of precision instruments and tools at Mnichovo Hradiště, a town 60 km north of Prague. The premises were an adapted former chemical works and Janeček at first joined forces with toolmaker František Kohoutek. However, the partners disagreed and parted a few weeks later — Kohoutek was paid 50,000 crowns and with this ended his cooperation with Janeček. On the other hand the latter went into business pursuing it with growing intensity at the expense of his creative work as designer and engineer. In 1922 he bought a factory building in Prague-Nusle in a locality called Green Fox after an ancient roadside inn. "Factory building" is, of course, a rather exaggerated term for the Sachs company shoemaking workshops set up in the former bar. Shortly, in 1923, Janeček had built at the place a new hall — a proper factory. And this is where he transferred the production from Mnichovo Hradiště.

Investment in the bigger plant was made possible by orders from the Ministry of National Defence for the reconstruction of Schwarzlose machine guns devolved upon Czechoslovakia from the equipment of the former Austro-Hungarian Monarchy. The Schwarzlose guns were constructed for Manlicher type ammunition whereas the Czechoslovak Army used Mauser ammunition — that was why Janeček's factory was reconstructing the machine guns. Since the numbers of machine guns were less than required by the Army, Janeček got an order for the manufacture of new weapons of the same type. Unlike the machine gun production that of the grenades was declining, mainly because of waning customer interest. In 1926 their production came to an end.

Arms orders resulted in an extension of the plant, in updated technology, in high specialization and professionality of the personnel. The Schwarzlose machine guns were obsolete and in time the Ministry lost interest in them. It happened in 1928 when Zbrojovka (Munition Factory) Brno came forward with a new model of the machine gun (ZB26).

By then Janeček was quite preoccupied with business. He was considering various articles — from typewriters to sewing machines. He was definitely able to envisage exacting and precision production — his practical experience, factory equipment and staff permitted such plans. In the end his decision fell on motor cycles. "Zbrojovka Ing. F. Janeček" (Munition Factory Ing. F. Janeček) was changing its manufacturing programme.

THE RIGHT STEP?

The tradition of motor vehicle production in Czechoslovakia was of long standing. After all the first motor cycle came into existence here in as early as 1899. It was a Laurin and Klement standing at the beginning of the long row of hundred and seventeen now known Czech makes. In 1928, when Janeček was contemplating what to do next, there were in Czechoslovakia twenty-one motor cycle manufacturers — among them Čechie, Itar, Terrot, Orion and above all Premier and Praga enjoyed a good reputation. Production was mostly of the small lot type. Even the largest of them Praga did not exceed several hundred units. On the home market Czechoslovak makes were in an insignificant minority, the prevailing majority was represented by foreign makes. Yet there was considerable interest in the home products, but capital for large scale production was lacking. Janeček had funds at his disposal. So his decision was right.

His other decision was perfectly justified, too — he was not to develop a machine of his own, but begin with production under licence. This was reasonable, because he would not lose time and because a well-proven design, verified in practice, promised success. And this was what Janeček wanted to ensure. He was a businessman unfraid of broad-minded plans. He was contemplating serial production based on his own forces in every respect. His ideals were Tomáš Baťa and Henry Ford, above all with the style of their work and an assembly line production method. However, the type of motor cycle on which his choice fell suggests that he had not been aware of all the problems involved in this kind of production and that his assessment of the market situation was not quite correct. His factory purchased, namely, a licence for the Wanderer 500 OHV motor cycle.

SWAN-SONG AT CHEMNITZ — PREMIÈRE IN PRAGUE

Wanderer was a well-known German make from Chemnitz (now Karl-Marx-Stadt, the German Democratic Republic) manufacturing motor cycles since 1902. Wanderer represented quality and advanced design, the single cylinders (327 and 387 cc) and Vee twins (408 and 616 cc) has proved their worth also during the First World War. Later models presented a number of outstanding elements, too, above all the four stroke twin cylinders (708 and 749 cc), some of which featured four valves per cylinder. Wanderers were noted because of first class workmanship, generous equipment and quality material, making them rather expensive. In addition, growing engine power and speed in the mid-twenties resulted in impaired handling, which was bringing about increasing financial difficulties. The establishment had to come with something new, mainly to face the competition with the BMW factory playing first fiddle. The new motor cycle designed by Alexander von Novikoff promised to be a good move. It came into existence in 1927 as a new generation machine. In the first place its triangular pressed frame, compared to existing mostly tubular frames, was a novelty. This Wanderer featured a four stroke OHV engine, tank under the frame top tube and tubular front fork. Interesting was the rear wheel drive not by chain, but by propeller shaft suggesting that the half-litre was to be a sort of anti-BMW.

The motor cycle concept was right representing a step forward in its time. However, because the manufacturer was in a hurry and had not tried out the motor cycle enough, it suffered from many teething troubles and had to be repeatedly reconstructed. It was unreliable and the many guarantee repairs caused financial loss. In a situation when Wanderer was losing its foothold, the Prague factory showed interest in a licence. Could one imagine nowadays, what the response at Chemnitz was? They definitely had done their best to meet Janeček's demands — they sold him not only the licence for the production of their motor cycles, but let him have unfinished parts and components as well as the complete manufacturing equipment. Hand rubbing at Wanderer and in Prague in 1929 seemed justified. Who had more reason for it?

While in Chemnitz that year motor cycle production was definitely discontinued, a première was being prepared at the Green Fox.

The Green Fox buildings at Prague-Nusle, birth-place of the first JAWA motor cycles

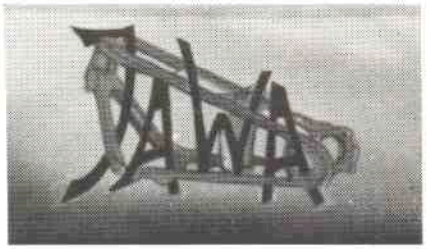
JAWA

In Prague the right decision was made to market the new product under a new trademark. Whoever proposed to connect the two first letters in the names Janeček and Wanderer had a felicitous idea. Appeared JAWA, a simple, easy to remember and pronounce, atractive word trademark. For home customers it had something of a foreign flavour owing to the letter W which does not exist in the Czech language. JAWA was initially just a word trademark without graphic layout.

On August 17, 1929, since half past ten a.m. (the application time is also recorded) Zbrojovka Ing. F. Janeček had a new trademark registered by the Patent Office of that time under number 37 525/Prague. The trademark was registered before the first motor cycle was presented to the public, because its début was to take place in the autumn at the Prague Motor and Motor Cycle Show. Even before the Show opening the factory had its trademark registered by the World Intellectual Property Organization in Geneva on October 9, 1929.

A graphic set-up was not considered initially, nor was the lettering stabilized. This is borne out by the JAWA sign on the tank of the early motor cycles which differs from the JAWA boss on the timing cover as well as from the JAWA sign on the compartment under the luggage carrier bracket.

The present-day familiar JAWA in oval trademark did not appear until two years later on the tank of the OHV JAWA third and last series. In the oval was the JAWA sign, in the middle of its bottom part F. Janeček's initials styled in grenade shape, used earlier on armaments. Diverging from the initials were left and right six rays. This was registered as trademark as late as on March 31, 1936, under number 56 772/Prague. The author of this composite trademark could not be traced.



THE FIRST JAWA

The motor cycle was for the first time presented at the Show, which opened on October 23, 1929. The first JAWA differed from the German model in a number of details, conspicuous at first sight was its large drop-shaped tank.

The half-litre was powered by a 498.7 cc (84×90) four stroke single cylinder with hemispherical combustion chamber producing 13 kW (18 HP), situated lengthwise in a duplex pressed frame. Suspension of the short link-type front fork was by quarter-elliptical leaf spring. Lubrication was of the dry sump forced feed type, the three-speed gearbox in unit with the engine was controlled by hand lever moving in a gate, the rear wheel was driven by shaft with flexible couplings and bevel gearing. The shoe brake acted on the propeller shaft. The rims were shod with 27 — 4 size tyres. The weight of the solo machine was 175 kg, its maximum speed 95 km p.h. and con-

JAWA stand at the 1929 Prague Motor and Motor Cycle Show

JAWA 500 OHV ● Four stroke OHV single cylinder ● Displacement 498.7 cc (bore and stroke 84×90 mm) ● Engine power 13.2 kW ● Forced feed dry sump lubrication ● Three-speed gearbox in unit with engine, hand control ● Rigid suspension rear wheel drive by propeller shaft with caliper brake ● Duplex frame welded of steel stampings ● Front fork with trailing link and quarter elliptic leaf spring suspension ● Weight 175 kg ● Maximum speed 95 km p.h. ● Average fuel consumption 5 to 6 litres per 100 km

The building on the right is the former roadside inn which gave to the whole locality the name Green Fox

sumption 5 to 6 litres per 100 km. The price of the new motor cycle was set at 14,890 crowns including Bosch electrical equipment, with sidecar the JAWA cost less than 17 thousand.

At its début the machine was exhibited in the finish that was to become tradition with JAWA till these days. It was red with cream lines and tank sides.

It soon transpired that a motor cycle of this category had not been a good choice. The reason was its high price — considering that the same year Aero came with a small single cylinder motor car which in its basic version cost not more than the JAWA with sidecar, there was a press indeed in the market.

In addition, the half-litre suffered from some design defects, the worst being in the front fork which was often breaking. Because of that for the second series the fork was reconstructed and made like the frame with pressed parts. New was also the headlamp, this time Bosch with tipping reflector instead of the original cylindrical lamp. The second series motor cycles in 1930 were sold at the reduced price of 14,000 crowns.

The third series (1931) differed from the previous ones mainly with the new exhaust silencer shape — the original end pieces nicknamed "grenades" were replaced by "fishtail" ends. On the tank was now the JAWA emblem in oval. An improvement was the new four speed gearbox, available as option. The third updated 500 OHV JAWA in solo version was priced at 12,000 crowns.

The heavy, expensive motor cycles came in the time of the economic depression and no wonder — Janeček's dream of mass production had to be postponed. In has to be admitted nevertheless that following all the improvements the JAWA was enjoying popularity. Until 1931 1,016 units are said to have been manufactured, not so little for those days. Owing to its robust appearance it earned the nickname "Rumbler". Its powerful engine induced many owners to acquire a sidecar. The sidecar standard wheel brake was controlled by pedal situated next to the motor cycle brake pedal. The driver could operate the two pedals at the same time or separately. Though heavy, the 500 OHV JAWA gave reliable service.

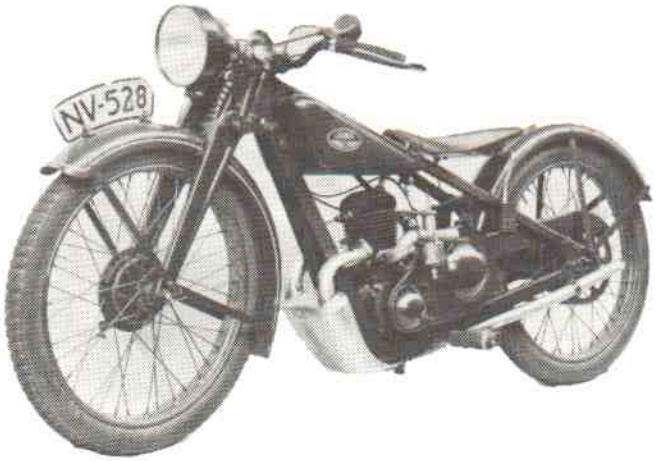
WHAT NEXT?

In 1931 still, i.e. the third year after the introduction of the new JAWA in the market, profit from armaments sales was double that of the motor cycle sales. However, Janeček made up his mind to follow the way he had taken, though he realized that the direction should be different. Following upon the economic crisis that had hit the whole of Europe the capacity of the market declined and adjustment was necessary. The factory's technical background was of a high standard, but no match for Zbrojovka Brno (Brno Munition Works) or for the other engineering giants. To continue with motor cycles was reasonable, but the heavy half-litre had to be replaced by a simple, reliable and cheap machine.

Once more the sensible thing was to seek a licence abroad. Therefore Dipl. Ing. František Janeček Junior set out for England. The country's motor cycle industry was renowned all over the world — makes like BSA, Norton, Matchless, AJS and others had the reputation of first class quality. The result of the trip was a contact with George William Patchett racer and designer, who had a wealth of experience acquired at Brough-Superior and McEnvoy in England and at the Belgian FN company. Not only did Patchett have the knowledge of facts, but technical sense, though he was no designer in the true meaning of the term, and not always quite at home in complicated drawings. Yet he knew definitely what a simple, reliable and cheap motor cycle should look like. Already during his employment with McEnvoy he became familiar with Villiers engines which met all the mentioned requirements. The Jawa management too realized that a two stroke single cylinder was the right answer, having made their experience not only with the complicated four stroke half-litre. Namely, no sooner did its production get into swing, the

design department — in the first place young and talented Josef Jozif — became occupied with the idea of its own machine. The result was a two stroke radial three cylinder with two pistons in each cylinder on a common crankshaft to be situated in the front wheel. If the power unit appears complicated beyond description, the frame was by no means simpler — the vehicle was in fact a three-wheeler with two wheels at the rear approaching each other when travelling. Pity, not even a photograph has survived, though the engine had been constructed and tested.

Due to Patchett JAWA started to buy Villiers 175 cc engines and to build them in frames of its own design. This time JAWA hit the mark. The oneseventyfive was such a trump card that even enthusiastic optimists in the factory must have been astonished.



Prototype of one of the first oneseventyfives with Villiers engine

THE RIGHT MACHINE AT THE RIGHT MOMENT

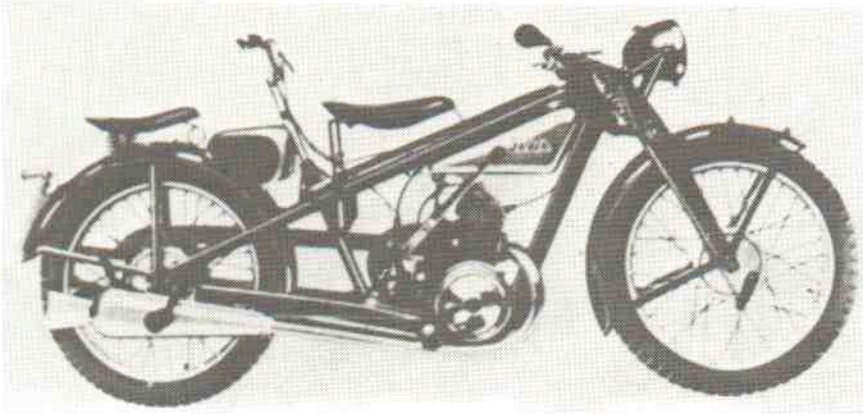
1932 was still a year of depression. A motor cycle costing 15 thousand crowns was for former potential customers unthinkable luxury. And so many manufacturers were forced in those times to close down for good. Among them was the Cheb manufacturer Premier who started his production as early as in 1908 and had sold by then some 4 thousand motor cycles. In this oppressive situation JAWA presented the oneseventyfive. "Better machine for less money" was the advertising slogan for the simple, attractive motor cycle presented at the Prague Spring Motor and Motor Cycle Show. The price of 4650 crowns was incredibly low, a third less than the price of the same class motor cycle of other manufacturers. The JAWA 175 engine was a two stroke three-port single cylinder with 172.6 cc displacement (57.2×67) producing 3.6 kW (5.5 HP) at 3750 r.p.m. at a compression ratio of 6.7 to 1.

The piston was deflector topped. Villiers 15 W flywheel magneto provided current for the ignition, power was taken through a dry single plate clutch to the three-speed gearbox controlled by lever from the box direct. The JAWA designed frame was welded of stamped sections the same as the link type fork with coil spring suspension. Capacity of the tank installed in the frame was 10.5 litres (the fuel was petroil mixture at the rate of 25 to 1). Initially the weight was 70 kg and the tyre size 2.75 mm — 25. Maximum speed attained 70 to 80 km p.h., consumption was 3 to 3.5 litres per 100 km.

To catch up with the 1932 season imported from England were not only engines, but gearboxes, wheel hubs, brakes, magnetos, headlamps, carburetters and chains. The motor cycle made a very compact, simple and pretty impression and had its sporting style, too. Noticeable was the exhaust system — the two exhaust ports led into a big common knee from which came the exhaust pipe without silencer. The first year 3,020 "Villiers" were manufactured — almost three times as many as the half-litres in three years. The small JAWA was smashing business.

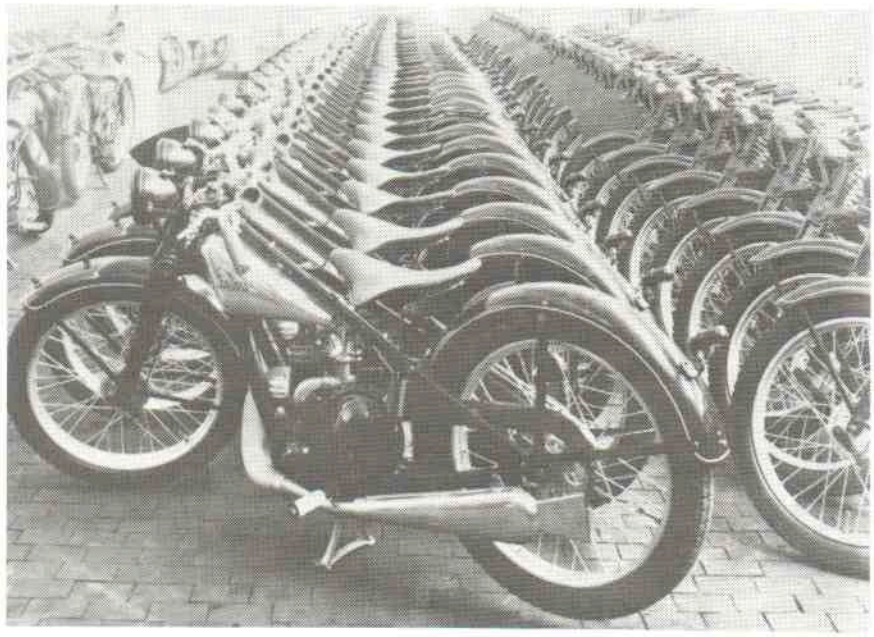
The model stayed in production until 1946 — during the War its manufacture was obviously halted like that of all motor cycles. The little JAWA was almost every year subjected to some changes and

JAWA 175 ● Two stroke three-port single cylinder ● Displacement 172.6 cc (bore — stroke 57.2×67 mm) ● Engine power 3.6 kW at 3750 r.p.m. ● Compression ratio 6.7 to 1 ● Deflector piston ● Intake port on side of the cast iron cylinder ● Albion three-speed gearbox ● Dry single plate clutch ● JAWA construction closed duplex triangular frame made with steel stamping sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension ● Weight 70 kg ● Maximum speed 80 km p.h. ● Average fuel consumption 3 to 3.5 litres per 100 km



The oneseventyfive with dual controls — the first swallow of its kind not only in Czechoslovakia

JAWA 175 Special ● Two stroke air-cooled single cylinder with inverted scavenging ● Displacement 173 cc (bore and stroke 58×65 mm) ● Engine power 4.5 kW at 3750 r.p.m. ● Compression ratio 6.2 to 1 ● Separate three-speed gearbox with foot control ● Dry multi-plate clutch ● Closed duplex frame made with steel stamped sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension ● Weight 97 kg. Maximum speed 90 km p.h. ● Average fuel consumption 3 to 3.5 litres per 100 km



The first series of the JAWA 175 models before dispatch

updated, so that the various motor cycles from the total of seventeen series differed considerably. The motor cycles were marketed in Popular and Standard-Special versions differing in chromium plating and extra equipment. Already in 1933 imports of parts for the basic production were radically cut down. Engine manufacture under English licence was launched and the motor cycles were equipped only with English magnetos, single lever carburetters and chains. For the very first time that year the worth of the motor cycles manufactured exceeded that of armaments at the rate of 18 to 3.5 million crowns.

Not later than in 1934 the motor cycles were equipped with JAWA 30 W magnetos, two lever Amal-Fischer carburetters and new shorter exhaust pipes with silencers.

In the course of the following years the machines were provided with new saddle type tanks, the engines were reconstructed to a seven port system with flat top piston, introduced were rectifiers and storage batteries and as extra equipment electrical horns. The exhaust system was again changed and featured two long silencers, there came the turn of a new cylinder with generous finning, engine power was being increased and some other elements reconstructed.

The oneseventyfive was such a success that JAWA made in 1938 a series of some fifty machines with double controls for training new motorcyclists. The machine was for the first time presented at the Prague Show where visitors were given the opportunity to try out their potential skill. Of course it was a publicity gimmick which paid and the double-control JAWA machines made news in the professional and popular press of the times. They were the very first motor cycles with this kind of equipment which was protected by patent. In all 27,535 JAWA 175 machines have been manufactured, their price was going down gradually to 3,490 crowns in 1936. They deserve credit for the increase of motor cycle numbers in Czechoslovakia and for a heavy decline of motor cycle imports from abroad. While in 1930 the home market absorbed 94% of foreign made machines and only 6% of home made motor cycles, the situation in 1937 was reversed — 6% of the motor cycles sold were imported and the majority of the remainder were JAWA. At long last the management of the factory at the Green Fox had put its best foot forward.

THE WAY TO THE 350 SV JAWA

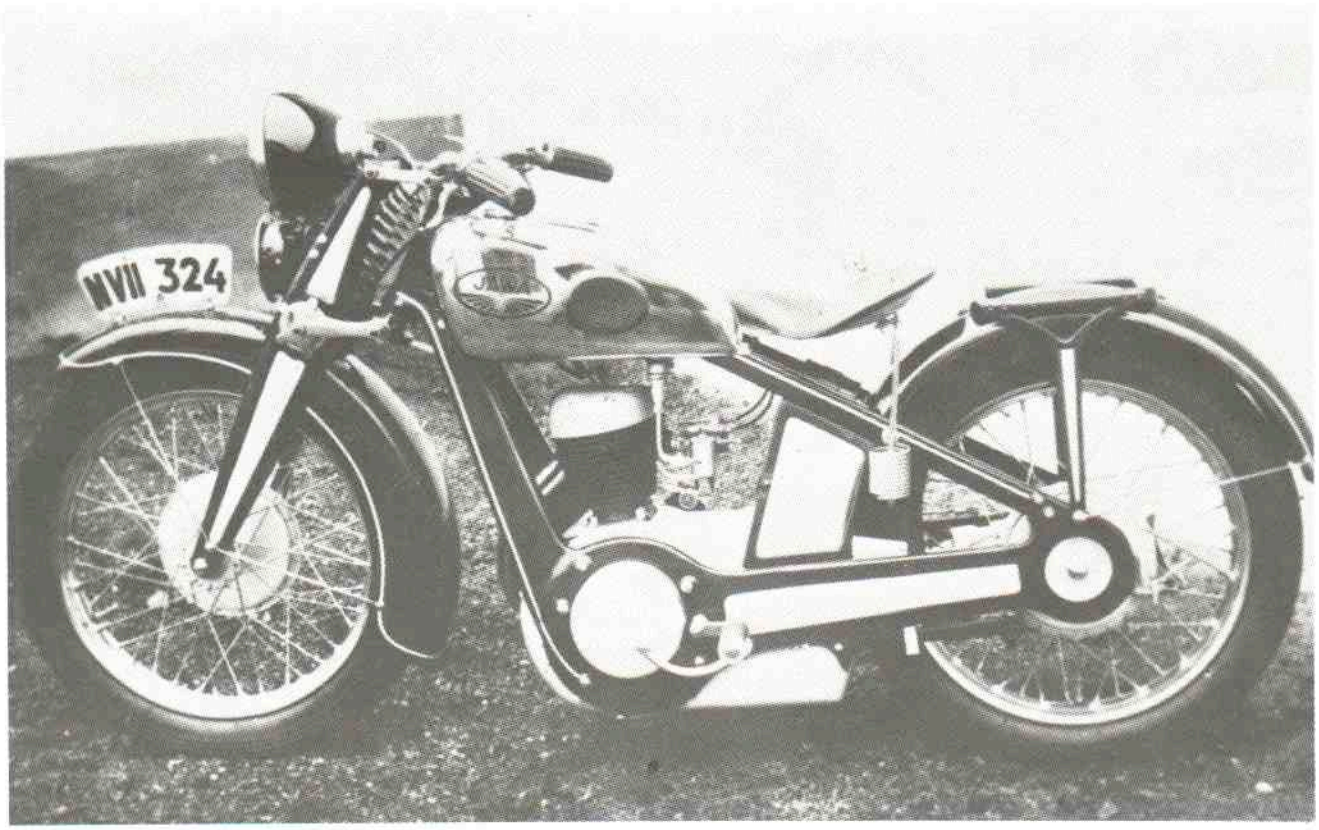
The management was under the impression that the small two stroke oneseventyfive had been a too big step from the half-litre and began to contemplate with what to bridge the gap, preferably with a 350 cc class motor cycle. It had been under consideration as long ago as in 1931, i.e. before the introduction of the "Villiers". The threefifty was to replace the half-litre and to accommodate exacting customers. The prototype of the machine presented at the 1934 Prague Show had a triangular duplex pressed frame and pressed swinging front fork with central coil spring suspension and a big saddle type tank. This time the motor cycle was of JAWA design, noted for a number of elements. The SV was provided with dynastart, the rear wheel — next to which the gearbox was situated — was driven by shaft like that of the 500 OHV JAWA. Its tests were perfectly satisfactory, but with a view to its design in general production costs would have been too high — and with an expensive motor cycle they had at Janečeks, as the factory used to be called, already a bad experience. That was the reason why also the second attempt at their own motor cycle design ended in failure, though this time for different reasons — from the technical aspect there was nothing wrong with the machine. The problem was that the threefifty would have cost as much as the half-litre.

In 1934 a threefifty had been nevertheless added to the JAWA manufacturing programme, even though it was on the whole an orthodox machine. It was powered by an air-cooled upright SV single cylinder of 346 cc (70×90) displacement with 8.8 kW (12 HP) output and 5 to 1 compression ratio. The separate gearbox was either hand or foot controlled. The frame was pressed like the front fork derived from the JAWA 175. The saddle type fuel tank (10.5 litres) was in unit with the oil tank. Lubrication was of the total loss kind with oil pump, oil quantity regulation and eye-sight. Worth noting were the double totally enclosed valve springs. Ignition was either Bosch by coil and battery or by Miller magneto. Employed was Amal carburetter with fuel and air regulation. The sporting handlebars were provided with shock-absorber, the throttle and ignition advance were controlled by twistgrips. The motor cycle was available with either Bosch or Miller headlamp (in the latter instance it was 300 crowns cheaper). The electric horn was standard equipment.

Its weight was 125 kg, maximum speed 100 km p.h., running consumption 3.5 litres per 100 km. The threefifty was a reliable motor cycle with very good handling. When starting from standstill the crankshaft and clutch shock-absorbers could be noticed. Highly appreciated was the very rigid frame. The cheaper type was sold for 6,950 crowns. The first year 1000 units were manufactured, in 1935 also 1000, in 1936 when the production of the side-valve threefifty was discontinued 504 more machines left the factory. In the course of the three years hardly anything was changed — at first sight noted was just another shape of the exhaust system — the more recent machines have been given fishtail silencers.

These motor cycles competed in several important meetings for which they were partly adjusted. The compression ratio was increased, the ports were polished and the timing adjusted. František Juhan took part with this machine in several track races, Vitvar and Dusil competed with the threefifties in the 1934 International Six Days Trial in Germany winning gold medals.

A notable JAWA 350 with dynastart; it was not introduced in production, but intimated the inventiveness of the design department



JAWA 350 SV ● Four stroke air-cooled SV single cylinder ● Displacement 346 cc (bore and stroke 70×90 mm) ● Engine power 8.8 kW ● Compression ratio 5 to 1 ● Oil pump lubrication with oil amount regulation ● Separate four-speed gearbox with hand control ● Closed duplex frame made with stamped steel sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension ● Weight 125 kg ● Maximum speed 100 km p.h. ● Average fuel consumption 3 to 3.5 litres per 100 km

ON FOUR WHEELS

Motor cycles, above all the oneseventy-fives, had proved their worth and took full possession of the market. The factory began to covet motor car production. It may have been prompted by the success of the Aero motor cars. Since the introduction of the small popular cars to the market in 1929 many former owners of powerful motor cycles have changed first to the single cylinder (Aero 500) and later to the twin cylinder (Aero 662) cars. At Janečeks there was no wish to lose time in this case either and the choice was another licence. In any case the German DKW Meisterklasse 701 was a suitable car for Czechoslovak conditions and for the facilities of Janeček's factory. And so appeared in 1934 the JAWA 700.

The car was presented to the public in the middle of the year and produced a lively response. The power unit was a transverse situated two stroke twin cylinder, water-cooled, displacement 684 cc (76×76), engine power 14.7 kW (20 HP) at 3200 r.p.m., the gearbox was three speed with disengaging freewheel. The clutch was on the gearbox drive shaft linked with the engine by a roller chain. The car had front wheel drive which was not exceptional in Czechoslovakia — the Brno "Z" motor cars were the very first front wheel drive cars in Europe to be manufactured in series. The backbone frame was made with stamped U sections, the four seater body wooden, leatherette covered. Suspension of all four wheels was by transverse leaf springs. The disc rims were shod with 4.00 — 19 size tyres. The total weight of the car was 690 kg, maximum speed 90 km p.h. The JAWA 700 was sold for 22,900 crowns and in the first five months (August to December) 203 units were disposed of. At first bodies with folding hood were manufactured in convertible-saloon version, since March 1935, cars were made with closed two-door bodies with the roof passing into hatchback without bulging luggage boot or spare wheel. Later bodies were no longer leatherette, but partly or fully metal sheet covered. Serial production continued only for two years and a total of 1,002 units left the factory gate.

JAWA motor cars were not made in Prague, but at Solnice in East Bohemia and at Týnec nad Sázavou, some thirty-five kilometres south-east of Prague. At Solnice bodies were manufactured, car assembly was carried out at Týnec.

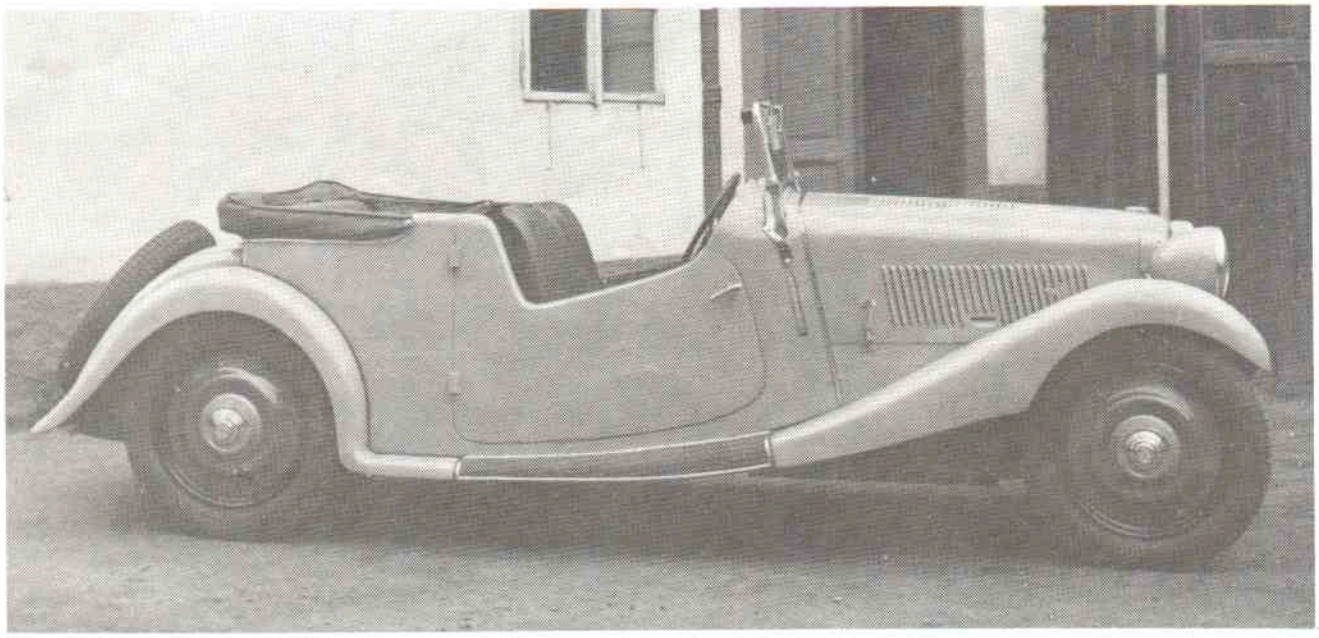
Notable are above all cars made for sporting events. There were only minimal engine modifications, the only major change was the 750 cc displacement. These cars in the year of their début were provided with open streamlined bodies with a big, vertical stabilizing "rudder" in the rear and without being tested (and even properly run in) brought to the start of a very difficult road race, the "Czechoslovak 1000 Miles". In the 750 cc open car category attained the Vitvar-Pánek JAWA the average speed of 84 km p.h., more than the previous year's winner P. Mucha with a big Praga Alfa (83.76 km p.h.). However, a defect close from the finish defeated Vitvar's endeavour which would have turned into a triumph. The race was nevertheless a JAWA success — the Kaiser-Kronberger closed production car finished 2nd winning the Prize of the Autoclub of the Czechoslovak Republic for closed cars.

A year later JAWA entered in the third Czechoslovak 1000 Miles three teams. Their cars (three open and three closed) had special streamlined Jarray styled bodies bearing even today strict examination. This time the closed car team won the Czechoslovak Republic President's Challenge Trophy. JAWA cars were successful in several other races winning some of them. Worth mentioning is Vitvar's win of the third Krakonoš Circuit in which he defeated all opponents with the smallest car on the line having completed the hilly 154 km long course at the average speed of 85 km p.h. A year later, in 1936, Vitvar repeated his overall win, this time at the average speed of 90 km p.h. and in 1937 the result was once more the same, the driver accomplished a hat-trick with the JAWA.

Crowns won in home rallies were galore and JAWA did well abroad, too. A big success was 1st and 2nd place taken in the 1937 Little Entente Rally. With that came the competition era of the JAWA 700 to an end, because the engines were getting obsolete and were no longer a match for the opposition. JAWA was well-aware of the situation and at the close of the thirties was preparing a brand-new car.

The JAWA racing team (3 closed and 3 open cars) for the Czechoslovak 1000 Miles Race

The JAWA 700



OHV ENGINE ONCE MORE

In 1935, a year after the introduction of the first JAWA motor car and a year after presenting the first motor cycle of the factory's own design — the 350 SV JAWA, a new OHV threefifty derived from the SV model, from which only the cylinder and cylinder head differed, was put on the market. In had been designed primarily for competition. Engine displacement was 346 cc (70×90), power output 11 kW (15 HP) at 4000 r.p.m., compression ratio 6 to 1. The casing of the four-speed gearbox was magnesium alloy. The frame was the same as that of the 350 SV, but the OHV 350 front fork was more robust with bigger shock-absorbers. With 142 kg weight the maximum speed of the machine was 115 km p.h. It was marketed in Standard and Special versions differing mostly with the extent of chromium plating, the more expensive model was equipped with a bigger headlamp with inbuilt speedometer lit up at night, pedal gearbox control and 3.50 — 19 size tyres, while the Standard was shod with 3.25 — 19 size tyres. In the year of its introduction the Standard cost 8,950 crowns, the Special marketed since 1937 was 500 crowns dearer.

The Overhead-Valve threefifties were at first manufactured parallelly with the Side-Valve models until 1936 when SV 350 machines were withdrawn. On the other hand production of the OHV 350 continued until 1946, of course with the exception of the war years. In all 2700 units were manufactured. Initially the machine was giving some trouble, mostly caused by the total loss lubrication. The valve gear suffered from oil starvation in the first place. Ignition defects were also appearing. But the engine continued to be improved, the cooling fins were enlarged, the valve gear enclosed, the lubrication trouble remedied. It enjoyed popularity with sportingly disposed motorcyclists. Properly serviced it gave very good service, its engine power and maximum speed satisfied exacting customers.

JAWA 350 OHV ● Four stroke air-cooled OHV single cylinder ● Displacement 346 cc (bore and stroke 70×90 mm) ● Engine power 11 kW at 4000 r.p.m. ● Compression ratio 6 to 1 ● Total loss lubrication with double-acting piston pump ● Separate four-speed gearbox with foot control ● Multiplate clutch with shock absorber ● Closed duplex frame made with stamped steel sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension and friction damper ● Weight 142 kg ● Maximum speed 115 km p.h. ● Average fuel consumption 3 to 3.5 litres per 100 km

THE FIRST TWOFIFTY

In 1935, while JAWA was already marketing the oneseventyfive, two threefifties and the small car, one more novelty was introduced — a two stroke JAWA 250. With that model started the great era of various twofifties which later, after the war, made JAWA famous all over the world. The very first appeared on the market in the spring of 1935, followed up the oneseventyfive to become with it the mainstay of the factory's production.

It, too, was a two stroke single cylinder, displacement 248 cc (63×80), engine power 6.6 kW (9 HP) at 3850 r.p.m. The seven port inverted scavenging Schnürle system replaced soon the original Villiers version improving scavenging and allowing flat top piston use. The engine was equipped with Villiers (later Grätzin) carburetter and two exhaust pipes ending with flat silencers. The three-speed gearbox control was by hand lever, optionally by pedal. The pressed frame was based on the well-proven concept tried out on the oneseventyfive and threefifties. The capacity of the saddle type tank was 10 litres (petroil at the rate of 25 to 1). The motor cycle weighing 95 kg attained 100 km p.h. maximum speed, its average consumption was about 3 litres per 100 km. At 5,490 crowns the twofifty stirred up the market and it is no wonder that it won within a short time thousands of customers. Until 1946 (with the war time interval) 14 thousand units have been manufactured.

Initially, the twofifty was to be made with Villiers flat piston top and cross flow scavenging engines. But the concept failed to prove itself, the engines suffered from overheating and high consumption. The reason was imperfect scavenging. Consequently the idea of another Villiers licence was abandoned and the more reliable Schnürle system introduced.

Evidently, many improvements have been made in the course of time. In 1936 still the twofifty received a new Amal carburetter, the 1937 model had a longer tank and new hand gearchange with gate on the tank instead of the original lever mounted on the gearbox. The flat exhaust silencers were replaced with oval shape silencers with the typical fishtail ends.

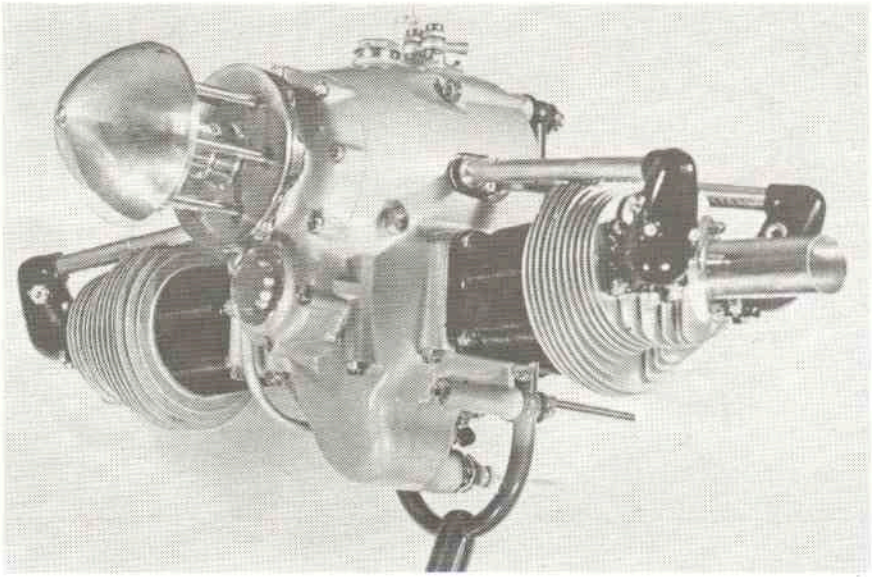
Offered for sale was a small number of the so-called Mountain Models, characteristic with a second flywheel outside (not inside) the crankcase under the primary chain cover on the left side of the engine.

WOULD JAWA FLY?

Janečeks were aiming even higher as shown by their notable aeroplane engine in 1936. JAWA may have wanted to prove that the factory was capable to do more than just dominate the motor cycle home market.

The JAWA aircraft engine was a four stroke twin with opposed cylinders, displacement 1000 cc (84×90), dry sump forced-feed lubrication with pressure relief valve and oil filter. The engine was provided with pressure gauge and remote temperature gauge. The auxiliary air regulation of the two Amal carburetters was changed to altitude correction. The throttle was lever controlled, the ignition advance and altitude correction were also controlled from the pilot's seat. The engine was equipped with a fuel feed pump and double ignition with two sparking plugs per cylinder. The single magneto was installed on the propeller shaft. For minimum engine length provided was a reduction drive consisting of a pair of spur gears. The first was fitted on the crankshaft rear end and drove the other gear mounted on the propeller shaft situated coaxially 100 mm above the engine. The shaft drove both the magneto and the camshaft. The unit was higher, but mainly shorter, which is highly important in aircraft construction. Notable was its weight — 39 kg — attained inter alia with crancase parts made with magnesium alloy castings. The power of the aircraft twin cylinder was 26.5 kW (36 HP) at 4000 r.p.m. It was definitely interesting, but never put in serial production. However, it proved that there were capable designers in the JAWA development department.

The aircraft twin with reductor, designed by the then very young Zdeněk Pilát, CSc.



THE INDESTRUCTIBLE ROBOT

In the mid-thirties JAWA had attained such command of the home market so as not to have to fear competition. What remained was to win the groups of potential customers who for the time being were prevented to ride big motor cycles — the young. At that time small motor cycles — from present-day aspect mopeds, were manufactured by another munition factory — ČZ. The make's light 73 cc cylinder capacity and more so the 98 cc models had no rival on the home market and that was what JAWA meant to remedy.

First, a licence, this time French, came under consideration. In the end Josef Jozif was commissioned to propose a bicycle with auxiliary engine. Janeček himself told him to work on the smallest cycle at home and not to mention it to anybody. He evidently wished to have the preparation of the new JAWA a complete surprise. The proposal of the machine took in consideration the traffic regulations which in these days were very benevolent toward owners of small motor cycles. In Czechoslovakia admitted as autocycle was a two-wheeler powered by engine of no more than 100 cc displacement and equipped with rear wheel pedal drive. It could be ridden by persons over 14 years of age without driving licence, the vehicle was not subject to road tax, third party insurance and registration and so it was not required to carry a registration number.

Once more JAWA went its own way, even though in this vehicle category many manufacturers were relying on the renowned Sachs and Ilo engines. The machines of a number of makes were just assemblies of parts from various contractors, while the little JAWA was an exception in this respect. Apart from the Grätzin carburetter it had originated under one roof.

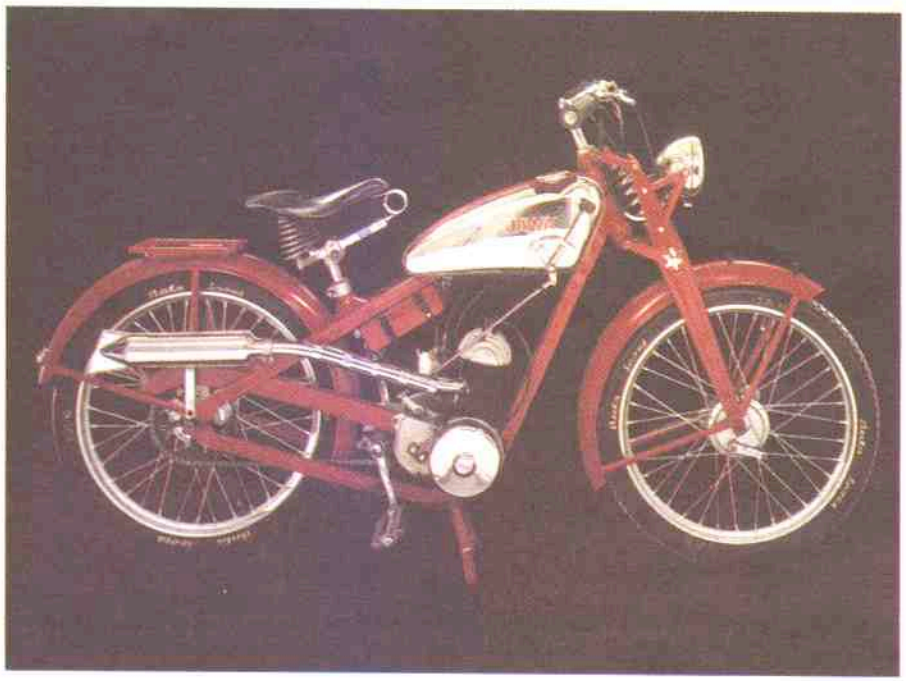
The JAWA 100 was presented at the 1937 Prague Sample Fair and the factory publicity department had the felicitous idea to invite the Fair visitors to a competition for its name. Within three weeks a total of 15,025 visitors have written their suggestion on the lottery tickets contesting the 2,500 crowns prize for the best name. The Jury decided that most appropriate was Robot — recommended by 68 competitors. Few people know that the word was invented by writer Karel Čapek who had used it his novel R.U.R. The JAWA Robot was powered by an air-cooled two stroke single cylinder with 98.8 cc displacement (47×57), inverted scavenging producing 1.9 kW (2.6 HP) at 3750 r.p.m. and 5.7 to 1 compression ratio. The Grätzin carburetter was controlled by lever, later by twistgrip. Ignition was by magneto, designed and manufactured by JAWA. The three-speed gearbox was in unit with the engine, control was by lever in the gate on the tank. Owing to the freewheel in the gearbox the rear wheel could be driven by the engine or by pedals. The engine was started by pedals at standstill or by pushing.

The frame was traditionally of pressed sections and so was the front fork. Capacity of the saddle type tank was 8 litres (petroil mixture at the rate of 20 to 1). The saddle and handlebars were adjustable for height. The Robot wheels were shod with 2.25 — 19 size tyres, the machine weighed 49 kg, its maximum speed was 65 km p.h., average consumption 2 litres per 100 km.

In the first production year the Robot cost 2,790 crowns and 5,000 units were sold. The total number manufactured until 1946 — except for the war time interval — was 12,000.

The Robot has been partly updated too, in 1939 the compression ratio was increased to 6 to 1 and the power output to 2 kW (2.7 HP), the exhaust was provided with a heat guard and its shape changed — the initially horizontal silencer was slightly upswept.

The Robot won very soon popularity bringing JAWA more customers who either were not so bold as to ride a bigger motor cycle or who because of their age would have had to wait to do so.



JAWA 100 ROBOT ● Two stroke air-cooled single cylinder with inverted scavenging ● Displacement 98.8 cc (bore and stroke 47 × 57 mm) ● Engine power 1.9 kW at 3750 r.p.m. ● Compression ratio 5.7 to 1 ● Three-speed gearbox with hand control in unit with engine ● Freewheel permitting rear wheel drive by engine or pedals ● Closed duplex frame made with steel sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension ● Weight 49 kg ● Maximum speed 65 km p.h. ● Average fuel consumption 2 litres per 100 km

JAWA MINOR I

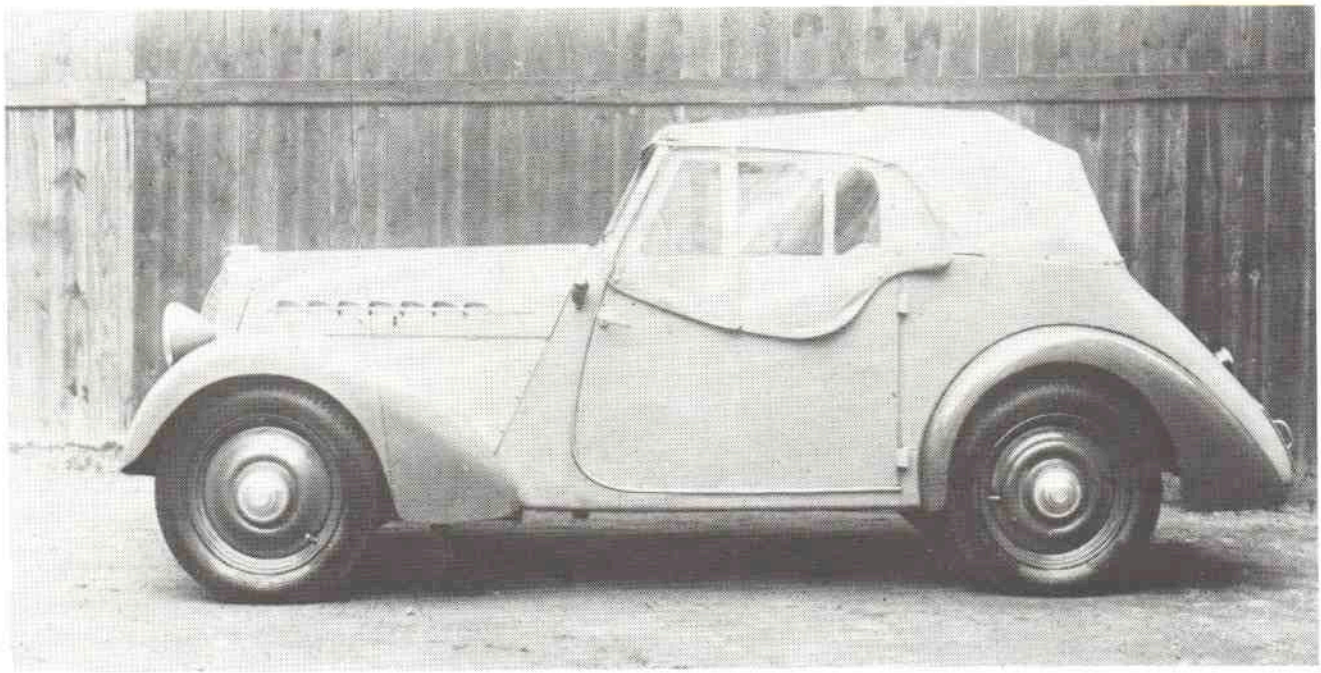
JAWA Minor I ● Two stroke water-cooled twin cylinder with inverted scavenging ● Displacement 615.75 cc (bore and stroke 70×80 mm) ● Engine power 14.3 kW at 3500 r.p.m. ● Engine situated lengthwise ahead of the driven front axle ● Three-speed gearbox ● Single plate dry clutch ● Chassis consisting of square section backbone central bearer ● Independent all-round suspension with transverse leaf springs ● Convertible with canvas hood and drop windows ● Maximum speed 95 km p.h. ● Average fuel consumption 7 litres per 100 km

In 1937, when the Robot was first presented, motorists had the opportunity to admire yet another new JAWA — the JAWA Minor I motor car. It was first put on show in November. It was this time the factory's own design, in development since 1935 had been two different concepts. Chosen for production was the car developed by Dipl. Ing. Rudolf Vykoukal — a small vehicle with backbone type frame and independent suspension all-roud, two stroke twin cylinder with Schnürle inverted scavenging system and 615 cc (70×80) displacement driving the front wheels. Engine power was about 14.3 kW (19.5 HP) at 3500 r.p.m. and maximum speed of the car 95 km p.h. The engine mounted on rubber blocks was equipped with Solex carburetter and Bosch starter motor. The gearbox in unit with the differential has three speeds, the clutch dry single plate. The steel sheet central bearer was of square section, bifurcating in front to receive the power unit. The front half axles were of the fishbone type, suspension was by upper transverse leaf spring. The wheels were shod with 4.75 — 16 size tyres.

With car cimensions (roadster body) — length 3000 mm, width 1350 mm and height 1360 mm — the weight could be kept down to 600 kg. Like with the previous JAWA car the bodies were manufactured at Solnice, final assembly was taking place at Brodce nad Sázavou. In its basic version the car was available with convertible body, folding hood and winding side windows. The roadster was two seater with simple folding hood and side screens and there were several versions of little differing saloon cars. In 1939 the JAWA was given a military body, too. This type of car was also bought by the police.

The civil car production was running up to 4 units, while that of the military models had gone up to 6 — 7 a day. In all 2,700 cars were made, including those assembled after the War in 1946. In the year of its début the cheapest version was priced at 16,000 crowns, a year later at 16,950 crowns. The little JAWA Minor I was pretty and sold well. Appreciated by customers was above all its reliability resulting from careful preparation and thorough testing — the prototype completed before the beginning of production 70 thousand kilometres. The car was capable to do more than give daily service. In the Little Entente Rally it took 3rd place among 107 starters.

The first JAWA Minor I (615 cc) prototype developed in two alternatives. Realized was the design of R. Vykoukal and J. Kec



THE LAST PRE-WAR PREMIÈRE

JAWA 250 Duplex-Blok ● Two stroke air-cooled single cylinder with inverted scavenging ● Displacement 248 cc (bore and stroke 68×68 mm) ● Engine power 6.6 kW at 4000 r.p.m. o Compression ratio 6 to 1 ● Four-speed gearbox with foot control bolted to the engine forming a block ● Multi-plate clutch in oil bath ● Closed duplex frame made with stamped steel sections ● Rigid rear wheel suspension ● Parallelogram front fork with coil spring suspension ● Weight 115 kg ● Maximum speed 100 km p.h. ● Average fuel consumption 3 to 3.5 litres per 100 km

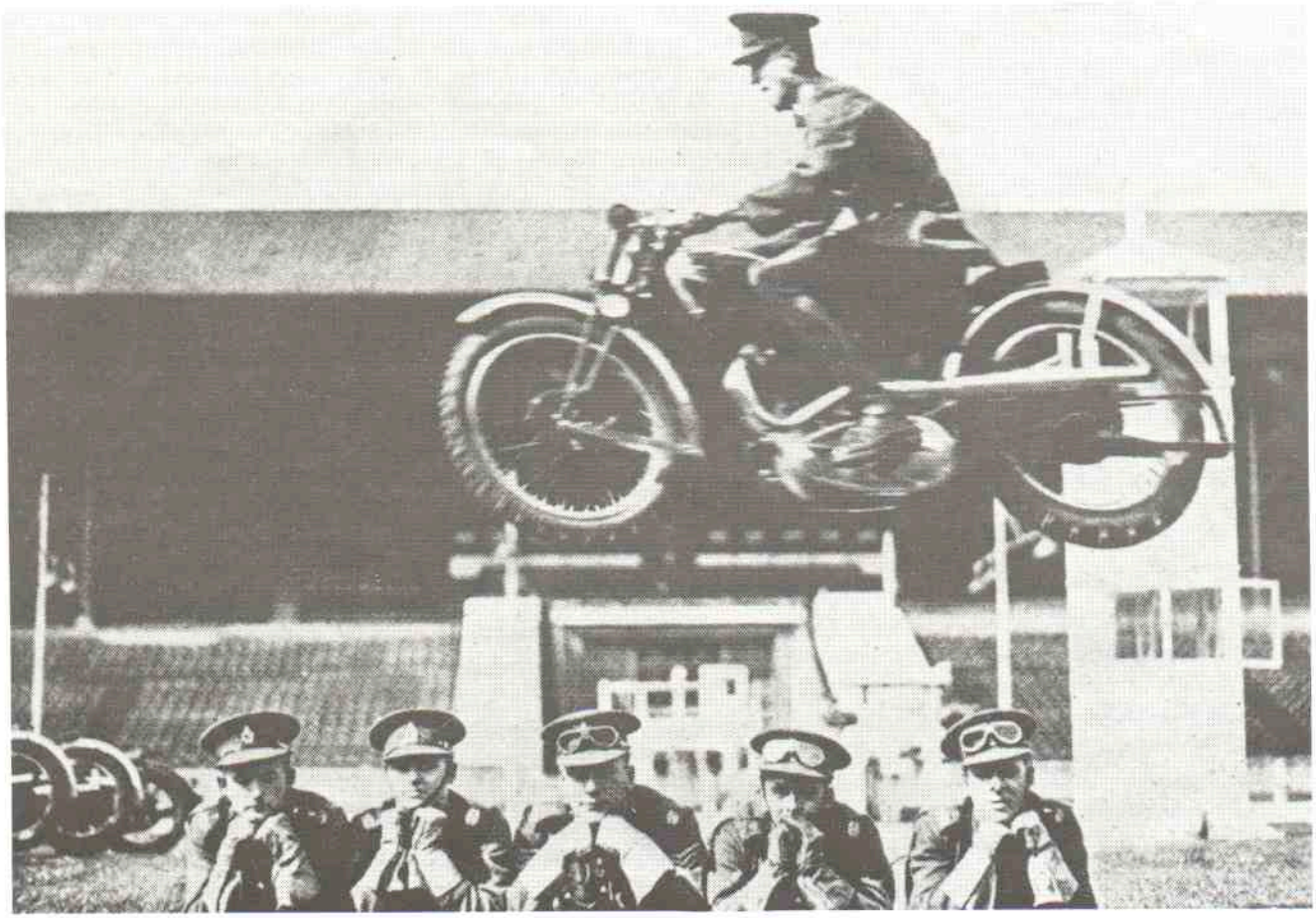
Before the outbreak of the Second World War the factory had come with one more novelty — the JAWA Duplex-Blok appeared on the market. It was a twofifty based on the familiar two stroke JAWA 250, but with the power unit reconstructed so much that it has to be described as a new model. The gearbox was, namely, joined with the engine, though its was a separate part (block), primary drive was by duplex chain. The engine was also changed, it was made "square" (68×68), displacement 246 cc. Its power output was 6.6 kW (9 HP) at 4000 r.p.m. and 6 to 1 compression ratio. The cylinder barrel was a special grey iron casting, the cylinder head of light alloy, ignition by JAWA flywheel magneto, Amal or Grätzin carburetter. The multiplate clutch in oil bath coupled to engine with a four-speed gearbox controlled by gearchange pedal.

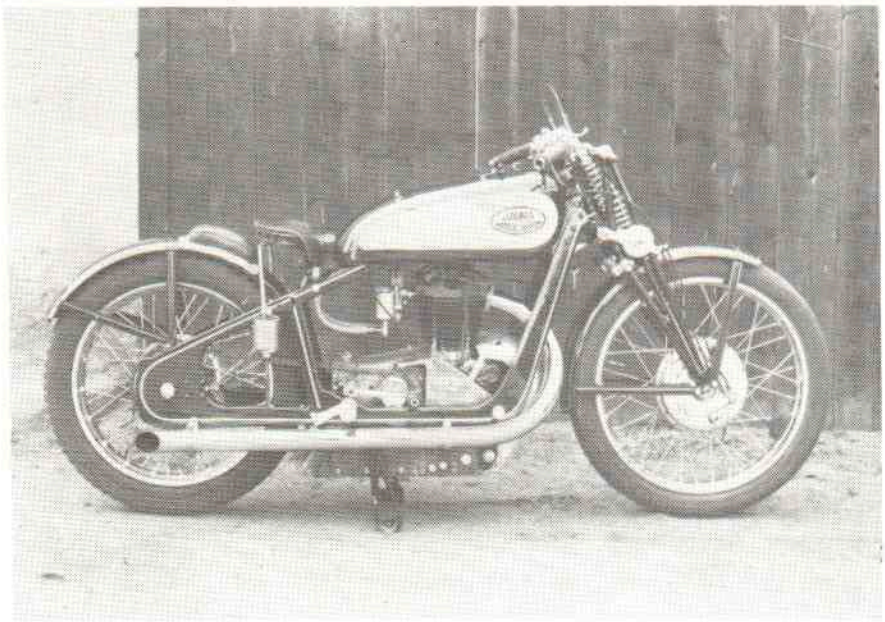
The frame and front fork were of the well-proven pressed type, reinforced partly compared to the JAWA 250 model. The two-piece rear mudguard and detachable spindle made wheel removal considerably easier. Knee grips were standard equipment. The tyres were of 3.25 — 19 size.

Machine weight was approx. 115 kg, maximum speed 100 km p.h., average consumption 3.5 litres per 100 km.

JAWA put on the market in 1939 900 Duplex models, another 100 units have been assembled after the War. Worth mentioning are prototypes of the JAWA 175 Duplex-Blok, their turn had, however, never come. The Duplex-Blok was the factory's pre-war swan song. But it foreshadowed what was to originate at JAWA later . . .

Even in this way tried the factory to convince potential customers of their machine reliability





A racing special in a frame modified from the JAWA 500 OHV raced by G. W. Patchett

Apart from serial production motor cycles JAWA manufactured special machines for trials and races, mostly 250 and 350 cc four stroke single cylinders. From the initial models made under licence JAWA arrived to its own trend in design verified on numerous prototypes. The factory paid attention to all novelties appearing in the world and tested all possible alternatives of various groups and components.

So for instance suspension was tested not only in prototypes, but on competition machines in extreme conditions. Among notable designs was suspension by composite torsion bars tested in road racing as well as trials motor cycles for the Six Days. The machine finished the trial to the very last day, but the suspension proved not to be suited for serial production.

To the same end came the rear wheel suspension by leaf spring. But this did not get further than the prototype stage. In current road tests the method proved to be utterly wrong — the motor cycle was unsteerable lacking rear wheel guiding in bends.

JAWA tried out pneumatic suspension, even a system of small rubber bags, however, without satisfactory results.

Although the main production programme was the manufacture of two stroke motor cycles, the design department paid great attention to four stroke engines. This is shown by experiments with various valve springs, beginning with orthodox coil to hair needle and to leaf springs complementing hair needles.

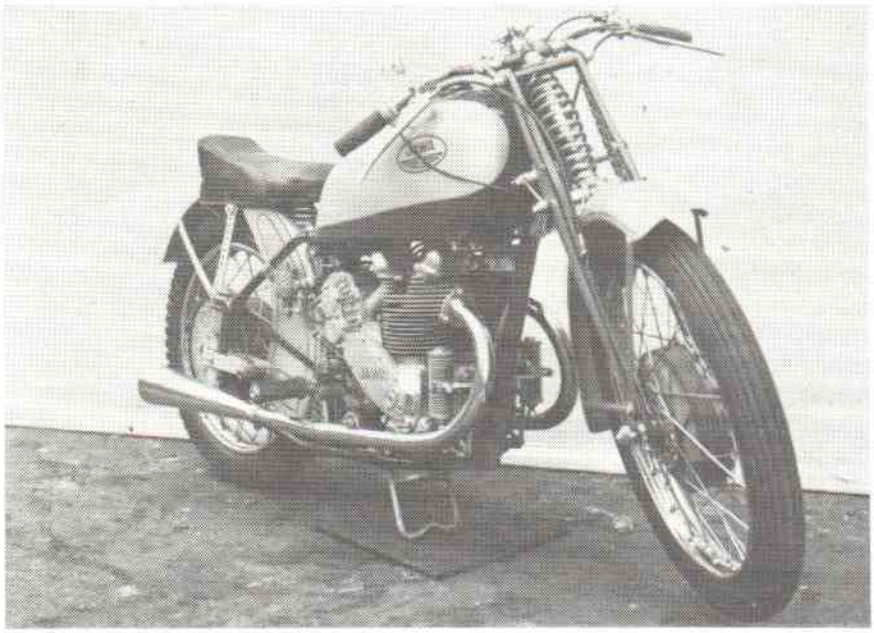
Tested in two stroke engines were various shapes of ports and different constructions of the whole system, including differential pistons and even a twin piston engine with opposed pistons and common combustion chamber. That prototype had two separate crankshafts at opposed ends of a single cylinder. But to overcome the problems with the synchronization of the two crankshaft mechanisms failed, although the power output was promising. JAWA staff had also experience with superchargers — the first experiments with them were made on the radial two stroke three cylinder, which had been mentioned. The racing oneseventyfive with blower designed by Dipl. Ing. Vsevolod Grečenko indicated, too, that the factory was paying attention to the problem. Experiments with a coal gas engine were also made.

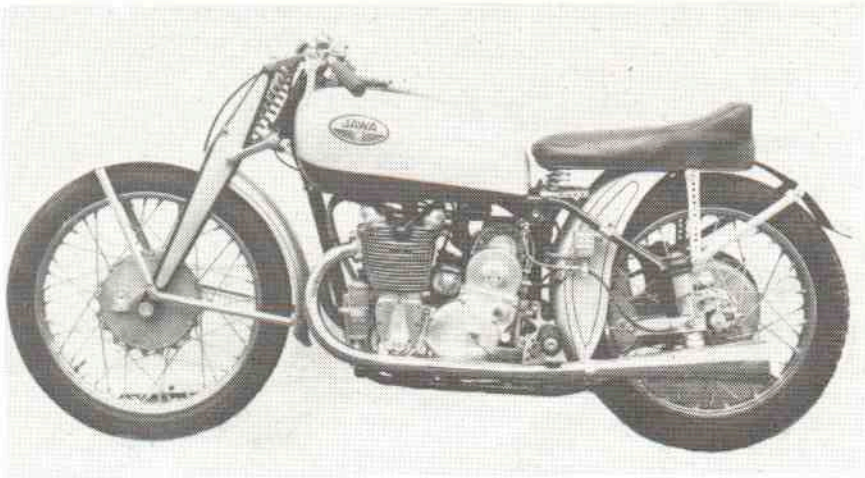
Most of this kind of work was far remote from serial production and often even from racing machines, nevertheless its investigation of the problems had its bearing on the growth of all, who worked in the JAWA design department.

Some of the experiments got ahead of their time, e.g., the construction of an engine with chain-driven rotary valve. Tested was also a two stroke engine with rich mixture injection in the cylinder scavenged with air.

Apart from these — let's call them laboratory engines, developed and manufactured in small lots were competition machines for verification of the planned novelties on the one hand and for top riders on the other. They had always been well aware at Janečeks that success in competition is the best possible ad-

JAWA 500 OHV twin cylinder with Roots supercharger (seen from the right)





JAWA 500 OHV twin cylinder with Roots supercharger (seen from the left)

vertising, regardless of the fact that the owner was well-disposed towards the sport.

In the design of many competition machines G. W. Patchett had his part, above all with his ideas, but these had to be realised by designers. Many competition engines were derived from serial production versions, mainly from the OHV threefifty, but there were instances of engines developed just for racing. This applies, e.g., to the OHV 250 JAWA of the late thirties.

Ever since 1930 JAWA had been taking part in rallies, trials and races, evidently still with the half-litre. But the factory got really busy in this respect after the arrival of the little oneseventyfive. Based on it several notable designs came into existence. In 1934 derived from the third series of production machines was a competition version with water-cooled engine, the radiator was situated in the middle under the tank in the motor cycle longitudinal axis. The cooling was of a thermosiphon type. Machine weight was 90 kg, engine power 4.5 kW (6 HP) at 3800 r.p.m., maximum speed 90 km p.h. The motor cycles were intended for road as well as for track racing, very popular at that time.

Quite unique was the JAWA 175 with piston type supercharger that came in existence in 1934. It was powered by a two stroke single cylinder with supercharger in the crankcase bottom part. This engine employed thermosiphon type water cooling, too. Its power output was 6.6 kW (9 HP) at 4200 r.p.m. giving the 72 kg weighing machine the maximum speed of 120 km p.h. František Brand won with it a number of trophies.

Speaking about the oneseventyfive, let's pass on to 1937 when a four stroke single cylinder of that capacity came into being at JAWA. Typical features of this motor cycle were "X" crossed push rods and the carburetter situated above the cylinder head. The power output of the OHV engine was 8.8 kW (12 HP) at 6000 r.p.m. giving the motor cycle 120 km p.h. maximum speed.

These designs give proof of the JAWA designers' inventiveness that had led to many crowns won by works and private riders. The very first big success has been won by JAWA in the first year of motor cycle production. In the 1000 km long Great Trial František Brand won a gold medal and it had been naturally assumed that the winner would be a heavy powerful machine.

A top class special — and the last in that period of time — was designed close before the beginning of the Second World War and its development continued until 1943. A few prototypes worth notice were made. The motor cycle was powered by a supercharged transverse situated 500 cc twin cylinder with two overhead camshafts, 37 kW (50 HP) power output at 7000 r.p.m., compression ratio 16 to 1. The inlet valves were in the front part, the exhaust valves in the rear part of the cylinder head. The camshafts were driven by gears between the cylinders. Ignition was by magneto, the Roots supercharger was driven by roller chain, in the supercharger intake manifold was a twin float Amal carburetter. The clutch was dry multiplate and the gearbox was substituted by a layshaft. The power unit was installed in a tubular frame bifurcating at the bottom, the front fork was telescopic with short suspension travel. The machine weighed 119 kg.

Beside these exceptional or special designs new production models were of course being prepared. Constructed at the beginning of the War was a JAWA 125 prototype and the prototype of a new JAWA 250, but these could no longer be put in production.

SPORTING ACHIEVEMENTS

As early as in 1930 JAWA appeared in the starting list of the international Zbraslav — Jíloviště Hillclimb and a team of three riders with the half-litres competed in national trials, very popular at that time. Among them František Brand found soon his place and was the very first Czechoslovak rider appearing in the Tourist Trophy when with a 500 OHV JAWA in 1932 he finished fourteenth — returning home with a Silver Replica. Brand competed in trials, road and track races, and in the International Six Days Trials regularly entered by JAWA since 1932.

In 1933 two Englishmen — G. Wood and T. Span — rode in the Tourist Trophy to finish in the very good 5th and 6th

place, JAWA was the only manufacturer outside the British Isles to leave a mark on that course. The average speed of 121.5 km p.h. attained by Wood commands respect even today, just as his Gold Replica.

Since 1932 to 1938 Czechoslovak JAWA riders were every year winning at least one gold medal in the International Six Days Trial, they fared best in 1937 coming home with four gold medals. In 1935 the Czechoslovak Trophy Team battled with the the German homeside until the final speed test to finish second in the end. Among the trial riders best were František Brand, Antonín Vitvar, Richard Dusil, Václav Stanislav and Zdeněk Houška. Worth mentioning is also Jan Bednář's overall win with a JAWA Robot of the 1937 "Little Entente Rally".

With even more intensity has JAWA been engaged in track racing and, in addition to local riders, most successful have been Austrian rider Killmayer and German rider Gunzenhauser. Track racing has always been popular in Czechoslovakia. The Golden Helmet at Pardubice is the oldest meeting on the Continent. Soon ice racing could assert itself, the first meeting has taken place in January 1937, at Jevany near Prague. It is a wonder that, though the racing and trials safety regulations of that time cannot be compared with todays' and though the speed of the motor cycles of that period was by no means low, bad accidents were infrequent. The only famous rider to lose his life with a JAWA was František Brand. The paradox is that it did not happen in races, but on a normal business trip. He died on March 4, 1936, near Rakovník at the age of twenty-six having in his six years' career won a quantity of trophies, medals and crowns.

JAWA motor cars have not lagged behind either. Their successful campaign in the Czechoslovak 1000 Miles had been mentioned. The streamlined wooden bodies covered with aluminium sheet with seven hundred capacity engines attracted well-deserved attention everywhere.

A big international success was won by a JAWA car in the 1939 Monte Carlo Rally. Antonín Vitvar with co-driver Musil have set out in the second JAWA model, the Minor I. They started on January 17 from Athens in a new car powered, however, by an engine which, without modifications had covered 20 thousand kilometres. By the fault of a taxi driver, who had led them out of Strassbourg at the opposite end than required, they lost marks and dropped back in their class to 11th place. They improved their position in the end finishing eighth in the 750 cc class with a 600 cc engine. But for straying at Strassbourg they would have been second in the class. A remedy was the Concours de Confort victory — the Jury having decided that in respect of comfort the little Minor surpassed its greatest opponents, the DKW and Simca-Fiat cars.

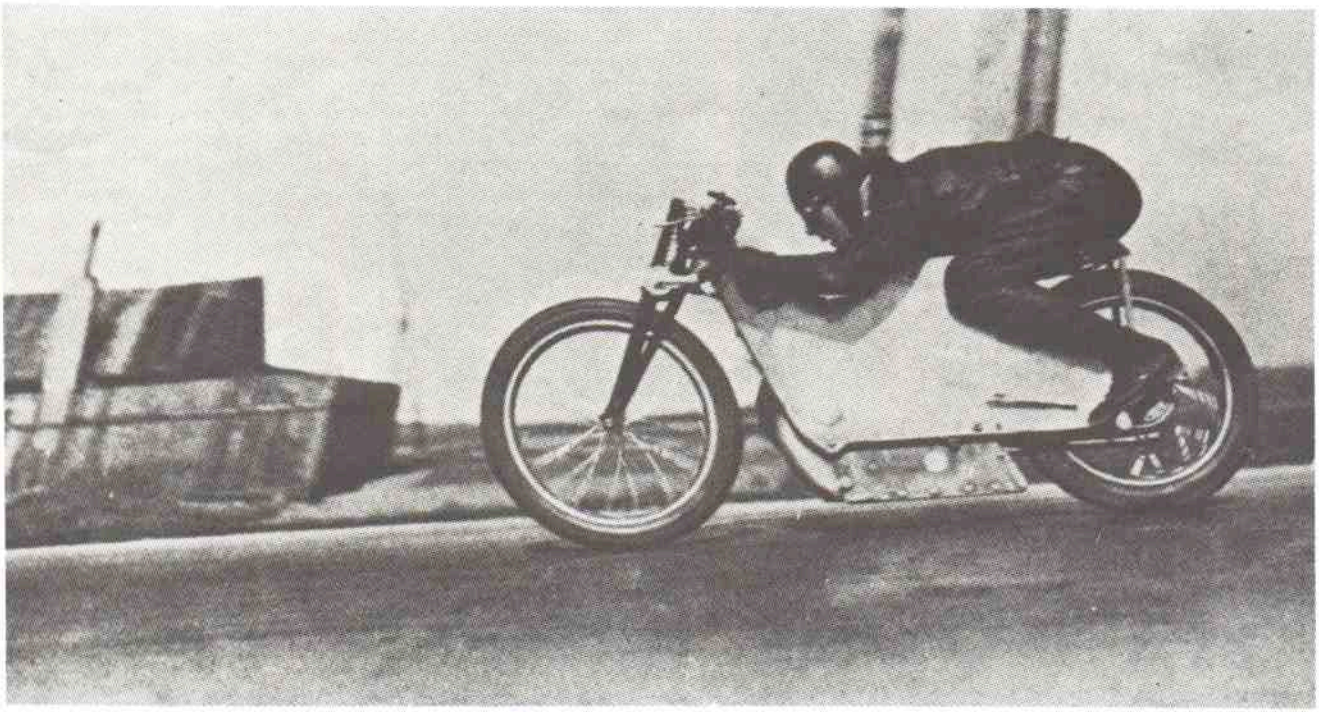
The competition department under G. W. Patchett's management had a big time with competition motor cycles indeed and Patchett had been not only chief of the expeditions to the International Six Days Trials, but was a rider as well. First with the "Box", a special he started to design while with FN and finished at JAWA. It looked just like it was nicknamed. However, with the heavy five-hundred single cylinder he couldn't possibly have set the Thames on fire, though he was an outstanding rider. The "Box" was ridden also by Brand, Uvira and Wood, but it proved rather unreliable.

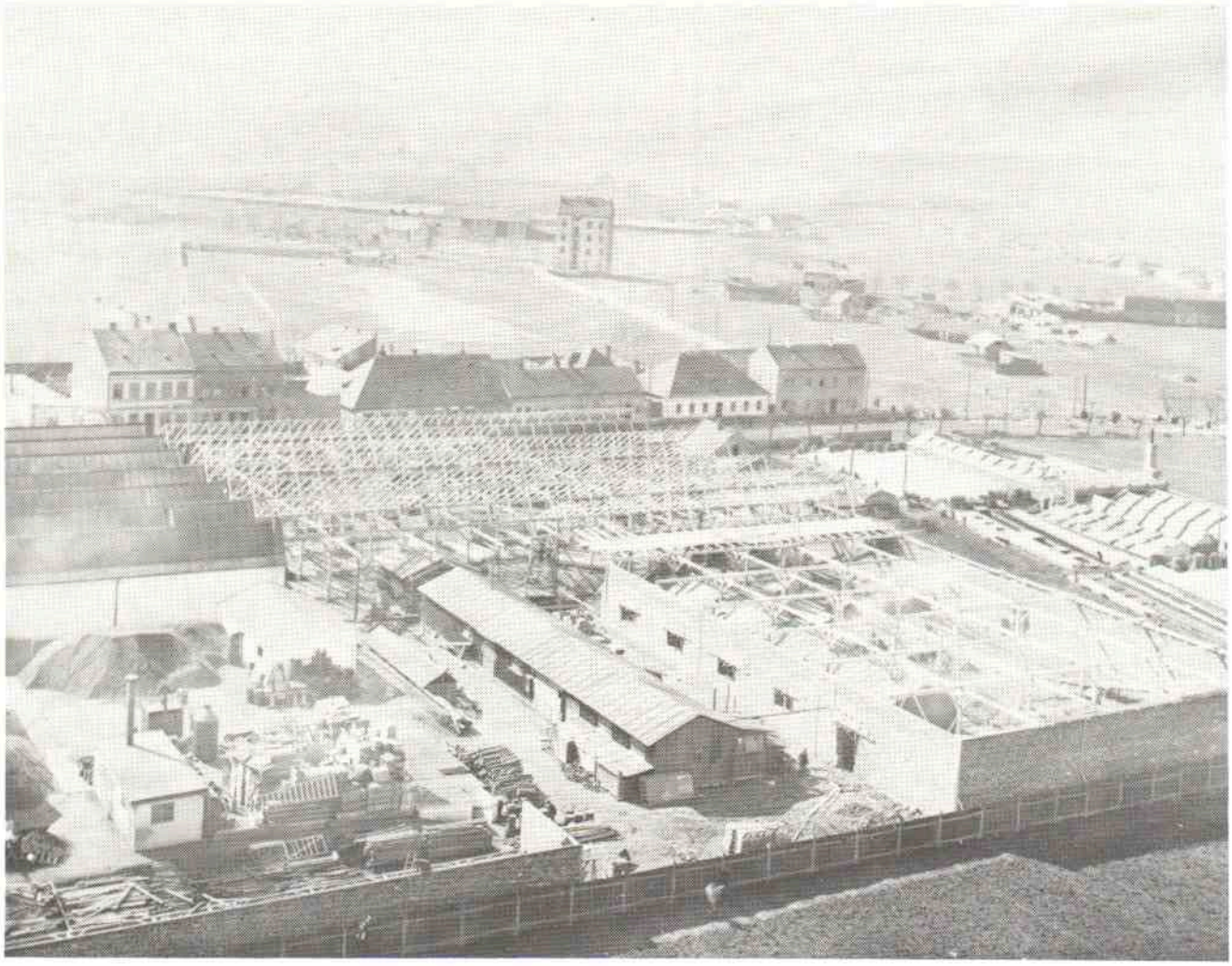
The prewar competition activity of JAWA involved perhaps all the kinds of the motor cycle sport of those days. The motor cycles had asserted themselves definitely in home meetings and were matchless in Czechoslovak track racing. However, in the European trial of strength their day of glory was to come later.

Even though long distance runs are not counted as sporting feats, one of them definitely should. In 1933 Captain František Přihoda left Plzeň for Africa and managed with a 500 OHV JAWA to cover 9,000 kilometres in 50 days.

Speaking about sport two Czechoslovak flying kilometre speed records in the 175 cc and 500 cc classes established in 1933 should not be forgotten. With the smaller machine F. Brand attained the speed of 123 km p.h., G.W. Patchett with the half-litre went on record with 179.5 km p.h. His motor cycle was a single-speed special with streamlined metal enclosure. This was nothing out of the ordinary for Patchett, until then he had been holder of thirteen world records in various motor cycle categories. On the other hand Brand's oneseventy-five was very close to serial production machines.

G. W. Patchett establishing a Czechoslovak speed record with a JAWA 500. Flying kilometre resulting speed was 179.5 km p.h.





Mid-thirties — the factory is growing fast

THE FIRM'S DEVELOPMENT

Where were the times when Janeček was busying himself in his workshop cum laboratory, where were the times when with Kohoutek they were finding their feet in the former chemical workshop at Mnichovo Hradiště and even the beginnings in the erstwhile Green Fox Inn converted first to shoe and later arms production seemed to be long past. Within a few years Janeček had to reorientate his production programme, to adjust his factory and everything connected therewith.

His aim was to secure motor cycle manufacture from raw material extraction right to the final product. That he had been inspired by Ford is evident, even though it was quite impossible to realize such programme in the Czechoslovak conditions. Janeček was nevertheless convinced that he must have a go at it. Sometimes his steps were strange to say the least — in 1940, early in the War, the firm started mining in the Železný Brod district in northern Bohemia in the Dagmar Mine at Vrát. Sixty mineworkers toiled there barely a few years, in the end the mine was closed down owing to unprofitableness.

Janeček, of course, would not embark upon his projects rashly. He was well-aware that the less subcontractors there are the more independent his business would be. And so already in the mid-twenties he intended to find a new locality for the future large concern. By then his conditions at the Green Fox were on the whole restricted and so he picked out an area at Týnec nad Sázavou in Central Bohemia. Why just there? There were several reasons. Cheap labour was available, because there had been practically no industry. There was a railway so that connection with Prague was very good, the flow of water in the Sázava river was sufficient for industrial purposes and the distance from the capital city — some thirty kilometres — offered advantages.

In 1926 Janeček purchased an estate at Solnice and a sawmill with a joiner's workshop at Kvasiny. True — it is from Prague to this part of Eastern Bohemia well over hundred kilometres, but at that time he was possibly more concerned with the estate than with industrial exploitation.

A year later he acquired the former Nobel company's dynamite factory at Zámky near Prague, so he had no need to fear lack of space for a possible future expansion of production facilities.

Most advantageous was evidently Týnec nad Sázavou, but things there did not go quite so easy. Janeček had to exert much effort, diplomacy and finance to settle down there.

In 1925 he donated the local authority

money for the establishment of a telephone exchange and became member of a power mains cooperative. The following year he began to buy up systematically land to acquire the principal part — some 200 thousand square metres — by 1929.

He had come to like Týnec so much that he had in 1929 a circular ground plan villa built on Korbel Hill, soon to be called merry-go-round. Its new owner was something of an eccentric — from his study he was able to follow on an electric board anybody moving about the house and in any room, there was even a bugging device in the villa.

Janeček had widereaching plans with Týnec. He wanted to make from the provincial township a modern town for twenty thousand inhabitants, believing he could imitate Baťa's Zlin. It is evident today that this was a chimera that dwindled away the moment the armaments orders declined — from the motor cycle production the net profit never reached the required level. And which is more, in the first two years JAWA had returned a loss.

In 1931 the Týnec steel, aluminium and electrum — the latter made under licence — foundry was completed. Three years later JAWA became home monopoly manufacturer of permanent magnets so as to be able to make its own flywheel magnetos. Their designer was Dipl. Ing. Dědek.

Even though many of Janeček's plans failed to materialize (for instance he did not build the planned huge department store on the plot purchased in one of the main avenues in Prague), whatever he embarked upon, he did with all his might. That is why for instance the Týnec foundry was in its time the best in Czechoslovakia. Introduced was in 1937 X-ray testing of castings, an unprecedented defectoscopy.

Manufactured at Týnec were not only castings and magnets, but JAWA motor cars were assembled and, in addition, a forging shop, wire-drawing and rolling mills were established there. In 1936 the labour force numbered 800, working since 1937 in three shifts. The approaching War and the tension prevailing in the whole of Europe brought the factory an order from the Ministry of National Defence worth 12 million crowns, there appeared also the prospect of a special order for eight hundred motor cycles for the Romanian Army.

At the close of the thirties Janeček succeeded to buy yet another interesting large property at Brodce, distant only 2 kilometres from Týnec. There had been since the 19th century a large Mautner spinning mill, in which production was stopped in October, 1936, owing to unprofitability. The factory was first bought by Fingerhut and Comp. from Prague manufacturer of paper lace and crepe. But it was not a good buy, Fingerhut having backed out of the contract in less than a year's time. Now came Janeček's turn and he bought the factory in mid-1938. He reconstructed it in an engineering plant, where still in 1939 JAWA Minor I cars began to be assembled.

One more interesting event took place in 1939. Dipl. Ing. František Janeček was granted the title Doctor of Technical Sciences Honoris Causa. On the festive occasion he gave a lecture on fire arms development. The new Dr. H.C. was indeed something of a crank — as shown by a short note in the newspaper Lidové noviny: "The genuine engineer and owner of many patents presented himself at his graduation ceremony also in that he had brought a table of his own design provided with rollers on which was wound an endless strip of paper with the text of the address so that the speaker was not bothered by holding sheets of paper and, in addition, making the impression of speaking off the cuff".

Janeček, indeed, liked to make an impression. He often walked through his workshops talking to the personnel and claiming they were his colleagues. Of course on several occasions the "colleagues" found it impossible to fall in with the chief "colleague" and in the second half of the thirties strikes have broken out at Janečeks, one of them lasting well over a month.

And mentioning newspapers, let's take a look into "Národní listy" of December 11, 1938: "A good husbandman, Dr. Ing. F. Janeček, was one of the most serious candidates for the office of the President of the Republic and got as far as to decisive choice between the last two. His great ability should be taken advantage of also outside his industrial concern."

Elected as President at that time was Dr. Emil Hácha, later notorious because of his collaboration during the Second World War with the Nazis.

It should not be forgotten that the factory was publishing two periodicals belonging to the best in the field and not having lost their attractiveness even now.

One of them was called "JAWA" and its first issue was published in December, 1933. It was a monthly, cost one crown (yearly subscription 10 crowns) and its 10 thousand copies show that it was in demand. It published technical articles, sport reports, tips for motor cycle owners, travel stories and surveys of motor vehicle history. It had been definitely worth while, in its second year the press run has increased to 12 thousand copies and a novelty was its German language version published in 5 thousand copies.

"JAWA" was published in exercise book format until March, 1943. The magazine was to impress not only JAWA motor cycle and motor car owners, but potential customers, too and in this it definitely succeeded. The other periodical was "JAWA at Home". It appeared for the first time at the beginning of 1936 and was intended for the factory employees. It was a monthly too, in octavo format, i.e., a little smaller size than "JAWA". Unlike "JAWA" it had no harder paper cover and dealt almost exclusively with internal problems, including reports from the JAWA competition and cultural departments. It was published throughout the War until 1945. In addition, the factory published stencilled quarto size sheets with topical news.

Of all the articles in these publications most important and saddest was the one of March, 1939 — Czechoslovakia was changed from day to day into the Bohemia and Moravia Protectorate. The occupation had begun.

All at once everything was upside down at JAWA. And mainly — design work on new motor cycle developments abruptly ceased. At least it must have appeared so to all and sundry.

And fortunately it did.

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EVERYTHING IS DIFFERENT

With the fifteenth March, 1939, when Nazi Germany attacked Czechoslovakia, life changed overnight in the whole country. Evidently at Janečeks, too. Not later than in April the factory had to change its orientation. The Germans were well-aware of its top technology and capable personnel. Consequently they transferred there the production of some parts for the aircraft industry, bomb carriers and small stationary engines for generator sets. Motor cycle production was still eking out a living until it stopped in 1940. Under orders all unfinished parts had to be surrendered and melted down, which would have meant the destruction of some 8,500 motor cycles and 700 motor cars close before assembly.

Apart from that, considerable supplies of material for the production of motor cycles and cars, such as bars, raw castings, bearings, rollers, balls and sheet-steel were stored at the factories, which should, of course, be also surrendered. It seemed only natural to those in charge of the material stores to hide and dispose of everything quickly so that the stuff should not get into wrong hands. This was also helped on by the proverbial thoroughness and excessive organization of the new masters both in the factories and authorities. Each institution received its superior authorities, its plan and files, so that when one office was to confiscate something, it got from JAWA the reply that another office had the required things seized long before. In this way the works lists of materials and unfinished parts got lost, so that a check-up was in fact impossible. Soon there was nothing to be checked. So r.g. ball and roller bearings were stored in cases with the shelf-mark of the military department. Because the cases with the contrived markings were nowhere recorded, they could not be requisitioned. Rented were, in addition, many barns and closed down inns in the environs of Prague where instead of finished armaments products materials for motor cycle and motor car production were stored, so that work in progress series and parts disappeared from records. Index cards which could not be carried out from the works were altered. In this way quantities of castings hidden at Týnec nad Sázavou under heaps of scrap right in the foundry building could escape inspection.

Scores of people worked feverishly to save all sorts of things. Nobody believed that the "Thousand Years Reich" would last longer than a few years. One can today hardly appreciate what that meant. It was, namely, a time when people were taken to places of execution for much lesser offences.

At first people at JAWA had hardly the time to get adjusted to the new conditions. It did not take long before a number of enthusiasts began to combat the formidable killing atmosphere of waiting. They made up their minds to prepare new motor cycles for the new life. In no way was it an act of defiance by a few day-dreamers or adventurous youngsters, but a grand programme joined by a number of people. Already in 1940 work was started on two projects. The first were new motor cycles, the second a new motor car.

Engaged in the motor cycle development was a group of people around designer Josef Jozíf. He was then thirty-four, but with a wealth of experience. Born on May 10, 1906, at Čivice near Pardubice, he got trained to be a fitter and after that finished the technical college at Pardubice. After a short time with the Škoda Works at Hradec Králové he joined on October 1, 1930, JAWA. Whatever the big boss may have been, one thing he can not be denied — he always knew how to surround himself with capable people. Jozíf was no exception.

The first steps for the preparation of the new motor cycle began with setting-up customer requirements from the last selling season as a basis, studied were all the development trends worldwide close before the War. It was clear that a modern motor cycle must be reliable, simple, yet efficient and comfortable. Basis of the first speculations were the last prototypes or planned designs. The work began in the factory direct, but soon the atmosphere was getting heavy. All designers were made to sign that under no circumstances would they be occupied with anything having any connection with peacetime production and random checks at every workplace would have had to reveal such occupation.

That was why the team was moved to the JAWA motor cycle service, the only department during the War to be still dealing with motor cycles. Obviously not with former customers' JAWA machines (petrol was soon out of reach of private owners and tyres had to be surrendered), but with repairs of German military motor cycles. There was not only peace and quiet, but there were also the needed capable and skillful people. The design department was established in the storehouse behind a wooden wall, where later was put up the prototype workshop, too. Those in the know called the den "brains".

It seems incredible that the work could have been kept secret throughout five years as well as brought to an end. True, there were hard moments. Jozíf is remembered by everybody as a white-haired man, who had likely been born with such mop. Far from it. His hair has turned white within a week when the gestapo had burst into the service on day and took away Rudolf Osvald, one of those working hard on the motor cycles. In the following hours all the revealing things were hidden and carried out, then came the long wait. One word, a single sentence would have been enough and all the men in the department would have died. Their mate had been engaged not only at Janečeks, but in the resistance movement elsewhere. That was why he was arrested. He did not speak and paid for it with his life. Josef Jozíf's recollection of the event was his snow-white hair. What would he have been telling the unitiated ones when asked about the change?

The work in the "brains" department was directed mostly at two stroke engines of several capacity classes, beginning with onetwentyfives and oneseventyfives to twofifties and threefifties. The biggest of them was being developed in two different ways — as a two stroke twin and a four stroke OHC single with the camshaft driven by chain. In addition to orthodox motor cycles, work was going on on a scooter, on a light tubular frame cycle with auxiliary engine, the engine being designed so as to be fitted to a normal bicycle. On the drawing board was even a single track machine of unorthodox design with a body. In the end and quite logically chosen as basis for postwar production was the twofifty. By then the situation in the service was so bad that design work was continued at home, some jobs were delayed and the development was moved from Prague to Nová Paka in East Bohemia. It was there that the well-known rider and JAWA dealer Antonin Vitvar lived and the motor cycle was assembled in his workshop. Before the first prototypes have been constructed (in all twenty were made!), the individual groups were tested on current serial machines available at the time.

So in old prewar twofifties primarily front and rear wheel suspensions have been tested. The front fork telescopic system was subject to several modifications, just as the design of the rear coil springs, including tests of circular line suspension.

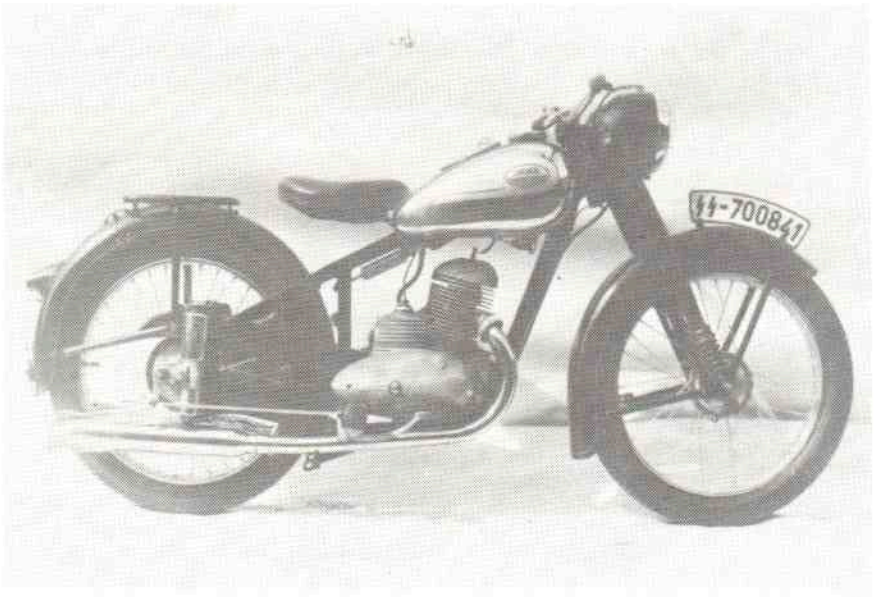
The tests were taking place with motor cycles in military field grey finish carrying military registration numbers and the DKW emblem on the tank. The guard at the gate was clearly not interested in motor cycles, did not know anything about them, because the road tests went on without problems. Petrol had to get "lost" from the stock earmarked for running-in repaired military machines, because it was impossible to acquire fuel in another way.

As a result of comments and following due modifications prototypes were at last constructed and have been run for 100 thousand kilometres. But that had to be taken care of at Kvasiny by the JAWA branch establishment. Part in the preparation of the motor cycles has been taken also by the foundry staff at Týnec nad Sázavou, road tests were the job of former racing and trials riders, in the first place of Václav Stanislav and Jan Bednář. Another rider, Jaroslav Simandl, was in charge of the development workshop personnel. The work was of such extent that it could not have been unknown to the JAWA management, including the general manager Dr. J. Frei. However, who did not know about it for certain was the boss himself. Janeček had been seriously ill since the beginning of the War and had not long to live.

The motor cycle possessing all the set down qualities was made detailed drawings of, its tests were completed and it was prepared in prototypes already in 1944.

Besides J. Jozíf other designers, such as J. Mráz, J. Navrátil, J. Větvička, J. Rajchrt and J. Šťastný have worked on the future motor cycles. The noted designer J. F.

A JAWA Springer with the registration number plate with which the secret test runs were made in the War on open roads



Koch, who had created the splendid Praga motor cycles in the early thirties, was also giving a hand. He was occupied with the mentioned scooter and auxiliary engine, not as an employee of the factory, but as external co-worker if this is the right term.

The great era of racing specials kept the designers awake even in the wartime. Vincenc Sklenář therefore set to work on the design of road racing half-litres which never left the factory. To ride a road-racing special on the roads of the Protectorate would have been suicide.

THE BIRTH OF A MOTOR CAR

Apart from the work on motor cycles, development of the new Minor II motor car went on, too. The history of its origin would be in fact a repetition of the preparation of the new motor cycles story. The work was headed by Dipl. Ing. Rudolf Vykoukal, who was appointed chief of the former JAWA service, now the repair workshops of German military motor cycles and motor cars. With his colleagues he succeeded not only to design the car, but to manufacture five (seven according to some sources) prototypes. The bodies were constructed at Kvasiny, the chassis in Prague, castings were made by volunteers at Týnec nad Sázavou. The prototypes were road tested like the motor cycles with military number plates, in khaki finish and the BMW emblem on the radiator grille. The project of the car was completed in 1944, including road tests. Beside the Minor II R. Vykoukal set down to design a little two seater peoples car, a prototype was made, but not tested. Most likely, because a mini motor car with a single cylinder engine would have been a too strong cup of tea for the distrustful German military and officials, even if it were finished in field grey and carrying the Zschopau factory emblem.

THE FIRM IN WARTIME

"Carry on, I am leaving . . ." were František Janeček's last words. On June 4, 1941, shortly before eight a.m. he died of lung cancer. The illness had been apparent in the last two years and it must be said that Janeček fought it with courage. He had in his office installed a cobalt bomb for irradiation staying often overnight. He fought the illness with work staying until the last moment in his factory of which he was sole owner. After his death the firm became a family joint stock company as provided by Janeček in his last will drawn up in April, 1940. The family joint stock company was controlled by a three-member committee until the time of coming of age of his two children and the return of his eldest son František, who had left before the War for England. Shortly before Janeček's death, in May, 1941, the last remainders of the former Green Fox Inn building were pulled down. In its place began to rise a modern factory building completed in December, 1942. It had six floors and two basements. The roof rose to 22 metres above street level. In the last floor was located the works canteen with a gallery. From there in clear weather the memorable Řip Mountain could be seen.

With the completion of the new hall all the building work at Janeček's came to an end. In 1944 just a provisional bridge across the Sázava River at Brodce was built to save many of the emplyees to take the ferry when going to and from work. There had been first one ferry boat for 30 passengers, later two, each for 15 people.

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WHEN THE SUN ROSE

The end of the War was gone through by the people at JAWA very intensively — it is said that the very first barricade in Prague had been put up just in front of Janeček. Right after the liberation, in the first days of May, 1945, preparations for peacetime production were started in the plant. Out of all the remote hide-outs the concealed parts, components and materials were being brought to light. In the list appeared work-in-progress for 8,500 motor cycles, for 706 JAWA Minor I cars, 31,000 ball bearings, 920,000 balls, 720,000 rollers, 15 tonnes of light alloy and 26 tonnes of nonferrous metals, 150 tonnes of mostly sheet, strip and bar iron and steel. The first assembled cars left as early as in July. They were assembled at Brodce and sold there at 35,500 crowns. The motor cycles manufactured in Prague were also reaching new customers in the summer of 1945. The following year prewar models — JAWA 175 Special (8,500 crowns), JAWA 250 Special (10,450 crowns), JAWA 250 Duplex-Blok (11,500 crowns), JAWA 350 OHV Special (17,670 crowns) and JAWA Robot (6,660 crowns) were still marketed. And because, besides those assembled from recovered parts and components, new machines were manufactured in the year 1945/46 a total of 9,530 (according to other sources even 10,694) motor cycles was sold.

A WORLD SENSATION

While old-new JAWA motor cycles were appearing on the market, two definitive JAWA 250 models that had come in existence during the War in secrecy were brought along. One had been hidden in the cellar of Antonin Vitvar's sister in law, the other dismantled and stored in a case in a deep hole at Vitvar's brother's barn in Bohemian-Moravian Uplands. At the factory preparations for their speedy introduction in serial production were being made.

Already in 1946 the first 1,360 twofifties were manufactured. What kind of a motor cycle was it?

The closed frame was welded of square section steel tubes, organically embodied in the head of the by patent protected telescopic front fork with coil springs was an impressive 150 mm diameter headlamp with inbuilt flash fitting speedometer. Installed in the frame was a two stroke 248.8 cc (65×75 mm) displacement flat piston top single cylinder producing 6.6 kW (9 HP).

Notable was the enclosed carburetter, another feature protected by patent. The four-speed gearbox in unit with the engine was designed so that changes could be effected without declutching just by operating the gearchange pedal once the machine was travelling. The gear engaged was signalled by a tell tale system in the switchbox on the fuel tank. The output of the four pole six volt dynamo was 45 W.

The new design saddle joined the saddle type 13 litres capacity fuel tank. It was hinged on a pivot, its suspension was by central coil spring with friction shock absorber adjustable for rigidity according to the rider's weight. The rear wheel suspension was telescopic by means of sliders with coil springs. The ready for road weight of the machine was 125 kg, its length 2010 mm, height 954 mm, wheelbase 1297 mm, saddle height 702 mm, ground clearance 140 mm. The wheels were shod with 3.00 — 19 size tyres. Maximum speed was 100 km p.h., average fuel consumption 3 litres per 100 km of petroil mixture at the rate of 25 to 1. The JAWA 250 styling was attractive and functional, the machine was elegant, simple and featured a number of novelties. It looked pretty and simple at the same time so as to give the impression that nothing could be easier than to design just such machine. Its designers took even the trouble to con-

JAWA 250 — Springer ● Two stroke air-cooled single cylinder ● Displacement 248.5 cc (bore and stroke 65×75 mm) ● Engine power 6.6 kW at 4000 r.p.m. ● Four-speed gearbox with foot control in unit with engine ● Multiple clutch in oil bath automatically disengaged by gearchange pedal movement ● Simple closed frame bifurcating at the rear, made with square steel sections ● Rear wheel vertical slider type suspension ● Telescopic front fork ● Weight 115 kg ● Maximum speed 100 km p.h. ● Average fuel consumption 3 litres per 100 km

ceal all the electric leads in the frame so that they could not be seen.

The new JAWA 250 was indeed a surprise both for motorcyclists at large and for professionals. It is no exaggeration that it had outpaced competition worldwide by at least five years. Its début came in September, 1946, in Paris at the Motor and Motor Cycle Show. It would be useless to relate how the motor cycle has been received and that it was awarded a gold medal. It was perhaps most honoured by the then famous French rider, Louis Janin, holder of several world records and winner of many races. First an unconcerned spectator, he took the JAWA into his own protection regularly coming to the stand day after day to give information to visitors.

In the second year of production 17,162 new twofifties came off the updated production line and they began to be called Springer evidently because of their outstanding suspension. The first model, mark 10, underwent during its production (until 1950) only one change — the dynamo was since 1947 six pole. The 250 JAWA turned out to be a hit, not only in Czechoslovakia. Wherever it was exhibited, it commanded admiration. Like in England, the motorcycling big power, where the Janečeks used to buy Villiers engines from.

The Springer was there displayed for the first time at the 1948 Motor Cycle Show. By the time JAWA made up its mind to hire a stand, all the exhibition space had been booked. Owing to Dr. Jan Schulmann's connections, who was then delegate of the Czechoslovak engineering industry, at least a remote corner could be secured where the motor cycle with two others only just could be got into.

To witness the English début arrived the then JAWA manager Vojtěch Pokorný, Josef Jozif and Antonín Vitvar. Lively interest was expected, but what was going on in the remote corner could nobody have anticipated. The motor cycle was standing on a high white stage so as to be seen also by those who couldn't get anywhere near on the one hand and on the other to prevent the most inquisitive spectators to get hold of the machines. But it was all in vain — soon after the official opening the cool English got hold of the Springer to try out the sitting position. The stewards were quite helpless. And so overnight the motor cycles had to be fastened to the stands with steel straps. Dealer interest was enormous, but because there was no trade agreement with Britain, the motor cycles could not be imported. The country imported only essentials, exhausted by the War it could hardly afford to import just motor cycles, there being any number of British manufacturers. After all, where in Europe was the situation different?

Nevertheless in the end imports of some two hundred motor cycles were agreed upon. Dealers were looking forward to the motor cycles, so did customers, but a new problem cropped up — no dealer was willing to take the part of importer for fear of the British Cycle and Motor Cycle Manufacturers and Traders Association.

So what now? Industria (London) Ltd. was buying from time to time Czechoslovak meat cutters and the delegate talked the Company's owner into trying it with motor cycles. They would be better business than cutters. Though the customer was not familiar with the article, he borrowed twenty thousand pounds and took the plunge. His Company was accepted as member of the Association, some thirty dealers applied for franchise and within less than a month from the first steps the motor cycles have been sold out. Well, after all at that time the motor cycles manufactured in Britain were mostly prewar models.

In a similar way things were taking their course in some 112 countries all over the world — JAWA motor cycles having fought their way to markets everywhere. There were not many countries that could have "prided" themselves to have withstood the onslaught of the revolutionary machines.

Introduced in production in 1948 was also the first series of threefifties in the same frame as the JAWA 250 Springer. Initially the machines were marketed under the JAWA-Ogar marque, being manufactured at "Ogars" the third largest motor cycle manufacturer in prewar Czechoslovakia. Moreover the factory in Prague Strašnice had in 1948 been incorporated in the JAWA firm. JAWA had also Ogar registered as its trademark.

The JAWA-Ogar threefifties, later simply JAWA, were two stroke twin cylinders, designed along the same lines as the twofifties, with flat top pistons and inverted scavenging. Their displacement

Like the prewar JAWA 175 the JAWA Springer was provided with dual controls