

4 Road Tests: Triumph Racer, T100R Daytona, Jawa 350 & Benelli 250

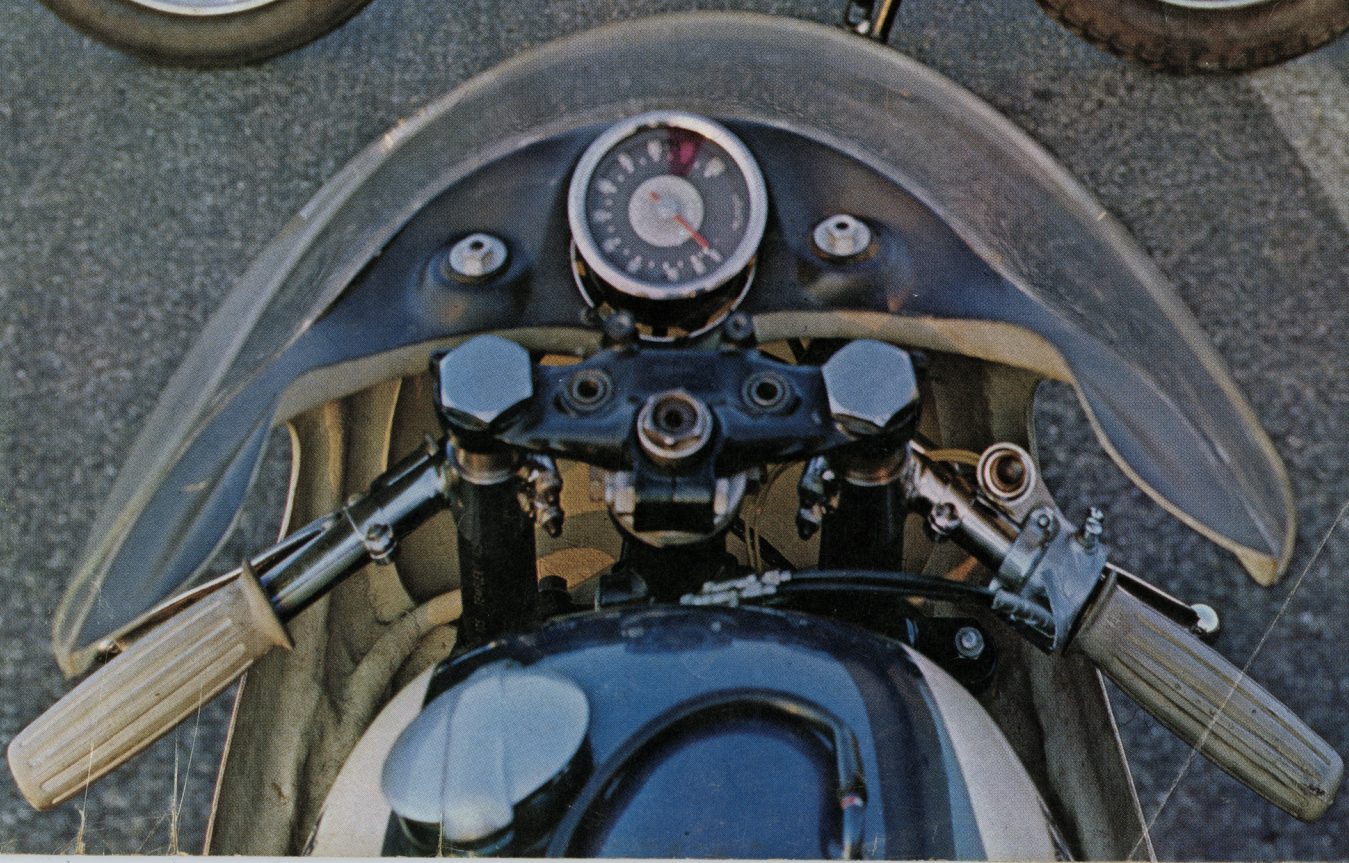
CYCLE WORLD

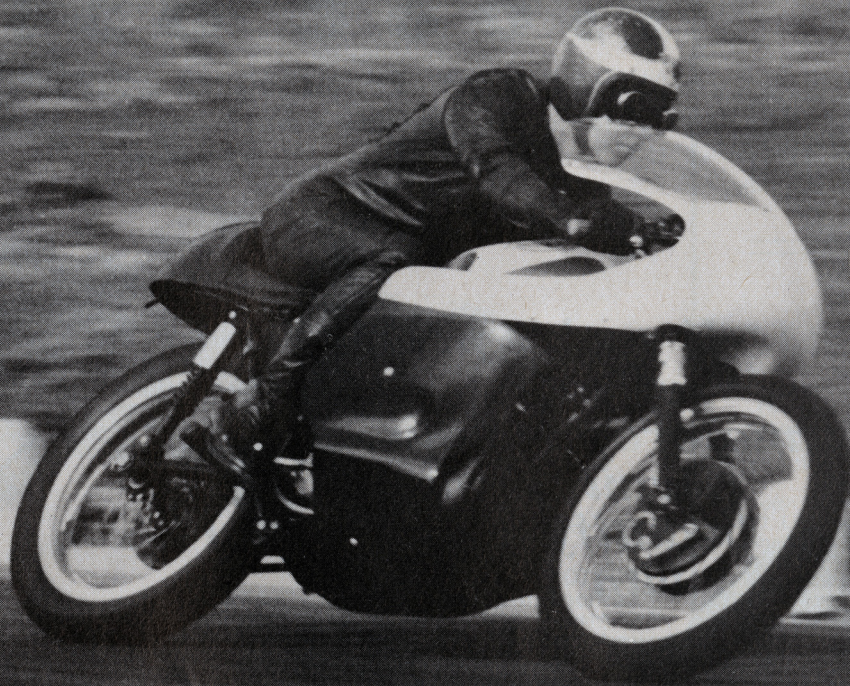
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THAT A TRIUMPH REPOSED in the winner's circle at Daytona last year was not an earth-shaking situation; it has long been a widely — and wisely — accepted fact that the Meriden Works twins are capable of some pretty great things. The win, however, was a bit of a surprise, in view of the show of strength by the ever-quick, home-built H-Ds that were favored in the 200-mile climax to the annual Florida speed orgy. Mild-mannered Buddy Elmore, who is, in reality, Superracer, came from deep in the pack at the start and plucked off the front running dicers one by one until the day had become his, and his name was duly entered in the record book. Very little was known about Buddy and his Triumph road racer before Daytona. After Daytona, there was little point in taking a detailed look at Buddy or his machine; the essential story in racing is not the man nor the machine, but the race, itself.

Now, nearly a year later, with last year's Daytona just so many wonderful memories, and anticipation building for this year's running of the classic, we find ourselves delving into an analytical look-see at what Triumph will offer for the coming contest. The machine we are about to view, unlike Buddy's Triumph-Baltimore mount, is owned by Johnson Motors, west coast distributor for Triumph motorcycles in the U. S. The bike, differing little from the east coast version, has been most capably modified and maintained by JoMo's Dale Martin whose conversance with engineering theory and articulation in pre-

senting the story behind the bike made our task of prying a most pleasant and rewarding experience.

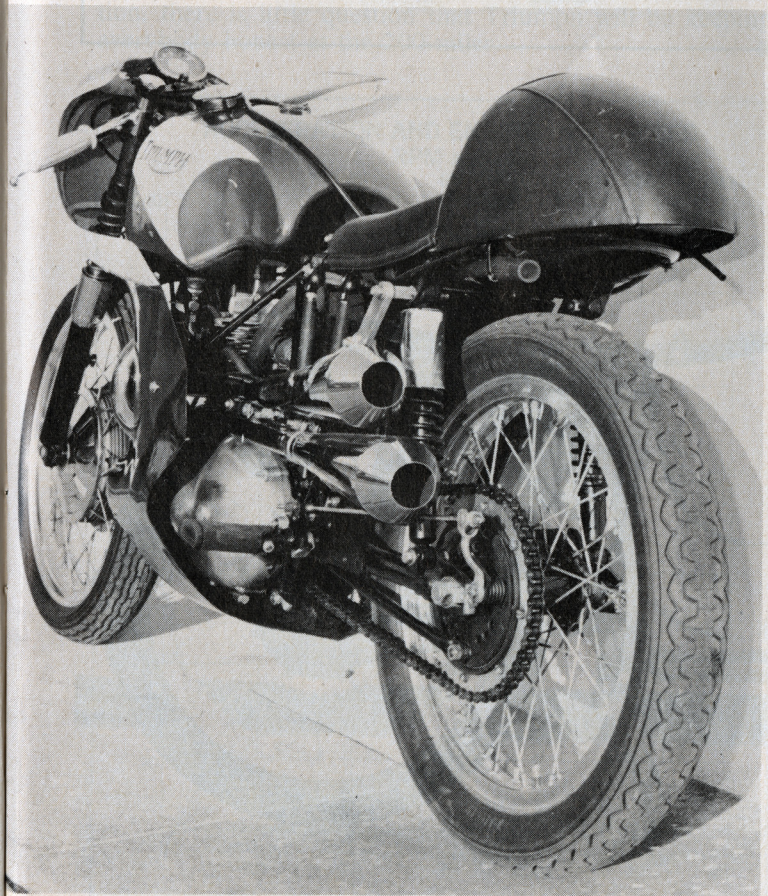
The chassis of the Triumph road racing machine has all standard dimensions. It sports gusseting at the swing arm pivot, which has been incorporated on the '67 production frames, and additional gusseting on the arms where they tie into the crosspiece. The large-diameter top and down tubes are the same as last year's frame — another mod incorporated on the production frame for this year.

Hubs and brake components are current Triumph items, and the only non-standard pieces used are the American-made racing linings. The dust cover on the front brake has been windowed to aid cooling and the rear dust cover has been removed to facilitate sprocket changes. In addition, the front brake lever arm has been lengthened for better mechanical advantage. The hubs are laced into 19-inch alloy rims that are fitted with a triangular section Dunlop KR-76 road racing tire in front and a K-70 Gold Seal in back. Martin plans to experiment with a KR-76, mounted on a WM3 rim, for the rear; the triangular section tire on the current WM2 rim has too abrupt a transition from the straight-up to the heeled-over position.

The 500cc T100R¹ engine incorporates numerous modifications, but most of them have been made in the interest of longevity rather than power. The cast-iron cyl-

No Rest For the Winner

TRIUMPH 500 ROAD RACER



inders have been overbored the AMA-allowed .040 inch and fitted with replacement pistons which are sand cast and slightly heavier than the original permanent-mold ones. The standard crank and rods were polished and the rotating and reciprocating masses were then rebalanced to Triumph's standard 70-percent factor. The timing side main bearing and the rod bearings are standard. A single-lip roller bearing has been fitted to the drive side of the crank to permit crankcase pressure pulses to be transferred into the primary case, where they are damped by the additional volume. Three 1/16-inch holes were drilled through the wall separating the primary drive chamber from the crank chamber, and maintain proper oil level in the primary chamber by returning excess oil to the crank chamber, where it is picked up by the scavenge. This modification does away with the timed breather (whose purpose is to damp the pressure pulses), and the engine now employs an atmospheric breather. The lubrication system has been further improved through the incorporation of a large-capacity alloy tank (developed by Triumph-Baltimore) and the addition of a Corvair oil cooler mounted on the right side of the front down tube.

The cams used in the Daytona road racer are factory racing items mounted in Torrington needle bearings. The cam lobes work against enlarged tappet bases that are accommodated by larger-than-standard bores in the barrels. Vapor oiling of the tappets replaces the pressure feed, and has been found to be completely satisfactory. The timing gears have been drilled and narrowed.

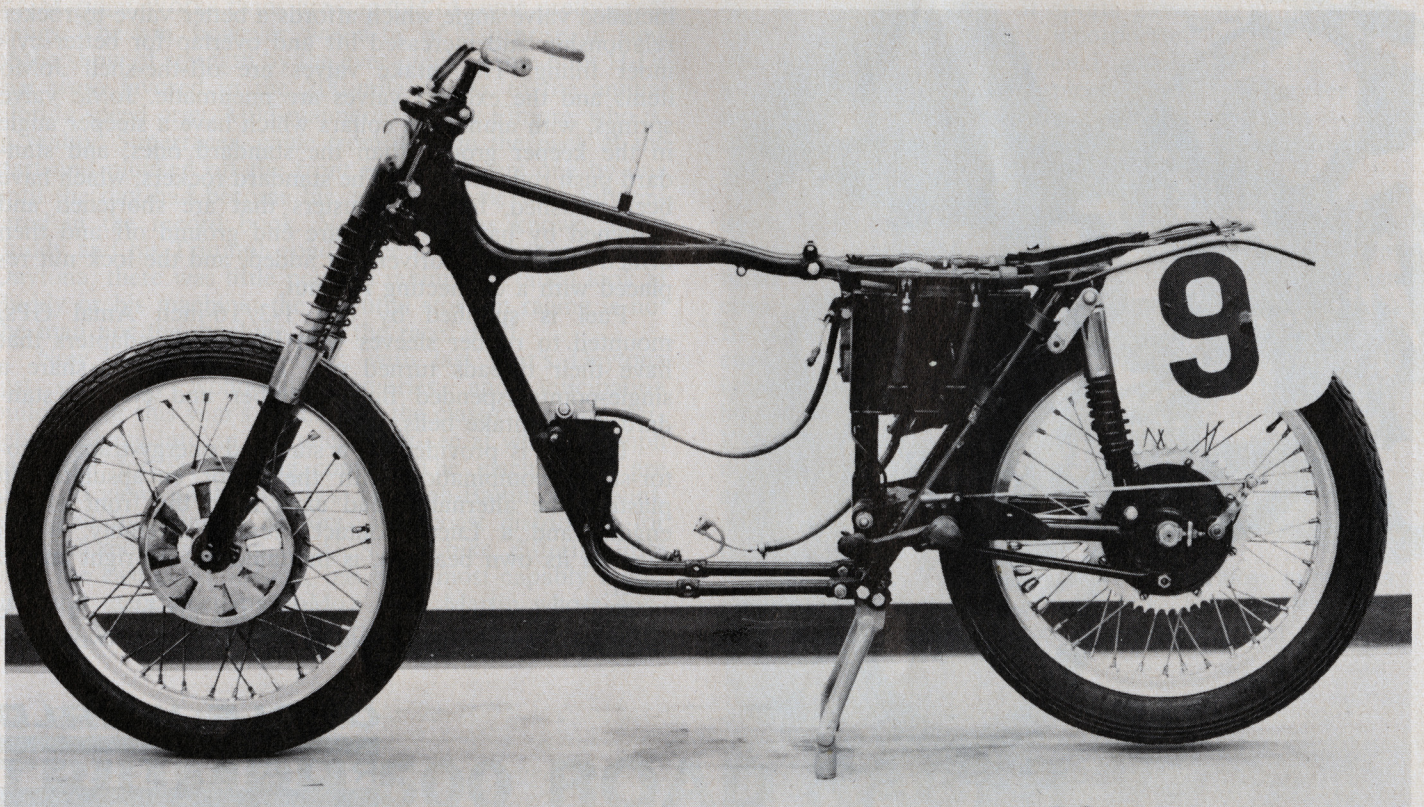
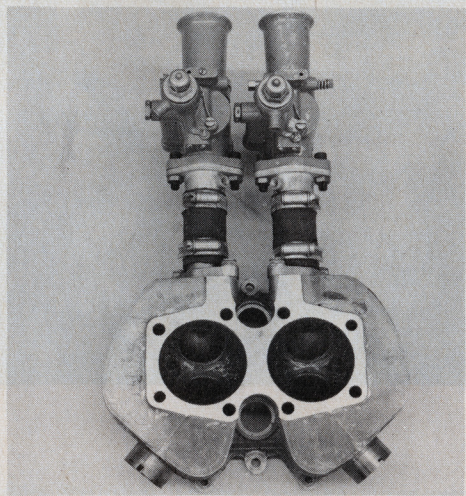
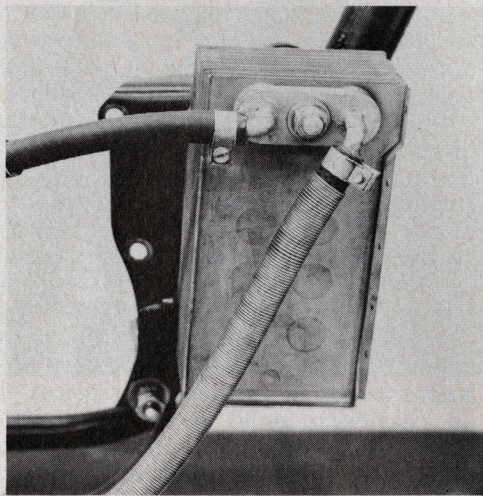
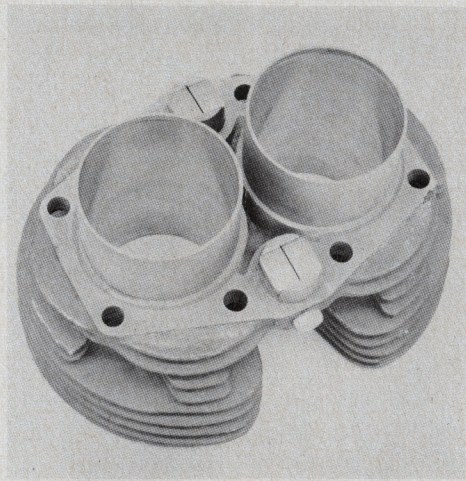
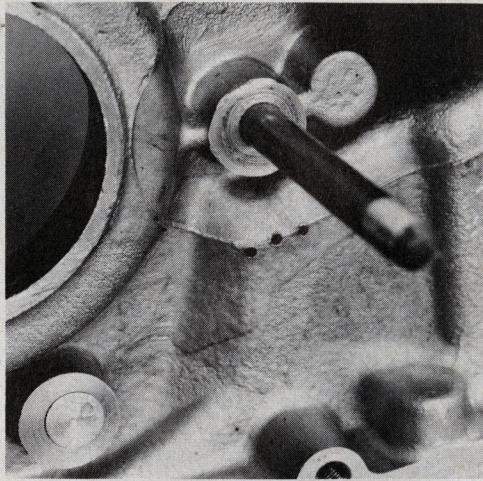
The combustion chamber shape, passed on to the roadster, is hemispherical; however, the road racer has inserted valve seats, while the roadster employs seats that are cast in. The design permits a two-degree reduction of included valve angle which affords a better valve-to-rocker relationship and increased lift and overlap for better cylinder filling. The intake valves are off-the-shelf JoMo items and the exhaust valves are pneumatic. JoMo valve springs, with aluminum collars which have a steeper angle in the keeper groove than the standard ones, and standard push rods are used. The standard rockers, which have been polished, feature adjusters that are shortened and lightened by having the square end ground off and then drilled with a screwdriver slot added, and the lock nut replaced with a connecting rod nut.

Fuel is supplied by two 1-3/16-inch Amal GPs, mounted to rubber sleeves with Bonneville adapters that have their threads turned off. The carburetors share a single-point-suspended float chamber and employ standard Amal intake bells.

Ignition is provided by a standard energy-transfer rotor-stator combination with the stator encapsulated in plastic. The alternator lead exits from the front of the engine, and a Lucas contact breaker assembly, which runs on its own bearings, is mounted on the right engine cover.

The transmission, like much of the machine, is made up of available Triumph parts. Basically, only two modi-

CYCLE WORLD
ROAD TEST

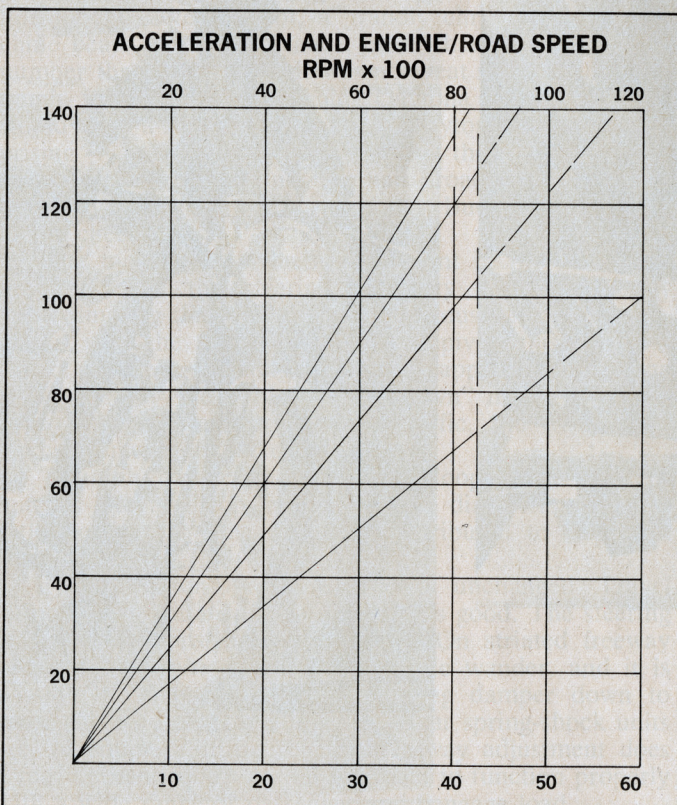


fications have been made to the assembly; the counter-shaft sleeve bushing on the mainshaft has been shortened and the sleeve is mounted on a roller bearing. The kick starter mechanism has been removed and the hole in the cover plugged. The rest is all standard, including the shifting quadrant which produces a shift pattern that is the reverse of Triumph's with the shifting lever turned 180 degrees. The stock clutch (58-tooth wheel) is fitted with steel plates and JoMo's relined friction plates and is connected to the 26-tooth engine sprocket with a standard primary chain with a riveted master link.

The short, fat fuel tank is something else. This item, manufactured by Triumph's sister company for production road racers, severely hampers movement of the rider's forearms and is about as handy as riding with an overinflated beach ball in one's lap. In addition, the tank ends about eight inches forward of the seat — a needless space that could very easily accommodate the volume of fuel that makes the current tank so fat. The matter is clearly a case of an interim solution and we presume Triumph will see fit to design another vessel for this chassis.

The handling characteristics of the Daytona road racer are quite good — perhaps not as good as a couple of other "legendary" production road racers — but the machine is responsive and handles confidently. Chassis flexing is nil and cornering line is constant and predictable. The brakes are good, despite the hard use they see. Braking could be improved, however, as is often the case with production units used for competition, to offer an additional margin for emergency situations or the increased braking activity required by very tight, twisty courses.

Without a doubt, the Triumph is one of the swiftest road racers ever built. Not only does the bike have a most respectable and competitive top end, but it accelerates hard and comes out of turns like gang-busters. It goes without saying that Triumph is working toward and hoping for a repeat of last year's Daytona victory. And with this machine as evidence of their abilities and determination, there is little question that Triumph will be keeping everybody honest at the 200-miler. ■



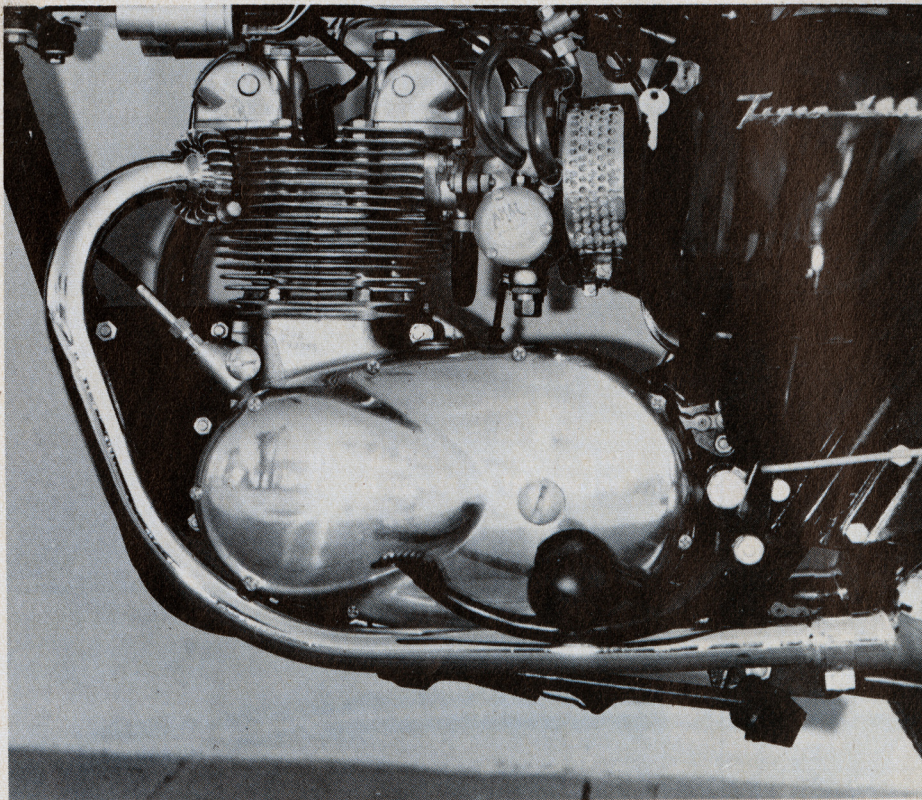
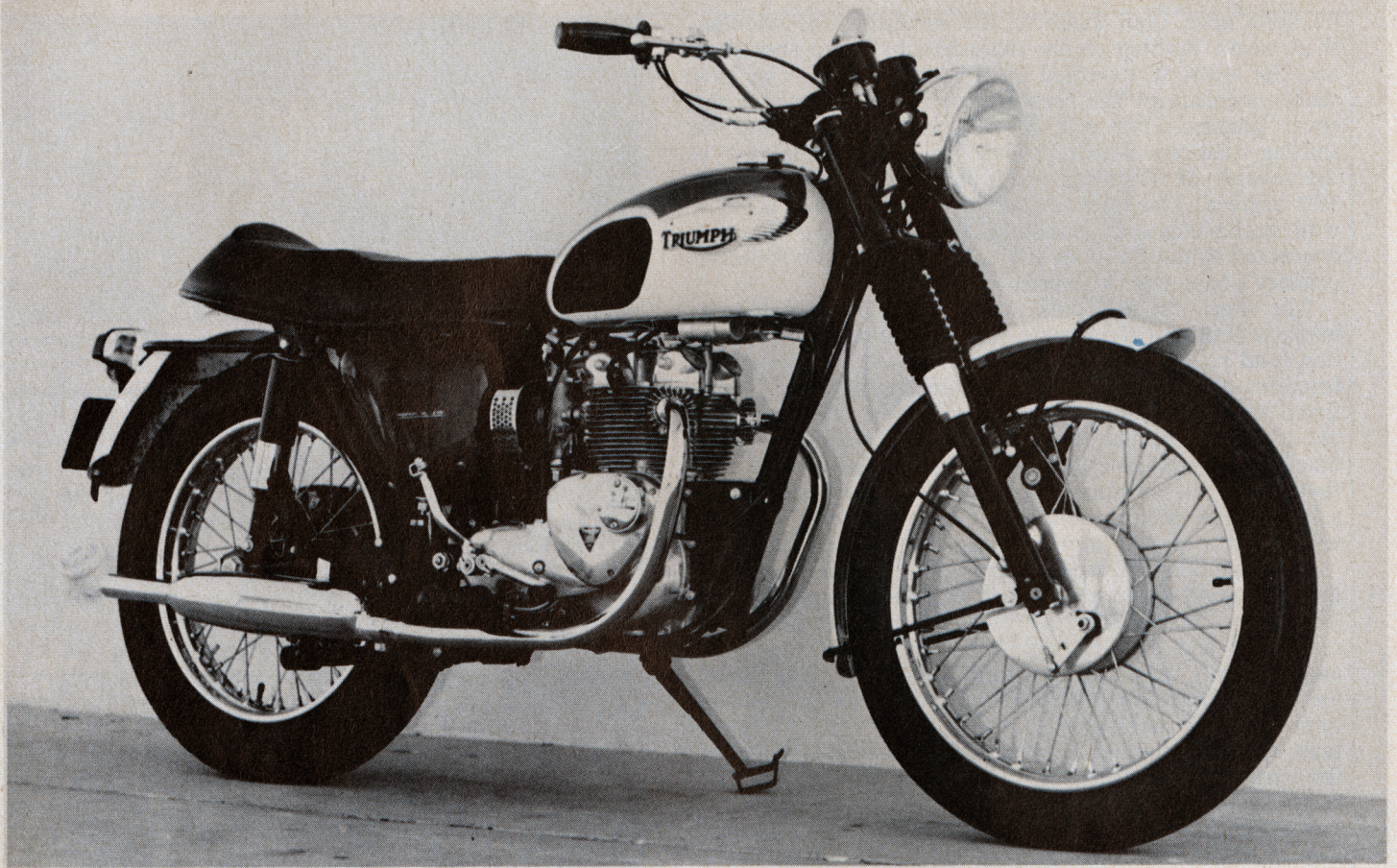
TRIUMPH ROAD RACER

SPECIFICATIONS

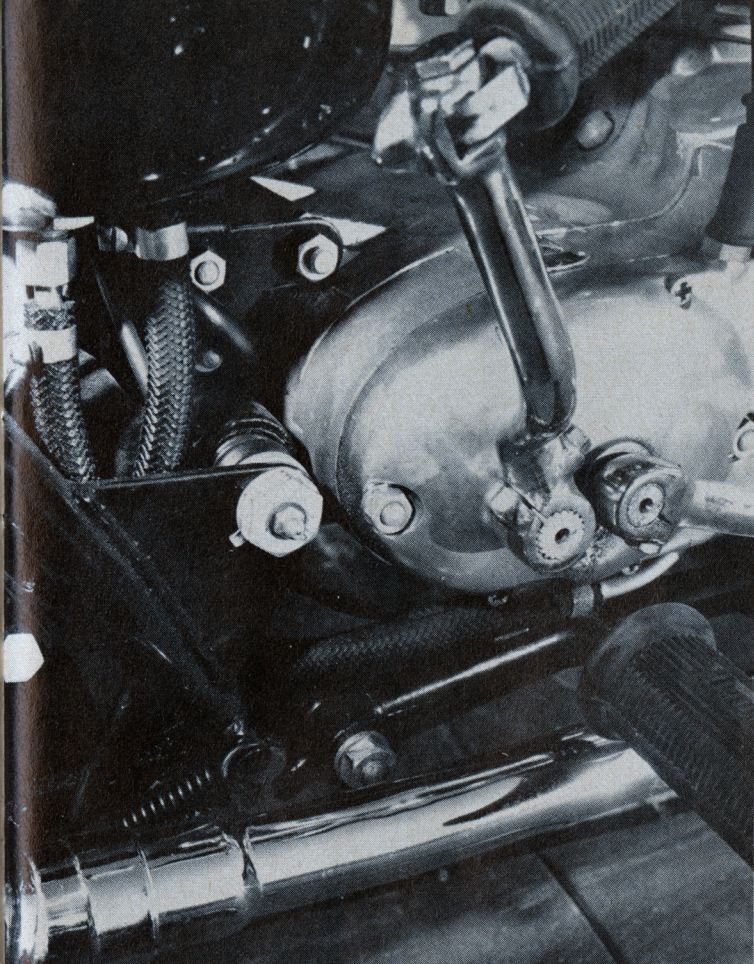
List price	n.a.
Suspension, front	telescopic fork
Suspension, rear	swing arm
Tire, front	3.00-19
Tire, rear	3.50-19
Brake, front	8 x 1.63
Brake, rear	7 x 1.13
Total brake swept area, sq-in.	65.8
Brake loading (test weight/swept area) lb/sq-in.	7.2
Engine type	ohv, vertical twin
Bore and stroke (inches-millimeters)	2.72 x 2.58, 69 x 65.5
Displacement (inches ³ -centimeters ³)	30, 490
Compression ratio	9.5
Carburetion	Amal GP (2), 1-3/16"
Ignition	AC magneto
Bhp @ rpm	n.a.
Oil system	dry sump
Oil capacity, pts.	16
Fuel capacity, gal.	5
Starting system	push
Lighting system	none
Air filtration	none
Clutch	multi-disc, wet plate
Primary drive	duplex chain
Final drive	single-row chain
Gear ratios, overall:1	
5th	none
4th	4.2
3rd	4.7
2nd	5.7
1st	8.4
Wheelbase	53.5
Seat height	30.5
Seat width	11.0
Foot-peg height	14.0
Ground clearance	7.0
Curb weight (w/half-tank fuel)	319
Test weight (fuel and rider)	479

PERFORMANCE

Top speed (with test gearing)	114
Maximum speed in gears (@ 8500 rpm)	
5th	none
4th (8000 rpm)	134
3rd	127
2nd	104
1st	71
Mph per 1000 rpm, top gear	16.8



CYCLE WORLD
ROAD TEST



A Cafe Racer's Dream

TRIUMPH T100R DAYTONA

The most obvious change in the powerplant for the new 500 is in carburetion. The twin 1-1/8-inch Amals allow the engine to breathe comfortably at high speed and are anything but intractable at the bottom end of the scale. In fact, blipping the throttle with the engine untaxed and at idle produces crisp, rapid rev rises, unmarked with spitting and hesitation. Internally, the Daytona sports some new items, such as true hemispherical combustion chambers in place of the previous stepped squish chambers. Also, a new oil pump with a higher capacity scavenge has been added this year. With the new combustion chamber the 500 has received a two-degree reduction in included valve angle, producing a more desirable rocker-to-valve relationship. In support of the axiom that "racing improves the breed," we mention that the changes covered so far were first seen on last year's Daytona 200 winner.

Breathing has been further improved on the Daytona through the addition of Q-type exhaust cams. Previously, the 500 used only Q intake cams. Also, Triumph's R-radius followers have been employed to realize increased duration, and the diameter of the intake valves has been increased to 1-17/32 inches.

The power characteristics of the Daytona exhibit a real Jekyll-and-Hyde personality. When taken no higher than 4,500 rpm, the engine works like a very strong thirty-fifty — very healthy, very satisfying — and it would probably be possible to ride the machine in this manner throughout its life without being disappointed in its performance. If you choose instead to hesitate just an instant before making a 4,500-rpm gear change you are in for a surprise, because it's at this point that the bike starts to "get legs." Once the effective cam design range has been experienced, it's difficult to muster enough discipline to make gear changes at anything less than 6,000 rpm. This delightful madness is still further encouraged by the close-ratio gearbox which keeps the engine "on range" during the trip up to fourth.

We were mightily impressed with the performance of the gearbox throughout the test program. The bike was used for to-work-and-back transportation, for highway jaunts, and then wrung out at Riverside raceway during timed acceleration and top-end runs, and always, the gearbox performed as though it had been designed specifically for each of these widely differing duties. The transmission is a strange combination of precision, super-heavy-duty and lightness of throw that has one — count it — one neutral that is always easily found. And, if the rider is ever in doubt that he is in neutral, he need only look down at the right-side engine case to read the gear indicator. We would be inclined to take Triumph to task on the placement of the indicator, which must be searched for, if the selector action were not so precise.

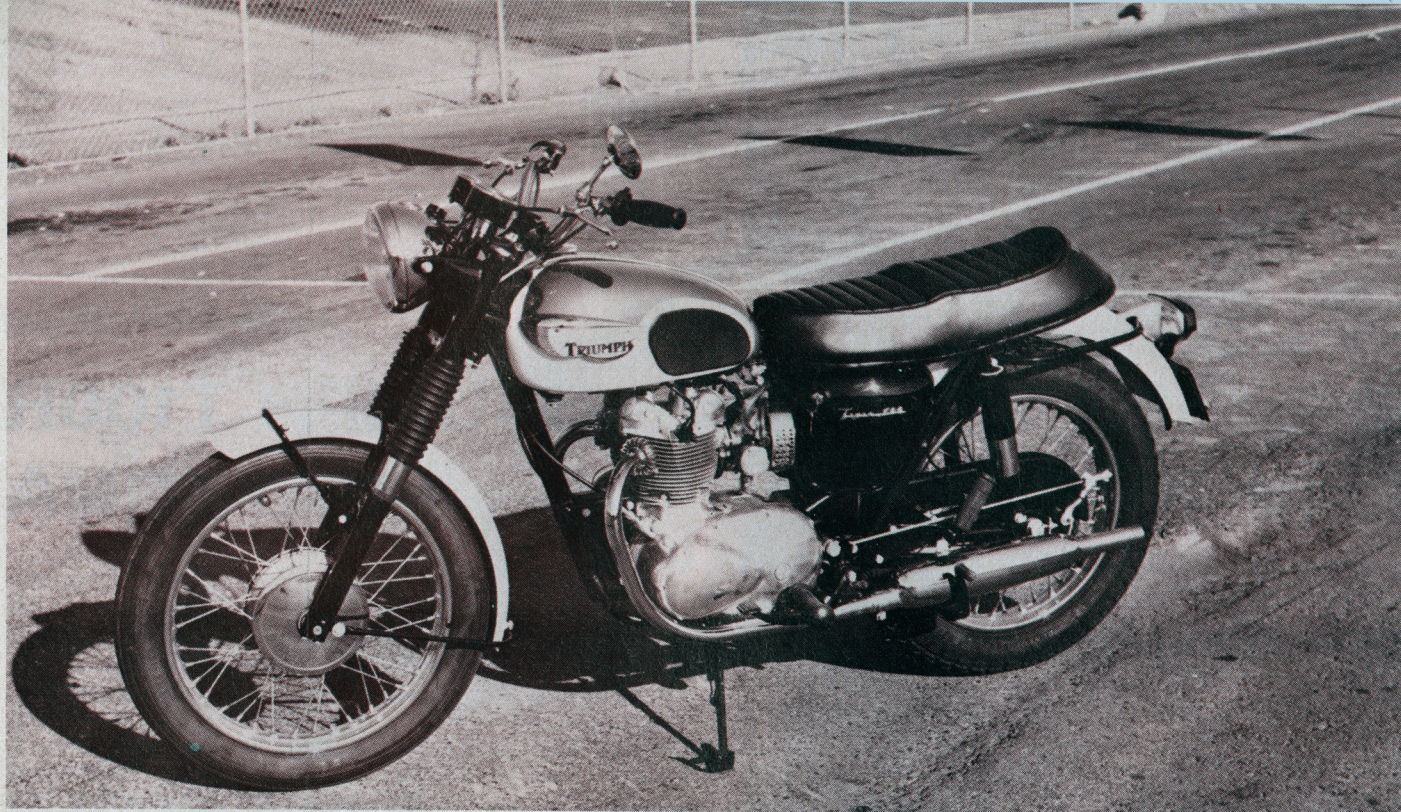
The Daytona maintains its ancestral legend when it

MOTORCYCLE MANUFACTURERS have long displayed a penchant for naming their products in honor of a major race or event, particularly after having experienced some success in the event whose name is chosen to grace a line model. Often as not, a grandly christened new machine bears little resemblance, other than physical, to the number that did the job. It was no great surprise that Triumph, following their smashing Daytona victory last year, would offer a 500cc twin dubbed "Daytona." What is surprising — and pleasantly so — is that the new model, despite its handsome but not too hairy roadster appearance, is closely related to the machine that Buddy Elmore rode to the checkers.

The most noteworthy improvement in the 1967 Triumph 500 is the steering geometry — very closely approximating that of Triumph's previous 650s. In combination with the gusseted swing arm pivot, this has produced a superb handling roadster. Happily, the Daytona retains its very desirable "around town" nimbleness, and even in snail-pace, stop-and-go traffic, the bike never seems clumsy and out of place.

Triumph has retained its single-loop frame for '67, but has increased top- and down-tube diameters. There is little doubt that this, too, has contributed to improved handling.

The front forks remain basically unchanged. Travel is more than sufficient and damping is good. The steering is always responsive and confident. On striated freeway surfaces the front end evidenced little wander, and it is possible to cinch the friction steering damper down to cause this to disappear altogether. Rear spring-shock units are, of course, Girling. Their three-way adjustment does a fairly decent job of permitting them to function properly with a wide range of passenger and baggage load.



comes time to bring the engine to life. Nothing, but *nothing*, is easier to start than a Triumph twin, and the only "problem" experienced was brought about by an initial reluctance to top off the float chamber for the twin Amals. When the tickler has been held down long enough to produce a spurt from the overfull vent, the engine will start with the first kick — without the aid of chokes — no matter how long it has remained idle. On cold mornings, the engine arrives at operating temperature rather quickly. We were convinced, in fact, that it could be started and ridden away immediately, although, in deference to the engine's lubrication requirements, we would not recommend this.

The brakes on the Daytona must get a "more than adequate" nod. They quickly pull the machine down from speed, and for intended use, are nigh fade-proof. Most of the time, the rear stopper is wholly adequate, and in panic situations, or when cafe-racing, the front and rear in combination haul the bike down like a pitched-out anchor.

While the tire selection for the Daytona is fairly standard practice for English roadsters — Dunlop rib in front and K70 Gold Seal in back — they feel as though they couldn't be better if they had been designed with this chassis in mind.

In the electrical department, this bike is one of the best. Triumph has been working long and hard with their supplier to provide a truly proper system and it appears that the effort has paid off. Lighting is excellent. The headlight is strong enough to reach out and illuminate unexpected hazards; instrument lights keep you abreast of road speed and revs; indicators tell you that the ignition switch is turned to "on" and your high beam is operating; and the strong taillight-stoplight combination gives you confidence that you won't be run down by an overtaking auto. We feel that it is significant to mention that Triumph was one of the first manufacturers to have their electrical systems accepted by law enforcement agencies in this country. We are curious, however, that they were able to receive a stamp of approval for their unquestionably feeble horn; this item would pass a public library annoyance test with flying colors! However, we have seen horns of this design that do work.

The hinged dualseat, brand-new to Triumph's 500s this year, is just about unequaled in comfort and, thus far, one of the best aesthetic approaches to fanny platforms we've seen. We won't hazard a guess at how many hours of contemplation and design time have gone into this saddle, but we know that they are many; one doesn't simply arrive at this sort of solution by accident. We're torn in our evaluation of the sports-style gas tank. The design is excellent and we particularly like the slim knee pads. But the parcel rack has been scrubbed for this model. One can live with the cruising range offered by the 3.3-gallon fuel capacity, but not with the fact that one has only two miles to get to a gas station after the reserve has been switched on (the bike does push rather easily, as we pleasantly found out).

Rider position is quite good for the average sized person. The narrow roadster bars are best appreciated after several hours in the saddle. They are wide enough to allow you to maneuver in big-city traffic with a great deal of control, but are sufficiently narrow to be comfortable at sustained high speeds. Triumph has seen fit to go to spongy grips this year, and while they are just dandy with bare hands, they are uncomfortably sloppy with gloves. And while we're concerning ourselves with gloves, we wish to state that all of the Daytona's controls, from the gas cocks to the dipper switch, can easily be handled by insulated-glove hands.

To be counted among its most endearing qualities as a roadster, is the Daytona's noise level. It makes just enough noise to let you know that it is alive and kicking. It has, of course, that typical, and most pleasant, Triumph rumble. The exhaust note is mild enough not to offend the automobile types, but is sufficiently right to excite those who know "where it's at."

In the quality-of-finish department one will search long and hard before he is able to produce an equal to Triumph motorcycles. The Daytona, of course, is no exception to this most pleasant tradition. The bike is superbly crafted and, in a word, beautiful.

The Triumph T100R Daytona clearly reflects its enviable heritage. It's a well-bred mount that will graphically illustrate how its sporty brother so handily won the premier crown in American road racing last year. ■

TRIUMPH T100R DAYTONA

SPECIFICATIONS

List price	\$1199
Suspension, front	telescopic fork
Suspension, rear	swing arm
Tire, front	3.25-19
Tire, rear	4.00-18
Brake, front	7 x 1.13
Brake, rear	7 x 1.13
Total brake swept area, sq.-in.	49.7
Brake loading (test weight/swept area)	
lb/sq.-in.	10.6
Engine type	ohv, vertical twin
Bore and stroke	
(inches-millimeters)	2.72 x 2.58, 69 x 65.5
Displacement (inches ³ -centimeters ³)	30, 490
Compression ratio	9:1
Carburetion	Amal Monobloc (2), 1-1/16"
Ignition	energy transfer
Bhp @ rpm	41 @ 7,200
Oil system	dry sump
Oil capacity, pts.	6
Fuel capacity, gal.	3.3
Starting system	kick, folding crank
Lighting system	alternator and battery
Air filtration	paper element
Clutch	multi-disc, wet plate
Primary drive	duplex chain
Final drive	single-row chain
Gear ratios, overall:1	
5th	none
4th	5.4
3rd	6.6
2nd	8.7
1st	13.4
Wheelbase	54.5
Seat height	31.5
Seat width	11.0
Foot-peg height	12.5
Ground clearance	7.0
Curb weight (w/half-tank fuel)	371
Test weight (fuel and rider)	531

PERFORMANCE

Top speed	105
Maximum speed in gears (@ 7800 rpm)	
5th	none
4th	111
3rd	91
2nd	68
1st	40
Mph per 1000 rpm, top gear	14.2
Speedometer error	
30 mph indicated, actually	32.1
50	52.6
70	72.9
Acceleration, zero to	
30 mph, sec.	3.4
40	4.4
50	5.8
60	7.0
70	9.3
80	11.6
90	14.9
100	21.3
Standing 1/8-mile, sec.	9.6
terminal speed	72
Standing 1/4-mile, sec.	14.9
terminal speed	90

