Monash University

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Honda CR750 Track Impressions

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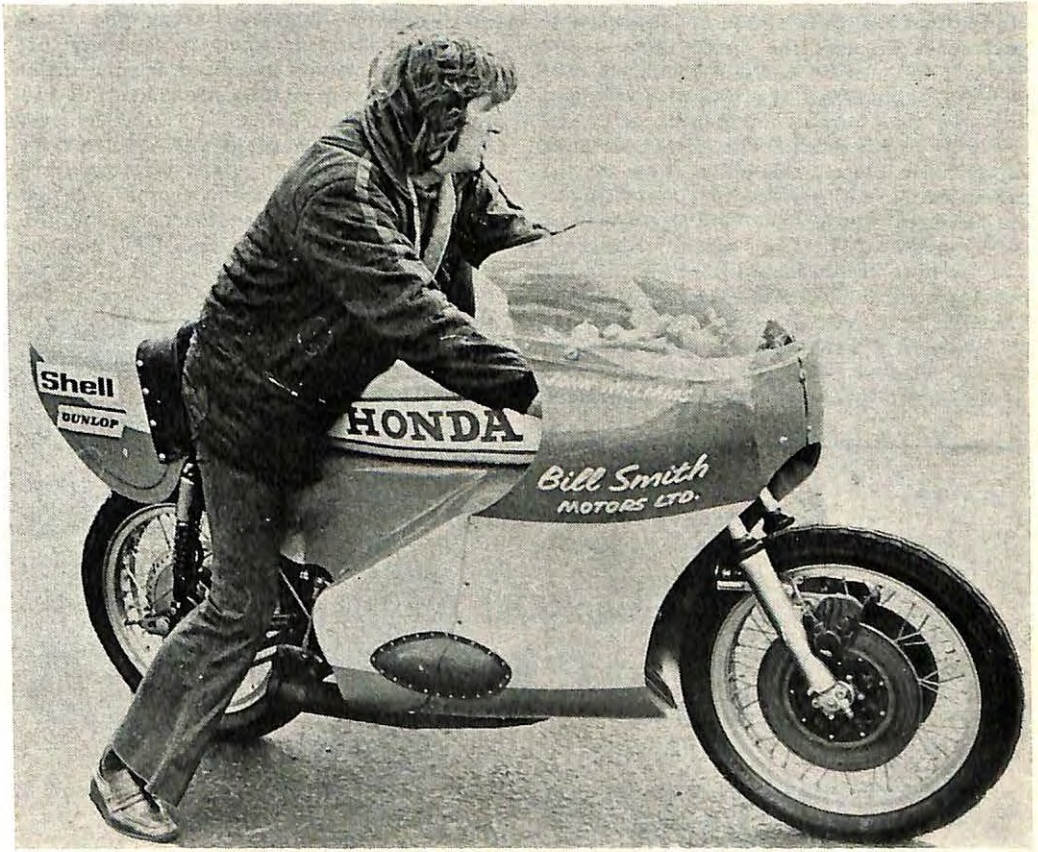
TRACK TEST: CR750

Riding a "great big teddy bear"

LAST year a couple of CR750 Hondas arrived in the UK, purchased by Bill Smith for his own use and for his rider—John Williams. These machines were hardly cheap, and if you recall the very high prices quoted for racing 750 parts after the 1971 TT you would have a good idea of the cost of genuine Honda racing parts. The "CR" parts that appeared at that time in the parts books had prices attached, and although it is generally considered that orders for such parts could never be filled, the blossoming of really fast Hondas in France and the USA started before Yoshimura had his special components widely distributed. Some of the racing parts are a reasonable price: pistons at about £6 and special cam chains—shared with CR350s—at about £4.60 demonstrate this. The prices of gearbox components, camshafts, and cycle parts are less acceptable. The "Honda Racing Service Club"—which must surely be the works under a thin veneer—are the source of these special Honda parts, and clearly work under the same constraint as the Production Racer



Warming up the pregnant egg: the bulge is for a Krober ignition system

Bill Smith on board the 750 with "total loss" ignition system

parts of Yamaha Works fairings for Yamahas come out at over £200 now, and similar labour-intensive, short-run parts in the Honda catalogue reflect the high cost of such work.

Complete race-kitted engines can be ordered, and in fact a first delivery of five units duly arrived at Chester this winter with no units short. Consequently there are several such engines around now. No one should confuse these HRSC racing components with the full works equipment. The Honda that Bill Smith rode at Daytona this year went through the speed traps at 148 m.p.h. The works machine managed over 160 m.p.h. and had the aid of just about anything that Honda could think of to improve its performance. The HRSC parts are rather more closely related to those on the production machines, and it is surprising to see just how much of the CR750 is from the road machine. The front wheel is standard, and the usual duplication of the calipers has been carried out. The thickness of the steel discs has been reduced almost by half, so as to cut down the substantial unsprung weight that they incur. The front forks are also standard, both lower legs and stanchions coming straight from the road machine. The fork crowns are not standard, and are special components. The frame is visibly standard. From a detailed investigation one can see that it has simply been pulled off the line at a certain stage and then worked on. Minor lugs have been either cut off or left off, and a few extra brackets welded on. In fact the CR750 frame bears precisely the same relationship to the CB750 unit as is borne by the TZ350 watercooled Yamaha to the RD350 road machine. The swinging arm also remains unaltered from the road machine. The rear wheel is definitely different; the massive twin-leading-shoe drum brake appears to be the same as that fitted to the Honda Racing Service Club 350 twin owned by John Skellern and described in *MCS* last year. Some of the parts used are surprising: the clutch springs come from the old CB77 305 c.c. road machine, and the primary chain is the normal CB750 component: both of these parts are likely to be heavily stressed, and it speaks volumes for the much criticized primary chain that it bears up under the strain. The twin disc front brake is the same as can be seen on many road machines, and apart from the thinned discs the only alteration is the use of Ferodo disc pads as may now be obtained from Joe Dunphy.

The critical parts are the cranks, pistons, camshafts and carburettors. The crank is altered for racing use and has a slightly longer stroke. It is polished, lightened, and selectively assembled and is not directly replaceable by a standard crank as the taper on the generator output stub is totally different, to match the CR93 energy transfer ignition fitted at the factory. The little generator is far smaller and lighter than the massive CB750 unit, but throughout the 1972 season Bill Smith and John Williams had repeated difficulties with the ignition system. Although it works well up to 14,500 r.p.m. on a CR93, the idle spark system on the four is too much for the system as it stands. The two fours at Silverstone were fitted with different systems: Bill Smith's had two batteries in the vast seat fairing, and no provision for charging them. This was the system used in the Bol d'Or last year, where the Honda ran well up. The other machine, ridden regularly by John Williams, was fitted with a Krober battery-less ignition system. This required a blister to be grafted on to the lower part of the fairing.

The distinctive appearance of the Smith Hondas is produced by the special fairings fitted to the machines. Bill Jakeman has now retired from his business, and was therefore able to spend a considerable amount of time over the winter sorting out the airflow requirements for these machines. Throughout 1972 the key problem was overheating: on many occasions the bikes ran really well, only to overheat severely. At Silverstone last year this happened even when all the streamlining had been torn off. These problems didn't stop John Williams lapping at over 102 m.p.h. in the Isle of Man, still the fastest lap set up on a production framed machine, so the potential was continually reaffirmed without the success that seemed to be reasonably within their grasp. There were many lessons to learn last year, and much trouble could have been avoided if they had known that the CR750 engines had to be run in for 500 miles before being raced! As no one had told them this, much of the sorting out process was unnecessarily difficult. The two cams for the CR750 produce 90 and 96 b.h.p. respectively: compare this with the standard 67 b.h.p., and consider that Honda designs for full reliability at 67 b.h.p., and the rough early life that the engines were given

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can be seen to exacerbate all sorts of reliability and heating problems.

I was interested to hear that they had used NGK D8 plugs last year, and only now moved on to the D12 rating that I used on my Honda CB750 for both road and track!

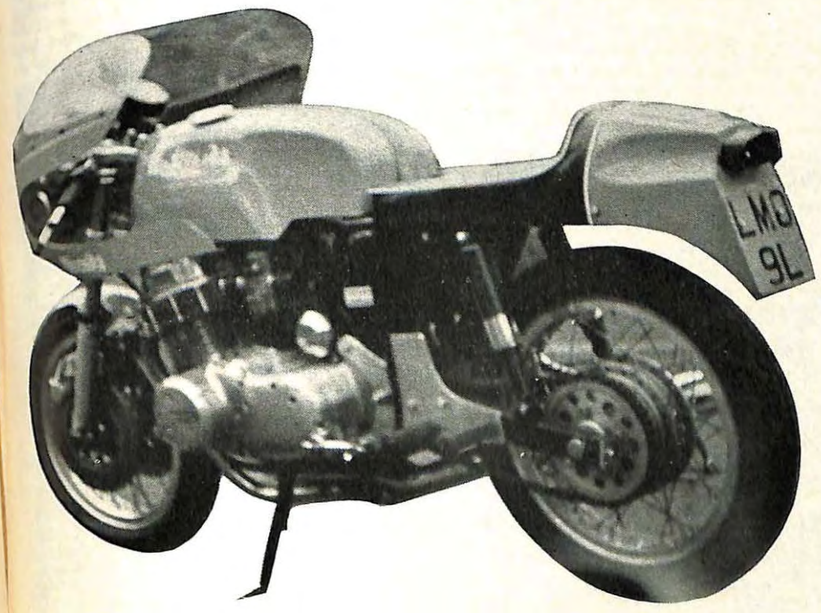
The anti-overheating campaign included an oil cooler and comprehensive MIRA wind tunnel testing. The ordinary fairing shape is just the start of this airflow programme. The huge tail section, the engine enclosure casings, and the slight duct shaping at the end of the engine casings all had a critical effect on the coefficient of resistance. The key objective of the programme was to get the heat away from the engine. The negative pressure and turbulence regions behind any such unaerodynamic device as a motorcycle were harnessed to aid the airflow past the engine. The function of these casings was to channel the airflow, and the shape at the rear fairing below the rider's thighs gave access to the pressure depressions at those points. Consequently the air is pushed in the front, glided along the engine finning, past the carburettors, and then sucked out the back. These fibreglass casings are all single skin mouldings, and before painting are clearly translucent. Bill Jakeman would have preferred them to have been left in their raw state, and having seen them in that condition I can see why he thinks so. His efforts seem to have been successful as the oil cooler was hardly warm after a session on the track.

It is, however, difficult to avoid thinking of these Jakeman-faired Hondas as flying pregnant guppies.

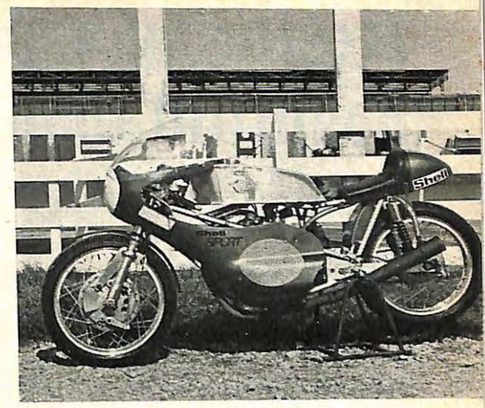
The Hondas are not all that easy to start when cold, and three-man relays rushed up and down the paddock before the single megaphone started howling. Both John Williams and Bill Smith took the fours out for a few laps circulating a few yards apart: both sounded impressive.

Bill Smith then handed over his machine: apparently there were only a few miles to go before the cam chain was due for replacement, consequently I was asked to keep the r.p.m. down to 8-8½. "It's easy to ride—it's like a great big teddy bear". Getting on board the beast, it was pretty hard to believe it: the sheer bulk of the machine is intimidating. Once aboard and moving the usual transformation occurs, and the machine feels immediately manageable in spite of its still substantial impression of size. The clutch is a bit delicate, and I was not encouraged to slip it when pulling away as it could well burn out.

The CR750 feels only slightly less flexible than the CB750, once one allows for the taller gearing. The riding position is comfortable which is hardly surprising in view of the fact that the machine was tailored for Bill Smith who is much the same size as I am. The bulbous front of the fairing shields one's hands and forearms so that the feeling of being "in" rather than "on" the machine is enhanced. The smooth and effortless manner in which the four accelerated is in dramatic contrast to the frenetic urgency of a racing Yamaha. A lap or two at a singularly sedate speed, at r.p.m. well below 8,000 allowed me only to discover that the Honda was quite easy to ride at such speeds, and that the steering was remarkably good. The brakes felt just like my road Honda CB750, singularly effective and sensitive. As they had the same Ferodo pads as I had in my road machine this was only to be expected. After the sidecars had had their session I took the Honda out again: there were only a very few laps allowable before the cam chain was due for replacement, so when it persistently misfired on two cylinders I came in: one plug proved to be oiled up, but this was not enough. Still, it was quite fast, but not terribly dramatic. The steering still felt as good, but the back end weaved about on Maggott's ripples.



The writer's CB750 as transformed by Dresda Autos



Next month: Track testing the Mick Walker Ducati

As a last check, I was allowed to try John Williams' Krober-equipped four: what a contrast! This four gathered itself and stretched forward to grasp each corner as it was barely out of the apex of the last. Down the straight in fourth gear the back wheel found one of those longitudinal ripples, and the four shrugged a good few feet sideways: the light crosswind became distinctly noticeable as this four's high top speed came up. The braking and steering remained excellent, but the handling was not nearly so good: I am far heavier than John Williams, and this showed up in the squirming that went on at Maggotts. The acceleration was good, but not as impressive as that of a 350 Yamaha, and the overall performance felt a bit down on that phenomenal two-stroke. At Daytona Bill got only 148 m.p.h. on the speedtrap, and Martin Sharpe reported little difficulty in getting by on his air-cooled 350 Yamaha. The great contrast was in the manner in which the performance was delivered: the CR750 was far nicer to ride, and I can only repeat Bill Smith's comment: "It's a pity about two-strokes".

This machine is surely what F750 is all about: exciting to look at, distinctive exhaust note, and a real mass of powerful machinery for the rider to master, all based firmly on standard components. Much the same could be said about the Yamaha, but somehow the four-stroke has a greater grandeur than the nervous and devastatingly fast little two-stroke. The supporters of 350 Yamahas in F750 ought to try a CR750—or a well set up racing Trident—or a Derimead 750 before speaking out in favour of handing over this class to the thoroughbred whippets from Yamaha. Perhaps more dealers could be tempted to follow Bill Smith's Honda and Bennett's threes if the International class became 501-750. Our thanks are due to Bill Smith for opening the eyes of even this Yamaha owner!—M. R. W.