EVERGREEN

JAWA

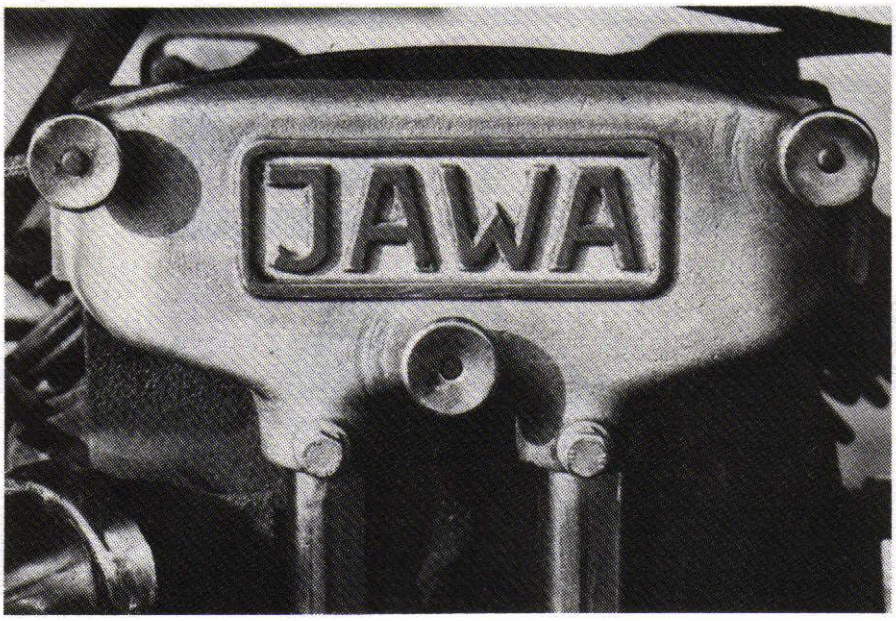
60 JAWA

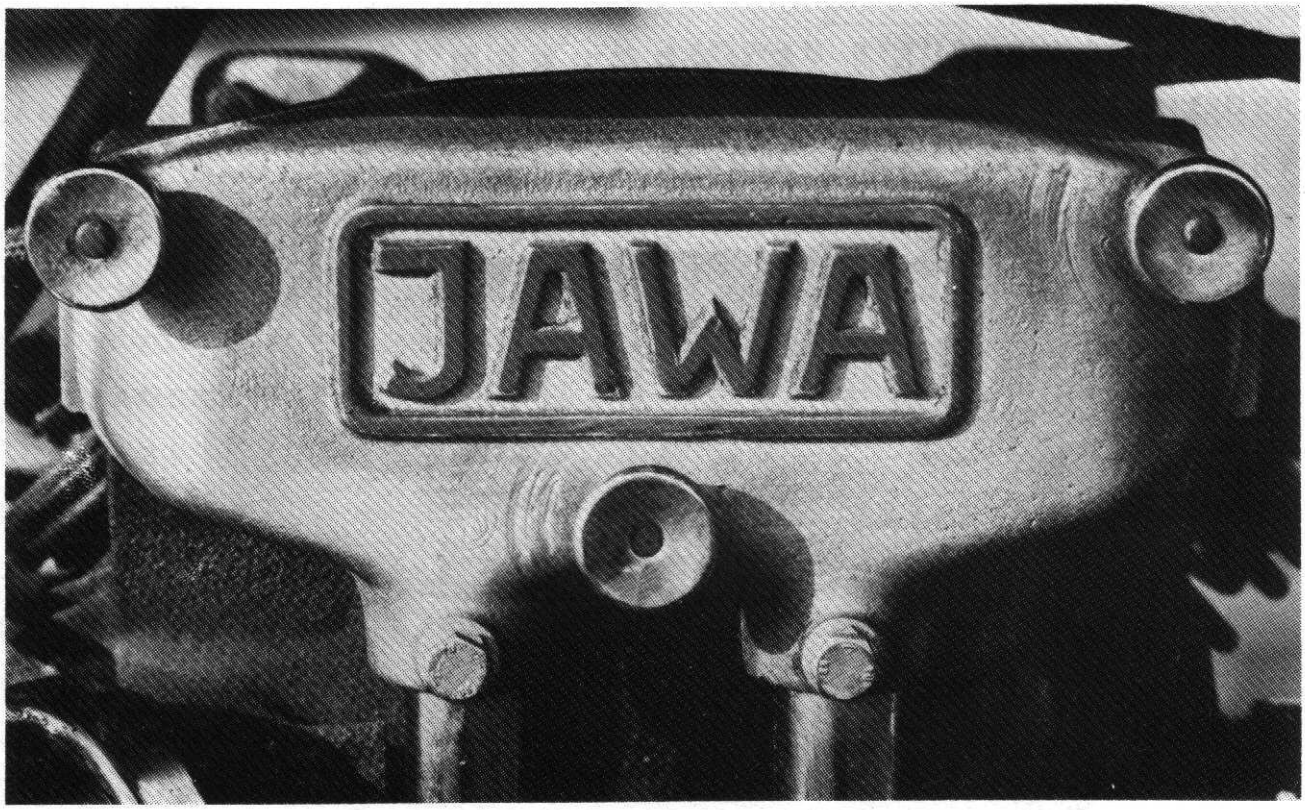
1929-1989

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.

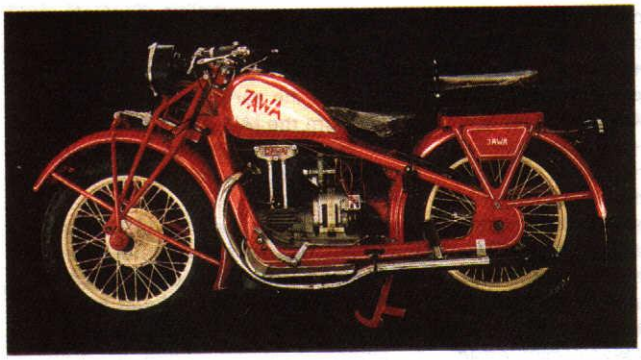
The present-day familiar JAWA in oval trademark did not appear until two years later on the tank of the OHV JAWA third and last series. In the oval was the JAWA sign, in the middle of its bottom part F. Janeček's initials styled in grenade shape, used earlier on armaments. Diverging from the initials 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.

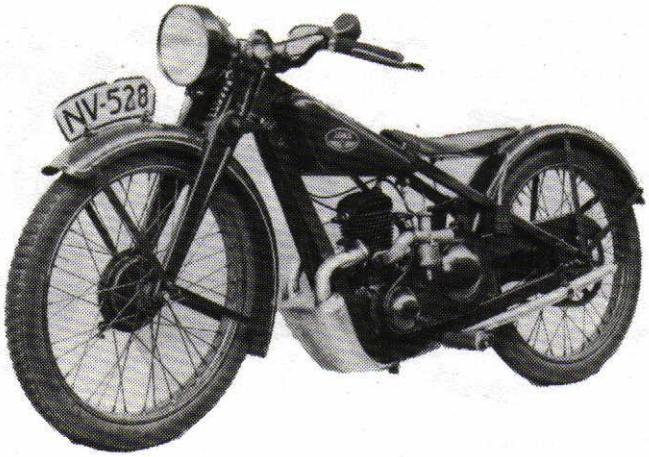
WHAT NEXT?

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

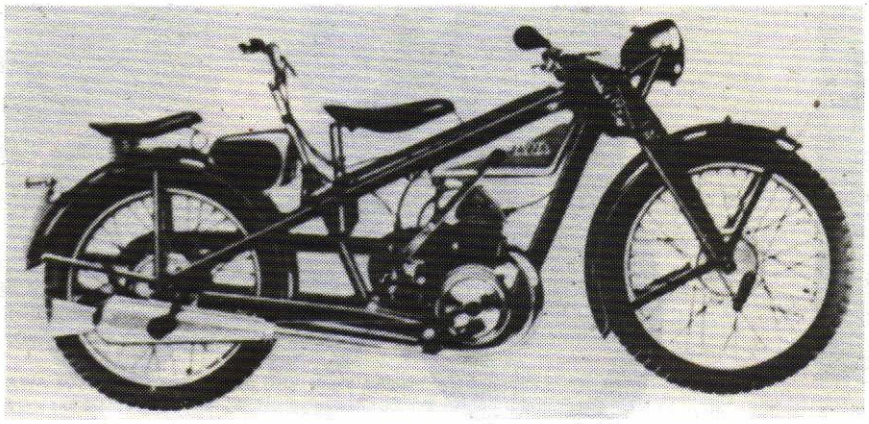
1932 was still a year of depression. A motor cycle costing 15 thousand crowns was for former potential customers unthinkable luxury. And so many manufacturers were forced in those times to close down for good. Among them was the Cheb manufacturer Premier who started his production as early as in 1908 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.

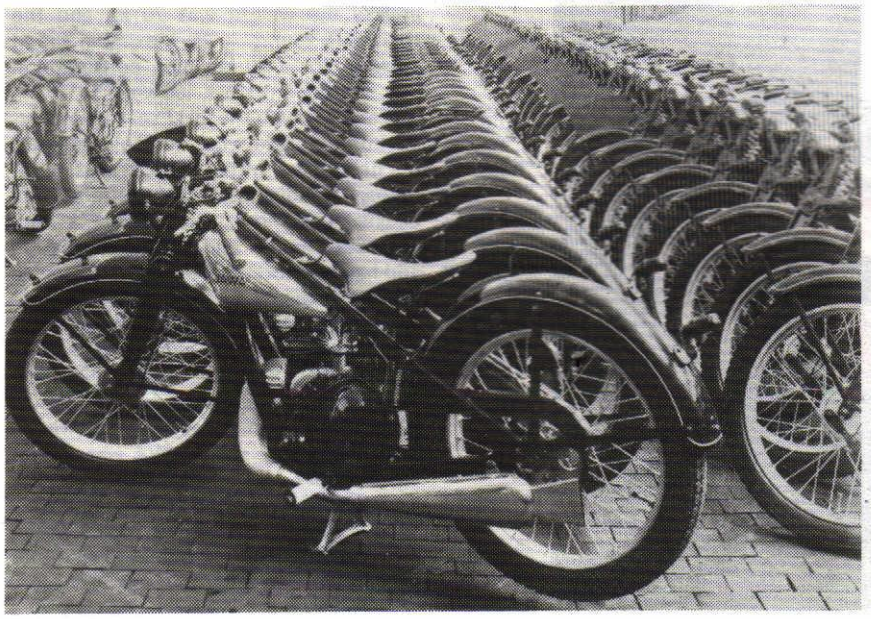
The model stayed in production until 1946 — during the War its manufacture was obviously halted like that of all motor cycles. The little JAWA was almost every year subjected to some changes and

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

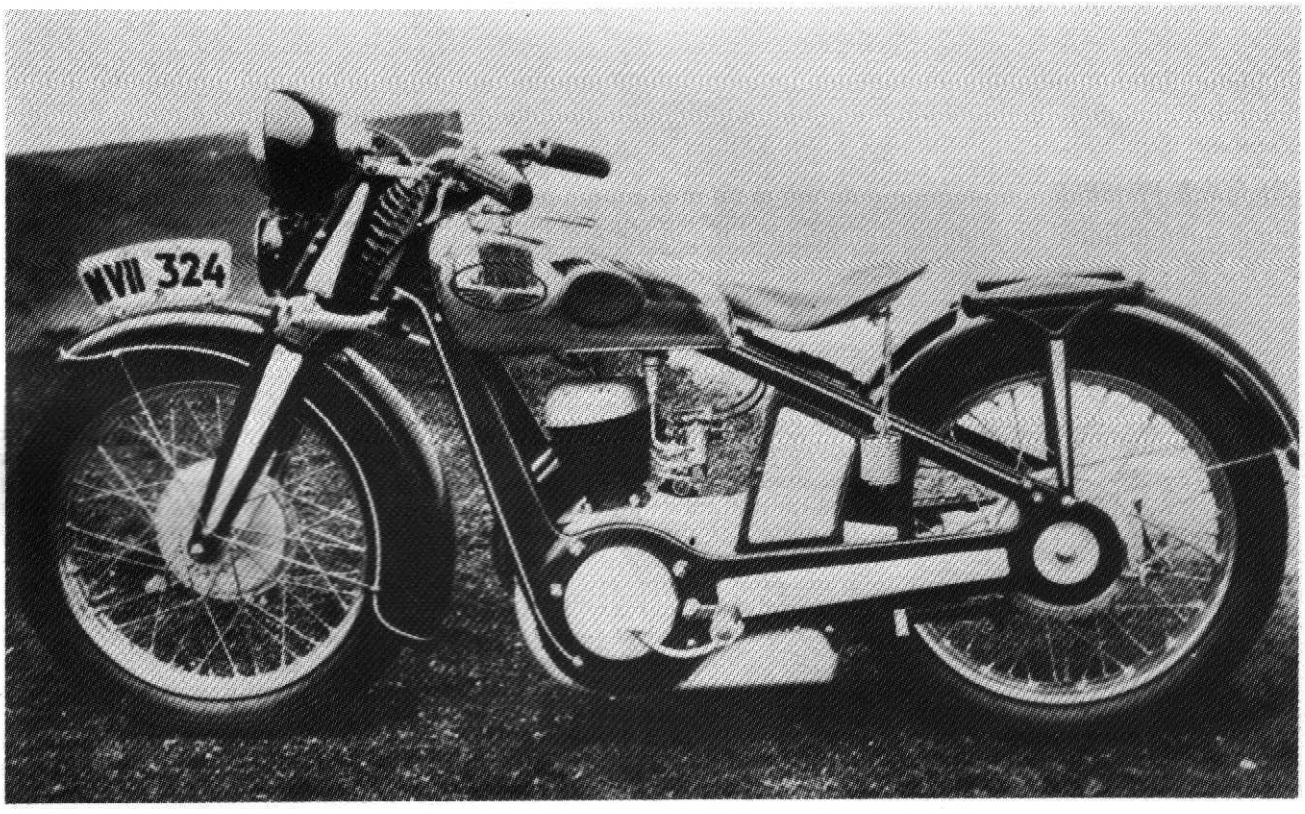
The management was under the impression that the small two stroke oneseventyfive had been a too big step from the half-litre and began to contemplate with what to bridge the gap, preferably with a 350 cc class motor cycle. It had been under consideration as long ago as in 1931, i.e. before the introduction 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.

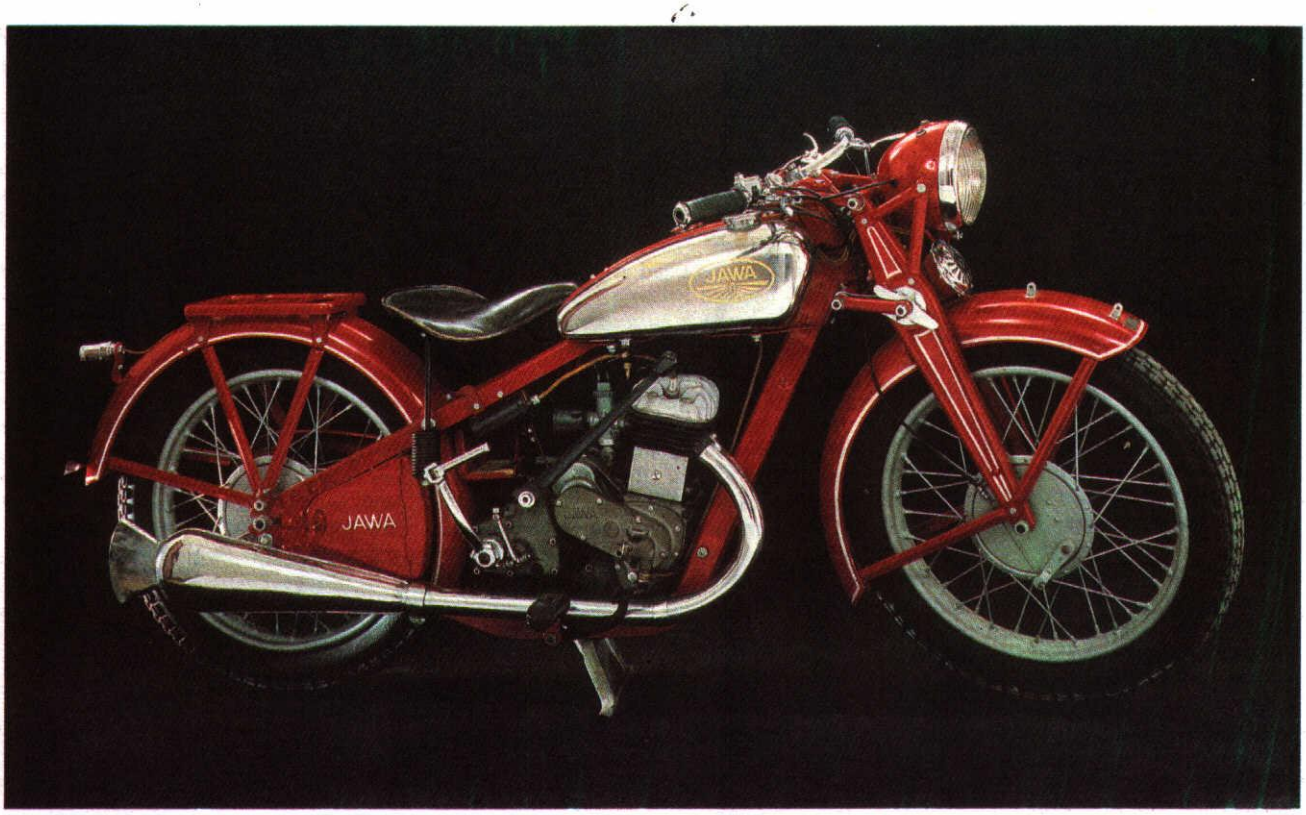
In 1934 a threefifty had been nevertheless added to the JAWA manufacturing programme, even though it was on the whole an orthodox machine. It was powered by an air-cooled upright SV single cylinder of 346 cc (70×90) displacement with 8.8 kW (12 HP) output and 5 to 1 compression ratio. The separate gearbox 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.

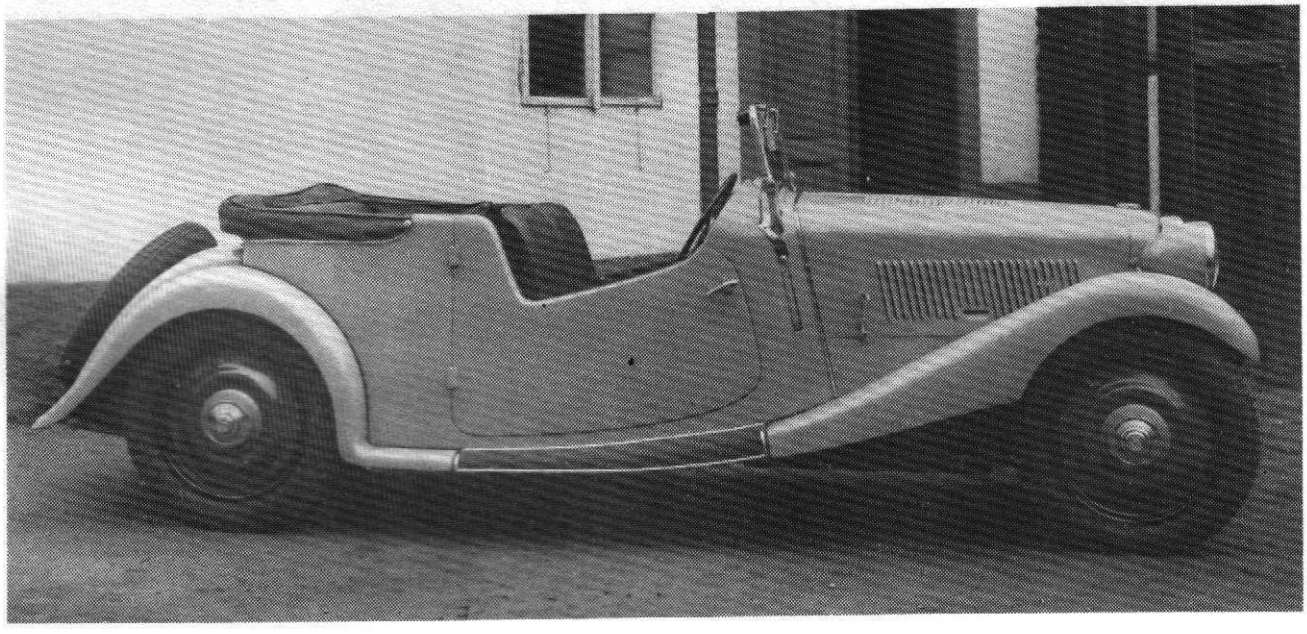
Notable are above all cars made for sporting events. There were only minimal engine modifications, the only major change was the 750 cc displacement. These cars in the year of their début were provided with open streamlined bodies with a big, vertical stabilizing "rudder" in the rear and without being 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.

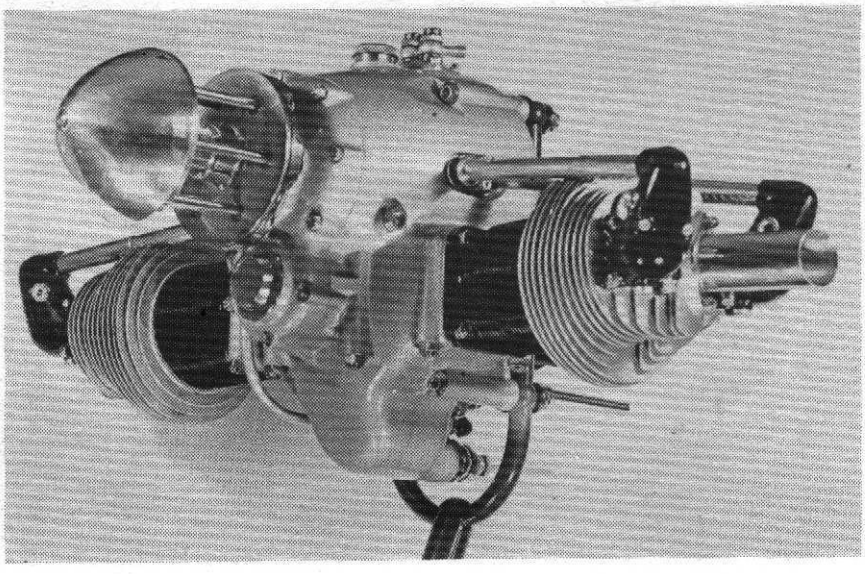
Offered for sale was a small number of the so-called Mountain Models, characteristic with a second flywheel outside (not inside) the crankcase under the primary chain cover on the left side of the engine.

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 Jozíf 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

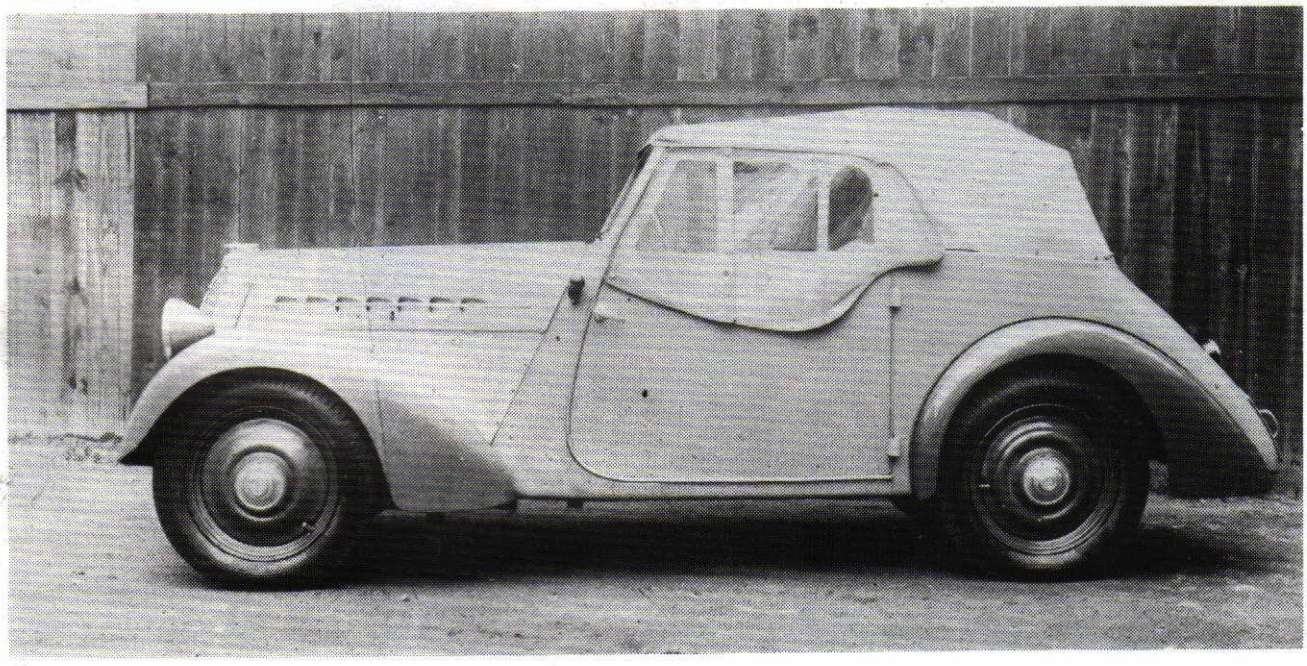
JAWA Minor I ● Two stroke water-cooled twin cylinder with inverted scavenging ● Displacement 615.75 cc (bore and stroke 70×80 mm) ● Engine power 14.3 kW at 3500 r.p.m. ● Engine situated lengthwise ahead of the driven front axle ● Three-speed gearbox ● Single plate dry clutch ● Chassis consisting of square 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.

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

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 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

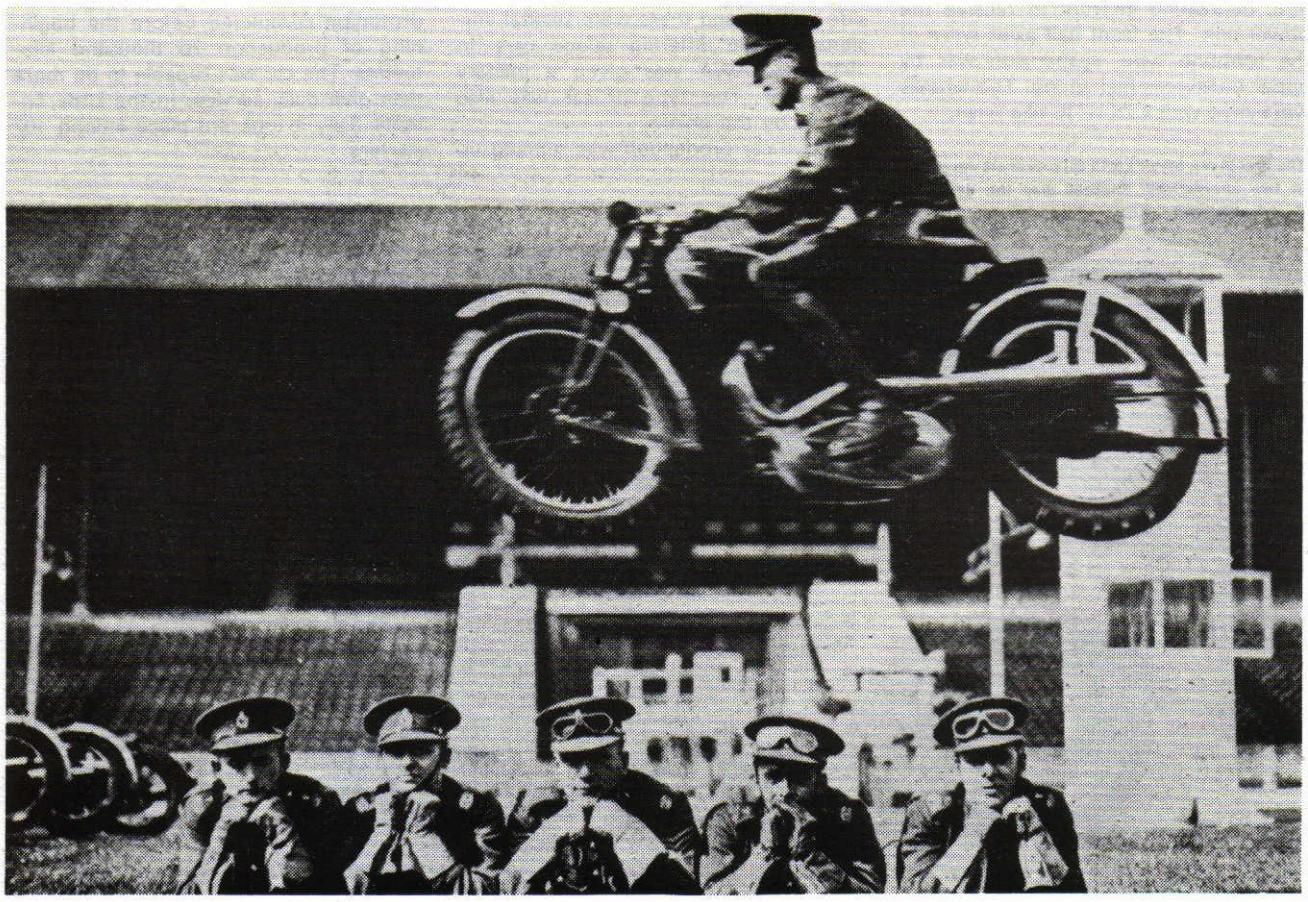
Before the outbreak of the Second World War the factory had come with one more novelty — the JAWA Duplex-Blok appeared on the market. It was a twofifty based on the familiar two stroke JAWA 250, but with the power unit reconstructed so much that it has to be described as a new model. The gearbox was, 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.

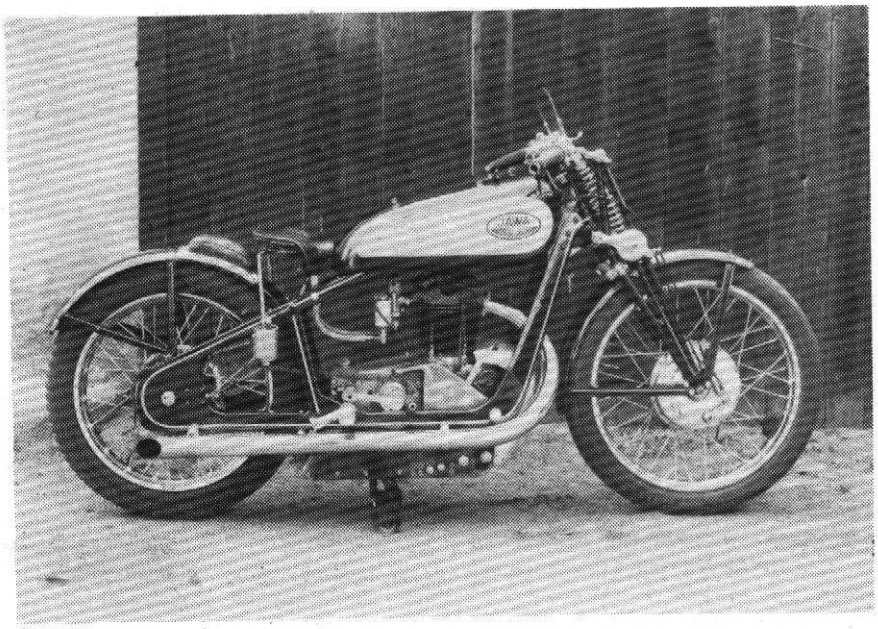
Machine weight was approx. 115 kg, maximum speed 100 km p.h., average consumption 3.5 litres per 100 km.

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



SEARCHING FOR WAYS



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.

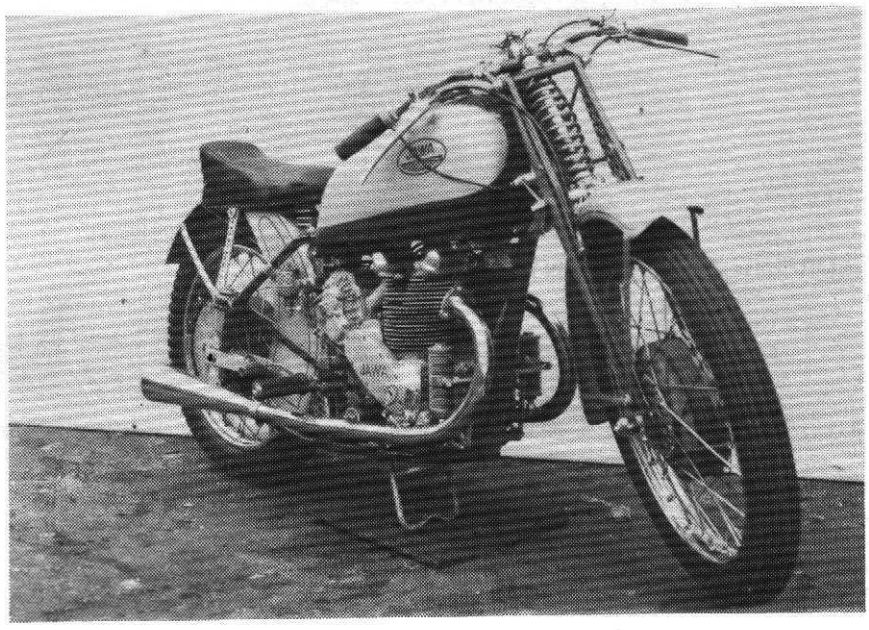
Tested in two stroke engines were various shapes of ports and different constructions of the whole system, including differential pistons and even a twin piston engine with opposed pistons and common combustion chamber. That prototype had two separate crankshafts at opposed ends of a single cylinder. 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.

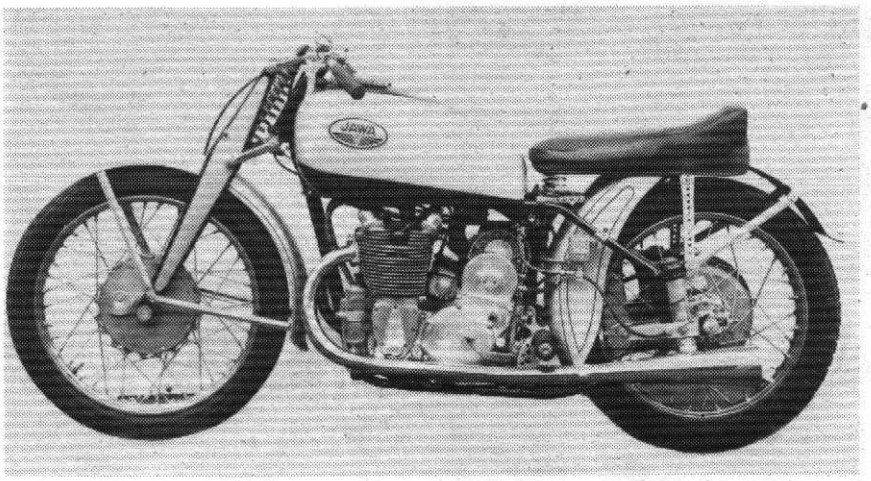
Most of this kind of work was far remote from serial production and often even from racing machines, nevertheless its investigation of the problems had its bearing on the growth of all, who worked in the JAWA design department.

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 — Jiloviště 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.

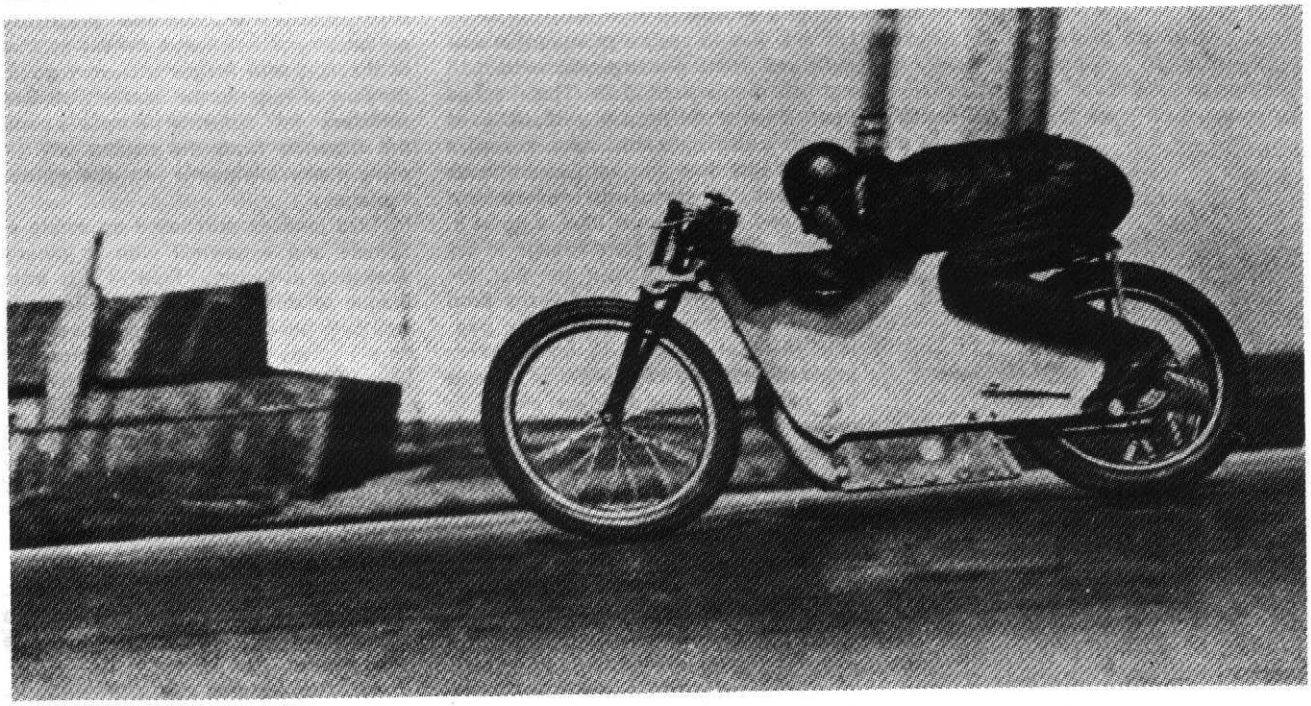
The competition department under G. W. Patchett's management had a big time with competition motor cycles indeed and Patchett had been not only chief of the expeditions to the International Six Days Trials, but was a rider as well. First with the "Box", a special he started to design while with FN and 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.

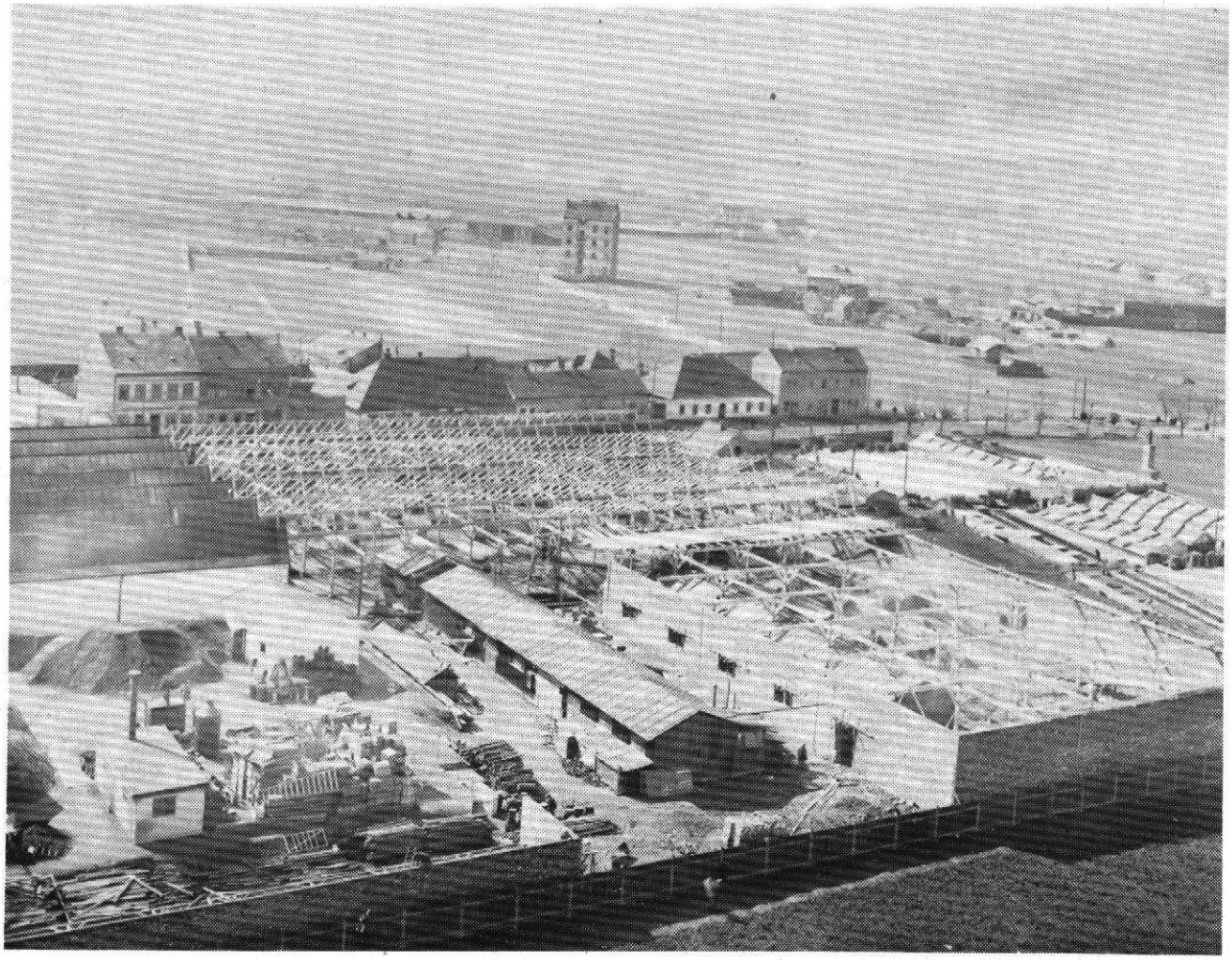
The prewar competition activity of JAWA involved perhaps all the kinds of the motor cycle sport of those days. The motor cycles had asserted themselves definitely in home meetings and were matchless in Czechoslovak track racing. However, in the European trial of strength their day of glory was to come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

Even though long distance runs are not counted as sporting feats, one of them definitely should. In 1933 Captain František Příhoda 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 Zlín. 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.

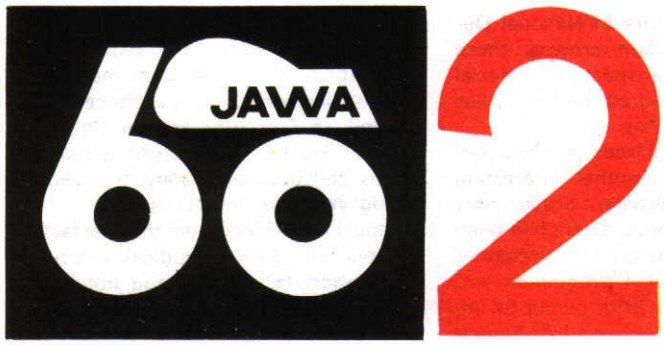
One of them was called "JAWA" and its first issue was published in December, 1933. It was a monthly, cost one crown (yearly subscription 10 crowns) and its 10 thousand copies show that it was in demand. It published technical articles, sport reports, tips for motor cycle owners, travel stories and surveys 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.



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.

THE MOTOR CYCLE

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 Antonín 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.

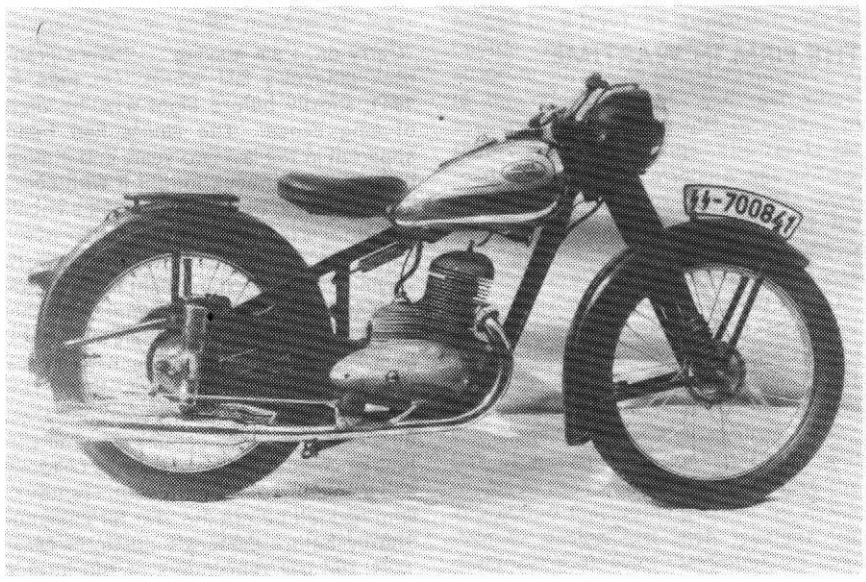
The tests were taking place with motor cycles in military field grey finish carrying military registration numbers and the DKW emblem on the tank. The guard at the gate was clearly not interested in motor cycles, did not know anything about them, because the road tests went on without problems. Petrol 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 Říp 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.

3

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 Janečeks. 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 Antonín 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.

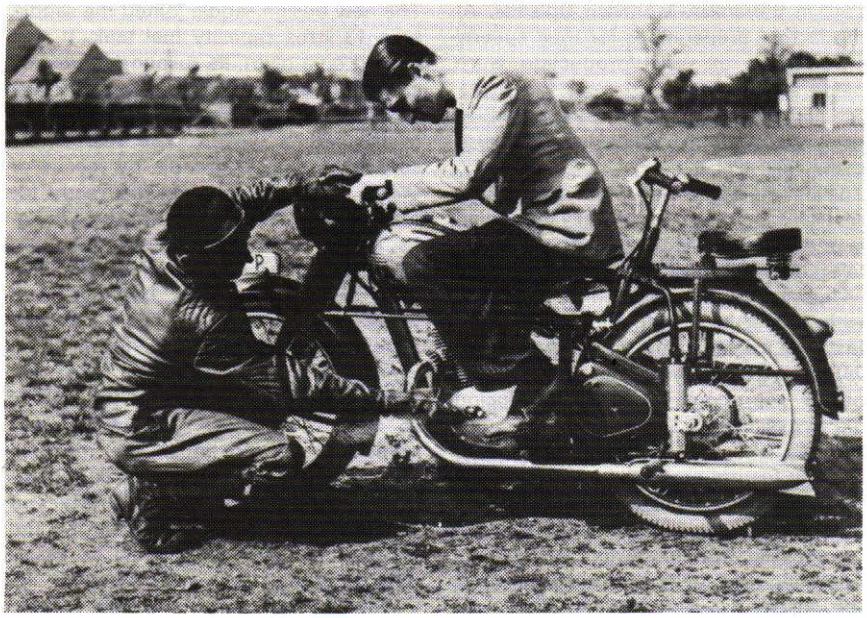
So what now? Industria (London) Ltd. was buying from time to time Czechoslovak meat cutters and the delegate talked the Company's owner into trying it with motor cycles. They would be better business than cutters. Though the customer was not familiar with the article, he borrowed twenty thousand pounds 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

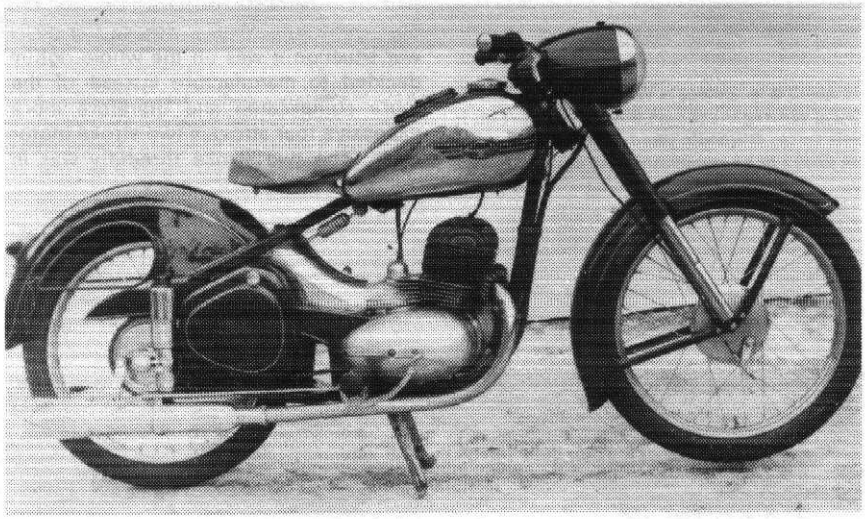


was 344 cc (58×65), power output 8.8 kW (12 HP), maximum speed 110 km p.h., average consumption 3.5 litres per 100 km. Until 1950 in production was model 12, parallel with the twofifty model 10. Following minor modifications models 11 (JAWA 250) and 18 (JAWA 350) began to be manufactured since 1950. Apparent at first sight was the sparser finning of the cylinders of both engines, but the fins were more sizeable for better cooling. The connecting rods and pistons have been changed, too, and therefore the motor cycles were marked as a new model.

The Springers were in production until 1956. The twofifties had been withdrawn earlier, in 1954. In all about 180 thousand of the famous machines with the two engine models have been sold. For many well-known makes the JAWA of that time has been an inspiration if not a model to be copied. Soon headlamps of a similar design integrated with the front fork head began to appear on other makes. Adler started to manufacture engines of the same system of induction into the crankcase instead of into the cylinders — the JAWA system had not been protected by patent in the Federal Republic of Germany. And since in Franco's postwar Spain Czechoslovak inventions had not been protected, one of the Derbi models looked as if someone at JAWA would have drawn it across carbon paper. At the Condor factory things were not very different. And when similar engines appeared at Villiers, this must have been taken by JAWA as distinction and satisfaction at one and the same time.

In the part dealing with the Springers it must be mentioned the fact that they served as basis for the construction of three-wheel rickshaws, both delivery and passenger vehicles, very popular primarily in Asian countries. The reconstruction was carried out either in the countries where they were used or in Czechoslovakia where Velodružstvo Solnice near Rychnov nad Kněžnou, later Velorex, had specialized in their manufacture. Another three-wheel variant called Velorex — Oskar 250 appeared in 1951. It was a little three-wheeler consisting of a tubular frame covered with canvas. The Velorex was two-door with two free mounted nineteen inch size front wheels — independent suspension by springs with friction and telescopic dampers. The steering was rack-and-pinion type. Inside the body with folding hood was room for two persons. At the rear was a pivoted fork with a single wheel driven by a 250 JAWA engine situated in the rear. Later 350 JAWA engines were used to power the vehicles. The first Velorex models attained 80 km p.h. maximum speed, versions for disabled persons with hand controls had their maximum speed restricted to 30 km p.h. Their manufacturer was Velorex, the engines were supplied by JAWA. Production continued into the sixties, when this model was replaced with a four-wheeler Velorex again powered by JAWA engines. These went out of production at the close of the seventies.

Springer updating project which had not been realised



JAWA MINOR II

Astonishing like the new motor cycle was the new motor car. The JAWA Minor II prepared like the Springer during the War, was presented in the autumn of 1945 and went in production the following year. Backbone type frame and independent front wheel suspension with transverse leaf spring were employed. Its engine was a two stroke twin with inverted scavenging, water-cooled, displacement 615 cc (70×80), 14.7 kW (20 HP) power output at 3500 r.p.m., compression ratio 6 to 1. This time the engine was situated lengthwise ahead of the front axle — the other way round than in the instance of the Minor I engine and drove, of course, the front wheels. The carburetter was Solex 30 AHR, starting by starter motor, ignition by coil and battery, single plate dry clutch, four-speed gearbox, gear lever in gate on the instrument panel. Front wheel suspension was by spring with telescopic oil dampers, lever type dampers were employed at the rear. The car was equipped with hydraulic brakes and rack-and-pinion steering. The fuel was petroil at the rate of 30 to 1, dimensions — length 4000 mm, width 1400 mm, height 1485 mm, ground clearance 175 mm. The wheels were shod with 5.00 — 16 size tyres, kerbside weight was 690 kg, maximum speed 90 km p.h., fuel consumption 7.5 to 8.5 litres per 100 km.

Notable was the four seater car body, streamlined with two doors in basic version. Its designer was Zdeněk Kejval, later head of the Škoda Mladá Boleslav coachwork technological department. Manufacture of the JAWA Minor II was launched at Kvasiny. But the factory was soon taken over by Škoda Mladá Boleslav and so the production was transferred to Prague to the Motorlet Jinonice factory. The bodies were, of course, made by the Prague Rudý Letov works at Letňany. This is where the car was given the name Aero Minor.

Apart from the saloon models, limited numbers of Minors with Normandie type estate and lorry bodies were manufactured. A few two seater roadster bodies were made, too.

The cars have been exported, mainly to Belgium, Austria, the Netherlands, Switzerland, as well as to Uruguay, Brazil, Egypt and to Siam of that time. There has been also considerable demand for chas-

sis which foreign customers provided with their own bodywork.

The Minor production went on until 1951 and it did not come to an end even then — it served as basis for the Polish Syrena vehicles which used different bodies, but the Minor chassis. In 1951 a Minor III prototype has been designed by R. Vykoukal, but did not get in production. It was considerably updated with an attractive body with stepped back.

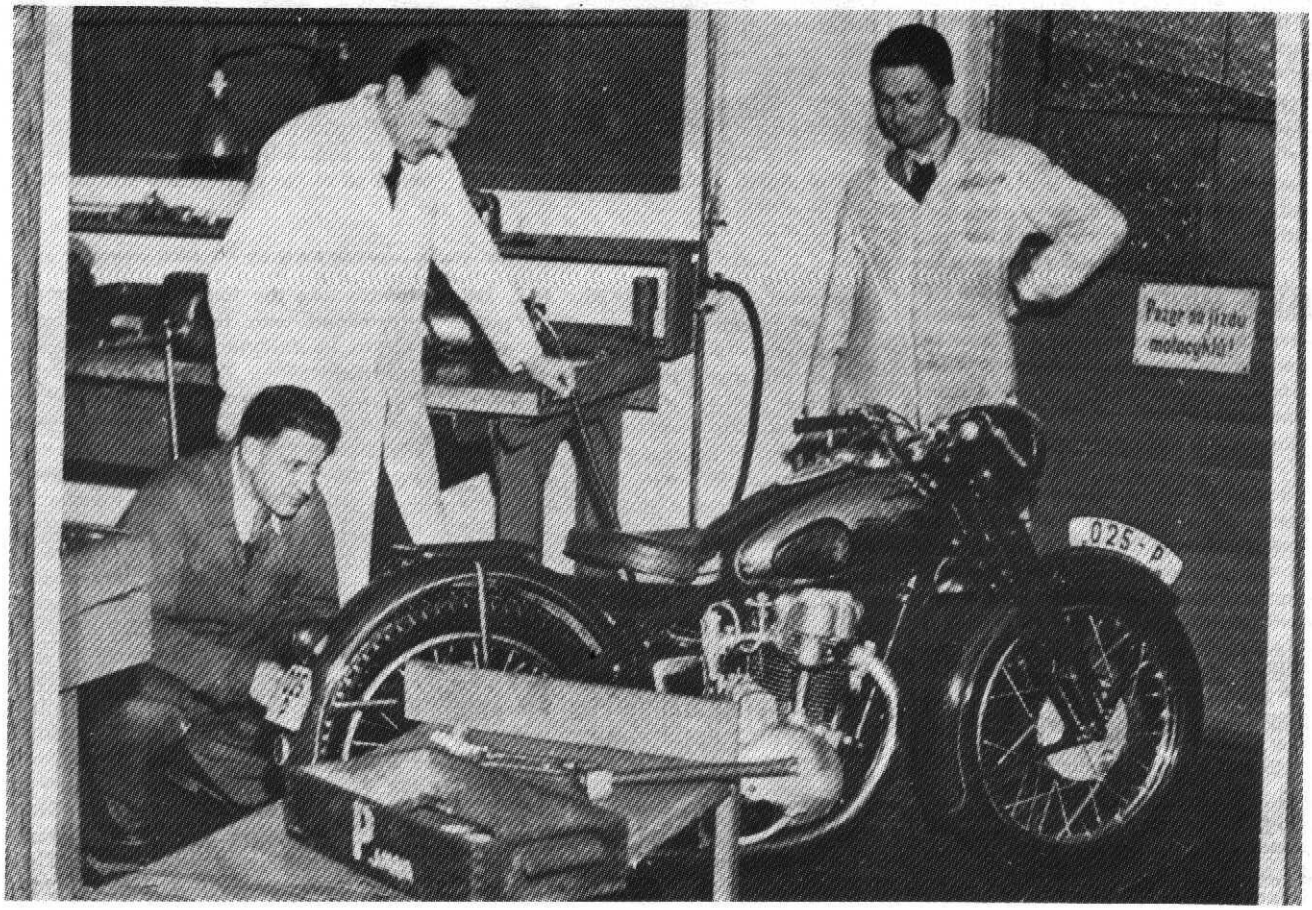
Mention has been made of the peoples car, also designed by R. Vykoukal during the War, but not subjected to tests. It came into existence after the War, was attractive indeed — in fact half of the Minor II, from which it was derived. It was equipped with a water-cooled two stroke 308 cc displacement (70×80) single cylinder producing 7.5 kW (10 HP) at 3800 r.p.m. The unit was carried in rubber blocks and drove the front wheels via a three-speed gearbox with reverse unit with the differential. Suspension in front was by two transverse leaf springs, at the rear by quarter elliptical springs mounted on a simple side-member type frame. The two seater body was wooden, sheet metal covered, with folding hood. The wheels with 4.00 — 15 size tyres looked rather big for the car, but the Minicar developed on them 75 km p.h. at the consumption of about 4.5 litres per 100 km. The brakes were mechanical acting on the front wheels only. The dry weight of the vehicle was but 308 kg. It was presented at an exhibition in 1948 in conclusion of a competition organized by the Technical Committee of the Czechoslovak Central Auto Club. The final was reached by 22 designs on show from October 23 to November 7, 1948. Vykoukal's Minicar, this time constructed by Motorlet, but in fact designed at JAWA already during the War, was the most successful model in the competition with only three basic rules of the game — it had to be at least a two seater, offer weather protection and to return a consumption of not more than 5 litres per 100 km.

However, the Minicar was never put in production, just like all other motor car designs at that time.

ANOTHER FOUR STROKE HALF-LITRE

Apart from the two stroke motor cycles a four stroke OHC 350 cc single cylinder had been prepared for postwar production; it was built after the War in the Springer frame. With a view to the postwar situation it was on the whole rightly decided to manufacture instead of the more complicated and therefore more expensive four stroke a two stroke motor cycle. The two stroke threefifty was in

Final version of the JAWA 500 OHC — justified smiles all round



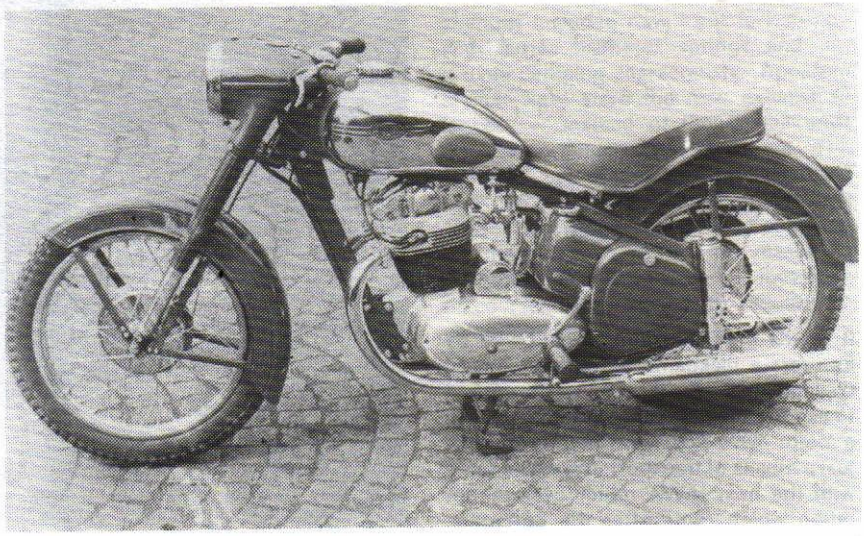
JAWA 500 OHC ● Four stroke air-cooled OHC twin cylinder ● Displacement 488 cc (bore and stroke 65×73.6 mm) ● Engine power 19.1 kW at 5500 r.p.m. ● Compression ratio 7 to 1 ● Vertical shaft camshaft drive ● Lubrication by three-way pump located on the frame ahead of the rear mudguard ● Four-speed gearbox in unit with engine ● Multiplate clutch in oil bath, automatically disengaged by gear pedal movement ● Simple closed in the rear bifurcating frame made with square steel sections ● Slider type rear wheel suspension ● Telescopic front fork ● Weight 156 kg ● Maximum speed 145 km p.h. ● Average fuel consumption 3.5 to 4 litres per 100 km

fact replacing the planned four stroke machine.

Within a few years the situation straightened out and some customers began to demand a more powerful machine. In as early as 1950 a half-litre had been prepared to be put in serial production in 1952, model mark 15/00. It was an air-cooled four stroke OHC twin cylinder with vertical shaft and worm gear camshaft drive, displacement 488 cc (65× 73.5), power output 19.1 kW (26 HP) at 5500 r.p.m. The gearbox was four speed, ignition by Lucas magneto soon replaced by PAL coil and battery system with 60 W dynamo. The following 15/01 model featured reconstructed valve gear with Gleason type bevel gearing. Lubrication was by oil pump, the capacity of the separate oil tank was 4.5 litres. The motor cycle frame was of the JAWA 250 type, duly reinforced with the possibility of sidecar attachment. The front wheel suspension was by telescopic fork with oil dampers, that of the rear wheel by coil springs. The 16 litre capacity tank was joined by a swinging saddle, of a similar type like the 250 model. Front tyre size was 3.25 — 19, rear tyre size 3.50 — 19, weight 156 kg, maximum speed 135 km p. h., average consumption about 4 litres per 100 km.

Since the beginning of 1953 introduced was model 15/02 with updated engine. The motor cycle received full width hub brakes and a big dual seat (since 1956), owing to engine modifications the power was increased to 20.6 kW (28 HP), the maximum speed to 147 km p.h. and the weight to 174 kg. The last 500 OHC JAWA left the assembly line in 1958 and is at the moment the last serial four stroke motor cycle of the make. The model with pivoted rear fork prepared, had not been put in production.

A feature of one of the innovations — dual seat and reconstructed valve gear



THE PIONEER

A faithful help — the JAWA Pioneer called "tree stump" because of its saddle shape

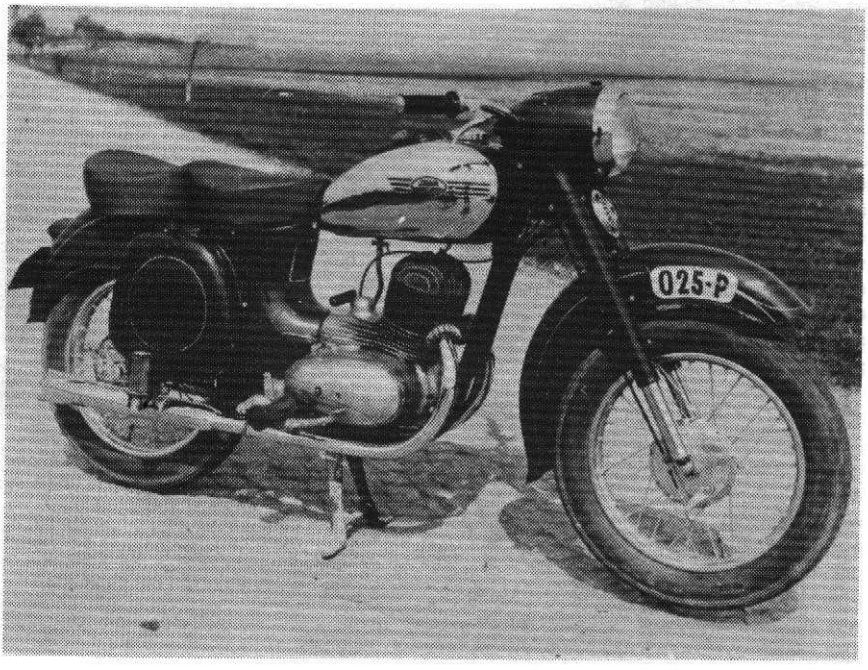
Shortly after the introduction of the biggest JAWA the smallest — the JAWA 50 — has been presented. It was the work of a team consisting of the designers M. Kubíček, J. Mráz, K. Mareš and J. Šťastný headed by Josef Jozíf. The idea of a thorough updating of the Robot, on which young Jan Křivka was working, was not realized.

The little fifty was soon to be nicknamed "stump" for the shape of its saddle. It has to be acknowledged that the smallest postwar JAWA proved successful. It was powered by a two stroke horizontal single cylinder, displacement 49.8 cc (38×44), 1.6 kW (2.2 HP) output at 5500 r.p.m. With the three-speed gearbox the little machine's maximum speed was 50 km p.h. The Pioneer outpaced owing to its concept and design the worldwide trend in this motor cycle category and, due to its qualities, stayed in production — though following various innovations — until the early seventies. First the cowling of the single seater was changed, then came the turn of an updated model with dual seat, after that a two seater sports version, in the very end manufactured was the redesigned JAWA 23 Mustang model. The base of all these models remained in principle the same horizontal two stroke single cylinder.

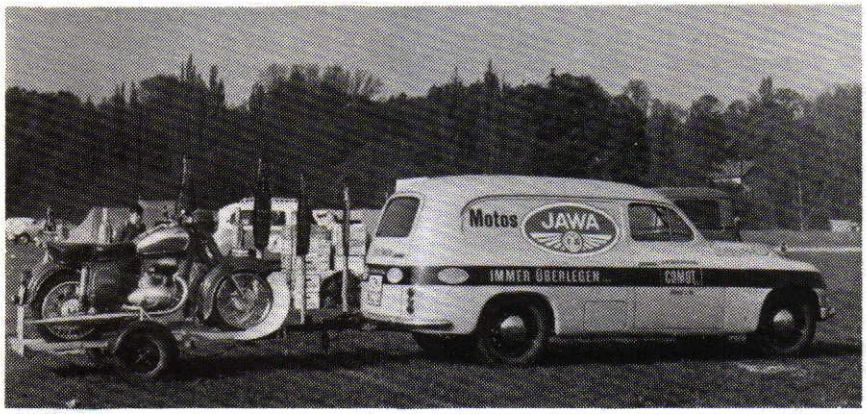
The little JAWA was developed in Prague, but its production was transferred in 1955 to Považské strojárne at Považská Bystrica. Nevertheless JAWA came back once more to the production of small capacity motor cycles. It was in the years 1958—1962 when JAWETTA mopeds were put in production. The frame was welded of stamped sections, the power unit was a horizontal air-cooled two stroke single cylinder with 49.8 cc displacement and 1.1 kW (1.5 HP) output at 4750 r.p.m., two-speed gearbox and the machine's maximum speed was 45 km p.h. JAWA manufactured two models, one the Standard, with the tank in the pressed frame, the other — Sport — with large separate tank and other apparent differences, including a sizeable saddle.

A Swinger prototype — the serial product turned out better

THE SWINGER



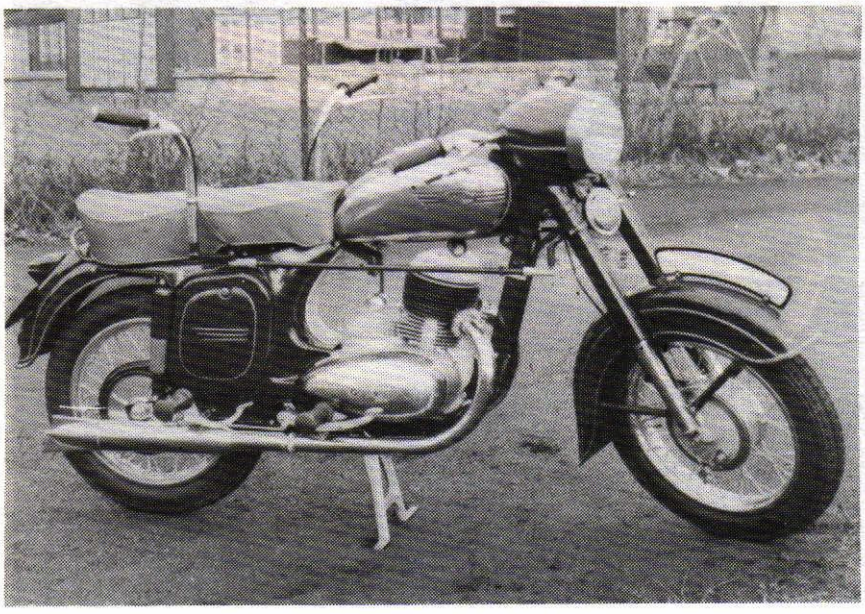
It seems that any motor cycle given by its users a nickname is thereby actually distinguished. As if enthusiasts wished to express their personal relationship with a motor cycle that is for them more than just a means of transport. It was the same with the next JAWA motor cycle generation which came after the Springers.



JAWA motor cycles have won positions all over the world. The Swingers were demonstrated in Switzerland by a Škoda service van

JAWA ČZ 250, Model 353 ● Two stroke air-cooled single cylinder ● Displacement 248.5 cc (bore and stroke 65×75 mm) ● Engine power 6.6 kW at 4750 r.p.m. ● Compression ratio 6.25 to 1 ● Four-speed gearbox in unit with the engine ● Multiplate clutch in oil bath, automatic disengagement by gear pedal movement ● Simple closed frame welded of square steel sections ● Pivoted rear fork with two oil damped suspension units and covered outside springs ● Telescopic front fork ● Weight 125 kg ● Maximum speed 100 km p.h. ● Average fuel consumption 3.5 to 4 litres per 100 km.

JAWA 250 Swinger with dual controls



They have been presented in the autumn 1953 and shortly after their début began to be nicknamed Swingers, although their official designation was JAWA 250 Model 353 and JAWA 350 Model 354. Their common feature was long travel front and rear wheel suspension with oil damping — owing to the swinging rear fork the machines were called Swinger.

The two — both the twofifties and threefifties — were put in production at the same time in 1954. The main difference from the Springer, which with the 350 cc engine has been still running out, was in the cycle part. There were no longer rubber gaiters in the front fork bottom part, but hydraulic damper sliders. Instead of the nineteen inch sixteen inch size wheels with up-to-date hubs were used and the rear chain was totally enclosed. The new JAWA machines were naturally equipped with dual seats. This version was in production until 1955. The parameters of the JAWA 250/350 were as follows: air-cooled two stroke single (twin) cylinder, displacement 248.5 (344) cc (65×70 mm, 58×65), compression ratio 6.25 to 1 (6.5 to 1), power output 8.8 kW/12 HP (11.7 kW/16 HP) at 4750 r.p.m. Kerbside weight 135 kg (145 kg), maximum speed 110 (115) km p.h. Suspension travel front/rear 130/100 mm, tyres 3.25 — 16.

The Swinger stayed in production until 1974 and underwent, of course, during the time several minor and also radical updatings. Let's pause at those worth mentioning.

Since early 1956 the 353/02 and 354/02 were equipped with the single kickstarter and gearchange pedal system. Beginning with November of the same year introduced were new light alloy full width wheel hubs with different spoke lacing and 10 mm wider brake shoes, the dimensions of the brakes were now diameter 160 mm, width 35 mm. As a result braking distances were improved. Since February, 1957 considerably updated Swingers model 04 were in production. The compression ratio was increased to 7.2 to 1 (7.4 to 1) carrying with it higher power output and higher maximum speed. The front wheels were shod with 3.00 — 16 size, the rear wheels with 3.25 — 16 size tyres. The cycle part changes included new front fork design with larger diameter springs and improved damping characteristic. Apparent at first sight were the new exhaust silencers — instead of the fishtail ends fitted were cigar-shape silencers. The 353 (250 cc) model was manufactured until 1962, the 354 (350 cc) model until 1965. The Swingers were solid and quality machines, there was no reason to change them in principle, but they had, of course, to be subject to regular development.

UPDATING

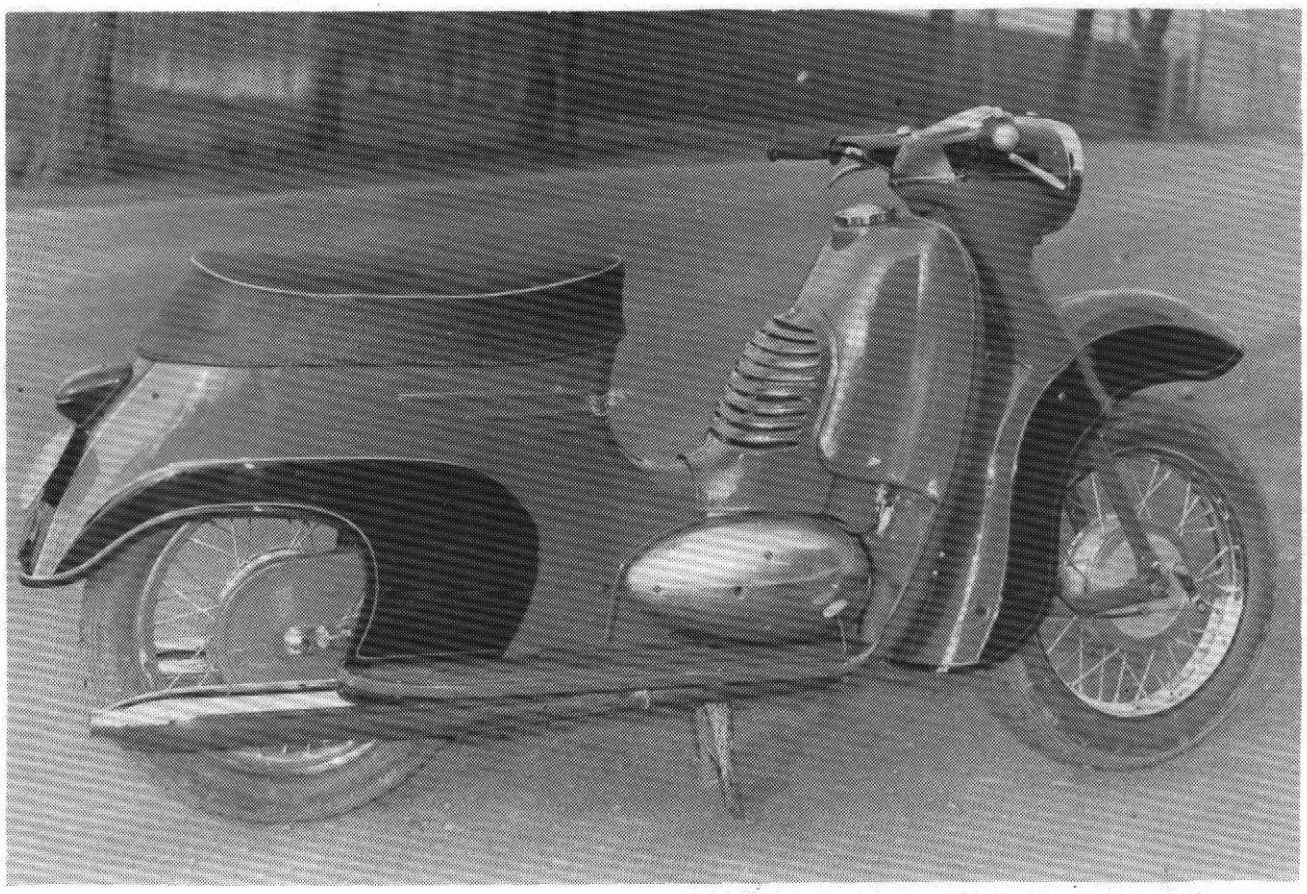
In 1962 there came the JAWA 250 Model 559. This was an updated machine differing from the 353 model in a panel-shaped enclosure of the headlamp top part passing into partial handlebar enclosure. That was why the motor cycle was beginning to be called "Panel". New was the speedometer form, changed was the switchbox integrated now with the light switch. The tail lamp cluster was made with coloured plastic, altered was the dual seat provided with a lock and only after unlocking and raising the seat the sideboxes could be unlocked from the inside.

The engine power was increased from 8.8 kW (12 HP) to 10.3 kW (14 HP) at 5000 r.p.m. the compression ratio to 7.7 to 1. The scavenging ports until then in the crankcase were now in the reconstructed cylinder barrel. Consequently the carburetter was fitted by means of a stub to the cylinder and not to the crankcase. It was equipped with a choke controlled by a sleeve at the throttle twistgrip. The exhaust elbows were fastened to the cylinder by means of nuts into the inside threads in the barrel and the nuts were consequently much smaller. The former models had the crankshaft assembly carried in three bearings — one on the ingition side, two on the primary drive side. The first model 559 series employed just two crankshaft assembly bearings which proved to be a disadvantage. Therefore the following series reverted to the former system. In 1963 appeared on the JAWA 559/03 model an automatic clutch, one of the great inventions originating in the factory. Owing to the quick-action twistgrip and narrower mudguards the motor cycle was given a slightly more sporting style. Introduced later was a clutch modification preventing clutch slip under heavy and sudden power take-up, the operating mechanism was changed so as to permit the use of stamped parts, rear wheel hub rubber cushion drive improved the power train service life, altered was the telescopic front fork. The model was also manufactured with towing gear for the PAV luggage trailer coupled behind the rear wheel. Adjusted was the air intake for dusty areas, for countries with large size rear number plates (the Federal Republic of Germany, Great Britain) the motor cycle rear was adapted, a special series of models for the Iraqi Police Force was manufactured, some motor cycles were equipped with magdynos, others were made without the carburetter choke. A special model was the JAWA 559/04/08 with dual controls.

Updated like the twofifty was the threefifty. It was, however, put in production two years later — it appeared for the first time in 1964 as model mark 360. Parallel with the twofifty it was manufactured until 1974. The threefifty was also available with the Velorex sidecar designed by JAWA and it was also marketed with the JAWA centrifugal automatic clutch. Machines with different equipment were exported to Mexico, Bolivia, the USSR, Great Britain or the German Democratic Republic. The Neckermann department stores network had its special requirements, too. The threefifties were also available with AC electrical equipment.

The 360 model appeared in the Californian (360/04) version. The very designation indicates that the motor cycle was destined for the US market, where JAWA has been well established. The Californian differed from the basic threefifty primarily by its more pronounced sporting style, narrower mudguard, upswept exhaust silencers and a number of extras to customers' option. Some of its elements found application also in other JAWA models.

JAWA 250, Model 592 ● Two stroke air-cooled single cylinder ● Displacement 248.8 cc (bore and stroke 65×75 mm) ● Engine power 9.5 kW at 4700 r.p.m. ● Compression ratio 8.1 to 1. Four-speed gearbox in unit with the engine ● Multiplate clutch in oil bath, automatic disengagement ● Simple closed frame welded of square steel sections ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 129 kg ● Maximum speed 195 km p.h. ● Average fuel consumption 3.5 to 4 litres per 100 km



It dit not want much for the production of a JAWA 250 scooter. It is obvious from the 1959 prototype why the factory gave up the plan

PARALLEL PRODUCTION

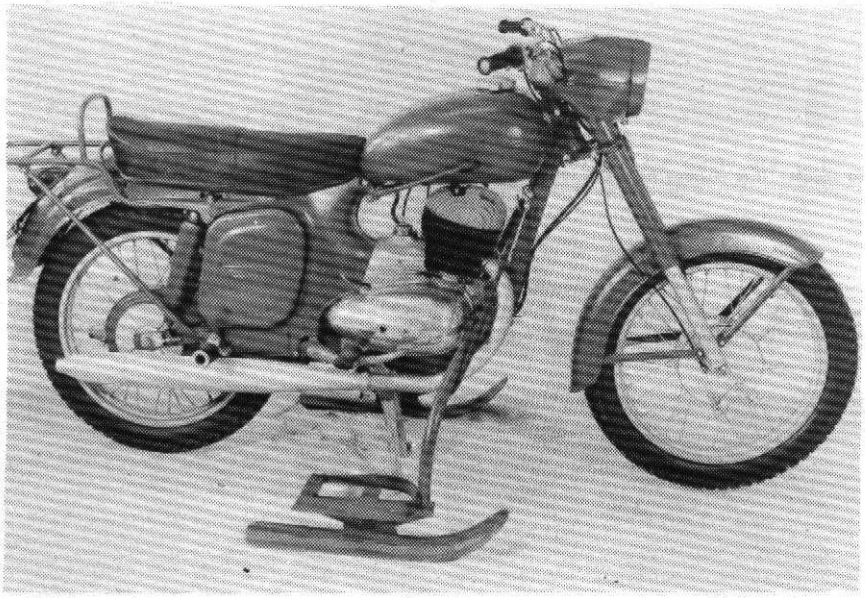
Apart from the basic twofifties (559) and threefifties (360) several other models derived from the well-proven Swinger were currently in production. In the 250 cc class appeared in 1965 the JAWA 250 Model 590 and stayed in production throughout 5 years until 1970. It differed initially from the standard model only with nineteen inch wheels (3.25 — 19 front, 3.50 — 19 rear), narrower front mudguard, rear chain guard and front fork adapted for the bigger wheel size. Later was the motor cycle equipped also with crash bars and flashing signal lights.

A special series was designed for the Scandinavian countries, it became even part of the Swedish Army equipment after JAWA had won a competition in which BSA, Husqvarna and Monark have participated. These machines were provided with side skis manufactured by the Swedish Fleron Company. Thus equipped they have proved their worth in snow and ice covered terrain. The machines were unbreakable and by the time the Swedish Armed Forces required replacement engines, their production had been long discontinued. That was why they have been replaced by the 590/00/02 model engines. Worth mentioning are models adapted for Tunisia, Canada, the USA and for areas with excessive dust. Since January, 1968, manufactured were model 590 twofifties in Californian version, some of which were exported to Australia, specific modifications featured Californians for the Neckermann department stores network.

In 1969 appeared in the market yet another twofifty — model 592, which stayed in production until 1974. At that time (1969—1970) offered for sale were three twofifties — models 559, 590, 592. The latter was a styling innovation. Its standard equipment was the Californian type tank, flashing signal lights, new tail lamp cluster, rearview mirror and a different mudguard. Engine modifications were aimed at outside noise reduction.

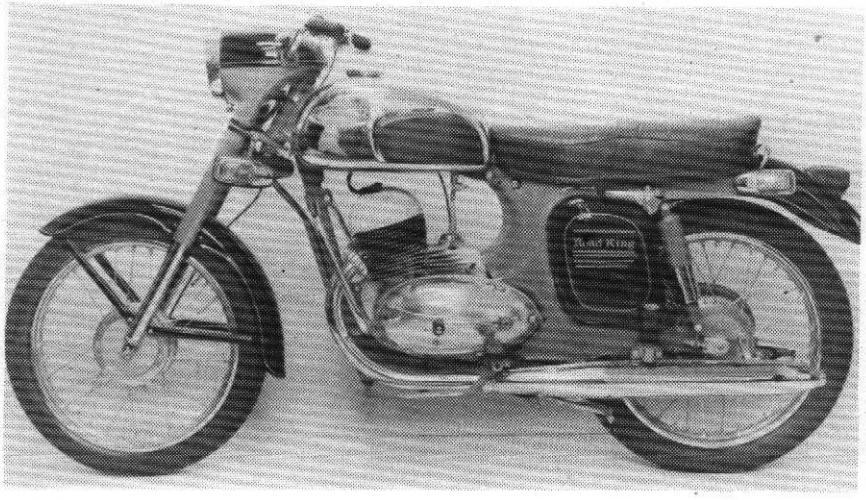
In the 350 cc class appeared apart from the basic 360 model three parallel threefifty types. First came the turn of the 361 — from 1965 to 1969. It was equipped with nineteen inch size wheels, quick-action twistgrip and was exported in various modifications to a number of countries. For Mexico it was provided with upper and lower crashbars and luggage carrier at the rear. The threefifties for Finland were sold in the mentioned side-ski version, for the Yugoslav Police with warning beacon, in Canada with crashbars and signal lights as well as with dustproof induction system and "Road King" sign on the sidebox covers. Exported to the USA were two versions, one was almost standard, the other lightened, without sideboxes, with Bosch headlamp, new tank and air cleaner fitted to the carburetter direct. In this way appeared the first Californian, later

A 1965 scooter prototype. In this instance it may be pity that it never reached the production stage



JAWA motor cycles in the version for Sweden

So looked the JAWA machines shipped in the mid-sixties across the ocean



subject to several innovations. Among the last 361 Californian threefifties versions with eighteen and nineteen inch size wheels were exported to Australia, JAWA machines in this modification were ordered by the Romanian Police Force.

Model 361 was in 1969 replaced by two new types — 362 and 363. The first mentioned was in production until 1973 and appeared under the designation Californian Oilmaster. It was provided with forced feed lubrication protected by patents in a number of countries with a separate oil tank from which oil was automatically metered into the petrol. The device regulated the oil feed according to engine load at the petroil mixture rate ranging from 200 to 1 to 25 to 1. Most of these models were powered with engines called Unified Range but with strengthened gudgeon pins. Unified Ranged motor cycles will be dealt with further on. These threefifties were the most powerful serial production Swingers. With 343.4 cc (58×65) displacement and 9.2 to 1 compression ratio the engines developed 16.9 kW (23 HP) at 5000 r.p.m., the machine's maximum speed was 135 km p.h. The last model 363 threefifty came in production also in 1969, but remained in the programme a year longer than the 362 model, i.e. until 1974. This means that in the course of four years (1969 to 1973) three different threefifties were offered for sale and in the following year still two more (models 360 and 363). These were touring machines with lower engine power destined for day to day use, similarly like the model 592 twofifty.

Throughout the time of production of the various models in total 1,418,840 Swingers had been manufactured and mostly exported to 120 countries all over the world.

JAWA 350 Californian, Model 362 ● Two stroke air-cooled twin cylinder ● Displacement 343.4 cc (bore and stroke 58×65 mm) ● Engine power 16.9 kW at 5000 r.p.m. ● Compression ratio 9.2 to 1 ● JAWA Oil Master forced feed lubrication ● Four-speed gearbox with multiplate clutch in oil bath ● Simple closed frame made with square steel sections ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 145 kg ● Maximum speed 130 km p.h. ● Average fuel consumption 4 litres per 100 km.

THE CASE OF THE CLUTCH

A list of equipment types, models, modifications and alternatives is a relatively boring and intricate reading — certainly wherever it is not possible to get at the gist of a matter. But it is a pity, since even at the drawing board incredible advantures ranking with an excellent thriller can be met with. And so let's pause a moment at one of more such events. Let's call it "The Case of the Clutch". After all mention of the centrifugal automatic clutch had been made before.

Its authors were designers Josef Jozíf, Dipl. Ing. Jan Ráfl CSc., Dipl. Ing. Eugen Ritschl, Vlastimil Bezouška and Dr. Jan Pivrnec from the JAWA Reasearch and Development Centre at Prague — Strašnice. They came in the early sixties with a new design of automatic centrifugal clutch in two versions — in a plate type and cone type alternative. It is a simple and functional device that had proved its worth and was introduced in production. JAWA motor cycles with the clutch differed very little from the serial production models — on the engine side cover was a small drum shape boss.

Applications for patents for the design were filed in most countries manufacturing motor cycles and where JAWA machines were exported.

At the time the clutch had been prepared for serial production appeared in Motociclismo an article on a new small Honda 50 Cub with automatic transmission. And since the JAWA Centre for Scientific and Technical Information was alert, such novelty could not possibly have escaped

its personnel. Automatic transmission in a fifty cc motor cycle should no doubt prove interesting. However, it was found from the spare parts list that it had nothing to do with automatic transmission, but that it looked very much like an automatic clutch. When the little Cub was imported and dismantled, there could be no doubt. JAWA patent agents in France and Britain were at one — briefly Honda began to equip the little machine with practically the same automatic clutch. A little earlier a letter from the European Honda Office in Hamburg arrived in Prague stating that the winged make from the country of the rising sun would be interested in the automatic clutch. JAWA replied that they were pleased with the interest shown and asked if Honda could specify what they had in mind. No reply.

And so "The Case of the Clutch" was beginning to gain pace. Honda was facing trouble in all the countries where the motor cycles with the clutch were exported and where the device was protected by JAWA patent. Obviously such things cannot please any manufacturer. In this instance there was nothing to be cleared up, at least it seemed so. Honda paid a lump sum for the Cub motor cycles exported to Great Britain, while for those exported to the other countries where the JAWA automatic clutch was patented the Japanese manufacturer paid royalties on the numbers of machines imported in such countries. Why the situation in Britain was different is no longer of importance, relevant is that the problem was solved.

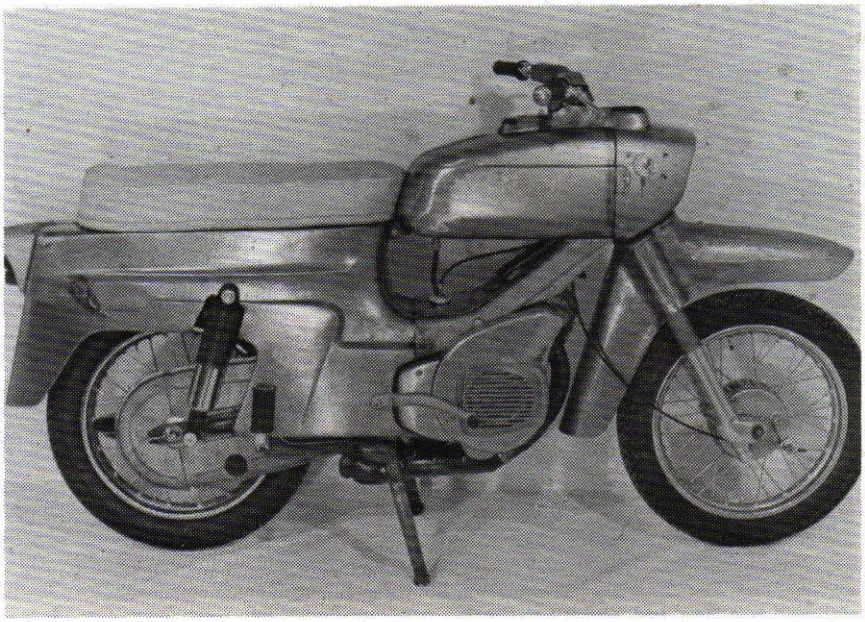
JAWA 350 Automatic, Model 360 ● Two stroke air-cooled twin cylinder ● Displacement 344 cc (bore and stroke 58×65 mm) ● Engine power 12.5 kW at 5000 r.p.m. ● Compression ratio 8.2 to 1 ● Four-speed gearbox ● Automatic centrifugal clutch ● Simple closed frame welded of square steel sections ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 150 kg ● Average fuel consumption 3.5 litres per 100 km

UNIFIED RANGE — THE BUFFALO

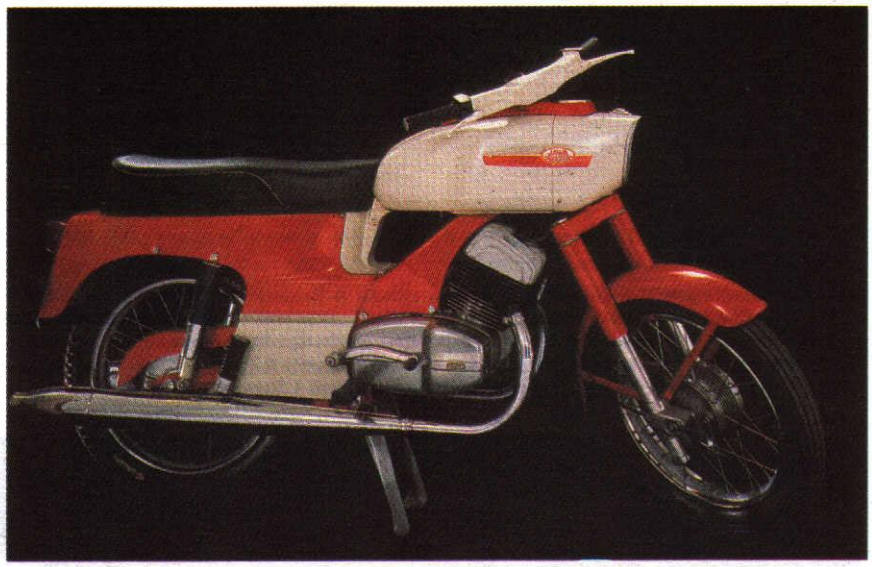
It was evident since the sixties that a new model should be prepared to replace one day the well-proven Swinger. The outcome were JAWA Models 623/0 and 633/0. It should be conceded at once that neither of them whether the two-fifty (623/0) or the threefifty (633/0) was a success. On the one hand because the beginning of their production was being postponed and when they at long last have been manufactured, they had become outdated and the market survey revealed that they failed attract interest. And so from July to October, 1968, not more than 120 units were manufactured. They were unaccustomed indeed above all owing to the integration of the headlamp with the tank producing the impression of heaviness. The design department worked on its modification which was not to require a radical change of the production process. In this way originated the JAWA 250, Model 623/1 and 623/2 and the JAWA 350, Model 633/1 and 633/2, which began to be called Buffalo for their typical handlebar shape. They were manufactured since 1970 until 1973 and were destined for the home market only — in all 4,436 units have been sold. It is evident that they were in production parallel with the older Swinger models. The Buffalo production version received a new closed cradle type frame welded of circular section tubes, a new front fork and a new headlamp. The handlebars were carried in a panel, changed was the shape of the dual seat. In both capacity classes marketed were also Oilmaster versions and increased engine power alternatives. Their basic versions — the JAWA 250, Model 623 (350, Model 633) were powered by the following engines:

Two stroke air-cooled twin cylinder with 246.3 cc, 52×58 (343.5 cc — 58×65) displacement produced 12 kW/16 HP (15.5 kW/21 HP) at 5250 r.p.m. at the compression ratio of 9.2 to 1. The fuel tank capacity was 16 litres (one Oilmaster model had an auxiliary 2.5 litres capacity oil tank), consumption 3.5 (4) litres per 100 km, maximum speed 120 (130) km p.h. The eighteen inch size wheels were provided with new bigger brake shoes. The Buffalo was manufactured on an auxiliary line and there the number was limited. The principal endeavour at the time was the development of a new model.

A prototype of the Unified Range motor cycle not introduced in production in this form



JAWA 250 UŘ, Model 623 ● Two stroke air-cooled twin cylinder ● Displacement 246.35 cc (bore and stroke 52×58 mm) ● Engine power 12.2 kW at 5250 r.p.m. ● Compression ratio 9.2 to 1 ● Four-speed gearbox with shifting gears ● Multiplate clutch in oil bath with automatic disengagement when changing gears ● Duplex open frame welded of square section steel tubes and stampings ● Pivoted rear fork with two oil damped suspension units ● The telescopic front fork consists of two stanchion tubes pressed in a welded lug passing upwards into the steering stem ● Weight 148 kg ● Maximum speed 120 km p.h. ● Average fuel consumption 3.5 litres per 100 km



JAWA 350 UŘ SST, Model 633 ● Two stroke air-cooled twin cylinder ● Displacement 343.5 cc (bore and stroke 58×65 mm) ● Engine power 15.5 kW at 5250 r.p.m. ● Compression ratio 9.2 to 1 ● Four-speed gearbox with multiplate clutch in oil bath ● Duplex open frame welded of square section steel tubes and stampings ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 151 kg ● Maximum speed 130 km p.h. ● Average fuel consumption 4.2 litres per 100 km

THE JAWA 634

The new Jawa 634 motor cycle was presented in 1973 proving the production line of JAWA motor cycles. JAWA were always machines for daily use with outstanding handling and without exceptional maintenance demands. The new JAWA was just another confirmation of these qualities.

It employed a new closed frame welded of circular section tubes based on the well-proven enduro design. The power unit was a two stroke air-cooled twin cylinder with 343.5 cc (58×65) displacement, 14 kW (19 HP) power output at 5000 r.p.m. and 9.2 to 1 compression ratio. New big and small end needle roller bearings were used. Initially it had not been provided with the Oilmaster system lubrication and centrifugal automatic clutch. A big improvement were twin cam drum brakes. The sixthirtyfour has been subject to many innovations and modifications, its engine power was increased to 16.2 kW (22 HP), a number of extra equipment served to improve safety. Let's leave the motor cycle evaluation to somebody more competent — for instance to the Italian Motociclismo magazine which said in the road test report of the JAWA 634 Model inter alia the following:

"With the simple model mark 634 was put on our Italian market this motor cycle of a quiet useful appearance. Despite the rear tyre off-road tread pattern and the suspension response road holding with the rider solo is very good at high speed. Steering the machine into fast bends is very easy; even heavily banked the motor cycle does not show the slightest tendency to get out of track. The best quality of the engine is its power take-up at low engine speed. The engine can be started with engaged gear and disengaged clutch. Pleasant and quiet is the exhaust. The clutch is very soft and progressive. The results of our orthodox acceleration test from standstill over a distance of four hundred metres can be described as good. With respect to speed, we have exceeded the manufacturer's claim by attaining 128 km p.h."

So far Motociclismo.

JAWA 350 Model 634 ● Two stroke air-cooled twin cylinder ● Displacement 343.5 cc (bore and stroke 58 × 65 mm) ● Engine power 14 kW at 5000 r.p.m. ● Compression ratio 9.2 to 1 ● Four-speed gearbox with shifting gears ● Multiplate clutch in oil bath ● Duplex cradle type frame welded of circular section steel tubes ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 155 kg ● Maximum speed 120 km p.h. ● Average fuel consumption 4 litres per 100 km

THE SIXTHIRTYEIGHT

The last JAWA for the time being, the Model 638 threefifty was presented in the summer 1984. It was naturally derived from the previous model, mainly the frame — duplex closed welded of circular section tubes. Novelties were applied above all to the engine — it is again a two stroke air-cooled 344 cc (58×65) twin cylinder with 19 kW (26 HP) power output at 5250 r.p.m. and 10.2 to 1 compression ratio. The light alloy cylinder barrels are lined with cold pressed grey iron cast liners, the crankshaft assembly is carried in four bearings — the engine is 7 kg lighter and its four-speed gearbox employs the well-proven clutch disengaging mechanism by gearchange pedal movement.
In the course of its production the model was, of course, several times updated and gradually equipped with extras to customers' option.

JAWA 350, Model 638 ● Two stroke air-cooled twin cylinder ● Displacement 343.5 cc (bore and stroke 58×65 mm) ● Engine power 19 kW at 5250 r.p.m. ● Compression ratio 10.2 to 1 ● Four-speed gearbox with shifting gears ● Multiplate clutch in oil bath ● Duplex cradle type frame made with circular section steel tubes ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 156 kg ● Maximum speed 125 km p.h. ● Average fuel consumption 4.5 litres per 100 km

WHAT NEXT . . . ?

Until now JAWA motor cycles are holding on to their orthodox design, in principle retained, although the various components and groups are continually being improved. This trend is given in the first place by customer requirements. Motorcyclists buying JAWA require above all reliability wishing their machines to be up to motorways, tracks as well as normal terrain. Therefore minimum demands on maintenance and servicing are the principal JAWA qualities. However, this does not mean that the JAWA people would not be thinking of brand new designs. In 1983 appeared a prototype of a JAWA OHC flat twin cylinder with shaft driven rear wheel. But it was not a current "flat" known for instance from the BMW motor cycles. JAWA applied a new design element protected by patents in many countries. The point of it was that the gearbox was situated under the engine and not behind it cutting considerably the length of the unit. Moreover, the opposite direction of the clutch and transmission rotation sets off the sideway reaction of the engine. Another advantage is the unit's low centre of gravity. The camshafts are chain driven, the two shaft five-speed gearbox is coupled to the engine by an oil bath clutch. The engine is started by a starter motor. Which motor cycle turn is it now?
Let's wait to see . . .

OTHER MODELS . . .

Anyone familiar with the JAWA production programme knows that not all the models have been mentioned. Omitted were mainly those manufactured at the time of the introduction of the Swingers — installed in their frames had been not only JAWA twofifties and threefifties, but also 125, 150 and 175 cc engines coming from another famous Czechoslovak motor cycle manufacturer ČZM Strakonice. These motor cycles displayed on their tanks the JAWA-ČZ emblem, but they were not new types. The purpose was the production of a unified Czechoslovak motor cycle range, but the idea was abandoned a few years later and JAWA remained JAWA just as ČZ remained ČZ.

Recalled should be also the production of the Babetta mopeds carrying also the JAWA marque. They are not JAWA design having come into existence at Považské strojárne in Považská Bystrica. They are nowadays manufactured by ZVL at Kolárovo. Považské strojárne manufactured in the seventies JAWA 90 Roadster and Cross motor cycles and prepared were fifty cc models. But this would be quite another story.

SIDECARS

Since the very first 500 OHV model JAWA motor cycles had been appearing with sidecars. Nor are the things different today. Even though sidecars are not manufactured by JAWA, but by the Velorex Cooperative in Eastern Bohemia. The establishment manufactured the earlier mentioned three-wheelers with JAWA engines — nowadays it makes mainly sidecars. It manufactured since 1957 more than a quarter of a million of them and Velorex is thus the world's second largest sidecar manufacturer. JAWA motor cycles with the sidecars were exported to many countries, the very sidecars to 62 countries. The latests JAWA three-fifties are also adapted for sidecar work. The design of the latest sidecar 700 model is modern and owing to increasing demand it is since 1987 gradually replacing in production the previous 562 model. The Velorex sidecar production volume recently is about 10 thousand units a year.

FACTORY DEVELOPMENT

After the Second World War and the nationalization of the Czechoslovak industry the JAWA manufacturing equipment was updated permitting in the early fifties to produce 60 thousand motor cycles yearly. It would be unnecessary to list all the investment actions that had taken place beginning with new production sheds and ending with a computing centre. A fundamental change took place in 1963. The parent works at Prague-Nusle was taken over by the ČKD Polovodiče (Semiconductors) establishment so that motor cycle production at the Green Fox was discontinued. Abolished was also the production of competition motor cycles at Prague-Libeň leaving in the capital city just the Research and Development Centre at Prague-Strašnice, in the former Ogar factory buildings. That is where serial production motor cycles and competition machines are manufactured.

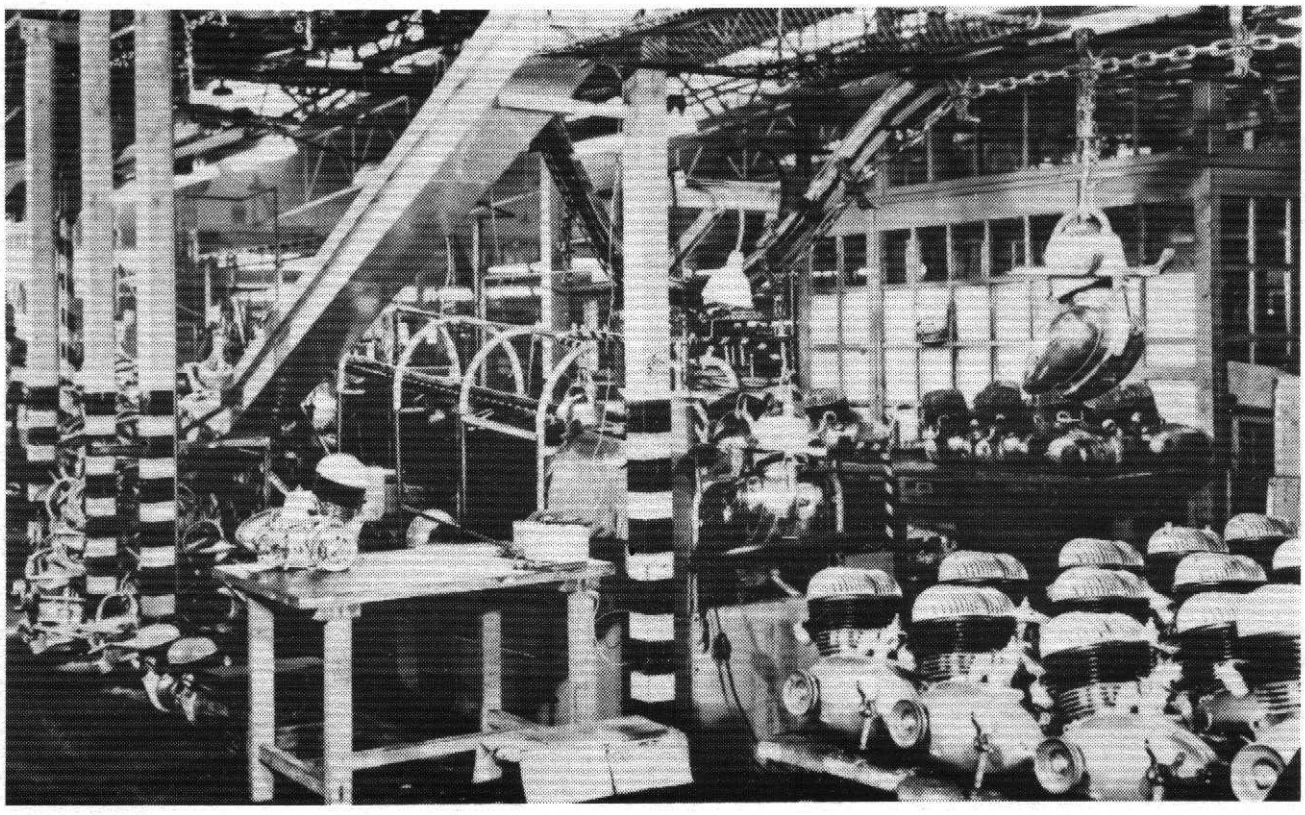
The equipment for the production of serial motor cycles was moved to ČZM (Czech Motor Cycle Works) at Strakonice. Engines for both JAWA and ČZ motor cycles are manufactured there till this day.

The premises at Týnec nad Sázavou were turned into the parent establishment and place of business of the concern's management. That is where the press shop, production of rims, tanks, enclosures, the plating, machine, welding and paint shops as well as the assembly line are situated. To frame and tank welding, in the paint shop, in the assembly and dispatch department is applied the most advanced technology.

Part of the Týnec plant are separate production departments. Manufactured at Bystřice are handlebars and exhaust pipes, concentrated at Mrač is the machining of production motor cycle components. At Jiříkov in Northern Bohemia is the forging shop making forgings not only for JAWA, but for motor industry plants in Czechoslovakia. In Prague where motor cycles are being developed and where competition models originate the moulding shop of plastics serves the parent plant.

Unique is the department at Divišov manufacturing JAWA track racing motor cycles. Its origin and development are so remarkable as to be worth a look into its history.

Engine production in the new hall in Prague-Nusle was among the most up-to-date in Europe in the late fifties



ESO

The popularity and successfulness of JAWA in track racing date back to prewar times. However, after the War the make was not engaged in track racing motor cycle production and so mostly British JAP machines were used. It had not been exceptional that some riders were successful in two or three kinds of the motor cycle sport and this was also the case of Václav Stanislav and Jaroslav Simandl, weather-beaten old wolves from the thirties. They were not idle during the War either taking part in the development of the new machines as had been mentioned. No wonder they went back to their beloved sport after the War.

Their story which began quite innocently while waiting for a ship at Dover had for them as well as for the Czechoslovak sport rather unexpected and incredible consequences. The two were returning as participants in the 1949 International Six Days Trial from Great Britain. Stanislav had bought in London a connecting rod for his speedway JAP, but was still not quite satisfied. He said he needed a camshaft as well. And would J. Simandl lend him the money, he would look for it in France as he had not enough to pay for it. Simandl was of course pulling his old pal's leg saying he should not worry, because he would make him a complete engine back at home. On board they betted the camshaft, on the way across France a complete engine. Simandl swore that he would construct a single cylinder better than the famous JAP. When a chap makes a promise, he should keep his word. Which Simandl wanted, but it was difficult. Of course the fellows kept bothering him so much that he saw no other way out than to make parts for a total of eight engines according to the English pattern. Four he assembled, the other four were left for spare parts. The engines were divided between the pals — Stanislav took away the very first and instead of JAP had "Jitka" — the name of his newly born daughter — engraved on it. Rider Marha wanted to have on it his name "Eman" and Holub (Czech for pigeon) the symbol of a pigeon. Simandl kept the fourth engine for himself. It seemed that the small toolmaker's shop where Simandl worked is well rid of the engines.

But the rumour spread soon about, the Sports Commission of the Automobile Club of that time urged Simandl, Motokov — the foreign trade organization — wanted to put the engine on show in Sweden and Simandl gave in. All he worried about was that the Swedes would give preference to the original JAP rather than to its copy and so he decided to make his own engine surpassing the JAP. After all the concept of the English engine was twenty years old. And so he drew a short stroke single cylinder, placed an order with his own firm to cover the production, paid himself twenty-eight thousand crowns for it and installed it in a road racing motor cycle frame which his son Jiří started to ride in road races to test the engine in this way. In a workshop with eighteen employees there was of course no dynamometer. The single cylinder appeared to be a success — later measurements revealed that its output was 45 HP and so it was called S — 45. The first four speedway machines were sold to the German Democratic Republic bearing the marque Eso which came into being in a very simple way. In the end the letter "S" was painted in red on the tank, hence Eso (for ace in Czech).

At the Divišov workshop track racing motor cycles started to be made in larger series to displace on the European tracks the JAP engines. Simandl has kept his word.

In the early fifties the business was nationalized becoming part of Kovovýroba Vlašim. Jaroslav Simandl continued to be the leading figure. In January 1964, the plant became part of the JAWA corporation. Since then bear the world famous track racing motor cycles the JAWA emblem.

JOINT PRODUCT

In the production of JAWA motor cycles cooperate many Czechoslovak manufacturers and as a matter of interest it is worth to mention at least the most important ones.

In the first place it is ČZM Strakonice making apart from engines front forks, wheel hubs and chains. PAL Magneton Kroměříž supplies ignition coils and switch boxes, Motor České Budějovice carburetters, fuel tank taps as well as the dual seats. Speedometers and rev counters are made by PAL Kbely, headlamp reflectors, direction indicators and tail lamps by Autopal Nový Jičín. Centre stand and minor parts are cast by Metaz Týnec nad Sázavou, Jiskra Tábor manufactures sparking plugs. Direction indicator contact breakers and horns come from Autobrzdy Hodkovice. The motor cycles are shod with Barum tyres from Rudý říjen Otrokovice. Packagings for the motor cycle transport are supplied by Středočeské dřevařské závody, paper for spare parts wrappings by Jihočeské papírny, the JAWA finishing coat by Barvy a laky, rubber parts come from Rubena Náchod and Gumárne 1. Mája Dolné Vestenice. Plastic parts are made by Chema Pardubice and Technoplast Chropyně, Pérovna Hostivař manufactures springs.

Omitted should not be the metallurgical production taking a big part in the motor cycle manufacture. The most important suppliers are Spojené ocelárny Kladno, Královodvorské železárny Králův Dvůr, Tažírny trub at Chomutov and Veseli, Vítkovické železárny, Třinecké železárny, Kablo and many other metallurgical works. JAWA cooperates with the cooperatives Velorex at Hradec Králové, with VDI Kyjovan at Kyjov and VDI Otava at Písek. Many of them are in close touch with JAWA since the first postwar years.

JAWA EXPORTS

Czechoslovak motor cycles were exported after the Second World War by a company with the long name Československé závody kovodělné a strojírenské (Czechoslovak Metal and Engineering Works) from which in 1948 came into existence the Kovo Foreign Trade Corporation. Since 1951 exports were taken up by Motokov which is exporting motor cycles till today. By the end of 1988 its records show 2,373,000 JAWA motor cycles sold in 120 countries in all parts of the world. The largest customer is the Soviet Union with some 2 million typically red finished motor cycles on the roads. Of course, you would find JAWA machines in Iceland, New Zealand, beyond the Polar Circle as well as on the Equator, in the Canary Islands and in California. JAWA appeared in 1956 even in Tibet, the first motor cycle ever to touch the country's ground. Permission for the crossing was given by the Dalai Lama himself on the occasion of a Tatra truck expedition across Asia assisted by JAWA. On the basis of motor cycle exports Motokov established a network of business partners all over the world with whom the corporation is still cooperating. For all, let us name the Austrian establishment Josef Faber which is doing brisk trade with Czechoslovakia.

JAWA ALL OVER THE WORLD

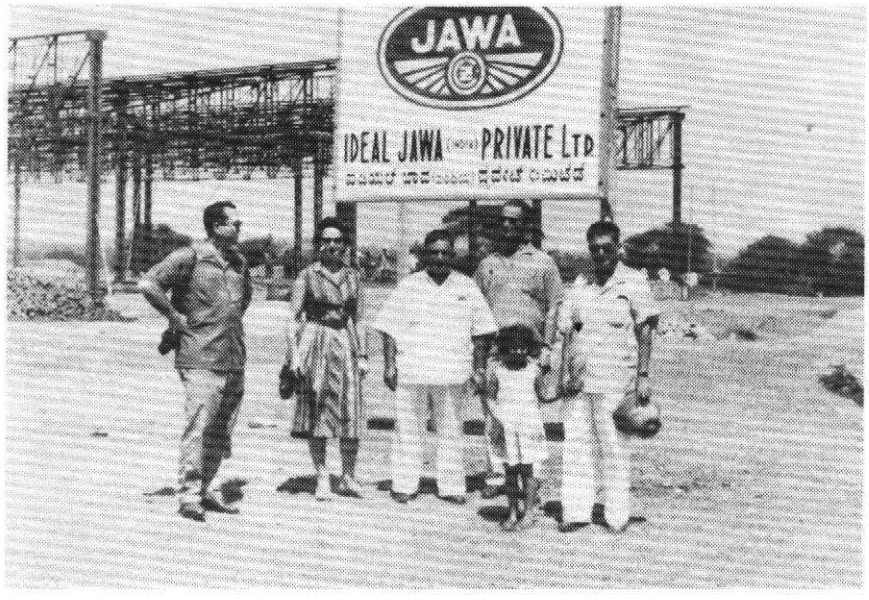
Apart from the motor cycle exports all over the world JAWA motor cycles began to be manufactured or assembled also outside Czechoslovakia. The largest project of production under licence was realized in India. Initially JAWA motor cycles were just exported to the country — agents at Delhi was the Baghwandas firm, in Bombay the Irani company. In the mid-fifties motor cycle imports were prohibited by the Government of India, permitted was, however, assembly of foreign machines by domestic engineering establishments. At that time the British Royal Enfield make has got a hold in the market, its motor cycles having been for years assembled in India.

Former agent Rustom Irani decided to establish his own motor cycle production under licence and following a market research chose JAWA. He knew no doubt what he was embarking upon and what he could expect from JAWA. He had, namely, in September 1951 organized a publicity trip of two policemen with JAWA motor cycles to Czechoslovakia and the feat was repeated by three Indians in 1955.

And so at Mysore had grown up a new JAWA motor cycle assembly plant — involved were twofifties and the Pioneer ultralightweights. It was on March 5, 1961, that the first motor cycle left the gate of the Ideal JAWA Mysore company's plant. The only important difference from the machines made by the parent works was that they employed three-circuit magnetic ignition to make starting independent of the condition of the storage battery. The first manager of the factory was Rustom Irani's brother Faruk. JAWA motor cycles were made under their mark until the licence agreement had run out. Since then they were sold under the marque Yezdi, which a transcription of the Czech language term "jezdí" meaning "going or running". How did the Indian motor cycles come by that name? Czechoslovak technicians have been testing every motor cycle by way of final inspection. When satisfied, they used to remark each time that it was running at the mark was in existence. Some 30 thousand Yezdi motor cycles are produced yearly.

Interesting was also the cooperation with partners in Turkey, where JAWA had about 250 dealers. General agents was the Oto Celik company and it decided to assemble JAWA twofifties from imported components on the spot. Evidence of the popularity of the Czechoslovak motor cycles is also the fact that they have been purchased by the Turkish postal services.

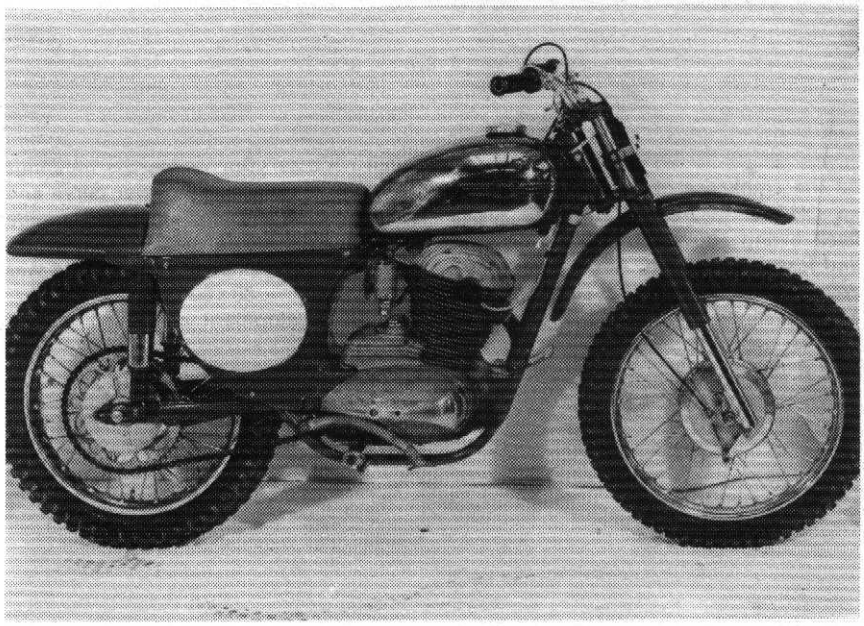
Eltramco in Egypt is also assembling Czechoslovak motor cycles from imported components — the volume is some 3 thousand units a year.



The Irani Family in front of the just started construction of the JAWA motor cycle factory

TECHNICAL WONDERS

JAWA is clearly the only make to have engaged machines in all kinds of the motor cycle sport. After the Second World War JAWA motor cycles competed in road races, motocross meetings, enduros, track races and trials. And which is more, JAWA riders have recorded hundreds of victories and won scores of world champion's titles. Many of them became the legens of the motor-cycle sport. It is a pity that forgotten are being the splendid machines they had been riding — they were often more than intricate engines in complicated frames. A perfect motor cycle — after all like any other perfect thing — has the hallmark almost of an object of art.

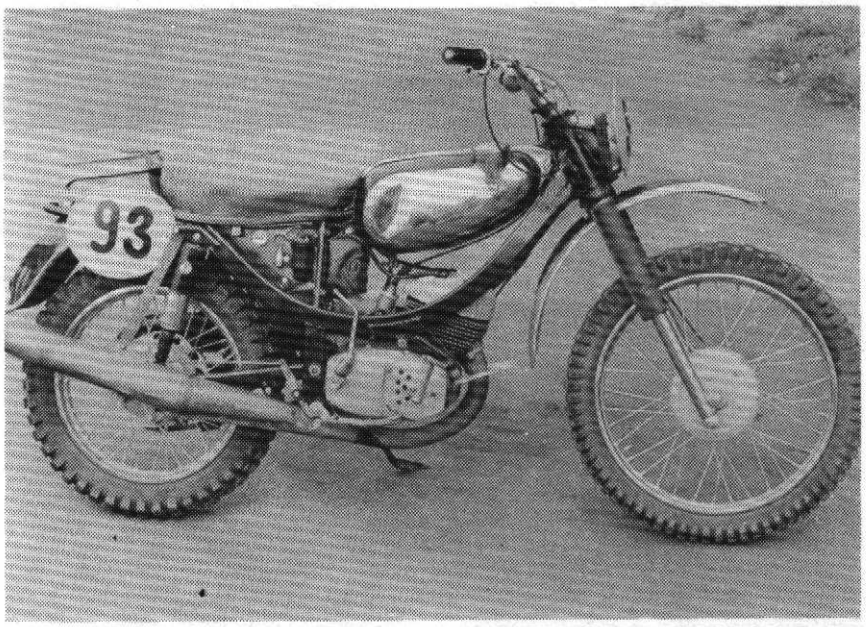


A motocross twofifty — a four stroke engine mounted on a two stroke engine crankcase

JAWA OFF-ROAD

Motocross and enduros are attracting since the first meeting of this kind ever more spectators. Isn't it wonderful to see riders poised in footrests to prevail over natural obstacles they would hardly cross on foot?

Initially competition motor cycles were derived from serial production machines. The engine of the famous Springer appeared in a slightly modified shape and in a little modified frame in the first postwar Six Days. Like the twofifties the threefifty twins could assert themselves first in the enduro sport and soon after that in motocross. In this instance, too, the machines were little modified standard production models. Exceptionally appeared some engines with light alloy cylinder barrels and pressed-in liners as compared to serial cast iron cylinders. Gradually the power output of these engines was being increased and it appeared that they were well suited for off-road work. Designers were wishing to adapt the engine to the specific motocross conditions and so came about the first reconstruction of the two stroke twin into a "false" twin, in which the reciprocating movement of the pistons was converted to parallel running, the big ends being in the same plane so that the engine acquired the properties of a single cylinder while retaining performance parameters typical for a twin cylinder. This showed in practice above all under acceleration off road preventing thus wheel slip and rear wheel skidding. The next logical step was a large displacement two stroke single which was soon to

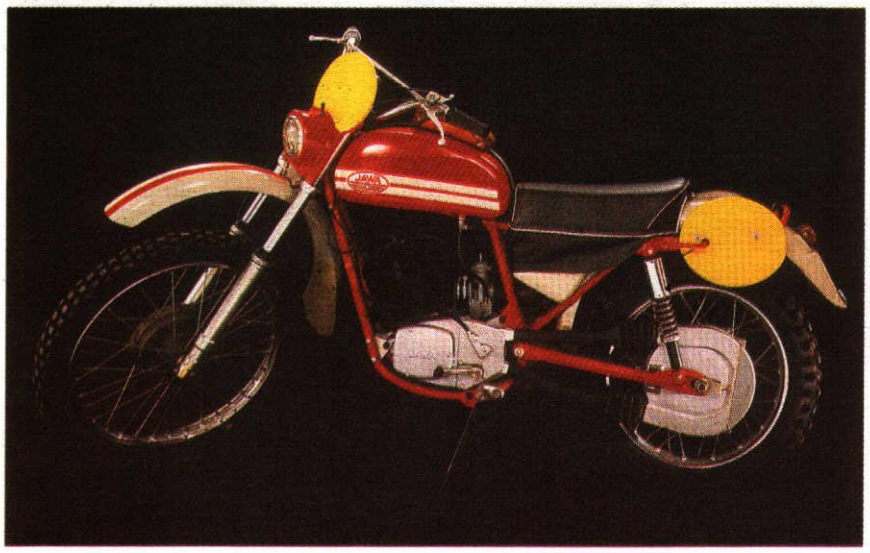


This motor cycle could not have been called anything else but banana. In this version it is of course without disc brake

displace the long stroke single four strokes which had been winning fame for British makes. The low weight of the twofifties and their engine power brought success in the just introduced motocross world championship.
With the ever growing demands on the motor cycle speed and dynamism a new way had to be found. This turned out to be an over-square twofifty, a motor cycle with the engine of a bigger bore than stroke. While the previous engines based on the serial version had 65× 75 mm dimensions, those of the new engine were 70×64.5 mm. Even with the original gearbox and clutch the motor cycle was changed so much that it brought JAWA the 1958 European Champion's title.
JAWA also tried it with a 250 cc four stroke single — an original design — on the crankcase of the twin was fitted an OHC single, but it failed to prove itself owing above all to bigger weight and lesser dynamism. Another step forward was the 1963 two stroke engine again destined for off road. The innovation consisted this time in a brand new crankcase made with a single casting closed by side covers. The gearbox was fitted in the case as a unit. The design presented not only improved rigidity of the crankshaft bearing and sealing of the two stroke engine crankcase, but permitted speedy and easy installation. Considering that the machine employed way back in 1963 a banana type backbone frame and rear wheel disc brake, it has to be admitted that it was an avantgarde machine indeed. The engine underwent a number of reconstructions and innovations throughout the years with engines for enduro, also in lower capacity classes having been derived from it.
A fundamentally new engine was the motocross fourhundred developed from the original 360 cc enduro engine. It had been necessary for motocross meetings to improve the engine power curve and dynamism, especially at lower engine speeds. This led in 1966 to 402 cc increased displacement — the engine was now square — 80×80 mm.
Engine development continued leading to displacement increase to the very 500 cc limit, a way JAWA was the first to take in the early seventies. True, it was risky, because large capacity two stroke singles are difficult to cool, but the vision of higher power was attractive and so JAWA was striking a new path like so many times before. The outcome was a 486 cc engine obtained by increased bore (88 mm).
Out of the number of technical novelties worth attention is the design of a decompressor valve. Its application had been necessary with a view to engine starting and its braking effect was also welcome. The decompressor was controlled by the throttle twistgrip turned beyond the idling speed abutment. The braking effect with the decompressor valve was twice that without it. Further power increases had to be solved by new measures applied to the engine construction — in the first place with rotary valve intake. By then JAWA had begun to concentrate on enduro meetings and to withdraw from motocross. So the rotary valves appeared on enduro engines.

JAWA FOR THE SIX DAYS

In motocross meetings motor cycles are required to give maximum performance for a relatively short time and so their service life is rather short. On the other hand enduros and, in particular, the Six Days, required until recent times machines to endure the toughest conditions throughout six days and hundreds of kilometres without any possibility to replace anything. The primary purpose of the six days trials was the endeavour to present slightly modified serial production motor cycles as absolutely reliable, efficient and accomplished machines which were to serve their potential owners "for ever". In the whole history of the International Six Days Enduro Czechoslovak riders have won the highest number of World Trophies — fifteen. And for that their first success did not come until 1947 . . . In those times it was the famous Springer triumphing. In the



JAWA 250, Model 652 ● Two stroke air-cooled single cylinder ● Displacement 246 cc (bore and stroke 70×64 mm) ● Engine power 20.6 kW at 7000 r.p.m. ● Six-speed gearbox ● Multiplate dry clutch ● Crankshaft assembly and gearbox fitted in the crankcase from the side ● Duplex cradle type frame welded of chrome-molybdenum circular section tubes ● Pivoted rear fork with two oil damped suspension units and progressive coil springs ● Telescopic front fork ● Weight 118 kg ● Maximum speed 135 km p.h. ● Fuel consumption not indicated

JAWA 80, Model 659 ● Two stroke water-cooled single cylinder with rotary valve ● Displacement 80 cc (bore and stroke 48×44 mm) ● Engine power 13.5 kW at 12,000 r.p.m. ● Short intake port at cylinder rear ● Asymmetric crankcase with dividing plane in the rotary valve plane ● Six-speed gearbox with four-plate dry clutch ● Duplex cradle type frame of chrome-molybdenum tubes ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 99 kg ● Maximum speed and fuel consumption not indicated

JAWA 250, Model 652-6-86 ● Two stroke aircooled single cylinder with reed valve induction ● Displacement 246 cc (bore and stroke 70×64 mm) ● Engine power not indicated ● Six-speed gearbox ● Multiplate dry clutch ● Simple at the bottom bifurcating frame welded of chrome-molybdenum tubes; detachable rear part ● Pivoted rear fork with linkage acting on twin suspension units ● Telescopic front fork ● Weight 114 kg ● Maximum speed and consumption not indicated by the manufacturer

JAWA 250, Model 683-0-87 ● Two stroke watercooled single cylinder with reed valve induction and exhaust port strangler ● Displacement 246 cc (bore and stroke 70×64 mm) ● Engine power not indicated ● Six-speed gearbox ● Multiplate dry clutch ● Simple closed at bottom bifurcating frame made with chrome-molybdenum tubes; detachable frame rear ● Pivoted rear fork with linkage acting on single suspension unit ● Telescopic front fork ● Weight 108 kg ● Maximum speed and consumption not indicated by the manufacturer

years that followed enduro engines were based on production units and later on on motocross engines. The 1963 twofifty with the single casting crankcase had appeared not only in motocross, but in enduros, the same principle being employed by smaller capacity engines in this kind of sport. Interesting in the mid-sixties was the JAWA 175 cc enduro, its crankcase was split in the longitudinal plane, but missing the cylinder longitudinal axis. The engine was suspended on one part of the case, so that both the crankshaft and gearbox could be taken out without the need to remove the engine from the frame. That is naturally invaluable in the enduro sport.

The link between the enduro and motocross engines is apparent in the instance of the mentioned JAWA motocross half-litre with decompressor valve. Derived from it was the 511 cc machine used by the winning ISDE Trophy Team.

The Six Days regulations had been changing, rather substantially, in recent years. Nowadays it is possible to replace a number of parts within a day's run, it became rather than an endurance, resistance and long life test a six days motocross. Owing to the regulations elements used long ago in other kinds of the sport could be introduced in enduros. To succeed in the Six Days it became necessary to win the acceleration and special motocross tests, which meant the need to increase the engine power. The way led to valve controlled engine timing. The first JAWA of the kind was the oneseventyfive with a valve of original design. Followed JAWA 125 and 80 cc machines provided, in addition, with water cooling.

While these motor cycles employed rotary valves, in 1981 appeared a 250 cc JAWA using instead of a rotary valve a shifting plate after the cylinder controlled by an auxiliary connecting rod in dependence on the engine connecting rod. Fuel flow in the intake port was regulated by its movement in steel guides. JAWA held on to rotary valves longer than some other makes, nevertheless abandoned the system in recent years and went over to reed valves. In the 1987 season appeared motor cycles of a new concept. Mainly in the 250 and 500 cc classes largely innovated cycle parts and new generation engines should carry JAWA in the years to come to success. And which is more, a production version should be manufactured in small lots which would please all those whose palms are itching for the handlebars of enduro motor cycles.

The twofifty and the fivehundred are powered by two stroke water-cooled single cylinders with reed valve controlled intake and shifting flat exhaust port strangler controlled in dependence on the excess pessure in the exhaust system. It ensures enough power as well as an optimum torque curve. The system altering the exhaust timing is complemented by an arresting device protected by patent which, in the event of failure of the moving mechanism, ensures full power output. The crankcase is a compact magnesium casting designed so that both the crankshaft and gearbox can be removed without the need to take the engine out of the frame. The cylinder barrel of the two engines has a pressed-in niresist liner, the combustion chamber in the head is hemispherical. Cooling is by two-piece aluminium radiator with forced circulation, resiliently mounted on the frame front tube. Brand new is the six speed gearbox.

The frame is closed, bifurcating in its bottom part, welded of chrome-molybdenum circular section tubes. The pivoted rear fork is carried in needle roller bearings, suspension by single unit.

The twofifty (70×64 mm, 246 cc) and the half-litre (80×64 mm, 320 cc) differ hardly at all, the main difference is in the bore of the two single cylinders.

JAWA ON ROAD

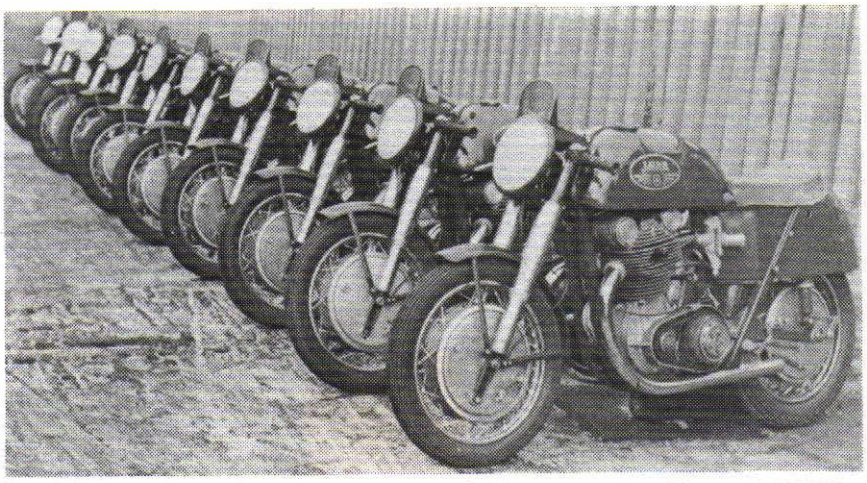
Road racing is the queen of the motor cycle sport. The JAWA road racing special was the very first postwar competition motor cycle, even though installed in the frame was the originally track racing twin cam supercharged twin cylinder. Before it could assert itself in international meetings, new FIM regulations prohibited supercharging. JAWA therefore started to prepare new motor cycles.

JAWA 500 Racer ● Four stroke air-cooled OHC twin cylinder ● Displacement 488 cc (bore and stroke 65×73.6 mm) ● Engine power about 30 kW ● Camshaft drive by vertical shaft ● Lubrication by pump from auxiliary tank located on the frame ahead of the rear mudguard ● Four-speed gearbox in unit with the engine ● Multiplate clutch in oil bath ● Simple, closed in the rear bifurcating frame made with square steel sections ● Rear wheel slider type suspension ● Telescopic front fork ● Maximum speed 190 km p.h. ● Fuel consumption not indicated

Already in 1950 appeared an OHC twin based on the production half-litre developed for serial production. Jan Novotný's third place in the Grand Prix at Brno was its first international success. The motor cycle underwent development and derived from it was a twofifty which Gustav Havel and František Šťastný began to race.

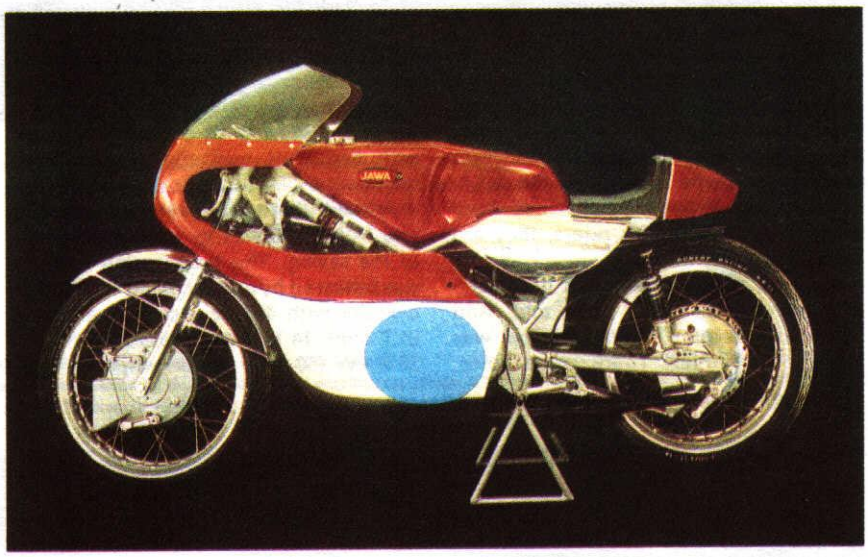
The half-litre had won a number of races at home and abroad. When the production of the JAWA 500 OHC roadster was discontinued, development of the half-litre in the competition department came to an end and attention was aimed at the 250 and 350 cc classes. Top was in 1960 the 2 x OHC 350 JAWA with 36 kW (49 HP) power output and six-speed gearbox. František Šťastný was in 1961 with the machine World Vice-Champion, Gustav Havel third. Let's now take a close look at the machine designed by J. Sirotek, E. Erban, P. Tatek, J. Křivka and J. Ráfl.
Its development started in 1958 and in 1960 it was for the first time entered in the World Championship. It finished fourth, the first three places having been taken by MV Agusta. The JAWA engine was a four stroke air-cooled OHC twin, displacement 347.6 cc (59×63.6 mm), power output 36 kW (49 HP) at 10,300 r.p.m. Respectable at the time was the output of 103 kW (140 HP) per litre capacity.

Like in one of the motocross motor cycle versions the road racing special had co-axial big ends with parallel piston movement. The vave gear in the cylinder heads was driven by vertical shaft aft of the cylinders behind the crankshaft centre bearing. The six-speed gearbox was in unit with the crankcase. The duplex frame was closed, welded of thin wall chrome-molybdenum tubes. Front wheel suspension was by tele-hydraulic fork, rear wheel suspension by pivoted fork welded of tubes and stampings. The motor cycle was equipped with streamlined enclosure.
Outstanding among other road racing machines was a threefifty of quite different concept than the 1960 one. It was a two stroke water-cooled Vee four cylinder prepared for the 1969 season. Internationally the JAWA was entered for the first time in the German Grand Prix at the Hockenheimring with Bill Ivy appearing in its saddle. The début was a success. Though the race was won by Agostini with a MV, Ivy was second — and the two have lapped the whole field. Moreover, third was the second JAWA threefifty ridden by F. Šťastný. There was satisfaction at the factory. The threefifty (model 673) was powered by a two stroke Vee four cylinder with rotary valve controlled intake, water-cooled with forced circulation. Its displacement was 344 cc (48×47.6 mm), power output 51.5 kW (70 HP) at 13,000 r.p.m. (203 HP output per litre capacity). The cylinders and heads were of light alloy, niresist cylinder liners, each cylinder with its resiliantly mounted carburetter. Power

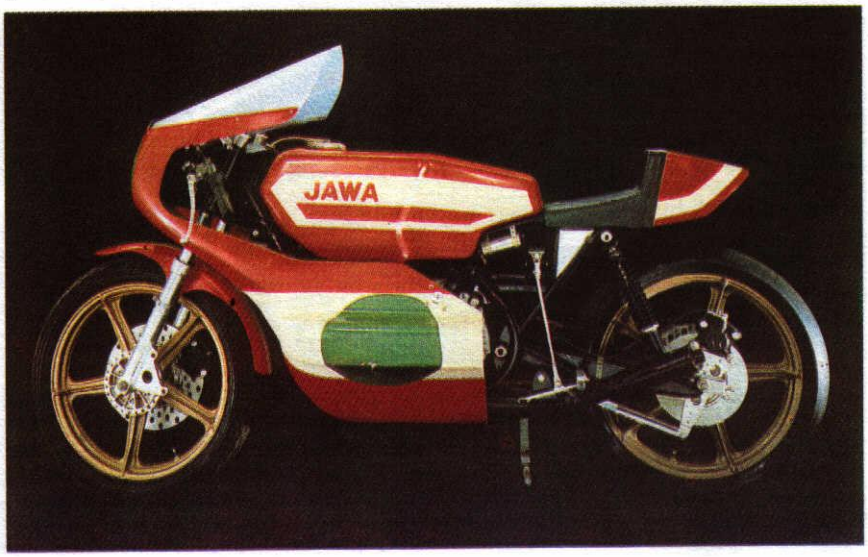


A series of ten racing half-litres opened the door of the world arena for JAWA

JAWA 350, Model 673 ● Two stroke water-cooled four cylinder with rotary valves ● Displacement 344 cc (bore and stroke 48×47 mm) ● Engine power 53 kW at 13,000 r.p.m. ● Compression ratio 15 to 1 ● Two and two forward inclined cylinders situated side by side ● Each cylinder with a separate crankshaft ● Seven-speed gearbox with dry clutch ● Contactless thyristor ignition ● Duplex at bottom open frame welded of chrome-molybdenum tubes ● Pivoted rear fork with two suspension units ● Telescopic front fork ● Weight 138 kg ● Maximum speed 250 km p.h. ● Consumption not indicated



JAWA 250 Road Racer Special ● Two stroke water-cooled twin cylinder with rotary valves ● Displacement 246.3 cc (bore and stroke 56×50 mm) ● Engine power 44 kW at 12,000 r.p.m. ● Compression ratio 7.5 to 1 ● Three piece crankcase with slanted dividing plane ● Six-speed gearbox ● Multiplate dry clutch ● Contactless thyristor ignition ● Duplex cradle type frame welded of steel tubes ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Ready for road weight 120 kg ● Maximum speed 240 km p.h. ● Fuel consumption not indicated



from the two crankshafts was taken up by an intermediate gear with shaft driving the dry multiplate clutch on one side and the water pump and ignition on the other. The seven speed gearbox could be removed without engine dismantling. The fuel tank, the front enclosure, the mudguards, saddle and oil tank were made with plastics. In all three three-fifties were made and being among the most powerful motor cycles in the class, it could be expected by right that JAWA will win big success with them. However, the tragic death of the English rider Ivy was soon to put an end to the high road racing ambitions which could not be avarted by the engagement of Italian rider Sylvio Grassetti either. The interest of JAWA was concentrated on other kinds of the sport, in which the make's engagement of long standing had been possibly more successful than in road racing. The swan song of road racing motor cycle came with a 250 JAWA which appeared in 1976. It was this time a two stroke water-cooled twin with rotary valve induction, 246.3 cc displacement (56×50 mm) and 44 kW (60 HP) output at 12,000 r.p.m. (240 HP per litre capacity). The engine was equipped with two Mikuni carburetters, the gearbox has six speeds. The frame was duplex closed, the front fork telescopic, the rear fork pivoted. The machine was designed by Zdeněk Tichý and two were to be entered in most of the 1977 World Championship meetings. However, it brought no outstanding success. The reason may have been that it had not been entered in the whole World Championship series. JAWA was engaged elsewhere and it was quite impossible to defend the colours in all kinds of the sport.

JAWA IN TRACK RACING

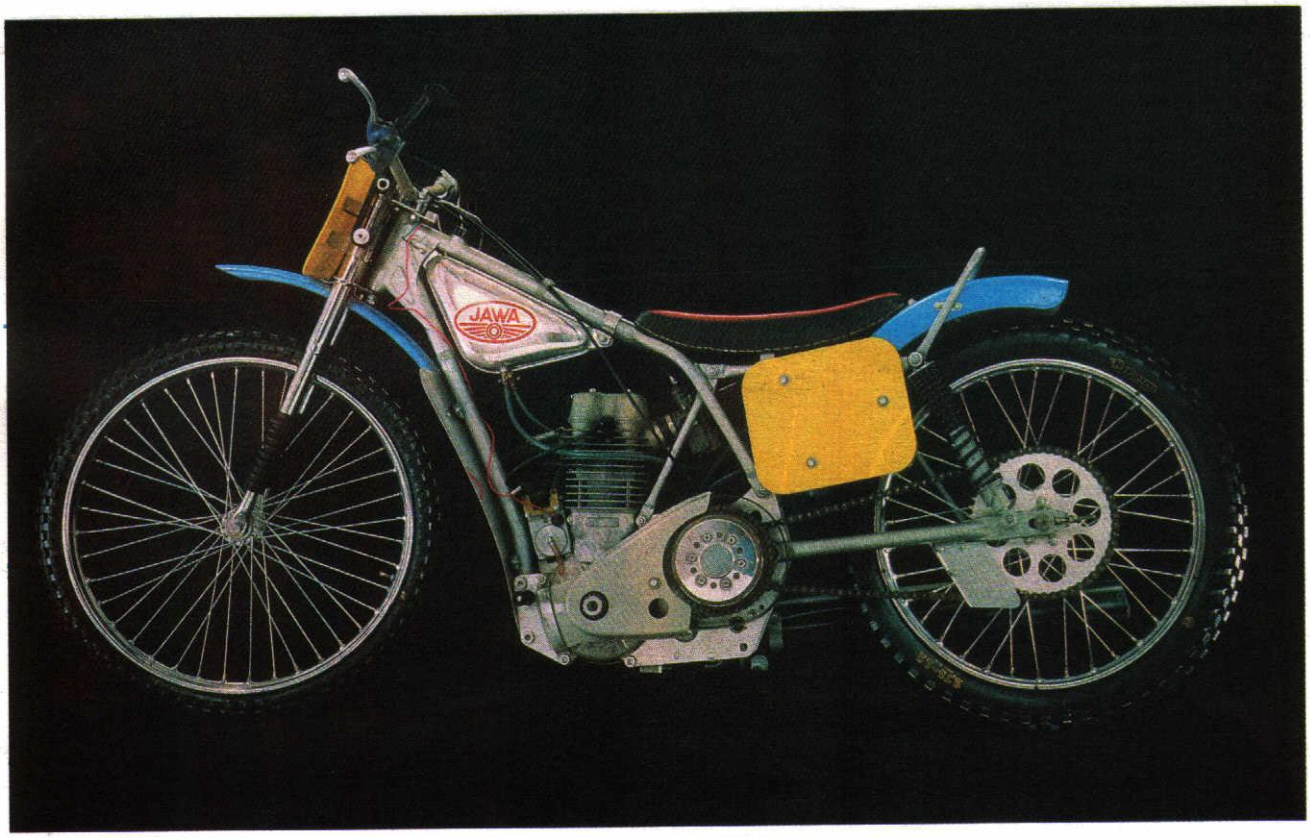
Track racing is undoubtedly one of the most attractive kinds of the motor cycle sport in all its shapes. Speedway, long, grass track, ice racing — racing on ovals is in short attracting spectators from Australia through Europe to the USA. This is where JAWA is a household word indeed. Just ask famous riders, they are sure to confirm it.

How track racing production originated in Czechoslovakia had been told. And when Eso became JAWA, its star was rising ever higher. There were times, when there was no other make on the oval. JAWA is still the world's largest track racing motor cycle manufacturer — about a thousand machines in various versions are marketed yearly. Exported are 95% of the production volume. Most famous of the JAWA track racing machines was the 890 model having by the mid-seventies carried many riders to World Champion's titles on all kinds of tracks and in all kinds of races beginning with individual and ending with team events.

It is said there is beauty in simplicity and JAWA 890 was to confirm the truth of the saying. The track racing half-litre was powered by an air-cooled OHV single cylinder with 497 cc displacement (88×81.7 mm), 14 to 1 compression ratio and 36.8 kW (50 HP) power output at 6600 r.p.m. The OHV gear was situated on the RH side, the two camshafts in the crankcase were driven by spur gears, tappets controlled by means of push rods the rocker arms in the cylinder head. The engine's design was incredibly simple and the engine was reliable, highly efficient and dynamic. Total loss lubrication was assisted by the oil pump. When in 1976 competitive makes began to appear with higher engine power, JAWA came with a new four-valve engine, not based on the two-valve unit, but of brand new design. The spiritual father of Czechoslovak track racing motor cycles, Jaroslav Červinka, managed in this instance to design a four valve unit, the weight and height of which were identical with those of the 890 model. The 2×OHC JAWA entered the

JAWA 500 DT, Model 890 ● Four stroke air-cooled OHV single cylinder ● Displacement 497 cc (bore and stroke 88×81.7 mm) ● Engine power of works riders' version 38 kW at 7250 r.p.m. ● Compression ratio 14 to 1 ● Two-valve cylinder head ● Total loss lubrication by double pump driven from the central timing gear ● Oil tank in the frame centre part ● Simple frame made with steel tubes; centre and rear frame part bolted ● Rear wheel without spring suspension ● Telescopic front fork ● Weight 85 kg ● Maximum speed and fuel consumption not indicated

JAWA 500, Model 894 ● Four stroke air-cooled 2×OHC single cylinder ● Displacement 493 cc (bore and stroke 85×87 mm) ● Engine power 43.5 kW at 8600 r.p.m. ● Compression ratio 13.5 to 1 ● Four-valve cylinder head ● Total loss lubrication by double pump ● Oil tank situated in central part of the frame ● Simple frame welded of steel tubes; central and rear part bolted ● Rear wheel without spring suspension ● Telescopic front fork ● Weight 84 kg ● Maximum speed and fuel consumption not indicated



JAWA 500, Model 896 ● Four stroke air-cooled OHC single cylinder ● Displacement 496 cc (bore and stroke 85×87 mm) ● Engine power 48 kW at 8,600 r.p.m. ● Compression ratio 14 to 1 ● Four-valve cylinder head ● Total loss lubrication by double pump ● Two-speed gearbox ● Multiplate dry clutch ● Simple frame welded of steel tubes ● Pivoted rear fork with two oil damped suspension units ● Telescopic front fork ● Weight 93 kg ● Maximum speed and fuel consumption not indicated

JAWA 500, Model 897 ● Four stroke air-cooled OHC simple cylinder ● Displacement 496 cc (bore and stroke 85×87) ● Engine power 44 kW at 8,600 r.p.m. ● Compression ratio 13 to 1 ● Four-valve cylinder head ● Total loss lubrication by double pump ● Multiplate dry clutch ● Simple frame made with steel tube; central and rear part bolted ● Rear wheel without spring suspension ● Telescopic front fork ● Weight 83 kg ● Maximum speed and fuel consumption not ndicated

JAWA 500, Model 891 ● Four stroke air-cooled OHV single cylinder ● Displacement 497 cc (bore and stroke 88×81.7 mm) ● Engine power 36.8 kW at 7250 r.p.m. ● Compression ratio 14 to 1 ● Two-valve cylinder head ● Total loss lubrication by double pump ● Oil tank situated aft of the engine ● Two-speed gearbox with foot control ● Simple closed frame welded of steel tubes ● Rear wheel without spring suspension ● Telescopic front fork ● Weight 128 kg ● Maximum speed and fuel consumption not indicated

JAWA 500, Model 893 ● Four stroke air-cooled OHC single cylinder ● Displacement 496 cc (bore and stroke 85×87 mm) ● Engine power 42 kW at 8,500 r.p.m. ● Compression ratio 14 to 1 ● Two-valve cylinder head ● Total loss lubrication by double pump ● Oil tank situated aft of the engine ● Multiplate dry clutch ● Two-speed gearbox with foot control ● Simple closed frame made with steel tubes ● Rear wheel without spring suspension ● Telescopic front fork ● Maximum speed and fuel consumption not indicated

world arena triumphantly indeed, nobody could have imagined a better début. It appeared in the Long Track World Championship Final and Ivan Mauger won the title with it. The JAWA 894 model had 493 cc displacement (88× 81 mm) and 42 kW (57 HP) output at 7800 r.p.m.

It was followed by the JAWA 897 model for speedway differing in that its four-valve gear was driven by a single overhead camshaft. Engine power was 44 kW (60 HP) at 8800 r.p.m. and it is in a modified version also installed in the long track 896 models. The power of the latter is even higher — 48 kW (65 HP) at 9000 r.p.m. The long track motor cycles employ rear wheel suspension with ČZ motocross units, the front fork is equipped with hydraulic dampers. While the speedway model has no gearbox and just a layshaft, primary and final chain drive, the long track machine is provided with a two-speed gearbox with semi-automatic change mechanism — low is engaged by pedal and arrested by means of a catch, high by depressing the handlebar lever while in motion. Maximum speed of the JAWA 896 is in excess of 160 km p.h. If in speedway and long track JAWA faces nowadays the competition of several makes, in ice racing the make reigns supreme. Ice racing machines may according to F.I.M. regulations use only two valve heads, a design with which JAWA has had experience of many years standing. The magic of ice racing is mainly in the incredible manner of cornering. Owing to the tyre spikes the machines are banked in bends at such an angle that the handlebars are touching the track. One has to be born for such way of riding. With a view to the two valve cylinder heads the power of the ice racing engines is lower — 38 kW (51.6 HP) at 8500 r.p.m. The model mark of the latest ice racing models is 893.

FAST MEN WITH FAST JAWA MACHINES

If all the riders deserving credit for the fame of JAWA motor cycles were to be listed, their names would fill several of the following pages. Alone the names of the fifteen World Trophy and seventeen Silver Vase winners in the postwar I.S.D.E. meetings would be something like a small telephone directory. And so let's look at least at some of the most famous riders whose star had not waned even after years. To the contrary — the names František Šťastný, Květoslav Mašita, Ivan Mauger, Ole Olsen or Gabdrakhman Kadyrov (to recall but a few of many) sound like the strokes of a bell.

JAWA has won fame not only on and off road and track. What do you think of its ice hockey team consisting of works riders? Standing from left: L. Štajner, J. Šulc, M. Kremer, M. Čada, J. Janeček, P. Slavíček, M. Vokurka, F. Helikar, sitting from left: G. Havel, F. Šťastný, J. Janouš, G. Šulc

ROAD RACING MEDALS

Shortly after the Second World War JAWA motor cycles appeared in domestic road races. Outstanding at that time was Antonín Vitvar, for five years the leading Czechoslovak rider and winner of the first Czechoslovak Grand Prix in 1950. A young rider trio in the early fifties were Richard Dusil, Ladislav Štajner and Jan Novotný. Štajner was very successful in threefifties, half-litres and sidecars — winning gradually all the three Czechoslovak champion's titles. Riders of the world format were Gustav Havel and František Šťastný, who have achieved in the late fifties and early sixties to bring to the fore the results of the design and competition departments work. Havel was the type of sensitive rider with clean style, his life's success was the third place in the 1961 350 cc World Championship. It is an irony of fate that he lost his life in 1967 in a commonplace road accident in the city. Taking place in his honour is the popular "300 Bends of Gustav Havel" meeting at Hořice in North-eastern Bohemia. František Šťastný was the most successful Czechoslovak road racing rider in the postwar era having in 1961 won the World Vice-Champion's title in the 350 cc class. Šťastný was racing twenty-five years and during that time had mounted the Grand Prix winners rostrum not less than twenty-four times. It was in Indonesia at Djakarta where he demonstrated his tour de force by winning in the Grand Prix meeting the 250, 350 and 500 cc races and in conclusion the crown in an open race of machines regardless of engine displacement. Four gold medals in one afternoon, 560 kilometres in scorching heat.

Let's pause at one more meeting which with the passing years had rather faded out, but which definitely deserves attention. In 1955 lined up at the starting line of a twenty-four-hour race at Montlhéry in France were also two JAWA 350s. In the meeting were allowed to participate only slightly modified serial production machines. One of the two JAWAs was ridden by the pair Saša Klimt—Oldřich Hameršmid. They won the race defeating other famous riders with famous machines beginning with half-litre Nortons and ending with BMWs. The Klimt—Hameršmíd JAWA established a new record having completed 383 laps at the average speed of 100.425 km p.h. JAWA won again the following year, this time at the average speed of 111 km p.h. A year later JAWA repeated the feat once more.

OFF-ROAD CROWNS

The Six Days is the toughest motor cycle meeting of all — this is undisputed. The World Trophy has been won by Czechoslovak riders fifteen times, the Trophy Team being the most successful of all that had ever competed in the event. Czechoslovakia's success is emphasised by seventeen Silver Vase victories. Credit for the achievement have, besides the riders, the JAWA motor cycles ridden by them.

The first success came in 1947 when the meeting took place in Czechoslovakia at Zlín (present-day Gottwaldov). JAWA won under dramatic circumstances when the sidecar stay broke and there was a risk that the combination will break apart, the crew — Bednář—Hanzl — had to hold in the final speed test the sidecar and motor cycle together literally with their hands.

The incident was only a mark of the JAWA riders' persistence and fighting spirit.

Matchless was Květoslav Mašita, ten times European Champion, six times member of the winning World Trophy Team. An off-road professor, acknowledged all over the world, he was the model of conscientious preparation. Czechoslovakia's last win in the toughest kind of the sport dates back to 1982. However, this was not the country's last word, in particular with a view to the new motor cycle generation. A rider's quality need not always be shown by the award of a crown or medal. This is borne out by the experience made by enduro rider Bohumil Poslední at the 1985 Six Days in Spain. Bohumil was hurrying along the course when he perceived a dramatic scene. Lying on the ground ahead was a motor cycle, next to it a motionless rider and nobody nearby. Bohumil did not lose time. He stopped, hurried to the limp body and acted fast. All that was necessary was to free the sunken tongue to enable the young Italian to breathe — he had namely lost consciousness falling and he would have suffocated a moment later. Bohumil Poslední had saved his life. Then jumped in the saddle and was gone. People did not learn of the incident until that night from members of the Italian support team, who came to thank Bohumil. The story had its end at the close of the year when the sympathetic rider flew to Paris to collect the Fair Play Prize awarded every year by the Olympic Committee.

A year later Bohumil Poslední was to drain the cup of bitterness — at the Six Days in Poland he spilled fracturing both hands . . . Well, the enduro sport is splendid, but tough. Only the most stubborn and resilient will assert themselves. But if these jaded fellows keep their hearts in the right place, it serves their honour and marque.

TRACK RACING ACHIEVEMENTS

Track racing had been popular in Czechoslovakia already before the War and it is the merit of JAWA that spectators were coming to the stadia with gusto and interest.

The situation was not different after the War and this kind of the sport lured many, even František Šťastný celebrated his first triumphs on ovals.

While before the War JAWA had been successful only in local meetings, it became in the postwar period the most significant and successful make worldwide, matchless for quite a long time. JAWA machines left their mark in speedway, long and grass track and, above all, in ice racing, having in the latter a monopoly position in fact.

The postwar era's most successful track racing rider is undoubtedly Ivan Mauger of New Zealand — six times World Champion with JAWA. Since 1972 Olsen, Szczakiel, Michanek and Lee have also won the Speedway World Champion's title with JAWA machines. Mauger had won his titles within twelve seasons. When he won for the third time, his fans had his JAWA gilded . . . There was possibly no track in the world, on which the smiling and sympathetic rider would not have triumphed. With the exception of a single one. The Golden Helmet contested at Pardubice was for Mauger taboo. He had come several times, each time to leave on the shield. On the other hand Olsen has six Golden Helmets and, in addition, three World Champion's titles with JAWA.

JAWA has also taken the title in the Pairs Championship — won by Olsen with Nielsen in 1979. That same year the Speedway World Champion's title was won by the New Zealand Team — again with JAWA. It was a bountiful year indeed!

Let's take a glance at the long track, too. It was again Mauger who got the title, though he was more modest here — satisfied with three World Champion's titles in 1971, 1972 and 1976. Of course, JAWA had carried to the title also Olsen (1973), Michanek (1977) and Lee (1981).

The picture of the Individual and Team Ice Racing World Championship has not changed in years. Whatever the names of the riders are they ride JAWA. World Champion in 1970 was Antonín Šváb, in 1974 Milan Špinka.

It has to be admitted that in ice racing Soviet riders reign supreme and, with the exception of two Czechoslovak riders, only Stenlund succeeded to win the Individual World Championship in 1984 when the Championship took place in Moscow. To steal the Soviet riders' thunder on their home ground is a tour de force and it is almost certain that it happened for the first and last time, too. Nevertheless Stenlund won another gold medal in 1988 in the Netherlands. Otherwise on the records appear only Soviet riders: six times Kadyrov, four times Tarabanko, in the last years (1986, 1987) Ivanov. Nor is it different in the Team World Championship. Since 1979 winners were the Soviet riders with the exception of 1983 (the Federal Republic of Germany) and 1985 (Sweden). But always the World Champions won the crown with JAWA motor cycles.

UNDERLINED, SUMMED UP . . .

Sixty years of achievements, triumphs and searching, such is the JAWA history till now.

Sixty years of work, 3,160,000 motor cycles.

When one day all the motor cycle makes of the world are lined up at the motorcycling Olympus and weighed, JAWA will not be found light.

That is enough.

I wish to thank all those who lent me their records, related their experience and remembered anything connected with JAWA. Among them I wish particularly to thank the following: Jaroslav Bříza, Jana Dvořáková, Dr. Dagmar Hájková, Ass. Prof. Dipl. Ing. Bohuš Häckl, Jan Křivka, Jan Martof, Zdeněk Pilát, CSc., František Miclík, Ing. Antonín Matějka, Dr. Jan Schulmann and František Šípek without whose help this monograph could not have been written.

Dr. Jan Králík

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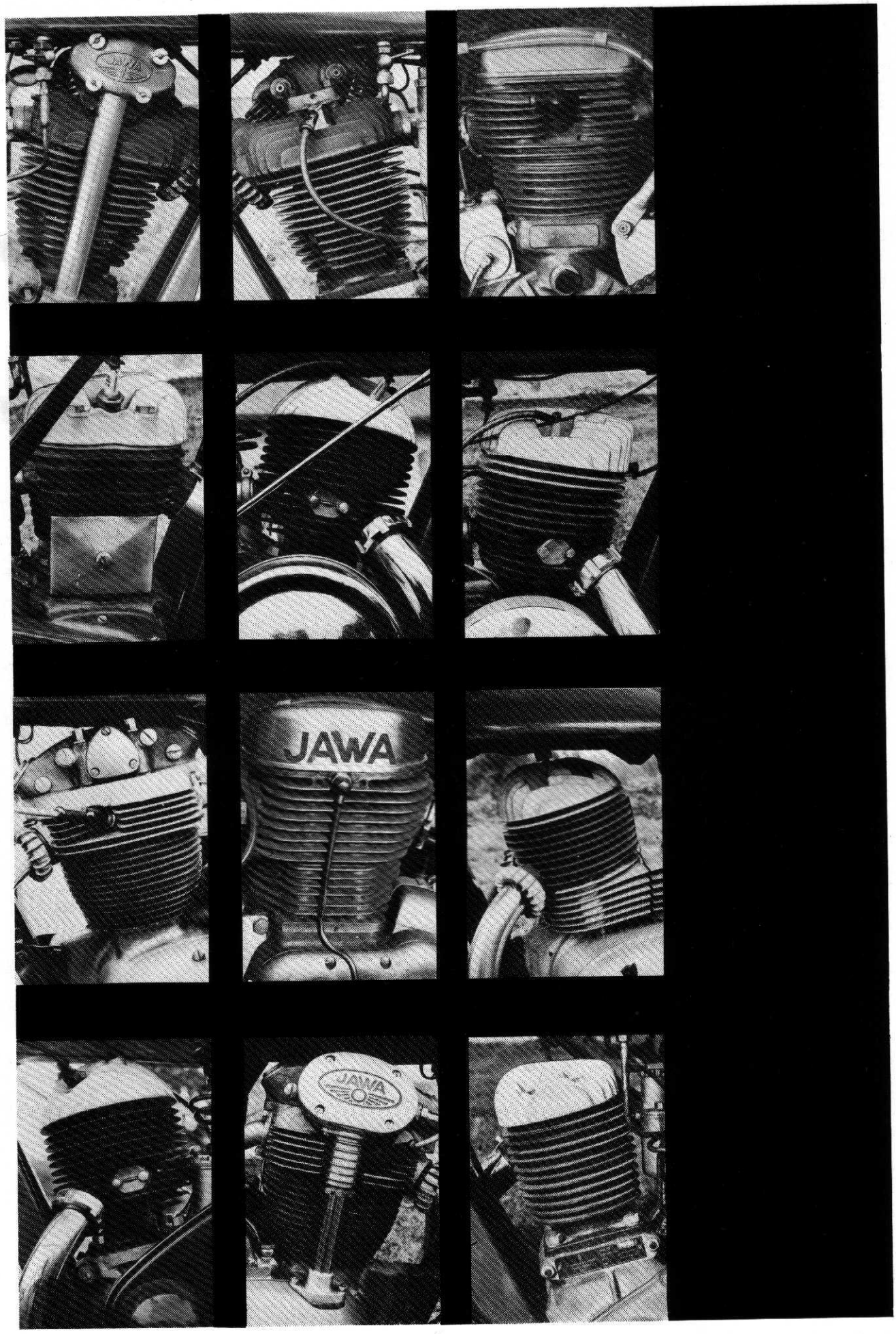
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