



Jaguar — winner for the fifth time since 1951. **BELOW:** Prior to his last pit stop (and mandatory driver change) Stuart Lewis-Evans just about broke the record for a slow lap so that co-driver Severi, pooped out from week-long mechanical preparations, would be able to sleep a few more minutes.



The D-Jaguar was designed with LeMans in mind and they've won three out of four. This year the opposition crumbled and victory became total.



Heavier and slower than the open car, Maserati's 4.5 Le Mans coupe, especially designed for Moss by Frank Costin, of Lotus fame, only looked hot — but wasn't. Falling from 2nd to 32nd, it was withdrawn with the rear in shambles.

Straight Scotch And The 24 Hour Jag

BY JESSE ALEXANDER

EVER since Sebring came and went, rumors about an American entry for Le Mans had been rampant. Indeed, a firm entry had been made for both a Ford Thunderbird and a Chevrolet Corvette, and hopes were high that Briggs Cunningham would return to his old stomping grounds at Le Mans. But in the end we were all disappointed when the official word filtered down that neither Ford nor GM had the courage to take the big jump. But despite the absence of an official American entry, there was an abundance of interesting machinery, particularly from Italy, England and Germany.

Maserati took first prize for creating the greatest stir among the press, for they arrived at Le Mans with a most violent-looking 4.5 liter Maserati V-8 coupe built by Zagato. Originally Moss's idea, it was on the drawing boards of British aerodynamicist Frank Costin by early 1957, and was supposed to have been ready for the Mille Miglia. Costin drew it up with a plexiglass sliding roof that moved fore and aft, locking the two doors which were hinged at the bottom. The design was completed and the plans rushed to Milan by air to be looked at by officials of the Commission Sportive Internationale (CSI). Negative; it would never pass technical in-

spection, for both doors must be openable if the car should flip onto its back in an accident. Obviously, in this case, the locking feature of the sliding roof prevented this. Maserati handed Costin's design to Zagato in Milan and said, "Build the car as a regular light weight coupe, following Costin's general shape."

Now the Italians are not known for their success in aerodynamics, and lack of attention to basic principles proved to be their undoing. Zagato executed the machine as faithfully as he could; it arrived at Le Mans in company with an open 4.5 V-8 as well as a 3 liter six. First practice was held Wednesday night, and we watched with more than passing interest as Stirling Moss climbed into his brain child for the first time. He and Harry Schell elected to drive it, as Fangio would have nothing to do with a closed car. After only a few laps at speed, the interior heat was unbearable, resulting in two par-boiled drivers.

Accordingly, a few holes were drilled, and in the end the machine resembled a piece of Swiss cheese. The gear train and drive shaft (running between the seats) was wrapped in heat-resistant padding; an additional windshield wiper was fitted (the first one had been picked up by the wind and flung

back over the roof of the car); the aero shrouding around the exhaust pipe came loose, actually falling off in practice, and Masers left it off.

The car was tried with windows shut and with windows open. There were no less than six orifices in the hood of the car, as well as two large vents over the driver's head in the roof. Mods were made to the bug deflector to try and keep the slanting windshield area as clean as possible. A huge filler cap in the rear window was surrounded by a plastic cloth "sock" rather than a hinged cap like the one that conceals the filler on the D type Jaguars. Wool tufts were tried during final practice in an attempt to find out where the air flow was, and these unraveled some of the mystery surrounding why Fangio was going so much faster in the open

4.5. The wool tuft placed just in front of the gauze air-intake to the carburetors stuck straight up at high speed, rather than lying flat as it should. The large orifice directly in front of the engine-air intake was discharging hot air at full chat from the motor compartment, forming a low pressure point in front of the most vital spot on the car. Obviously the engine was not breathing and that's at least one of the reasons why it wasn't going.

The Maserati coupe weighed in at technical inspection 65 pounds heavier than the roadster. Brakes were interesting on the 4.5, for they were even bigger than the ones fitted at Sebring; in fact the finned drums were larger in diameter than the wheels to which they were fitted. During the second

(Continued on page 56)



American entered and Swiss-American driven Porsche RS finished first in 1500 cc class; eighth overall.

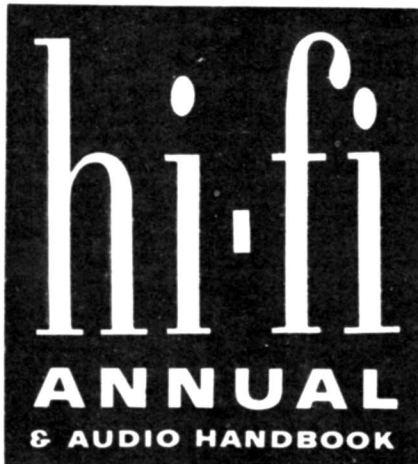


Fraser (looking happy) and Chamberlain (looking for the loot) won 1100 cc class; 2nd on Index.



First overall, the Flockhart-Bueberlain Jaguar leads its second-place team-mate across the line by over 8 laps.

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Le Mans

(Continued from page 29)

night of practice, the coupe seemed to be overgeared, and at one point Moss stormed into Mulsanne at the end of the straight with his rear brakes locked up. Behra and Simone were down to drive the open 4.5, and when Fangio finally made up his mind to come to Le Mans, he was wisely put in as Maserati's reserve driver. Thus, he could take over whichever car was better placed at the end of a few hours. The open 4.5 was Moss's Mille Miglia car, still fitted with the second gear-box behind the engine.

Second night of practice was a hair raiser. Fangio was out in the 4.5 Maser, along with Mike Hawthorn in the 4.1 liter Ferrari, both cutting their average speed by big chunks each time around until they finally crossed the 200 kph (average) barrier. The previous best practice lap had been something under 4'10", but in what seemed a surprisingly short time they both broke 4 minutes. Mike led off with a 3'59" lap; then the old man showed him how to knock a second off his time and turned 3'58.1", which means an average speed of 203.526 kph or 126.3 miles per hour for the 8.2 mile circuit. With this accomplished, Fangio pulled into the pits, and as it turned out never got back behind the wheel of a Maserati again during the next three days.

Ferrari had so many different kinds of cars at Le Mans that only engineer Ballantani knew which was which. They brought two of the potent 4.1 V-12 machines, with the latest twin cam engine, each weighing slightly over 2200 pounds. Besides these there were two very new cars with 3.1 single-camshaft V-12 engines. Here, the spark plugs are placed near the exhaust ports on either side, no longer in the "V" of the engine.

This engine was developed directly from the successful 250 Europa Gran Turismo motor. A new chassis and a Testa Rossa body make the new 3.1 one of the lightest Ferraris ever to come out of Maranello. It weighs slightly under 1800 pounds. One car was fitted with the gear box linked to the engine, and the other with the gear box back in unit with the rear end. The front of both cars had been cut away exposing the brakes, almost like a GP car. The two 4 liter machines were each fitted with a mechanical type of assist to the brakes; leverage would build up pressure in one cylinder, and this in turn would actuate the second, acting as a servo assist on the brakes. However, this resulted in a spongy feel to the Ferrari anchors, and one driver commented that he was tempted to overuse them, a disastrous practice in any long distance event.

The Ferraris were far from aerodynamic—at least compared to a D Jag—but their "boxy" shape seemed to be an aid in slowing them down at the end of Mulsanne. The handling on the big factory sports cars has been improved tremendously, and the

continued on next page

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Le Mans

continued from preceding page

short but extremely fast bend just after leaving Tertre Rouge could be taken flat out, while last year this was impossible.

Ferrari had a very strong driving team. Phil Hill was over from California, and teamed with Peter Collins. Musso was back, apparently in good health after a bout with typhoid fever, and he and Mike Hawthorn were given the other 4 liter. The two 3.1's were given to Maurice Trintignant and Oliver Gendebien and to Stuart Lewis-Evans and M. Severi. Ferrari's chief test driver, Lewis-Evans was a new-comer to the *scuderia*, having been signed on after his steady drive at Monaco in a Connaught Formula I car. A 750cc Osca, and three Stanguellinis completed the Italian contingent.

From Germany, of course came Porsche. There were three RS Spyders, one of them the latest type, seen briefly in practice two weeks before at the Nürburgring. This car, a lighter and more refined version of the RS, weighs 571 kgs or 1258 lbs as compared to 1284 pounds for the older RS.

The English contingent at Le Mans was stronger than ever. Aston-Martin, fresh from their victory on the Nürburgring with the 3 liter DBR1, chose Le Mans to introduce the 3.7 car, designated the DBR2/370. This prototype was interesting because finally Aston-Martin had built something that could conceivably give the D-Jags some competition on the Sarthe circuit. The back-bone type chassis had been laid down several years before, but Aston-Martin racing engineers didn't have the complete car ready until the 1957 24 Hour event. The engine is a 6 cylinder twin-cam design with a capacity of 3670cc — bore 92mm; stroke 92mm. Valve angle is 40 degrees; cam and accessory drive by chain. The David Brown-built head and block are aluminum; the three gallon wet sump system lubricates the seven main bearing crank; single ignition; carburetion by six Weber single-choke 48 DOE's; horsepower is probably more than 280.

The D-B five-speed gear box is at the rear in unit with the differential/rear end and Girling disc brakes with Ferodo linings are standard equipment. The three Astons, two 3 liters and the 3.7 had a fantastically loud exhaust note, reminiscent of the Ferrari-Lancia GP car with its mighty megaphones. The 3.7 car was entrusted to the two Whiteheads, Graham and Peter, while Brooks-Reid, and Salvadori-Leston were given the two 3 liter cars.

The Astons never equalled the show they put on two weeks before at the Nürburgring, for all of them were out of the race by early Sunday morning. The 3.7 jammed its gear selector, and the Brooks-Reid car crashed at Tertre Rouge after spinning, stopping in the middle of the road without any gears. Maglioli in the Porsche RS crashed into it. Neither driver was seriously hurt but two potential winners were out of the running. Le Mans '57 was a com-

plete debacle for Aston-Martin; they came beautifully prepared and with fantastic organization, but while the cars were ready their gear boxes let them down.

Jaguars were, of course, represented by Ecurie Ecosse. The 3.8 fuel injected Sebring car was on hand, along with another 3.8 running on carbs. There were two other 3.4 cars, one Belgian entry driven by Paul Frere-F. Rouselle, and a French-entered D-type. The two 3.8 cars looked identical to last year's winner—they had the same type of plexiglass tonneau cover from the full-width screen on back, covering the passenger's seat. As far as the Ecurie Ecosse team being a "private" entry, the identity of the pit personnel speaks for itself. Lofty England was in overall charge, but the factory mechanics were on hand as well as the Dunlop tire people and a representative of the Lucas Company to look after the fuel injection car. One car was even seen with English factory license plates. This should in no way detract from the effort of David Murray in putting Ecurie Ecosse in the winner's circle, but there should be less talk about it being a completely private venture.

Flockhart and Bueb were given one 3.8, while Sanderson and Lawrence handled the other. Mixture problems cropped up in practice with the injection car, but things were soon ironed out. With an honest 300 bhp under the hood, this D-type was about to give a fine account of itself. The foreign opposition to Jaguar was formidable enough, but the English went about their business with quiet calm, while both Ferrari and Maserati took all the pre-race publicity and attention.

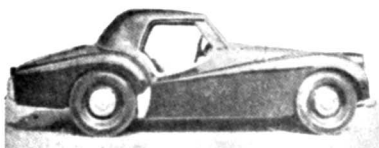
The failure of Aston-Martin to bring home the bacon was equaled by the disappointment at the failure of the Coventry Climax 1500 twin-cam engine to last even through practice in Colin Chapman's Lotus. The car had been literally flying and was much faster than any of the Porsches; Chapman himself turned 4'29", while Jay Chamberlin got down to 4'25". None of the Stuttgart air conditioners could get beneath 4'30". Only 55 pounds lighter than the Maglioli-Barth Porsche, the 1500 Lotus Climax "double knocker" seemed to handle and accelerate better than anything the Germans could offer. Just watching Chapman drive it through Mulsanne corner was an experience by itself. He would shut off later than any of the other small stuff, then get on it again before he was halfway through the corner. He literally drove it through the corner with his foot practically in the carburetors.

Thus, we were all anticipating a terrific duel between the Maglioli-Barth Porsche and the 1500 Lotus to be driven by "Mac" Fraser and Jay Chamberlin. But while Huschke von Hanstein and his team were concerned about the English car's performance, their worries were soon over. During night practice Thursday evening, Mac was hauling down Mulsanne at about 7200 when the 1500 dropped a valve! Bitterly disappointed, the Lotus team sent out a hurried call for another 1500 engine from England; but this came to nothing. Chapman decided that since the same malfunction had happened to every other engine of the new type, there was no point in trying to start the 1500 in the race. Besides,

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there was only one engine left, the last one anyone had, anywhere. Actual trouble was not immediately discovered, but it would seem to lie in material failure rather than some basic fault in the overall design. The English BRM had experienced valve trouble last year in GP racing, and it boiled down to suppliers who did not furnish valves that would do the job.

Here is where a man like Ferrari has a tremendous advantage over his competitors. Practically everything that he uses in his engines is constructed right in his own foundry.

So a dejected Colin Chapman decided to put all his eggs in one basket and have a go at the Index of Performance, usually the forte of the DB's or the Porsches. For this effort, Colin had prepared a special 750cc Lotus Climax. The bore stayed at 2.8 inches, but the stroke had been shortened to 1.7 inches. The engine produced 59 bhp at 8000 rpm with two twin-choke Weber (35mm) carburetors. This car and two other 1100 machines were fitted with a very-streamlined and very-effective windshield rig that gave the "Loti" extremely good aerodynamics. The "seven-fifty" car was driven by Cliff Allison-K. Hall, covering 2,159 miles in the 24 hours. (89.9 mph. average).

From France came a team of Talbots with 2.5 Maserati engines, all of them sporting new Stanguellini bodies. These Talbots, sponsored by Dubonnet, were no more than a token effort on the part of the builders to have a medium displacement blue car on the starting line. They were too heavy, weighing over 1980 pounds. Gordini arrived at Le Mans with two machines, a three liter eight cylinder, and a two liter six. Neither put on any kind of a show and only proved that Gordini has slipped badly in the past few years from his once influential position in European racing. The one real-going blue-painted car at Le Mans was the Ferrari Testa Rossa in the hands of Maurice Picard and Richie Ginther; the latter is one of the cleanest and most rapid up and coming American drivers yet seen in Europe.

The race itself was extremely exciting during the first three hours. The Italians fully extended themselves — beyond any reason — but although the cars went fast in the first part of the race, it availed them nothing in the end. Peter Collins was the first away at the start, but he lasted exactly two laps before the engine seized up. (Just the day before, we had seen the V-12 engine from the Collins-Hill car completely torn apart, and we remarked at the time that we hoped the starting driver wouldn't over-stress things in the first part of the race.) As soon as Collins was out, it was Mike Hawthorn's turn to have a go. He lasted just 19 laps before a wheel change forced him into the pits for an extended stop. The result was that when the Ferrari finally did get back into the race, it could never retake the lead from Flockhart's Jaguar, despite the fact that Hawthorn turned 3'59" in an effort to catch the Jag.

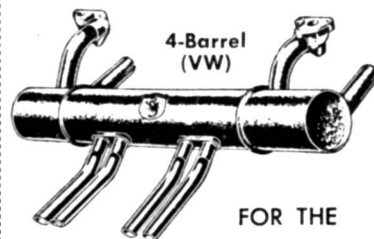
The other going Ferrari proved to be #8 — the Gendebien-Trintignant car. This 3.1 machine looked to be very nearly as fast as the D type Jags, certainly on acceleration

continued on next page

ABARTH Sweeps '57 Mille Miglia!

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Le Mans

continued from preceding page

and quite possibly on top speed, despite the Jag's superior aerodynamics. Phil Hill had nothing but good things to say about the car and apparently it will supersede the Testa Rossa as Ferrari's "production" sports car in 1957-58. Prancing horse retirements were due to engine seizure and failure of oil supply on the two 4 liters, while the 3.1 went out with a blown piston. The Severi-Lewis-Evans car finished in fifth position. General opinion was that bad fuel caused most of the trouble, for the von Frankenberg-Herrmann Porsche also went out with a blown piston. More than likely these cars were "pinked" or "knocking" all the way down Mulsanne straight and the drivers, unable to hear it, did not lift their feet.

After only six hours the Ecosse D types had it all their own way, running steadily but conservatively. The 4.5 Maser coupe had long ago folded up with a seized rear end, as had the open 4.5 that Behra had driven so nobly for such a short time. The rubber boot over the joint from the half-shaft at the rear wheel came off, all the oil came out, and pieces letting go from the half shaft flew into the fuel tank. Simone was at the wheel when it happened, and he managed to stop the car at Mulsanne before any fire could start. The Scarlatti-Bonnier 3 liter Maserati went out with clutch trouble before twelve hours were up. Thus, to all intents and purposes, the race was over early on the morning of Sunday the 23rd when the D Jags took the lead, holding it till 4PM Sunday afternoon, 24 hours after they started.

The Italian "challenge" just never materialized. Possibly it *could* have, particularly among the Ferraris, if Collins and Hawthorn had lifted their feet occasionally to make it a 24 hour race instead of a two hour sprint. For the English, Le Mans once more became an automobile showroom. What a pity that neither Chevrolet nor Ford had the courage to bring a team to France for this internationally famous event. Even if they didn't even finish, the fact that they were *there and entered* would have been a step in the right direction. And Le Mans is not that difficult a race to win, according to Jaguar.

Jesse L. Alexander

RESULTS—1957 LE MANS 24 HOUR RACE

1. Flockhart-Bueb; Jaguar "D"; 3781 cc; averaged 113.85 mph for the 2732.36 miles covered in the 24 hours.
2. Sanderson-Lawrence; Jaguar "D"; 3781 cc; averaged 111.16 mph for 2665.51 miles.
3. Lucas—"Jean Marie"; Jaguar "D"; 3442 cc; averaged 110.17 mph for the 2644.15 miles.
4. Frere-Rousselle; Jaguar "D"; entered by the "Ecurie Nationale Belge"; averaged 107.95 mph for 2590.76 miles.
5. Lewis-Evans-Severi; Ferrari; 3117 cc.
6. Hamilton-Gregory; Jaguar "D".
7. Bianchi-Harris; Ferrari "Testa Rossa".
8. Hugus-de Beaufort; Porsche RS; 1498 cc.
9. Mackay-Fraser-Chamberlin; Lotus; 1098 cc.
10. Rudd-Bolton; AC Bristol; 1971 cc.

INDEX OF PERFORMANCE WINNER

1. Lotus 750 cc; Allison-Hall.
2. Lotus 1098 cc; Mackay-Fraser-Chamberlin.
3. DB 745 cc; Cornet-Perrier.

Fastest lap (record)

Ferrari; 4023 cc; Hawthorn;
3 min 59.6 seconds; 125.67 mph

Alfa

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straights of the high desert country. I took the wheel. The seating position felt fine: high, with plenty of room for everything but my feet, which tended to get tangled in the tight-packed cluster of pedals. The throttle pedal was tucked between the two big pedals in typical old-continental style—good for heel-and-toe work but easy to make mistakes with at first.

I found it surprising that this car was very reluctant to get off the line in spite of its close power to weight ratio and fast idle. But with higher revs it would shudder, charge and peak out all within four seconds. First speed was at the far left of the H-shaped gate, second was straight back. In this cog, the 2.3 delivered a solid whack-in-the-back and hurried powerfully up to 60 mph. Here I popped the lever across to third, and began to get some idea of the passions this purebred carries locked under its long hood. There are plenty of road machines that will do 75 in third, but not many will do it with such fierce eagerness.

It was also surprising to discover that the 2.3 handles heavily, like an old truck, at low speeds. But at 40 mph there's an easy, fluid quality to everything it does; and from about 60 mph onward the heavy, pedestrian side of its character vanishes completely. It becomes supple as a whip and its road behavior is far above average, even by modern sports car standards.

Alfas of this period were celebrated for their "sentient steering," which, in the words of a road-tester of the '30's, "seems to anticipate turns before you reach them." This description has the ring of superstitious folklore, but it's well-grounded. It's possible, more or less to *will* a motorcycle around a bend by body or muscle movements that are practically imperceptible. The Alfa, thanks largely to its full ball-bearing almost frictionless steering, can be guided the same way. Too tight a grip on the wheel at speed can produce symptoms of wander; but these are caused by the driver's own minor body movements being telegraphed to the front wheels through its super-sensitive steering.

The 2.3's cornering behavior is no less uncanny. It has been called an oversteering car; but, judging by the Zipper specimen, this is not exactly the case. The effect of common oversteer is that the car pulls to the inside of a curve and has to be steered away from the inside for it to follow the radius of the curve accurately. The Alfa is not like this; it's weird. The front wheels follow any curve as though on rails, and need none of the correction required by over- or under-steer. But the rear wheels don't follow the same invisible track. They slide outward, following a trajectory of their own until their alignment puts them parallel again with the front wheels. It feels as though the rear wheels need a moment to catch up with the front wheels, and the sensation is a little disquieting until you learn that this outward swing of the rear end *always* stops as soon as the rear wheels point in the same direction as the front wheels.

The rear-end slide sets in at fairly low cornering speeds, but no matter how fast we cornered there was *no* trace of tire squeal. The slide isn't sudden, and has no slippery broken-loose feel. Like the slide of the modern Porsche, it probably helps the 2.3 get through turns a shade faster than it otherwise could. This effect probably was an important factor in the 2.3's racing successes.

Otto and I spent the first few hours of our test day taking care of the basic road-testing preliminaries: weighing the car, calibrating its speedometer, taking pulling power and drag readings, and just getting the feel of the machine. It was a ball. And then the clutch went out.

At the very outset Zipper had announced that he wasn't happy with the clutch; he'd hoped to rebuild it before this but the needed springs had not arrived. So we nursed the clutch carefully. During high-speed gear changes it would slip momentarily and we learned to avoid this by not applying throttle until the multiple disc unit had established a good bite. But the time came when depressing the clutch pedal suddenly had no effect.

Worse things can happen than being 50 miles from civilization in a '34 Alfa without a clutch. Zipper assured me cheerfully. Then, with great gusto, he proceeded to pick his way through the spur-cut gears. His first few changes were just a bit noisy, but by the fifth change he had established such control over engine speed and gear

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Jordan

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Special stainless-steel studs (having a low coefficient of expansion) are screwed into the crankcase with a very long thread. These studs extend through the cylinder muff and through the cylinder head. Special nuts at the upper end of these studs hold the cylinder head against the barrel which in turn is held firmly on the crankcase.

A special copper washer serves as a gasket between the cast iron portion of the cylinder barrel and the head. This is annealed each time the head is removed. The muff does not extend quite to the upper end of the barrel to avoid interference which might otherwise occur due to the difference in expansion between the cast iron and the aluminum.

Norton Manx hairpin valve springs are used. These give 180 pounds pressure when the valve is on its seat.

One of the most outstanding features of this engine and one that evokes much comment is the special double overhead camshaft setup. These camshafts are supported by ball bearings held in special

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