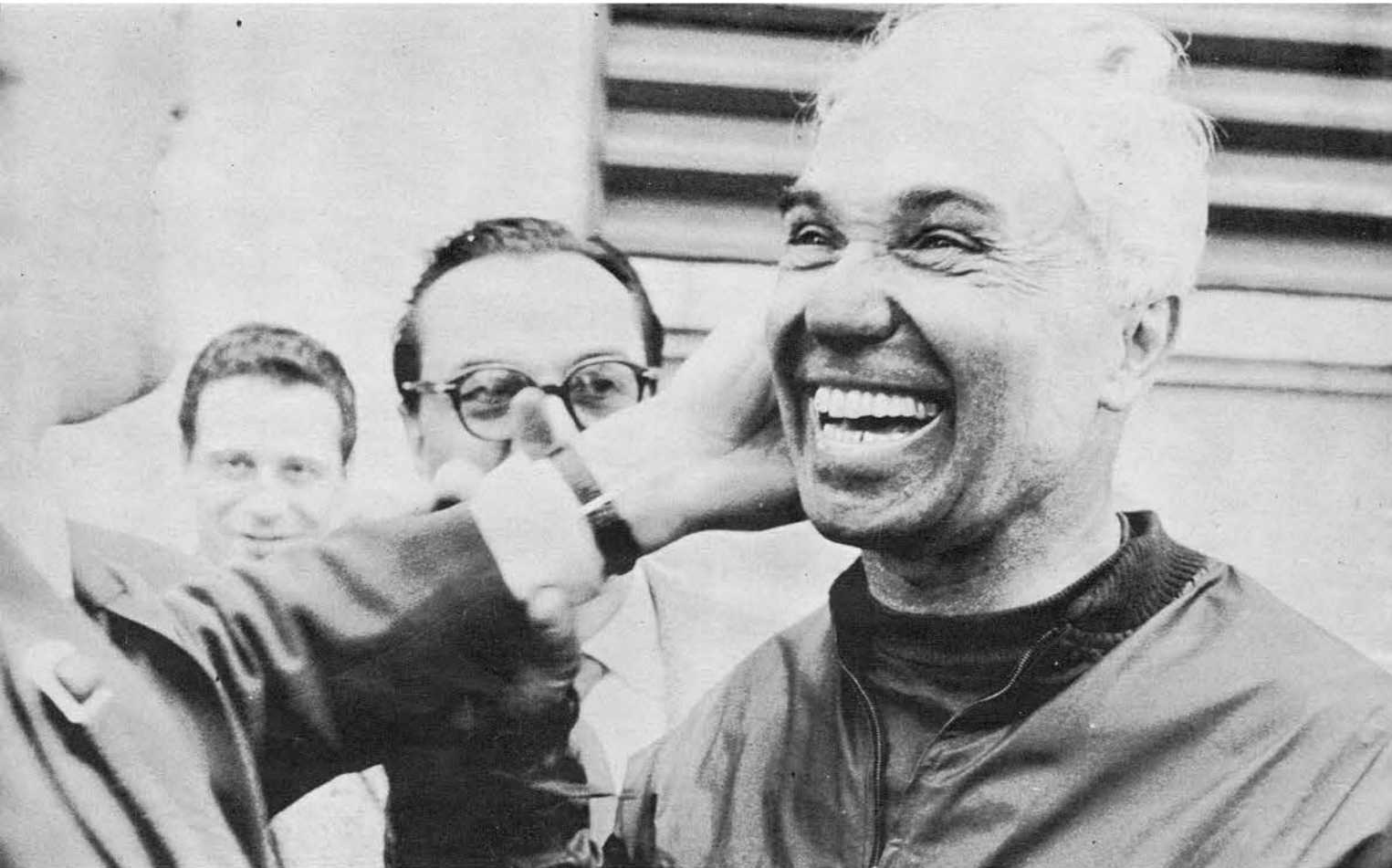
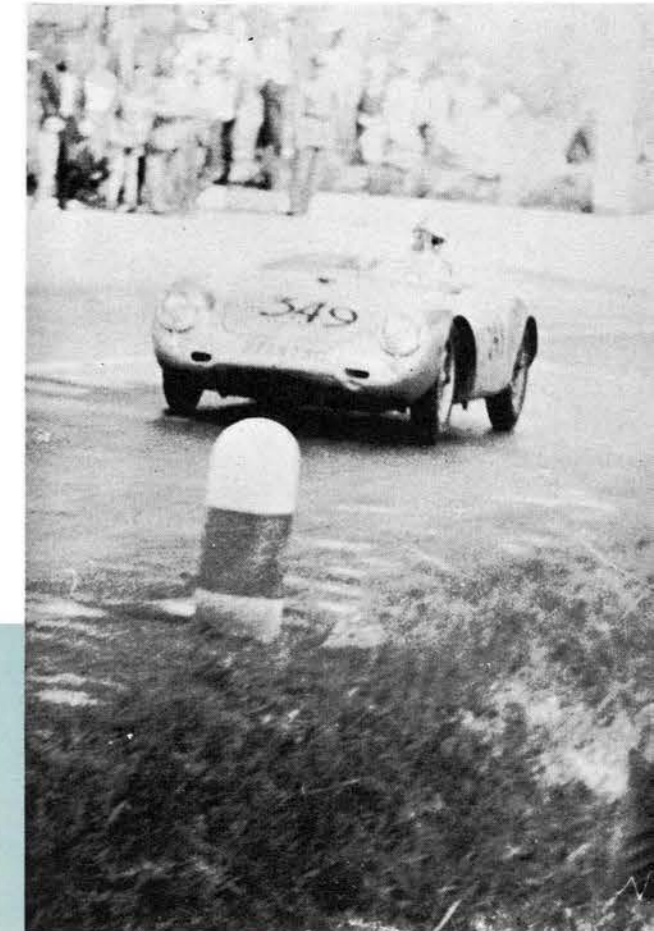


Unless your name is Piero Taruffi or Stirling Moss, there was only one way to run the Mille Miglia. Prepare the car as best you can and follow the veterans. Ak Miller did his best but he had to . . .

Taruffi's victory in the '57 Mille Miglia marked the end of a fifteen year endeavor to possess that prize. It came in the nick of time, too, for with the demise of 1000 mile run, he would never have had the chance again.



Most valuable information came from Denis Jenkinson (center) who volunteered a myriad useful hints. Doug Harrison, at right rode co-pilot with Ak (checked shirt).



Umberto Maglioli drove to victory in 1500cc class in a Porsche RS Syder. Placed 5th overall.

horrible hour of 4 AM; I went on board at six, met Ak and his crew, and a few hours later we were struggling down the gangway with the largest collection of luggage ever seen among four men. The race car had been unloaded earlier along with Pete Coltrin's Olds coupe that was to serve as combination tow and scout car.

Customs formalities went fairly smoothly, thanks in large part to the triple "A" rep on the pier; we managed to get two carnets de passage and were just about to begin loading the car when the French Customs official, a female in uniform who looked like a fugitive from the Red Army's woman auxiliary, asked the boys to open the box that just happened to contain about 10,000 feet of 16mm movie film. Now this really put things into a flap. Heads were put together, hands were wrung, many words were spoken back and forth and it began to look as if Ak was going to get stuck with a fantastic import duty. Somehow, however, it was inferred that if a wee bit of money changed hands, the customs people would do us a favor and let it pass. Welcome to Europe!

Another hour later and a few thousand French Francs less, we were on the way to Paris, my Porsche leading the way with MUM 816 (the Olds) towing the race car in its trailer, rattling and banging over those horrible Norman cobblestone roads. People stopped and stared; kids, dogs and chickens scurried out of the way, and the Gendarmes, on duty in the center of each little town that we passed through, looked at us most suspiciously, especially when they spied the California license plate. But all went without incident, and by 3:30 that afternoon we were propping up Harry Schell's bar while Ak was trying to make himself understood over the tube to the FIA office. He needed a license for his race car from them. It seemed that nothing would do but he should go to the office in person, so while he and Doug jumped a taxi for the ride to the Place de la Concorde, Pete Coltrin and I scouted around for some hotel rooms, which in Paris, in the spring, are practically non-existent. Thanks to the bartender at Harry's, however, we got in at a place just down the street, practically disrupting traffic on the Avenue D'Iena as we unloaded. Next day found us rolling South through a sunny and green France headed towards Switzerland. Ak had made up his mind to drive straight on through to Brescia as he was eager to get down and turn in some practice laps.

The Swiss frontier was crossed at 2 am, in a tiny border village shrouded in fog and wet. I don't think the guard on duty had ever been confronted with anything quite like this before in his life. Here were five Americans with two cars, one of which was towing a trailer which they said contained a racing car. Very



Oliver Gendebien in a Gran Turismo Ferrari flogged previous records on the Mantua to Brescia run. He clocked 123.6 mph, six tenths better than Moss in '55.

PLAY IT BY EAR

RESULTS—24th Mille Miglia

1. Piero Taruffi (Ferrari) 10 hr. 27'47"
average speed: 94.6 mph.
2. Graf Wolfgang Berghe von Tripps (Ferrari) 10 hr. 30'48"
3. Oliver Gendebien (Ferrari Gran Turismo) 10 hr. 35'53"
4. Giorgio Scarlatti (Maserati 3000 cc) 11 hr. 00'58"
5. Umberto Maglioli (Porsche RS Spyder) 11 hr. 14'07"
6. Camillo Luglio (Ferrari) 11 hr. 26'58"

Gran Premio Nuvolari (For the distance Mantua-Brescia)

1. Gendebien 39'43" 123.6 mph (new record)
2. Von Tripps 40'10" 122.2 mph
3. Taruffi 40'31" 121.1 mph

Editors note: This story is a follow-up by our European Editor on Ak Miller's attempt at the 1957 Mille Miglia. For a complete tech report on Ak's Kurtis-Chrysler, see the April issue of SCI.

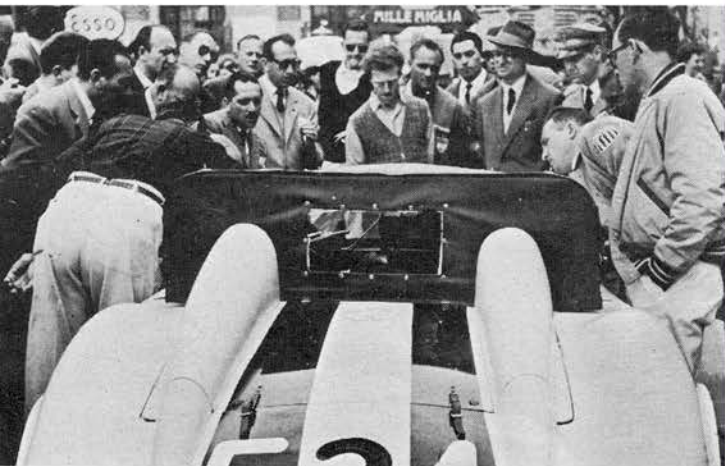
By JESSE ALEXANDER
SCI European Editor

AK MILLER ARRIVES LE HAVRE APRIL 23 ABOARD SS UNITED STATES NEEDS CUSTOMS HELP MEET HIM THERE AND RENDER ALL ASSISTANCE SIGNED JOHN CHRISTY SPORTS CARS ILLUSTRATED . . .

I received the above cable in the middle of April and accordingly, met Ak Miller and Doug Harrison with "El Caballo" at the French dockside. The "United States" came in at the



Wolfgang Von Tripps just as he finished second place. For a while, Tripps, coming into the Ravenna control, led the pack averaging 115.7 mph. Almost to the end the quarrel for first was between Tripps and Taruffi.



No top, no race! So this lid was quickly fabricated for inspection day. No thing of beauty; even its functional use can be debated especially at a speed of anything over 30 mph.



Friday before the start. The ridiculous top gets a final okay at scrutineering time. NHRA, on duty with the Army in Europe, served as pit crew at various stops along the route.

suspiciously, he cast his tiny flash light over the car papers issue in Le Havre, then decided that before he could put his stamp on them he ought to call his superior officer. A bell was rung and in a few minutes a night-shirted inspector was hanging from an upstairs window of the customs house. A brief conversation ensued between the guard and his chief, then he said, "C'est va"—a few more forms were filled out, stamped and properly filed away, and we were free to move on.

Two and a half hours later found El Caballo approaching the Simplon Pass; Pete was driving the Olds and missed the turn-off for the railroad station where you load your cars onto flat cars to go through the tunnel when the pass itself is closed by snow. The road began to climb, and to wind around hairpin corners banked with snow . . . higher and higher they ground on; finally someone said, "I don't think the tunnel is up here"—so around they went and back down the hill to the quaint little Swiss village of Brig. Once safely on the train, they were at the Italian frontier at the end of the tunnel and that much closer to their objective, Brescia, and the 24th Mille Miglia.

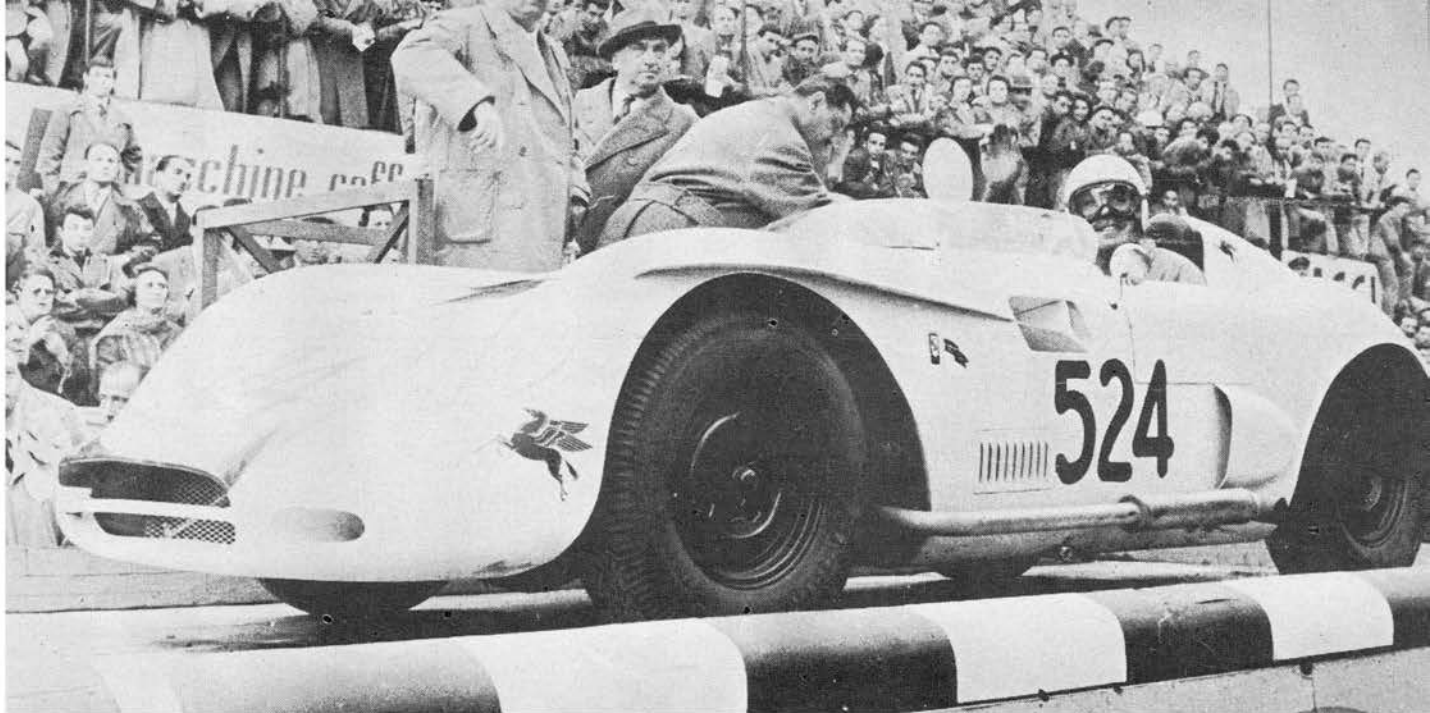
Brescia, city of the Mille Miglia, begins to come alive each year about a week before the race; Ak and Doug arrived about 12 days ahead and immediately set out to map the course and find out just how rough it was.

Piero Taruffi has done the Mille Miglia now 14 times, the '57 race being his 15th; even he, the acknowledged expert and perennial threat in the event, admits that he doesn't know it perfectly; he knows certain stretches, like those down the Adriatic Coast, as well as the back of his hand, but other parts, the mountainous bits North of Rome, are not his forte. This, interestingly enough, shows up clearly in his elapsed times from point to point. If there is a mechanical system that will beat the odds, then Moss and Jenkinson have it in their close partnership that won them the event in 1955 at a record speed of 97.90 mph. Relying on a roll map inside a waterproof box with a plexiglass top which detailed every corner as to speed and surface—every blind brow—every dip, even they had to spend one time this year going over the circuit bringing their map up to date. Thus, the task that Ak and Doug had cut out for themselves was a seemingly impossible one, but they were there and determined to do their best.

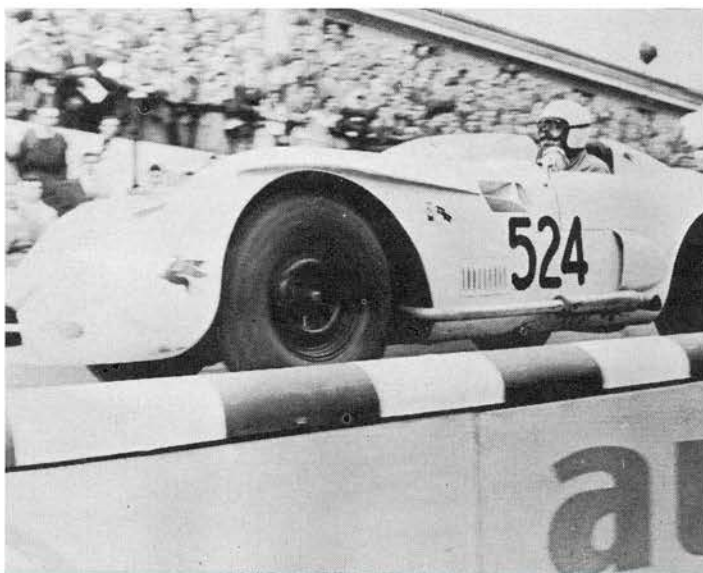
Opposition was more than just formidable, it was damned near overwhelming. At least two 4.5 liter V-8 Maseratis were on tap, one to be driven by Moss, the other by Behra; a brace of 3.8 and perhaps even a rumored new 4 liter Ferrari were on the lists. These would be handled by Collins-Klementaski, Wolfgang Von Tripps, Alfonso de Portago-Edmund Nelson, and last but far from least, Piero Taruffi. In addition, one lone Ecurrie Ecosse D Jag had been entered, to be driven by Ron Flockhart; Two other Maseratis, one a 3 liter with Scarlatti at the helm, and a new experimental 3.5 liter twelve cylinder developed from their latest 2.5 liter Formula I engine, to be driven by Hans Hermann, were among the factory entries, but not really considered to be a threat.

After doing one complete lap in the Oldsmobile, Ak had made up his mind. "We'll play it by ear, try and finish and anything after that will be a bonus."

The time went fast. A top had to be made for inspection. Gas coupons had to be promoted from General Petroleum. All sorts of minor little items kept cropping up. At scrutineering on the Friday before the start, Ak found he had to lay out an additional \$125 for liability insurance. The ridiculous top was produced and the officials seemed satisfied. By then several members of the National Hot Rod Association on duty with the Army in Europe had shown up in Brescia, and Ak sat down with them to map out plans for refuel stops and tires. The first gas-up would be at Pesaro—then Rome—then Bologna on the way home. At each of these stops there would also be tires if needed. The boys to man the pits left 24 hours ahead of time, as the roads were closed early. In addition to the GI's at the tire stops, an American film crew were setting themselves up around the circuit to shoot the race as well as trace Ak's progress.



Just thirty minutes before this picture was taken, the powerful Chrysler engine turned temperamental and refused to kick off. Now, on the ramp, the engine idles quietly as the two Americanos await the flag.



Seat belts adjusted, shoulder harnesses set, the seconds are counted off, the flag dropped and down the chute they go.



They're off! Later, as Taruffi passed El Caballo, Ak forgot himself and almost rocketed up the Italian's back.

We spent the Saturday doing last minute items to the car; then gassed up—checked tires, and garaged. Ak was far from optimistic for that single tour around in the Olds had been most impressive. The roads were in a sad state and if they shook the boys up in the Olds, what were they going to do to them in the Kurtis-Chrysler with its solid axles and hard racing tires? If it rained, the 6.5 liters of brute power under the hood would just be completely unusable.

We talked with numerous European motoring personalities. Wilky Wilkinson and Ak discussed injection; we found Umberto Maglioli staying at our hotel and he and Ak reminisced over the Carrera. The most profitable time was spent with Denis Jenkinson.

Jenks filled them on control procedure in the Mille Miglia—how to get the route card stamped. "Just keep rolling, hold your card along the side of the door and let the official worry about stamping it; don't get upset if the stamp is put in the wrong place, for often times you'll get 'Mantova' stamped on your right

thumb but no matter . . . and don't worry about the people along the road. They'll be a bit nerve-racking at first but after a few miles you'll get used to them. They'll all wave handkerchiefs at you but this doesn't mean danger, they're just happy. Remember about flag men too; they'll be out on all of the bad corners, but don't rely on them, as by the time you come by they'll be tired and half asleep. Also, there are the usual shut off warnings at the bad corners, but they're meant for the small cars; they figure any one in a fast car should know where the bad spots are and will brake early. In overtaking another car, blink your lights—you'll find the small ones usually cooperative in letting you by. It's the middle-sized 2 liter cars that sometimes give you trouble."

A few last-minute changes in the entries were announced on Saturday. Jean Behra, going too fast in practice near Modena, crashed his 4.5 V-8 and was out of the race. Cabianca, down to drive a 1500cc Osca to give Maglioli a bad time in the lone RS Porsche, suddenly switched to an 1100 car after he also had an accident in training—thus the prospects for a real duel in this

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Last Mille Miglia?

(Continued from page 29)

class vaporized. All things considered, then, Moss was the favorite on the basis of past performances and on the basis of the 4.5's fine showing at Sebring. The young Englishman was talking about having a "go" at his '55 record of a 97.9 mph average in the Mercedes 300SLR, but this seemed a super-human task considering the difference between Italian and German pit work. The new Maserati has more acceleration than the Mercedes and it had been fitted with an additional two-speed transfer case mounted just behind the engine with a "high" and "low" cog to gear the car down for the mountains as well as give it an additional 15 mph on the long straight stretches. (As a point of interest here, Moss said after he got back into Brescia that the Maser reached its maximum speed just after leaving Brescia, whereas in the Mercedes, they didn't get the thing up to its limit until close to Verona, 41 miles out).

Another point in Moss' favor was the fact that he had drawn the final starting number, so as you move out you always know where you stand in relation to your competition while they never know how close behind them you are until picked up in their mirror. As far as top speed was concerned the Ferraris and the 4.5 Maser were on equal terms—an honest 185 mph for both with the Maser having an edge with its extra box. Ak figured he could turn 170 mph on the long straight back into Brescia from Mantova, as the surface was new and smooth, but for the rest of it he couldn't possibly exceed 150.

That night, Brescia was really jumping. The first car, a baby Fiat, rolled down the ramp at 11:00 pm, and at succeeding intervals of one minute a piece 301 starters were flagged off.

At 3:49 am, Umberto Maglioli roared off into the night in the Porsche; at exactly the same time, Ak and Doug were eating breakfast in their hotel and preparing to bring El Caballo to the starting line. They walked to the garage, rolled her out of the stall and turned over the starter; nothing happened. Again they tried—again—still nothing. A Fiat was enlisted to tow the race car around the garage which, incidentally, was two stories underground. Finally, at about five am, just 24 minutes before they were due to be off, El Caballo decided to cooperate and fired up. The two Americans, usually the picture of relaxed composure, were spitting nails by the time they pushed their way through the milling crowds at the starting line.

Flockhart's Jag went down the chute at 5:18. The Cooper-Jag of Steed and Hall set off at 5:20, then came Ak's turn. The powerful Chrysler motored calmly up to the line on the ramp where Castegneto and Count Magi with the mayor of Brescia stood with the starting flag. It was fantastically exciting; the impressive Chrysler

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Horses Part II

(Continued from page 25)

through a single throttle valve, but instead of trying to measure air density by a combination of temperature and pressure, they put a big venturi at that throttle and bled off a pressure line which was directly sensitive to the volume of air being consumed. This told the injection pump exactly what it needed to know, and avoided seasons of cut-and-try between races.

Mercedes also seems to have licked the knotty problem of nozzle placement in a unique manner. Their outlet was screwed into the cylinder wall just below the intake valve, where it was covered by the top land of the piston at top dead center. Its spray was directed across the incoming air stream, to improve vaporization, and against the face of the exhaust valve to cool that hot surface. Injection was timed to take place over the 120 degrees before the piston covered the nozzle, which meant that fuel entered largely during the compression stroke and was still being injected as combustion began if the ignition was well advanced. This kept the fuel-air mixture as cool as possible up to the last minute, and allowed complete freedom in valve overlap since fuel couldn't be lost down the exhaust pipes.

The remarkable smoothness and power of the Merk straight-eights at all speeds is testament enough to the potency of this injection system, which rounded out every flat spot. Unless the job's done just right, though, the curve will be full of lumps and a handful of Webers or Solexes would be a better investment. The major problem, as we recall, is the passage of the maximum weight of air per unit time, equalled in importance by precise fuel metering. Pounds of air that can be pumped through depend on all the foregoing factors but probably most of all on valve timing, which is more closely intertwined than ever with compression ratios and combustion chamber design.

VALVE GEAR

If the racing engine designer could have his way, his valves would open instantly and close just as fast. He's constantly pushing back the barriers of material strengths and space restrictions to approach this goal, and direct injection has helped by eliminating some of the variables in the overlap period. It has hindered just as much, though, by allowing higher compression ratios which severely limit the piston-to-valve clearance margin at top dead center. Those valves *must* be seated fast, or risk summary decapitation.

As hinted above, there are many limitations on both positive and negative valve acceleration. Kicking the valve open is by no means as tough as closing it, but the first step can directly influence the ease with which the second is executed. If durability of the valve gear isn't important, the opening contour can be quite arbitrary, but for long life the cam shape must be

matched to the tappet type, shape and material, the spring pressures and the weight of the components to be lifted.

Converting the rotating motion of the cam into the valve's reciprocation motion introduces some side thrust at the junction point, and to keep this from wearing the valve guides unduly, some form of tappet must be interposed. The shapes of the tappet faces determine the actual motion of the valve as opposed to the plotted cam lobe. A cam for a roller tappet, for example, will look more extreme than that for a flat tappet giving the same valve opening diagram.

In spite of this, a round or curved tappet surface allows the cam designer much more latitude, and the roller is the ultimate development of this. There has been much discussion over whether or not they actually roll, and in Ricardo's day there was reason to doubt it, but Chet Herbert's modern experiments show that they do rotate. This is beside the point, though, the function of the roller being to allow an improved valve opening diagram, which must be enough better to offset the added weight that the use of a roller brings.

With a few notable exceptions, most of the world's top racing engines have used a finger-type tappet. This is a short, shaped sliver of metal placed between the cam lobe and valve stem, with one end pivoted so that the finger trails in the direction of the cam rotation. (It can actually be either direction.) All lateral thrust is thus taken by the pivot bearing, and the finger can be as thin and light as the designer dares, once he's presented the cam with the type of tappet contour that it requires.

Actual pivoting methods vary, but Maserati is typical in using a single shaft parallel to each cam. Porsche, with only two fingers per cam to deal with, rests the finger anchor on a spherical surface, supported by a vertical rod. The fingers themselves can be shifted, sometimes by eccentric pivots, to vary valve clearance, though most rely on tiny cups with shims over the valve stems, if they aren't finicky enough to grind the stem ends to suit.

More accurately called a "tappet" are the cup-type cam followers long familiar to Meyer-Drake mechanics. Both huskier and heavier than valve fingers, this type has been popularized in production engines from Jaguar, Aston-Martin and Alfa Romeo, not to mention the Crosley. All have valve adjustment by shims, the latter being the only version in which shims can be changed without pulling the cam.

Cup-type tappets aren't generally suitable for assaults on the two horse per cubic inch mark, since their working surfaces must be flat or nearly so, which restricts the cam designer. Liking the straight motion of the cup-type, though, Lampredi produced a mushroom-shaped variation of it for his Ferrari fours. He sank a narrow roller into its face, though, to allow faster valve accelerations, and his successor Bellentani has added rollers to the tips of the rockers in the single-cam V-12's. Even the finger-type followers are getting the treatment, the latest Maserati engines having rollers added, plus screw-and-locknut clearance setting. They may find it hard, with this system, to keep the roller surfaces

under the hood

BONNEVILLE NATIONAL SPEED TRIALS

Aug. 26 to Sept. 1, 1957

The Contest Board of the world-famous Bonneville National Speed Trials has just announced regulations for the ninth edition of this classic event. Due in part to encouragement given by SCI, this year's week-long meeting on the world's greatest and safest straightaway course will offer greatly increased scope for sports car competition. In place of the four sports classes provided at previous Bonneville meets. The '57 rules define ten classes of sports cars. Last year's meet was enthusiastically endorsed by all its sports car contestants and the Board extends a warm and cordial invitation to all those who wish to run in sports car categories this fall.

Whether you'd like to scream for records in a blown Monza or just explore the effects of simple tuning on an MGA, you'll find running on the land speed record course an unforgettable experience. The Nationals are justly renowned for smooth organization, precise timing, safety, technical stimulation and good fellowship. The \$20 entry fee (\$35 post-entry, after Aug. 1) entitles contestants to any number of timed runs during the seven-day event and there will be excellent trophies for top cars in classes.

REGULATIONS

I.

Sports cars will be divided into four groups with separate engine classes as follows: (Production will mean produced in quantities of 500 or more; open and closed cars will run in the same classes.)

SPORTS CARS, PRODUCTION

Class O: Up to 91 cu. ins.

Class A: 92 to 170 cu. ins.

Class B: 171 to 305 cu. ins.

Cars competing in these classes must be equipped with production sports-car type bodies, unaltered in height, width and contour. Engines, bodies, chassis, windshields, fenders, hood and grille must be of the same year and make and mounted in the conventional manner. No streamlining will be allowed.

SPORTS CARS, AMERICAN PRODUCTION

Class C: Up to 368 cu. ins.

Cars competing in this class must be equipped with American production sports car type bodies, unaltered in height, width, and contour. Engines, bodies, chassis, windshields, fenders, hoods and grilles must be of the same year and make and mounted in the conventional manner. No streamlining will be allowed. American

production sports cars with engines above 368 cu. ins. will run in Class CM.

SPORTS CARS, MODIFIED

Class OM: Up to 91 cu. ins.

Class AM: 92 to 183 cu. ins.

Class BM: 184 to 305 cu. ins.

Class DM: 306 to 488 cu. ins.

Cars competing in these classes must be equipped with sports car type bodies, either modified production or fabricated. Supercharged engines will be limited to 368 cu. ins.

SPORTS CARS, AMERICAN MODIFIED

Class CM: Up to 425 cu. ins.

Cars competing in this class must be equipped with American production sports car type bodies which have been modified or streamlined. Engine make is optional.

ADDITIONAL REGULATIONS

II.

All sports cars, in addition to the general safety and technical regulations, must comply with the following rules:

S1: Suitable for competition. Cars entering for sports car classes will be qualified as per the 1957 FIA Sporting Code.

S2: Fuel. All cars must run pump gasoline without any type of additive.

S3: Bodies. Minimum width 48 inches; must have two functional seats side by side.

S4: Doors. All cars must have at least one functional side door.

S5: Fenders. These must be securely mounted and must cover tread of tire for 120 degrees, down to a point on the rear tire no higher than a horizontal plane through the rear axle. Cycle-type fenders will not be permitted except where factory production.

S6: Windshields. These are required on production classes, American production class, and American modified class.

S7: Exhaust systems. These may be modified.

S8: Only single-engine chassis will be allowed.

Misc.: Cars must have battery-operated starter, positive-operated generator, headlights, tail lights, horn, spare tire. Quick-change and locked rear ends will be allowed.

For entry blanks or further information write to Mr. Jim Khougaz, Secretary-Treasurer, Bonneville National Speed Trials, 20304 Gresham St., Canoga Park, Calif.

Last Mille Miglia?

(Continued from page 52)

sitting there, turning over relatively quietly in comparison to some of the other iron already gone, all white with a bit of blue showing—Doug and Ak looking like two jet pilots—the mob of Italian photographers on a platform over our heads shouting themselves crazy to get Ak's attention. Seat belts adjusted, shoulder harnesses set, the seconds were counted out and the flag fell; every American present felt a wonderful pride in that machine as Ak let in the clutch—easily—to avoid going down the ramp too quickly and banging the car's rear as they hit the street. With all four wheels on black top, Ak really poured it on, and away they went, a white and blue bomb passing between a mass of waving, cheering humanity that opened like a wave as they roared through. Moss was off at 5:37, preceded by the Ferraris of de Portago, Collins, Taruffi and Von Tripps. We returned to the press office to follow the race from there.

Within 5 minutes the Maserati threat had completely dissolved. Moss, boring through a 140 mile-an-hour corner just seven and a half miles out of Brescia, shifted down into fourth, hit the brakes, and nothing happened. His foot went clear to the floor, the pedal itself breaking off on the stem, metal failure. Stirling's guardian angel must have been on duty at that moment for if the incident had occurred a minute or two before, he wouldn't be alive to tell about it. Bitterly frustrated and disappointed, Moss and Jenkinson got the Maserati to a halt safely, and with the help of some peasants, turned her around and headed back to Brescia. Even if the pedal could have been replaced or repaired on the spot, the fact that they had started last meant that any delay would make it impossible for them to get back into the race as the road would be jammed with the public—minutes after the time they were to have passed. Hermann's new V-12 didn't last much longer. In true Maserati form, the car had been finished the day before without any opportunity to try it out on the road; Hans managed to get a bit of highway time in but nowhere near enough; its handling just wasn't right and he retired near Ferrara. This left only Scarlatti in the 3 liter six cylinder to uphold Maserati's honor.

Collins in his Ferrari was burning up the roads; the new quadruple cam 4 liter twelve averaging 118.4 mph to Verona. Then as the road reached Padua and turned South for the run along the Adriatic Coast, Taruffi put his foot in it. Running as if at Le Mans or Monza, he flew South towards Ferrara, Ravenna and Pescara—here there are numerous blind hills; the man who knows which way the road goes—which ones can be taken at full throttle, is well ahead of his competitors; Tripps was in the lead, but not for long; he was first at the Ravenna control averaging 115.7 mph., Collins just 36 seconds behind him and Taruffi just one minute and 20 secs. behind him. By Rimini, 37 miles farther on, Taruffi had made up this minute and 20 seconds, passed Tripps and by the

(Continued on page 59)

Last Mille Miglia?

(Continued from page 56)

time he arrived at the next control at Pescara, was leading the German by two minutes and 41 seconds! Collins managed to hold the Italian off all the way to Rome—the gap between second place being 5 minutes and 27 seconds. Portago held fourth position with Gendebien screaming along in the 3 liter Gran Turismo Ferrari in 5th spot. The race was turning into a parade of Ferraris. Collins got to Rome in 5 hours, 3 mins., 11 secs.; Moss had taken just 5 hours, 3 mins., 5 seconds in 1955.

Ak, meanwhile, was having a ball of his own—albeit a short one. Nevertheless he was treating the populace to the violent noise of El Caballo's hustling Chrysler. Running like a top, El Caballo was passed once by Taruffi, and Ak, forgetting himself for the moment, accelerated to keep up with the flying Roman. The Chrysler fairly leaped ahead and with Doug shooting the gun camera, practically ran up over Taruffi's tail. Ak decided then that it was the better part of valor to let Taruffi show him the way, rather than the other way around. Just about then, however, things started happening. Ak heard a "clunk"—a brake drum had broken. Continuing slowly along the Adriatic coast, the exhaust manifold suddenly came adrift. It was then that he realized what a pounding the car was taking from the horrible roads. Slowing now considerably, they had no real hope of finishing within the maximum time allowed, so they stopped, found a small garage, and did some spot welding. Then, turning around, they motored back to Brescia—the race for them over. They had only covered approximately 300 miles, but they were not alone. A strong Mercedes team of privately entered 300SL's all went out in the early stages of the race due to the failure of a bolt holding on the generator—said bolt entering the water jacket—it got loose and all the water came out.

The race among the Ferraris continued North from Rome: Collins continually in the lead, guided by his co-driver, Louis Klementaski. This particular stretch of the route is considered by some to be the most difficult; you traverse the Radicofani pass, the road winding incessantly over the main highway north. Viterbo, Siena then on to Florence. Near Siena, Taruffi began to have trouble with his rear axle; Collins still led but Von Tripps moved up into second place while Taruffi was stationary by the side of the road. Collins was maintaining an average speed superior to that of Moss in 1955; the old record was 99.5 and Collins was maintaining 100.3 mph, but from Florence on, his speed dropped.

The Futa and Raticosa passes were crossed and the roaring Ferraris flew into Bologna—Collins still holding a good margin over Taruffi of 10 min. 43 seconds. Seven min. and 16 seconds farther back came Von Tripps and after him Gendebien, in the Gran Turismo Ferrari, who was even leading Portago at this point. Gendebien was driving a fantastic race—up to Rome he had averaged 101.9 mph—at one point he even led Flockhart's D

(Continued on page 63)

continued from preceding page

apparently this has little noticeable adverse effect.

The rear shock absorbers are Ford telescopic units and for convenience of mounting are tilted forward. The quarter elliptic springs are made up of Ford front springs cut so that the center bolt holes could be used in hanging them in the new position.

The braking system is hydraulic with two leading shoes used front and rear. A TC MG master cylinder is mounted on the firewall and is operated by a pendant type lever. The front brakes are TF MG and incorporate Al-Fin drums. In the rear TC units are modified to two leading shoe and Al-Fin drums are used.

The MG engine is of the type that is known as the "factory competition" model. Specially cast, the block comes as close to 1500 cc's as is mechanically possible. The water passages through the head and block have been rerouted, eliminating the head gasket and the overheating problems that were encountered with the earlier engines. Rated by the factory at 82 BHP @ 6500 RPM in stage four tune, it has wonderful reliability but is handicapped by its weight. By raising the compression ratio, lightening the valve train and very careful assembly, Hand has managed to squeeze 90 bhp from this unit.

The low mounting position of the engine made it necessary to construct a new oil sump. This was made as flat as possible, is very wide and has a capacity of nine quarts. An ingenious system is used to cool the oil that employs the core from a regular car heater as an oil radiator. To avoid pumping oil at high pressure through this core, which was not designed for it, Hand built a separate pumping system. A regular MG dual gear pump was cut in half and attached to the stock pump. This picks up from the sump and delivers oil to the radiator after passing through a pressure regulator valve set for thirty pounds. Engine oil pressure is maintained at 75 pounds per sq. in. Trouble was experienced with leaking rear main seals. This was cured by turning the crankshaft and modifying the block to accept a Ford 60 seal. The flywheel is alloy, machined from a heat treated aluminum plate.

An interesting fact about this engine, in common with a good number of the better engines running on the West Coast, is that the highly stressed parts are shot peened. It is felt that shot peening greatly improves resistance to metal fatigue and in some instances is more effective than the time honored high polish in preventing premature failures.

The body paneling consists of seven separate pieces, most of them easily removable by Dzus fasteners. The belly pan runs the full length of the car and is in two pieces to make the underside of the car a little more accessible. Sixteen gauge half-hard aluminum stock is used throughout.

This car leaves an indelible impression of the all-round ability of Bud Hand. None of the various techniques necessary in building a car seem to snow him. He says he just couldn't buy a racing car to sit in and drive, so perhaps his Santa Monica shop will soon turn out that front running Bud Hand Special.

Russ Kelly

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Last Mille Miglia?

(Continued from page 59)

type as well as Scarlatti in the 3 liter Maserati.

From Bologna the road gives the cars and drivers a break; it is flat country and the Via Emilia running north from Bologna through Modena and Parma is the home stretch—where the cars are fully extended. Collins made Modena, then, as he reached Parma, the race ended for him. His back axle had packed up. Taruffi swept into the lead, now with Von Tripps breathing down his neck in the only 3.8 liter Ferrari. Taruffi's car was far from perfect and Tripps found he could just barely get by the wily Italian if he wanted to. Tripps passed once, but Taruffi caught him and waved him back, giving him the "caution" sign. Now they were through Mantua, the town of Nuvolari, and flat out headed for Brescia, their tachometers reading close to 9000. Portago and co-driver Nelson were also fully extended, holding third place when the catastrophe happened. Due to either a blown tire or a rear axle shaft failure, their Ferrari went out of control while roaring down a straightaway near Guidizzola. Ripping through a group of spectators, the machine smashed into a high tension pole, flipped and careened for another 300 feet before coming to rest in a ditch. At least eleven people were killed on the spot, including five children.

Gendebien went by—then Maglioli in the Porsche. Crossing the finish line less than a car length apart, Tripps and Taruffi brought Mille Miglia victory home to Ferrari. For the 51-year-old Taruffi, it was the culmination of an effort extending over the better part of his career.

For my money, the real hero of the day was the Belgian, Gendebien; driving his Gran Turismo Ferrari, he won the Gran Premio Nuvolari—for the fastest time over the road from Mantua to Brescia. His time was a new record—even beating the 1955 Moss time of 123 mph. Gendebien ran the distance at a speed of 123.6 mph, this doesn't sound like much, but when you consider that the 3 liter Ferrari is "only" a Gran Turismo machine then one can have nothing but admiration for Gendebien.

As far as tires were concerned, only Collins had changed. Taruffi ran the whole race on the same set—likewise Von Tripps.

Ak Miller's effort was really admirable, despite the outcome. It is men like Ak and his co-pilot, Doug Harrison, that make motor racing what it is today. Without these sincere, intensely devoted people, we would have nothing. It is true perhaps, that in the current atmosphere, too many people are "out for blood", so to speak—and not enough people out for fun; but then, on the other hand, European racing is professional racing. Ak and Doug had fun. They know now what it is all about over here. It was far from being time and money wasted, despite the frustrations and numerous obstacles. They might decide to come back to Europe some day, and when they do it will be with a car designed from first hand knowledge of what it takes to win a race like the Mille Miglia.

—Jesse Alexander

Portago

(Continued from page 15)

ranked Portago:

"He's certainly among the ten best in the world today," Moss said, "and as far as I'm concerned, he's the one to watch out for."

In Cuba, just before Sebring this year, he was leading Fangio by a respectable margin when a gas-line let go again.

"I don't think anyone will be champion as long as Fangio competes," Portago told me. "If the absolute limit of adhesion of the car through a certain bend is 101.5 miles an hour the old man will go through at 101, every time. I may go through at 99, or 102—in which case there'll be an incident."

"Moss is of course better than I am, too. If I pass Moss, I wonder what's the matter with his car! But I'm learning still, I think I get a little better with every race. I hope so, anyway."

Portago ranked Collins, Behra, Schell, Musso and himself after Moss as equals. He carefully repeated his estimate of Schell: "Harry is very, very fast," and then said that he considered Schell his closest friend. They spent much time together. Both appeared to be tense, more accurately, taut, something that was not in any way allied to nervousness but was instead a peculiar expression of awareness. Like Portago, Schell walks rapidly, he turns his head constantly, he seems to be trying always to see something that is just out of sight, to hear something that is just out of ear-shot.

I said as much.

"It sounds corny," Portago said, "but I think that because racing drivers are very near to death every Sunday in the season, they are more sensitive to life, and appreciate it more. I take it that is what you meant by what you called "awareness" when you saw Harry and me walking together. Speaking now only for myself, I'm sure I love life more than the average man does. I want to get something out of every minute, I want no time wasted. You know, people say that racing drivers are dare-devils who don't care whether they live or not, and you've seen stories about me and my flirting with death and all that. Nonsense, all nonsense. I want to live to be 105, and I mean to. I want to live to be a very old man. I'm enchanted with life. But no matter how long I live, I still won't have time for all the things I want to do, I won't hear all the music I want to hear, I won't be able to read all the books I want to read, I won't have all the women I want to have, I won't be able to do a twentieth of the things I want to do. And besides just the *doing*, I insist on getting something out of what I do. For example, I wouldn't race unless I was sure I could be champion of the world."

"Can you imagine yourself driving when you're Fangio's age?" I asked him.

Portago smiled. His mouth was unusually small, and straight-lined, and his smiles were brief, but warm enough. "Never," he said. "Certainly not. In any

continued on next page

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