CX 650 TURBO

HAVE HONDA BLOWN IT?

The first time I saw the ordinary CX500 I thought it was the ugliest motorcycle ever built. A few hours later, having ridden one, my opinion was rapidly reversing. The experience of the handling and ride comfort and the usability of engine power had not only changed my definition of "ugly", it had conditioned me to believe almost anything!

The hump-backed lines of the CX slowly turned into a work of art and although the V-twin never became very popular with other journalists, enough people bought one to make it consistently the UK's best selling "real" bike.

By chance, we ran various tests which proved the 500's abilities beyond any doubt. We thrashed one non-stop for 24 hours at Snetterton and then took the same bike down to the South of France and back. I rode another one from Land's End to John O'Groats stopping only for fuel and food.

The way the bike tackled any kind of road in any kind of weather made it easy to forget the indifferent fuel consumption and the academic lack of top end performance.

Even so, it seemed a strange choice of model for Honda's initial exercise in turbocharging. Except that the CX was about the most difficult motor to turbocharge in the range, a point which added a lot of force to Honda's achievement in building the first production turbo.

In fact they did it too well, and there was very little to tell the rider that he was sitting on a blown 500 and not on a conventional 900. It was civilised. It did not breathe fire, it did not make clouds of white smoke and it did not stand up on end every time the throttle was turned.

And, of course, it stopped being a CX500. It showed, more than anything else that the promise of turbos — lots of power from small engines — was an illusion. Horsepower doesn't care how it is made and an 80 bhp motor still needs 80 bhp suspension, tyres, and brakes and costs 80 bhp money, regardless of its piston size. In this respect the 500 didn't reveal the turbo as anything special.

The CX650T appears to make more use of its compressor. So while the novelty and perhaps the attraction of the turbo dwindles, we still have the great turbo Promise of Efficiency. Efficiency is variously defined as what you get, divided by what you have to pay for. In the case of the 650 you get a lot of power; more power than ever before but it is awkward power, unlike the highly usable thrust of, say, the 750 V-4. Honda, possibly in an attempt to keep the CX distinct from the later Vs, have made the Tubro a large, comfortable (I'm tempted to say lumbering), tourer. It is what the first Gold Wing should have been.

What you have to pay for, or otherwise suffer, is a variety of things which only begin at the raw cost. There is a significant level of complication, although it is admittedly not so much worse than the V-4. In terms of the rate at which fuel is turned into power there is no obvious sign of the promised efficiency and the power which gets into the drive shaft

lacks the all-round instant usability which made the very first, unblown CX such an attractive machine.

As a limited edition, virtually a prototype, the CX500T could be forgiven a lot of vagaries but the 650 now ought to be making a lot more sense out of the forced-induction deal. Yet in some ways it behaves more like a prototype.

The 500 was carefully engineered to reduce the less pleasant side effects of the turbine, although they did it with sensible levels of boost, unlike Yamaha who civilised their 650 by letting it run at pressures which are better suited to clarinets than four cylinder petrol engines. The CX500T was gentle, well-developed and easy to use; because of this it wasn't obvious what the turbine was doing.

The 650 is more blatant. It delivers with a more noticeable smack when the turbo chips in — and consequently there is more of a noticeable lag between the throttle being tweaked and the arms being stretched.

It also emphasises any imcompatabilities, like the gearshift which moves at a lower order of speed than the engine. The total effect is that the Trubo is harder to use. A typical example of this appeared at the MIRA test strip, where the only consideration is straight-line speed. It had noticeably more power than the 500T, which it demonstrated by romping along at nearly 134 mph and we think this might have been higher if the bike could have been persuaded to stay in gear more predictably.

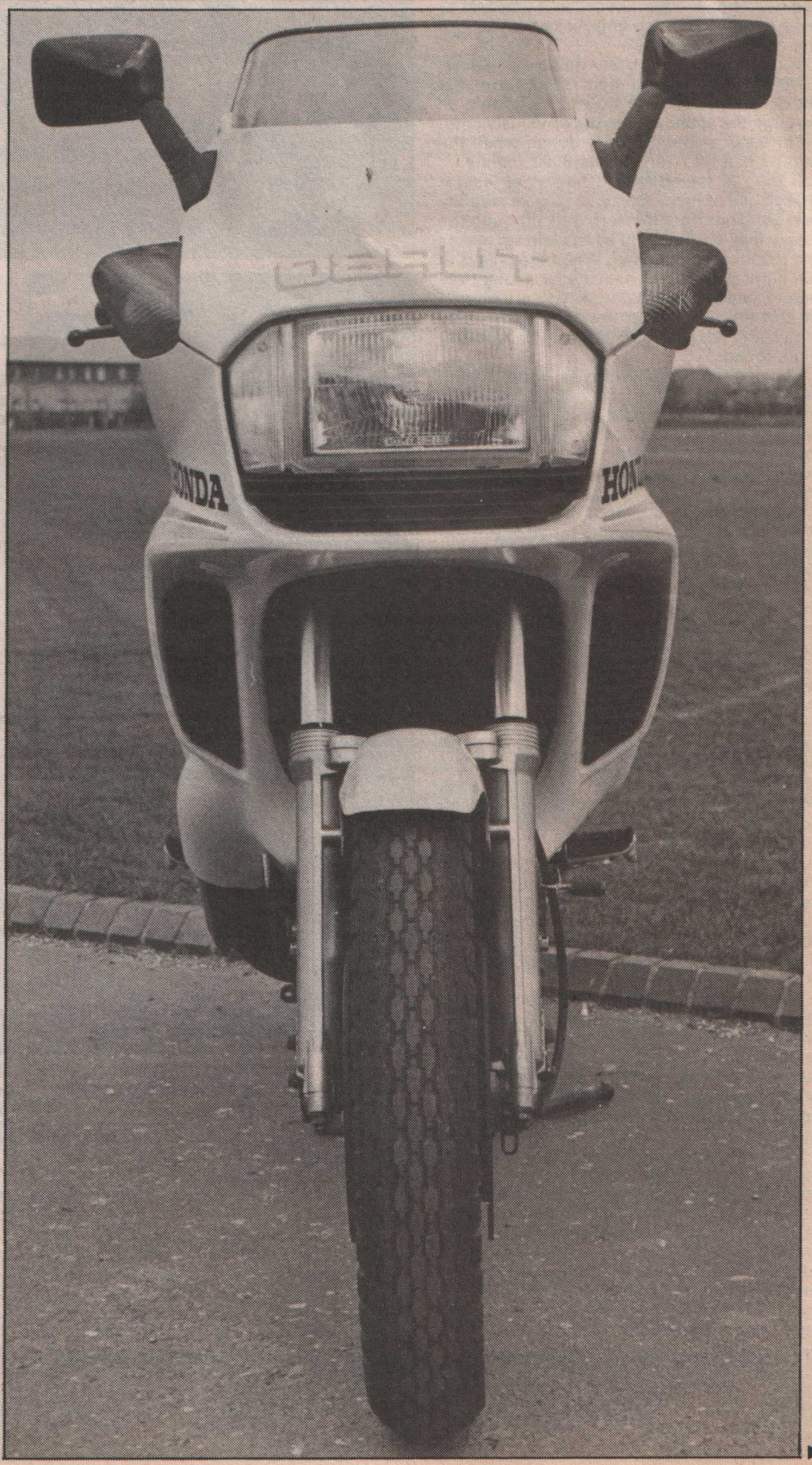
Despite this higher output, the standing quarter times were actually 0.1 seconds slower than the 500. As the terminal speeds were higher, the 650 was losing out at the start of the acceleration run. It was quicker to get it off the line using about half of the motor's capability but even then the turbine, rushing to catch up, would make its boost felt just when the rider needed to concentrate on shifting from first to second gear.

The gear change was possibly the bike's worst feature. Heavy and slow, it was also less than accurate and the CX frequently missed the next gear or dropped out a few seconds later. Slow, deliberate co-ordination of the controls made it more reliable, but also made it impossible to shift through the gears at a pace which matched the engine's rate of change of speed. The gaps between the ratios also seemed to be too wide to realise the 650's full performance.

I don't like the distinction between "sports" and "touring", but there is the argument that the CX is not performance-orientated. That to get the best out of it for long-distance cruising, it necessary to restrict performance. That the Turbo's good points would not be seen clearly at a test track.

If you decide that you need more than 90 horse-power so that you can cruise at 85 mpg on just one-eighth throttle opening, then you obviously can accept a rather different machine to one which uses 90 bhp to travel at 130 mph.

That, really, is what the 650 Turbo seems to be. It *will* travel at 130mph, but it is a lot easier to appreciate the way it laps up the miles at a steady 85. In this case it also eased



the gearshift problem because it was just as easy to leave it in top and make the most of the motor's flexibility.

It will pull top gear down to below 2000rpm, although it gets a bit lumpy at these speeds. Turbine boost is available all through the speed range, but obviously comes in faster and with more punch when the engine is a bit nearer to its 9000 redline.

If the CX feels big and heavy, at least it makes use of its proportions to give stability and good comfort. It steers well although the heavy feel, emphasised by the fairing, makes the response seem slow. When the bike is in full flight you start to heel it over a long time before you get to the corner you are aiming at. But the ride is effortless and completely stable and the bike does build up deceptively high speeds.

The handling, generally, is good, in the sense that it is secure and stable rather than having the hairline precision of something like the VF750. The rather upright sitting position gives a majestic view of the world sweeping past, along with an exaggerated impression of the bike's height.

The suspension added to the ride comfort without letting the machine move about too much in the turns — at least it did while it worked at all. The air-assisted forks developed a fault which completely destroyed the bike's comfort and handling in a way which made me realise just how much we take good suspension for granted.

I've never had much faith in the "air" component of air forks — largely because the manufacturers never give you enough adjustment to make any difference. The CX has linked forks, so when one of them developed a leak, it affected both sides. The effect, was catastrophic; the forks sank 44mm from the fully-extended position and bottomed out violently every time they got near a bump.

The nose-down attitude contrived to make the steering lighter — which was all right in itself — but the softer springing and reduced travel completely spoiled the handling. As soon as the forks were pumped up again, the ride and handling were restored to their normal levels.

This was a mystery at first, because the rated air pressure runs from zero (i.e. atmospheric) to 9lb/in^2, so why wouldn't it work at atmospheric pressure? Of course, even when the forks are not pressurised, the pressure will go up whenever the forks are compressed in use — as long as they make a gas-tight seal.

Still not entirely convinced that the limited amount of air pressure could account for the severity of the symptoms, I stripped the forks out, half expecting to find a broken or even a missing spring. All I discovered was a slightly chewed-up 'O' ring on one of the fork caps. After putting it all back together with the 'O' rings carefully located in their grooves, the forks pumped up and stayed up and the suspension went back to its usual, praiseworthy state.

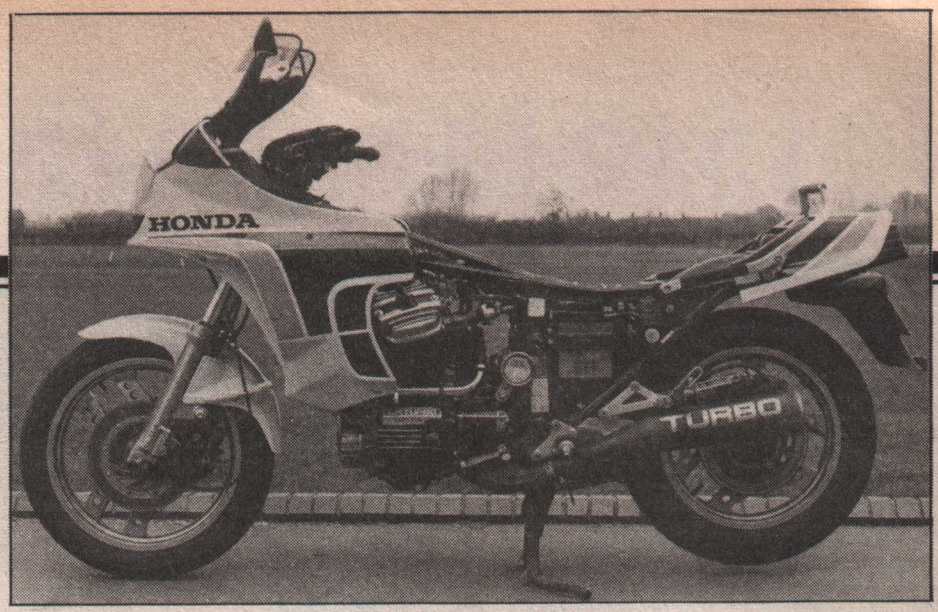
The front suspension also incorporates Honda's TRAC anti-drive in which the braking reaction on the caliper is restrained by a link which controls the fork's damping. When the front brake is on the damping is stiffened up by an amount dependent on one of four adjustable positions. Like the action of the forks, it is difficult to tell how valuable this is, without being able to remove the effect entirely.

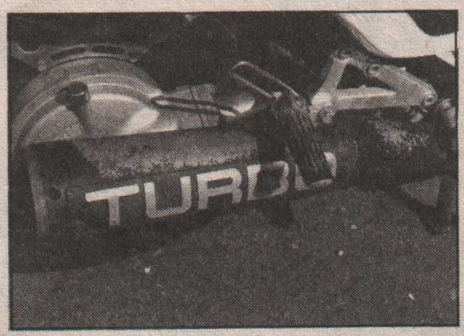
The brakes, like all of the current large Hondas, have dual piston calipers on all three discs. This set-up gives ample power but we have criticised it on other models because it also results in excessive lever travel. Two-finger braking is impossible because the other two fingers get trapped by the brake lever. Ironically the brakes are so powerful that four-finger braking is totally unnecessary — and needs to be conducted with some care if you don't want to stand the bike up on its front wheel. Maybe that's why Honda are so keen on their anti-dive forks.

Unlike other models with similar brakes, the CX had less travel and a slightly heavier action. We don't know if there are any dimensional differences but the only time there was a problem was when the brakes were used very hard during the track test.

The final feature of the bike which makes it different from the racy VF is the fairing. Large enough for full weather protection, the fairing is designed well enough not to hamper top speed. It has been redesigned since the 500 Turbo and the screen is now slightly lower.

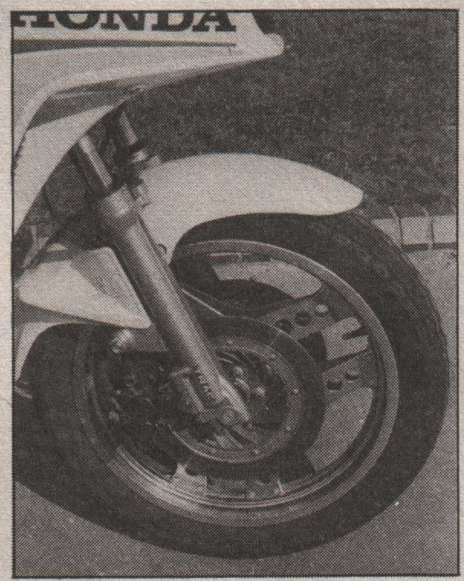
Unfortunately, the fairing didn't give as much weather protection as it might. It needed to be travelling at around 80mph ▶



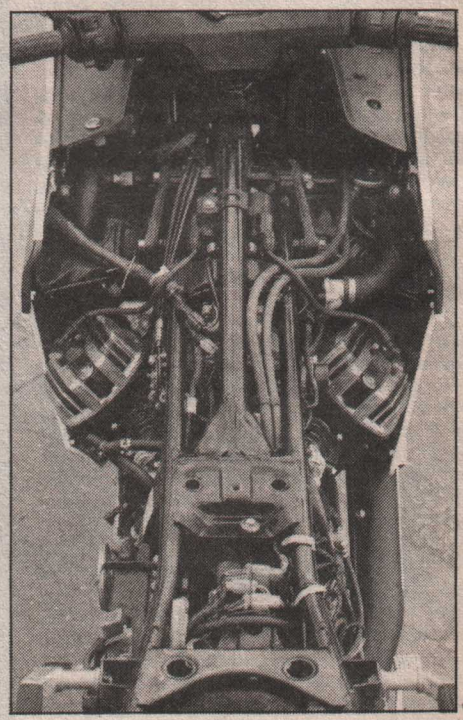


Above: ***The 650 Turbo would benefit from a larger all-round fairing even if this meant a slight reduction in the top speed or an increase in the overall fuel consumption.***

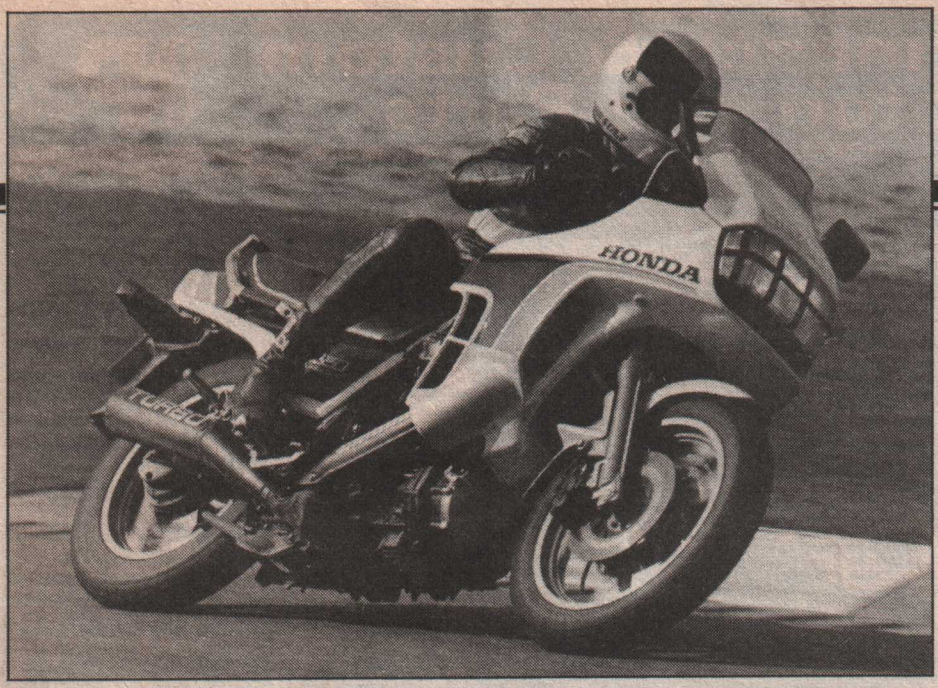
Left: ***The test bike was a few thousand miles old, but that's no xcuse for the black finish on the silencers to peel away like this.***

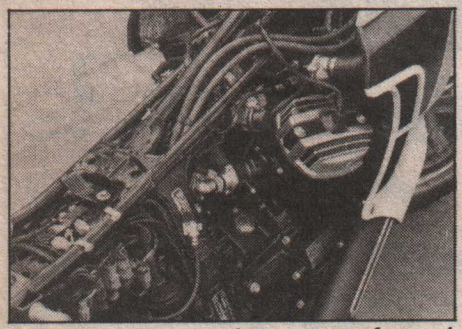


The brakes are good but necessitate excess lever movement. The suspension includes Honda's anti-dive set-up.



Wouldn't like to have to sort this little lot out on a dark night. The left side of the fairing contains a small glove box.





Not much spare room here — space forward of the motor is filled by the air boxes.

Nearly as many instruments and warning lights as the average passenger jet!

before it started to keep the rain off — and it isn't always so easy to maintain that sort of speed in the wet. And the screen could have deflected more wind; as it was, it created an uncomfortable draught and got quite noisy at speed.

A fairing which was marginally bigger all round or had some adjustment for rake would be a worthwhile addition even if it did lop a few mph off the top speed or increase fuel consumption slightly.

Fuel economy always seems to be very low on the lists of both designers and customers even though it is one of the theoretical benefits of turbochargers. Averaging between 34 and 40mpg, the CX did not, at first seem to be particularly good. On reflection, considering the sort of speeds that it was travelling at, it is not worse than average. Deliberately gentle riding in the 50mph region gave consumption approaching 60mpg; nearly as good as the 500 Turbo and better than the unblown CX500s.

Even if nobody is too bothered about the rate of fuel consumption, long-distance bikes ought to be able to travel long distances. In this respect the 650 carries 4.4 gallons which will see it through anything from 150 to 260 miles, depending on how it is ridden. This is a fair enough sort of range except that it is based on a full tankful; there is no reserve tap and the pessimistic fuel gauge gets down close to the E mark after only 3 gallons have been used — which could be as little as 100 miles. A few miles later the red fuel reserve light will be winking at the rider, so despite all of the sophistication, he still has to make a mental note of the mileage if he wants to use anything like the bike's maximum range.

The sophistication also fills up a lot of other gaps. The left side of the ABS fairing contains a small glove box (whose lid didn't fit very well), but the corresponding space on the other side contained the air cleaner. Above and in front of the motor, all available space is taken up by air boxes and the trappings of the turbine/compressor.

Behind the engine and under the seat and in the tail compartment there is the fuel injection, its pumps, filters and the digital electronics which control it and diagnose any faults which may trouble it.

Getting down to more detailed details, the attractive instrument layout still contains the silly boost gauge, which is offset by the very useful clock. And the generally high standard of trim is also offset by the black finish on the exhaust, much of which had come off with only 3,000-odd miles on the bike's odometer.

The new motor, bored and stroked to its 673cc displacement has a new computer and is claimed to give more low to midrange power than the 500. The bike weighs 4kg less but I can't say that I liked it any more than the 500 Obrut.

In many ways it is a very good bike; in other ways you get nothing here which isn't available elsewhere. So is the turbo merely a passing fad, an item of remote academic interest or is it set to carve out a good, spacious niche for itself?

Only time and the paying customers will tell whether Honda have blown it...

John Robinson

SPECIFICATIONS

HONDA CX650 TURBO

PERFORMANCE

Maximum speed	
prone	133.6mph
upright	125.5mph
Standing start ¼-mile	12.3s/112.0mph
Fuel consumption	
average	40mpg
worst	34.1mpg

ENGINE

Type	80-deg V-twin, OHV, liquid cooled, turbocharged.
Bore x stroke	82.5 x 63.0 mm
Piston displacement	673 cc
Compression ratio	7.8:1
Fuel system	electronically controlled fuel injection, IHI turbocharger
Ignition system	breakerless electronic

TRANSMISSION

Gear ratios	2.50; 1.714; 1.280; 1.036; and 0.839
Primary drive	gear
Final drive	bevel gear and shaft
Primary reduction	1.725
Final reduction	3.400
Clutch	wet, multiplate

ELECTRICS

Generator	12V alternator
Battery	12V, 14 Ah
Headlamp	12V, 60/55W

CHASSIS

Front tyre	100/90V 18
Rear tyre	120/90V 17
Front brake	twin disc
Rear brake	single disc
Front suspension	air assisted fork
Rear suspension	Pro Link
Castor	63 degrees
Trail	110mm (4.3in)

DIMENSIONS

Wheelbase	1495mm (58.9in)
Overall length	2250mm (88.6in)
Overall width	730mm (28.7in)
Dry weight	235k (518 lb)
Fuel capacity	20 litre (4.5 gal)
PRICE	£3,450

Warranty ..... 12 months unlimited mileage
Importer: Honda UK, Power Road, Chiswick, London.

TESTER'S VERDICT

Good points	comfort
Bad points	complication
Performance	could be more usable
Economy	average
Handling	stable
Comfort	excellent
Braking	very powerful
Equipment	lot of bike
Value	lot of money