An authority on advertising has said:

"We can spend hundreds of thousands of dollars advertising a product, but if it isn't what the people need, if it doesn't serve, it cannot be a permanent and growing success. It doesn't matter so much what we say about it. Every product finds its own place in the life of the world by the quality of the service it renders. It creates its own good-will. About all advertising can do is call attention to the fact that it exists."

That's the object of Ace advertising, simply to point out the facts about perfected four-cylinder power. The swiftly-growing popularity of the Ace is the natural response to the advantages that motorcyclists thus discover.
Added Refinements
Embodied in 1925 Models

NEW MANIFOLD

It gives ideal gas distribution and the distributing chambers are located so that the manifold requires no hot spot and vaporizes the raw gas to the extent of giving approximately 30 per cent more miles per gallon of gas, more horsepower and a more even pull, especially at low speeds.

NEW SADDLE POSITION

New Saddle Horn and new saddle spring support, giving more comfortable riding and three inches more saddle action with the lowest of low saddle positions.

FRONT FORKS

The length of the forks in their relation to one another have been changed to give easier steering and road action.

CHAIN ADJUSTING

New greatly increased chain adjusting screw and chain adjusting screw boss, giving easy and positive chain adjustment.

 BRAKE MECHANISM

Brake lining increased in thickness, giving longer life. Brake levers increased in strength and position, giving greater leverage on brake.

REAR STAND

Rear stand bracket increased in strength, assuring a substantial rear stand.

BATTERY BOX

A change has been made in the Battery Box so that by turning a thumb screw, the lid can be removed, leaving the battery accessible for removing or adding water. The bottom of the box is also made more substantial by reinforcement.

O THE value of service which any good motorcycle should render, the Ace adds an intensified satisfaction through the greater scope and wider range of performance gained by exceptional development of four-cylinder design. The fleetness and power of the Ace motor make the rider master of time and distance. The benefits and pleasures of the great outdoors both far and near are at his command—the country club, golf links, tennis court, baseball diamond or swimming pool for a few hours’ recreation in the afternoon; quiet out-of-the-way streams or secluded lakes where fishing is really good, or woods and fields where game abounds, for week-end trips with rod or gun; or the majestic mountains, the unfrequented wilderness, the seashore, or other scenes a thousand miles away that beckon when vacation time gives opportunity to travel afar and see new sights and strange localities.

The Ace is so economical to operate that expense of any trip becomes negligible (total running costs average less than a cent per mile).

Its steadfast dependability insures the prompt and satisfactory performance of every undertaking. Its capability under changing conditions and varied requirements insures success in unexpected emergencies and trying circumstances. It will go anywhere that wheels can travel, is ready at a moment’s notice, and never grows weary.

The critical observer notes in the Ace motorcycle a finished relationship of lines and uniform harmony of proportion such as only time and experience can evolve. For this machine is the product of ten years’ experience in manufacturing four-cylinder motorcycles by Mr. W. G. Henderson, designer of the Ace and pioneer in this field.

Ten years in which all his efforts were concentrated toward the perfection of this one type. Ten years of building and studying and riding four-cylinder motorcycles. Ten years in which motorcycle riders all over the world have proved the value of his ideas by actual experience that has established the supremacy of four-cylinder power beyond question.

Mr. Henderson was engaged continuously in manufacturing four-cylinder motorcycles from 1911 until his unfortunate death in December, 1922, and had a specialized knowledge and expert grasp of this subject that only such practical experience could produce. The benefits of his extensive research and exhaustive labor with power plants of this type are concentrated at their highest worth in the new four-cylinder Ace—the masterpiece of a master engineer.

Note how each detail shows the perfection of a finished product. A single brief experience with the new Ace is sufficient to demonstrate the supremacy of four-cylinder power. Its fluid smoothness is an unwearying delight. Its dignified silence of operation is a source of pride in any company. Its instant acceleration and quick pick-up, which have proved of such practical value in
motorcycle police service, arouse enthusiastic appreciation in the ordinary private owner as well.

With the four-cylinder Ace, the rider learns to drive almost entirely by throttle, for its power is so flexible and answers so readily to every twitch of the grip, that use of clutch or gearshift is called for much less frequently than when driving the older and less advanced types of motors.

Its beauty of line and handsome appearance win warm admiration.

The low-hung weight of the four-cylinder motor results in exceptional balance that makes the machine surprisingly easy to handle and responsive to control. Steady, sure and safe at high speeds or when negotiating rough or slippery surfaces. Practical proof of the value of its wonderful riding qualities was supplied by the success of the Ace in the foremost endurance runs of the season, when it won such signal success in spite of the difficulties imposed by rainstorms, wet highways, treacherous clay mud and rough, rutted roads.

Wear is noticeably reduced by the absence of jerk and jar. Drive chains last longer and give far more satisfactory service on this four-cylinder machine because the pull is so smooth and uniform. For the same reason, Ace riders find that tires wear longer, while minor mechanical difficulties, such as loosening of fittings and parts shaking out of proper adjustment, are practically done away with by eliminating vibration.

The student of design notes the extreme simplicity of this motor. The crankshaft, for instance, is a one-piece steel drop forging, which insures permanent alignment and effects accurate realignment when overhauled after long service. This forging is case-hardened 1/4-inch deep all over and the bearings are ground to finish, which combines rugged strength and long wearing qualities.

This type of crankshaft is so expensive to produce that its use is generally found only in high-priced multiple-cylinder cars, but is so important in insuring service that it is used on all Ace motorcycle engines.

The connecting rods are also steel drop forgings, drilled for lightness, carefully heat-treated and quenched in oil.

Because of its simplicity the Ace is readily accessible. The cylinders can be removed for cleaning out carbon without taking the motor out of the frame. The lower half of the motor base can also be removed to expose the crankshaft, lower connecting rod bearings and transmission, without dismounting motor from frame.

By removing the gearcase cover the ignition-timing gears, the cam gear and oil pump are open for inspection.

Exhaust tappets can be adjusted accurately without removing the muffler, and the inlet rockers can be oiled and adjusted by simply lifting the snap cover of the bonnet over them.

Valve cages can be removed to allow inlet or exhaust valves to be ground without dismounting cylinders or taking engine out of frame.

In every detail the convenience and utility of the rider has been the guiding consideration, with every care taken to insure ease and certainty of inspection and adjustment, economy in repair and satisfaction in constant service. The Ace engineering staff has borne in mind that repairs on motorcycles are often made by non-expert mechanics who do not understand motorcycles. Each part is therefore designed with utmost simplicity to insure its being correctly reassembled or adjusted if taken apart by an unskilled repair man or rider.

The cleanliness of this type of motor wins approval from the fastidious. Its design keeps all the oil on the inside of the engine, where it belongs, and presents no joints or openings through which it can leak to gather dirt and cause unsightly appearance.

With an Ace the motorcyclist can ride well dressed, secure in the knowledge that his clothes will not be soiled by the machine—a fact which appeals particularly to the critical class of riders who take pride in appearing at their best wherever they go.

Ace quality is of vital importance to the rider because it assures consistent practical service. Selected
and tested high-duty steels and special alloys provide exceptional strength and durability. Accurate fitting, painstaking workmanship and close inspection make sure of smooth and efficient operation. Perfection of detail with large bearing surfaces, careful hardening and scientific lubrication mean minimum friction, minimum wear and long, satisfying usefulness.

Ace quality is evolved by excellence of materials and conscientious skill in manufacturing that produce such pleasing effectiveness in daily road riding.

The beauty of line and proportion that distinguish the Ace, is the natural accompaniment of its perfected development and refinement. The rider is justified in feeling proud of his handsome machine, for its attractive outer appearance is the expression of built-in qualities that only careful study, conscientious work and long experience can produce.

**SPORTING SOLO MODEL**

The dyed-in-the-wool motorcyclist who uses a solo mount for sheer enjoyment and who loves the sport for its liveliness and vim, was given the center of the stage by W. G. Henderson and his associates who designed the new Ace Sporting Solo Model. The solo rider comes into his own.

For this new machine, as its name implies, is built from hub to hub as a light, competent, swift and easy-handling outfit which will give the rider the utmost of that sense of freedom and power that is found in no other form of recreation.

This is the first instance of a "solo sport model" being an accented and emphasized super-edition of the standard machine rather than a smaller and less powerful type. The power plant of this new outfit has been in course of development by the factory's experimental department for a long time, and its performance is the basis of the exclamation points of surprise and admiration that garnish the comments of the rider after his first trial trip on the Sporting Solo.

The Sporting Solo motor is a high-powered high-compression engine designed and built especially to produce unusual power and speed. It is regularly fitted with aluminum alloy pistons that are extremely light and perfectly balanced.

The pistons are carefully fitted to the cylinders for free action, the amount of clearance allowed being just right to give perfect freedom and absence of friction. The connecting rods are, of course, drilled for lightness.

Lubrication is by the constant-level circulating splash system that has been worked out so successfully by Ace engineers and that has proved so satisfactory for sustained fast riding.

Other details of the new motor have been worked out with equal care to insure the top notch of pep, power and flexibility. The valves stand up under the hammering of their rapid action at high speed. Thecams give just the right acceleration and height of lift to give swift and free motion of gases, with thorough scavenging of cylinders and a full charge of new, fresh gas for the next explosion. All bearings are ample in size, thoroughly lubricated and free from undue friction.

While the Sporting Solo high-compression engine fairly brims with power and speed when called on, it retains in full measure the steady pulling power at low speed, flexibility of control and ease of throttling-down that are characteristic of the standard model. The greater power developed permits the use of a somewhat higher gear than of the regular model.

The acceleration of this motor when the throttle is snapped open is a revelation. The machine fairly leaps forward in a space-devouring bound that ripples an electric thrill of delight through the fibres of even the most experienced and ease-hardened road veterans—it gives a sensation of mastery over a live thing of enormous power, with giant energy under perfect command and ready to respond to your slightest wish.

The difference in riding position is notable at first glance. The handlebars of the Sporting Solo are wider than the standard model, also somewhat shorter and lower—what would be termed a semi-dropped or Speedster position similar to the English "T. T." or the type of handlebar used in some of the big road races in this country—and are heavily nickel-plated on copper.

The saddle is a new pattern produced especially for the Sporting Solo Ace. The saddle is scientifically formed and holds the rider securely in position for fast riding on the road. A specially-designed spring system is provided, incorporating an inner coil spring which softens the action and absorbs road shocks with exceptional efficiency.

The new double-spring arrangement of the Ace saddle provides the extra power that is needed to take care of the jolts received when pounding over rough roads at high speed, yet its flexibility makes it effective for little vibrations such as occur in driving on brick or cobblestone pavement. The smooth action of this saddle is very pleasing in open-country traveling, as the soft, even cushioning of the new suspension absorbs the jolts and avoids rebound with uniform efficiency that is a symphony of comfort.

The effect of this new saddle is particularly pleasing
With complete electrical equipment $400 F. O. B. Factory Tax Additional
to the eye in its harmony with the lines and composition of the rest of the machine. The curve of the saddle top and pommel blends into the sweep of the top tube and tank of the motorcycle, giving an impression of unity and capability that inspires confidence. The saddle is of black leather, which sets off the dark blue enamel of the machine effectively.

The saddle position is exceptionally low, the top surface of the seat being only 27½ inches above the ground. This low position combines with the shape of the seat to produce remarkable steadiness and security at high speeds—the rider feels safe and confident even on bad roads, for there is no slipping about or bouncing, and the machine holds to its straight line and hugs the roads in a way that gives joy to the rider who likes to open ‘em up.

The position of the wide nickel-plated handlebars gives just that slight forward inclination that experience has demonstrated to be best for both comfort and control at high speed. The English motorcyclist has learned the value of this position, as shown by the popularity of the “T. T.” handlebars for snappy solo riding in that country, but American riders have only recently learned to appreciate the added pleasure that it gives.

Experienced road riders find the position to be ideal when they mount the new Sporting Solo Ace, for the saddle places the rider so low that when he drops his hands on the grips he finds himself just right for lively solo traveling—a slight lean forward against the surge of speed from an opened throttle, positive control of steering due to the wide spread of the bars, steadiness in sand or on treacherous surface because of the position of the grips allow the arms to brace solidly against twisting or wobbling.

"It makes you feel so safe," was one rider’s comment after a fast spin on the Sporting Solo. "You get the effect of being seated firmly and securely down between the two wheels—like you couldn’t fall over. Same as being in a swooping monoplane or a perfectly balanced glider, with the outfit under complete control and ready to answer exactly to your wish."

That’s what careful study of riding position for solo driving has accomplished.
Read Clearance—Full four inches at lowest point of motor base. Frame cradle clearance 11/2.

Connecting Rods—Drop-forged, 1-inch section with holes drilled, ensuring maximum lightness combined with strength. Heat-treated and quenched in oil, giving great toughness and endurance. Split at crankpin for take-up. Oil dipper on lower end.

Pistons—Three-piece direct alloy iron, very light and tightly balanced, yet offers return to insure correct lubrication. Three rings to each piston, with light pressure on cylinder walls and narrow faces on rings, to reduce friction to minimum while providing proper compression and high motor efficiency. Sporting 50 Model provided with aluminum alloy pistons.

Timing Gears—Unusually fine in material and workmanship, insuring accuracy and smoothness of motor operation. The two large gears, the cam and the valve, are the parts of the drop forging; the other gears are cold-rolled steel. All on Fellows Gear Shaper, with teeth scientifically generated, to assure ease-hardening. Gears run in an oil bath, insuring silence and freedom from wear. Readily accessible, as all timing gears can be exposed merely by removing gear cover.

Lubrication—Entirely automatic and trouble-proof. Constant-level circulating-splash system of the Ace system of lubrication assures long life. Oil carried in reservoir in motor base supplying straight stream to take off oil from crankshaft bearings and oil rings, which draws oil from reservoir to base as to maintain efficient lubrication when ascending long, steep hills or under severe conditions of wear. System insures uniform and adequate lubrication at all times in proportion to speed at which motor is running. Oil requires no attention from rider except to put oil into motor base through dip stick, inserted through the filler plug provided at top of breather in easily accessible position. Oil gauge shows amount of lubricant in reservoir, providing warning whenever desired. Capacity of oil reservoir, one gallon.

In an article concerning lubrication, published in 1935, the following statement is made regarding the necessity of continuous lubrication of the various bearings in the motor:

"Over-oiling has been practically eliminated in connection with this model of lubrication. The oil is carried in a reservoir in the motor base and is taken off from the crankshaft bearings and oil rings, which draws oil from the reservoir to the base as to maintain efficient lubrication when ascending long, steep hills or under severe conditions of wear. System insures uniform and adequate lubrication at all times in proportion to speed at which motor is running. Oil requires no attention from rider except to put oil into motor base through dip stick, inserted through the filler plug provided at top of breather in easily accessible position. Oil gauge shows amount of lubricant in reservoir, providing warning whenever desired. Capacity of oil reservoir, one gallon."

For traveling under average road conditions, all the riders need to do is put in a quart of oil about every 10 miles and change the oil as necessary. For small projection on lower end of each connecting rod scoops oil from crankshaft to distribute it throughout the motor, ensuring proper lubrication as it ascends. Main bearings are oil by means of the oil cup with holes leading to bearing surface. Wristpin oil is by means of the oil cup with holes leading to wristpin housing and oil passage. Timing gear and transmission oil is supplied by splash from motor base. All superfluous oil is returned to pump in motor base by means of outlet in center of oil pan.

Removable Pan—Oil pan in bottom of crankcase. Lower half of cast aluminum crankcase may be removed without taking engine out of motor cycle frame, thus facilitating inspection or overhauling.

Oil Gauge and Breather—Breather incorporating oil filter, with baffle device to avoid loss of oil, bolted on left of crankcase. Long side pipe extends well down side of lower half of crankcase. Oil gauge with notched rod dipping into pan to oil in motor base. Any high oil level will cause oil to flow through from oil gauge to oil pan, making it easy to check oil level.

Oil Manifold—One-piece manifold with two outlets. Gas passage forked to the left to the oil cup for each cylinder. Main gas channel straight from tank to breather. Oil cups or curves to crank flaps of vapor.

Heating Devices—Air heated by passing through tube enveloped by exhaust flame from muffler before reaching lower intake manifold. This provides additional heating effect and improves thorough vaporization, thus assuring both in less time and maximum power and reducing carbon deposits.

Ignition—High-tension armored waterproof magneto. Ignition wires enclosed in black fiber tubes for protection. Spark plugs, metric.

Lighting—Generator—Electrically-equipped Ace motorcycles use the regular high-tension magneto for motor Ignition and are equipped with an entirely separate unit to provide current for lights, so that no derangement of the lighting circuit has any effect on the operation of the power plant. Lighting current produced by standard Schilder generator. Mounting underneath tank on left side, protected from weather and from shock. Driven by black fiber shafewheel, split and clamped on magneto shaft.

Electrical Equipment—Power accumulated in storage battery mounted in box suspended from frame under the saddle, readily accessible and located so as to give best balance. Lid can be removed and battery drawn out for filling out removing terminals. Powerful headlight mounted on strongly-braced, bracketed, panel reflector and dimmer controlled by switch. Tail light. Motor-driven electric horn securely clamped to frame in inconspicuous position below tank. Horn button ahead of left gear.

Lighting Switch—Lights may be operated singly or together by means of switch controlling entire series of lights.

Motor Controls—Spark advanced or retarded by turning the left grip on handlebar. Throttle control, in addition to positive piano-wire mechanism that does not rattle or develop lost motion. Controls remain where set when hands are removed from bars—do not jar open or shut. Smooth action, dependable and sure.

Starter—Step-starter with engaging mechanism completely exposed. Ratchet and pawls to prevent chipping. Large and powerful drop-forged foot lever. Tubular foot pegs for foot to rest on. The wedge is adjusted to the top position by spring at end of down stroke. Folded when not in use.

Transmission—Three-speed progressive type, housed in rear of motor base and running in oil bath. Lubricant automatically supplied by splash and requires no attention from rider. Gear shafts are "straight back", face 8° wide. Gearshift lacking mechanism inside crankcase eliminates need of hand lever, locks on operating lever. Drive through gear to be permitted tilted for...
Observer Sidecar designed and built especially for use with the four-cylinder Ace motorcycle. Note the unusually deep cowl and long sweeping lines of this car, enhancing its handsome appearance and giving unusually thorough protection to the passenger. The small views at the sides illustrate the appearance of the car as viewed from other angles, and also show the generous road clearance beneath the chassis. Large luggage compartment in space back of seat, readily accessible through door in rear of body. Quick detachable connections allow car to be removed from motorcycle or re-attached in less than a minute.

Frame—Suspension-cradle type, giving great strength and low distribution of weight. Made of 13-gauge seamless steel tubing. Front bar 18", 11-gauge, with powerful internal reinforcements. Rear frame and fittings are solid drop forgings. Reinforcing brace bars from rear fork crown to cradle bar relieve all strain on rear fork connections and give great strength and durability. All fittings and connections are tough steel drop forgings. Side members of frame completely enclose motor, transmission and control mechanism so as to protect all vital parts from injury by fall.

Wheelbase—59 inches, combining smooth riding qualities and road comfort with ease of control, ready responsiveness and ability to turn quickly.

Saddle—Ace special integral design, built in as part of the motorcycle. Bucket-seat top scientifically shaped to a specially designed double-sprung system of special design to avoid browning on recall, with 3½ range of action. Unusually low and well forward, distributing weight of rider between the two wheels, giving excellent balance and making machine particularly easy to handle—highest point on saddle is only 27½" from ground, so that even a man of short stature can place both feet flat. Covered with black leather; springs black japanned.

Tank—Pressed steel construction, beveled front and rear, with all corners rounded. Capacity 3½ gallons. Provided with efficient gasoline strainer and sediment trap. Large filler opening to accommodate hose nozzles on gasoline pumps at filling stations.

Footboards—Hinged to fold up so as to avoid damage in case of fall. Roomy and comfortable. Substantial steel plates with drop-forged arms, covered with high-grade rubber mat, deeply corrugated to prevent slipping.

Handlebars—Low and wide, giving comfortable position for arms and wrists. Braided by cross-bar, 15½" steel tubing, finished in all-weather tough black enamel on standard model, on Sporting Solo, 18½" tubing, 13-gauge, no cross-bar, heavily copper-plated and nickel-plated. Extension cushion rubber grips, deeply corrugated.

Spring Fork—Double fork with straight sides. Springs and plungers completely enclosed. Angle and leverage of rocker arms designed so as to absorb both small vibrations and severe road shocks; motion of axle back and up. Fairly sized steel bushing in rockers. Stubs of large diameter, hardened, give exceptional strength at point where shocks are met.

Weight—The lightness of the new Ace is a pleasant surprise to many riders who naturally think that because of its great power and strength it must be of more than ordinary weight. As a matter of fact, the Ace is the lightest high-powered motorcycle made in America—a fact which is made possible by the high efficiency of perfected four-cylinder design. This lightness combines with its low center of gravity and excellent balance to make the Ace so easy to handle as a solo mount, and so capable under all road conditions. Weight of Ace magneto-model motorcycle, complete, 365 pounds.

Stand—U-shaped with extra-long side braces. Special rattle-proof spring washers. Attached independently of rear axle, to facilitate adjustment of chain tension.

Finish—Ace high-gloss baked enamel, with fine gold stripe on tank, fork and mudguard; gold nameplate on tank.

This manifold is interchangeable with the old manifold and valve cages and can be installed on any Ace Motorcycle, and eliminates 21 component parts.

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**PRICES**

Standard electrically-equipped model four-cylinder Ace Motorcycle with magneto ignition, separate lighting generator, storage battery, two-bulb headlight, tail light and electric horn $400.00

Magnet Model, without electrical equipment for lights and horn $370.00

Sporting Solo Model, with aluminum pistons, high-speed high-compression motor, nickel-plated sport bars and full electrical equipment $420.00

Observer sidecar, complete with tire and all fittings for attaching to motorcycle $110.00

All quotations f. o. b. factory and subject to Federal tax.

**Guarantee**—Every Ace Motorcycle is fully covered by the guarantee of the Ace Motorcycle Corporation, the standard form of warranty endorsed by the Motorcycle and Allied Trades Association.

The Ace Motorcycle Corporation reserves the right to make improvements or changes in design or construction of its product without notice at any time it considers advisable; all quotations are subject to change without notice in case of strikes, fluctuation of material prices, or other unforeseen causes, and in the event of such changes or improvements no liability shall attach to this company.