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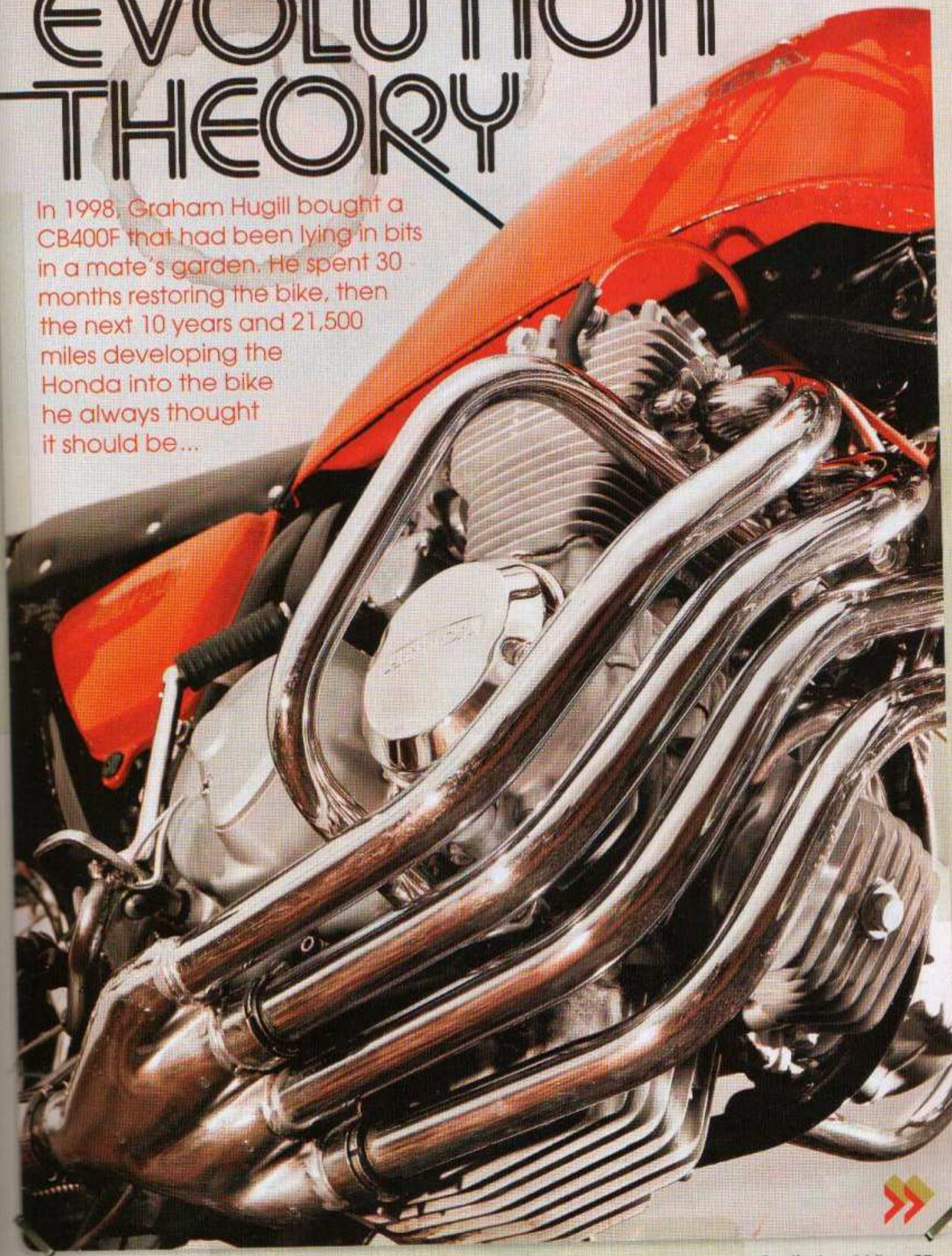


* WORDS GEZ KANE PHOTOGRAPHY RORY GAME

HONDA
400 FOUR
RESTORATION

EVOLUTION THEORY

In 1998, Graham Hugill bought a CB400F that had been lying in bits in a mate's garden. He spent 30 months restoring the bike, then the next 10 years and 21,500 miles developing the Honda into the bike he always thought it should be...



Graham Hugill goes back a long way with Honda 400/4s – back as far as 1976 to be exact.

That was the year he bought his first one – SVY 224P – brand new, part-exchanging his CB250G5 at the start of that famously long and hot summer. “I just fell in love with the look of the 400,” Graham explains. “I’d ridden a mate’s 750, but it felt so big and heavy. But, to be honest, I think it was the looks of the CB400F that really did it for me. Those pipes, the tipped-up rear to the seat and the glorious sound from the four-into-one exhaust. I used to take mine through a tunnel under the railway, drop it down into second gear and wind it on just to enjoy the noise it made. The whole package was great on the 400/4. The handling was as good as my G5’s was awful, and it felt pretty fast after that 250 too.”

Graham’s love affair with his 400 lasted until 1982. “I’d been everywhere on the bike, covered 30,000 miles and sold it for just £50. That was the worst mistake I’ve made. I had a few other bikes – though none that captured my heart like the 400 – and dropped out of motorcycling when I went to live and work in London in 1986.” But a chance find in a mate’s garden after returning to live in his native Yorkshire gave Graham a

“There were things that I thought could be done better on the 400/4”

second bite at the CB400F cherry. With the bike restored, he started to look at areas where he felt he could improve the bike for the 21st century. “I really wanted to keep the bike looking standard,” Graham explains. “Apart from the fact that standard bikes hold their value better, I’d restored it because I love the whole concept, ride and look of the CB400. I didn’t want to mess with that. But there were things I wasn’t so keen on and thought could be done better. And, as time went on, there were things I wished I’d done differently. So I started a rolling programme of work to get the bike to where I wanted it to be.”

The first thing to come in for attention was the poor sealing of the carburettor intake stubs. “The ones I’d originally fitted were cracked,” Graham recalls. “I repaired them with epoxy glue and all seemed well. But after about 500 miles and three different types of glue, I gave up and bought a new set of inlet stubs for £40 from David Silver Spares (01728 833020).”

That set the ball rolling and in October 2004 Graham had the chance to buy up a job lot of spares from another 400/4 owner who was abandoning a restoration project. “I got loads of parts from him,” says Graham. “Most of them I just put to one side ‘in case’, but there was a complete Dyna S electronic ignition system – with coils – and I was getting fed up with fiddling about with two sets of points at service time, so on it went. That was

seven years and nearly 12,000 miles ago and it hasn’t been touched since. That’s a worthwhile upgrade.”

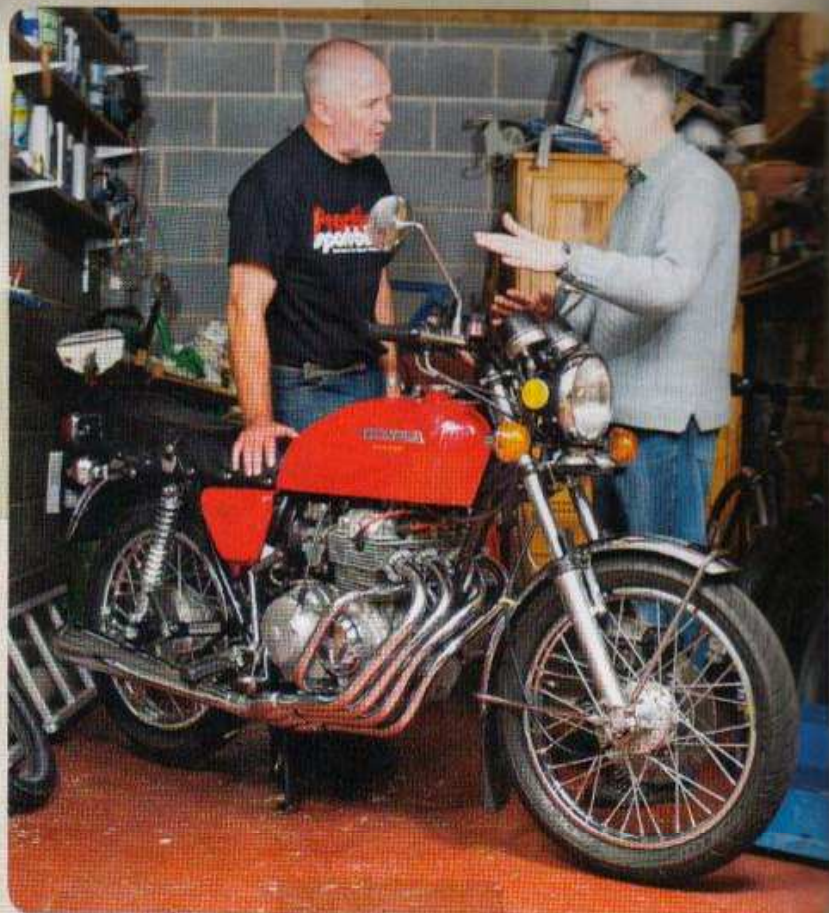
A couple of quiet years spent enjoying the bike followed, but in late 2006 Graham started experimenting with LED lights instead of standard bulbs. Although he reverted to standard bulbs for the indicators, he’s stuck with the LED ‘bulbs’ for the warning lights and stop and tail lamps.

“The warning lamps are brighter, so it’s easier to spot when I’ve accidentally left the indicators on and the fact that they draw less current than incandescent bulbs goes a little way to balancing the extra power needed for the 35/35 watt Cibie halogen headlamp unit I fitted when I restored the bike. I kept it from my first 400/4 in 1976,” says Graham.

March 2009 saw the next major round of work, when Graham came across an F2 engine for sale in nearby Holmfirth. “I wasn’t happy with the condition of the engine cases, and I’d read that the F2 engines have longer cylinder/head studs to combat oil leaks from the head of the earlier engine,” he says. “I’ve torqued the head nuts down to 19lb.ft [the standard setting is 14lb.ft] and they’ve given me no problems. But really I bought the F2 engine because it was much better cosmetically than the engine in the bike.”

“I heated the liners of the first engine in the oven and dropped them into the F2 barrels and honed the bores, before re-using the +0.25mm pistons I’d bought new for the F engine. While I was in the F2 engine, I also fitted new primary-drive shock-absorber rubbers, a cam chain and tensioner blade and a stainless-steel tensioner adjuster bolt and locknut I bought from Phil Denton at the Stafford show. As with the first F engine, the bottom-end and gearbox were fine. It just shows how robust these little Hondas are.”

At the same time as swapping the engine over, Graham took the opportunity to raise the overall gearing, using a front sprocket with an extra tooth and a rear with one less. Later that year, he picked up a pair of used Koni shocks for just £30



“Graham Hugill (right) tells PS’s Gez Kane how to do things better than Honda did

“Don’t expect to see this coffee table in Ikea any time soon. Love the Castrol milk jug



THE BUILD WAS JUST THE START...

GRAHAM HUGILL'S RESTORATION of his CB400F looks as good as it gets. The chrome is perfect, the paintwork just so and the bike runs better than new. But, although this wasn't a cheap job, Graham has made a conscious effort to conserve as much of the original bike as possible. He bought the bike from a mate in Shipley, aiming to relive the good times he enjoyed with his first CB400F, bought way back in 1976.

"My mate Gerry had bought a CB400F to restore, but after spending four months and – more importantly for a Yorkshireman – £24.34 on the bike, he hadn't really got anywhere with it and agreed to sell it to me. I bought it in November 1998 – in a shocking state after it had lain in his garden in bits for months."

Graham started by stripping the bike and cleaning up all the components. "It really was a mess," he recalls. "But I started to go to autojumbles to see what was around for the bike and met the guys from LSN Powder Coatings (01977 604461) at the Rufforth Autojumble and decided to take the plunge and get the frame powder coated. Once they'd blasted it, they told me it was in pretty good shape and that encouraged me to press on with the rest of the bike."

Graham stripped the engine and found things weren't too bad there either. "I'd got hold of a genuine manual and parts book and just went through everything," he says. "A mate had a blast cabinet, so I used that to bead blast the engine cases before painting them myself with aerosol cans and then

lacquering over the paint. I think the result is good." Graham replaced the camchain and tensioner, but the primary chain, main bearings, big ends, crank and rods were all fine. "I did rebore the barrel and replace the pistons, small-end bearings, pistons and rings though – as well as a couple of valves. The only other part I had to replace was a needle roller bearing on the primary drive – even the gearbox was perfect."

With the frame powder coated, NOS tank, fork stanchions, mudguards, exhaust and cables fitted – all of which were cheaper to replace than repair – and the wheels rebuilt, Graham's CB400 was good to go after two-and-a-half years of hard but enjoyable work. It didn't end there. Before the year was out, the modifications and upgrades had started...

Back garden basket case awaits collection



Crud at the sprocket housing, rust on the rotor



F2's longer studs make for an oil-tight motor



Satin black over grey primer for the clocks



Finding new fork stanchions is tough

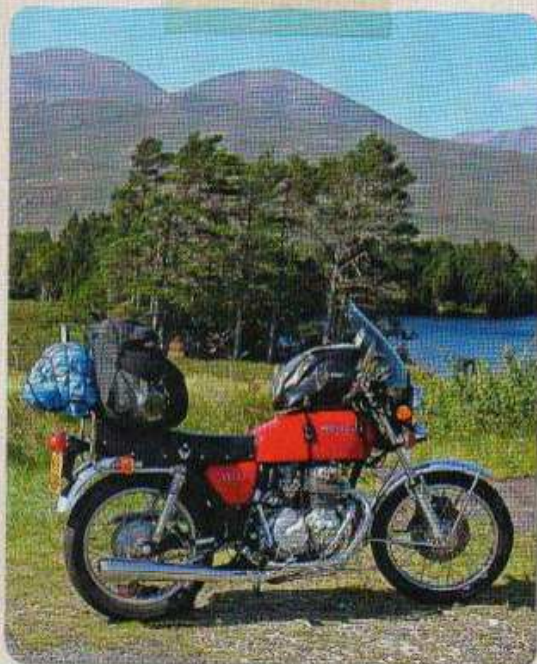


Mouse sander dines on seat foam



Gel pad insert ensures improved comfort





◉ You can even go touring on a well-sorted Honda 400/4

and rebuilt them, getting the red springs chromed at the same time. "Even with chroming the springs and refurbishing the Konis, they only stand me at £100," says Graham.

A final round of work in December saw electrical engineer Graham upgrading the electrics. "I was aware that the output from the alternator was marginal," he explains. "So I looked for ways to lighten the load on it. In the end, I fitted relays to the horn and both the headlamp circuits (main and dip beam). Not only does that mean virtually the full battery voltage can get to the headlamp, but also the switches get a far easier time as they are only switching micro amps of current. I also fitted an electronic regulator/rectifier unit bought from M&P for £45."

Apart from grafting a gel seat pad – bought at the NEC show in November 2010 for £30 – into the seat over that winter and fitting the custom-made front brake caliper pivot pin, that brings the story of Graham's 400/4 up to date. But of course

he's unlikely to stop there.

"I'd quite like to fit a new loom," he admits. "But, at £120, they're not cheap. Still, the peace of mind from having brand new connectors and wiring would probably be worth it."

A project like this never ends. But, with Graham in no hurry to replace

"Don't expect to restore a bike to a decent standard on the cheap"

the bike, that's no big deal. "It does everything I ask of it," he says. "I'll keep it until I'm too old to ride. People say that older bikes can't be as reliable as modern ones, but I rode my first CB400/4 all over the UK and Europe without any worries. And if you restore a bike well and keep it maintained properly, I don't see any reason why it shouldn't be just as reliable today. Buy spares when you see them – you never know when you might need them – don't expect to restore a bike to decent standard on the cheap, and be prepared to take your time. You might have to do a job more than once to get it right."

Graham makes it sound easy, but then he's been working on his 400/4 for over 10 years now. But, if you've found the bike that ticks all the boxes for you, what does it matter? As he says: "What's the rush?" ◉

MODIFICATIONS

1 FRONT BRAKE

Standard Honda pads and caliper, meticulously cleaned. Braided steel brake line (£50) fitted and Phil Denton Engineering (01492 641345) made a new – slightly oversize – pivot for the caliper in stainless steel (£30).

2 LIGHTS

Cable headlamp with 35/35 watt halogen bulb replaces the standard – rather feeble – unit. LED brake and tail-light (£20) and idiot light bulbs (£3 each) to reduce the draw on the alternator.



7 FORK STANCHION PROTECTORS

Genuine fork stanchions are no longer available (though Graham fitted a pair to his bike) and hard chroming isn't cheap. These slip-on protectors deflect some of the worst debris away from the stanchions.

8 DYNA 5 ELECTRONIC IGNITION AND COILS

Graham picked his up from a guy who was abandoning a CB400F resto project and paid just £100 (retail price around £250). Good quality Nippon Denso points and capacitors cost about £40 every service.

9 CAMCHAIN TENSIONER

A known weakness of the CB400F. Internal plunger replaced with NOS part. A stainless steel adjuster bolt and locknut from Phil Denton Engineering makes keeping it clean and corrosion-free easier.

THAT MATTER

3 CLOCKS

Faded original dial faces have been replaced with reproduction overlays from Peter Horton (01634 305567). Peter tests new repro faces for fading by sticking them onto his wheelie bin for a few months.

4 GEL INSERT IN SEAT

Trimmed to fit into a recess in standard seat; foam cut away to accommodate it (£30).

5 REAR SHOCKS

Konis bought on eBay for £30, stripped and rebuilt with re-chromed springs. Ikon or Hagon units are a good alternative and cost from £180 to £230 for shocks that look right and perform way better than the originals.

6 MUDGUARDS AND CHAINGUARD

Undersized to protect from corrosion. Genuine front guards are still available, but cost around £210 and pattern rear guards are £85, so it pays to protect your investment. Pattern chainguards are not available yet.



10 ENGINE

Engine is F2 version with longer cylinder barrels/head studs, which provide a more 'oil-tight' top-end. They are only about 1mm longer than the F and F1 studs, but it makes a difference.

11 GEARING

Raised slightly in the interests of fuel economy and allowing the engine to rev lower at a decent cruising speed. A one tooth larger front sprocket (£7) and one smaller rear (£13) means chain length can remain the same. Using a rear sprocket two teeth smaller means shortening the chain by one link.

12 RELAYS

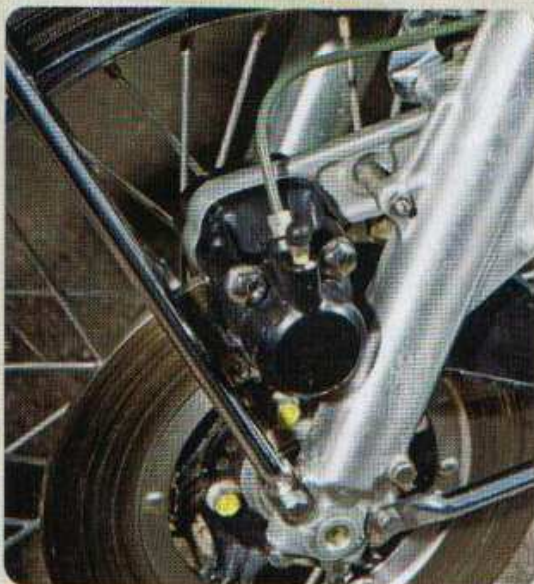
Fitted to horn and high and low-beam circuits to give the switchgear an easier time thanks to the lower current flowing through them.

13 REGULATOR/RECTIFIER

Modern electronic combined regulator/rectifier fitted.



❖ Much modified it might be, but Graham wanted his 400/4 to retain its standard classic lines. He succeeded



❖ Pivoting brake caliper is the source of much complaint among CB400F owners. But Graham Hugill sorted it



❖ Extra assistance for the front stopper comes in the form of a braided brake hose. It pumps Harley-Davidson fluid



HONDA 400 FOUR RESTORATION

The best 400/4 we've ridden and proof that you can modify a bike without compromising its character



THE RIDING

THIS IS THE BEST CB400F I'VE RIDDEN.

Not only does it look the part, but it works just as well as Mr Honda must have intended in 1976. That's all the more remarkable when you consider this isn't a no-holds-barred, everything-replaced-regardless-of-cost, chequebook restoration. It's the work of an – admittedly talented and dedicated – home restorer who has replaced only what he had to, or was cheaper to replace than restore.

Thumbing the starter button, I realise I'm in for a treat. The engine kicks in with the hushed stirrings of a well-set-up sohc Honda four and every control is smooth and light in operation. Graham has told me about the raised overall gearing on his bike but, apart from a few hundred extra revs in first gear to get the plot rolling, I don't notice any disadvantage as I head out onto some empty back roads between Graham's York home and the brewery town of Tadcaster. The winding B-roads are made for the super-smooth 400/4 and the ride is taut and composed despite the extra stone or two I'm imposing on the bike compared to its owner.


Honda's 408cc four thrives on revs and, although there's no huge hit of power, the CB400F gets distinctly more lively above 6500rpm, whistling



up to its 10,000rpm redline in style. I've no doubt this beautifully presented little bike would have no trouble hitting the 103mph recorded by magazine road testers of the day, but twisty Yorkshire lanes are no place to test that theory. Instead, I content myself with (almost) legal cruising and revel in swinging the compact four through a procession of bends.

Best of all is that lightly modified front brake. It's far and away the best example

of the much-maligned single-piston swinging caliper Honda design that I've ever encountered. The lever is firm and the brake has more than decent bite with excellent feel. It's just what I need to enjoy the bike with confidence. If all that's involved is a new brakeline, a custom-made, stainless-steel caliper pivot pin and some decent silicone brake fluid, why aren't all CB400F brakes as good as this?

Riding a bike like this makes me realise just how good Honda's CB400F must have seemed when it was launched. And, getting on for 40 years later, how a well-sorted bike with just a few upgrades and tweaks can still offer such a rewarding ride. It's proof-positive that the 400/4 was an instant classic – and why it remains one today. 

★ SPECIFICATION 1976 HONDA CB400F

ENGINE Type air-cooled, sohc, 8v inline-four **Capacity** 408cc **Bore x stroke** 51 x 50mm **Compression ratio** 9.4:1 **Ignition** points and coil **Carburation** 4 x 20mm Keihin
TRANSMISSION Primary/final drive chain/chain **Clutch** wet, multiplate **Gearbox** six-speed **CHASSIS** Frame tubular steel cradle **Front suspension** 33mm telescopic forks
Rear suspension twin shocks, adjustable preload **Front brake** 8.425in (214mm) disc with single piston caliper **Rear brake** 6.5in (160mm) sis drum **Wheels** spoked **Front tyre** 3.00 x 18in
Rear tyre 3.50 x 18in **DIMENSIONS** Dry weight 179kg (375lb) **Wheelbase** 1355mm (53.3in) **Seat height** 790mm (31in) **Fuel capacity** 14 litres (3.1 gallons)
PERFORMANCE Top speed 103mph (Bikeroad test) **SS ¼ mile** 14.7sec @ 93mph (Motor Cycle test 1975) **Claimed power** 37hp @ 8500rpm **Claimed torque** 23.87lb.ft @ 7500rpm
(3.3kg.m @ 7500rpm) **Fuel consumption** 50mpg **Price new** £669