



Hydro-matic...

**Can Citroën's BX and its strange suspension really go racing?
Andrew Charman found a man who thinks it can...**

PHOTOGRAPHY: GARY HAWKINS



Citroën – a maker of radical cars – just take a look at the latest C4. Also a maker that has persisted for many years with its unique hydraulic suspension system. It's a clever setup, offering self-levelling even with heavy loads in the back and sublime ride quality, but surely trying to make it work in a race environment would be a nightmare not worth considering?

Meet Gary Cole. Now Gary has been racing a Citroën BX for more than the last decade – well, to be strictly correct, he campaigned the car in 1993, went away and thought about it for a mere nine years, then returned to action in 2003!

In fact, Gary is not even a particular fan of Citroëns; his passion is Porsches but his long club racing career has encompassed mainly Roadsaloons and Thundersaloons, driving everything from a Mini to a VW Golf to a Vauxhall Chevette. But the genesis of his involvement with the funny French maker came courtesy of one of its most famous, and slowest, cars. The BX project was born out of a successful 1991 season racing a Citroën 2CV for long-time friend John Witty, boss of Merstham-based



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Citroën specialist Witmun Engineering. With a 2CV championship tucked under their belts the pair wanted a new challenge, and John's favoured series was Touring Cars.

“John had previously run a BTCC Astra for the journalist Paul Harmer,” explains Gary, “and he was keen to get back into the series. So we looked at the possibilities of building a Touring Car BX and set about finding the backing.”

Neither of the two could have predicted, however, that the BTCC was about to explode in popularity and therefore expense, attracting ten major manufacturers, including Citroën's sister company Peugeot. “Citroën wasn't interested in the BX, and other big companies weren't interested unless Citroën was.”

Plan B saw the pair run a car in the 1993 Thundersaloon Championship, in the hope of generating some interest in the project. Thundersaloons was by then spiralling into oblivion, but the virtually standard BX still looked rather incongruous against the Escort Cosworths and 600bhp Vauxhall Carlton. “In fact it was too small for the series,”

admits Gary. “There was by then only one class for two litres and above, and when filling in the application form my pen slipped and I wrote 2005cc instead of 1905. I hope they don't come looking for their prize money back...”

Prize money? Yes, because while it was pretty slow compared to its big-engined rivals, the BX was reliable, and never finished outside the top ten all season long. But by the end of '93 there was no cash left for development so the car was put under a tarpaulin in the Witmun yard as Gary took a sabbatical from racing, building up his gas engineering business.

Fast forward to 2003. Still a 'resting' racing driver but still reading the 'comics', Gary happened upon the announcement of a new series for pre-1990 Touring Cars, to be run by the Classic Saloon Car Club (CSCC). Thoughts turned again to the BX and John was persuaded to remove the tarpaulin, somewhat reluctantly as he was enjoying his weekends cycling in the countryside. “We thought we had nothing to lose, so we changed the battery and plugs, stuck some petrol in it and put some new tyres on (the old

ones were by then rather stiff) and off we went.”

The BX took on three races that year and unsurprisingly the first at Brands Hatch brought no end of problems with seized dampers and the like. But at both Snetterton and Silverstone Gary came away with second in class.

Suitably encouraged, the squad decided to make a proper effort in 2003, but over the winter the pre-'90 Touring Cars were amalgamated with the Classic Thunder series also administered by the CSCC. It seemed singly appropriate for the BX, an ex-Thundersaloon after all, and despite the new competition Gary ended the season with the Class F title, beating off rivals that included Ford Fiestas and Escorts, VW Sciroccos and Golfs, and an Alfa Sprint. He was also placed second in the overall championship – again the BX was not the fastest car on the track, but results came through the mantra that has governed Gary's entire racing career: ‘To finish first, you first have to finish!’

The 2004 season brought only second in class and third overall, but Gary is keen to point out that this was achieved



despite missing a couple of the races. This year, however, has proven more difficult, with a clutch of reliability issues slowing the squad's progress. But literally the day before we sat down to produce this feature Gary turned the corner, scoring his first finish of the season in style with a class win and lap record at Cadwell Park.

Of course, the BX racing today is not the completely standard car that re-appeared three years ago. It has been developed under John's watchful eye, though it still retains a surprising amount of stock parts, not least the Citroën patented 'hydropneumatique' suspension. "This causes great interest in the paddock particularly when I jack the car up high to reverse it off the trailer," says Gary. He runs the BX at its standard ride height. "The youngsters drop their cars close to the ground and that's a mistake – doing that seriously changes the angle of the driveshafts and particularly with this suspension the shafts end up doing some very strange things in corners. You end up with big bills for both driveshafts and bearings." The only major suspension mods have



seen the replacement of the original rubber bushes with solid aluminium versions and 50 per cent thicker anti-roll bars added.

The standard BX powerplant has been blueprinted but has done without boring or big valves. The 1905cc 16v block boasts a lightened and balanced crankshaft, rods and flywheel and Omega forged pistons. The head has gained Piper camshafts, springs, followers and vernier pulleys. The inlet manifold is a modified opened-up standard unit, the exhaust manifold and downpipes also stock Citroën items which run into a two-box stainless steel system. A standard throttle body is fitted with a green double cone filter, the whole thing controlled by an Emerald M3-D engine management system.

The clutch was donated by a BX Turbo, as this version offers higher torque, while one of the latest upgrades has been to replace the BX gearbox with one from a 1.9 Peugeot 205 GTI. Basically it's the same unit but the Peugeot ratios are more race-friendly, the BX version boasting too much length between the cogs.

Perhaps most incredibly, the car boasts standard brakes and even pads. "One of the first things we did wrong back in 1993 was putting a nice Mintex race set on," says Gary. "Such brakes work by being soft and therefore offering more grip, but we haven't found a competition pad strong enough for the BX. Due to the hydraulics in the suspension the Citroën puts something like 30 tonnes

of pressure on its brakes, and mangles competition versions. They just run out too fast."

The car sits on 6Jx14-inch Wolfrace alloy wheels, shod with Hoosier 205/60 rubber, or somewhat elderly Yokohamas if the weather turns wet. According to Gary, getting suitable tyres is a problem. "There's not a lot around for 14-inch," he says. "You look at the ads and they tend to jump from 13 straight to 15."

Series rules require some parts of the original interior to be retained, such items as the dash and door cards, but otherwise it's the typical recipe of a stripped-out shell fitted with typical race seat, harness, fire extinguisher and the like. The instruments have made way for a race standard oil pressure gauge, water temperature gauge and rev counter. The roll-cage is to FIA Group A homologation, fabricated by Witmun Engineering.

So that is the BX, a car that creates a lot of interest wherever it races. "We get a lot of attention in the paddock, people amazed that we run this car, with this suspension," says Gary. "Members of the BX Owners Club (www.bx16valve.co.uk) follow our progress avidly."

So what about the future? Well, Gary wants to perk up his season by securing a few more class wins, and then review matters with John at the end of the year. He admits that there has been some talk of a "higher profile" project, but he won't reveal any details just yet. Bet it will be a Citroën.... ■

SPECIFICATION - CLASSIC THUNDER CITROËN BX 16v

ENGINE

Power-unit: Standard 16v Citroën block, lightened and balanced crank, rods and flywheel, Omega forged pistons, stock 16v head with Piper cams. Standard inlet manifold, standard exhaust manifold to two-box stainless steel system. Emerald engine management

Power: 205bhp

Torque: Not stated

Transmission: Citroën BX Turbo clutch, Peugeot 205 1.9 GTI gearbox

SUSPENSION

Front & rear: Standard Citroën Hydropneumatique hydraulic system front and rear. Solid aluminium bushes, thicker anti-roll bars

BRAKES

Front & rear: Standard Citroën discs (266mm front, 224mm back) and pads.

WHEELS

Front & rear: Wolfrace 6Jx14" alloys

TYRES

Front & rear: Hoosier 205/60 slick; Yokohama wets

INTERIOR

Inside: Stripped out, race seat, harness, extinguisher system. Witmun-fabricated roll-cage to FIA GP A spec

ESSENTIALS

Thanks to: Gary could not race without the efforts of John Witty at Surrey Citroën specialist Witmun Engineering (01737 644828). Race day help is supplied by trusted mechanic Rene de Bern, while vital extra support comes courtesy of Richard Norris at R&V Coachworks (01883 627453) and Mike Cale at SKC Kitchens of Distinction





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MANTRA THAT HAS GOVERNED
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