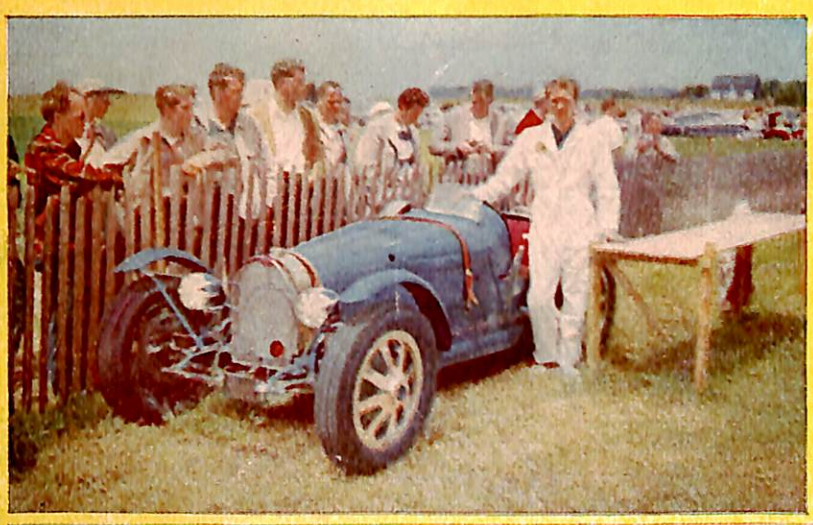
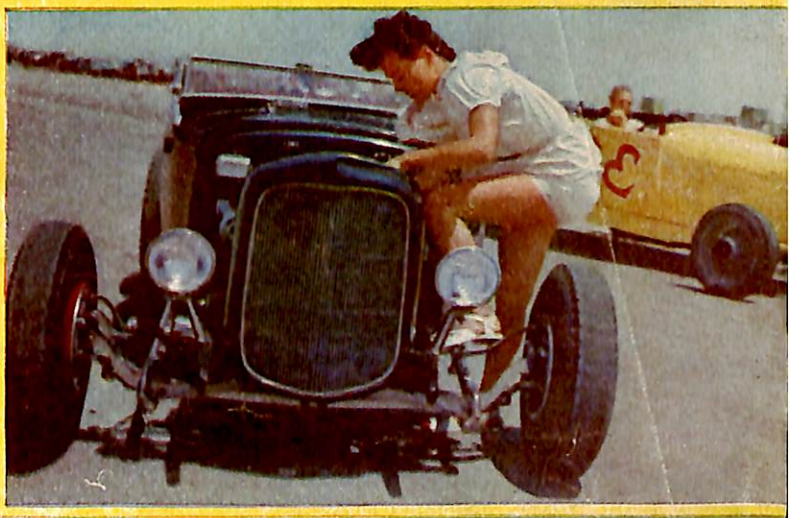
AUTO SPORT Review

FEBRUARY 25¢

ANC

World's Fastest HOT ROD!





BSA establishes OFFICIAL American A.M.A. Class "A" and "C" Speed Records!

BONNEVILLE SALT FLATS—UTAH

September 1951

143.54 M.P.H.!

40 cu. in. BSA "Golden Flash"*
Class "A" Record—Rider: Gene Theissen

123.69 M.P.H.!

30.50 cu. in. BSA "Star Twin"*
Class "C" Record—Rider: Gene Theissen
Pump Gas—Standard 8 to 1 compression

3 GREAT TWINS!

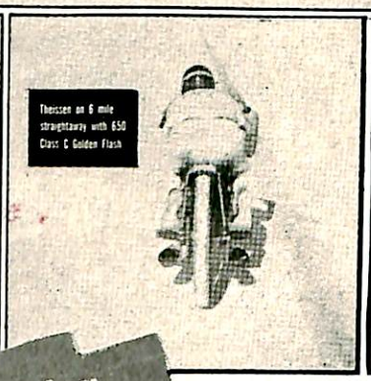
A-7 500cc (30.50)
$749.38*
STAR TWIN 500 cc
$779.56*
GOLDEN FLASH 650cc
$794.99*
(F.O.B. N.Y., L.A. or San Francisco)
*Subject to change without notice

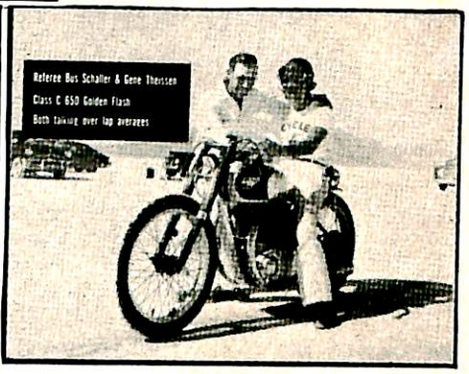

Left to right: Ray Bowles of Cycle Magazine Gene Theissen, Gene Rhyne tuner taking a plug reading.


Left to right: Gene Theissen, Hap Alzina and Gene Rhyne tuner
Star Twin 30.50 Class C gas job

*HAP ALZINA TUNED MACHINES


Gene Theissen on Class A Golden Flash alcohol job


Theissen on 6 mile straightaway with 650 Class C Golden Flash


Referee Bus Schaller & Gene Theissen Class C 650 Golden Flash Both taking over lap averages

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Rich Child Cycle Co., Inc.—639 Passaic Ave., Nutley, N. J.

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Hap Alzina—3074 Broadway, Oakland, Cal.

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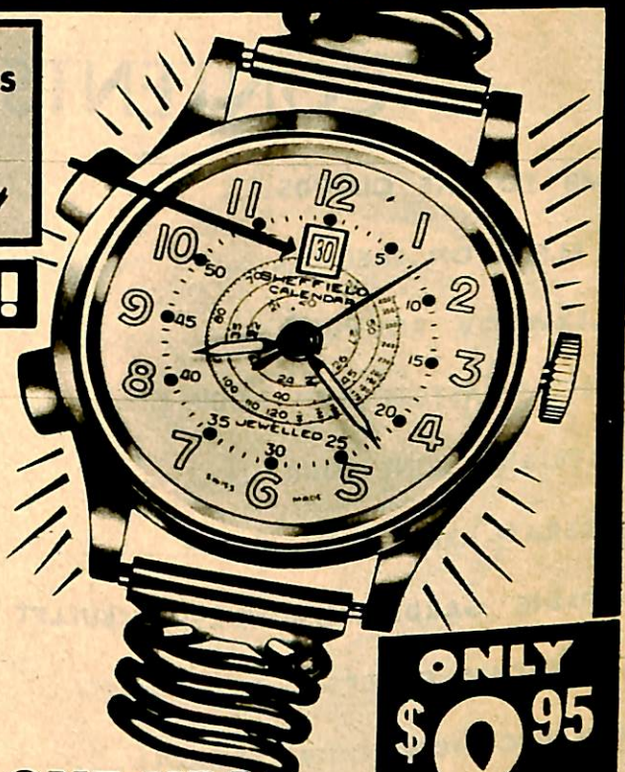
WEAR AND ENJOY This Watch on

DATE CHANGES EVERY DAY *Automatically*



10-DAY FREE TRIAL!

This Swiss-Precision Watch is Also a

- **TACHOMETER:** Measures speeds of moving objects.
- **TELEMETER:** Measures distance between points.

and

- **12 HOUR RECORDER**

It's Also SHOCK-RESISTANT and ANTI-MAGNETIC

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THESE HIGH PRICE FEATURES USUALLY OFFERED IN WATCHES SELLING AT $50.00 or MORE

- Precision Made, Imported Swiss Jeweled Movement.
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A sensational bargain! Don't miss it — or you may be too late! You have always wanted a watch with these expensive features. Now you can have them AT A PRICE YOU CAN AFFORD! This accurate, precision-made Window Calendar Chronograph is ideal for the members of our Armed Services, for sportsmen, doctors, photographers, engineers, technicians, executives, etc. And as for gifts . . . it's A PERFECT GIFT FOR EVERY OCCASION, such as Graduation, Birthday, Anniversary, Holiday, etc. SEND NO MONEY! Simply mail coupon below for 10-Day FREE TRIAL. Do it now, before supply is exhausted!

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AUTO SPORT Review

VOLUME 1 FEBRUARY, 1952 NUMBER 2

CONTENTS

COVER **Top left, Grand Prix Bugatti model 35B. Right, California Hot Rod enthusiast making engine adjustment. Nino Farina at the wheel of the formidable Alfa Romeo "Alfette" 159.**

AUTO SPORT REVIEW is published monthly by Picturight, Inc., at 105 East 35th St., New York 16, N. Y. Application for 2nd class entry pending at the Post Office at New York, N. Y. under the Act of March 3rd, 1879. Single copy price, 25c, yearly subscription $3.00. The publishers will handle all submitted manuscripts, drawings and photographs with care, but all such submitted material must be accompanied by return postage and is submitted at author's risk.

Vol. 1, No. 2, February, 1952 issue.

Printed in U.S.A.

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install a

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miles per gallon

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Fits All Cars — Permanently Mounted

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Fits all cars. Permanently mounted. Checks Spark Plugs, Carburetor and 31 other Motor adjustments. Shows how to increase miles per gallon at every speed. 1 to 5 minute installation — 4 color Easy-To-Read Dial. No holes to drill. Mounting bracket fits dash or windshield frame. No experience needed. Complete instructions and 16-page mileage book included. Tested and proved by leading Automotive Associations and manufacturers. Makes a perfect gift. (Beautifully gift wrapped at no charge.) Over 1,000,000 in use today.

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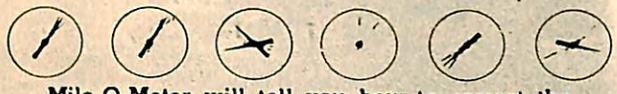
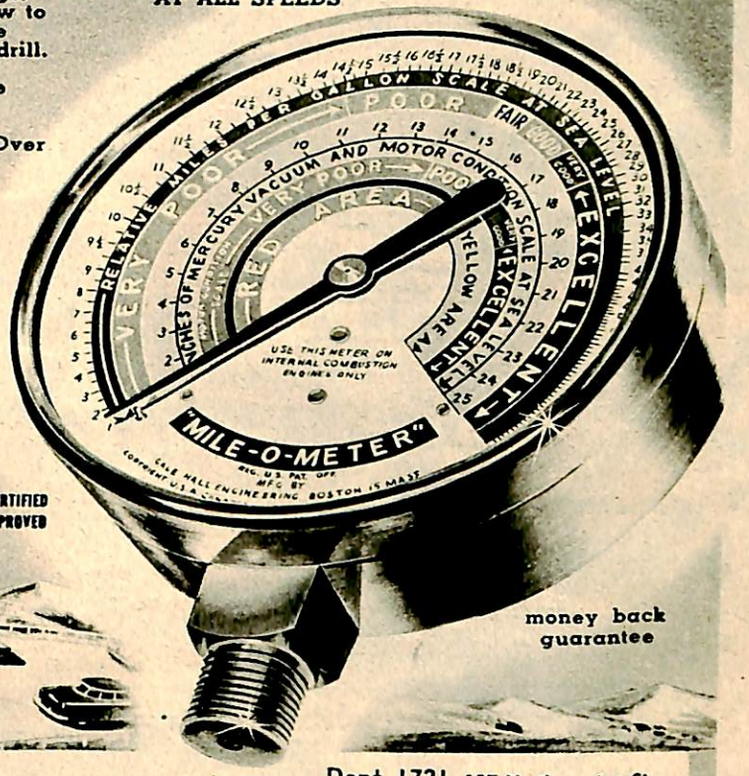
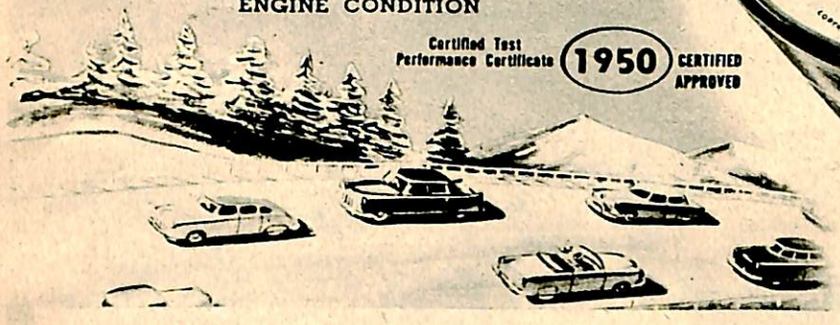


Mile-O-Meter will tell you how to correct the ENGINE CONDITION

SURE ACCURACY AT ALL SPEEDS





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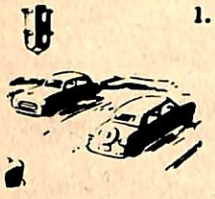
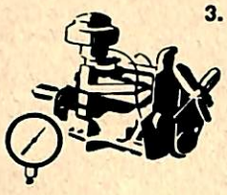


1. **TEACHES** you how to drive economically — eliminates the Jack Rabbit starts and passing on hills — that's where you really drink up fuel.



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To .....

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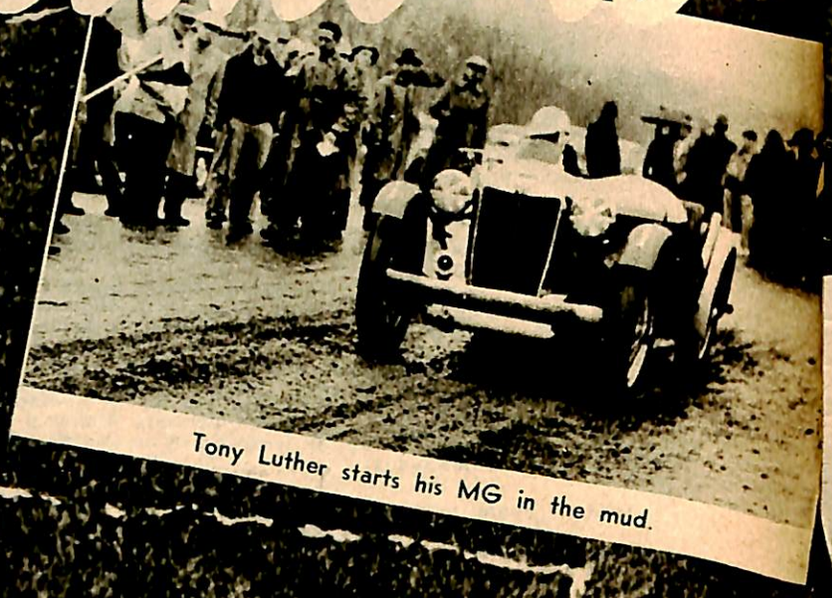
Climb to



Tony Luther starts his MG in the mud.

Roger Merrill at the wheel of his Jaguar.

WHAT was lacking in good weather was made up with good spirits on the part of the numerous stout souls who braved the wintry temperature in Manchester, Vermont, last October 27th and 28th.

With all the rain and sleet, Mt. Equinox may just as well have been situated within the arctic circle. Sports-car enthusiasts arrived in appropriate attire, most of them looking like members of a government sponsored expedition to the polar regions. Fur-collared coats, heavy mittens and parkas were the order of the day.

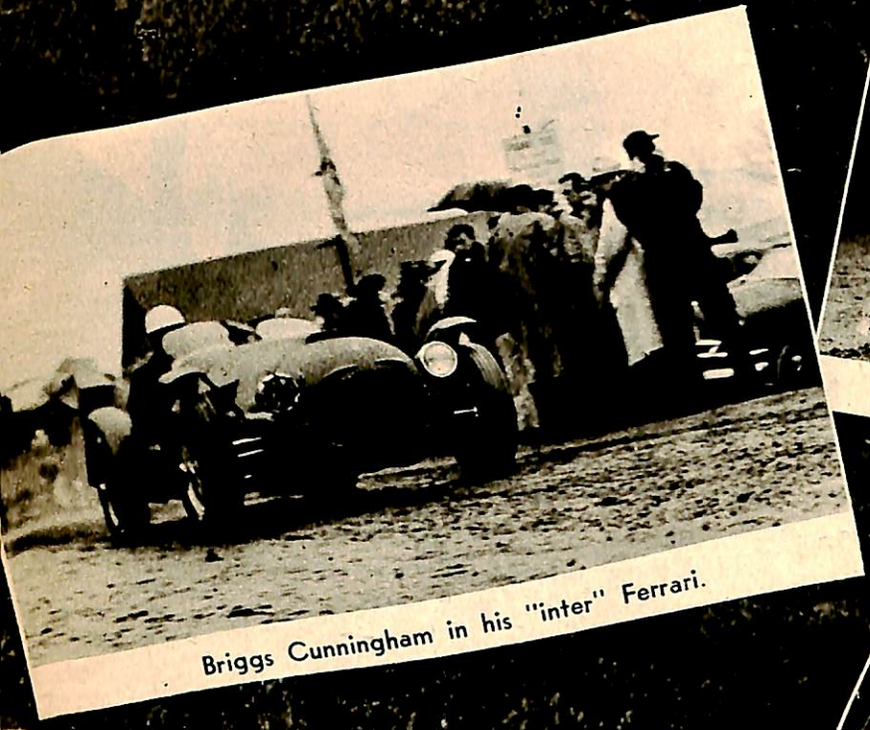
During the practice period, on Saturday, Oct. 27th, George Weaver at the wheel of the ex-Indianapolis Mesarati scaled the coursed in 6 minutes, 59 seconds, establishing a new track record. Dave Garroway, (whom we miss on TV in the East, on Sunday nights), made remarkably good time with his XK-120 powered SS Jaguar.

In class 3, Robert Wilder, driving the Ardun-Ford-Allard J-2 got to the top in better time than cars driven by Johnny Meyer and Paul Timmins of Class 2. Briggs Cunningham took top honors in his Ferrari in Class 4. The supercharged MG-TC, driven by Charlie Moran captured the class 5 category.

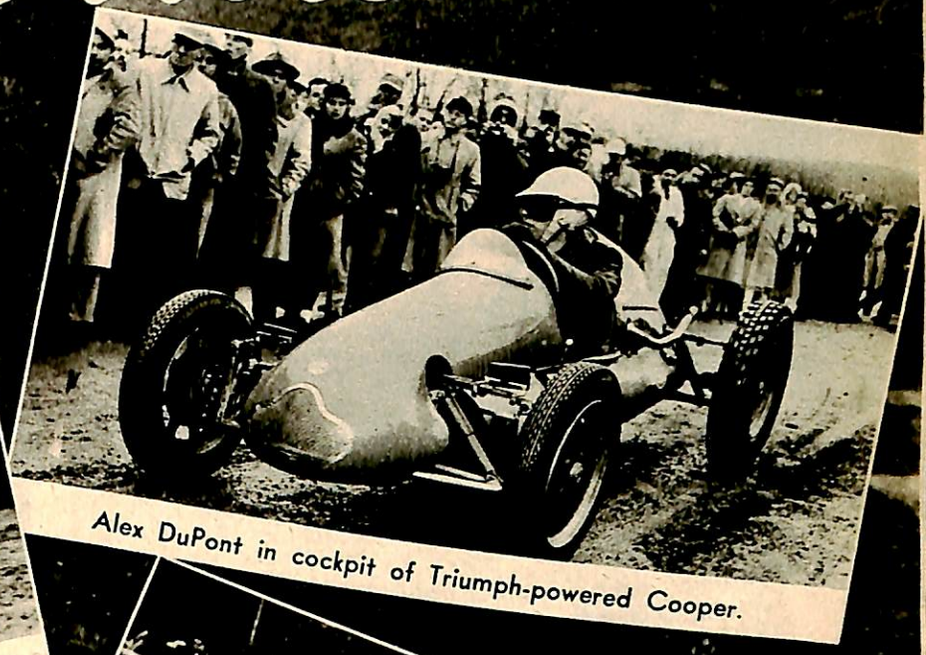
The most outstanding performance was put in by Max Hoffman, driving a Porsche. Max took the 1½ Ltr. convertible to the finish line in 4 minutes and 38 seconds, 18½ seconds faster than the MG-TD driven by Marshall Green. Peter Iselin, who made the best time in class 6, during practice, came in third, negotiating the course in his Offenhauser-powered HRG in 4 minutes and 58 seconds.

Best single performance of the two-day event goes to Alex DuPont who took his Triumph-powered 500cc Cooper to the finish line only two tenths of a second behind Johnny Fitch at the wheel of the Cadillac powered Cunningham!

the Clouds



Briggs Cunningham in his "inter" Ferrari.



Alex DuPont in cockpit of Triumph-powered Cooper.

Russ Sceli checks with Luther in Miller Special.

CLIMB TO THE CLOUDS

Kasimier Krag's supercharged M.G.-T.D. sports an unorthodox mounting for blower.

Ardent sports car enthusiast, John Meyer performed well in his Meyer "Special."

Warren Collins put in a good performance in his light, standard Jaguar XK-120.

George Weaver, holder of the Mt. Equinox Course record, in the ex-Indy Maserati.

OFFICIAL RESULTS OF MANCHESTER HILL CLIMB
Sunday, October 28th:
Rain, mud, sleet: (Mount Equinox climb cut to 2.5 miles)

UNLIMITED CLASS:
1st: George Weaver in the Maserati— 3. flat
2nd: John Fitch, Cadillac-Cunningham—3:15
3rd: Alexis DuPont in the 500cc Cooper—3:15.2

CLASS 2:
1st: Preston Gray. K-2 Allard—3:06.27
2nd: John Meyer, Meyer Special—3:19.
3rd: Paul Timmins, K-2 Allard—3:21

CLASS 3:
1st Robert Wilder, J-2 Ardun-Ford-Allard—3:13.6
2nd: Warren Collins, XK-120 Jaguar—3:26
3rd: Dave Garroway, SS-Jaguar-120—3:27.8

CLASS 4:
1st: Briggs Cunningham, Ferrari—3:18.7
2nd: John Sabourn, Riley—4:13.8

CLASS 5:
1st: Charlie Moran, MG-TC Blown—4:04
2nd: Ned Curtis, Astin-Martin DB-2—4:12.5
3rd: Guy Atkins, MG-TD Blown—4:13.2

CLASS 6:
1st: Max Hoffman, 1½ Ltr. Porsce—4:38.2
2nd: Marshall Green, MG-TD—4:56.6
3rd: Peter Iselin, HRG-Offenhauser—4:57.9

Weaver, winner of Unlimited Class being presented with award by William Kemp.

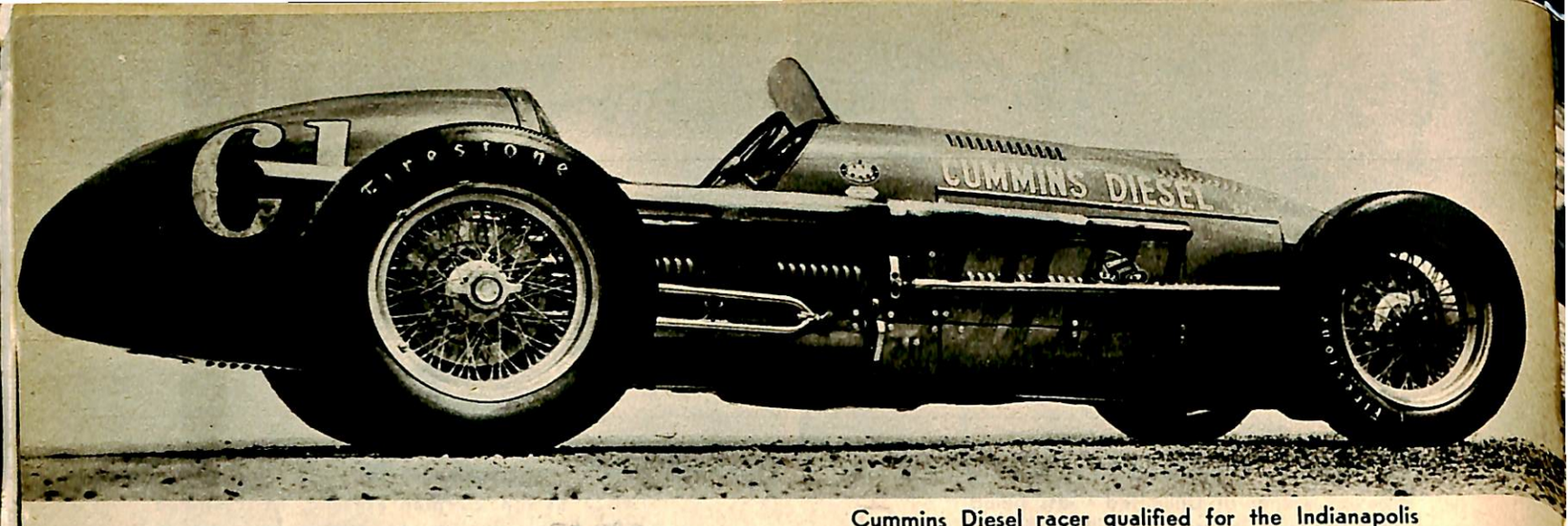
Driver of the German Porsche, M. Hoffman collects his trophy as winner of class 6.

First place winner in class 2, went to Preston Gray who piloted an Allard K-2.

T.V. Star Dave Garroway made the fastest time in class 3 with Jag. during practice.

Bill Kemp hands trophy to driver Briggs Cunningham for fastest time in Class 4. (Ferrari)

Johnny Fitch, who finished 2nd in the unlimited class, accepts his award from Kemp.



Cummins Diesel racer qualified for the Indianapolis 500-Mile Race at 129 mph with J. Jackson at wheel.

165 M.P.H. ON FUEL OIL!

THE CUMMINS-POWERED DIESEL HOLDS SIX INTERNATIONAL RECORDS

THE Cummins Diesel Special No. 61, which set six American and six international speed records in its straightaway runs on the Bonneville Salt Flats, marks a long forward step in the ceaseless pioneering of lightweight, highspeed Diesels by Cummins Engine Company, Inc., Columbus, Ind.

The sleek green race car, powered by a revised, highly supercharged version of a standard truck engine, represents the latest chapter in Cummins' development of light weights and high speeds. The car has done these things:

1, Established six official American and six official international speed records for Diesel-powered cars—including the breaking of two previously held in England—with its recent Bonneville runs. Top speed was 165.23 mph.

2. Qualified on the oval Indianapolis Speedway for this year's Memorial Day classic during the fastest time trials in the Speedway history with an official 129.203 mph to become the first competitive Diesel in race history, and the fourth Cummins car to run in the "500."

3. Opened broad, new horizons for research, development, and application of lightweight, highspeed Diesels in the world.

The sleek No. 61 was driven both at Indianapolis and Bonneville by Jimmy Jackson, four-time money winner at the Speedway from Desert Hot Springs, Calif. In two tries at Bonneville, he established these records:

Distance	Cummins Record	Old Record
1 mile	165.23	158.87
5 miles	161.92	112.07
10 miles	148.14	
1 kilometer	163.83	159.10
5 kilometers	164.25	126.99
10 kilometers	147.63	

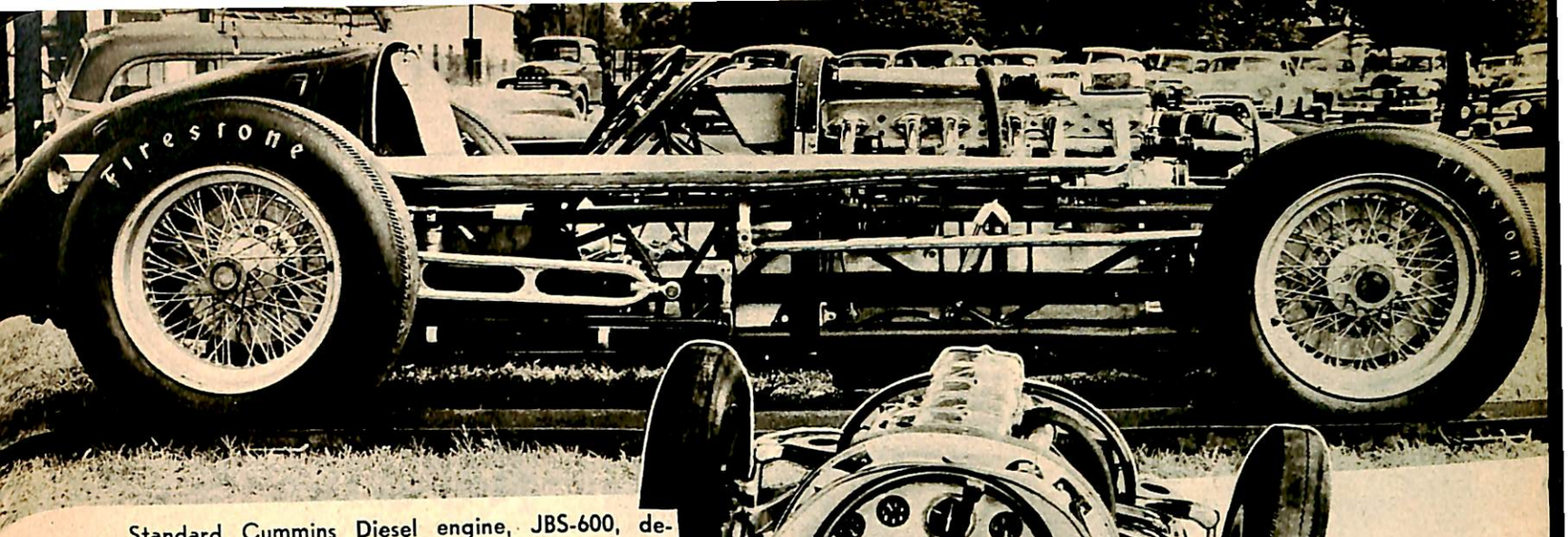
The old marks in the first two classes were held by Capt. George Eyston of England, who set them in 1936 at Bonneville with a British Ricardo Diesel. The five-mile, five-kilometer records were established by "Wild Bill" Cummings driving the third Cummins race care in 1934 at Daytona Beach. This car, which also ran at Indianapolis, set marks which, however, were not recognized internationally.

D. J. "Don" Cummins, vice president-engineering for Cummins, said the run at Bonneville "more than met our expectations. Mechanical trouble which delayed our trials one week was quickly remedied. The car was not altered mechanically between the Indianapolis and Bonneville runs.

"Our engine proved in both runs that the Diesel can be made light and fast enough for a race car. It has long since proved itself rugged and dependable enough for heavy work."

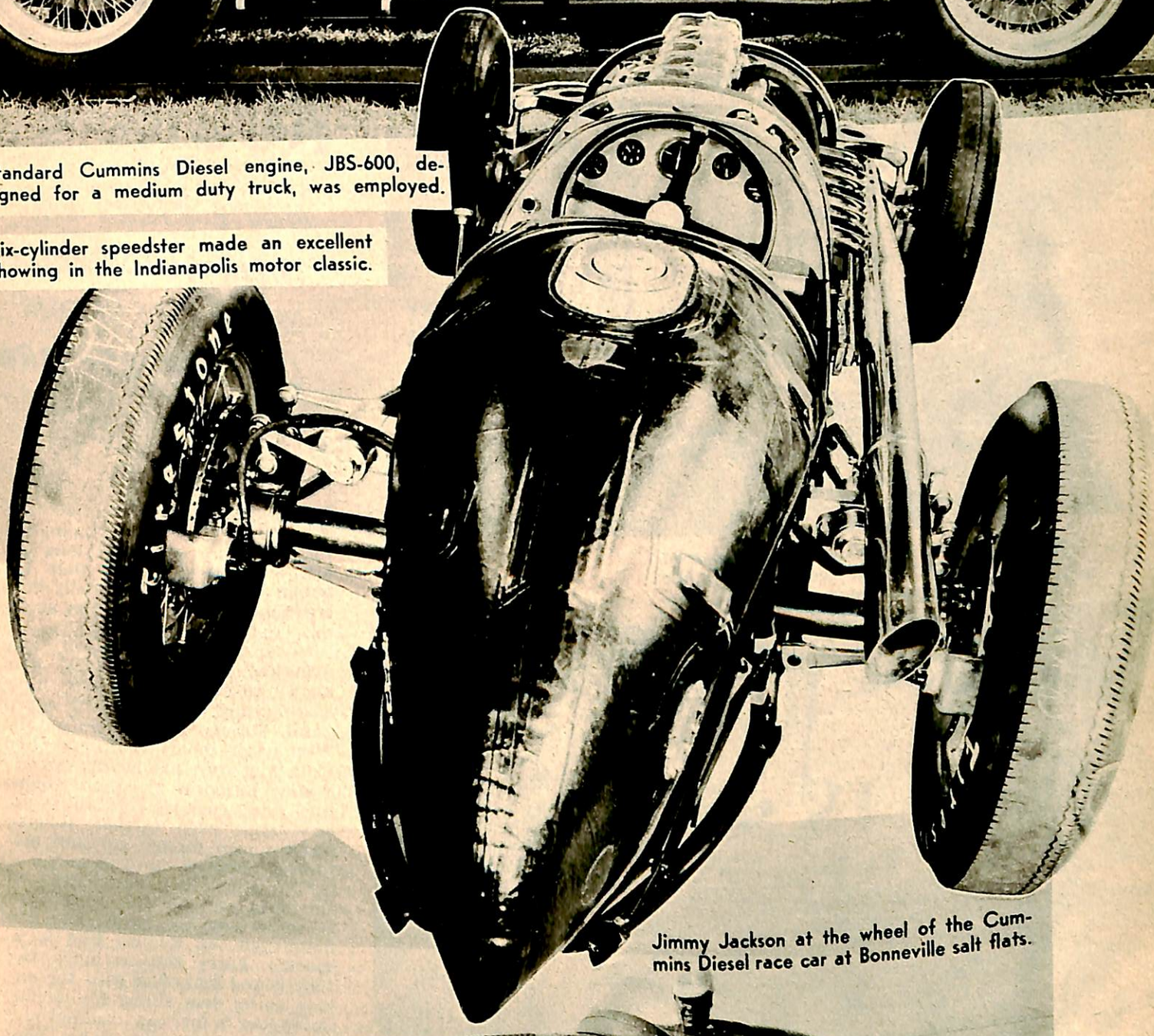
The race car engine, weighing 2.06 pounds per horsepower, develops slightly more than 340 horsepower at 4,000 rpm, which makes it one of the lightest and fastest Diesels ever to appear in public competition. Highly

(*Continued on page* 48)

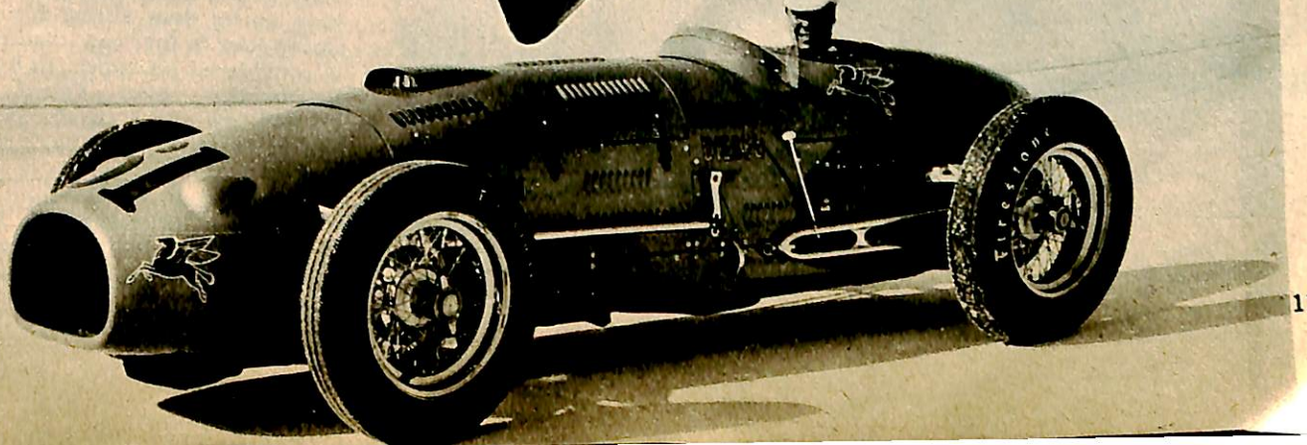


Standard Cummins Diesel engine, JBS-600, designed for a medium duty truck, was employed.

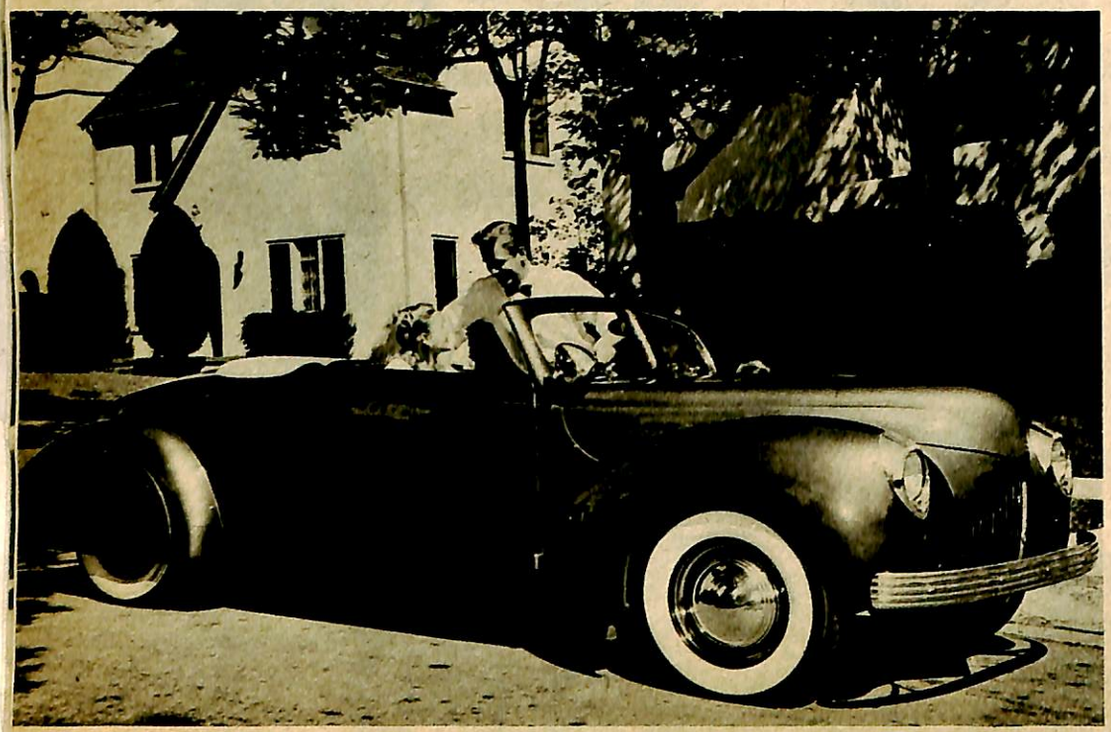
Six-cylinder speedster made an excellent showing in the Indianapolis motor classic.



Jimmy Jackson at the wheel of the Cummins Diesel race car at Bonneville salt flats.



Larry Parks gets about on his high-powered BSA motorcycle. Finds tinkering with the engine is as much fun as riding his bike.



Alan Young drives around Hollywood in a stripped-down, de-chromed Ford with a souped-up engine capable of 110 M.P.H.

Hollywood ROUNDUP!

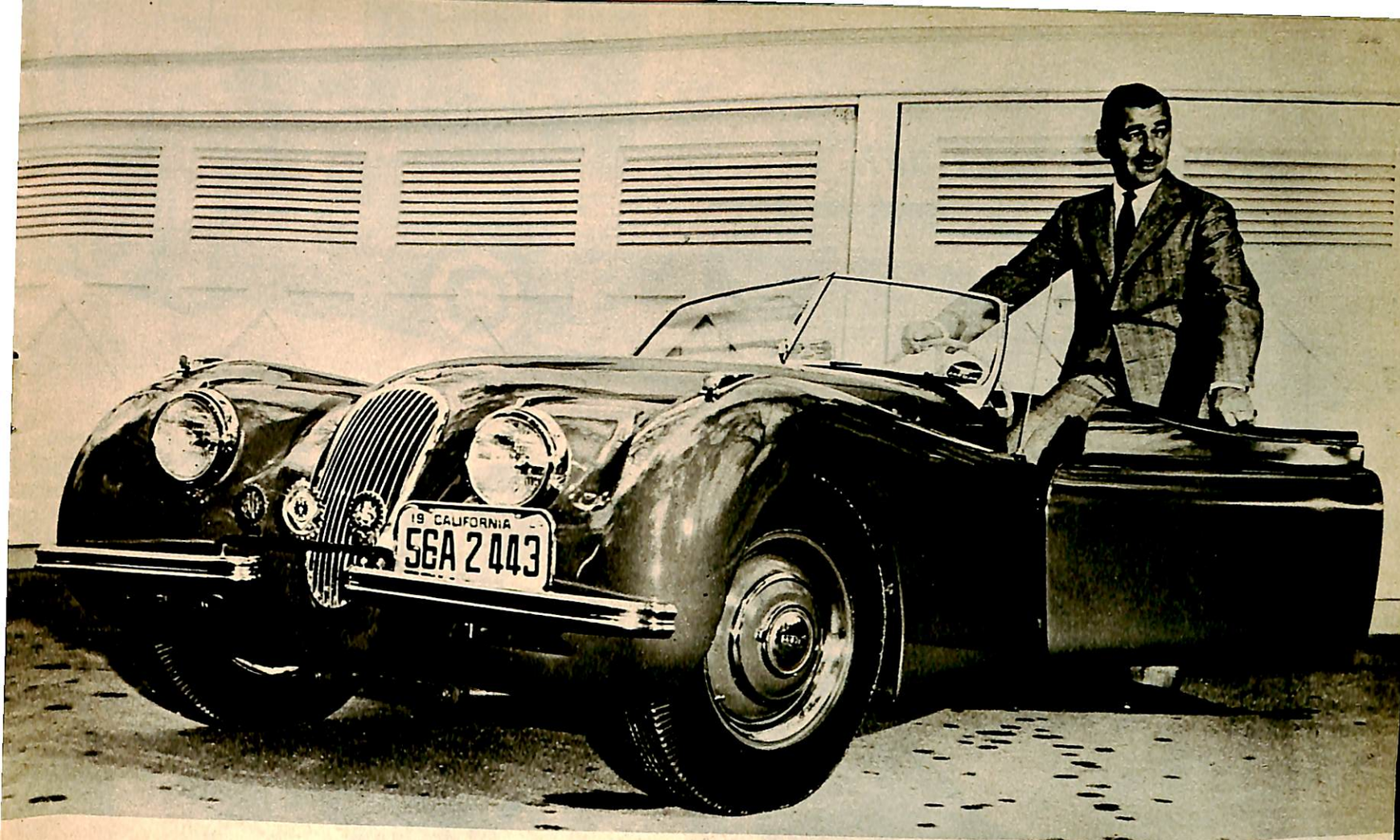
MOVIE STARS LIKE THEIR AUTOMOBILES WITH A "CUSTOM LOOKING" APPEARANCE

IN Hollywood a foreign or custom-built car is a "must" among actors. Publicity men have long ago discovered the interest that the public has in the specially-built creations that so many film actors own and drive.

As far back as the days of Fatty Arbuckle, Hollywood stars were known to swoop around in sleek-looking and expensively designed autos. Foreign car dealers on the West coast report that more and more film stars are buying one-of-a-kind European creations. Some film stars, such as Keenan Wynn, have gone even further. Keenan has his own foreign car and motorcycle agency.

Film star Larry Parks goes off the deep end on two wheels instead of four. His special love is a motorcycle, an English BSA to be specific. Larry gets as much fun tuning and tinkering with the engine as he does riding his mount. Larry goes in for "cow-trailing" and is considered an expert in his class.

Comedian Alan Young sports around town in a super-"hot-rod." His de-chromed Ford has a specially tuned engine capable of hitting speeds as high as 110 mph! Gary Cooper has a custom-built Lincoln convertible he helped design and build. Lynn Bari drives a low-slung speedster built on a Mercury chassis. Clark Gable (also a motorcycle



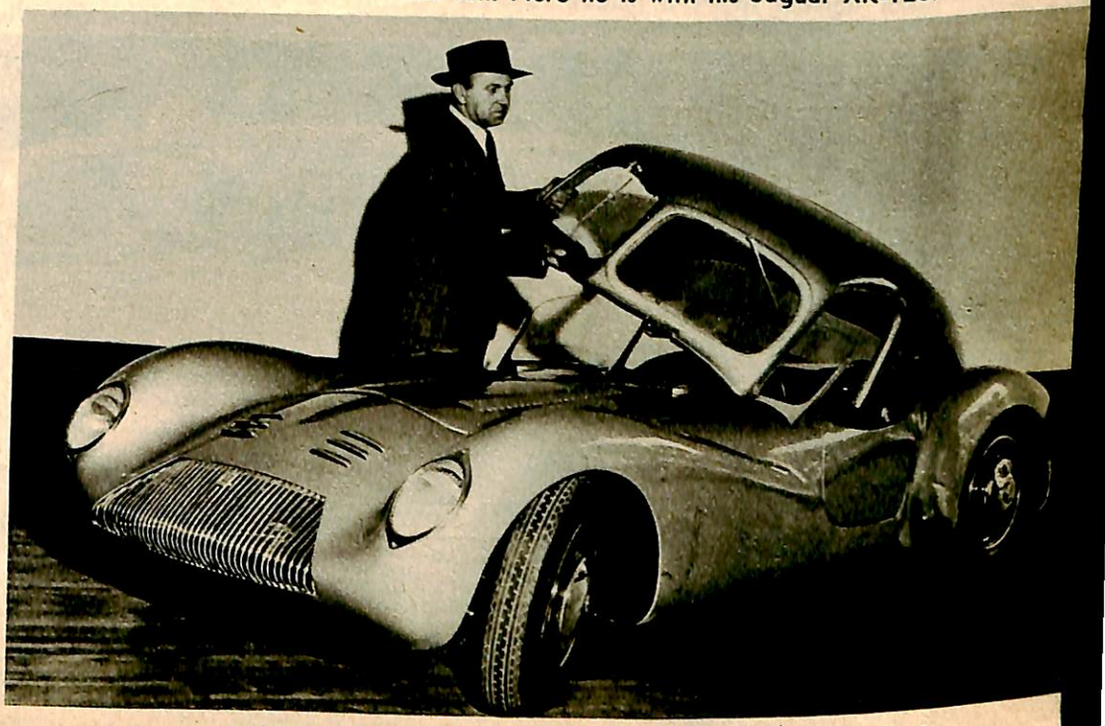
Clark Gable, who is often seen around the studio sets on a motorcycle, is an ardent race fan. Here he is with his Jaguar XK-120.

enthusiast) owns and drives a British Jaguar XK-120. Dick Powell, Yvonne DeCarlo and Jack Warner are also owner of fabulous cars.

Famous actor, Jackie Cooper, currently starring on Broadway, in "It Remains To Be Seen," not only owns and drives an English sports car, but races it in actual competition. Jackie came in 6th at the Pebble Beach, California race in his stock Jaguar XK-120.

Cowboy-actor Jim Bannon makes good use of a snow-white convertible Buick with hand-tooled leather upholstery, a revolver gear-shift lever, sterling silver horseshoe door handles and a pair of 65 inch steer horns attached to the front bumper.

Not all the stars, however, succumb to this vogue. A few years ago, Groucho Marx, in top hat and tails, chugged to a premiere at Grauman's Chinese Theatre in a $40 Model "T" Ford. This antique wheezed to a shuddering stop among Rolls Royces and collapsed. The arrival of other Hollywood celebrities was stymied until a wrecker hauled Groucho's heap away.



Howard daSilva inspects a newly imported low-slung Italian Fiat. Car has an entirely removable top made of plastic and aluminum.

AUSTRIAN ALPINE TOUR

Alpine tours test skill of drivers and the durability of automobiles and engines

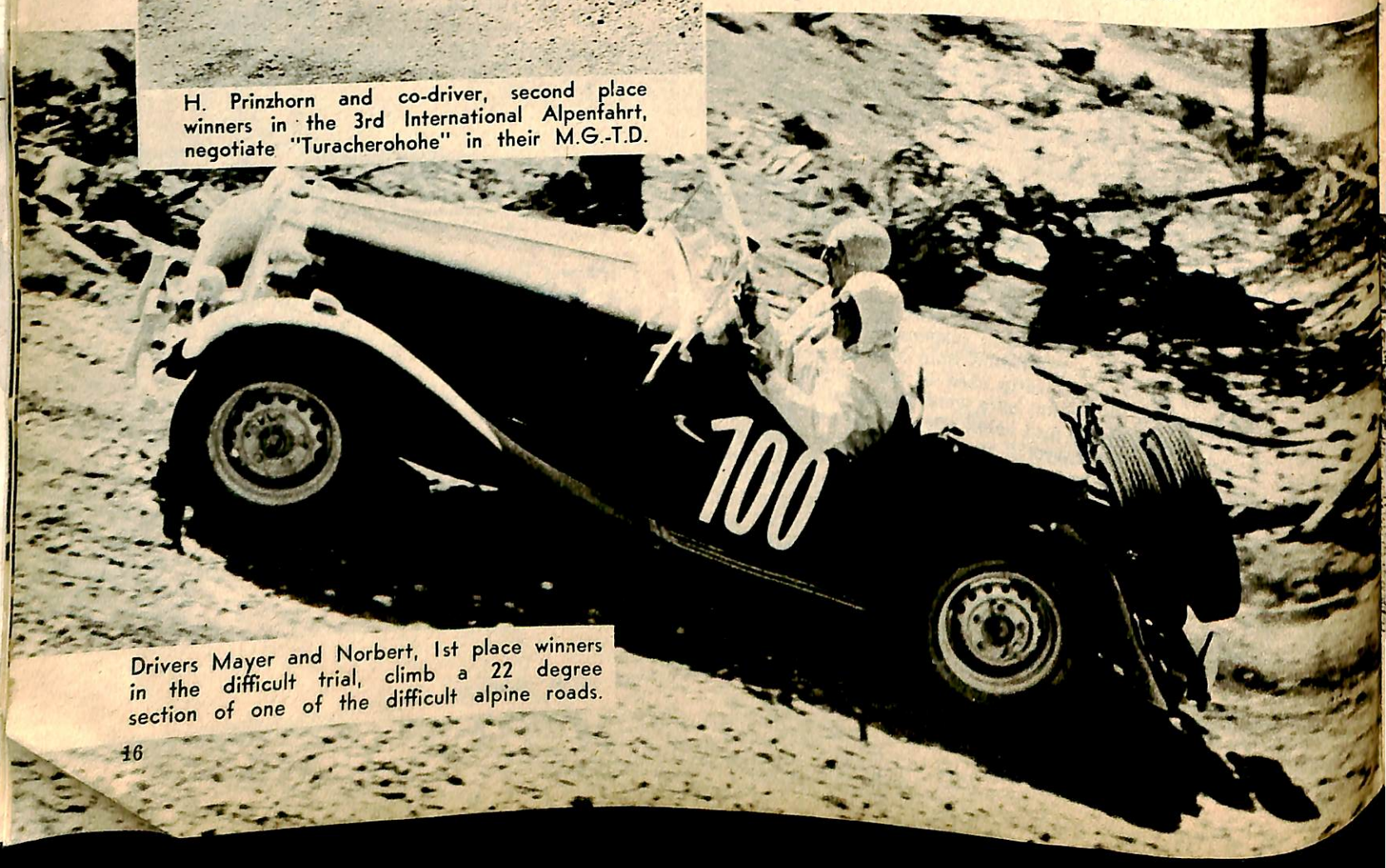
THE entire country of Austria lends itself to Alpine road racing. Century-old hard-packed dirt roads, sneaking up and down the Tyrolean Alps, makes a veritable playground for sport car owners and enthusiasts.

The Third International Alpine Tour, a road race held over a course of sharp hairpin turns, up and down a series of mountains, and particularly in the Turacherhohe area, gave European sportscar drivers a real test and a thousand thrills.

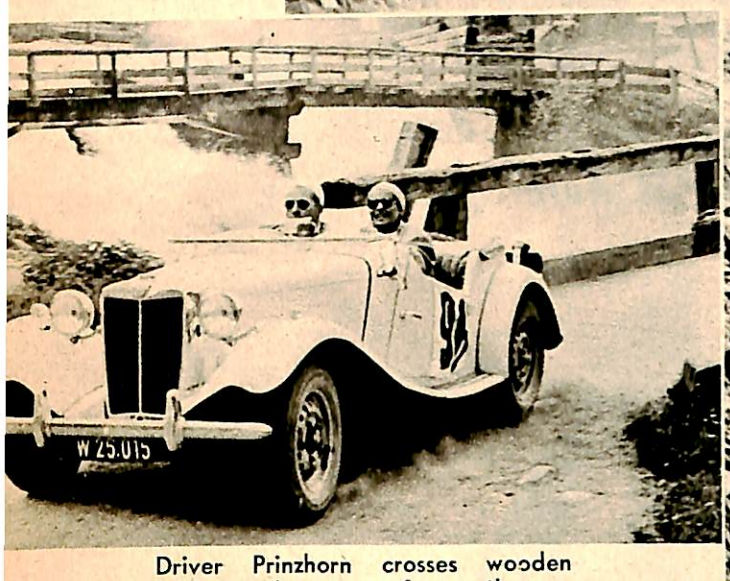
A number of classes are run concurrently. There is no restriction as to what body type to be driven. Both open and closed cars are to be found at the starting line. Most of the course is over rough secondary roads, made up of gravel, loose shale and rocks. Only the most skillful driver can expect to complete the trial without a number of setbacks, the least of which is generally a series of tire failures. On approaching higher altitudes tire pressures and carburetor adjustments must be observed.

In the 1951 event, the most outstanding performances, in the 1½ Ltr. class (1500cc) were attained by the British M.G.s and the German Porsches.

H. Prinzhorn and co-driver, second place winners in the 3rd International Alpenfahrt, negotiate "Turacherohohe" in their M.G.-T.D.



Drivers Mayer and Norbert, 1st place winners in the difficult trial, climb a 22 degree section of one of the difficult alpine roads.



Driver Prinzhorn crosses wooden bridge and prepares for another ascent along the steep alpine trek.

On mountain speed tests, G. Hala gained 3rd place award in M.G.

S. Shild finished 4th in his M.G. Here he is shown coming out of turn approaching upgrade.

MASERATI RECORD Smasher!

EXCLUSIVE!

Taruffi, driving a Ferrari, victorious in 1,933-mile Mexican road race. Complete details in March issue of Auto Sport Revue.

The lightweight, twin-cigar shaped Italian built "Tarf" has a four-cylinder Mesarati engine in one hull, driver and fuel tank are located in other hull. Top speed 187 mph.

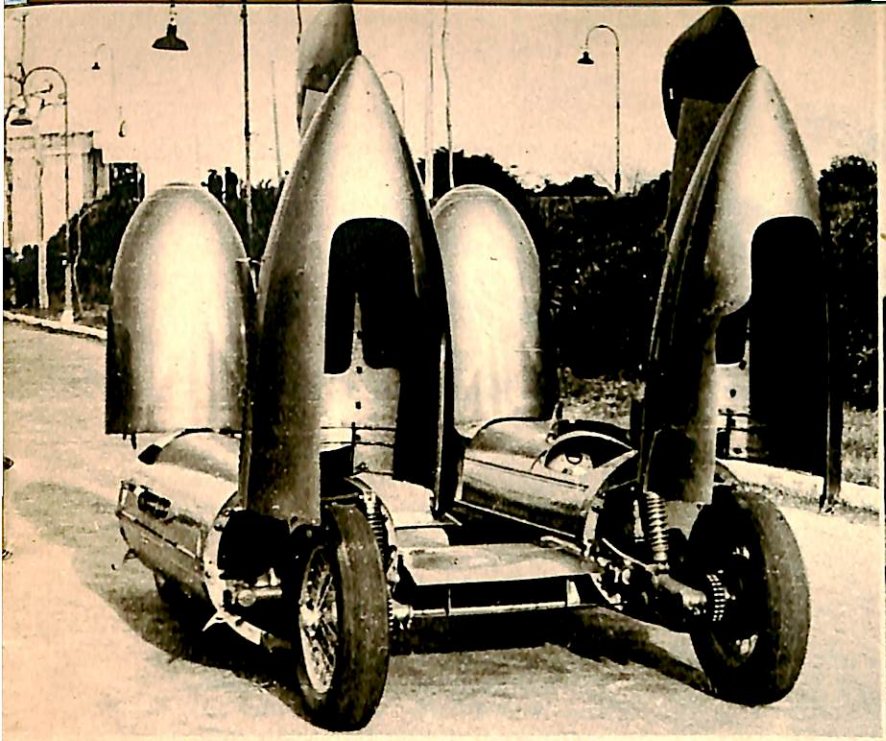
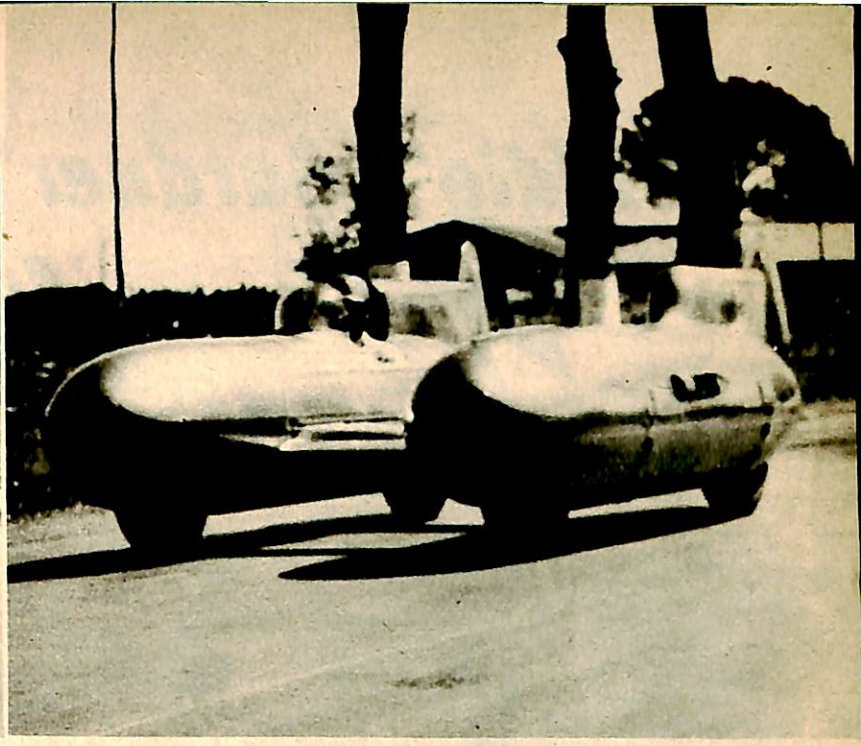


Photo reveals hinged nose and tail of each hull. Note springing and final chain drive.



Taruffi at the start of his record-breaking run in the 280 horsepower supercharged "TARF."

SPECIFICATIONS:

ENGINE:

Supercharged four-cylinder Maserati. Bore 78ccm Stroke 90ccm. Total piston displacement 1720cc. Horsepower 280. Maximum RPM 6500. Weber carburetor.

DETAILS:

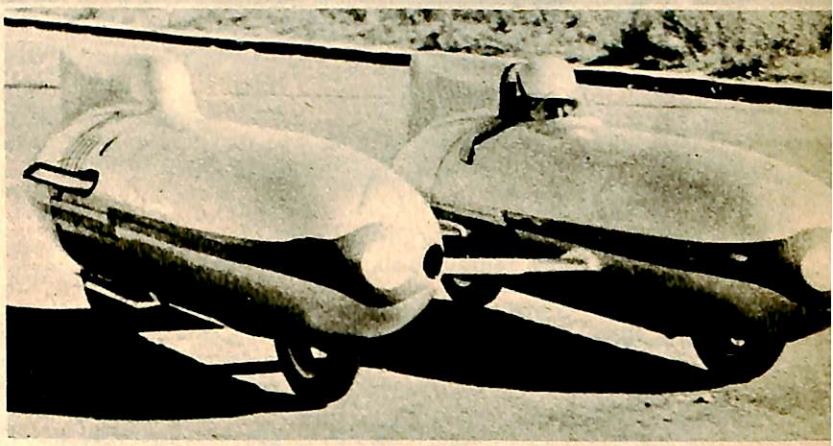
Rudge type wire wheels. Body made of duraluminum. Independently sprung wheels operated hydraulically. Mobil lubrication. Pirelli tires 5:50 x 17 front 6:00 x 18 rear.

PIERO TARUFFI is what may be termed a genuine automotive sportsman. Taruffi is more than a driver and designer of fast cars and motorcycles, he's one of the world's foremost high-speed engineers, who understands carburation, springing and streamlining as few men do.

Taruffi the sports car enthusiast, participates in European road races, and last year displayed his skill over here as a driver, by finishing and placing in the International Mexican road race. (Carrera Panamericana).

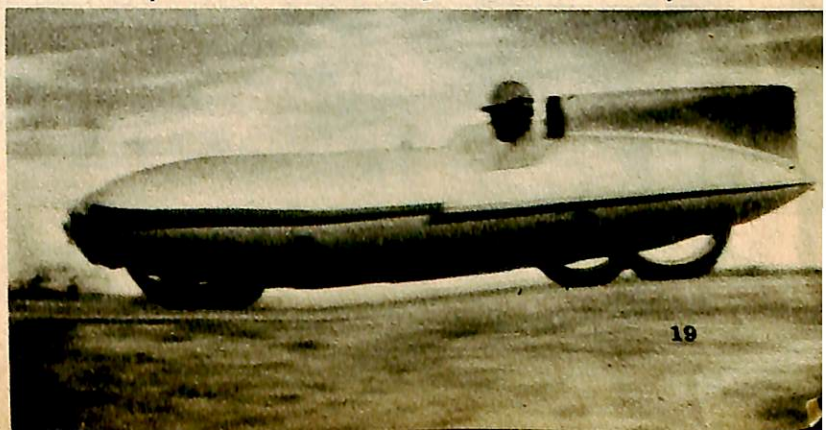
Taruffi as a race car driver holds numerous circuit records in England, Europe, South America and South Africa. His colorful racing career goes back to 1930 when he won the Tunisi-Tripoli race, driving an Alfa Romeo. In 1935 he won the famous Italian 1000 Mile Race (Mille Miglia) driving a 1100cc Maserati. In 1938, he was first at Brooklands with a Bugatti. In 1938 he again won the Mille Miglia in the 1100cc class, this time with a Fiat. More recently he has been driving Cisitalias and Ferraris to first place in International competition.

Taruffi the motorcyclist started back in 1928 racing English AJS models, later Italian Guzzis and British Nortons. His most outstanding motorcycle accomplishments include records established with the twin-fuselage "TARF" powered with a 500cc Gilera motorcycle engine with which he attained speeds of 222.085 Km. p.h.



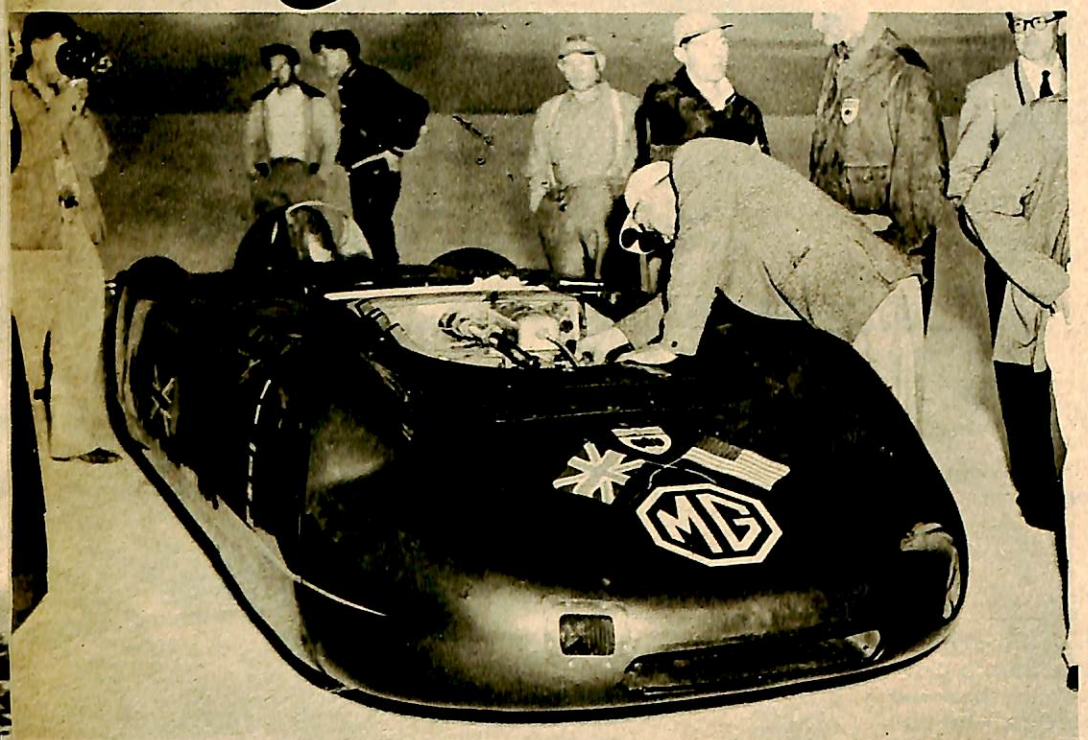
Three-quarter front view of "Tarf" showing air ducts in nose and exhaust from engine.

Below, Taruffi at the wheel of the Maserati powered "Tarf" during the record attempt.



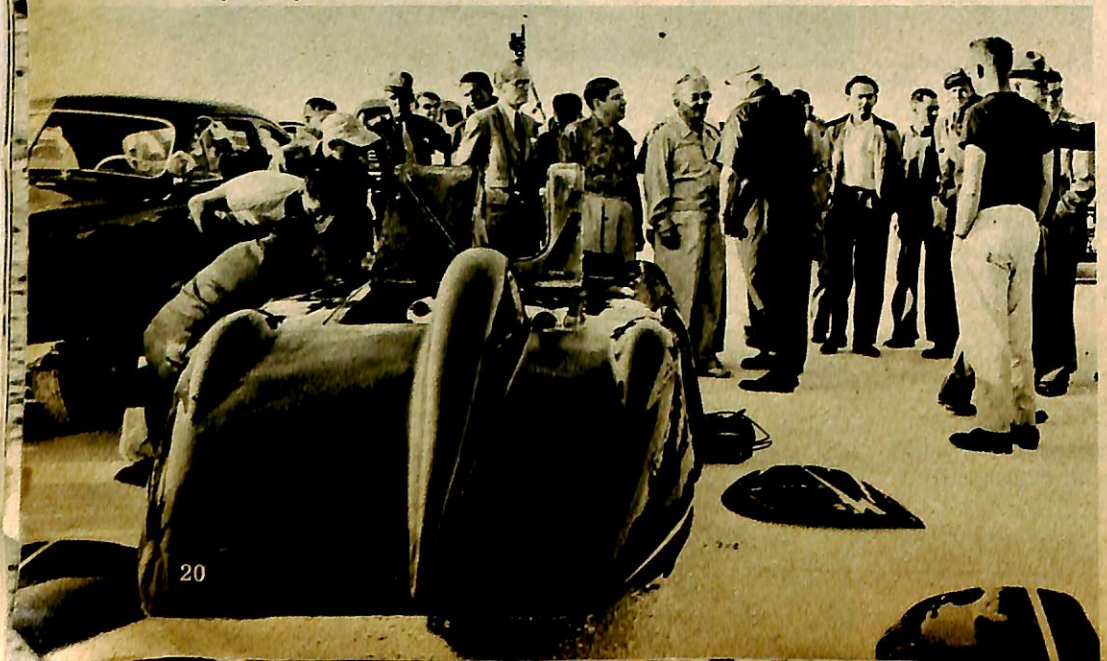
"Goldie" Gardner's Bonneville Bullet

By Emerson Cheney



Last minute carburetor adjustment is made at dawn on the famous salt flats at Bonneville.

"Goldie" Gardner set to attack established record. (Below) Pit crew assemble streamlined racer.



LT. COL. GOLDIE GARDNER, already the holder of 22 International Class Records, carved out new achievements for himself and his MG Special on the salt flats at Bonneville, Utah in August, 1951.

Using a *standard MG TD engine*, Gardner set 16 new speed records—six International Class F Records and ten American Class F Records. The record runs were under the sponsorship of the American Automobile Association. The MG Special achieved an average speed of 139.28 m.p.h. for one hour, breaking the whole series of records from 25 kilometers through the 200 kilometers mark.

A standard 4-cylinder, O.H.V., 1250cc "T.D." engine was used in the basically unchanged Goldie Gardner racer, for the attempts on Class F one hour and flying mile records at Utah. Other International, American National and Salt Lake records were also shattered!

The chassis frame and axles are standard M.G. and it is interesting to note that the supercharger, engine unit and drive shaft are offset across the chassis at an angle of 6° to accommodate the six-foot-plus of Major Gardner who will sit well down between the chassis side and the drive shaft. The hammock shaped seat is set at an angle of 45° in order to assist in the reduction in frontal area to the small figure of eleven square feet.

HALF eliptic springs are used at the front and rear with chassis underslung at the back. The springs are bound and upward movement is limited to 1 inch at the front and 2 inches at the rear. Large friction type shock absorbers control spring movement.

Brakes operate on the rear wheels only and this has resulted in a great saving in unsprung weight at the front. To assist in this respect the wheels and tires are as light as is possible consistent with safety. Tire sizes are 4.75 in. x 19 in. on the rear. For the short records very light Dunlop tires, with a minimum of cords and approximately 3mm. of tread rubber, were used.

Steering is by a center swing link and double track rods whilst the steering wheel, which is oblong in shape, is quickly detachable.

The rear axle is made from aluminum castings and steel tubes and several different sets of gears, to give various ratios. For the flying mile record a gear ration of 2.8 to 1 was used. All gears are straight cut bevels and the drive shaft is the standard Hardy Spicer type.

THE instrument panel is mounted on a tubular structure secured rigidly to the chassis frame and the gear shift lever is modified to bring it back within reach of the driver.

The minimum of fuel, transferred to the carburetors by air pressure, was carried for the short record attemt. For the hour run, two specially constructed tanks each holding 11 gallons was employed.

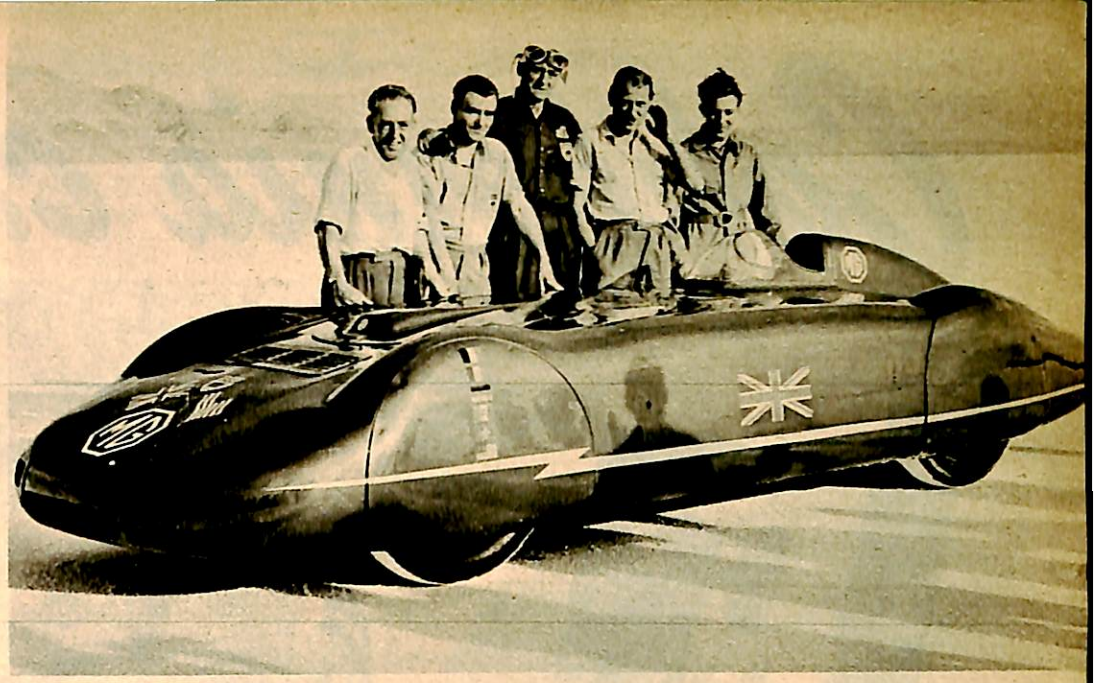
The honeycomb type radiator is mounted low down at the front of the chassis at an angle of 27° and well ahead of the front wheels. The header tank is located just behind the cylinder head and the water is conducted by means of large diameter duraluminum pipes. There is a valve in the header tank to maintain the water system under a pressure of 2 lbs. per sq. in.

A SHORROCKS blower is mounted just behind the radiator and is driven by means of a short shaft from the front end of the crankshaft. In order to improve the air flow to the blower, twin S.U. carburetors with a choke diameter of 2 3/16" each are fitted, this arrangement is more satisfactory than the use of one larger instrument due to the better porting that can be obtained. Air reaches the carburetors from a forward facing tube that projects well into the air stream in order to prevent any restriction of the air flow due to turbulence at this point.

Two engines were used at Utah, both are basically the standard T.D. unit although special large overlap camshafts are used to ensure adequate cooling of the valves with the high boost pressures that were used. A Lucas magneto replaced the original coil installation as no other electrical equipment—and therefore no battery was carried on the car. Compression ratio is 7.25 to 1 and 92 B.H.P. was developed at 5400 r.p.m.

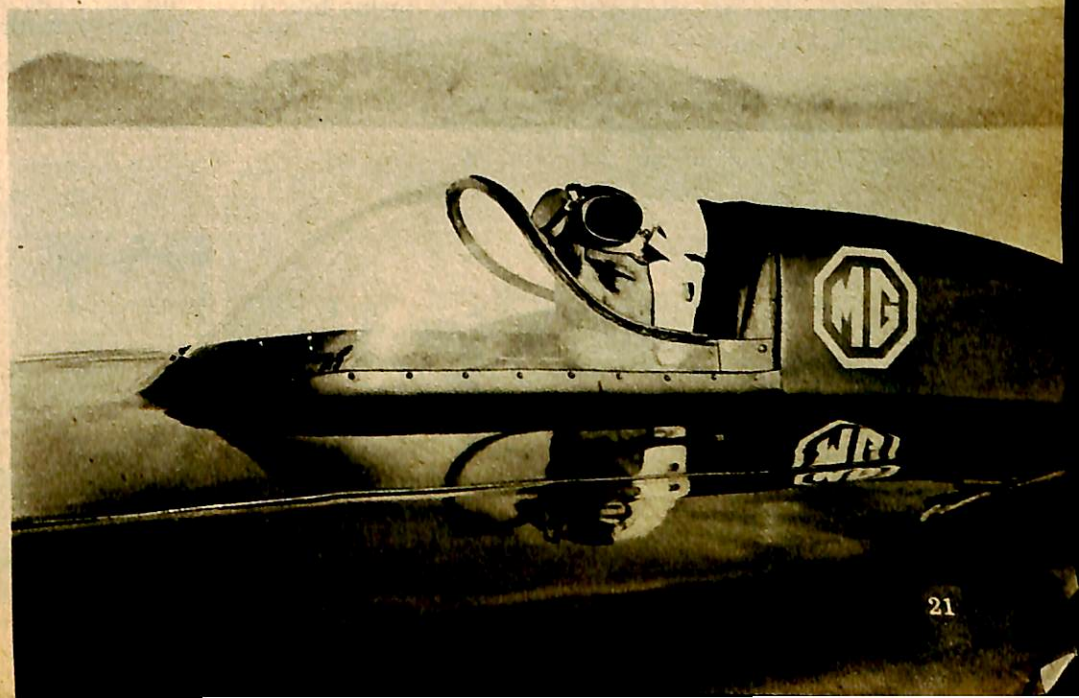
IT is interesting to note that although Utah is an excellent spot for such record attempts in that it

(*Continued on page 47*)

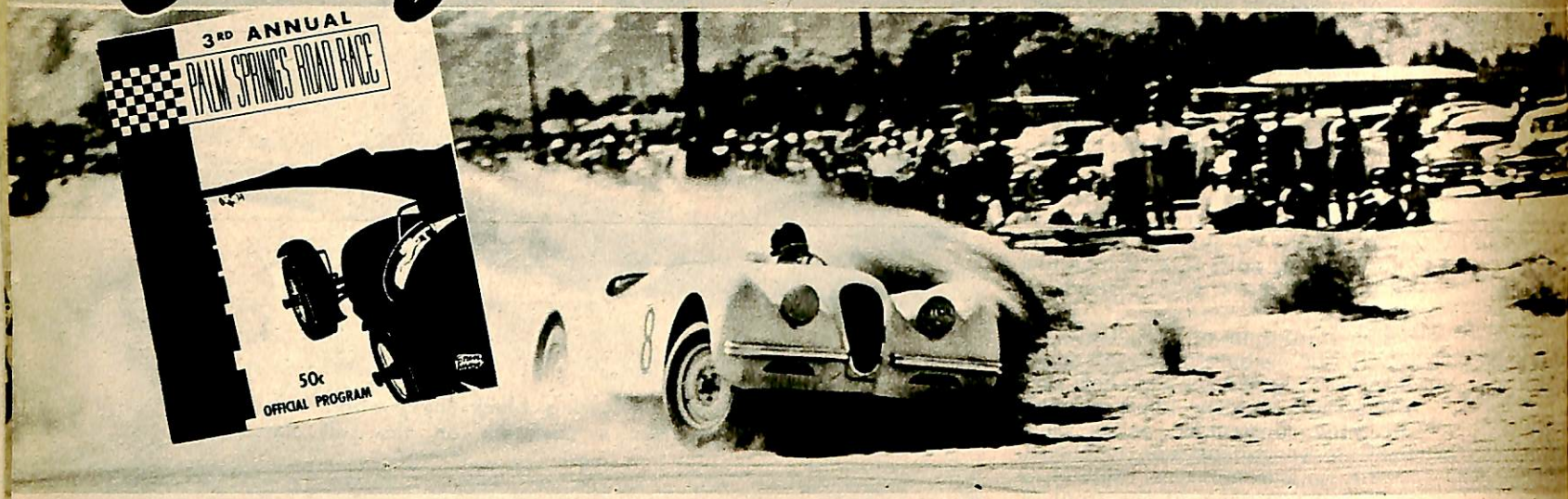


"Goldie" (wearing black shirt) with his pit crew after a trial run on the salt flats.

Specially streamlined MG gets pushed to a start. (Below) Famous driver just before record attempt.



California CAPERS



Richard Jackson goes into a four-wheel skid. Dick captured 2nd place in the 23 mile stock production class in his fast Jaguar XK-120.

By ANNABELLE FITZMAURICE

PALM SPRINGS, CALIFORNIA, the scene of the 3rd annual California Sports Car get-together saw over 7000 sportscar enthusiasts cheer Don Parkinson and his slick Jaguar XK-120 on to victory in the 150 mile Palm Springs Trophy Race.

Don Parkinson of Los Angeles covered the tough 65 lap event in 2 hours 43 minutes and 3 seconds. Close behind the winner, driving exceedingly skillfully, was Bill Stroppe in a Ford V-8 powered British M.G.

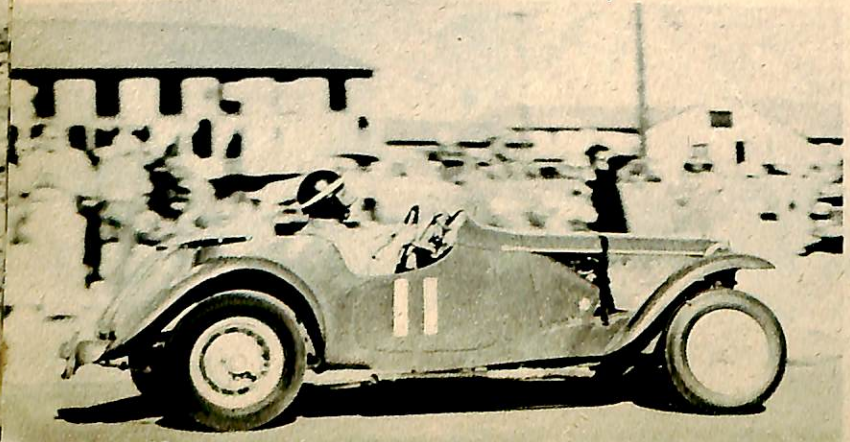
Third spot went to popular Phil Hill, piloting one of the specially modified Jaguar XK-120s, that was first seen at Elkhart Lake. This car, resembling the stock XK-120, has no luggage compartment, an extra large quick-fill competition type fuel cap and a much lightened frame and body. It is owned by Charles Hornburg. In fourth place was Robert Path driving Richard Seifried's smart-looking Mercury Special.

In the 103 mile Desert Trophy Race, Roger Barlow streaked across the finish line to chalk up his fourth straight win for cars up to 1500cc displacement. Because both the Palm Springs Trophy Race and the Desert Trophy Race were run concurrently, Roger Barlow stuck to his guns, and kept his beautiful Simca speeding around the course for the full distance, 149.5 miles, winding up in Fifth place in the main event.

Johnny von Neumann, a perennial favorite amongst the M.G. owners, ran out of fuel and into difficulties on the 57th lap. Johnny in his red M.G. was running in second place behind Roger Barlow's Simca right up to the 45th lap, which marked the finish of the Desert Trophy event. Both drivers sped up to compete in the 150 mile event, and Johnny's M.G. pulled away from Barlow's Simca, taking command of first spot, but it was only until the 57th lap, the M.G. needed gas!

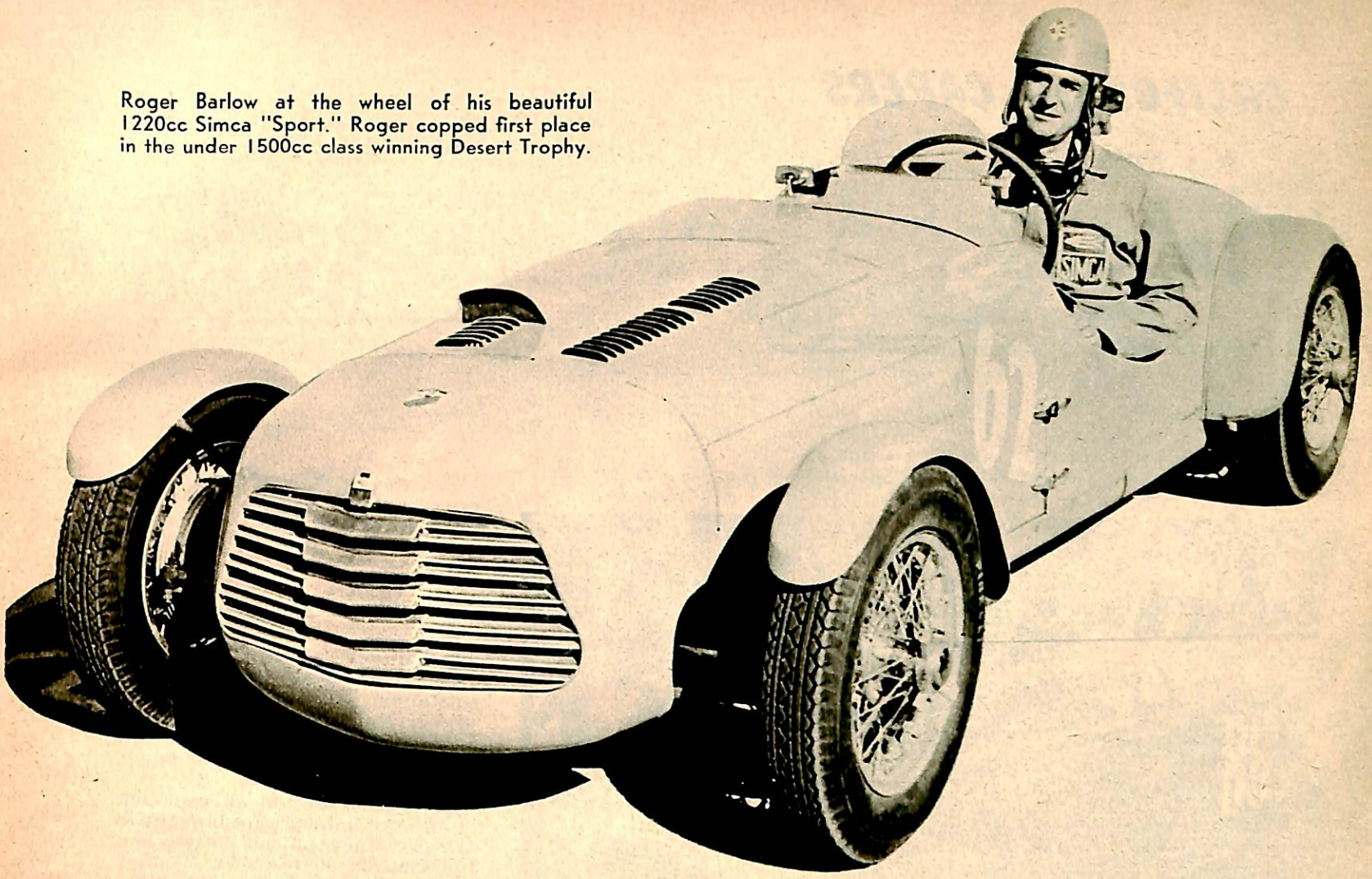
The numerous Cadillac-Allard successes on the West coast in recent months, placed Michael Graham right up in front for the big event. The Cad-Allard was a heavy favorite amongst the crowd after the recent

Johnny von Neumann and his carefully tuned, and expertly prepared MG-TD ran out of gas on 57th lap.



Spectators car, a Muntz "Jet" attracted attention, but did not compete in any of the events.

Roger Barlow at the wheel of his beautiful 1220cc Simca "Sport." Roger copped first place in the under 1500cc class winning Desert Trophy.



Reno Victory. Graham broke an axle early in the ninth lap and wound up with the "best sportsmanship" award.

In a race specifically organized for owners and drivers of stock production sports cars up to 1500cc, Bill Kerrigan drove Monroe Gretske's Singer SB-1500 to victory. The distance was ten laps, (23 miles) Second in this race was Robert Menafee in an M.G. and third was William Quinn also in a Singer.

There was also an event for stock production sports cars with a piston displacement from 1501cc to 4000cc. Distance was ten laps, (23 miles) All first three places going to Jaguar XK-120s, First, was Sherwood Johnston, Second, Richard Jackson and Third, Irving Robbins.

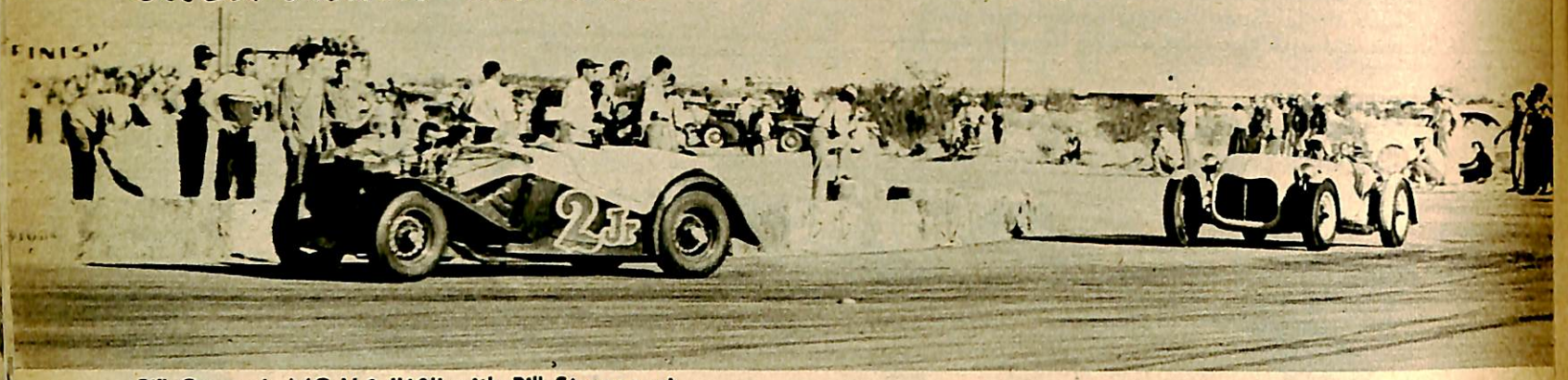
Winner Parkinson, who went home with a car-full of trophies and awards was never once in danger after the ninth lap. He drive steady and in an expert-like manner, moving up from fourth place to second in the fifth lap. Graham, driving the Cadillac-Allard, was leading when he was forced out with mechanical difficulties, at this time Parkinson took over, never relinquishing his lead for 56 laps!

Hastings Harcourt sixth place winner in the 150 mile

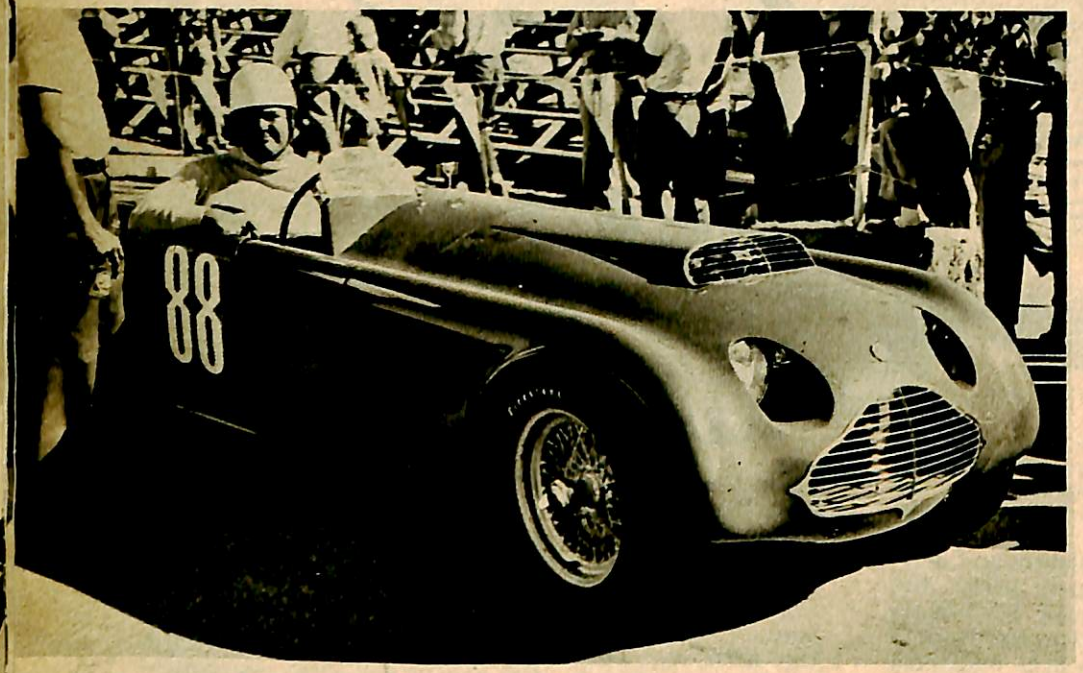
Don Parkinson at the wheel of the special Jaguar, followed by the California - built Mercury Special.

Phil Hill in the cockpit of Chas. Hornburg Jr.'s Jaguar XK-120 "Silverstone." Phil was 3rd in big race.

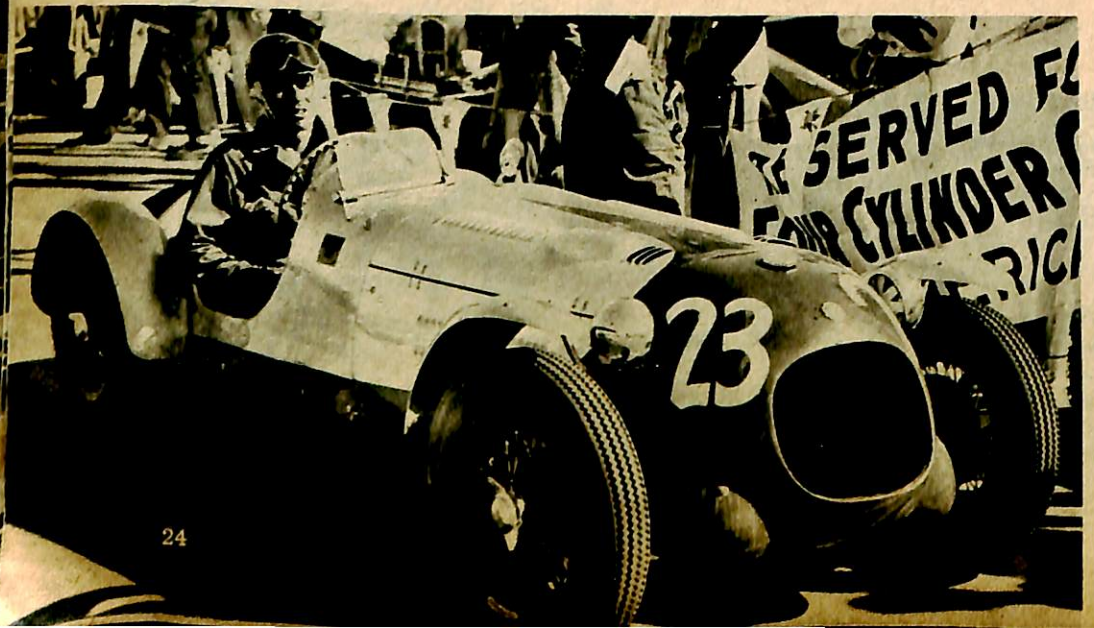
CALIFORNIA CAPERS



Bill Cramer's MG-V-8 "60" with Bill Stroppe at the wheel, followed by the Mercury "Special."



Two formidable cars. No. 88, Emil Deidt designed supercharged MG with Jack McAfee at wheel. No. 23 TC model with owner Alfred Coppel at helm.



grind in his Jaguar XK-120, was given a special award as the most outstanding novice jockey. (Last year he started, but after a number of miles, handed the wheel of his car over to visiting Swiss champion, Peter Detweiller!).

The race ended in an explosion of cheers, winners were brought to "victory lane", official starter and Indianapolis driver Joel Thorne, World-famous champion, Ralph de-Palma and an attractive model were all part of the victory show for photographers and newsmen—sports car racing was going "big time" at Palm Springs.

To quote the winner of the 1500cc race, Roger Barlow: "The heat, dust, continuous cornering, and so forth, made the hundred and fifty miles seem like 300, and I know that every driver who completed the course had a sense of real accomplishment. Palm Springs is, with the possible exception of Watkins Glen, N. Y., the most difficult and demanding road circuit in America. I can heartily recommend it to anyone who wants plenty of excitement and the opportunity to really learn to drive a sports car."

The California Sports Car Club and the four assisting clubs, The Four Cylinder Club of America, The Arrowhead Foreign Car Club, The Long Beach MG Club and the San Beach Sports Car Club deserve a word of praise for the excellent manner in which the entire event was staged. There were no accidents, crowd control was good and spectators interviewed afterwards had only favorable comments for this reporter.

Event Number One:

Ten laps—23 miles—Stock production sports cars up to 1500 c.c.
1. Bill Kerrigan, Singer.
2. Bob Menafee, M.G.
3. Bill Quinn, Singer.

Event Number Two:

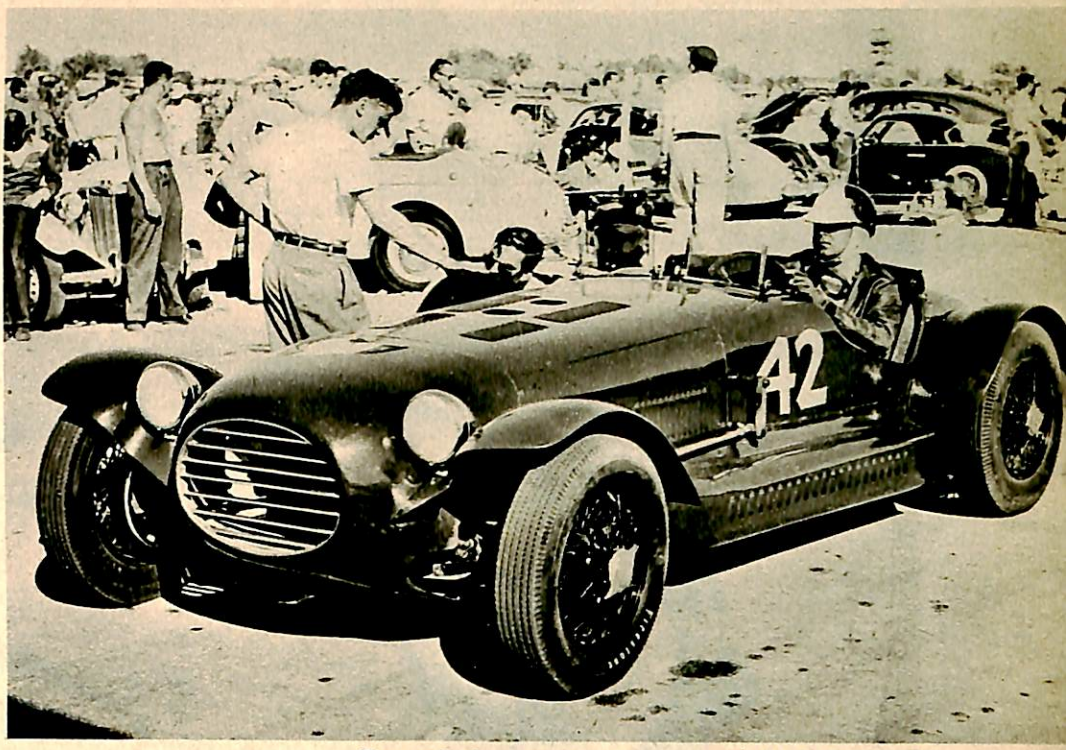
Ten Laps—23 miles—Stock Production Sports Cars 1501 to 4000 c.c.
1. Sherwood Johnston, XK 120.
2. Richard Jackson, XK 120.
3. Irving Robbins, XK 120.

Event Number Three:

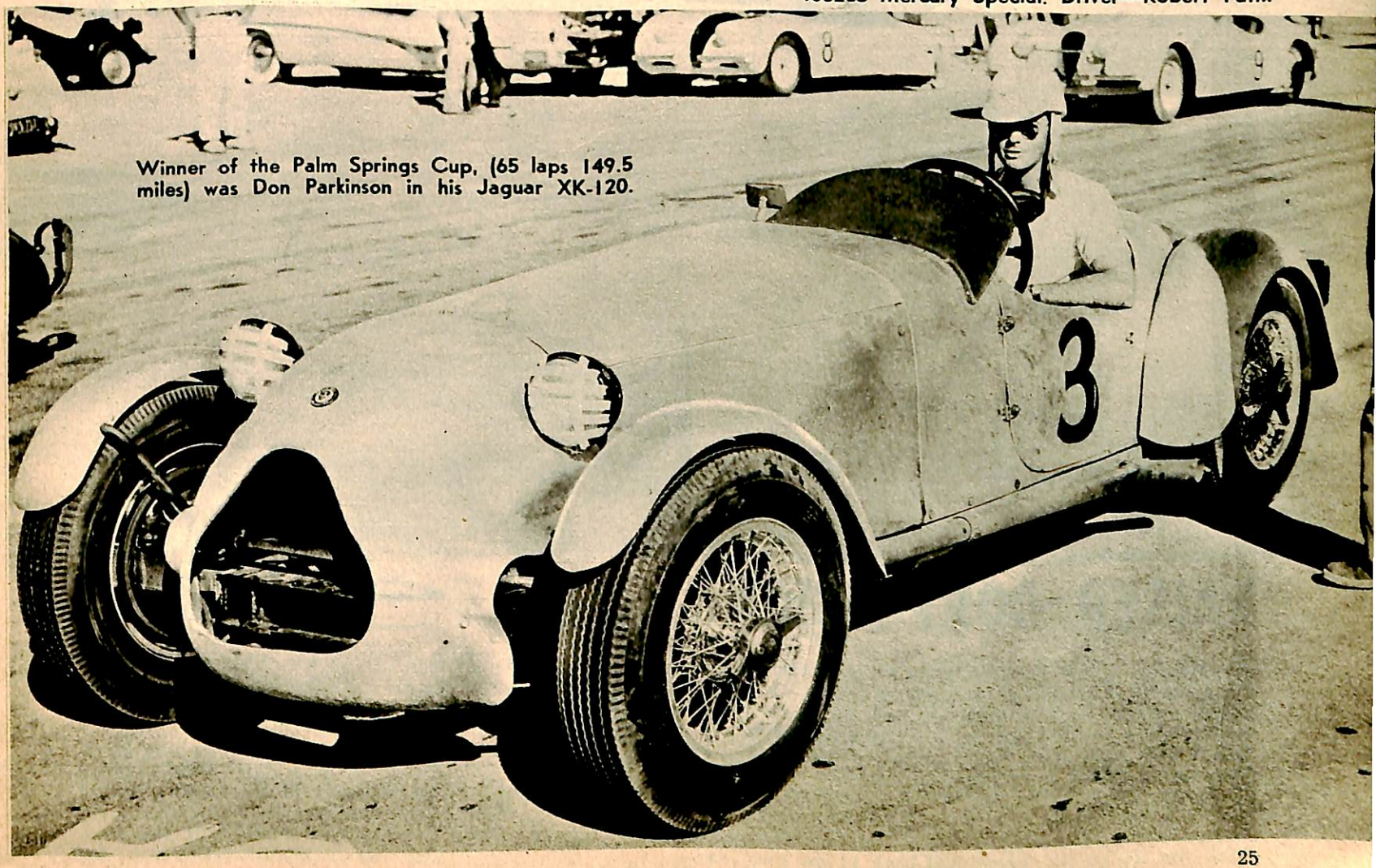
The Desert Trophy—45 laps—103.5 miles. Unsupercharged sports cars up to 1500 cc, and to supercharged sports cars up to 1000 cc.
1. Roger Barlow, Simca.
2. John Von Neumann, MG.
3. Randy MacDougall, MG.

Event Number Four:

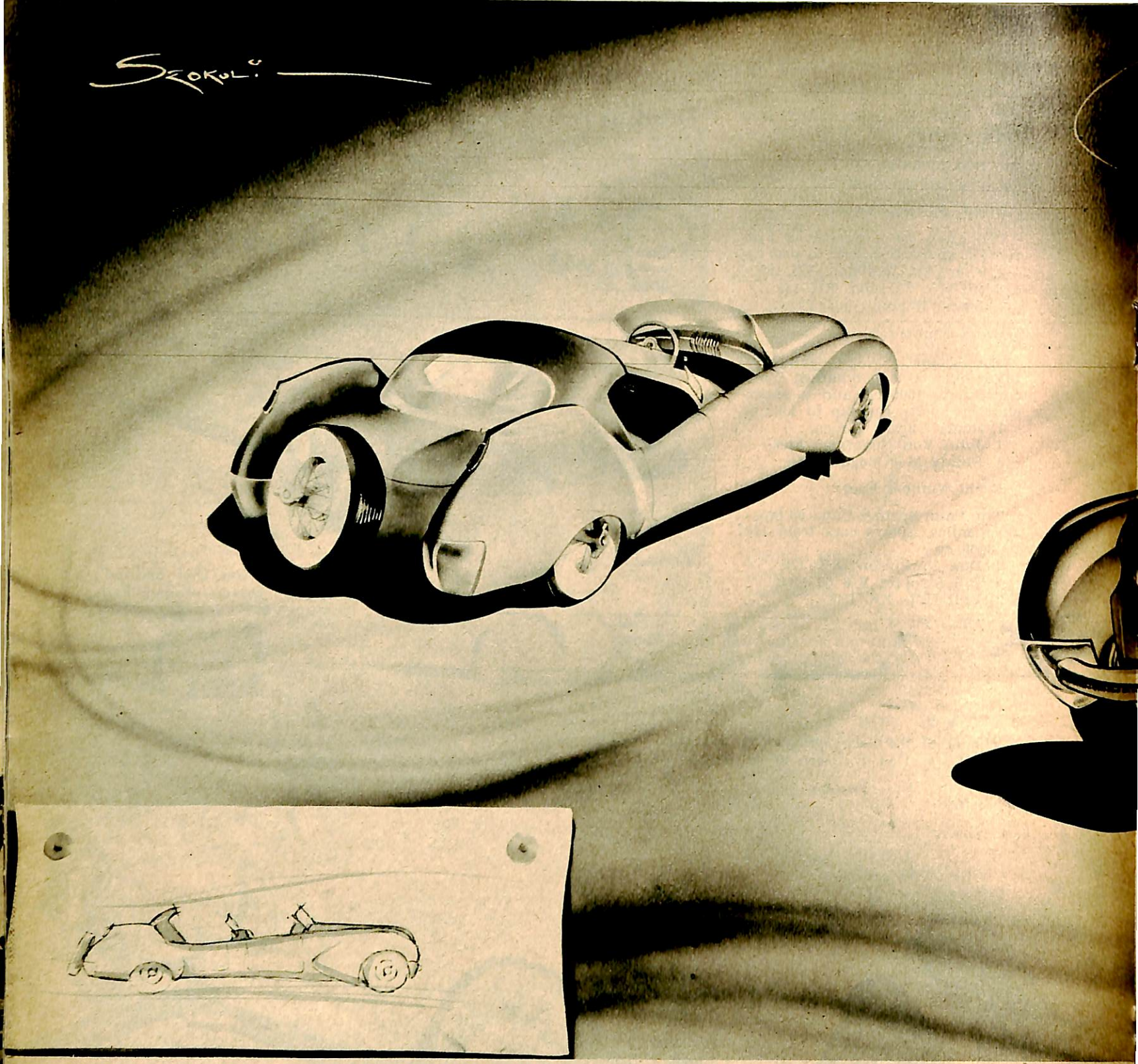
The Palm Springs Cup—65 laps—149.5 miles. Sports cars from 1501 to 8000 cc.
1. Don Parkinson, XK 120.
2. Bill Stroppe, V-8 60 MG.
3. Phil Hill—XK 120.



One of the smartest cars, was Dick Seifried's 4852cc Mercury Special. Driver—Robert Path.



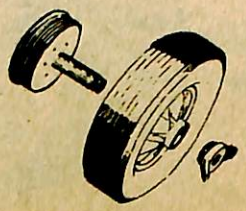
Winner of the Palm Springs Cup, (65 laps 149.5 miles) was Don Parkinson in his Jaguar XK-120.



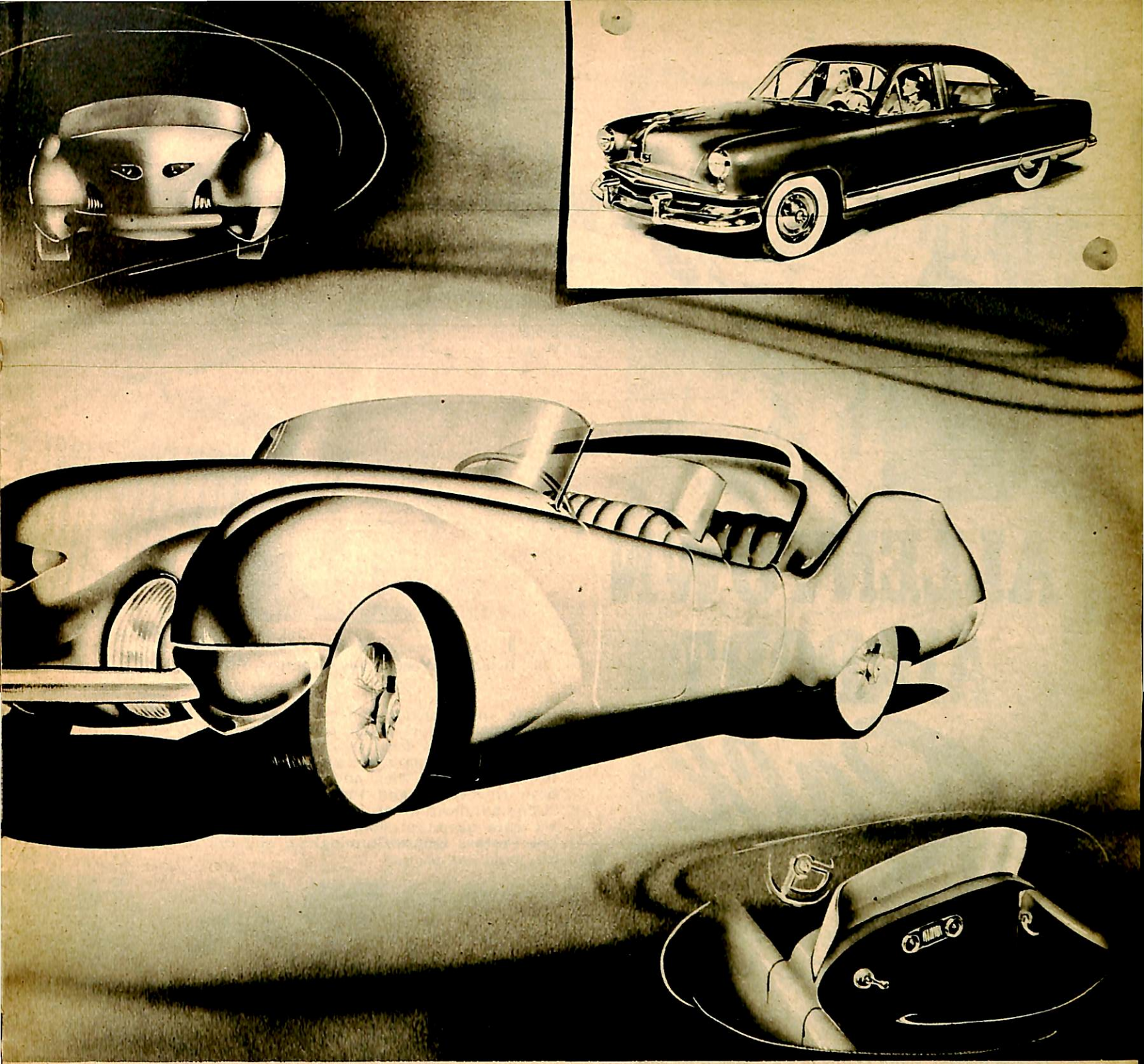
KAISER CONVERSION . . . by Szokoli

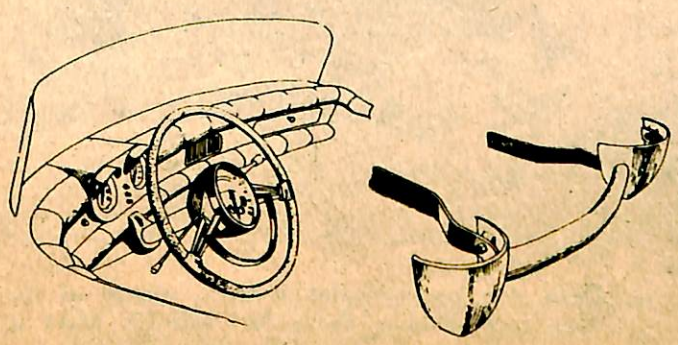
CUSTOM "Coupe de Ville' built on standard Kaiser chassis. Custom car enthusiast and well known artist, Joseph Szokoli, gives readers of "Auto Sport Review" his version of what a re-designed Kaiser would look like after the standard chrome grille is removed, fenders re-formed and leaded.

Szokoli removes the top of the Kaiser but leaves the rear portion on to which a canvas top, with aluminum frame can be attached. This snaps in place from the top of the windshield back to the rear portion of the top, folds conveniently in an accordian manner, and when not in use is tucked away in the spacious luggage compartment.



Tubular front bumper has large flat ends, shaped to conform with the contours of the front fenders. Rear fenders have contour conforming bumperettes of chromed steel for maximum protection. Air





to the radiator is channeled via two air ducts on each side of the hood between the fenders and the nose of the car.

Headlights are set inside the nose of the car and swivel in the same direction as the front wheels. Both the front and rear windshields are of tinted, curved glass and are adjustable as to height. Can be lowered out of sight. Steering wheel is of cork, competition type as manufactured by Nardi-Denise. Steering wheel rim supports are flexible, reducing fatigue on long trips. Standard Kaiser rear view window is removed, and enlarged one piece curved, tinted glass is installed.

(Continued on page 45)

B. Jones, winner of the J. S. Inskip Award gets kissed by Wendy Waye, chosen "Miss Sports Car."

ALLENTOWN AIRPORT *Race*

M.G. Car Club Host to 5000 Eager Sports Car Enthusiasts

ALLENTOWN saw its first Airport Race on Saturday, October 20th, when the M.G. Car Club sponsored a full day of racing and excitement. Over 5,000 spectators, a great many of whom were sports car owners, lined up their fancy foreign jobs to witness the running of the 16 mile "Convair" Trophy, the 32 mile J. S. Inskip Trophy and the 95 mile Miller Handicap Trophy.

The course on the Convair Airport included a number of sharp bends, short straight-aways and one long straight that permitted the more powerful cars to attain speeds up to 120 M.P.H.

It should be mentioned that in running an Airport Race, such as was held at Allentown, the various owners of sports cars are given the opportunity of displaying a degree of skill. Because the course is away from disinterested individuals, in an area specifically set aside for high speed driving and cornering, it is a safe and sane location at which to participate in the activities for which sports cars are originally purchased. It is from practice at such events, that drivers will graduate to a point where their participation at Watkins Glen and Elkhart Lake is safe for both themselves and the spectator-enthusiast.

The handicap event, strange as it may seem, placed six cars ahead of Johnny Fitch, who was driving the Ferrari. Briggs Cunningham and Bill Spear, also

Dave Ash congratulates Ehrman, winner of the main race. Ehrman drove fast MG-TD, Mark II.

in Ferraris, finished 11th and 12th in this event. Winner was G. O. Ehrman in a very fast and reliable MG-TD Mark II, covering the 94.8 miles, (sixty laps) in 110.32.

All told over 90 entries were accepted by the M.G. car Club, fifty of which were lined up in the two-sectioned C. D. Miller Memorial Trophy race of 94.8 miles.

Complete results of all three events are as follows:

CONVAIR TROPHY — 10 laps 1.58 mi. — 15.8 mi.

(1) No. 16 M. Coler	MG TD	19:06.75
(2) No. 24 N. Ehrman	MG TD	19:35.25
(3) No. 12 A. Ash	MG TD	20:05.25
(4) No. 77 A. Hanvsocky	MG TD	20:43.50

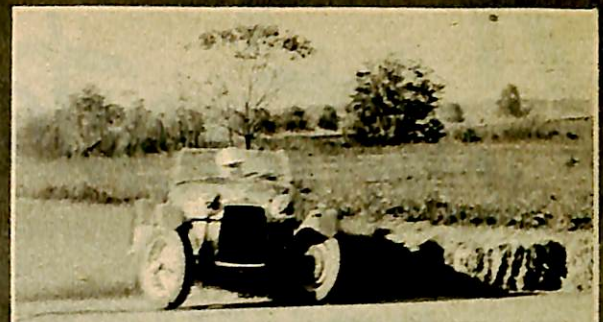
J. S. INSKIP, INC. TROPHY — 20 laps 1.58 mi. — 31.6 mi.

(1) No. 89 B. Jones	MG TD	36:30.0
(2) No. 16 M. Carroll	MG TD	36:32.0
(3) No. 29 W. Lloyd	MG TD	36:42.0
(4) No. 3 W. Zabriskie	MG TD	36:51.0
(5) No. 31 M. Schulzo	MG TD	37:46.0
(6) No. 11 R. Meyer	MG TD	Flagged

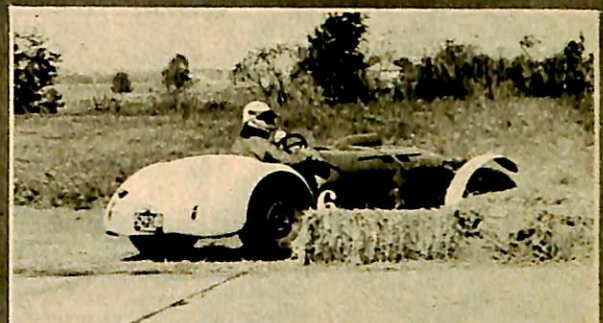
MILLER HANDICAP TROPHY 60 laps 94.8 mi.

(1) No. 24 G. O. Ehrman	MG TD Mark II	110:32
(2) No. 27 F. Koster	H. R. G.	110:41
(3) No. 57 R. Fisher	MG TD Mark II	110:46
(4) No. 68 A. Cummings	MG TC (s)	112:49
(5) No. 37 J. Stiles	MG TC	114:20
(6) No. 66 P. Iselin	H. R. G.	114:25
(7) No. 65 J. Fitch	Ferrari	115:48
	Act. elapsed time:	103:50
(8) No. 88 B. Bailey	MG TD	116:17
(9) No. 53 G. Sanderson	Crosley	116:43
(10) No. 95 W. Hansgen	XK-120	117:13
	Act. elapsed time:	105:15
(11) No. 42 B. Cunningham	Ferrari	117:28
	Act. elapsed time:	106:30
(12) No. 39 W. Spear	Ferrari	117:41
	Act. elapsed time:	106:43

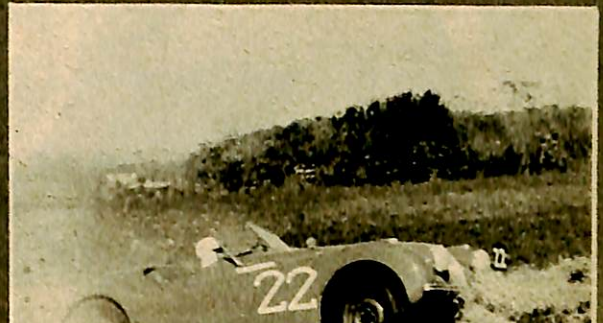
J. Fitch, driving the Ferrari, was 1st to get checkered flag. "Alf" Momo, mechanic with him.



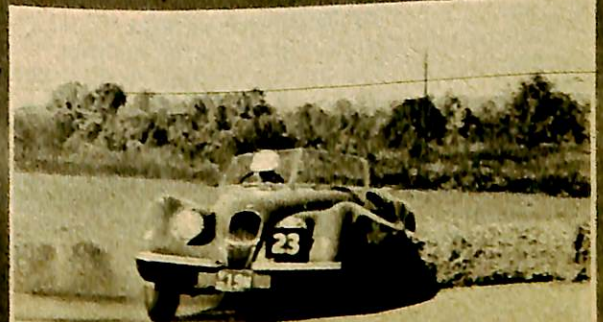
Offy-powered HRG driven by P. Iselin gets back on track.



Bob Wilder (Ardun-Ford-Allard) backs up thru the hay bales.

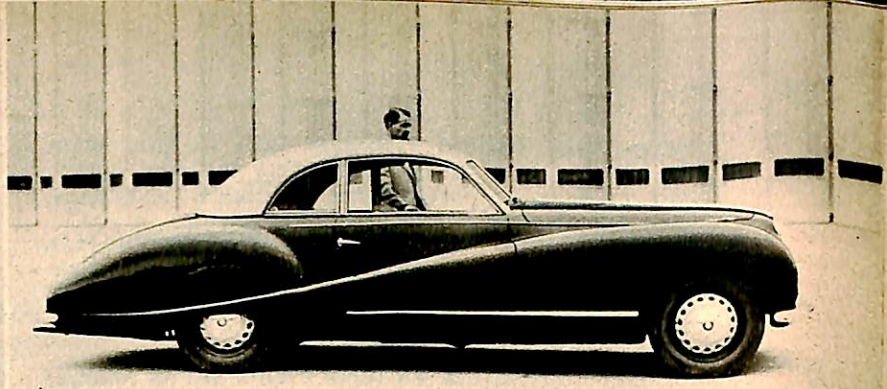


V. A. Rogers experienced lots of difficulty riding hay bales.

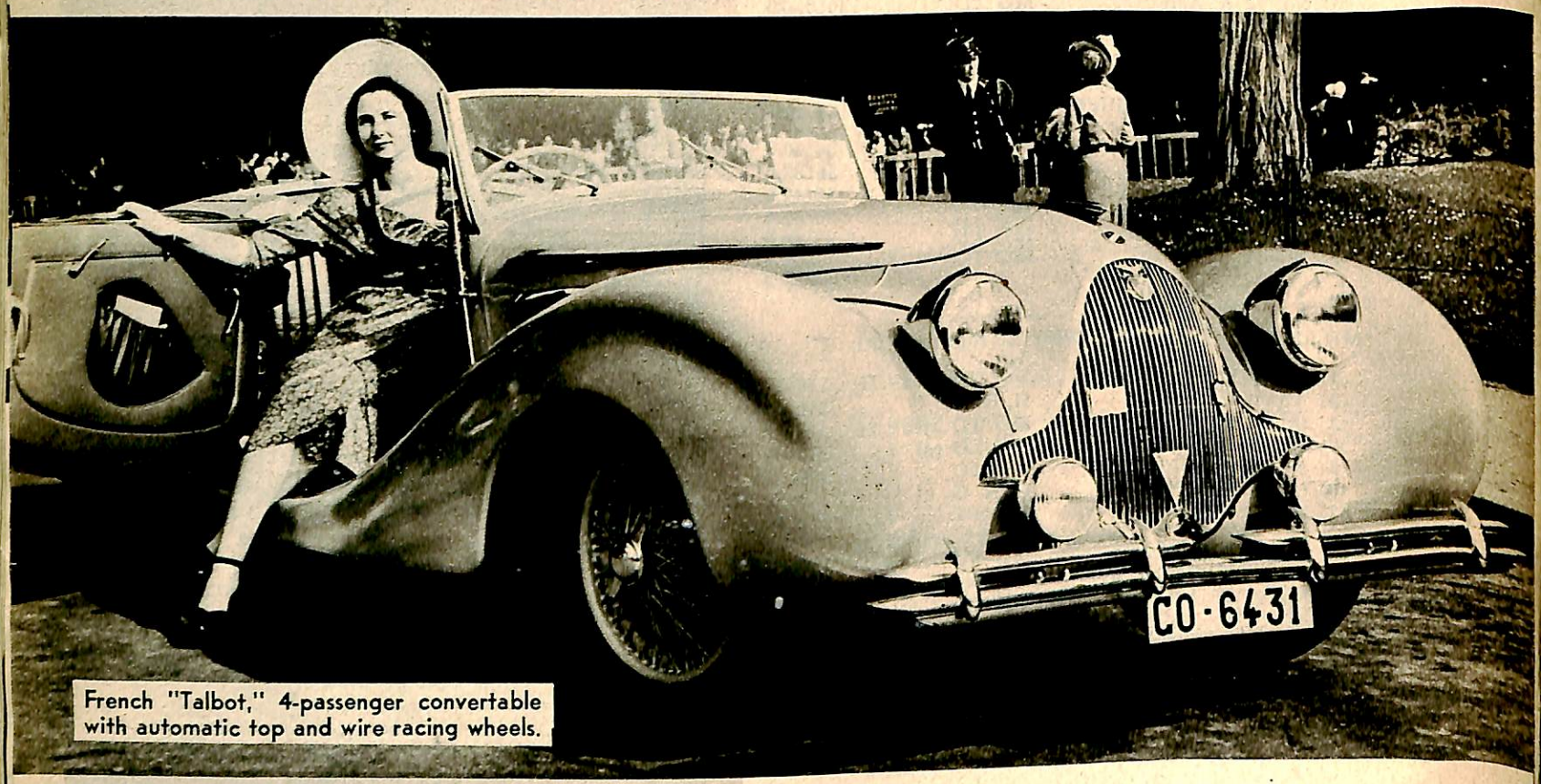


Chas. M. Schott took his Jaguar thru hay with determination.

Continental COACHWORK

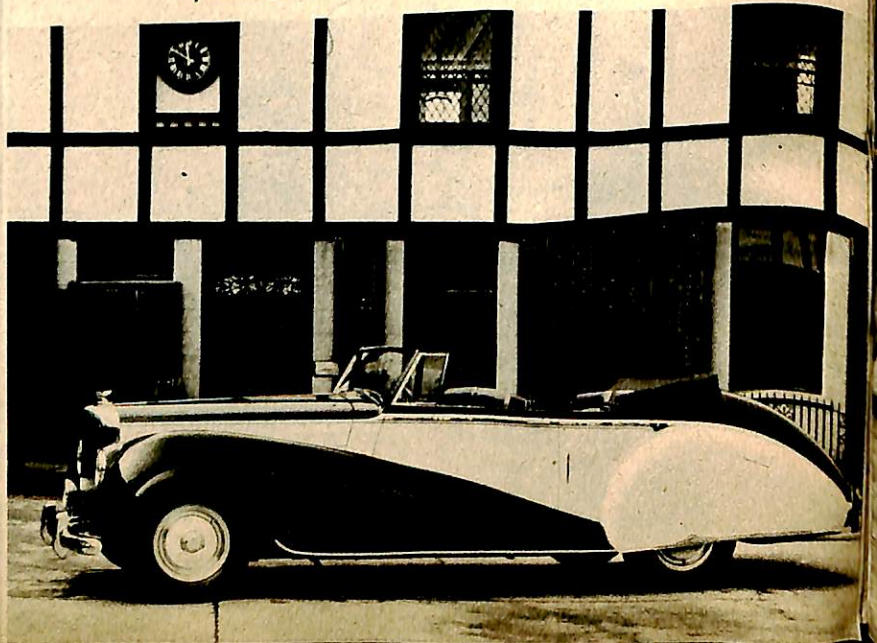


2-Litre British "Bristol" 4-5 passenger hard-top. Swiss coachwork by Beutler.



French "Talbot," 4-passenger convertable with automatic top and wire racing wheels.

English "Bentley" Mark VI drop-head Coupe. 5-passenger model coachwork by Park Ward.



WE MAY lead the world in the manufacture of cars because of our mass-production facilities. When it comes to style and originality of design, it's an accepted fact that European body builders have out-distanced Detroit.

A great number of European cars are custom-built, and designed by firms whose staffs include, not only men who design automobile bodies, but experienced engineers, and experts on aerodynamics.

No one can deny that French, Italian as well as German and English bodies on standard Delahaye, Bugatti, Alfa Romeo, Porsche and Bristol chassis are ten years ahead of American body styles manufactured en masse, in lots of one hundred thousand.

Custom-styling is not limited to large, expensive European models. Both in France and Italy, custom coachwork, on smaller, and less expensive chassis is rapidly gaining in favor among the average car owners. Here in the U. S. "customizing" a stock car is still in the "hobby" stage.

85Horsepower "Bristol" resembles German BMW. Car is only 5' high Comp. Ratio 7.5:1.

"Delahaye"—French convertable has radiator nose resembling Italian Alfa and wire wheels.

Dutch "Gatso" sport coupe features single "cyclops" eye and transparent plastic top.

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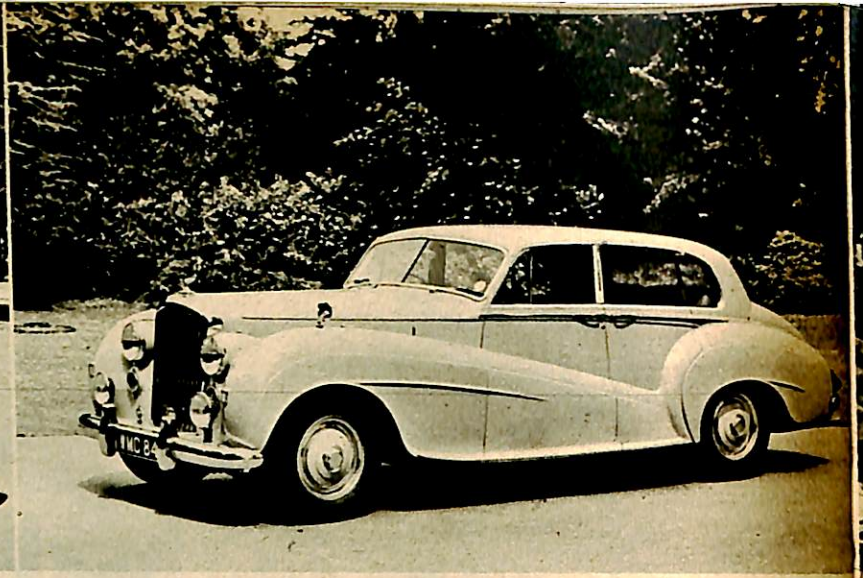
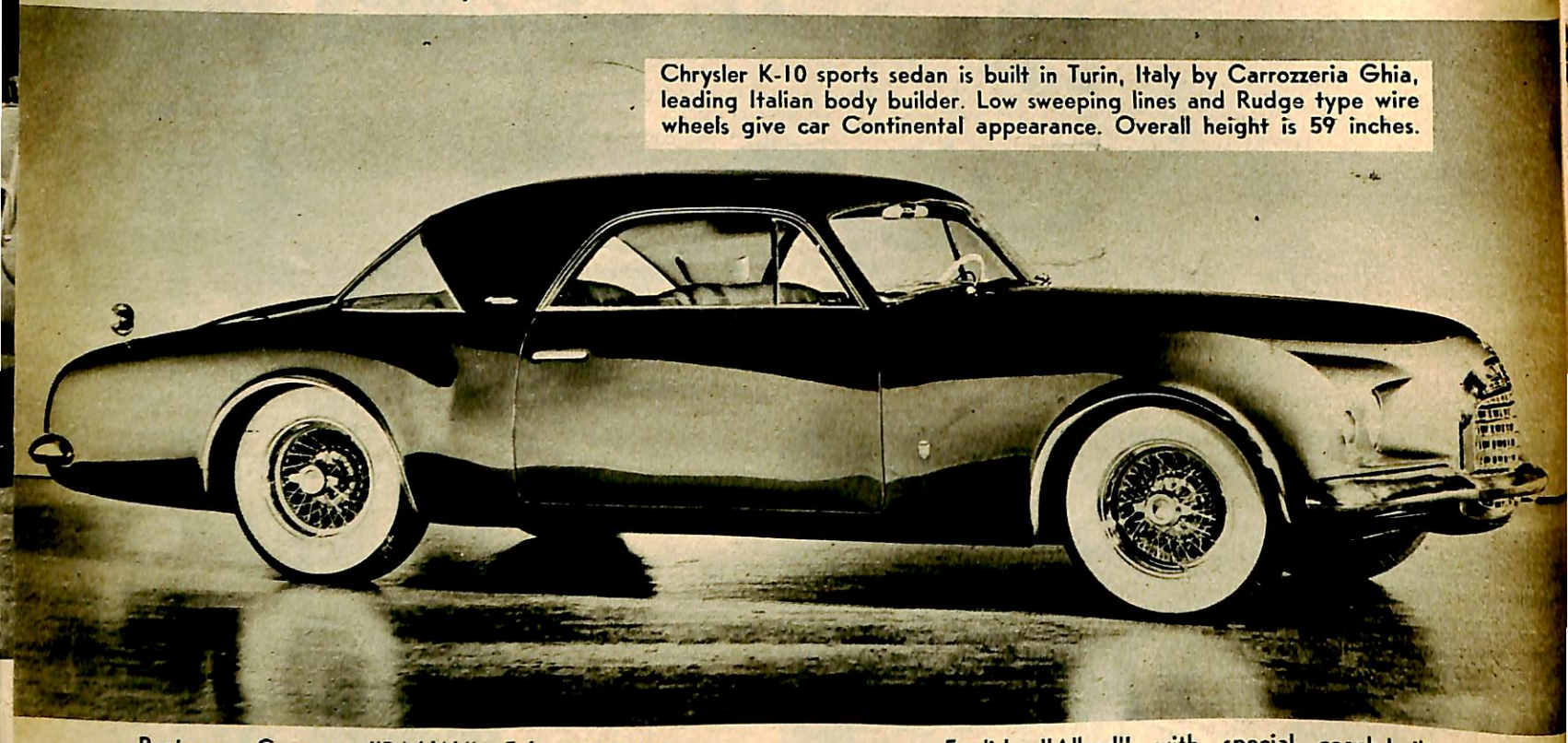
CONTINENTAL COACHWORK

Italian "Alfa Romeo" Model 6-C 4-passenger 4-door Sedan coachwork by Pinin Farina.

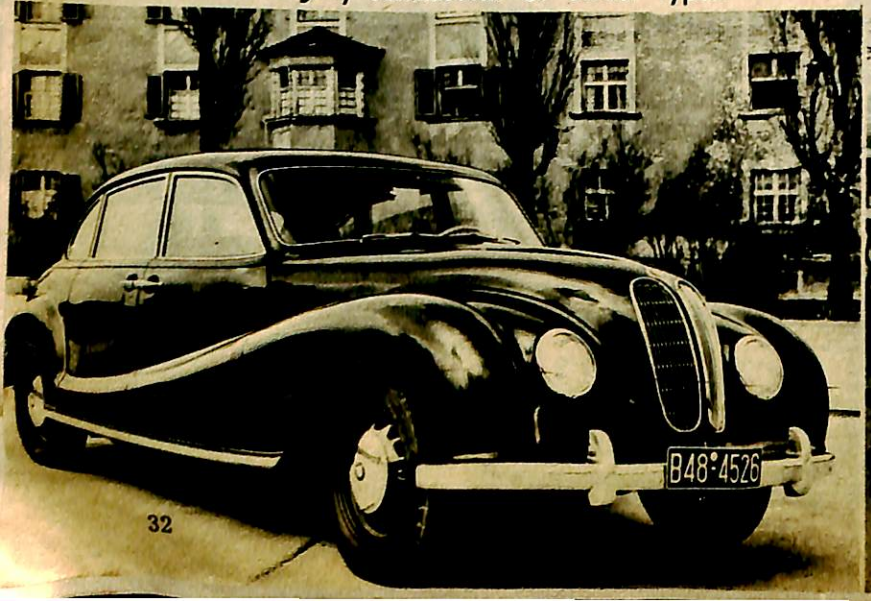


Lightweight British "Bentley" Saloon. 4-door model designed by H. J. Mulliner & Co. Ltd.

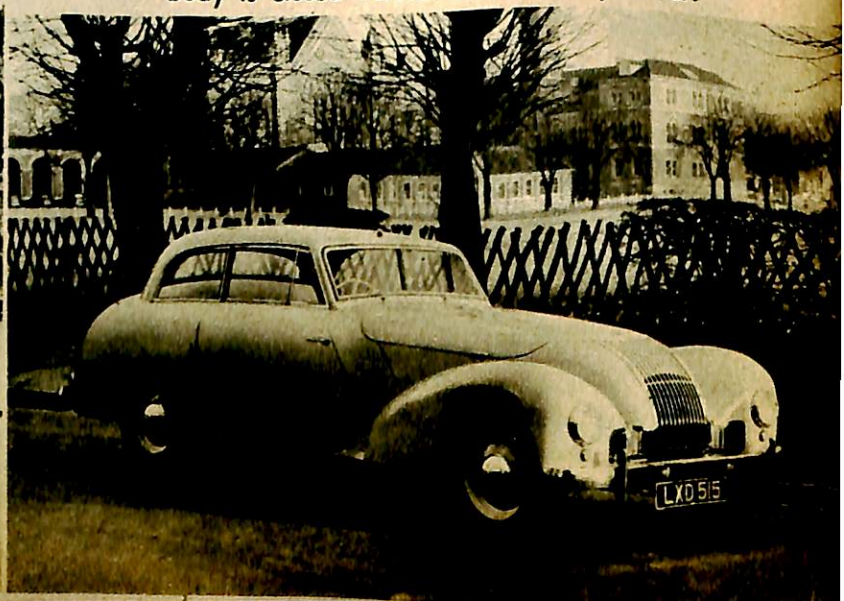
Chrysler K-10 sports sedan is built in Turin, Italy by Carrozzeria Ghia, leading Italian body builder. Low sweeping lines and Rudge type wire wheels give car Continental appearance. Overall height is 59 inches.

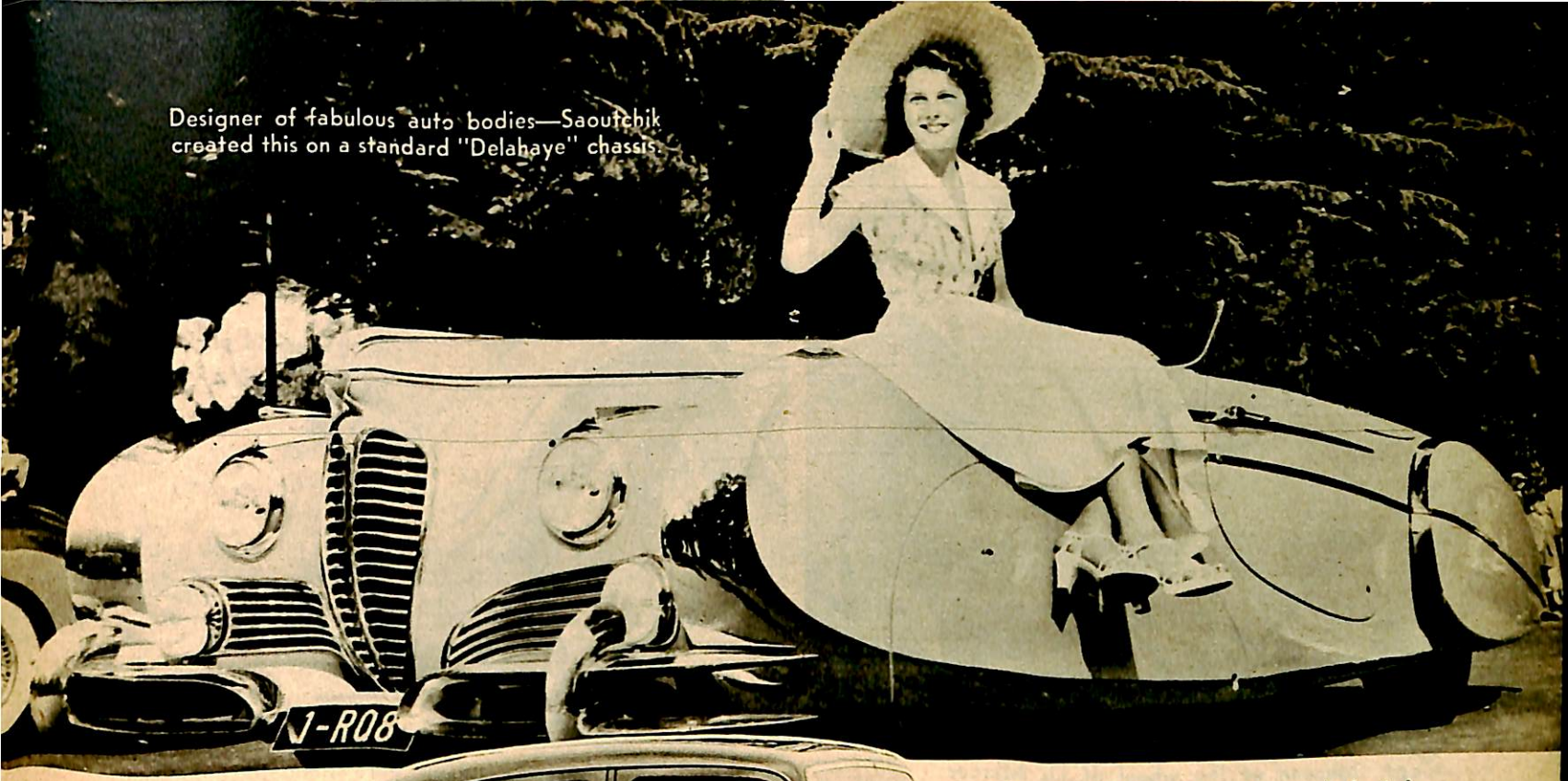


Post-war German "B.M.W." 5-6 passenger sedan is slightly reminiscent of earlier types.

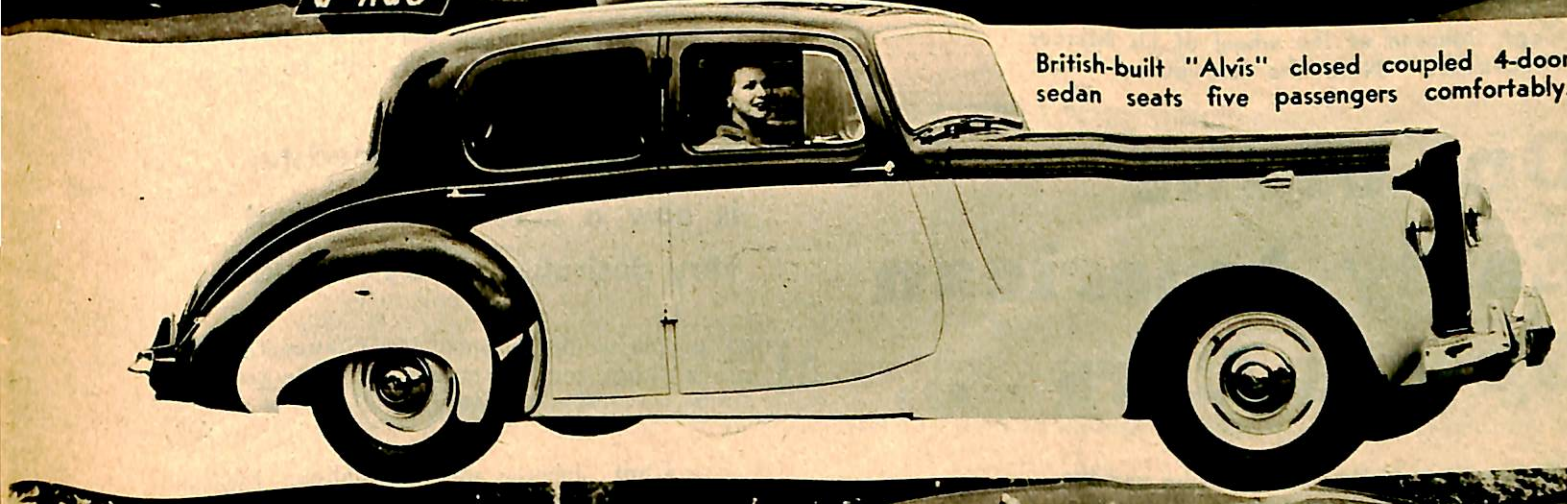


English "Allard" with special coach-built body is closed version of famous sportscar.

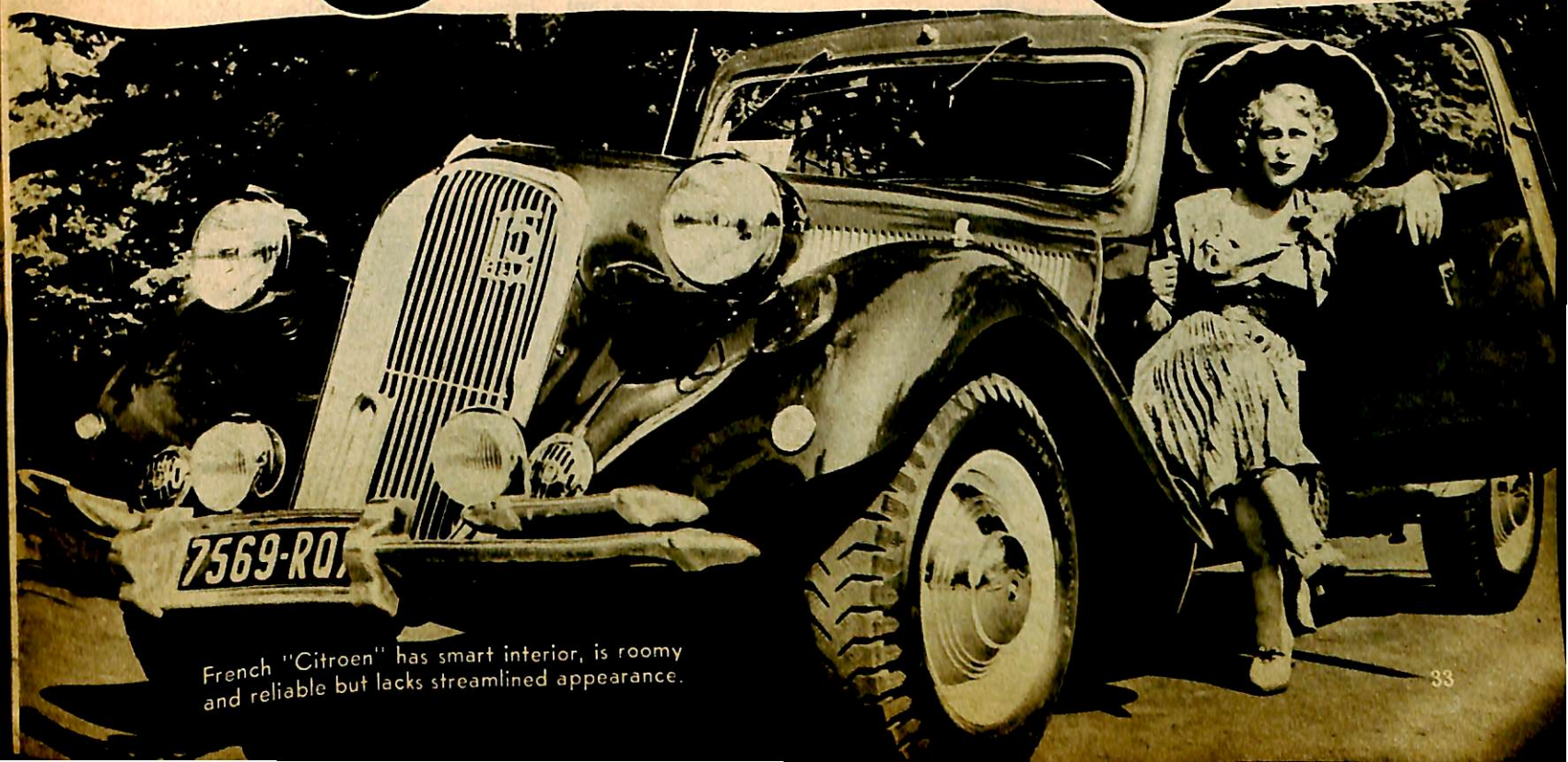




Designer of fabulous auto bodies—Saoutchik created this on a standard "Delahaye" chassis.



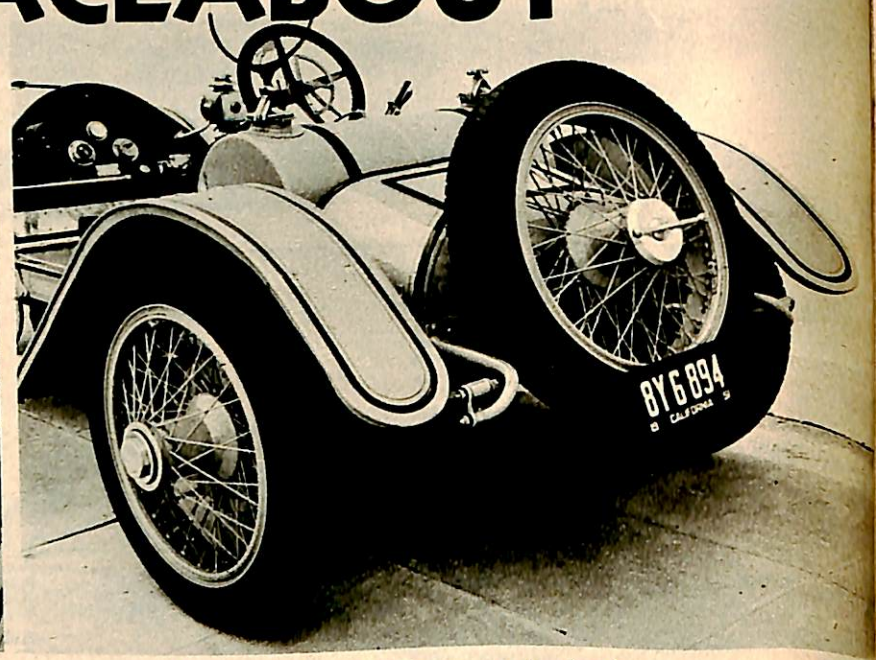
British-built "Alvis" closed coupled 4-door sedan seats five passengers comfortably.



French "Citroen" has smart interior, is roomy and reliable but lacks streamlined appearance.

MERCER "RACEABOUT"

Capt. Johnson at the wheel of his Mercer "Raceabout." Note the low bucket seats.



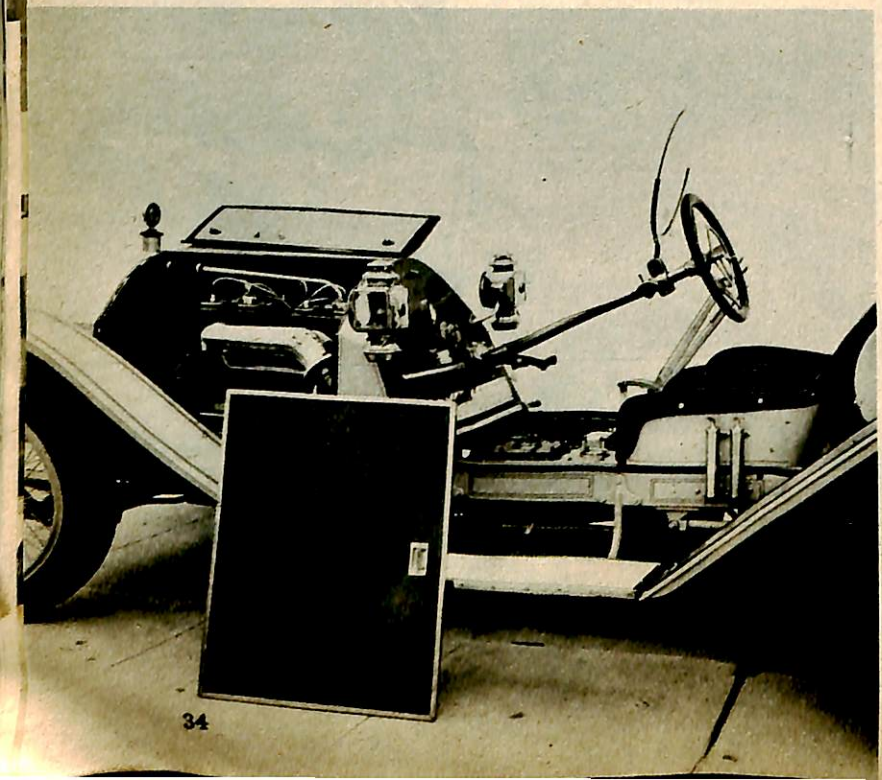
Rudge racing wheels were standard equipment. Tire size is 32 x 4½ with 60 lbs. air.

One of the Early American Sports Cars . . .

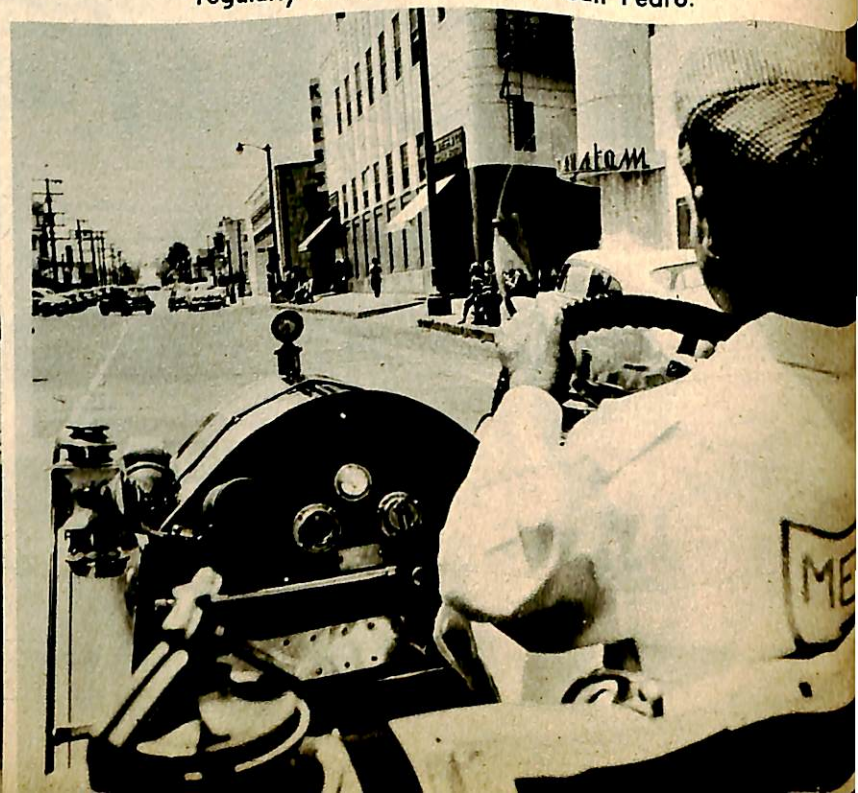
This once famous speedster is now a much wanted and very desirable vintage model

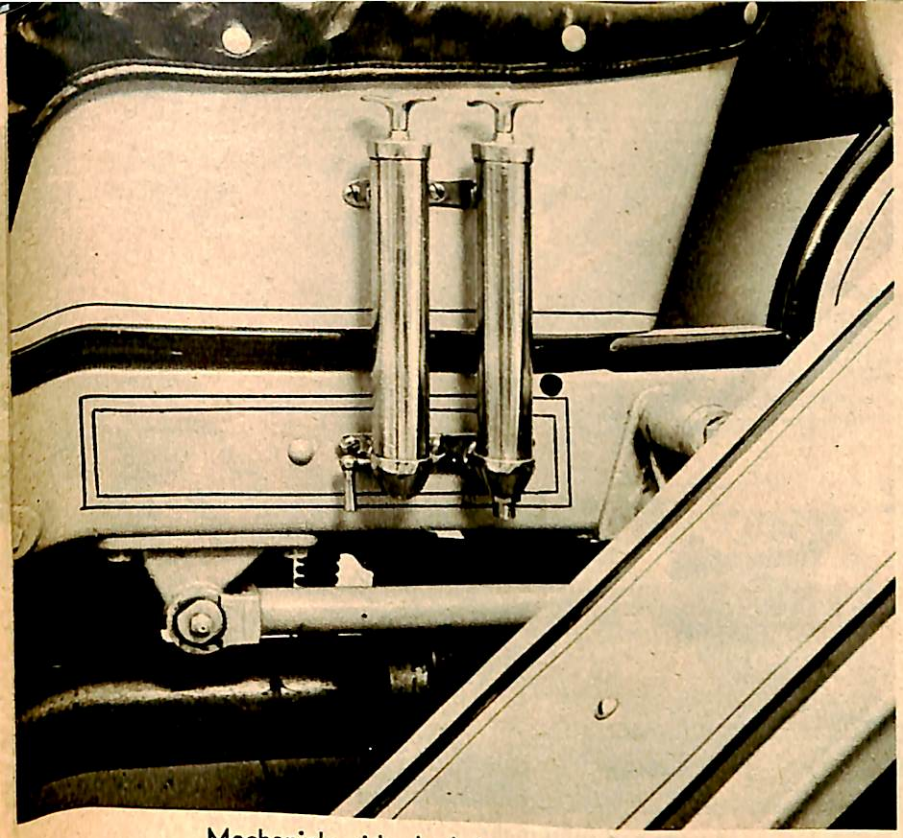
MOST people would consider the chance to climb into a shiny, red fire engine and ride to a fire with sirens screaming the epitome of thrills. Not so

Ready for servicing, with hood up and the floorboard out. Car has 4-speed gearbox.

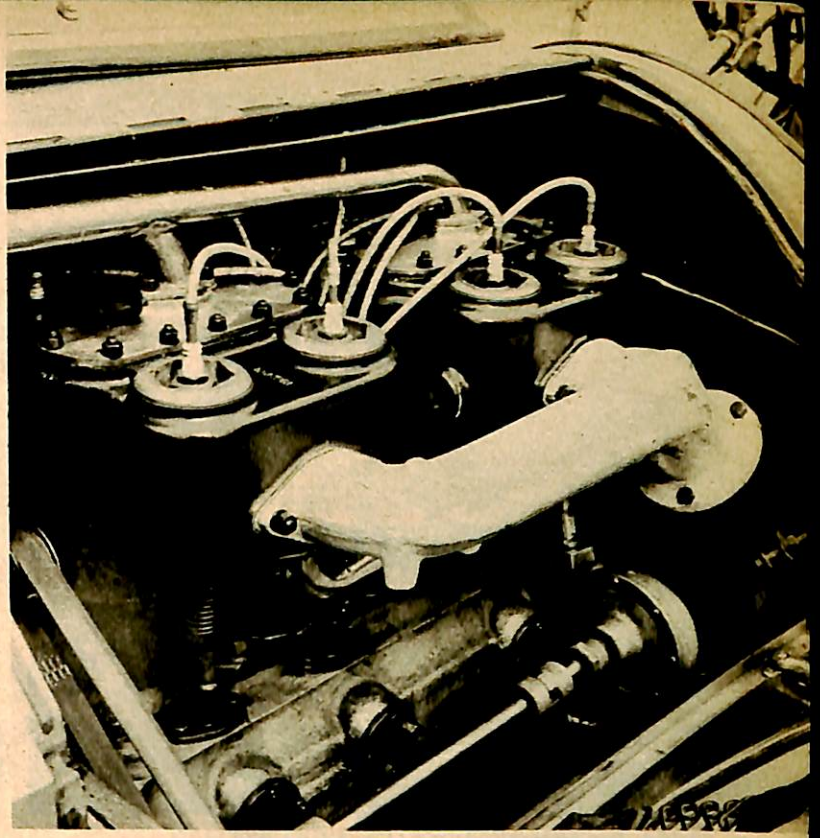


Capt. Johnson uses his antique Mercer regularly in his travels around San Pedro.





Mechanic's side had two pumps to the engine, one for gas, the other for oil.



Engine block was cast in two sections, the intake valves on one side, exhaust on other.

Captain Harry Johnson who has been with the Los Angeles Fire Dept. for 14 years. When Captain Johnson wants a thrill, he discards his fire helmet for a peaked cap which he wears backwards, puts on a pair of goggles and clambers into his shiny, yellow Mercer "Raceabout," an automobile which was built in 1913 but is still "plenty of auto" according to Johnson.

Captain Johnson was bitten by the "antique auto" bug in 1942. He had always been mechanically inclined and thinks that most collectors of antique cars have a mechanical bent. The enjoyment in collecting antique autos comes from various aspects of the hobby: the fun in searching for the old cars (Johnson is always on the prowl, journeys to the Midwest during his vacation); the enjoyment and relaxation of working on the old-timer and putting it into "good as new" shape; the thrill of owning something unusual; and the social life which goes with belonging to clubs, going on caravans and meeting people with common interests.

In the garage behind his house in San Pedro, California, Captain Johnson maintains his shop where he spends most of his spare time. His inventory consists

Mercer radiator cap contains a "Motometer" which registers the heat of the engine coolant.

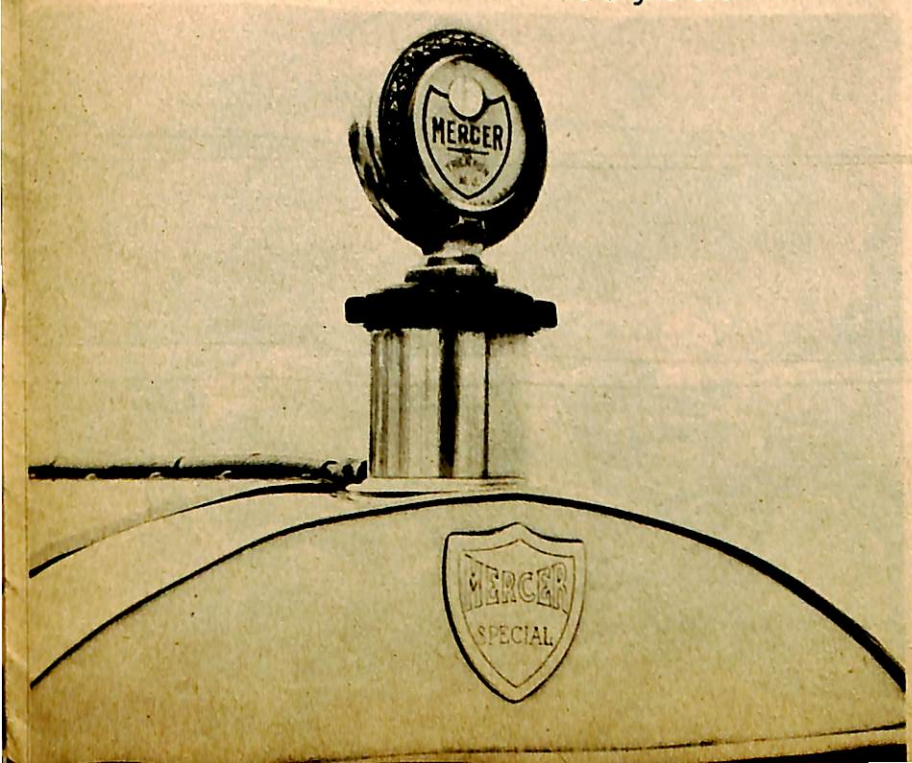
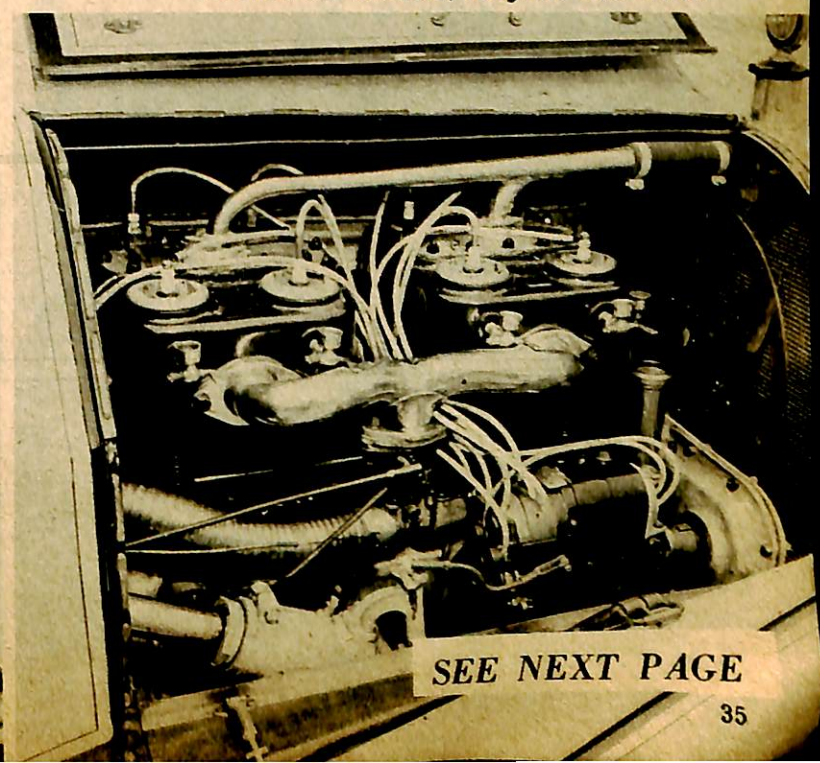


Photo shows construction of the engine, location of manifold, magneto and wires.



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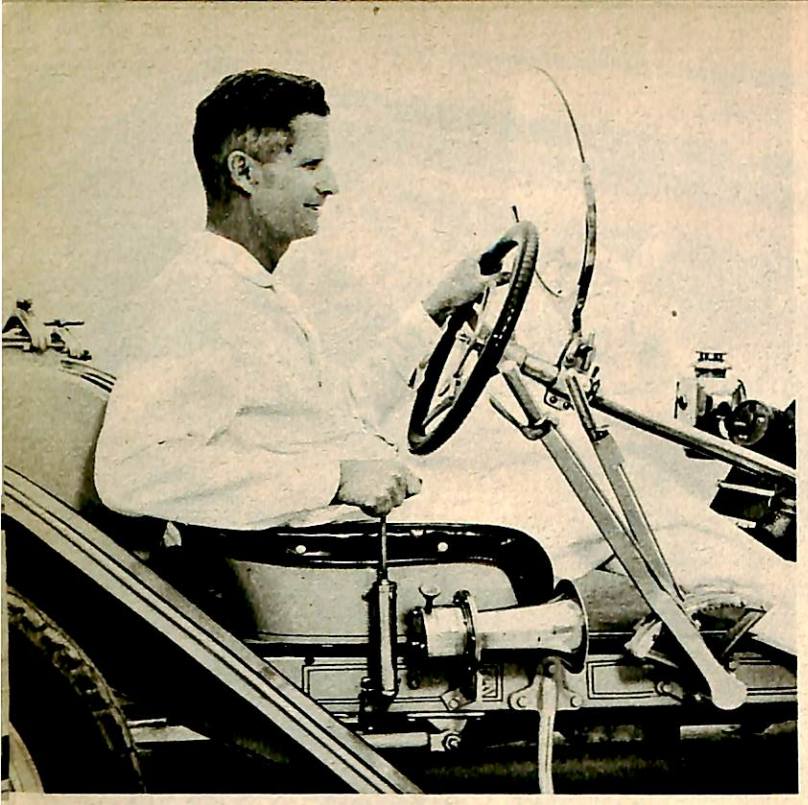
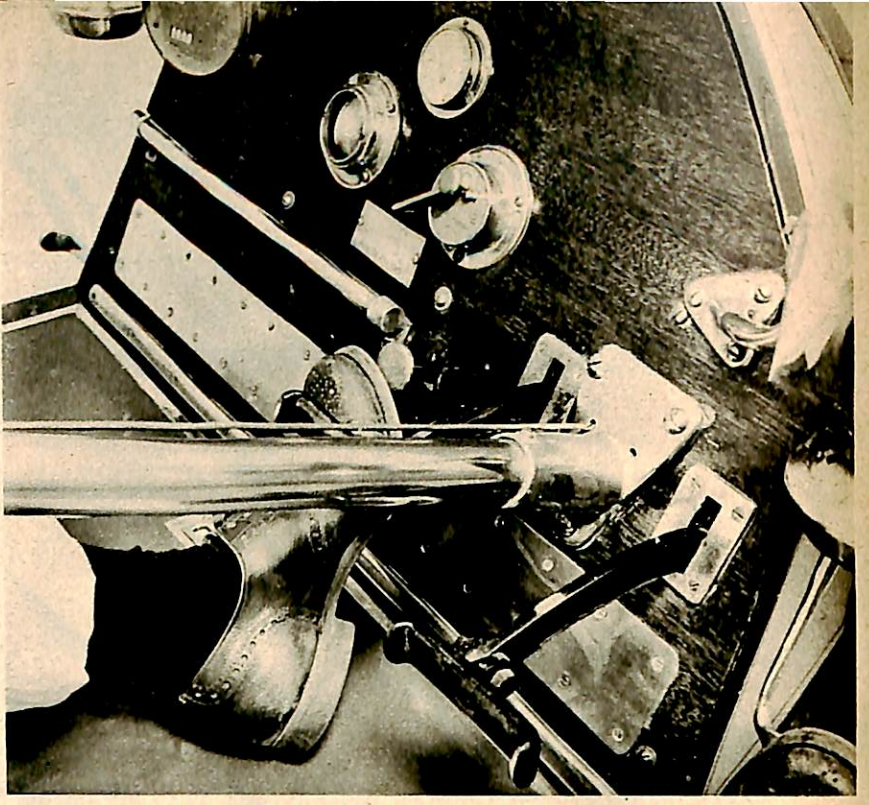


Note the oval windshield, hand brake, shift lever, Klaxon horn and exposed fuel tank.



Mercer had solid mahogany dashboard. Metal bar on the left is the mechanic's foot rest.

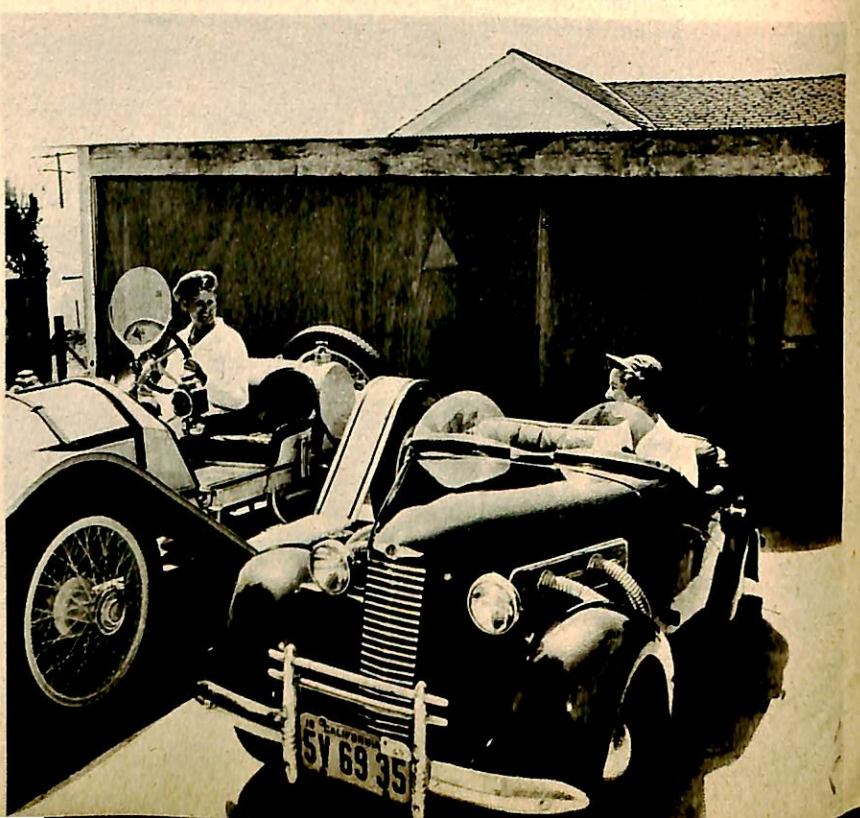
of various accessories for antique autos which he picks up wherever he can find them. It took him hundreds of manhours over a period of several months to rebuild his Mercer which he had bought in Texas for $500.00 in very run-down condition, but which is worth several times that now that it has been renovated.

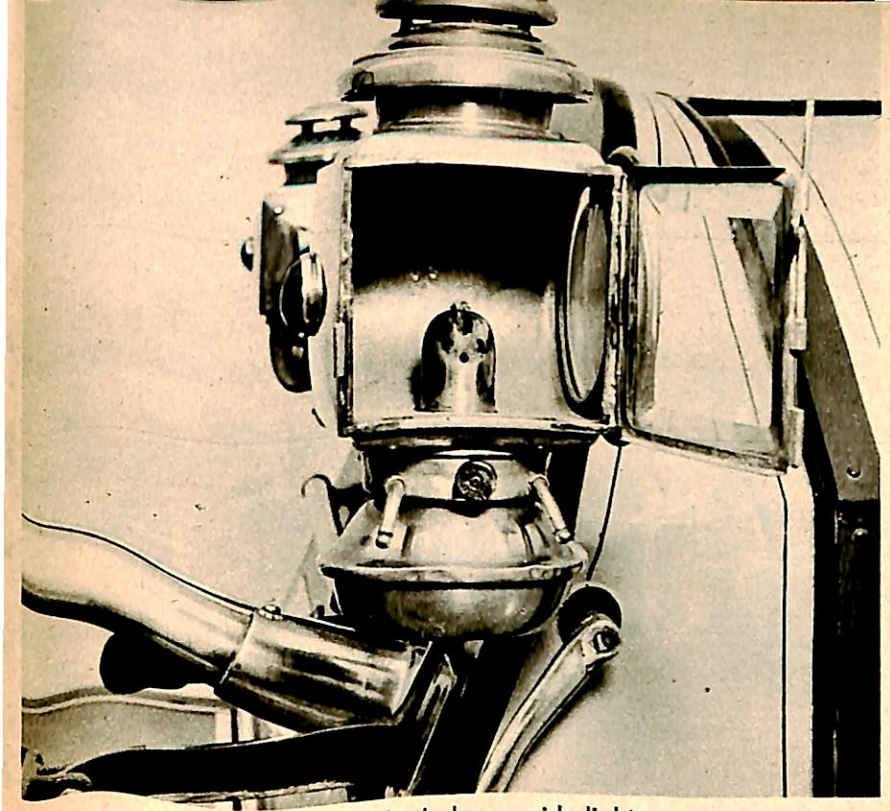
Captain Johnson's wife, Ellen, takes as keen an interest in his hobby as he does. Together they won a trophy in 1946 in the famous Glidden Tour in which they drove a 1910 Ford over 5000 miles in three weeks. The Johnson's belong to four clubs. The Horseless Carriage Club of California, the Veteran Motor Car Club, the Antique Auto Club and the Veteran Car Club of Great Britain and they maintain correspondence with many club members whom they have never met.

The Captain's first antique auto was a 1914 Hupmobile. However he thinks that the Mercer "Raceabout" is the greatest of the antique cars as far as raciness, performance and advanced styling are concerned. Originally sold for $2600.00 (and hardly depreciated today), the "Raceabout" was a racing car designed for the public. With each car there went a factory

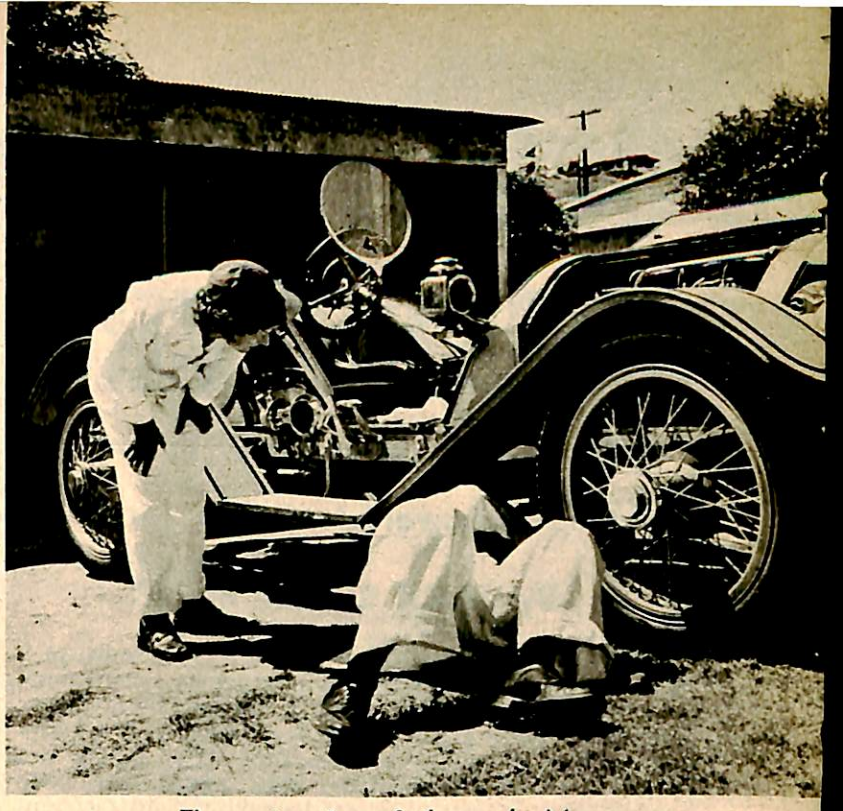
Only non-original piece of equipment is the wide safety-belt for the Johnson youngsters.

Mrs. Johnson at the wheel of a midget sports car built on an American Austin chassis.





Handsome polished brass side-lights were of the kerosene wick variety on the Mercer.



The restoration of the early Mercer was lots of fun. Mrs. Johnson pitched right in.

guarantee that the car would do "a mile in 51 seconds or your money back" . . . and Johnson's Mercer still gives good performance even by modern standards, with a high speed of over 75 MPH, a cruising speed of 45 MPH at which speed the car gets 18 miles per gallon of gas.

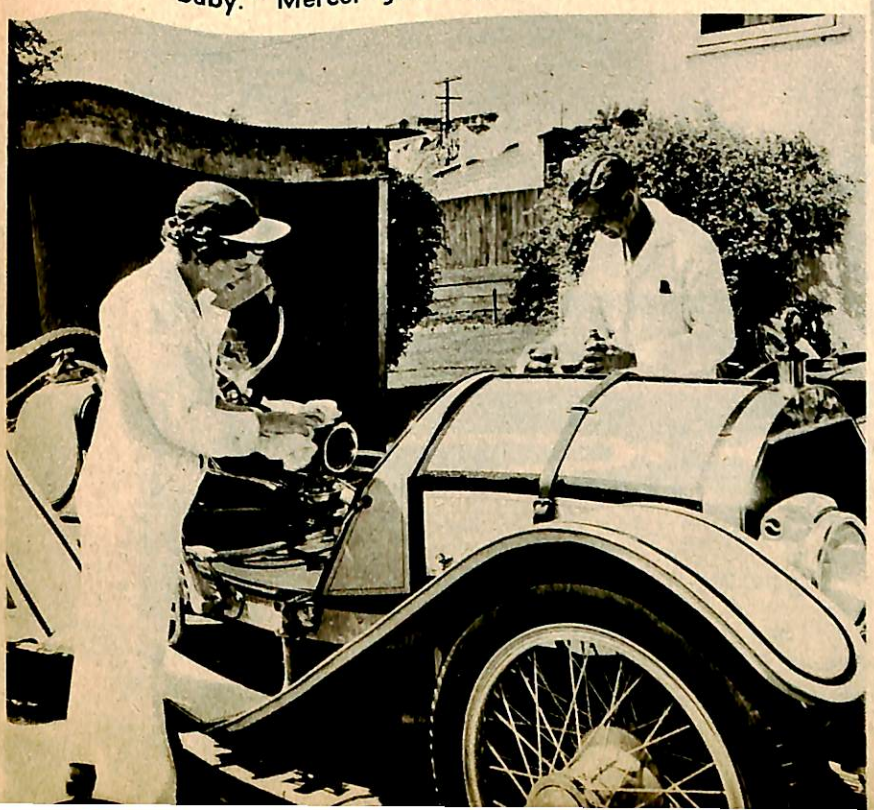
The Raceabout weighs 2500 lbs. has a 108" wheelbase and an overall length of 152". The height from the top of the steering wheel is 51" and it has a very low center of gravity, enabling it to "corner" with greater stability than modern American stock cars.

The first model was built in 1911 and was by far the raciest car of its period. The body is made from sheet metal . . . with brass, aluminum and mahogany used liberally. The motor is a 4 cylinder, T-head motor with the blocks cast in pairs and a compression ration of 4,78 to 1. The color of Johnson's car is "Mercer Yellow with Black trim" (a lemon yellow which is very popular today).

In Johnson's opinion, the car compares very favorably in performance with modern American cars. He feels that the greatest improvement has been in the braking system and in the ride-comfort . . . but he's sure he'll still be driving his "Raceabout" around when his "family car" is being melted down for scrap.

Editor's Note: Captain Johnson, who lives at 3671 Leland Street, San Pedro, California, enjoys hearing from fellow enthusiasts. If you're interested, and would like to hear more about the Mercer "Raceabout", drop Captain Johnson a line.

The Johnsons take good care of their "prize baby." Mercer gets regular wax rub-down.



POCKET-SIZED SPEEDSTERS

Pacific Coast Speedway Enthusiasts Develop a Powerful Midget for $350.

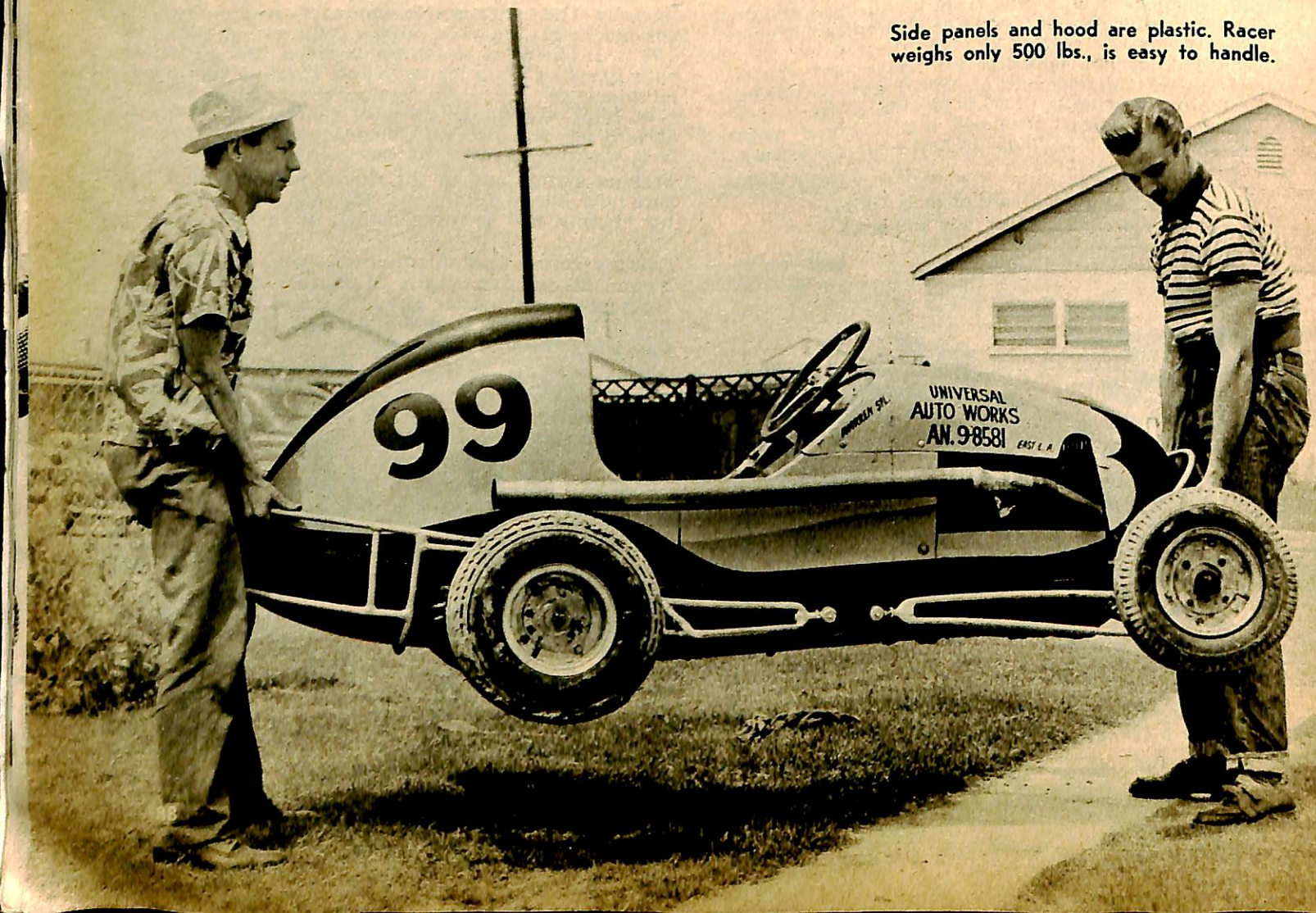
By JACK B. KEMMERER

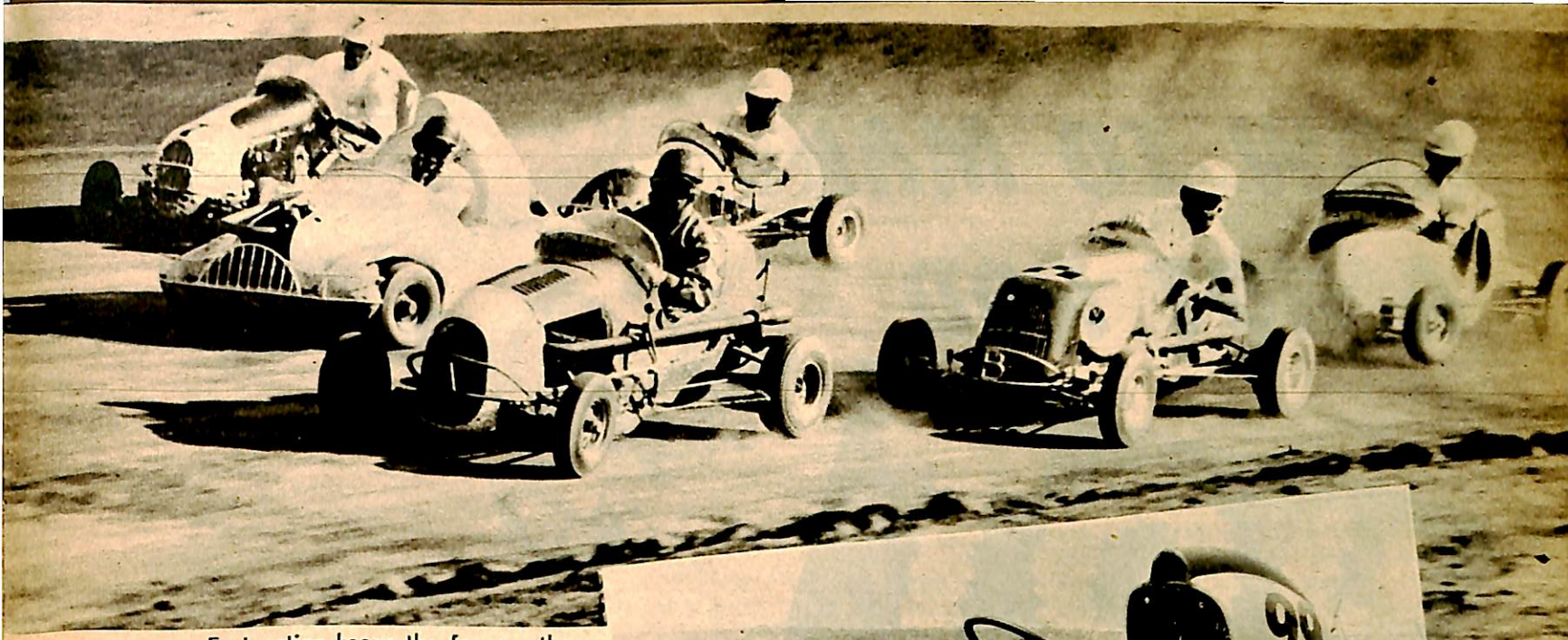
THERE'S something new on Western speedways—the three-quarter midget. These pygmy racers compete on postage-stamp size tracks, run on motor scooter wheels and tires, and are powered by motorcycle engines. Capable of speeds up to 80 m.p.h. the pocket-sized speedsters keep fans agog with hair-raising skids, wheel to wheel jockeying, and frequent pile-ups, on the slightly banked turns. Interest in the tiny racers is spreading rapidly among Southern California and mid-Western fans.

With a wheelbase three-fourths as long as the stand-

Three-quarter midget has a 40" tread and 60" wheelbase. Note small wheels.

Side panels and hood are plastic. Racer weighs only 500 lbs., is easy to handle.





Fast action keeps the fans on the edges of their seats all the time.

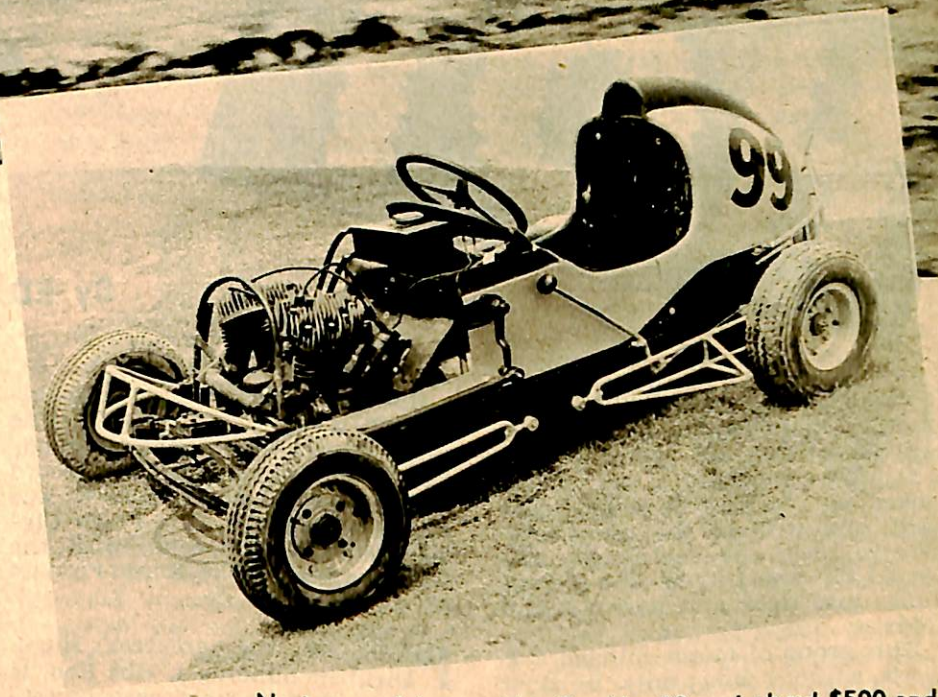
ard midget and weighing about half as much, the capsule racer is often called the "poor man's midget." One can be built at a relatively low cost from Austin, Crosley, and motor scooter parts.

Aside from conforming to the specifications set up by the Three-Quarter Midget Racing Association, individual owners exercise their ingenuity in the design and construction of their racers These rules specify a weight-range of 350 to 650 pounds, a wheelbase of 54 to 60 inches, a tread of 32 to 40 inches, wheels ranging from 6 to 9 inches in diameter, and an engine of 30.50 to 45 cubic inches, depending on type. Numerous safety devices are also mandatory, such as a tail that extends beyond the rear wheels, firewall, flex-type steering wheel, and positive neutral.

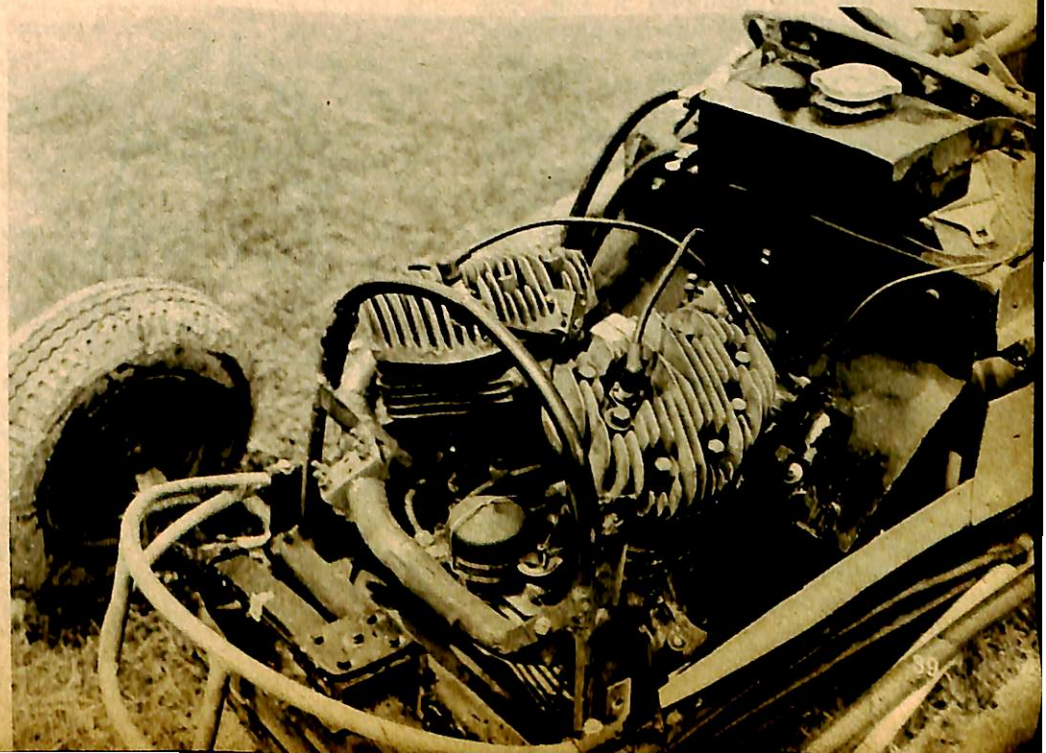
A typical owner, Paul Griffith of Downey, California, is an ardent racing enthusiast. Paul could never afford the prohibitive cost of a $3000 to $6000 standard midget racer but saw in the "T.Q." midgets an outlet for his racing ambitions. With Jerry Gaywood, another avid fan, Griffith drew up plans for a tom-thumb racer. In their leisure time the two worked in Griffith's garage with his lathe, welding outfit, and mechanic's tools. In due course, "T.Q." No. 99 rolled off the homemade assembly line.

No. 99's springs, front axle, and rear end were cut down from an Austin. The eight inch wheels and tires came from a Cushman motor scooter. Steering was adapted from an ancient Franklin. In fact, all of the parts were cut or adapted from

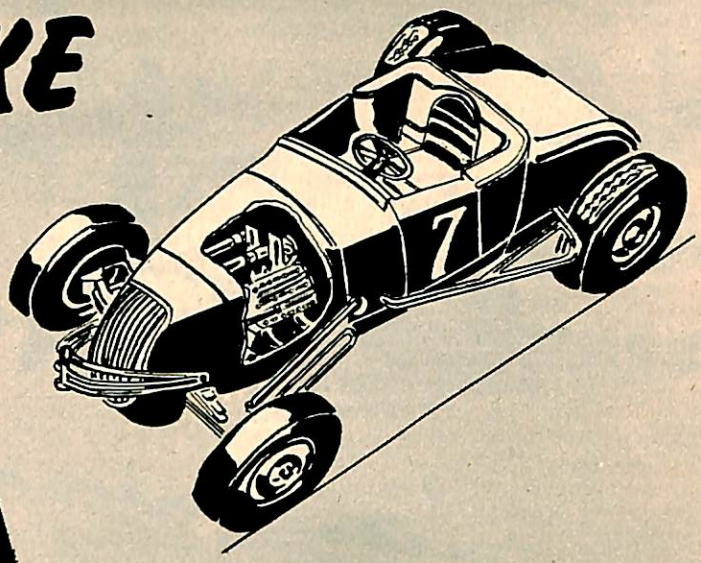
(*Continued on page* 48)



No two models are alike. Car No. 99 cost about $500 and took six months to build. (Below) Engine is 45 cu. inch Harley twin, develops 20 h.p. at 6000 R.P.M.



HOW TO MAKE A HOT ROD



HOT

By ED ALMQUIST, JR.

THE American Hot Rod is often referred to as the true American Sports Car. All over the U.S., lads with a mechanical bent, have picked up old cars in some junkyard, and without the use of expensive tools and equipment converted ten and fifteen-year-old jalopies into sleek and powerful Hot Rods.

This group of motor-minded lads work without blueprints in their backyards turning out cars with fantastic performance characteristics.

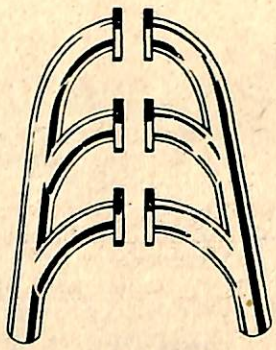
No two Hot Rods are alike. In designing and building a Hot Rod every enthusiast has his own ideas regarding body design, and many have their own theory in "hopping up" a powerplant.

Most popular car around which the current Hot Rod is built is the Ford. For this purpose a Model "B" or V-8 roadster is most desirable. Into these chassis a late model Ford or Mercury engine is installed resulting in a high-power-to-weight ratio.

The power and performance of modern Hot Rods is dependent on three basic factors: 1, Engine power, 2, Streamlining, 3, Overall weight. From this it is easy to see that a well-designed roadster will, because of the alteration in both engine and body, give greatly improved performance. On acceleration tests, an average Hot Rod should be able to do 60 m.p.h. from a standing start in about 7 seconds.

Hot Rod speed records have increased with every time trial. The current record for a stripped roadster is 173 m.p.h., and the record for a stream-lined job, such as was just established by the Floyd Clymer Motorbook Special, with the twin-engined Leslie-Kenz Ford is 231 m.p.h.

PERHAPS the greatest single thrill in building a Hot Rod, is the fact that no huge cash investment is required. Old cars are available at junk yards for as little as $25. The degree to which the individual owner wants to "soup-up his car varies depending on the performance desired. Most Hot Rods show investments from $200 to $500 but it is not uncommon to hear of a real snappy looking roadster that was completed for a cost of less than $200. By the same token, many Hot Rods scooting along the American Highways today represent investments exceeding $1000.



ALMQUIST EXHAUST HEADERS Custom V-8 headers designed for a free flow of exhaust gases. Reduces the harmful back pressure found in the stock exhaust system. When used for road or track this system will increase horsepower 10% or more.

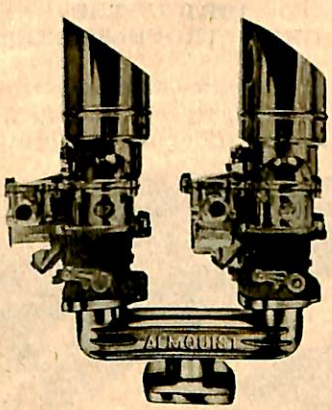
HOW TO START: A good Hot Rod is built from the ground up, the chassis is stripped of the radiator, fenders and body. It goes without saying that the chassis should be inspected for weak or worn parts. Remember to maintain proper clearance, paying special attention to the steering gear, brakes and the suspension. Re-inforcing the frame, by welding additional ¼" gussets to the rear cross member is good practice.

LOWERING THE BODY: To give an early car, a foreign or continental appearance is accomplished by lowering. This is done by various methods. The front can be lowered by using a "dropped axle" on which the spring perches are about 2¼ inches lower. Another method, is to re-shape the rear springs by heating. The rear of a car may also be lowered by raising the spring hanger locations by re-locating the rear cross member or by re-working the frame.

FRONT and REAR BRAKES: Most Ford chassis, from which Hot

Rods are constructed have mecnanical brakes. Mechanical brakes, if they are reconditioned and kept in adjustment should be adequate. Many of the drivers who have a preference for hydraulic brakes make the change-over using a set of backing plates and drums, as well as master cylinder and brake pedal from a 1939 or later Mercury or Ford.

THE POWER PLANT: Here in the engine department is where the Hot Rod receives the conversion and re-working that will eventually determine the car's capabilities. It is common knowledge that a new or used 24 stud block from a 1938 Ford, or later, be employed for maximum results. If it is planned to re-work and re-build the engine it is usually wise to completely disassemble the engine, inspecting all parts thoroughly for wear. The cylinders should be checked carefully to make sure that they are true, if not, cylinders should be re-ground or re-bored .060" oversize, or to the next ring size. Usually regular stock replacement pistons can be used. If the car is being "hopped up" for competition, a set of balanced aluminum racing pistons should be installed, and the cylinder block bored to 3 5/16" or 3 3/8" diameter.

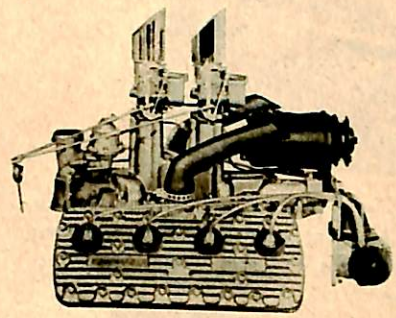


DUAL CARBURETOR MANIFOLD
This new power unit offers a quick, easy way of adapting dual carburetion to practically every 6 and 8 cylinder car at a fraction of the usual cost. The low aluminum manifold is designed to give more speed and power as well as greatly increased acceleration. It is accurately machined for two Ford V-8 carburetors and comes in two models to fit all popular make cars.

CRANKSHAFT bearing journals should be checked for roundness. If there is any evidence of excessive wear or scoring, be sure to have these reconditioned. It is needless to say that the best quality bearings are usually the least expensive in the long run.

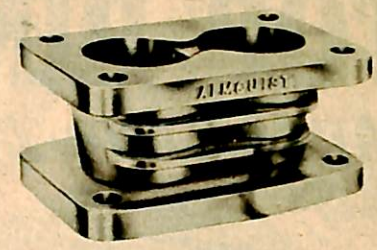
Because we have economy in mind, no mention is made of "stroking" the crankshaft or porting and relieving the block. If however the car under construction is to be raced, it is essential that these methods of increasing engine performance be considered. In a future issue of Auto Sport Review the subject of "Stroking," "Porting" and "Relieving" will be taken up in detail.

CAMSHAFT AND VALVES: One of the most important factors in increasing engine power is reworking the valve assembly. A reworked valve assembly, is accomplished by installing a new or re-ground racing camshaft, this increases the volumetric efficiency. A re-ground camshaft will give the valves higher lift, more overlap and longer opening. For every-day use, a "3/4 Race" grind is suggested. For competition, a "full" or "super" race cam should be employed. Adjustable tappets and stronger valve springs should also be used with any of the aforementioned cams. Valve seats should be reground to 30 degrees, and oversize (1 5/8") intake and exhaust valves used.



FORD V-8 ROAD SET-UP
Shows the high neck Dual Intake Manifold sometimes preferred for passenger car use. Aluminum High Compression Heads are 8:1 ratio.

THE FLYWHEEL: A stock flywheel, usually of cast iron, is heavy, and consumes much of the engine power, for this reason it is a definite advantage to install a light weight iron or aluminum racing flywheel. It is relatively easy to machine a stock flywheel and reduce much of the original weight by removing the flange. A reworked flywheel should be balanced dynamically before it is installed.



CARBURETOR ADAPTOR
A recent introduction into the hot rod field—this special unit will adapt the new 1951 Mercury carburetor to any Ford V-8 or 4-bolt flange eight cylinder car. (It will also adapt a Ford V-8 carburetor to any eight cylinder car.) This power method was mentioned by Tom McCahill in a recent article.

HIGHER COMPRESSION: Another method of obtaining more horsepower and increased efficiency is to raise the compression of the engine. The most simple method, is to purchase a set of aluminum heads. A compression ration of 8 or 8.5 to 1 is most desirable for all-around use. Final ratios for racing should of course be higher. If the heads you have, are of the old 21 stud type, it would be more economical to rework the heads by milling .050" off the gasket surfaces.

DUAL CARBURETORS: No Hot Rod is ever really complete until a dual carburetor manifold, and two carburetors are installed! Dual carburetion will give your Hot Rod lightning acceleration and considerably more "horses under the hood."

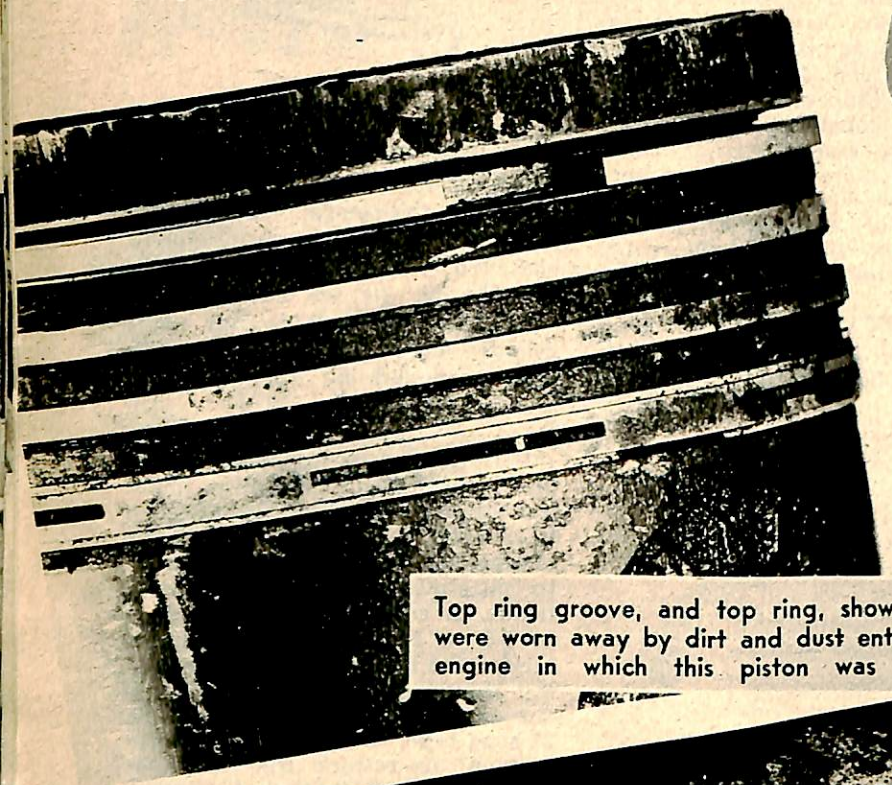
Many Hot Rod builders like the low type manifold because the carburetors are low, permitting necessary hood clearance after a body has been "channeled." In making use of a low type manifold, it must be remembered that the generator must be remounted on either the right or left cylinder head.

IGNITION: To assure maximum performance at high speeds, it is essential that a heavy-duty coil along with a set of dual ignition points be installed. It is best to use racing type spark plugs, of the proper heat range, with a spark gap of .018 to .022.

Editor's note: *Next month, in the March issue, Ed Almquist Jr. will give AUTO SPORT REVIEW readers detailed information on "Custom-izing and "channeling" a Hot Rod body.*

TOP RING GROOVE *Wear*

CAUSES AND CORRECTIONS



Top ring groove, and top ring, shown above, were worn away by dirt and dust entering the engine in which this piston was installed.

The gaping crater at the top of this piston was only one of the many around the top edge that were caused by dirt in the motor.

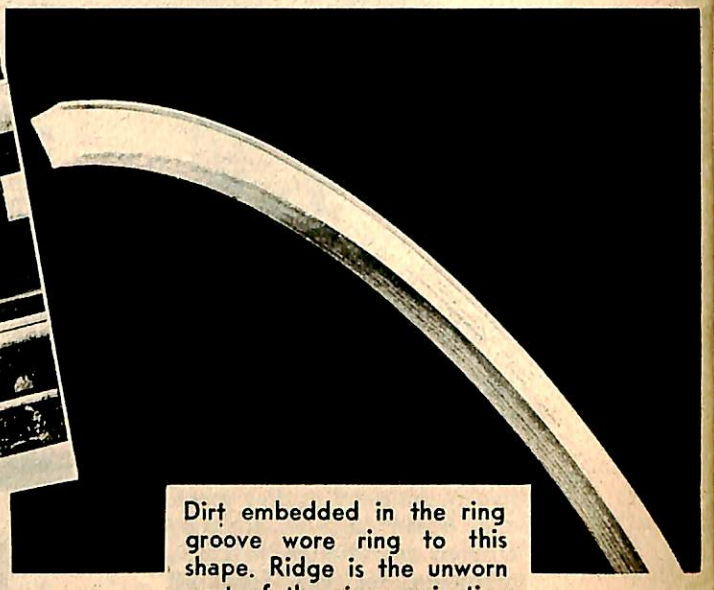
IN about three out of four engines that have been disassembled for re-ringing, it will be found that the top grooves of the pistons are excessively worn. That fact is important from a piston ring performance standpoint because unless the worn condition is corrected —either by remachining the top groove or by installing a new piston —a newly installed set of rings will not do a completely satisfactory job of combustion seal and oil control. It can readily be seen, then, that checking the top groove for wear should be done whenever an engine is re-rung.

We know that when the top groove is worn, ring wear is speeded up. So let's see what the principal reasons are that cause top groove wear. They are as follows:

1, Abrasives (air born dirt).
2. Detonation.
3. Low engine operating temperature.
4. Too much ring side clearance at the time of installation.

DIRT IS THE CHIEF TROUBLEMAKER

Dirt can enter an engine through an improperly maintained air cleaner or through a hole in the air



Dirt embedded in the ring groove wore ring to this shape. Ridge is the unworn part of the ring projecting beyond the piston ring land.

induction line somewhere between the carburetor and the air cleaner. Once in the engine, the dirt mixes with a film of oil which makes an effective grinding compound that starts to work wearing away the face of the rings and the cylinder walls. Also, dirt that enters the engine through the combustion chambers will work in between the rings and the ring lands and will become embedded in the lands in such a way that it wears away the rings as they move in the grooves. (This is more likely to happen with aluminum pistons than cast iron ones.)

Air born dirt and dust that get into the engine will be particularly harmful to the top rings and ring grooves. As the groove is worn wider the ring is worn thinner. With increased edge clearance, the ring will pound in the groove as the piston moves up and down. Pounding, in turn, will cause further wear, ring flutter, fatigue, excessive stresses, and probably ring breakage. But, even if the ring doesn't break, both the groove and the ring will be in such a condition that the top ring cannot function properly and excessive blow-by and oil consuption will be the unhappy result.

Now that we know how much damage can be done by abrasives that get into the engine through the air intake, let's see what measures can be taken to keep the dirt from entering in the first place. Here are several recommendations that will cover most cases:

1. Regularly service and properly maintain the air cleaner.

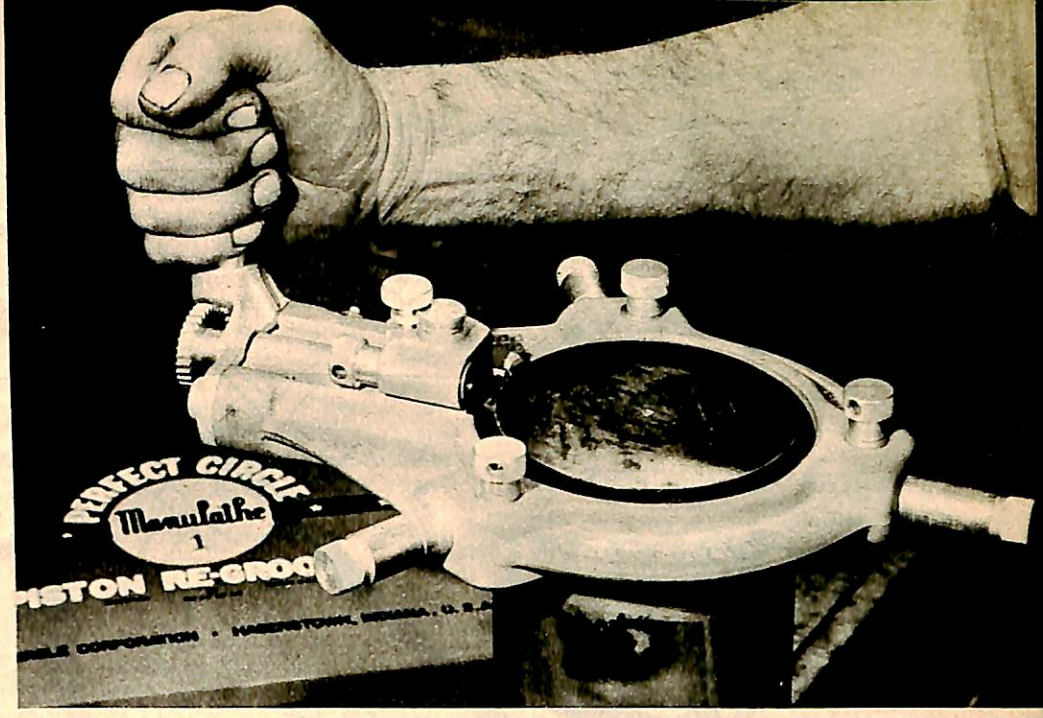
2. Keep all connections and gaskets between the air cleaner and the carburetor tightly in place and free of cracks and holes.

3. If the air to the cleaner is brought from the floor, (as in some busses,) regularly check the entire line for broken connections and holes in the line.

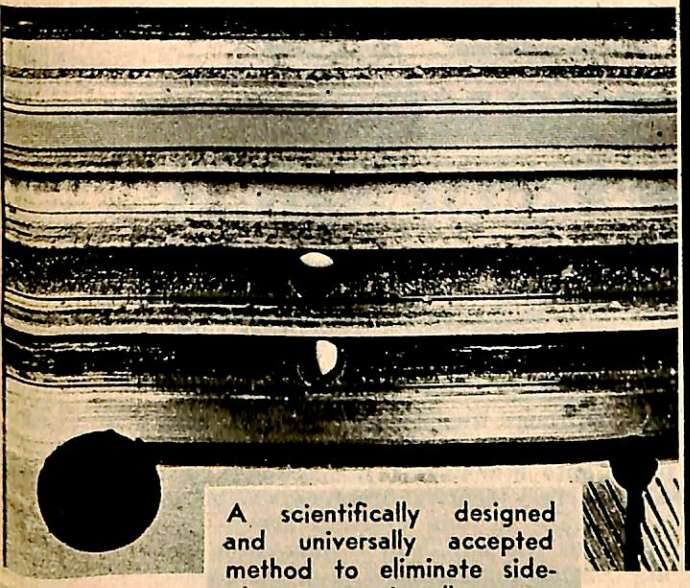
4. Give the system a smoke check (an old-fashioned bee smoker will work very well).

5. When a vehicle is equipped with Hydrovac brakes, an air cleaner installed before the engine will keep dirt that gets past the brake system from getting into the combustion chambers.

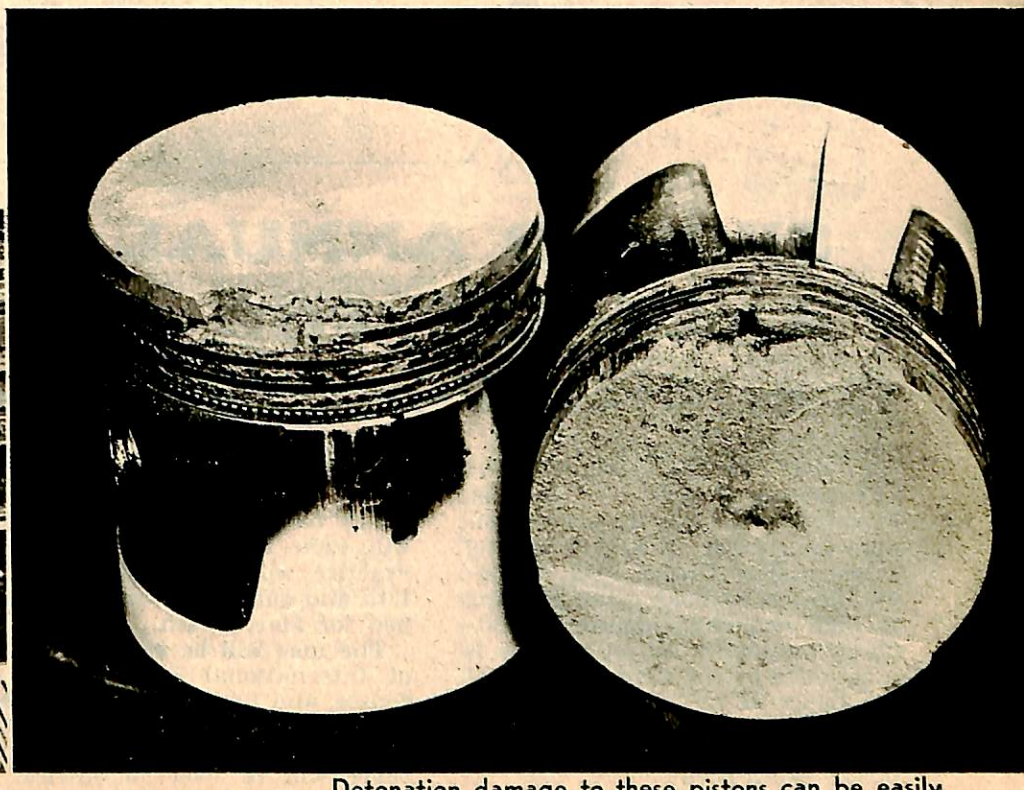
(*Continued on page* 46)



By using Perfect Circle's Manulathe, worn top ring grooves can be re-machined quickly and accurately on both aluminum and iron pistons.



A scientifically designed and universally accepted method to eliminate side-play is to install a top groove spacer in piston.



Detonation damage to these pistons can be easily seen. Top of piston is pitted where molten metal was picked off. Top ring is broken, others stuck.

Sebring International Grand Prix of Endurance

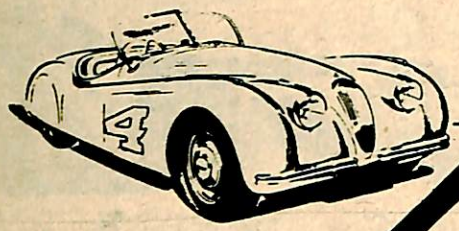
Sponsored by the Sebring Fireman, Inc. Sebring, Florida, U.S.A.

SEBRING, FLORIDA

March 15th, 1952

5.2 miles per lap

Circuit direction clockwise



SECOND ANNUAL SPORTS CAR RACE SET FOR AIR TERMINAL

12 Hr. Grand Prix of Endurance Set for Mar. 15

WORD has just come, that the Sebring Firemen, of Sebring, Florida will sponsor the second annual Sports Car race—the Sebring International Grand Prix of Endurance—a 12 hour grind starting at high noon and ending at midnight, on March 15th. The race is sanctioned by the Contest Board of the triple A. At this writing it is estimated that upwards of 50,000 spectators will view this International sports event.

The race will be run over a 5.2 mile course at the Sebring Air Terminal, about 1.7 miles longer than last year's course. The course which has three major "straights" will have ten very tricky turns. Practice will be permitted March 13th and qualifying trials are planned for March 14th.

The race will be open to holders of International F.I.A. drivers licenses, and limited to category No. 2 Sports Cars as defined by F.I.A.

At this writing it is expected that there will be over 75 entries, at least ten of these from drivers outside the U.S.A. Most of the cars entered will be of foreign manufacture, although it is hoped that the Nash-Healey and the Cunninghams will be at the starting line. The event is expected to get International and National publicity through the efforts of the AAA, and its numerous connections in the auto industry.

Two identical trophies will be at stake in this grueling event—one for the handicap winner, and the other for the car and driver covering the greatest number of miles in the 12 hours.

CUSTOM KAISER . . .

(*Continued from page* 27)

Spare wheel and tire are mounted in the Continental manner, also act as an auxiliary bumper. Sports type Carlo Borrani wire racing wheels are used. Large chrome plated "Knock-offs" give car "speedway" appearance. Wide doors have spacious storage capacity. Rear luggage door opens automatically, push button is located on dash board. Spare wheel and tire tilt backwards.

Rear fenders of aluminum have finned appearance with very narrow, built-in tail and stop-lights. Rear dashboard also has built-in loudspeaker, speedometer and tachometer.

Dimensions: Wheelbase 118½". Overall length 214". Overall width 75". Overall height 50". Total weight 2660 lbs. Tire size 6:50x16.

TOP RING GROOVE

(*Continued from page* 43)

Although not as much an offender as dirt, detonation is an important factor in causing top groove wear. Usually one thinks of detonation as an explosion and that is just what it is in this case—an explosion of the fuel mixture. It is uncontrolled burning of the fuel in the combustion chamber. Usually a person is very much aware of detonation because a pinging develops that is easily heard. However, there are some borderline cases where no pinging can be heard, but where the damage is done because excessive pressures and temperatures have developed.

Detonation causes the pressure and temperature of the combustion gases to increase considerably and this in turn causes undue pressure to be applied to the pistons, piston rings, and bearings. The top ring is driven down hard against the second ring land which causes wear on the lower side of the top ring and not infrequently will shear off the land between the first and second groove. On occasion, the heat and force of these detonations is so great that the aluminum piston head is melted and part of the metal lost.

The high temperature caused by detonation softens the ring grooves of aluminum pistons as well as effecting the head. As the ring grooves soften, the piston rings more easily pound out the groove which eventually results in excessive side clearance.

What are the conditioning factors that can aggravate detonation?

1. *The quality of the fuel.* The make and model of engine, compresion ratio, gear ratio, and the type of service the vehicle is used for all have an effect upon the quality of gasoline that is required. High compression ratios ordinarily require high octane fuels.

2. *Air-fuel mixture.* Another cause of detonation is improper air-fuel mixture. Too lean a mixture tends to cause detonation. Many engines today are equipped with carburetors that are "on the lean side" in order to get maximum fuel economy. Naturally, any change in the carburetor that results in a further leaning-off of the fuel-air mixture will cause detonation. For example, the lowering of the float level or a partly clogged jet will cause a leaner mixture. To avoid this, some manufacturers recommend increasing the use of the power jet in the carburetor by one step.

3. *Improperly adjusted ignition system.* Spark timing that is improperly adjusted and worn distributor parts have a direct influence on detonation because they change the octane requirements of an engine far beyond those for which the engine was designed. Consequently, the ignition timing should be checked frequently and properly set. Checking should be done at different rpm's to make sure that the advance is working properly and that it returns to its correct-setting.

4. *Lugging an engine.* When an engine is operated with wide open throttle at low engine rpm, the tendency towards detonation is greatly increased. Lugging causes an unbalanced heat condition in the engine. The fuel intake is increased, but the flow of the engine coolant is slowed down. This results in a rapid rise in temperature in the cylinder head. An engine that may require 75 octane fuel at 2,500 rpm might well take an 85 octane fuel to prevent detonation when operating at around 1000 rpm.

5. *Dirty cooling systems.* Failure to keep the engine cooling systems clean will have its affect on detonation. If the cooling system is not kept clean and functioning properly, it is likely that scale formations will build up around the valve ports causing localized hot spots. The scale formations prevent the adequate transfer of heat to the cooling fluid and the retained heat, being higher than it should, will prematurely explode the fuel mixture.

LOW ENGINE OPERATING TEMPERATURE INJURIOUS

Another cause of top groove wear is low engine operating temperature. When an engine is being operated with low water jacket temperature, unburned fuel washes down over the pistons and cylinders. In so doing, the lubricating film of oil is removed. Metal to metal contact is the result. Another point is that with the kind of driving which results in low operating temperatures there is more chance for condensation to form in the engine. This is harmful because the condensation combines with the sulphur in the oil to form an acid which eats away the metal.

There are two types of devices on the market today which will help to correct low operating temperatures. One is an oil heating device which heats oil and keeps it warm. Another is a re-circulating

device. This latter unit re-circulates the heated water or cooling fluid rather than letting cold water come into the water jacket all the time. Both of these devices aid in keeping the engine warm. In so doing, there is less possibility of acid forming and for unburned fuel to wash down the pistons and cylinders.

TOO MUCH SIDE CLEARANCE DESTRUCTIVE

Whenever rings are installed in grooves that are worn and have too much side clearance, they will pound the sides of the grooves, wear excessively, and fail prematurely.

If you can put a .006 feeler gauge 1/16 of an inch or more into the ring groove with a new ring in place, then there is too much side clearance, in that event, you have two choices. You can replace the piston. Or you can re-machine the top groove and install a steel spacer above the top ring.

Perfect Circle's Manulathe is designed to re-machine worn top grooves accurately, quickly, and inexpensively. The Manulathe makes it possible to salvage pistons with worn top grooves. In re-machining the top groove with the Manulathe, the groove is widened. Then a steel spacer is installed above the top ring to take up the extra clearance.

The use of this steel spacer, it has been found, will slow down top groove wear. Steel is more wear-resistant than aluminum. The impact of the ring against steel wears the groove less than the impact of the ring against aluminum.

OTHER RECOMMENDATIONS

Another recommendation that will help to keep down top groove wear is to improve piston stabilization. A piston that is not stable in the cylinder will rock back and forth as it goes up and down. The parts of the piston that move the most are those parts farthest away from the pin—that is, the top and bottom of the piston. The top ring and groove in a rocking piston will wear much faster than they will with a correct piston fit.

Nurlizing the piston will make it much more stable in the cylinder because it is possible to fit a Nurlized piston with less than one-half the normally recommended clearance. Increased stability will not only reduce top groove wear, it will also improve blow-by control and oil control, increasing the life of the ring installation and adding considerably to the life of the piston.

(Perhaps we should add that while Nurlizing is increasing the crosshead diameter of the piston by permanently raising the surface of the piston skirt, it is also applying an interrupted surface on the thrust faces of the piston. By so doing, the danger of scuffing and scoring is greatly reduced.)

Pictures on page 42 and 43 show some extreme cases of abrasive wear and detonation damage to pistons and rings. In the milder cases, the appearance of the other rings will help decide whether the trouble is the result of dirt in the engine or detonation. Dirt in the engine will cause *all* of the rings to wear more than normal. Detonation does not necessarily affect all of the rings.

Top groove wear *is* a problem. And to meet that problem effectively a careful mechanic will check for top groove wear on all re-ring jobs. Finding the causes of top groove wear and correcting them will mean that he is doing a better job of putting the engine in good operating condition.

GOLDIE GARDNER

(*Continued from page* 21)

is a wide expanse of dead level surface, it is over 4000 feet above sea level and consequently the power an engine develops at Abingdon will be reduced by something like 14% on the Salt Lake. Consequently considerably more power was obtained during practice tests in England than if the attempt were being made at a lower altitude.

For the one mile run the engine has a compression ratio of 9.3 to 1 and is boosted 25 lbs. per sq. in., the blower running at .544 engine speed. This engine will give 210 B.H.P. at 7000 r.p.m.

The body is of excellent streamlined shape, designed by Reid Railton to produce the minimum of drag, by presenting as small a frontal area as possible while enclosing the complete car and wheels.

The bottom of the body between the wheels is absolutely flat but is inclined so that the difference in height between the front and rear is 2 inches. This gives a negative incidence angle which gives stability to the whole aerofoil section. The wheelbase of the car is 99" and the track 48". Overall body length is 16'5" and it is 5'3" wide. The underside is absolutely smooth and nothing but the tires protrude.

AN interesting features connected with the cooling system is that no air enters the engine compartment and a fruitful source of wind resistance is eliminated.

The wheels are enclosed in the general body shape and also each wheel is contained in its own box with detachable fairing on the outside to ease the lot of those responsible for wheel changes.

The only part of the driver to come outside the body shell is his head and this is enclosed in a tight fitting domed plastic shield the inside of which is fitted with a sponge rubber guard. Behind the driver's head is a padded rest which is faired off into the car's tail.

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Standing Start, M.P.H.

Distance	Speed
50 Kilo	127.8015
50 Mile	130.5945
100 Kilo	132.0533
100 Mile	135.1036
200 Kilo	136.6867
1 Hour	137.4760

NATIONAL CLASS "F" RECORDS

Flying Start, M.P.H.

25 Kilo	132.5226
25 Mile	133.0370
50 Kilo	133.4729
50 Mile	134.7507
75 Kilo	134.5178
75 Mile	136.5188
100 Kilo	135.8037
100 Mile	137.6485
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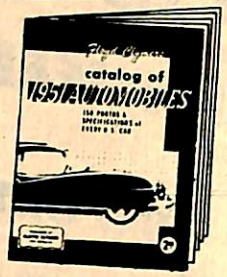

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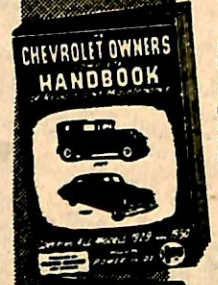

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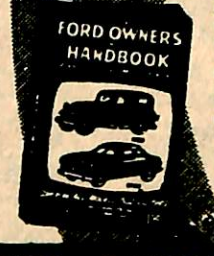

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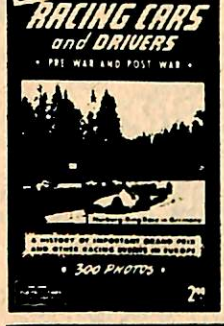

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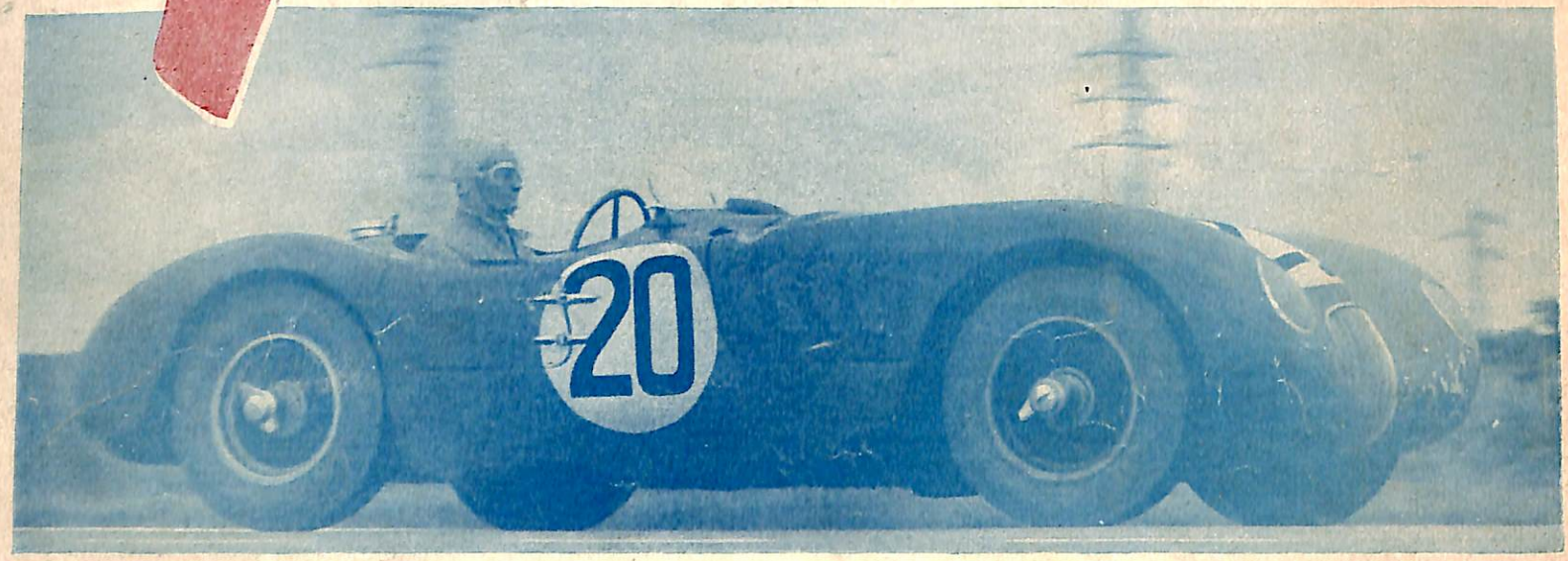

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