

MOTOR CYCLE

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**NEW
BIGGER,
BETTER
BUYERS GUIDES**

...1987

SPECIAL 'STROKER ISSUE

**GOODBYE
ELSIE**

FAREWELL
TO YAMAHA'S
SCREAMIN'
STREET
RACER

1980

SCOOP!

**FIRST RIDE ON
HONDA'S RC30**

**FREE! LEATHER
KEY-FOB**

**THE NOW
GENERATION**

**YAMTZR250
vs. SUZIRG250**



TESTS: SUZUKI'S NEW GSX1100FJ/ENFIELD INDIA 350 BULLET/CAGIVA 125 FRECCIA

SO LONG

The 250LC was the last of the learner-legal rockets; it just scraped in before the 12hp limit and two-part test to the joy of 17-year olds everywhere



'Up to now it was only those who had taken the ultimate plunge and gone racing were able to enjoy the electrifying delights of squirting a water-cooled Yamaha two-stroke through its knife-edged powerband.'

—Which Bike?, 1980

Yamaha's 350LC has reached the end of its development. We mourn the passing of an old friend/**Julian Ryder**



My first ride on an LC was one of those experiences that you're never likely to forget. At the 1980 TT, the UK Yamaha importer Mitsui fronted up with a display of their new machinery — and they even had a 250cc demonstrator. A journalist new to the bike industry could hardly have had a more awe inspiring introduction to his new job if he'd been given a works bike for the only slightly more serious riding going on during the same week. I know, because I was that journalist, and the first sighting of an LC was awaited with the sort of fervour normally reserved for such events as the Second Coming.

I was allowed just one lap, and I have to admit that my recollections of it are hazy — an inadvertent wheelie at the Gooseneck when I stomped down to first after failing to find any go in second, and a brain-off charge over the mountain in the company of a demented Teuton on a BMW. The only other thing that left a lasting impression was the neatness of the thing with its black engine and white paintwork. My God, there wasn't even any chrome on the pipes. It was the smallest bike I'd ever lapped the island on and I've a feeling it was the quickest lap I've ever done.

It wasn't that a two-stroke twin was a particularly revolutionary device. Water-cooling had been around as well, notably on the Suzuki GT750 triple. Even the monoshock rear end wasn't new. Yamaha's own DT175 had gone down that road back in '78. What was new was the concept of a motorcycle designed for Europe, not the USA. Right from the start Yamaha's designers knew that the American emissions legislation had effectively

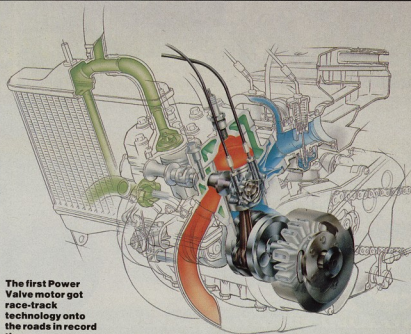


Although the LCs were essentially Japanese motorcycles, there was a lot of European input. This is Dave Bean of Yamaha NV testing in Japan



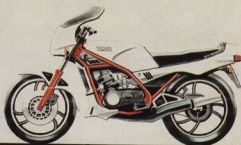
In racing, LCs meant the knock-'em-down-drag-'em-out Pro-Am. Some famous names first made an impression on LCs, this is Ray Swann leading Kenny Irons and Nigel Boswell

G, ELSIE



The first Power Valve motor got race-track technology onto the roads in record time

DESIGN COUNCIL



This early styling drawing of the Power Valve shows how European ideas channelled via Yamaha NV in Amsterdam influenced the final product. But back in Japan the ideas go through computer-aided design systems of the type that any large-scale automotive manufacturer uses to finalise detail design



'In fun-for-money terms it's very hard to beat Yamaha's 350YPVS. It's fast, it's furious, it's cheap and now that the Elsie has more power and sharper looks it'll continue to reign supreme in the budget street racer class.'

—MotorCycle International, 1986



outlawed the two stroke, so much of the responsibility for the new model's design was handed over to Yamaha Motor NV, in Amsterdam, the company's European headquarters.

Paul Butler, now front man for Kenny Roberts' Lucky Strike Yamaha GP team, was in charge of product planning at Yamaha Motor NV during the development

of the LC. He saw the bike as a logical progression from the air-cooled RD roadsters and the water-cooled TZ racers. Interestingly, he also regards the LC as one of the motorcycles that marked the arrival of unselfconscious Japanese design. In the '60s, says Butler, Japan copied. Early bikes were deliberately engineered and styled like Triumphs, BSAs or even BMWs. In the '70s

Japanese motorcycles were an amalgam of Japanese and European ideas. Italian style trends still had a lot of influence. But in the '80s we've been seeing motorcycles from Japan produced without reference to Europe. The Japanese home market has always been very sports oriented, the difficult decision Yamaha had to take was whether the rest of the world would accept such an uncompromisingly sporty motorcycle.



THE ORIGIN OF THE SPECIES

1980 RD350LC: 47hp and 107mph – the original Elsie



1982 RD250LC: 35.5hp and 102mph – new colour scheme



1983 RD350LC YPVS: 53hp and 115mph – the first Power Valve



1985 RD350LC YPVS/N: 59hp and 115mph – unfaired, more power, new forks



1985 RD350LC YPVS/F: 59hp and 116mph – full fairing



1986 RD350LC YPVS/F2: 62hp and 117mph – lot more power and new looks, end of the line



SO LONG, ELSIE

Once the factory had decided to make their new bike an out-and-out sportster, the rest, says Butler, was easy. He gives all the credit for the engineering of the LC to Yamaha NV's engineering director of the time, Mr Naito, who had earlier in his career been race engineer to the Grand Prix team in the '60s. Those were the days of Read, Ivy and the two-stroke twins that would evolve first into the RDs and then the LCs. Naito's love of, and commitment to, two strokes plus his outstanding abilities as an engineer ensured that the new bikes would be winners from the start.

There has always been some confusion about the styling side of the bike. Yamaha Amsterdam commissioned Mike Oldfield, then with NVT and now with Bates Leathers in the States, to do a series of drawings. At

the start of this process Butler knew that the bike should have expansion chamber type exhausts, but wasn't sure how they should be positioned. They considered high-level pipes exiting through the back of the seat, among other layouts, but eventually settled on relatively normal positioning.

The curved-spoke 'Italic' wheels have always been a source of controversy. The story according to Butler goes like this. Originally, he saw some wheels in a Japanese car magazine with curved spokes and liked the look of them. He passed the idea on to British designer John Mockett, who had collaborated with Yamaha NV on various projects including a two-piece fairing for the XS1100. Mockett produced visuals of the idea which were sent to Japan where they were used as the basis for the production wheels. This adaptation from visual to something that could be manufactured economically was done by Mr Iwasa.

The only sticking point at head office was the cost of the new design, both to produce and thus to the customer. Water-cooling meant considerable investment in new tooling at the factory, and the added complexity meant higher cost to the buyer. Butler maintained that the racey image would outweigh the cost, and he was right.

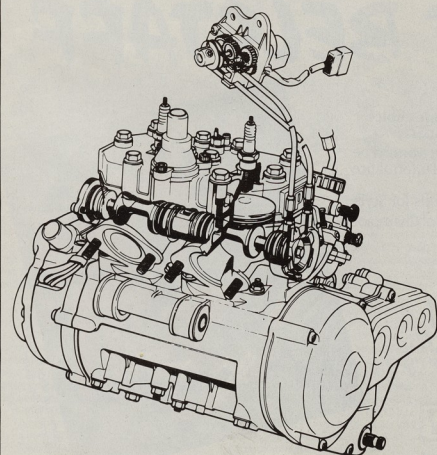
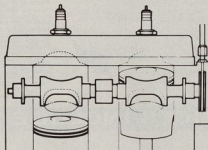
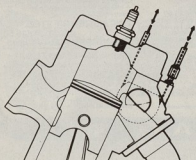
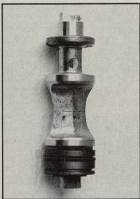
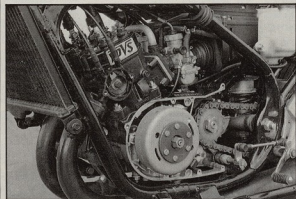
The 250LC arrived in the UK first and was immediately elevated to the status of cult motorcycle. At the time, the hot 250 on both road and track was the Suzuki X7. All of a sudden it looked very old fashioned, not to mention slow. In fact the first LCs weren't that quick, their advantage lay in handling. I spent the best part of a day at the MIRA test track trying to get one to do the magic ton and didn't succeed. This didn't stop good old MCN producing one of its more outrageous headlines, though. 'What'll it do?' they asked, '105mph!' came the answer. This speed was never approached in any other test of the 250LC and the offending feature ►

POWER-VALVE EXPLAINED

The Power-Valve was the first of a whole new set of acronyms designed to extract the best of both worlds from two strokes. The idea is to alter the height of the exhaust port so that the engine is 'tuned' for low-down torque at one end of the rev band yet also for top-end go at the other.

Yamaha's solution to this problem was deceptively simple. The Power Valve is a drum with a cutout in one side that fits flush with the

front wall of the cylinder. Below 5000rpm the valve is 'shut', and the exhaust port opens low down the piston's travel. Above 5000 revs, the valve starts to rotate and the exhaust port therefore gets a progressively higher top edge until it is fully open at 9000rpm. Everything is under the control of a microprocessor that turns the valve with cables via a servomotor



SO LONG, ELSIE

was quoted in the House of Commons during debate on the upcoming learner legislation.

The 350cc version took a little longer to arrive. In fact the importers were so embarrassed by the delays that they gave everyone who'd put down a deposit a free Bell helmet with a special paint job. Again, the bike wasn't terribly fast – it took a good one to break 110 – and the best I ever got out of one at the test track was 108mph. Again the bike's major advantage was its handling.

Not surprisingly, production racing grids soon became populated solely by LCs. Stan Stevens, who became the guru of LC tuners, recalls his first sight of an LC at Brands Hatch was 'Gary Noel whispering into Paddock with everything on the deck.' Noel, later to become European 250cc champ on the beautifully crafted Exactweld, was wearing an orange novice's jacket at the time and knocking over a second off lap records at most circuits he and his LC visited.

The 350LC proved to be the ideal first racer. Anyone could afford to put one on the track to find out whether or not he liked racing. If he didn't, it was simple just to put the thing back on the road. More importantly, the bike was beautifully suited to racing – not surprising given its heritage. It was far from uncommon for the 350 production race winner's time at a club meeting to be the fastest of the day, beating open-class 500s and F1 four strokes. Suddenly, production racing wasn't a joke anymore.

But it was the Yamaha Cup and its various national qualifying events that provided most opportunity for the racers and most entertainment for spectators. In the UK this meant the Pro-Am in which hand-picked up and coming clubmen competed against young professionals.

The bikes were provided by the organisers and riders drew the keys out of a hat for the race. This format had been first thought of by Mitsui Germany who used XS400s, of all things, from 1978 until the LC appeared.



Each country did things differently. In France you bought your LC, Sonauto replica leathers and entered. It usually needed at least two heats to whittle the entry down to a number that could fit on the grid. One of these crash and burn extravaganzas was always run as a curtain-raiser to the big 24-hour races and guaranteed that trackside photographers would be working knee deep in smashed fibreglass. The UK version produced equally exciting racing and more importantly, it got on television. Lots of now famous names first made their mark in the Pro-Am: Alan Carter, Kenny Irons, Ray Swann and Niall Mackenzie to name but a few from the early days and current whizz kid Terry Rymer is the most visible of the recent crop.

It's no coincidence that the Pro-Am was organised by Bruce Cox, the same man who now promotes the Superstocks. Pro-Am showed everyone that production racing could be real racing and therefore paved the way for series like Superstocks which is production racing with slicks and loud exhausts.

Kenny Irons remembers the LC with fondness and puts the bike's success down to its handling as it really didn't have any more grunt than the old RD400. On bikes prepared by Stan Stevens he cleaned up in

southern events. On one occasion Irons was sent up to Scotland 'to sort out some bloke called Mackenzie.' Stan can't remember the result, but thinks that both of them crashed.

Surprisingly, Irons had no problems with his 350 despite being among the first to get one. The first, small batch of 350s to arrive in the UK in 1980 had terrible carburation problems, cured by dealers under warranty. The larger numbers that appeared the following year were perfectly okay and a couple of strange phenomena started to appear. First, all sorts of people you'd have thought wouldn't be seen dead on a 350cc two-stroke twin started buying LCs. At least

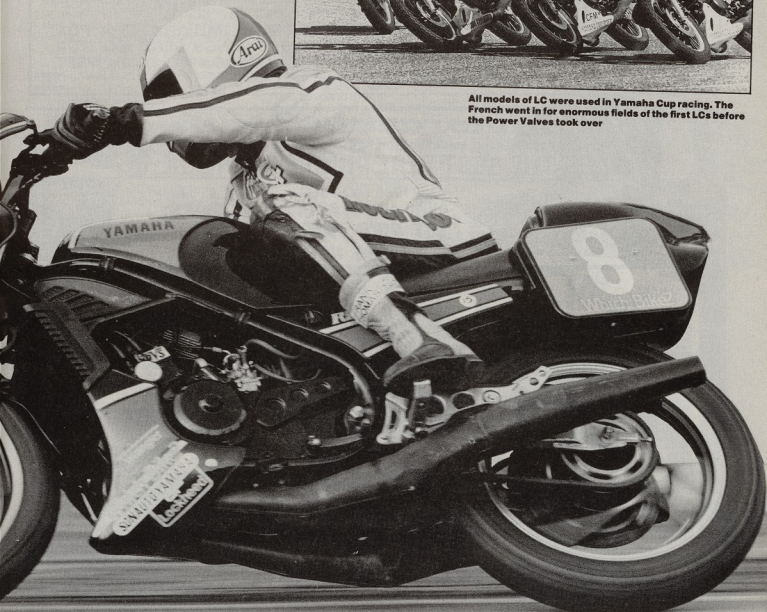
two Ducati owners of my acquaintance gave up the charms of the 900SS in favour of LCs. Secondly, they started being stolen in quite amazing numbers. I read somewhere that someone worked out that the LC became Britain's second most stolen vehicle after the Ford Cortina.

This second, unwelcome phenomenon came to a head in 1983 when the first Power Valve version of the 350 appeared. The first two people I knew with Power Valves had them stolen and Mitsui had several of their road-test fleet half-inched. Sales of Kryptonite locks rocketed.

Strangely enough, my first ride on a Power Valve was one of those experiences ►



All models of LC were used in Yamaha Cup racing. The French went in for enormous fields of the first LCs before the Power Valves took over



SO LONG, ELSIE

that you never forget. I took one to the Nurburgring to see the last ever world-championship event on the old, long circuit. It wasn't what you call a totally suitable journey for a 350 but it proved a couple of things. First, the Power Valve had given the motor a real top-end boost. A good one could now just crack 120mph. Secondly, the addition of a true rising-rate rear end had done nothing for the handling.

One of the Power Valve's more endearing features was the way it whirled at you when the ignition was turned on. In fact this was the sound of the Power Valve rotating automatically to clean off any carbon deposits, but most owners liked to feel that they were in possession of a bike that said good morning to them.

On the amazing road past the 'Ring towards Koblenz the new bike was fine — just like the old one only more so. But then, on the way home, it started taking a dislike to relatively gentle curves and weaving on the way out. I discovered that the OE Yokohama on the rear was getting marginal, although it was definitely still legal, and the bike didn't like it. It turned out that the Power Valve was highly tyre sensitive. One female rider who bought a Power Valve had to buy an expensive White Power shock for her bike because she wasn't heavy enough to make the suspension work and the thing weaved at speed.

Perhaps the most striking thing about the new LC was its looks. In white with red panels and blue pinstriping it was the best looking bike on the street bar none. The addition of a belly pan and headlamp fairing as standard helped, too, and echoed the optional Pro-Am equipment of the first LCs. The belly pan was another idea that came from the Amsterdam offices. Butler had seen a belly pan in a styling sketch published in a Japanese magazine and decided it was an idea worth putting into production.

All of a sudden, people stopped talking about 'LCs' and started talking about 'Power Valves'. It must be remembered that it was as late as 1978 when the Power Valve first appeared in the cylinders of Kenny Roberts' world-championship winning YZR500. In 1981 they went into the production-line T2250H racer, just two years before appearing on a street bike. Who says racing doesn't improve the breed?

One of the nice things about the first LC was that the Yanks didn't get it, but the Power Valve managed to get through to everywhere except California with catalytic converters in its pipes. Along with all other non-European markets, they called it the RZ and made everyone else jealous by getting a black-and-yellow Kenny Roberts Replica version.

For 1985 Yamaha attacked the only real problem the LC ever had: weedy front forks and marginal brakes. The belly pan and headlamp fairing went and in its place punters got a choice of a full fairing or a 'naked and unashamed' version, as the press release so quaintly put it. With astounding originality, Yamaha christened them the F and N versions. More importantly, the forks got variable damping and a hefty brace. This managed to

eliminate the BMW impressions earlier types had done under braking. The new opposed-piston calipers allowed the rider to take advantage. This Ryder was first let loose on one on the Estoril race track during the launch of the FZ. Even an excess of enthusiasm and a lack of talent failed to turn the thing upside down when I got myself in severe problems on a downhill hairpin; in front of senior Yamaha personnel naturally.

Yamaha had just one trick left. In 1986 the Power Valve got a new suit of clothes to emphasise the family relationship with the 500LC, plus a new top end for the motor. The result was a staggering 56.1hp at the back wheel of our test bike. We were so impressed we thought some naughty bits might have crept in to the motor. So we took it apart only to find it was totally and utterly standard.

And that, really, is it. Yamaha say they won't develop the RD series anymore. Any new two-stroke twins will be TZRs. But all is not lost for LC freaks. The Power Valve lives on in hiding in Latin America. Actually, Yamaha's Brazilian subsidiary is now making 350 Power Valves modified to run on the local alcohol-based fuel and they are free to develop it if they wish. There's a thought; an alcoholic Elsie. ☐

APRIL FOOL

Which Bike? got 'em all going in April '82 with this lovely spoof story about a four-cylinder LC — they were only a couple of years early!

The '500-4' was actually two 1/12th scale Yamaha kits slamed by then editor John Nutting. The man himself was then grafted on in the darkroom and the airbrush artist let loose to put some movement into it. Lots of people were taken in. Not surprising really, the only giveaway was the thickness of the brake hose and speedo cables

