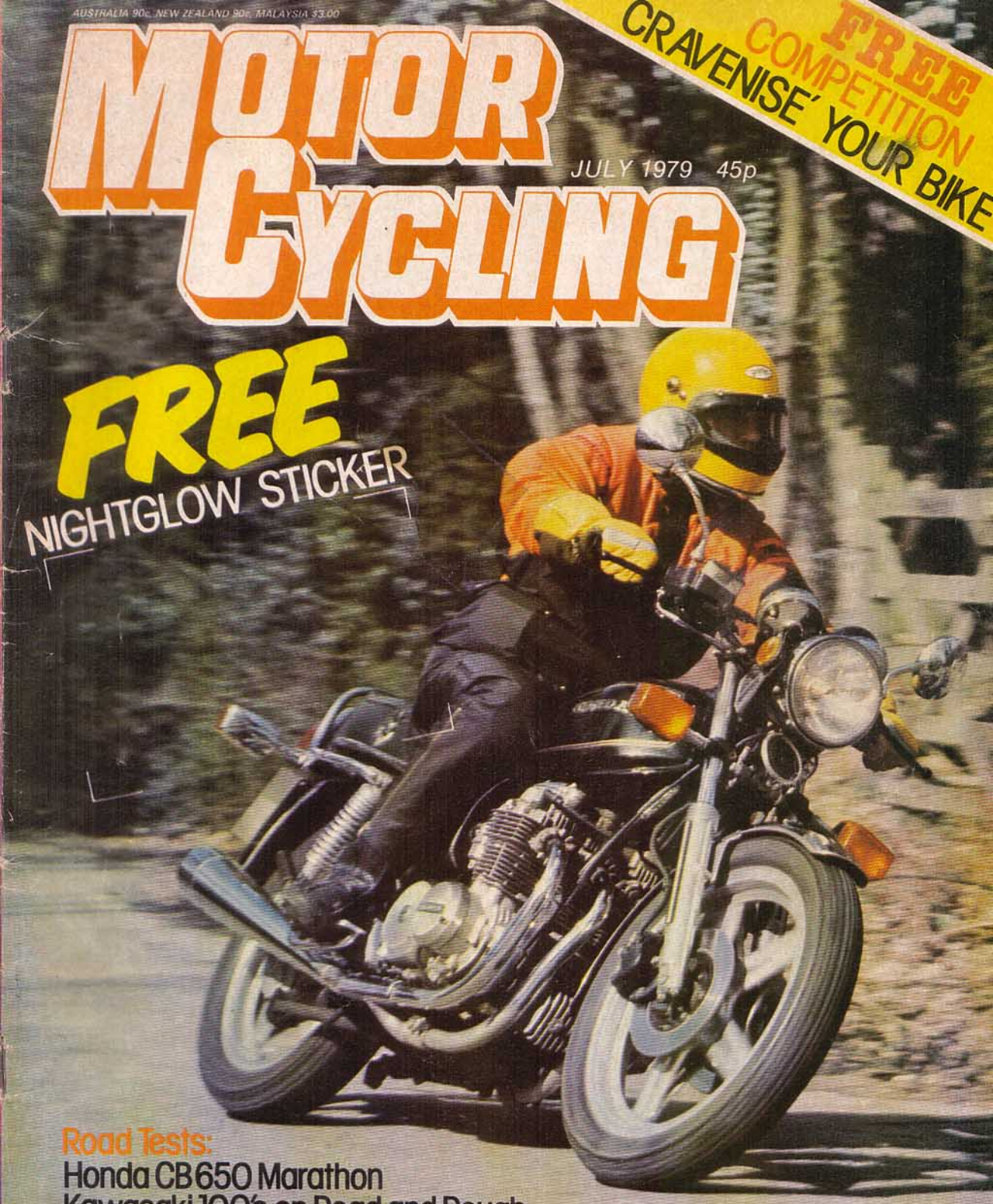
AUSTRALIA 90c NEW ZEALAND 90c MALAYSIA $3.00

MOTOR CYCLING

JULY 1979 45p

FREE COMPETITION
CRAVENISE YOUR BIKE

FREE
NIGHTGLOW STICKER



Road Tests:
Honda CB650 Marathon
Kawasaki 100's on Road and Rough

Features:
Trials Champion Martin Lampkin
Accidents-Avoid the Big Crunch!

Servicing:
Honda CB750 Superservice
Tuning CV Carbs

Marathon 5000

EVERY bike in the unique 'Motorcycling' test series is bought from stock at an ordinary motorcycle dealer's showroom. It is run for a minimum 5000 miles under all road and weather conditions and finally, it is tested at the Motor Industries Research Association test track at Lindley, Warwickshire, using electronic timing equipment accurate to 1/100sec. and 1/100mph. Performance is assessed with the rider seated upright, prone in leathers and with a passenger.

Our Star system gives a quick reference to the standard reached in both performance and engineering. The standard is:–
*** = Poor; ** = Below average; *** = Average; **** = Above average; ***** = Outstanding.**

We claim that these are the world's fairest, toughest and most thoroughly researched motorcycle tests and are written without bias or prejudice, based on the experiences and facts obtained during the 5000 mile test period.

HONDA CB650

Honda bridge that gap with their new 650 . . . we bought one to put through our Marathon 5000 test

When Kawasaki launched their Z650 a couple of years ago, it didn't really have any competition in its class. It could not be compared with any other bike of a similar size and type, only with bigger capacity machines. It came out pretty well. Now Honda have released the CB650, and it is obvious that it will be compared with the Z650. Our marathon test has proved that although down on power, due to more moderate state of tune, the Honda will match and surpass the Kawasaki in other areas.

Geoff Carless collected our new bike from Sammy Miller Ltd., New Milton and had to ride it home at running-in speeds. Home was way up in the outbacks of Northamptonshire, and the weather at the time was bad. Snow lined the roads and patches of black ice were to be found around every bend. The bike was on reserve when collected, so the first stop was a nearby garage. With the mileage recorder reading 2.4 miles, exactly three gallons of petrol were squeezed into the tank and the journey continued.

Running-in rigours

The first thing to be noticed about the Honda was the 'two-stage' twistgrip. No, it's not a new gadget developed for saving fuel, it was the feeling caused when changing from the pilot jets on to the mains, and stayed with the bike throughout the complete period of the test. It did not become a handicap and it wasn't considered a fault. Smooth acceleration was still attainable, although only after a little practice and experience with the bike.

That first ride, running the engine to between only five and six thousand revs, returned a fuel consumption of some 57mpg. As the speeds increased after running-in was completed, so the fuel figures fell. Working out the overall figure at the end of the test mileage we found it to be 41.3mpg. A figure which included the running-in, a test session at MIRA, numerous motorway and trunk road journeys and everyday use about town. When really pushed hard at MIRA the CB650 only managed 28mpg, but that was due to consistent high revving of the engine.

And now the problems

During the running-in period, our bike suffered an annoying little problem. Three or four times the neutral indicator light came on and stayed on. A couple of times it was cleared when first gear was selected, but finally, and with 358 miles on the clock, it cleared itself as mysteriously as it appeared. The wonky light and the need for a minor clutch cable adjustment, were the only problems encountered between collecting the bike and its first service at 670 miles.

A chain is not really supposed to last for only 3000 miles on a 650cc motorcycle. It should be 6000 miles or more. By just over a thousand miles, the chain on the Honda not only required adjustment, but also showed signs of excessive wear. The side play was as much as ¾in. in the middle of the lower run. By the end of a long trip up north, it was being adjusted and sprayed every 100 miles or so. The NKN replacement 102 link 350 heavy duty chain cost us just short of £13.00, for those of you that want to work out your yearly riding costs. It lasted 280 miles before it too showed serious signs of wear — don't attempt fitting a cheap chain to a high-performance bike.

Wet weather conditions had the four-cylinder motor misfiring at times and on one occasion, it was down to firing on only two pots, with a third cutting in every now and then. We did not discover the exact cause, although a quick spray with an ignition sealant during a routine service seemed to cure the problem.

A plus factor

The other fault usually associated with wet weather, that of delayed action of the disc brakes, was hardly noticeable on the CB650. They are easily controlled and both front and rear have a lot of feel to them. The rear drum brake is not automatically locked-up under heavy braking and together, the system allows for straight line stopping from high and low speeds. Our test figures only go up to 70mph, although runs from 100mph gave excellent and stable results.

Trouble in different forms surrounded the instrument panel. After about 1500 miles the rev counter stopped functioning, but not because of the normal broken cable. It was in fact the small securing bracket that holds the cable in the engine castings that had sheared across. The annoying part is that this is not the normal type of spare part carried by the average dealer. An order went in but we had to wait some time before we had a working rev counter again.

The other problem was associated with the speedo. It was quite accurate up to and including 70mph, and seemed accurate at higher speeds, although the needle went

wild, fluctuating over a 10mph spread at both 80 and 90mph. Still, it's nice to know that all this country's legal limits were almost spot on.

MIRA for performance testing was the Honda's next ordeal. During the ride up to MIRA the clutch started playing up. On arrival we found that pushrod adjustment, rather than just cable adjustment, was required.

The ensuing wet weather meant yet another test session plagued by rain and wet track. The bike's most impressive figures proved to be the passing times, showing just how flexible the bike was in top gear.

The Honda was then ridden home to Bournemouth so that Geoff could prepare for his ride to the Lake District and Scotland. A trip that started with 2650 miles recorded on the day after Easter.

The first day's journey was to prove to be a quick dash from the south coast to Windermere, arriving in time to have a look around. Country lanes to Salisbury were followed by the very fast, but very twisty, section of the A36 up to Bath where the bike's handling and overtaking capabilities were tested to the full.

Heading north the CB650 maintained speeds of 70-plus for the next few hours, stopping only for petrol before joining the M6 just outside Birmingham.

Touring the Lakes

By mid-afternoon, Geoff had reached junction 36 and turned off along the A6 to Kendall, then on to Windermere. After 340 miles it was time to find a hotel for the night. The bike had run perfectly, apart from the ever-worsening rear chain.

Rising early the next morning, Geoff admits to being completely selfish about his first four hours in the saddle. He'd never looked around the Lake District before and made use of the time to follow a few mountain roads. There were several gradients, both up and down, some as steep as 1-in-4, with no road edges, just plenty of long drops and numerous sheep.

It was on one of the 1-in-4 climbs that the clutch mysteriously packed up. The lever pulled back to the bars as though the cable had broken, but then slowly let itself out again. Five miles of mountain roads were then negotiated without a clutch before a suitable stopping place could be found. Ten minutes were spent fiddling with both cable and pushrod adjustment, without really achieving anything. Strangely the clutch seemed okay again and the journey was completed without further trouble. A queer one that, and one that we have not really discovered the cause.

Returning to the northbound M6, with the bike running like a Swiss watch, Geoff joined the A74 and then the M74 to Glasgow. From there the A82 from Clydebank was followed north to the shores of the famous Loch Lomond.

A quick ride round then it was off south again to the M6 via the M74/A74.

The third day was the windiest of the lot and a good deal of thought was given to the proposed route across the M62 Pennine motorway, which is notorious for its strong crosswinds. The decision was made to carry on as planned, so out from Blackpool, where Geoff spent the night, on to the M6 and pick up the M62 was the first part of the journey after the chain had been given a quick once over for the umpteenth time.

The wind on the M62 was bad, but it did show that the Honda could be easily controlled in such conditions; even to the point that 70mph was maintained all the way to the M1 at Leeds. Turning right to travel south meant that Geoff was heading directly into the wind. A wind that wouldn't let the CB650 cruise at more than 70mph anyway, unless fourth gear was used. The wind sent the fuel consumption figures plummeting to the same 28mpg we had encountered during our performance tests at MIRA. It persisted throughout the M1 trip past Sheffield and Derby, and by Northampton had become a trial of strength for Geoff, his arms, shoulders and back were aching under the strain.

Heading for home

A change of route was made. Instead of continuing all the way down the M1 to London and then out along the M3, the Honda was turned along the A5 from junction 18, and down into Towcester. After a stop for fuel, it was on to the A43 bound for Oxford. The winds were still strong, but both rider and machine were protected to some extent by the hedges and fences that line the winding road past Silverstone.

Those final miles, along the A34, A33, M27 and A31, were cruised at only 50 to 60mph. The bike was still running very well and very smooth, but the wind had made our rider very tired and the low speed was purely in the interests of safety. Without that strong wind on the M1, Geoff would have been able to carry on and do another couple of hundred miles. Also without the run over the mountains, another couple of hundred would have been added. In three days, the total mileage was 1208, it could have been nearer 1600 or 1700.

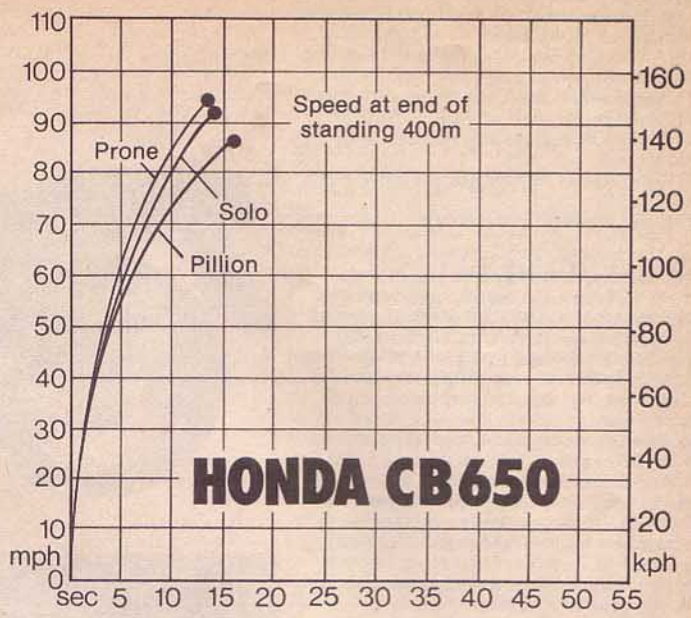
The trip produced an overall fuel consumption figure almost identical to that of the test figure, and the bike only used half a pint of oil.

All-in-all, Honda have come up with a package that seems destined to take a share of the 650-four market away from Kawasaki. The CB650 is a bike that is easy to ride and comfortable and one that has enough ability around bends to make up for the speed lost on the straights.

The Euro-styling is certainly acceptable, drawing long admiring glances from bikers and car drivers wherever it is parked. It's nice to see America pushed onto the sidelines for once, so that Europe can have its say, and its own bikes. Let's just hope that we can justify their faith and continue the trend.

Speed in Gears

GEAR		MAX	MIN
1	SOLO	46.84	6.00
	PILLION	,,	,,
	PRONE	,,	,,
2	SOLO	67.33	8.00
	PILLION	,,	,,
	PRONE	,,	,,
3	SOLO	89.45	9.00
	PILLION	,,	,,
	PRONE	,,	,,
4	SOLO	97.69	11.00
	PILLION	96.44	,,
	PRONE	108.04	,,
5	SOLO	100.85	13.00
	PILLION	93.89	,,
	PRONE	109.55	,,



Brakes (both)

mph	Feet	
	SOLO	PILLION
30	32.0	37.0
40	62.5	69.0
50	93.0	111.0
60	137.0	165.0
70	174.5	211.5

Acceleration over standing ¼ mile/400m.

		50 M	100 M	150 M	200 M	250 M	300 M	350 M	¼ MILE
SOLO	sec	**3.63**	**5.71**	**7.30**	**9.21**	**10.47**	**11.65**	**12.93**	**13.74**
	mph	50.00	63.21	70.62	74.41	81.23	84.21	88.99	90.49
PILLION	sec	**3.71**	**5.97**	**7.74**	**9.73**	**11.59**	**12.53**	**14.00**	**15.48**
	mph	46.86	61.18	65.35	69.90	77.36	81.53	85.74	86.05
PRONE	sec	**3.62**	**5.65**	**7.16**	**8.94**	**10.11**	**11.29**	**12.50**	**13.61**
	mph	48.98	64.86	73.13	77.03	84.33	88.55	90.34	93.54

Mpg (solo)

mph	
30	82
40	75
50	65
60	58
70	39

Mph per 1000 Rpm

GEAR	1	2	3	4	5
	Figures not available				

Passing Times (solo)

GEAR	30 – 50	40 – 60	50 – 70	60 – 80	70 – 80
2	2.18	2.80			
3	3.57	3.16	4.08	5.42	
4	5.44	5.26	5.23	5.80	6.74
5	5.60	6.20	7.79	7.80	7.90

Speedo

IND	TRUE
20	18
30	27
40	37
50	49
60	60
70	69
80	75
90	81

OIL CONSUMPTION
Neg.

MILEOMETER
+½%

MOTOR CYCLING **TEST SHEET**

Performance figures obtained at:—
M.I.R.A. Test track
Nr. ATHERSTONE WARKS.

DELIVERY FAULTS

Our machine was collected from Sammy Miller Ltd., Gore Road, New Milton, Hampshire, and within 20 miles it was given a thorough going over.

The Honda CB650 had beeen very well prepared by the staff of Sammy Miller's. Very close inspection revealed only two minor faults.

1. Paint slightly chipped around the steering lock.
2. Rear tyre valve cap missing.

SUBSEQUENT FAULTS

1. At 175 miles the neautral light came on and remained on until first gear was selected.
2. At 321 miles the neutral light started glowing faintly until first gear was selected.
3. At 343 miles the neutral light came on and stayed on, and the clutch cable required adjustment.
4. At 358 miles the neutral light fault cleared.
5. At 670 miles — first service.
6. At 725 miles condensation started to form in the front nearside indicator lamp.
7. At 1033 miles the chain required adjustment and showed signs of excessive wear.
8. At 1345 miles the engine started misfiring in wet weather.
9. At 1525 miles the rev counter failed due to a broken cable securing bracket on the engine. Still misfiring in the wet.
10. At 1725 miles chain adjusted and silencer-bolts rusting.
11. At 1993 miles the ends of the silencers started losing their black paint and rusting, as did the paintwork on the indicator stems.
12. At 2200 miles — Full service.
13. At 2247 miles the clutch required pushrod adjustment.
14. At 2450 miles — MIRA.
15. At 2848 miles chain adjusted.
16. At 3106 miles chain adjusted.
17. At 3311 miles chain adjusted.
18. At 3450 miles the clutch failed for no apparent reason — it soon returned to perfect working order.
19. At 3560 miles the rear tyre started to 'white line' quite badly. Condensation appeared in the other three indicators. Front brake started squealing badly at low speeds.
20. At 3725 miles a new chain was fitted.

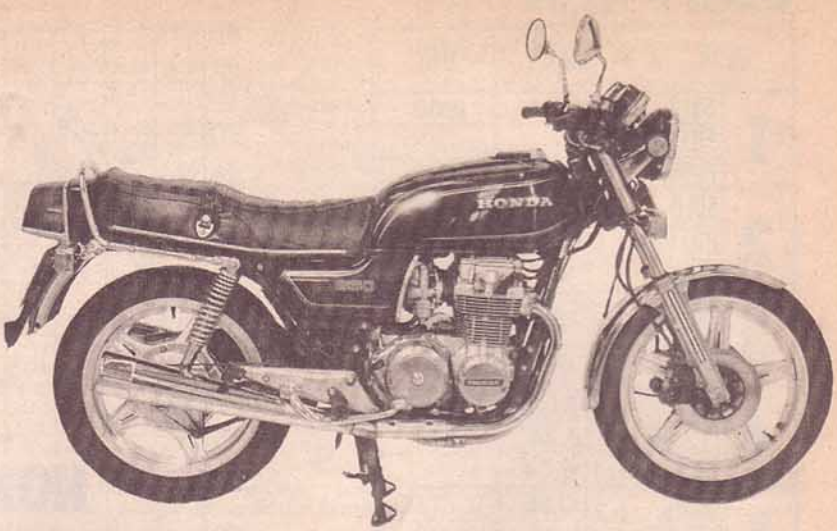
PERFORMANCE ***

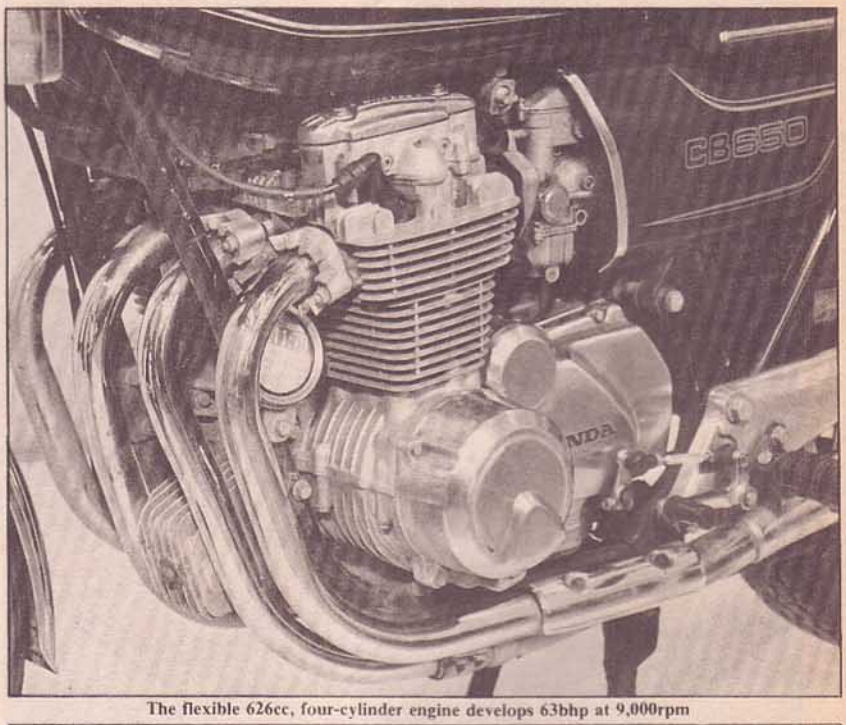
Not exciting, but still invigorating. On the road, with good use of the gearbox, the Honda CB650 will stay with some of the best and that included a couple of 750's and 850's. Cruising at the legal limit on motorways and trunk roads was all too easy and many times the rider found that the speed had increased to 90 plus, even when carrying a pillion passenger. Such is the smoothness of the power increases.

Even at low speeds, 30 to 40mph, it is essential to keep an eye on the speedo if you want to stay within the limits. Top gear acceleration is very smooth, with a complete absence of the judder sometimes present on other bikes. Just out of interest, our bike would accelerate from its minimum speed of 13mph to its maximum 100mph solo speed as though it was an electric turbine. Smooth almost to perfection.

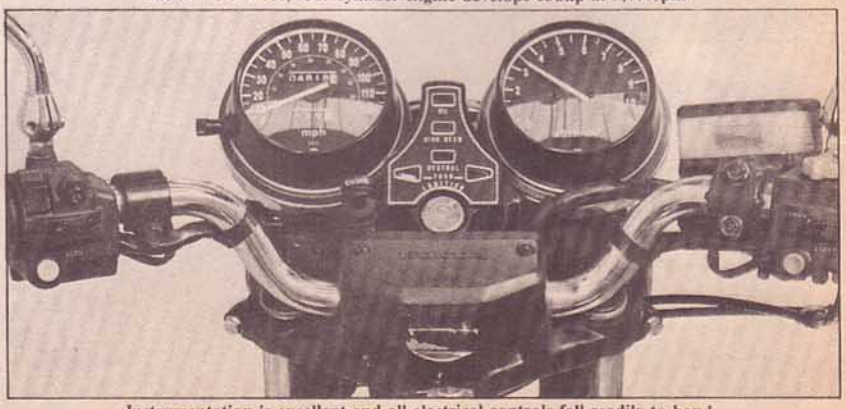
Acceleration was obviously down on most of the bigger bikes, but it was still enough to take advantage of most of the overtaking opportunities, particularly if the engine speed was between 7000 and 9000rpm.

Vibration is not completely absent, and does become annoying, but only because it

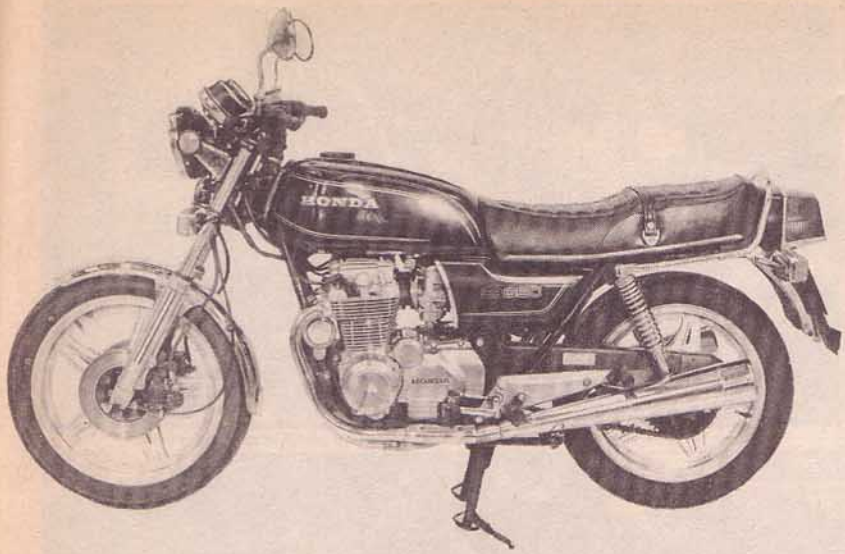


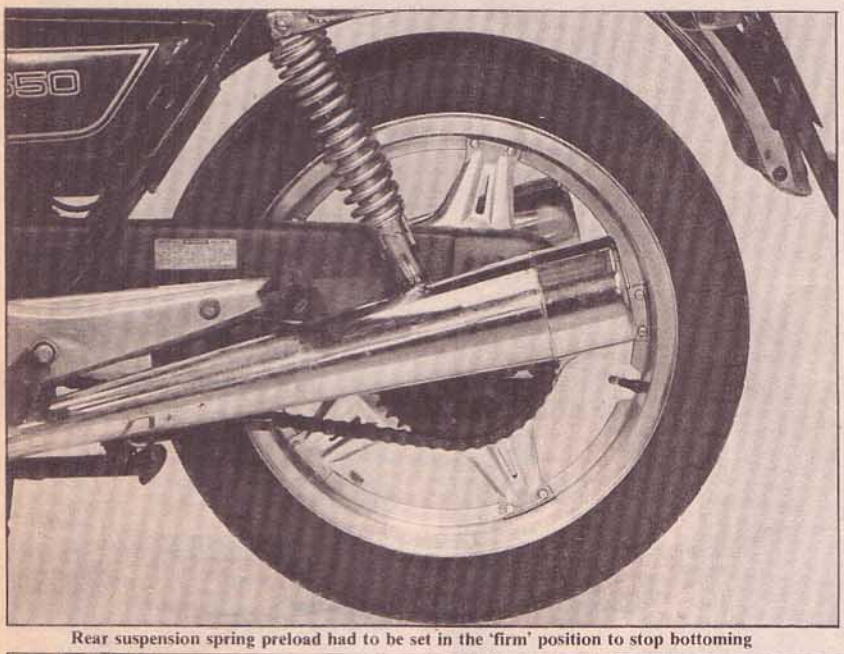


The flexible 626cc, four-cylinder engine develops 63bhp at 9,000rpm

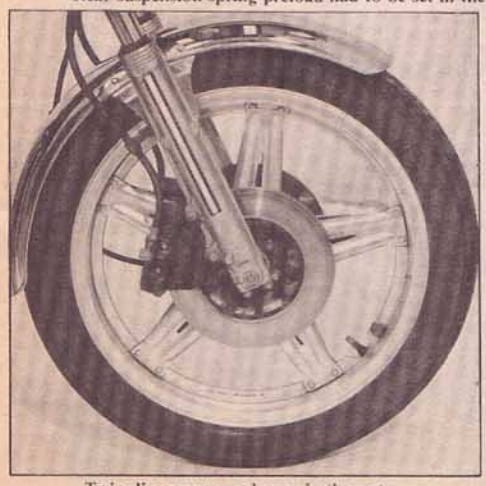


Instrumentation is excellent and all electrical controls fall readily to hand

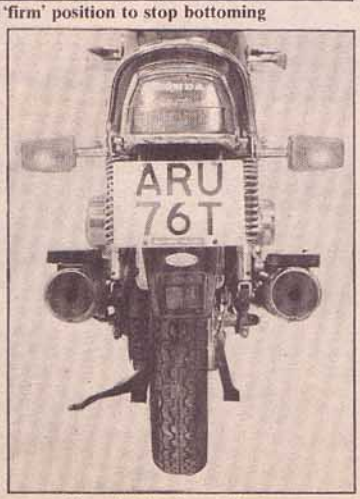




Rear suspension spring preload had to be set in the 'firm' position to stop bottoming



Twin discs were good even in the wet



Rear lighting is excellent

happens at exactly 70mph in top gear, blurring the images in the mirrors. Riding at 65 or 80mph was the ideal, but not always practical. Funnily enough, the vibration causing the problem is hardly noticeable in other gears, even at the same engine speed.

HANDLING & RIDE ****

Taking a 100mph downhill bend, two-up, where a Suzuki GS750 backed out, has got to be praise for the superb handling of the CB650. The suspension units, although they frequently bottomed, held the bike perfectly on course. Right down the line.

Solo handling is also quite superb, providing the bike is set up correctly. Tyre pressures must be accurate, an essential feature of the tubeless tyres, and the rear shock experimented with to find the best of the five settings. Geoff Carless did most of the riding on our bike, and at 12-stone, he had them set on number four for solo work and five with a pillion.

Backing up the handling characteristics are the roadholding capabilities of the Bridgestone tubeless tyres. An uncertain feel surrounded them at first, but as the mileage increased, so did the confidence of the riders. Eventually the tyres were used to test the claimed dynamic banking angle of 39 degrees.

ENGINE ****

In order to explain what makes the 650's powerhouse tick we have to compare it to the original CB550, from which it has been developed. The bore has been increased by 1.3mm to 59.7mm, and the stroke increased by 5.2mm to 55.8mm. The result is an actual capacity of only 626cc. Just in case you are wondering, the Kawasaki Z650 is 26cc bigger, clocking in at 652cc.

Combustion efficiency has been increased by making the inlet valve diameter 4mm larger, and the exhaust valve 3mm larger. The intake efficiency has also been increased by raising the carb size to 26mm.

The final comparision must be made with the Z650 which has double overhead cams, the Honda only has a single.

Type — *Air-cooled, 4-cylinder, 4-stroke with SOHC.*
Bore X Stroke — *59.8mm (2.35in) X 55.8mm (2.20in).*
Displacement — *626cc (38.2in)*
Compression ratio — *9.0:1*
Carburettors — *4 X 26mm piston valve PD*
Inlet valve diameter — *31.5mm (1.24in)*
Exhaust valve diameter — *26mm (1.02in)*
Max. horsepower — *63bhp @ 9,000rpm*
Max. torque — *39.1lb-ft @ 8,000rpm*
Paper air filter
Forced pressure, wet sump lubrication system
Fully transistorised ignition

TRANSMISSION ***

The gearbox ratios are slightly wider than those of the CB550, and this helps with acceleration and bike's flexibility.

Five-speed constant mesh gearbox. Wet, multi-plate clutch with disc and coil spring.
Primary reduction ratio — *1.166:1*
Secondary reduction ratio — *2.346:1*
Final reduction ratio — *2.500:1*
Gear ratios — *1st — 2.538:1*
2nd — 1.789:1 4th—1.160:1
3rd — 1.391:1 5th—0.964:1
Drive sprocket — *16T*
Driven sprocket — *40T*
Drive chain — *530H x 102 links.*

FRAME & FORKS ***

Double cradle, welded, steel tube frame. Telescopic front forks with double-acting hydraulic shock absorbers.
Front spring travel — *142mm (5.59in)*
Front fork oil capacity — *170cc (10.37cu.in)*
Trail length — *105mm (4.13in)*
Swinging arm rear suspension with 5-way adjustable FVQ dampers.
Rear spring travel — *77mm*
Max. steering angle — *40 degrees.*
Steel roller bearing in steering head.

WHEELS & BRAKES ****

Comstar wheels with universal pattern Bridgestone tubeless tyres.
Front tyre size — *3.25H19-4PR*
Rear tyre size — *3.75H18-4PR*
Front brakes — *Double disc with floating caliper. Disc diameter 240mm (9.45in).*
Rear brake — *Simplex hub, diameter 180mm (7.09in) Lining area — 73sq.cm (11.32sq in)*

ELECTRICS ****

Ignition — *Fully transistorised system with mechanical advance/retard unit.*
Battery — *12 volt, 12Ah.*
Alternator — *0.26kw @ 5000rpm*
Starter — *0.6kw*
Headlight — *Halogen 55/60W, 180mm diameter*
Stop/tail — *21/5w*
Indicator bulbs — *21W*

DIMENSIONS ****

Overall length — *2.200mm (86.61in)*
Overall width — *775mm (30.51in)*
Overall height — *1.110mm (43.70in)*
Wheelbase — *1.430mm (56.30in)*
Seat height — *795mm (31.30in)*
Ground clearance — *155mm (6.10in)*
Handlebar width — *740mm (29.13in)*
Dry weight — *198kg (436.51lbs)*
Max. allowable weight — *328kg (723.10lbs)*
Fuel tank capacity — *18 litres (3.96 Imp gal) inc. 3.5 litres reserve.*

EQUIPMENT & FINISH ***

Apart from the Euro-styling, the first thing you notice about the CB650 is the size of the direction indicators. They are large rectangular ones that are very easy to see, even in sunlight. A definite advance in the safety stakes.

The remainder of the equipment is all of the usual Honda high quality, although the sidestand could do with having a greater angle of lean. Care had to be taken on even the shallowest of cambers, and we found that the very easy to use centrestand was the best bet 99 percent of the time.

GOOD BUY****

ARU 76T

Honda have filled the gap between their CX500 and the 750's with the CB650. It is based on the 550-4, which is one of their popular models, although it has been uprated in several areas.

The problems we encountered with our marathon test machine were minor, but annoying. No major problems though, and never a time when one of our riders was left stranded on a dark wet night.

If the sidestand had been more reliable, the rear shock absorbers a little harder, and the low speed comfort a little better we would have given it five stars. As it stands we have to rate it: **** Price: £1475 incl. VAT plus del. (Nov. '78).

The battery is stowed behind the right-hand side panel and is easily checked

The comprehensive toolkit is a very tight fit in its box in the seat hump

SPARES LIST

Parts	Price (excl. VAT)		
Air filter	6.91	Head	276.71
Battery	22.81	Rockers (set)	(x8) 6.91
Brake caliper assy.	31.43	Rocker shafts (set)	(x4) 2.83
Brake caliper assy.	28.30	Silencer pipe	80.23
Rear brake	86.49	Pipe only	20.11
Brake pedal	11.81	Flasher unit	9.01
Brake pads (pair)	9.55	Fork legs	73.23
Brake shoes (each	5.08	Frame	282.32
Carburettor assy.	363.07	Front brake lever	4.03
Clutch plate, friction (each)	2.03	Gearchange pedal	9.81
Clutch plate, plain (each)	1.44	Handlebars	11.10
Clutch lever	4.27	Headlamp	
Clutch springs (set)	0.41		Rim 9.20
Contact set			Unit 9.20
Engine: Exhaust valve (set)	(x4) 8.30	HT coil	(x2) 16.05
Inlet valve (set)	(x4) 4.83	Indicator	14.52
Valve spring (set)		Oil filter	3.26
	Inner (x8) 0.72	Oil pump assy.	53.47
	Outer (x8) 1.24	Petrol tank	105.78
Piston rings (set)	(x4) 5.88	Rear suspension unit	26.04
Pistons (set)	(x4) 8.08	Rear lamp	37.47
Big ends (set)	(x8) 1.62	Rear chain	41.01
Con rod bolts (set)	(x8) 1.24	Rotor assy.	79.24
Con rods (incl. bolts)	(x4) 19.97	Speedometer	44.76
Gudgeon pins (set)	(x4) 1.21	Sprocket, gearbox	8.75
Crankshaft	177.54	Sprocket, rear wheel	28.00
Crankcases (pair)	264.47	Starter motor	n/a
Cam chain	22.76	Starter assy.	113.20
Cam shaft	69.17	Tachometer	36.62
Cam chain tensioner	16.98	Wheel (rim) front	98.24
Barrel	220.10	Wheel (rim) rear	146.47