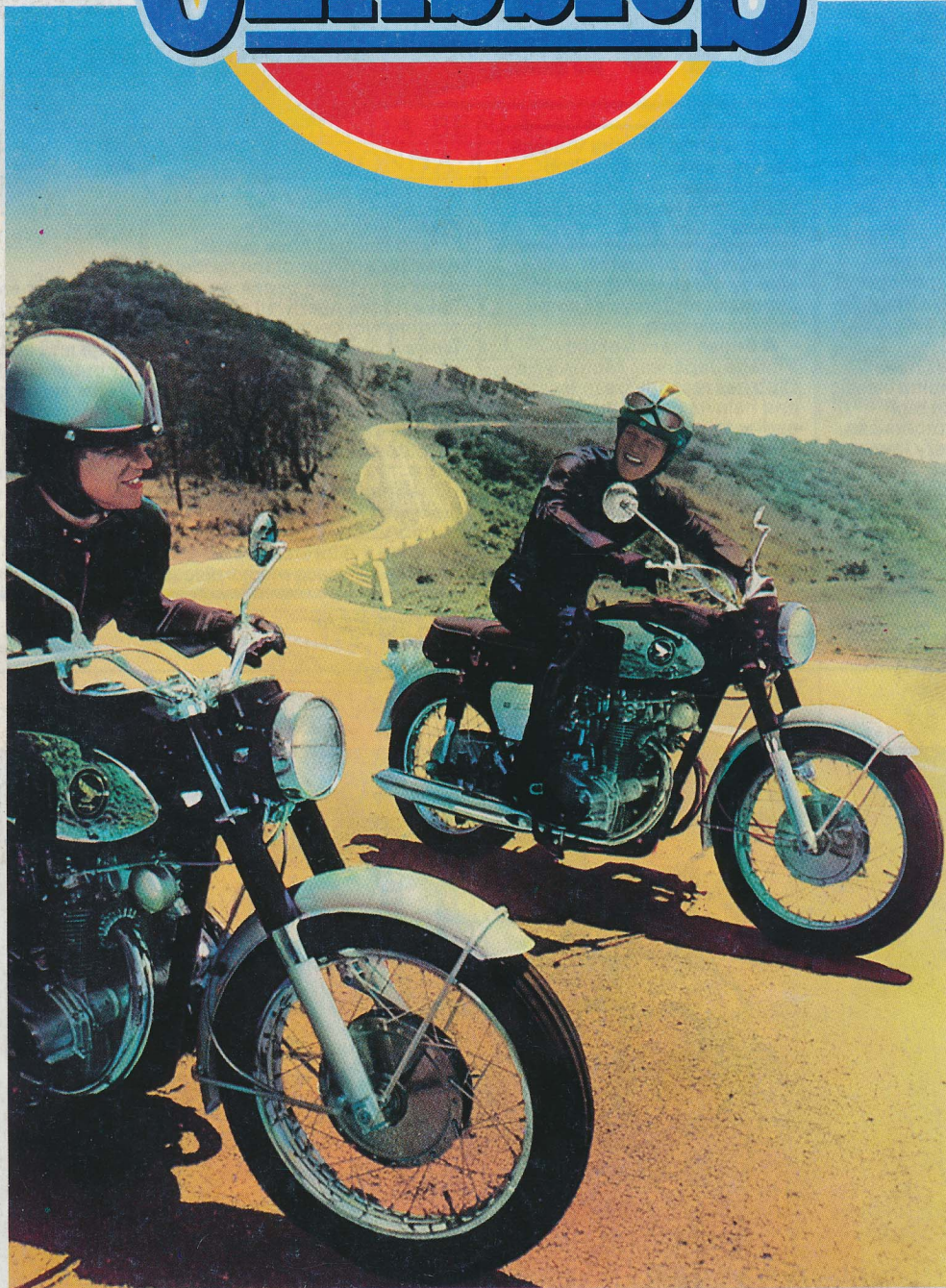


# JAPANESE CLASSICS



20 Golden Greats  
from the Land of  
the Rising Sun  
1960-'72



# JAPANESE CLASSICS

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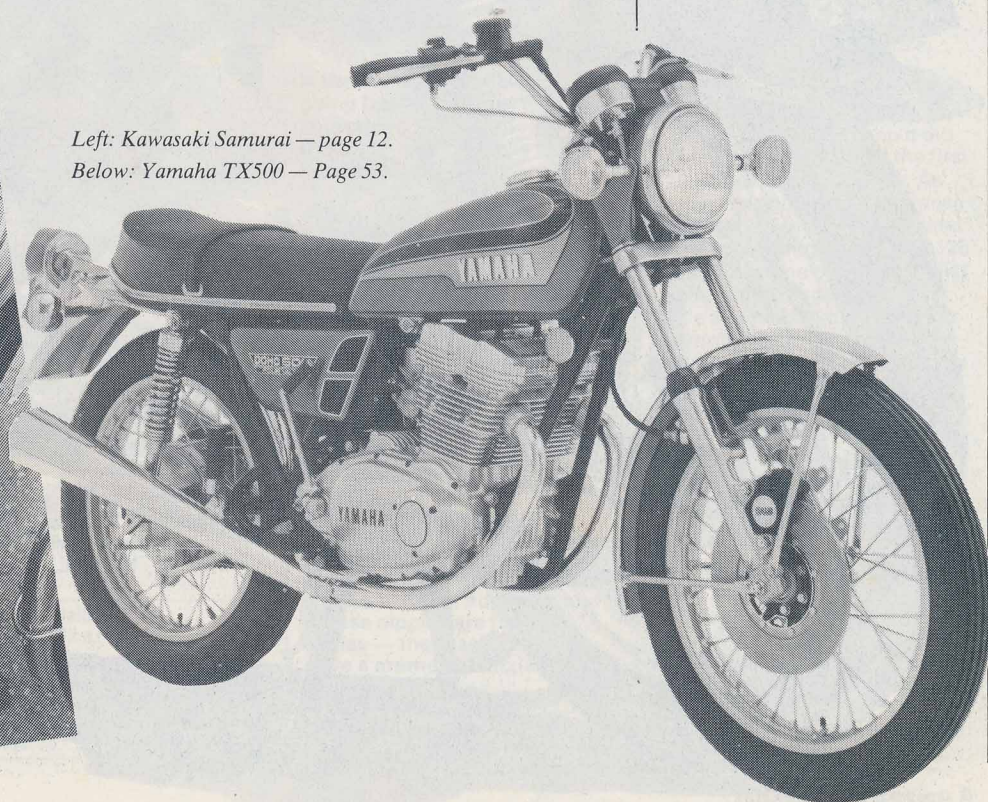
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*Left: Kawasaki Samurai — page 12.  
Below: Yamaha TX500 — Page 53.*





# FIVE PORT PHENOMENON

*... a stylish roadster that can be flung along twisting byways as effortlessly as it will ease along main roads at the legal speed limit.*

Mike Wilson, MCN tester

## SPECIFICATION IN 1969

- **ENGINE:** Two-stroke twin cylinder. Bore and stroke 61.0 mm x 59.6 mm. Capacity: 348 cc.
- **CLAIMED OUTPUT:** 36 bhp at 7,000 rpm. Claimed torque rating: 28 lb. ft. at 6,000 rpm. Compression ratio: 7.1:1.
- **CARBURATION:** Two 28 mm Mikunis.
- **ELECTRICS:** Battery, coil, and crank mounted generator.
- **TRANSMISSION:** Primary drive by helical gears, final drive by single-row chain, through a multi-plate clutch running in oil. Overall gear ratios, first to fifth: 18.72:1, 11.77:1, 3.55:1, 6.99:1, 5.68:1.
- **SUSPENSION:** Telescopic front fork. Rear: swinging arm, and hydraulic damper units.
- **BRAKES:** 7.2 in. diameter, 1.2 in. lining width, front and rear. Two leading shoes at the front, single leading shoe at the rear.
- **TYRES:** 3.00-18 front, 3.50-18 rear.
- **CAPACITIES:** Petrol tank: 3.3 gallons. Oil tank: 6 pints.
- **DIMENSIONS:** Wheelbase: 53.2 in., seat height: 33.0 in., ground clearance: 5.7 in.
- **PRICE:** £359 inc. P.T.
- **MAXIMUM SPEED:** 91.4 mph.
- **STANDING QUARTER MILE:** 16.07 seconds.

**THE ADVENT** of a 350cc two-stroke twin from Yamaha was inevitable.

The continuing success of the 250cc series during the early sixties saw the birth of a 305cc version — the YM1 — the first marketed in 1965.

The YR1, Yamaha's first full 350 was ready for sale in Japan two years later. It was big for a two-stroke and it represented a new level of technology for two-stroke development.

In 1969 the YR3 was marketed with further development leading to the R-5F the following year.

A big change occurred in 1972 with the introduction of the RD (race developed) range up to 350cc which incorporated reed valve "torque induction" and seven port design.

In 1973 Yamaha were able to celebrate their machinery winning 125, 250 and 350cc world road race manufacturers' titles and in 1974 a 350 Yamaha won the Daytona 200 for the third consecutive year.

Britain had a fairly long wait before the 350 appeared. Public debut was the April '69 Brighton Show by which time the 350 series had progressed to the YR3.

Readers of *Motor Cycle News* had first heard about the new 350 Yamaha when a report on the latest bikes from Japan was carried in December 1966.

The YR1, which Yamaha world champion Phil Read had been using as a runabout, was in production — though not available in Britain — with a claimed top speed of 105mph from 36bhp at 7500rpm.

The engine was split horizontally, there was provision for right or left foot gear-change, and compression was quoted at 6.9:1.

At the time it was commented that tuning potential should be good for this addition to the Yamaha range. Bore x stroke was 61 x 59.6mm and it was of course fitted with the now famous Yamaha Autolube oil injection system.

Though the 350 had not been made available in Britain during 1968 the race version of this five port phenomenon had already been timed at Daytona at 149mph, whetting the appetites of enthusiasts keen to get their hands on a performance two-stroke midweight.

The new five-port design which gave the superior performance involved two extra transfer passages. These helped to clear a pocket of burnt gas which previously went unscavenged with the earlier three-port design.

As well as clearing residual gas much more efficiently and so allowing more and a better spread of fresh charge, the system also cooled the top of the piston (see diagram).

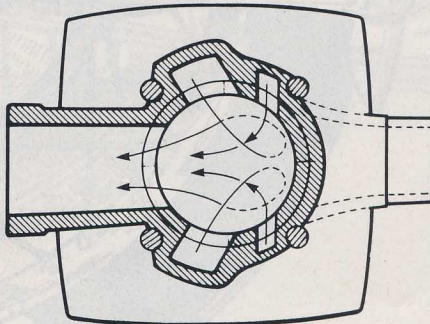
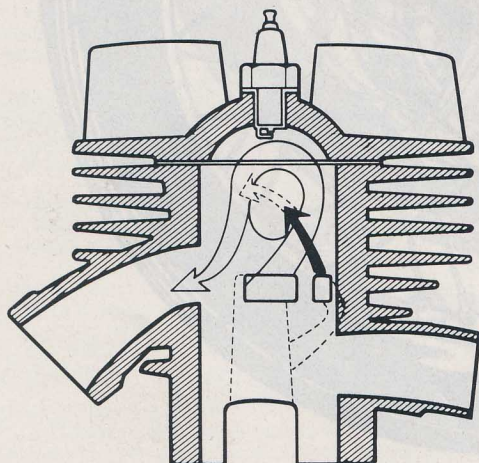
When at last the 350 Yamaha roadster was first seen by the British public at the Brighton Show in April '69 it was priced at £359.

Its presence there was somewhat overshadowed by the British debut of the mighty 750 four cylinder Honda. But what the 350 Yamaha lost in show glitter its racing brother made up for on the race track.

In the April 9 1969 issue of *Motor Cycle News* the Honda-4 was the focal point of the Brighton Show report inside. But on the front page was Rod Gould and a story about his trio of double wins aboard his 250 and 350 Yamahas over the Easter weekend.

It was a fantastic debut in Britain for these roadster based aircooled racing twins — the 250cc TD2 and 350cc TR2 which had been raced for the first time a few weeks earlier at Daytona.

MCN staffman Martin Hodder was quick to arrange a track test of the fantastic new racers which had won so convincingly



*The five port barrel. The diagram on the left shows the pocket of spent mixture which remains with the earlier three port design. The extra pair of transfer ports direct a fresh charge at this pocket, expelling it through the exhaust port. The improved cylinder filling gives a wider power spread as well as increasing outright power.*



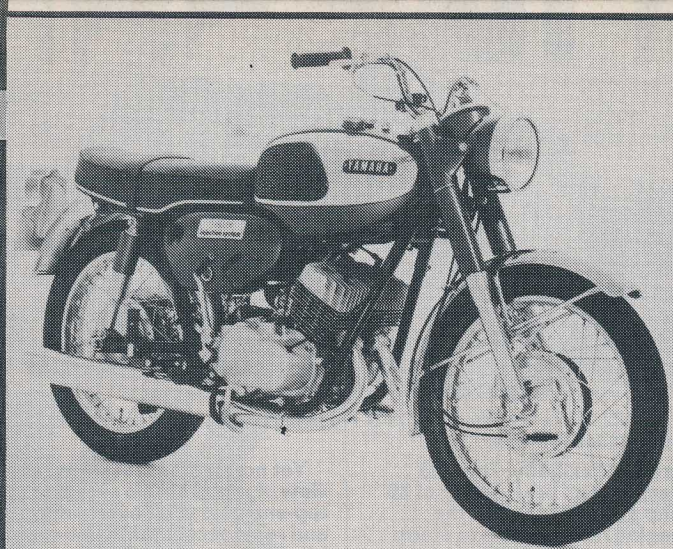
over the weekend.

Here are extracts from his comments on the 350 which had been timed at over 150mph at Daytona:-

"Rod Gould's brace of Daytona Yamahas — which won him a trio of double wins over the Easter weekend — are the most exciting couple of bikes in the country.

"They have more power than any other privately owned machine in either the 250 and 350 class.

"Rod, one of Europe's brightest new generation road racers, first used his new



*Above: This is the YR1 350 which was not imported to Britain. If you can get hold of one so much the better — many argue it's the best looking of the breed.*

machine for this year's Daytona event in Florida, USA.

"On the 350cc TR2 he finished fifth after numerous pit stops caused by the Yamaha's heavy fuel consumption — 19mpg at the most — and a loose exhaust pipe.

"The engines are based on the latest Yamaha road machine power units while the frames — which are pretty near identical — bear a striking resemblance to those used in last year's four cylinder works racers.

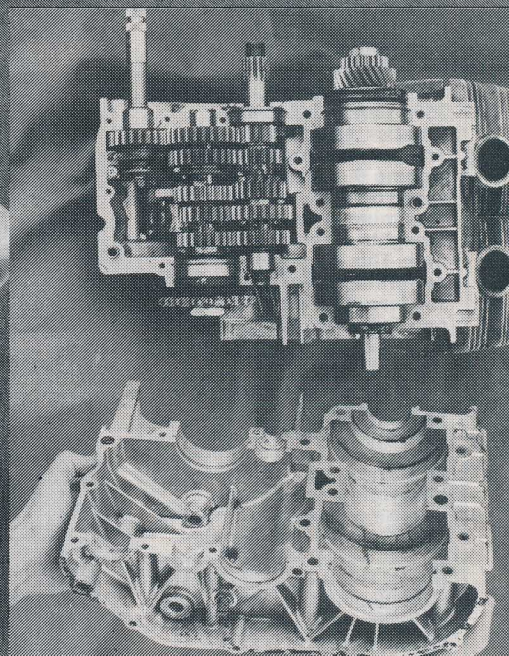
"Best speed recorded on the 350 was 136.5mph which is better than any other racing machine tested by *Motor Cycle News* apart from Mike Hailwood's Honda-4 which was 9mph faster. Had the Yamaha not been overgeared it would certainly have topped 140mph.

"Power started at 7000rpm, coming in with a real bang at 8500, with the redline coming 1000rpm later. Changing up at 9500rpm dropped the revs back just less than 1000rpm. Maximum power is 68bhp.

"Gearchange was better all-round than the 250, with barrel selection and the gear lever operating direct on the side of the gearbox with no linkage. Changes were very rapid with ultra-short pedal movement.

"Brakes are the same as on the smaller machine and the extra weight does not noticeably affect braking."

For 1970 Yamaha announced that their seven models for the British market including the 350cc YR-3 which continued into 1970 would have Teflon coated pistons to cut carbon deposits and reduce seizure risks. Price was retained at £359.



*Horizontally split crankcase — more oiltight than a vertically split design, and an easier proposition for major maintenance.*



## **FIVE PORT PHENOMENON**

In December 1970 came the news that the YR-3 was to be superseded by the R5-B priced at £369.

Restyled with a 3.2 gal tank weight was reduced from 374 to 343lb. Bore x stroke was revised to undersquare dimensions of 64 x 54mm. Though power claimed was the same, MCN reported that the new motor "is far more flexible than the older unit.

"But the outstanding impression of the R5-B is its compact layout making it handle more like a 250 than 350."

At the end of '71 it was announced that the YR-5 was to continue unchanged apart from a new colour scheme.

● Before the YR3 was officially imported MCN was able to test a version in February '69. The following extracts are from Mike Wilson's report which was headlined "Built for comfort — Yamaha's luxury 350."

'YAMAHA'S first 350 roadster to be sold in Britain is a bike for the man who wants high speed motor cycling without body-wracking vibration and cramp.

The new five-speed twin, named the YR3, offers a casual, relaxed riding position and a smooth engine that never mars its performance with that common fault of fast two-strokes, high frequency tingles.

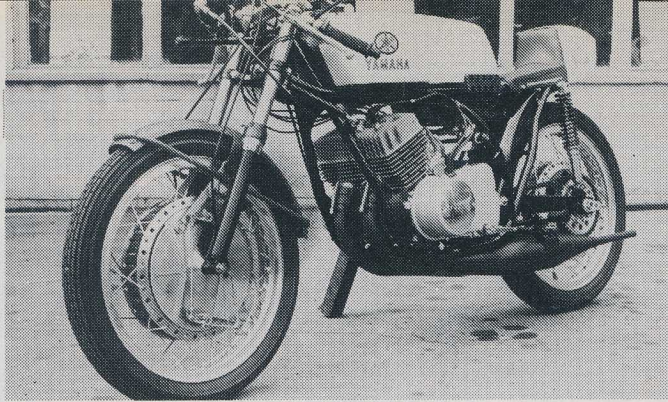
Detailed finish and fine engineering add to the prestige of his luxury tourer, the largest capacity machine that Yamaha has ever sold.

And while the YR3 makes a flexible, mild-mannered tourer, engines similar to its 36 bhp powerplant have formed the basis of searingly quick racers.

The racing version of these 350s were developed in America, and stunned Transatlantic motor cyclists by lapping the banked Daytona speed bowl at 147 mph, with maximum speeds on the straights of more than 150 mph. This is a fantastic performance from a piston-port 350 forced by U.S. rules to use only four of its five speeds. This year, the bikes will also be raced in Europe.

This remarkable engine naturally incorporates Yamaha's famous five-port barrels. The two additional ports in each barrel straddle the intake port, and direct the incoming mixture around the cylinder head in a path that pushes out all the stale exhaust gases. This path also prevents incoming fuel from shooting straight out the exhaust port when the piston is at the bottom of its stroke.

The rider feels these benefits not only in the form of increased power, but also in



*The TR2 racing version of the YR3 — a fantastically successful competition projectile.*

greater flexibility. The YR3 develops its peak power of 36 bhp at 7,000 rpm, but the engine really begins to storm from as low as 4,000 rpm.

For easing through towns, the bike burbles quietly, without choking or transmission snatch, at far slower engine speeds.

Through MCN's electronic speed trap, the YR3 recorded a best top speed of 91.4 mph. The figure is respectable, without being startling, but the test bike was the first of its kind in Britain, and had not had the benefit of a thorough running-in period. With several hundred more miles on the speedometer, maximum speed would almost certainly rise to around the 95 mph mark.

Standing quarter mile attempts brought a best figure of 16.07 seconds, which would obviously drop into the 15-second bracket with more miles on the clock.

Total performance figures are handicapped, however, by the Yamaha's weight — a hefty 374lb. Poundage of this sort takes the bike into the weight class of the lighter 650s, and also makes it heavier than some 500s.

Yet no-one could call the 350 slow. It offers ample mid- and top-end power for overtaking and rapid acceleration between bends, and the engine adopts a relaxed 5,000 rpm gait at cruising speeds in the 70 mph region.

The gearbox operates on a one-down four-up basis. Changing from first to second involves a jerky double movement, but the remaining changes ease through smoothly and quickly. Primary drive is by gears, in accordance with usual Japanese practice, to a multi-plate clutch.

Each change produces a difference in engine speed of approximately 500 rpm, so there's no difficulty in keeping the Yamaha at peak power.

The racing 350 uses a frame from the old works RD56 250 twins, but the YR3's frame is unique to it alone. Twin downtubes are mated with a single top tube to form a very strong, rigid, unit. And this results in light, predictable handling under all road condition. The bike will tackle corners at extreme angles without pitching or wallowing.

The telescopic front forks and rear suspension units provide a

supple ride, yet their action is not soft enough to spoil the bike's precise handling.

Braking is handled by a twin leading shoe unit at the front, and a single leading shoe stopper at the rear. Both drums are 7.2 in. in diameter, and offer a total brake swept area of approximately 52 square in.

They pull the big Yamaha to a stop in remarkably short distances and without judder, snatch or sponginess. Lever action is smooth and progressive, and combined with the exceptional stopping powers, makes the YR3 one of the best-braked bikes on the road.

The factory has really made efforts to ensure YR3 owners will enjoy comfortable riding. The seat is thickly padded, and is ribbed to provide firm grip during hard acceleration and braking.

In line with this theme of catering to the rider, Yamaha have provided large, easy-to-read speedometer and tachometer dials, big and bright flashing indicators, and a rear view mirror that remains free of vibration.

In fact, footrests, seat, and handle-bars all remain free from shakes and tingles. With comfort like this, a rider can tackle all-day trips at motorway speeds without thrashing either himself or the bike.

And that's the YR3. It's not sprinkled with ridiculous gimmicks such as cowhorn handlebars, but it is a stylish roadster that can be flung along twisting byways as effortlessly as it will ease along main roads at the legal speed limit. □

*This is the YR3 tested by MCN in February 1969. It was the first 350 Yamaha model officially imported; it should be fairly easy for a potential restorer/collector to pin down an example in fair condition at a very reasonable sum.*

