A big name returns to competition with a remarkably fast small-displacement GT car

Renaissance in Milan

ALFA ROMEO GIULIA TZ

Change up at 110 mph? No, we're not kidding. That's the normal shift point for going from 4th to 5th in the Alfa Romeo GTZ.

There's a world of difference between a standard car that has been modified for racing, no matter how thoroughly, and a car that has been designed from scratch purely for racing. Having published a road test on one of the former breed in the May issue (Volvo's full house 122 S) we thought we'd follow this up with a track test on a genuine racing sports car. We were interested in the Alfa Romeo Giulia TZ, as this type of car had won its class at Sebring last March, finished third overall in the Targa Florio in May and has a promising future. Alfa Romeo graciously co-operated to the extent of letting our demon tester, technical editor Jan P. Norbye, loose in the Sebring car on the fastest road circuit in the area. Our day at Bridgehampton was an enormously successful experience and a real eye-opener. The difference between the standard Giulia Sprint and the GTZ is almost as wide as the difference between a BRM F-1 and a Rover 3-Liter.

The racing Alfa in fact has almost as much power as current Grand Prix machinery, but carries full road equipment and aerodynamic light alloy bodywork, making it about 50% heavier than Formula 1 cars. With a mere 1500 or 1600 cc it becomes impossible to talk about a real power surplus, in either category, and we found ourselves driving the GTZ in much the same way that G.P. drivers admit they drive current F-1 cars. One leaves the braking until the very last moment, and then stands on the pedal, hard, until the moment the right foot slips onto the throttle, depressing it fully and abruptly and holding it there through the gears until reaching the next turn. No need for feathering the accelerator on the

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GTZ; whatever the right foot is doing, it's doing with plenty of pressure. The engine actually sounds best when accelerating; it's floundering on light overrun, and coughing and gasping when running on part throttle under 3000 rpm. But stomp on it at 3000 rpm and it will pick up with remarkable agility, although there's little or no torque below 4500 rpm.

Our acceleration runs were complicated by this lack of low-range torque in combination with a normal, single dry-plate clutch. Getting the car quickly off the line is a problem, and on our best runs there was a distinct odor of clutch lining in the car. On normal starts, the clutch is fully released at about 1500 rpm, the accelerator is flattened on the floor, the engine stutters and stumbles along, the car jerks and bucks, and then, eureka, power comes in, the seat moves up and grips the driver's hips, the engine winds to a shrill note, and it's time to change up.

With a little cruelty to the clutch, keeping the revs up as the clutch is released, it's possible to reach 35 mph in about 4 seconds, change into second, reach 50 mph in 7 seconds from standstill, change into third at 55 mph, reach the 60-mark in about 9 seconds, 70 in 11.5 and 80 in 13. At 85 mph, shift to fourth, 0-100 mph in 18 seconds, change into 5th at 110 mph. Top speed is about 135 mph.

We were held to a rev-limit of 6500, which was observed except for a high-spirited, irresistible burst in second gear around the hairpin and up the back hill, when we momentarily hit 7500. The tachometer reads to 8000, and if the full range had been used on the acceleration runs, the times would naturally have been improved.

An improvement in lap times would also have resulted from a higher rev-limit, but even below 6500 the car was impressive. After a few training laps taken up with various experiments on line, braking points, et al, it was doing 2 min. 11 sec. with some regularity, and after a stop to check temperatures of oil, water, and tires, we are off again, getting down to an effortless 2:07 with plenty in hand. There can be no doubt that this car is capable of lapping Bridgehampton in two minutes flat, and it won't need Jim Clark to do it either. *He* would probably run it with the Cobras!

Production-model GTZ engines put out 129 bhp at 5500 rpm. The Conrero-tuned version used in the Sebring car develops 175 bhp at 6500 rpm, which equals 111.7 bhp per

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ENGINE:
Water-cooled four-in-line, aluminum block, 5 main bearings
Bore x stroke....3.08 x 3.23 in, 78 x 82 mm
Displacement.....95.7 cu in, 1570 cc
Compression ratio.....11.0 to one
Carburetion.....Two Weber 45 DCO/E
Valve gear.....Twin overhead camshafts
Power (SAE).....175 bhp @ 6500 rpm
Torque.....144 lbs-ft @ 5000 rpm
Specific power output 1.83 bhp per cu in, 111.7 bhp per liter
Usable range of engine speeds 3000-8000 rpm

DRIVE TRAIN
Clutch.....8-inch single dry plate
Transmission.....5-speed all-synchro

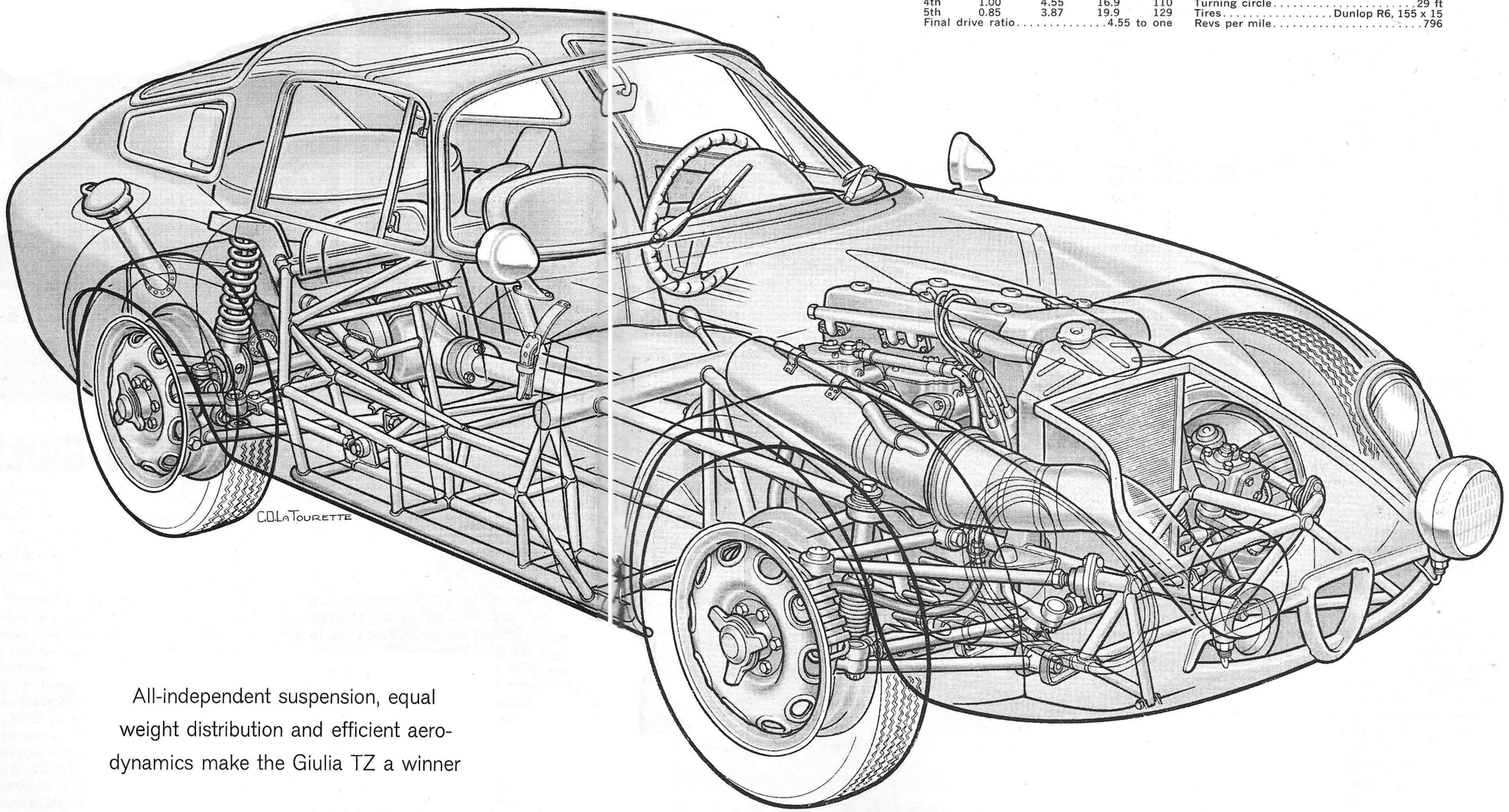
Gear	Ratio	Over-all	mph/1000 rpm	Max mph
Rev	3.25	14.80	5.2	36
1st	3.26	14.84	5.2	35
2nd	1.99	9.06	8.5	55
3rd	1.36	6.18	12.7	85
4th	1.00	4.55	16.9	110
5th	0.85	3.87	19.9	129

Final drive ratio.....4.55 to one

CHASSIS
Multi-tube steel frame and Zagato light alloy bodywork
Wheelbase.....86.8 in
Track.....F 51.3 R 51.3 in
Length.....150 in
Width.....59 in
Height.....45 in
Ground clearance.....4.0 in
Curb weight.....1650 lbs
Weight distribution front/rear.....50/50%

Suspension: F Ind., wishbones and coil springs, anti-roll bar, radius rods.
R Ind., lower wishbone and Chapman strut, coil springs.

Brakes..11.2-in. discs front, 11.5-in discs rear, 440 sq in swept area
Steering.....Worm and roller
Turns, lock to lock.....3½
Turning circle.....29 ft
Tires.....Dunlop R6, 155 x 15
Revs per mile.....796



All-independent suspension, equal weight distribution and efficient aerodynamics make the Giulia TZ a winner

liter, or 1.83 bhp per cubic inch! The carburetion is identical; two dual-throat Weber 45 DCO/E sidedraft units. It's the type of engine that doesn't want to idle, but its response is terrific, and a source of immense joy on urgent downshifts.

The transmission is the same all-synchro five-speed gearbox fitted as standard equipment on the Giulias, but has a narrower gate with shorter throws. First gear is almost exclusively a starting gear, and at Bridgehampton was not needed on any turn. Still, 5th is an overdrive and was equally useless on this course, though it would make all the difference at Le Mans. For a race at Bridgehampton, the GTZ should have a shorter final drive ratio than the standard 4.55 to one (4.79 to one and 5.13 to one are optional) which would make 5th more useful as well as facilitating starts from standstill. The gearbox ratios seem ideally chosen, with a 3.26 : 1 first, a 1.99 : 1 second, a 1.36 : 1 third, a direct fourth and a 0.85 to one fifth.

The GTZ handles much like the Lotus Elan. They are particularly similar on long, fast turns; less so on hard corners. The similarity is due mainly to the well-controlled all-independent suspension—the difference stems from the Alfa's higher polar moment of inertia. The directional stability of the GTZ is irreproachable, yet it can be forced through turns at unusually high speeds, almost as if its momentum in the direction of travel could be used to maintain its speed for travelling in the opposite direction! To call it well balanced is a classic understatement. But the balance is coupled with an almost unique obedience. It responds to intelligent maneuvering with remarkable poise; yet it never punishes the driver for poor timing or slight misjudgments the way some competition cars are known to do. The GTZ protests by lifting a rear wheel, if taken on a particularly stupid line, or by going into a tail-end slide if the braking is delayed too far into the corner. But it never does anything unpredictable or rash. It must be one of the safest competition cars in the current crop.

The steering feels quicker than the 3½ turns lock to lock, but then the turning circle is very tight at 29 feet. A small wheel (14-inch diameter) with three leather-covered spokes offers handy control and has absolutely no lost motion. No normal corner ever requires a change of hand grip. In fact, at near-racing speeds, the driver finds that he doesn't use the steering wheel very much at all. When the car is correctly set up for a curve, it settles at an angle pointing slightly inward and the driver keeps the front wheels more or less straight, steering mainly with his right foot. Power-off promotes oversteer; power-on makes the car run wider. Yet if it tends to go wide coming out of a turn, it can be steered back onto the desired course with the wheel while maintaining full throttle. That's the beauty of this particular design.

The same way that a closed throttle shortens the turning radius, braking into a turn forces the tail slightly out, in a well-balanced fashion, aiding the driver to get through in classic style. For those spectators or competitors who can't see the Alfa's brake lights, a pretty cowardly turn may look like a heroic effort.

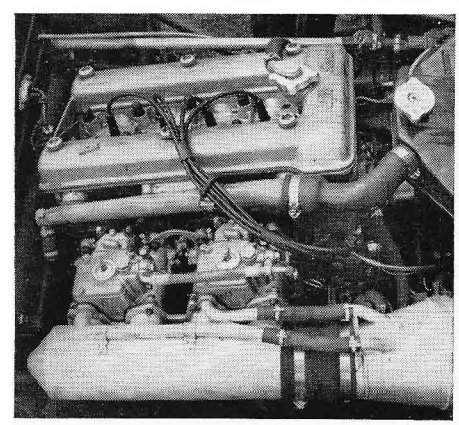
Seats can't be more bucket than those in the GTZ. They wrap around the hips and really hold a human body so well that the four-point harness is strictly for emergency. The driving position is fine for the average-height-or-below driver, who can sit straight-armed with slightly bent knees, but the tall drver will find himself short of legroom (though not as precariously as in a Mini-Cooper), and headroom is ample.

On some cars heel-and-toeing just seems a natural movement, and this Alfa is one of them. The pedals are so well spaced and located relative to each other that a foot seems the best tool to operate them. And, yes-yes, our old-favorite ledge to the left of the clutch for the driver to brace himself, is there. Perfect. A frame tube sticks out near the calf of the driver's left leg—it's padded with foam rubber. So is the transmission cover, where the right calf rests. Our only complaint about the interior, which is very efficiently laid out, with tools, fire extinguisher, spare wheel, all easily accessible behind the seats, is concerned with the ventilation, or lack of it. The car gets awfully hot, and the vent panes don't stay open unless fixed in position with rubber bands. The door windows and rear window do not open, thus letting in lots of sun but precious little air for ventilation.

The Sebring GTZ is fitted with center-lock wheels in place of the production bolt-on cast magnesium wheels, carries special driving lights and other equipment, which together raise the curb weight from 1450 lbs to 1650 lbs. The production version of the car is available for $8395.

But what impressed us most about the car is the fact that Alfa has produced a potential race-winner after 11 years' absence from official factory participation. And if the present version is just a class winner, that's still as good as proof that the factory could successfully tackle all comers for GT or prototype honors whenever they wish to do so. **C/D**

An ideal spot for brave but diminutive men.



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Lap times at Bridgehampton were highly competitive for an under two-liter machine.

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