

1954 Motorcycles

Harley Features New KH

Golden Anniversary models to celebrate 50 years of building motorcycles

FOR 1954, STARTING ITS 51ST YEAR OF business, Harley-Davidson announces its Golden Anniversary motorcycles. It is featuring the former 45-cubic-inch K model, now improved and promoted to be the KH with 55-cubic-inch displacement, with much more than a corresponding increase in power, acceleration, and speed. The company feels that this year's models are better in performance, quieter and cleaner in operation, with greatly extended service life. Each motorcycle this year will carry on its fender the 50th anniversary medallion.

The New KH

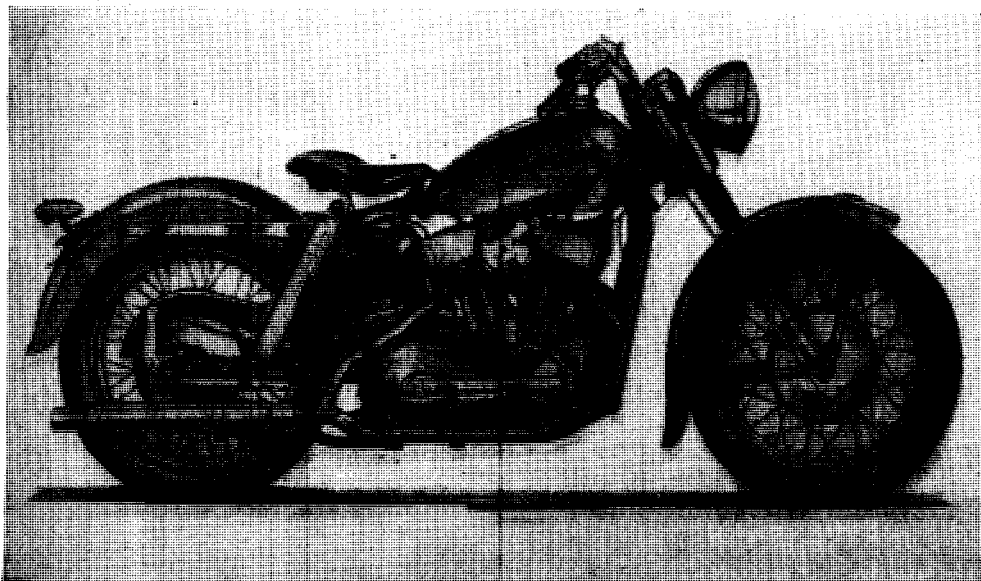
Other changes in the KH besides the increase in displacement, include new, cast-iron flywheels in the new power plant. The flywheel shafts are taper-fitted and held with a nut, similar to the flywheel shafts in the

74 OHV. The aluminum alloy pistons are cam ground, of the trunk type, and eight holes are drilled around and through the piston walls directly below the U-flex oil-control ring and take the place of the double horizontal slots formerly employed.

The retainers, with closed ends, designed by Harley-Davidson engineers, are used on the crank pin and the lower ends of the connecting rods. Seventeen roller bearings are held in each retainer, long ones in the center retainer and shorter ones on each side. Retainers have been redesigned to give them a greater factor of safety under high speed conditions.

The engine cylinders are changed to accommodate the longer stroke. The intake and exhaust ports have been changed in shape to get the gas in and out quickly for maximum efficiency, and, the inlet valves have been increased 7/64 of an inch in diameter.

To handle the increased torque of the KH engine, the clutch now consists of seven plates instead of five, and the clutch



55 CUBIC INCHES of power push the KH cross-country on runs or scrambles. The rede-

signed power plant and the new model lead Harley's Anniversary parade.

sprocket assembly is now increased in size to accommodate the additional plates. The front chain cover is also made deeper to clear the new seven-plate clutch.

Model 165

In Model 165 for 1954, Harley-Davidson offers a lightweight with wide appeal for most age groups.

Its high-silicon, aluminum-alloy piston has undergone a design change. A slot has been introduced in the rear bottom of the piston skirt, $\frac{1}{4}$ of an inch deep and $1\frac{1}{2}$ inches wide. A pleasing increase in power and acceleration is noticeable.

Serrations on the gear-shifter shaft and on the end of the gear-shifter lever have been eliminated, and there is now a smooth fit, and the shifter lever is fastened with a pinch bolt.

The engineers report they have succeeded in shutting out and bypassing much more of the engine heat from the carburetor.

The thrust bearing between the clutch sprocket assembly and the clutch hub now consists of 15 balls, each $7/32$ inch, and replaces the carbon washer bearing formerly employed. Drag on the clutch is reduced when the clutch is held in released position. The tendency for the machine to creep slightly when the engine is running and the clutch is released has been eliminated.

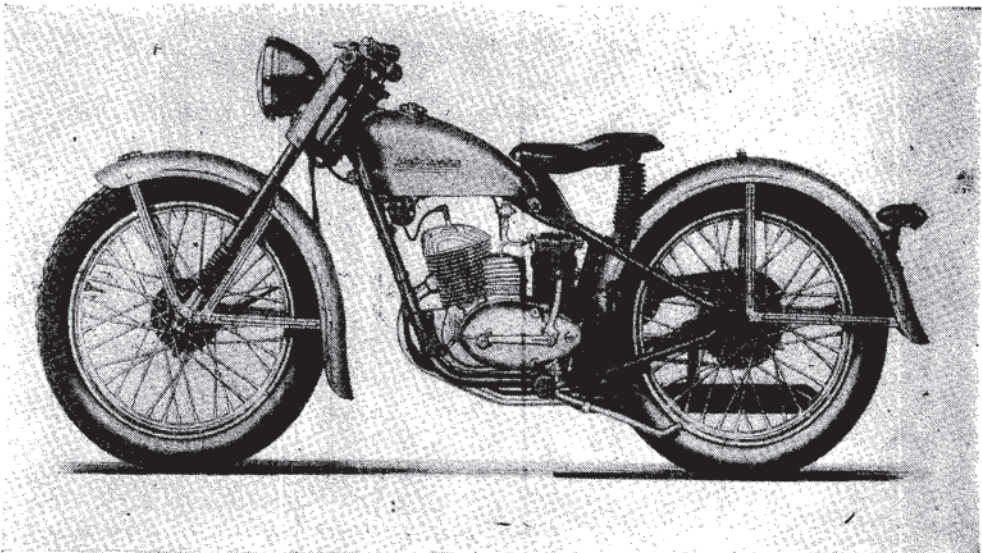
The 74 OHV

The Harley-Davidson 74 overhead-valve Hydra-Glide is claimed by the company to be the unquestioned leader in the field of motorcycles. It has hemispherical combustion chambers, a V-type design, and overhead valves. It is the only motorcycle with hydraulic valve-lifters.

This year the gear shaft, worm gear, and pinion gear have been redesigned. The six splines formerly employed on these parts have been eliminated and a taper fit substituted on the pinion gear and a straight fit on the worm gear. The pinion and worm gears are key-locked. Fit is tight and, with no opportunity for forward or backward movement, there is no noise.

On this model, too, serrations on the gear-shifter lever shaft and in the end of the gear-shifter foot lever have been eliminated and a smooth fit substituted. The end of the gear-shifter foot lever has been strengthened and a tight fit is accomplished by means of a 5.16 inch bolt with a nut. When undue force is applied to the foot lever, slight slippage affords protection to the shifting mechanism.

The handlebar spiral has been changed and is the same as it was on the K model and is now on the KH model. This gives the rider the possibility of a faster-acting throttle.



ANOTHER leader in Harley's 54 line is the Model 165, a lightweight built for service,

safety, and action. Like the others, it is available in five standard colors.

SPECIFICATIONS

Model KH

Engine: Air cooled, four stroke, V-type, twin cylinder. Enclosed valve gear. Bore, 2 1/4 inches; stroke, 4 9/16 inches. Motor develops approximately 38 horsepower.

Transmission: Four-speed, incorporated as part of the crankcase casting. Sliding dog clutches. Constant-mesh gears. Foot shift, hand clutch.

Lubrication: Circulating lubrication system with gear-type pressure pump and gear-type scavenger pump, with pressure feed direct to cylinder wall. Transmission and front chain lubricated by oil supply separate from engine.

Ignition: Two-brush shunt, voltage-controlled generator, storage battery, spark plug, circuit breaker.

Clutch: Multiple dry disc with bonded-on clutch facings. Left-hand operated.

Forks: Front—Hydraulic fork with helical coil springs hydraulically dampened. Rear—swinging-arm type suspension with two helical coil springs, controlled by two hydraulic, automotive-type shock absorbers, enclosed in Royalite covers.

Brakes: Fully enclosed, front and rear brakes with molded anti-score lining. Eight inches in diameter and 1 inch wide.

Model 165

Engine: Single unit motor and transmission, air-cooled, two-cycle, single cylinder. Bore, 2.375 cubic inches; stroke, 2.281 cubic inches. Compression ratio, 6.6 to 1. Horsepower, 38 at 5200 RPM.

Lubrication: Oil mixed with gasoline. Oil measuring cup is attached to the under side of the gas-tank cap.

Clutch: Operated in oil bath, left handlebar lever operated, multiple-disc type. Torque capacity, 35 foot-pounds.

Forks: Telescopic spring fork, oil lubricated.

Frame: Single loop, reinforced tubular steel. Wheelbase, approximately 51 inches.

Brakes: Five-inch internal expanding brake on each wheel. Front-wheel brake operated by lever on right handlebar. Rear wheel brake operated by right foot.

Model 74 OHV

Engine: Air cooled, four-stroke, V-type, twin cylinder. Overhead valves, in removable aluminum cylinder heads. Bore, 3 7/16 inches; stroke, 3 31/32 inches. Horsepower, 53 to 55.

Transmission: Available as follows—four-speed, constant-mesh gears, foot shift. Four-speed, constant-mesh gears, hand shift. Three-speed and reverse with sliding low gear, hand shift.

Ignition: Generator, storage battery, spark coil, circuit breaker.

Clutch: Multiple dry disc, left-hand or left-foot operated.

Frame: Double loop, trussed frame made from seamless steel tubing with major fittings, dropforged. Wheelbase, 60 1/2 inches.

Fork: Oil-dampened helical-coil springs.

Brakes: Front and rear wheel, fully enclosed, waterproof.

Tires: Four-ply, 5.00 by 16.

Indian Offers Lightweights

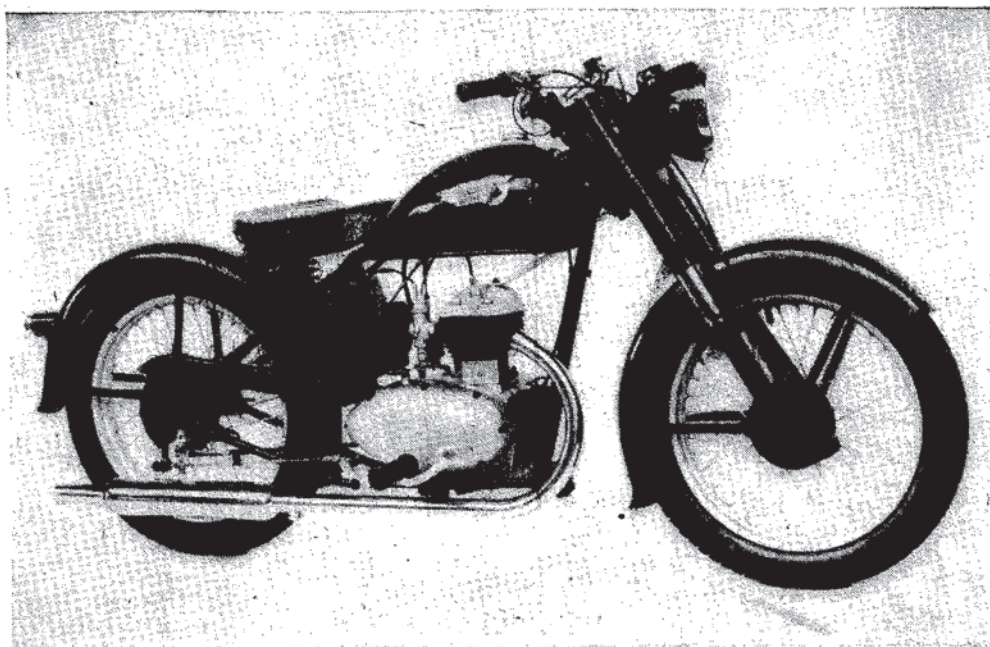
The Brave and the Papoose are designed for dependability, economy, and utility

THE '54 INDIAN BRAVE IS A NEW LIGHT-weight machine equipped with a full sized, four-stroke, side-valve engine. The engineers feel they have combined the best qualities of the medium-weight machine with those of a lightweight in the new model. The engine of the Brave shows simple design and strong construction, with a capacity of 15 cubic inches piston displacement. It will develop speeds in excess of 60 MPH. The performance through the three-speed gearbox, operated by foot, is lively, they say. The ratios are 5.731 to 1, 9 to 1 and 16.2 to 1. The motorcycle is thus able to stay in the traffic flow both in town and on the road, an important safety point. Maintenance of the Brave power unit

is simple; it is designed to run for long periods without attention other than routine checks.

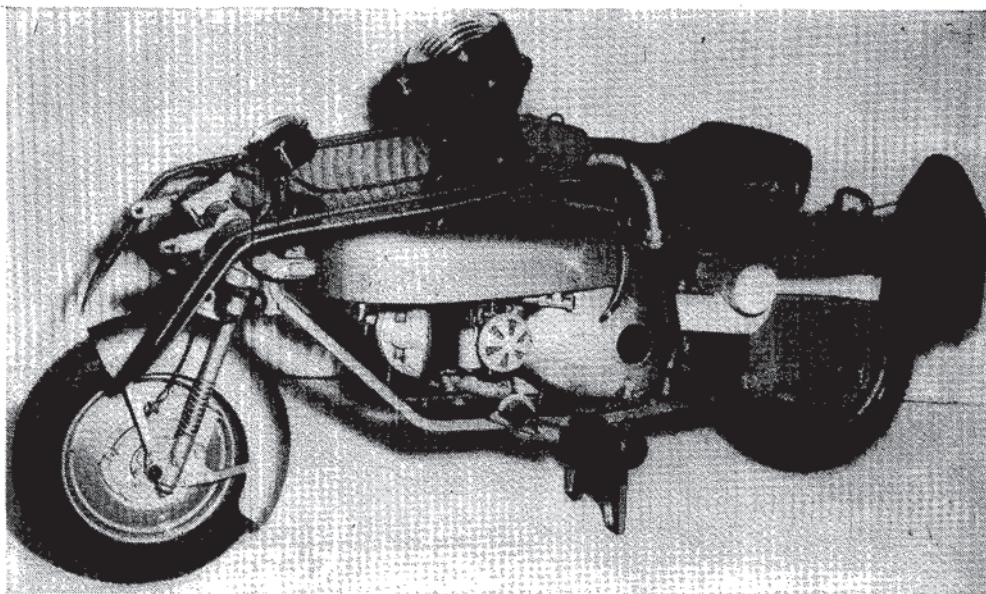
The clutch and three-speed gear set are combined with the engine casting in one compact, streamlined unit. The engine-shaft generator is part of the unit, producing ample current for both lighting and ignition. A standard storage battery and coil ignition are provided. Powerful two beam headlight, parking light, combined tail and stop light and electric horn are also standard items.

The construction of the Indian Brave has been aimed at sure, steady handling on any kind of road surface, wet or dry. Two big automotive-type brakes—5 inches in diameter, internal expanding—mean quick smooth stops. Long-action telescopic forks are loaded with rubber buffers, and the saddle has multiple springs to provide the utmost comfort. The Indian Brave has ample reserve power for "two-up" riding.



THE BRAVE is Indian's lightweight model designed as a full-sized, inexpensive motor-

cycle. This is the improved 1954 model of this famous line.



THIS LITTLE work horse is called the Papoose. Folded up like this, it is all of fifty-six by

twenty-five by eighteen and a half inches. It gets 125 miles per gallon.

The 1954 Brave has a heavier crankcase, and an improved oiling system, designed to make the new model even more dependable and longer lived than preceding ones. Oil is provided by a pressure type of gear pump, which supplies the oil directly to the big ends from a 1½-pint sump, which is cast integrally with the engine base. Gravity and splash supply lubricant to all the other enclosed moving parts.

The finish is in red, blue, or black enamel. Chrome is used as contrast to the back of the frames. A toolbox is standard equipment on the Braves; it is large enough to accommodate a complete tool kit.

The speedometer (a Smith 85 MPH model) is mounted in the steering head bracket. It is driven from the transmission by a flexible shaft; all the drive parts are enclosed and run in oil.

Deeply fitting chainguards are provided to insure maximum protection.

The Lightweight Papoose

The Indian Papoose is a scooter type of vehicle equipped with a 98-cubic-centimeter, two-stroke engine. It is possible to get 125 miles of fuel to a gallon with it, the company says.

The Papoose is a development of the original wartime machine, which was designed for the British Paratrooper units. The

objective—which was met in the first production machines—was a compact, lightweight vehicle of unfailing dependability. Many thousands of these machines served their purpose well.

The engineers have attempted to retain the good qualities of the original while making the present-day "Papoose" a more versatile vehicle. They have added a two-speed gearbox providing a higher gear for level running and retaining a very low bottom gear for starting and hillclimbing. The use of a higher gear ratio, of course, means less engine "revving" and consequently longer life, and even greater fuel economy. More powerful lighting and better braking mean more safety on the road, and the engine itself develops more horsepower for today's needs.

The Papoose is not offered as a substitute for a full sized motorcycle. It is designed to fill a need which, the company feels, cannot be met by any other self-propelled vehicle. The machine can be folded for easy storage or transportation. The folded dimensions are 56 inches by 25 inches by 18½ inches.

The fuel tank of the Papoose will hold ten pints. The clutch is a single-plate cork insert which operates by a lever on the left handlebar.

The frame, which will fold, has spring forks, and a hinged rear fender. Other fea-

tures include a luggage rack, a weather screen, and a large touring saddle.

A range of colors is offered including "polychromatic" blue, or red, bronze and standard black, red, or blue.

The Indian manufacturers say that many

thousands of two-speed models have been sold to air force personnel, both here and abroad. These men use their Papoose "auxiliaries" around the great air bases and back and forth to town. Many have been sold to resort areas for pleasure riding.

SPECIFICATIONS

Electrical: 45-watt generator on engine shaft. Automatic spark advance; metal rectifier for charging 12-ampere storage battery; coil ignition. Headlamp with twin beams, tail and stop light and electric horn, standard.

Forks: Telescopic spring-loaded, with rubber buffers.

Frame: Open cradle type with twin bottom tubes. Welded and brazed construction, with side stand and provision for center stand.

Wheels and Tires: 18 x 3.25 inches. Front and rear brakes: internal expanding; 5 inches in diameter.

Indian Brave

Engine: Single cylinder, four-cycle, side-valve engine. Bore, 64.5 mm.; stroke 76 mm. Compression ratio, 6.3 to 1. Piston displacement, 15 cu. in.

Transmission: Three-speed gearbox, foot operated. Ratios: 5.731 to 1, 9 to 1, and 16.2 to 1. Chain driven. Primary chain, $\frac{3}{8}$ inch pitch; final drive, $\frac{1}{2}$ inch pitch. Gearbox and crankcase in one aluminum alloy casting, with removable side plate.

Lubrication: Pressure type of gear pump supplies oil direct to big ends from 1½-pint sump, cast integrally with engine base. Gravity and splash supply lubricant to all other enclosed moving parts.

Carburetor: Amal single cable with choke.

Dimensions: Wheelbase, 52 inches. Length, 79 inches. Saddle height, 28 inches. Ground clearance, 5½ inches. Total weight dry, 225 pounds.

Indian Papoose

Engine: 98 cc., built by Brockhouse. Cylinder head: aluminum alloy, dome-type piston, two rings. Bore 50 mm.; stroke, 50 mm. Compression ratio, 6 to 1.

Transmission: Albion, 2 speed, foot-operated. Gear ratios: low, 8.9 to 1; high, 5.25 to 1. Chain, Renold. Primary chain, $\frac{3}{8}$ inch pitch; secondary chain, $\frac{1}{2}$ inch pitch.

Lubrication: Oil and gas mixture.

Carburetor: Amal.

Electrical: Flywheel magneto, incorporating lighting coils.

Frame: Folding, with spring forks. Hinged rear fender, luggage rack, weather screen, large touring saddle.

Wheels: Cup and cone type of bearings.

Tires: 12½ x 2¼ inches.

Brakes: Two-wheel, internal expanding, 4 inch diameter.

Dimensions (folded): Length, 56 inches; height, 25 inches; width, 18½ inch.

Cushman Offers Many Models

Lightweights and Trucksters with various horsepowers give a wide choice

THE CUSHMAN MOTOR VEHICLES ARE DESIGNED for a wide variety of transportation needs. Each of the models is powered by the compact Cushman "Husky" engine. A three-horsepower engine is standard on the Highlander, a four-horsepower on other models. A five-horsepower engine is standard on the Eagle and optional for the others.

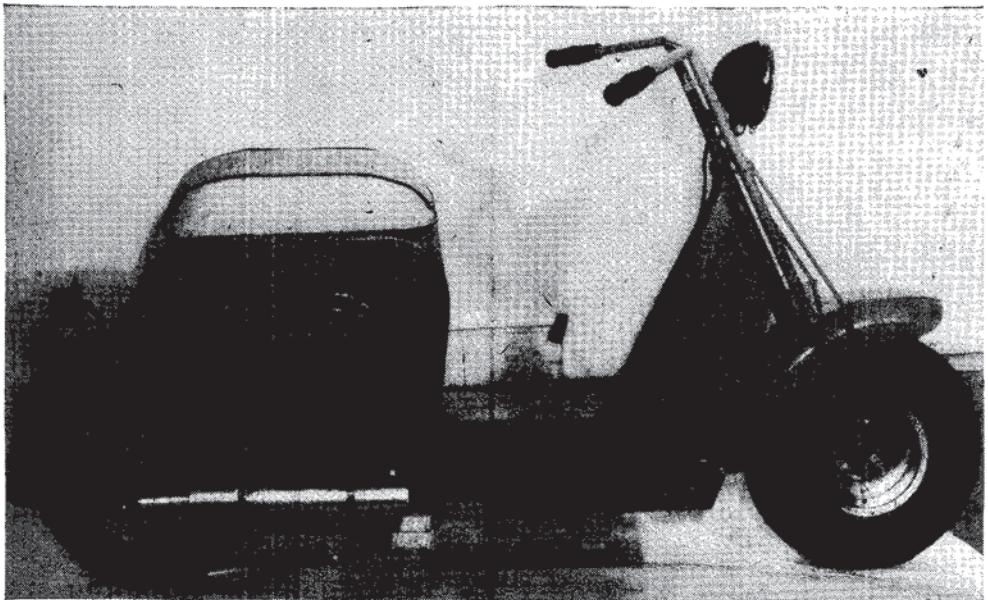
Among the models are the Highlander, the newest addition to the Cushman line; the Pacemaker, an "all-use" vehicle; the Super, Side Kar and Package Truckster, each ideal for light delivery service; and, the Road King, a deluxe vehicle with a two-speed sliding-gear transmission. The Eagle is designed more like a motorcycle than a motorscooter, with the rider straddling the engine.

Speeds of 30 to 35 miles are claimed for

all the models except the Eagle, which will go up to 50 miles per hour. The manufacturers rate the gasoline mileage as from 60 to 90 miles per gallon.

An automatic one-speed forward is standard on the Highlander and the Pacemaker, while the Super is equipped with "Vari-matic" drive. This drive achieves a true torque conversion by automatic self-shifting according to engine load and speed. As the load is imposed, the Vari-matic drive automatically adjusts itself to the variation in speed required for the proper torque and power. An automatic, centrifugally operated, three-shoe clutch is built into the drive. The action of the clutch is automatically controlled by engine speed, and engine stalling is impossible. The Road King has an automatic two-speed-forward gear arrangement.

The Cushman motor is cooled by a flywheel fan which forces air over cylinder and oil sump. The ignition is provided by a flywheel magneto with Alnico magnets.



THE HIGHLANDER, latest addition to the Cushman line, is only one example of their

answer to the pick-up and delivery problem. It gets up to 90 miles per gallon.

SPECIFICATIONS

Engine: Cylinder and crankcase integral unit. Highlander model has a 4-cycle engine. Valves on all models are $1\frac{1}{4}$ inches in diameter. Bore: for 3 horsepower is $2\frac{1}{8}$; 4 horsepower, $2\frac{1}{4}$; 5 horsepower, $2\frac{3}{8}$ inches. Stroke: 3, 4, and 5 horsepower, $2\frac{1}{4}$ inches. Piston displacement: 3 horsepower, 12.3; 4 horsepower, 14.9; 5 horsepower, 17.8 cubic inches. Highlander: 3 horsepower engine standard. Eagle: 5 horsepower engine standard. Other models: 4 horsepower engine standard. Five horsepower engines, optional.

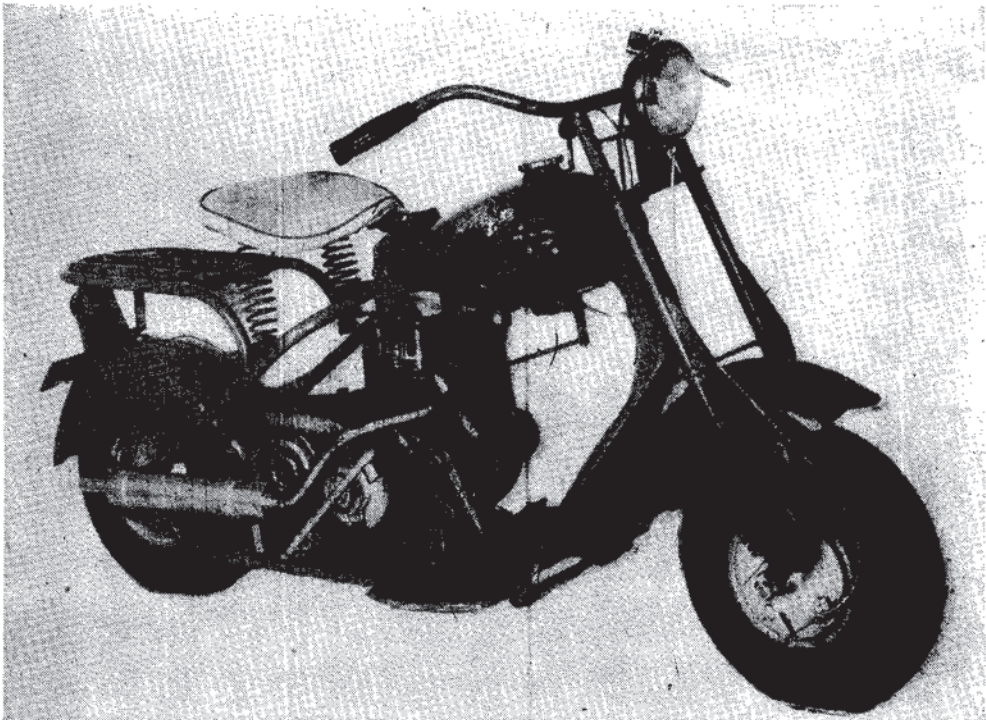
Lubrication: Oil capacity, one quart. Positive-action piston pump; centrifugal pressure to connecting-rod bearing.

Transmission: Highlander and Pacemaker: automatic single speed. Super: Vari-matic drive (fully automatic). Road King: automatic 2 speed forward.

Ignition: Wico flywheel magnet. Foot-type starter.

Brakes: Truckster models are equipped with heavy duty, positive-action brakes on all three wheels. Two wheel models have heavy duty brakes on rear drive wheel only; a front wheel brake is standard equipment on the Eagle, optional on other models.

Tires: Highlander, 4.00 x 8 inch. Other models, Cushman 100.



THE CUSHMAN Eagle is aimed at easy operation and maneuverability. A five horsepower

engine is standard in this model, providing speed, and power in plenty.

Mustang—Light and Safe

Single cylinder, 9½ hp engine and Burman foot shift mark out these models

INCLUDED IN MUSTANG'S LINE FOR 1954 are the lightweight Solo, the pepped-up sports Special, and a handy, economical delivery cycle.

The Mustang Solo

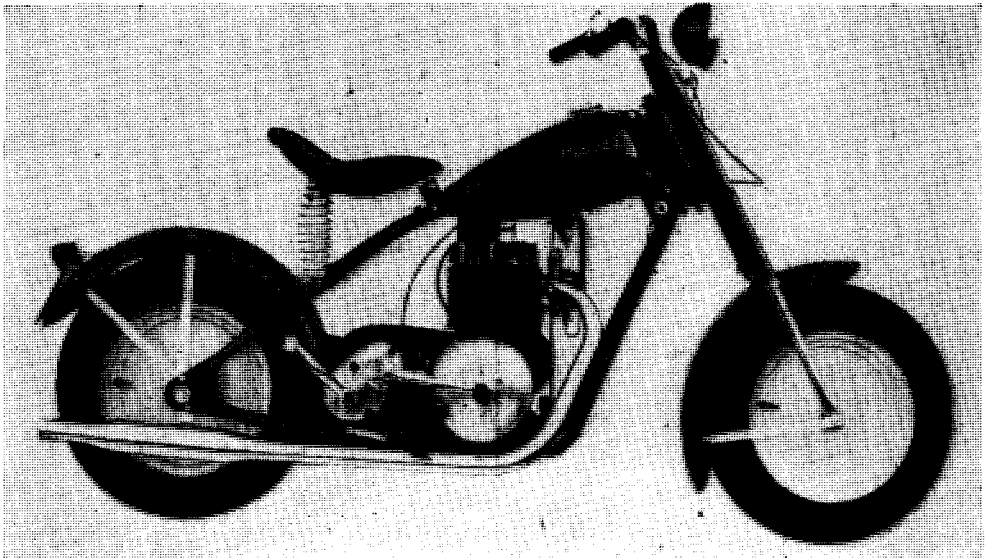
The efficiency of the Mustang MC "75" motor was developed from their high-output-per-pound aircraft-engine experience, the Mustang engineers say. It "winds up" to 5000 revolutions per minute and delivers nine and one-half horsepower with a weight of less than 80 pounds. They say it is the only American-built machine with the special British, Burman 3-speed foot-shift gear box. They claim it is the fastest, safest type of motorcycle transmission ever developed. The driver can shift without removing either

hand from the handlebars, by using the foot shift. It has a low center of gravity, scientific weight balance, and a low sitting position—all aimed to give the driver the confidence of safe stability and balance in every maneuver.

The Mustang weighs 215 pounds, is 72¼ inches long, 41 inches high, and 28 inches wide at the handlebars. This permits the motorcycle to be garaged in ordinary bicycle space.

The wheels are of pressed steel, and they run on adjustable taper roller bearings. This type, long used on motor cars, can withstand great lateral strain. This added strength, together with four-inch tires, adds to the driver's safety and comfort. The rear wheel combines an internal expanding brake with chain drive sprocket.

The gasoline tank is made of heavy gauge sheet-steel and is of streamlined, welded construction. It holds 2¼ gallons. The engineers rate the mileage at 70 miles per gallon.



THE MUSTANG Lightweight Solo with the MC "75" motor that delivers 9½ horsepower.

The weight of this motorcycle is 215 pounds. The wheelbase is 50 inches.

The Mustang is equipped with completely enclosed compression and rebound springs, which are designed to cushion not only road shock but recovery shock as well. Polished chrome actuating tubes operate smoothly in aluminum and bronze bushings with neoprene oil seals and felt wipers.

An enclosed oil-bath case protects the clutch and primary drive chain on the Mustang.

The Sports Special

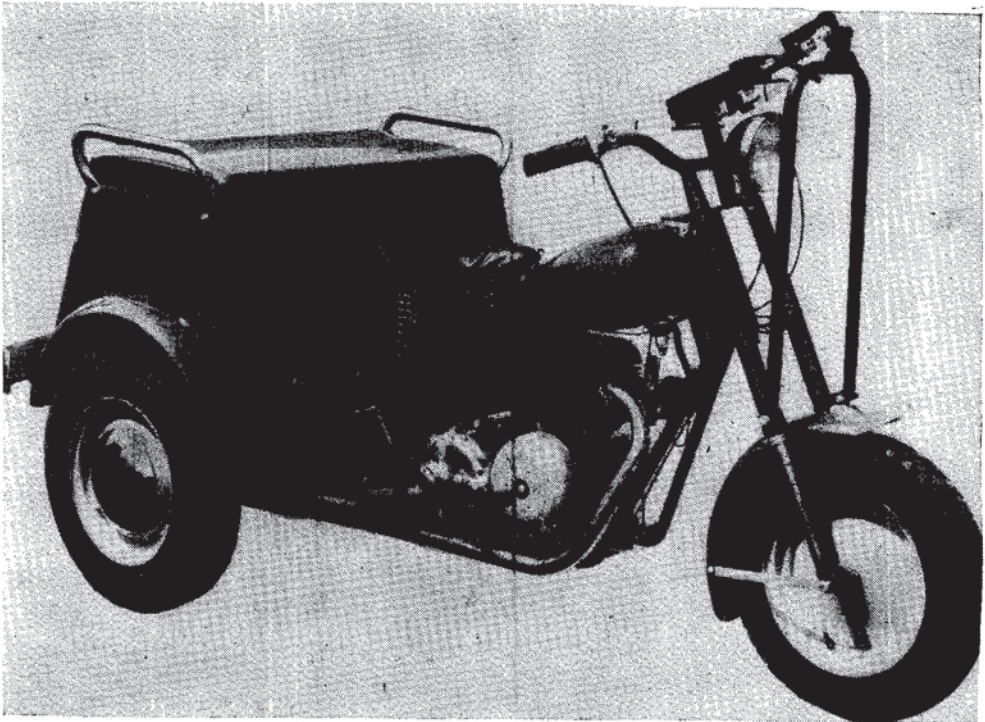
The Mustang Special is the sports version of the Mustang Solo. The addition of a high compression cylinder head (7 to 1) and full race cams have raised the Special's horsepower to 10.5. The designers say the upswept exhaust not only gives the Special faster lines but provides better clearance of the exhaust in rough cross-country riding and in riding through water. Mustang's new front-wheel brake, developed for this ma-

chine, gives even greater safety and maneuverability than before.

For Pick Up and Delivery

The Mustang Delivercycle is the so-called workhorse of the Mustang Lightweight motorcycles. Simple and rugged in design, it is built for ease of operation and economy of maintenance, based on hard testing in commercial and police traffic-control service. Like the Mustang Solo and Special, it is equipped with the foot shift. It has a 4-speed transmission and handlebar clutch control. The Mustang engineers point out the dependable stopping power of its telescopic front forks and load-spring suspension, and the stability of its low center of weight.

The roomy, heavy-gauge-steel body, with a load capacity of 300 pounds, should make the Mustang Delivercycle an ideal carrier for any type of business.



WORKHORSE in the Mustang stable is the Delivercycle, with a load capacity of 5.8

cubic feet or 300 pounds. It has foot shift, four-speed transmission.

SPECIFICATIONS

Mustang Solo and Solo Special

Engine: Single cylinder, 4-cycle, L-head Mustang MC "75." Bore, 2 $\frac{1}{2}$ inches; stroke, 3 inches. Compression ratio: Solo, 6 to 1; Special, 7 to 1. Piston displacement, 19.4 cubic inches. Horsepower: Solo, 9.5; Special 10.5.

Transmission: 3-speed foot shift, enclosed kick starter and positive-stop, toe-shift, rapid gear-changing mechanism.

Lubrication: Splash and plunger pump.

Ignition: Flywheel 6-pole generator.

Clutch: Multi-cork plate type with handlebar control.

Fork: Telescopic front fork.

Dimensions: Wheelbase, 50 inches. Tire size, 4.00 x 12. Weight, 215 pounds.

Length, 72 $\frac{1}{2}$ inches. Height, 41 inches. Width at handlebars, 28 inches. Seat height, 27 $\frac{1}{2}$ inches.

Delivercycle

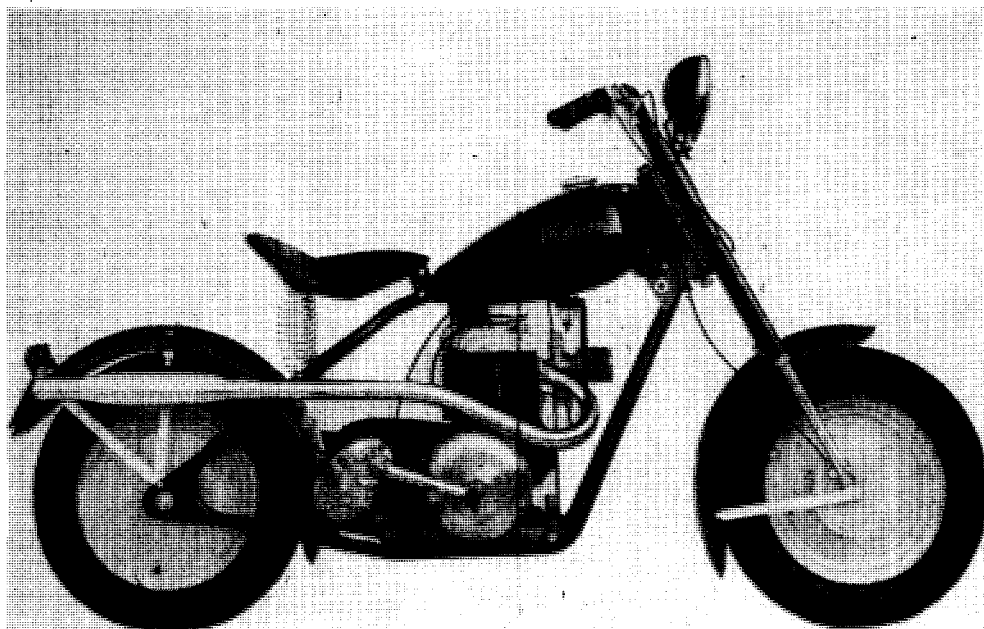
Engine: Single cylinder, 4-cycle, L-head Mustang. Bore, 2 $\frac{1}{2}$ inches; stroke, 3 inches. Piston displacement, 19.4 cubic inches. Compression ratio, 6 to 1. 50 miles per gallon of gasoline.

Transmission: Burman, 4-speed foot shift.

Ignition: Flywheel magneto-generator.

Clutch: Multi-plate type, heavy duty.

Dimensions: Wheelbase, 56 inches. Tire size: front, 4.00 x 12; rear, 4.50 x 12. Seat height, 27 $\frac{1}{2}$ inches. Weight, 445 pounds. Storage space capacity, 5.8 cubic feet, 300 pounds.



SPORTS MODEL of the Solo is Mustang's Special. Note the upswept exhaust. Compression

ratio and horsepower are up over the Solo. Hp for the Special is 10.5.

The Simplex Automatic

Powercycle with automatic transmission tops the Simplex line

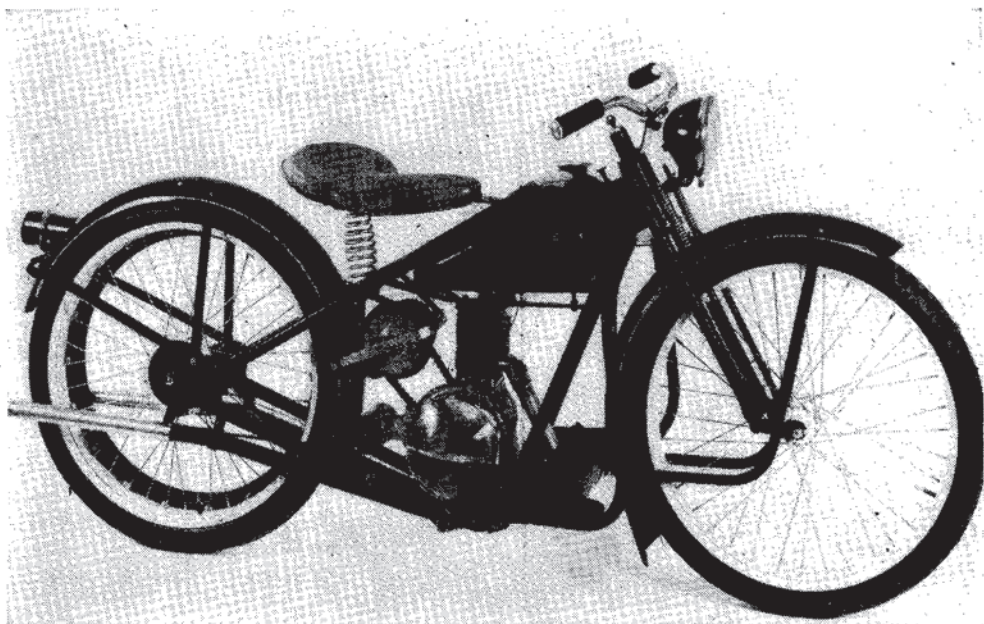
THE 1954 SIMPLEX LINE CONSISTS OF TWO powercycles—the “Simplex Automatic,” equipped with automatic transmission, and a manual shift model, the “Simplex 125”—and a three-wheel Fifth-Ton Truck model. Numerous improvements have been made in all the vehicles, particularly with respect to performance and appearance.

The new automatic-transmission powercycle, the “Simplex Automatic,” has a fully automatic clutch and transmission. The operation of this model is very simple. Simplex says that anyone can ride it with no instruction except pointing out the throttle grip and the brake pedal, even though the rider has never driven a motorcycle before. With the new clutch and automatic transmission, of course, it is not necessary to

shift gears for rapid acceleration or for climbing the steepest hill. You set the throttle at the speed you want to travel and the transmission automatically selects the ratio most favorable for that speed, the load, and the grade. There is a price difference between the automatic and manual shift.

Simplex engineers point out that although the automatic transmission is just being nationally announced, it has not only gone through extensive testing but has been sold through a limited number of dealers during recent months so the factory could find out first-hand the experiences of actual users and determine positively that the unit was trouble-free before putting it into mass production. They say the reports have been enthusiastic. Re-orders are almost exclusively for the automatic model.

Next to the automatic transmission in importance is the striking improvement in the appearance of the entire line, the company says. Fuel tanks, which were originally



THE RIGHT SIDE of the Automatic. The manual shift model, the Simplex 125, has foot-

operated gears and lacks the twin tail pipes seen above.

fitted with one small filler cap, are now fitted with two large automobile-tank caps. The frames have been changed, as has the saddle bar. Footboards are now rubber-covered. The headlight switch is mounted upon the handlebar dash plate. Heavier tires and tubes are now used, adding to riding comfort and tire life. The ignition is turned on and off by an automobile type of ignition switch fitted to the fork crown.

Three-Wheelers

The Fifth-Ton Trucks (three-wheelers) have found great favor among commercial and industrial users and, when fitted with tow bar attachment, are used by garages and service stations. All Fifth-Ton Trucks for 1954 are equipped with automatic clutch and transmission, which provides greater power and smoother operation, the engineers say.

SPECIFICATIONS

Engine: Single cylinder, 2-cycle. Bore, 2 in.; stroke, 2½ in. Piston displacement; 7½ cu. in. Compression ratio, 6 to 1. Horsepower, 4 at 4000 RPM.

Two 14-mm. sparkplugs in the cylinder.

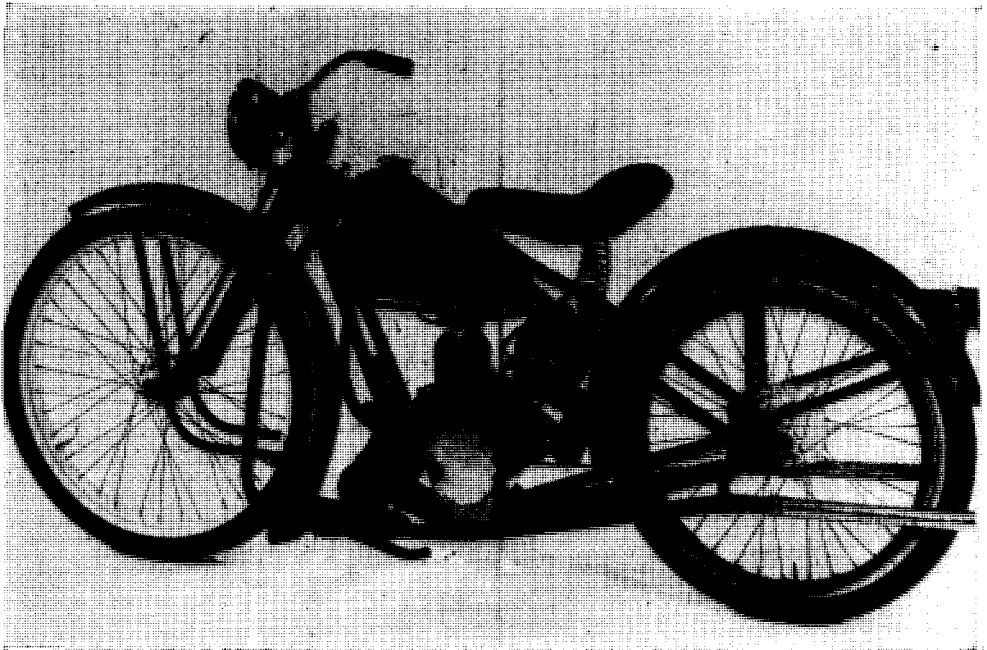
Clutch: Self-contained unit mounted behind the motor.

Transmission: Fully automatic, variable speed transmission. Centrifugal type. (Manual model: four-speed with foot shift.)

Forks: Extra-heavy, double shock-absorber type. Rocker arm slotted for easy removal of front wheel.

Ignition: Special Wico-Twin ignition. Separate coil for lights. No batteries.

Brakes: Automobile type, two shoe, internal expanding, enclosed. Operated by foot pedal. Five-inch brake drum.



THE NEW Simplex Automatic is a single-cylinder, two-cycle engine with automatic transmission that weighs 135 pounds un-

crated. It will give you four horsepower at 4000 RPM and has a tank capacity of 2½ gallons.