

free air conditioning

First a high speed flying machine, now a low cost tourer - BRA is the only kitcar company to offer two very distinctly different three-wheelers - we test the budget CV3 in deepest Wales

The name BRA (Beribo Replica Automobiles) goes back a long way and will be familiar with many kitcar enthusiasts. Peter Ibbotson and John Berry started the company in the late '70s and they successively produced an MG P-type replica, a Cobra 427 replica and a Cobra 289 - all of which were sold off.

Their last model, a three wheeler inspired by the Morgan, was the last of the line. John Berry, being a particular fan of the marque, has for many years been involved in Morgan restoration and sales, and he was the driving force behind the car.

Based on the Honda CX3 motorcycle, the car soon received very favourable press coverage and proved itself to be a fast, capable touring machine. However, both John and Peter wished to retire and after a good deal of palaver, decided to sell the project as a going concern.

Here James Mather enters the picture. A successful business man in other spheres and a keen car and motorcycle enthusiast, James saw the potential for the CX3 and set about an aggressive marketing campaign at the

same time as making improvements to the kit. His policy of attending as many shows as possible, obtaining press coverage and investing in advertising began to pay off and sales figures climbed.

However, fate was to take a hand in the shape of a 2CV with a very shaky chassis, which he intended to restore for his wife's use. It's a well known fact that kitcar manufacturers spend many of their waking hours and much of the night thinking about their next project - they also always have a tape measure about their person.

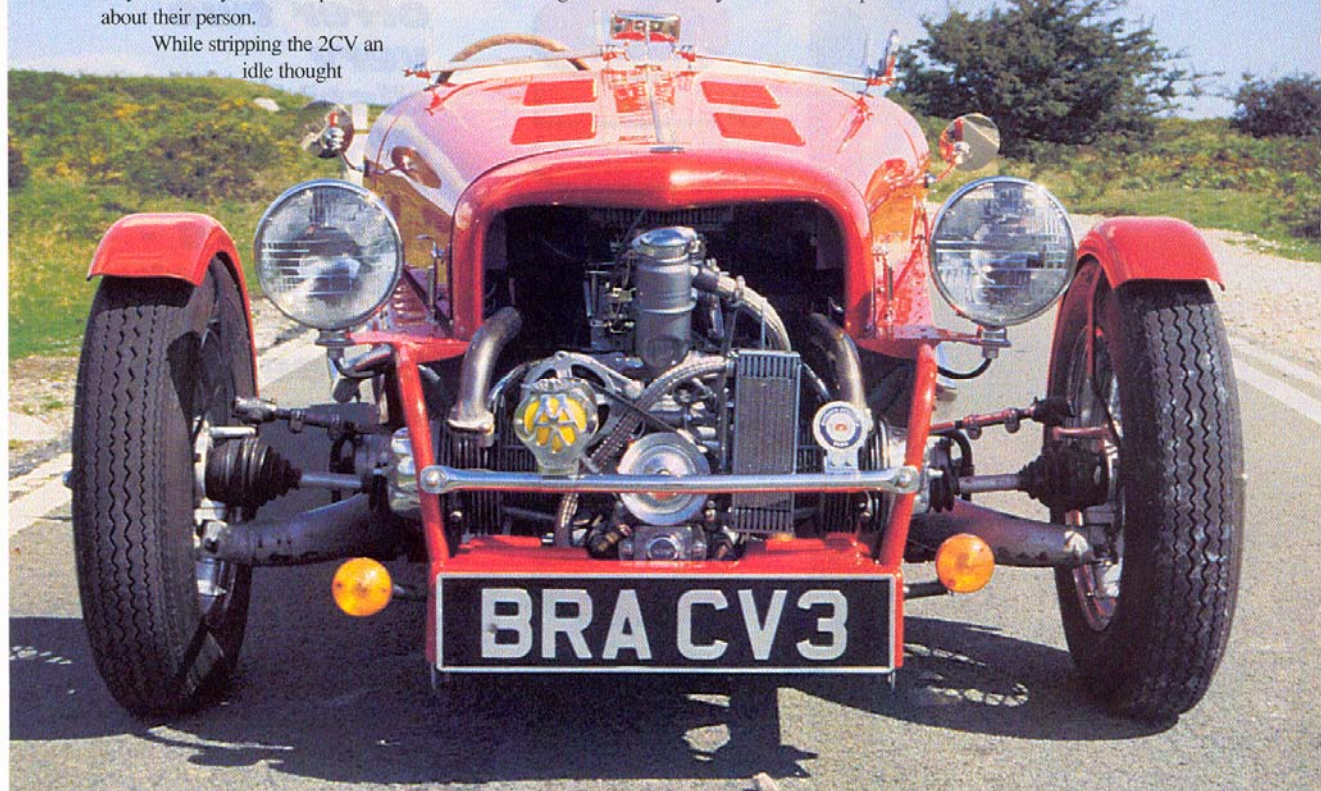
While stripping the 2CV an idle thought

crossed his mind that it might be a good idea to introduce a low budget three-wheeler to compliment the CX3. Whipping out his tape measure he was pleasantly surprised to see that the track of the 2CV exactly matched that of his existing chassis. The BRA CV3 was conceived.

Working with his colleague David Wiles, James created a shape which is very similar to the existing Honda-based CX3. In fact, with exception of the bonnet, all of the bodypanels are interchangeable so the family

resemblance is striking. It was the long bonnet which concerned James and David - in its unpainted state and with multicoloured panels, the prototype looked unbalanced. They worried needlessly. When the car came back from the paint shop, it looked a picture and everyone who saw it was delighted with the shape. In fact, it's proving to be the more popular of the two cars - which just goes to show that kitcar design is something of a chancy business.

Although the bodypanels are prone to



corrosion, the 2CV makes an ideal donor car. The air-cooled, two-cylinder engine is almost unburstable, spares are dead cheap and easy to obtain - even brand new OE or replacement chassis only cost around £250/300. Designed over 50 years ago, the technology is basic but very effective and the car is easy to work on. Suitable donors can be had for as little as £50/100 and some people just give them away, what's more, there are millions of 'em.

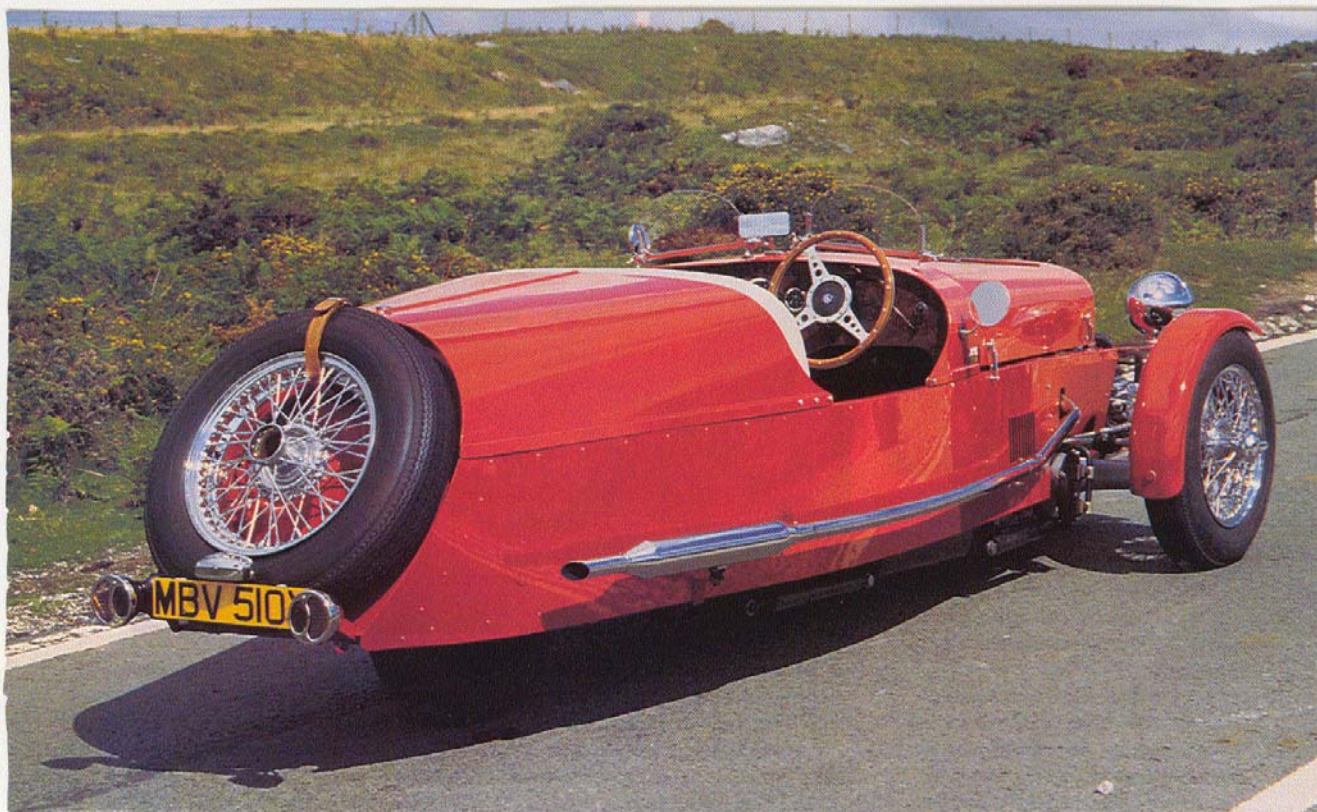
However, even without the support of the bodyshell, Citroën's platform chassis is fairly stiff but BRA has designed a body frame which,

panelled in steel and aluminium, makes the donor chassis very stiff indeed. And it is this that is at the heart of the car.

The front suspension, braking and running gear is pure 2CV. A central suspension cylinder on each side contains coil springs for both the front and rear suspension. Damping is via standard double-acting telescopic shock absorbers. Earlier 2CV models had drum brakes all-round, but from 1980 all cars were fitted with discs on the front. The tie rods which connect the front and rear springs to the axles are adjustable so that the vehicle ground clearance can be altered.

Of course, it's at the rear that the standard Citroën set-up is altered quite drastically. The single rear suspension arm fits onto the rear axle cross tube as on the original car but it is turned inwards instead of outwards, thus bringing it into the centre of the car. The customer needs to supply both arms to BRA who will carry out the necessary modifications - the non-used arm is also modified and put back in position so that the two arms can be linked to stiffen the suspension should this be desired at a later date.

Other modifications carried out and included in the price of the kit are lengthened rear eye bolts to lower the



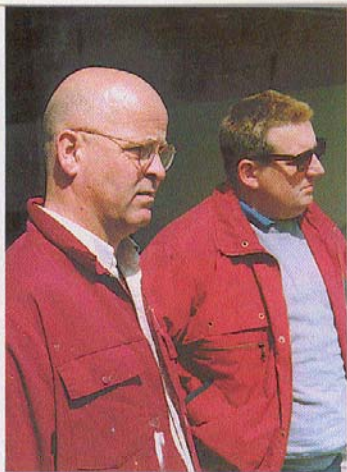
rear ride height; brackets welded to the front hubs to carry the cycle wing stays; the rear cross tube to which a brake pipe bracket is welded and the fan pulley. The only mechanical item to be sourced is the bottom end of an Allegro steering column and that also is modified by the company.

The donor car provides practically every other component though, including the engine & gearbox and the suspension & brake systems; even the electrics and instruments can be recycled.

There are many interesting features about the CV3. We liked the overall shape of the car. It is very much in the style of the old Morgan three-wheelers; though it doesn't pretend to be a period vehicle it certainly looks traditional rather than modern. For a three-wheeler, the boot area is quite large, we stuffed a big camera bag, a tripod and a couple of bulky coats in without problem and there is certainly room for a weekend's luggage of soft bags, but best leave the golf clubs at home.

The construction manual supplied with the kit is very comprehensive. The detailed written instructions are supplemented with hand-drawn sketches which are a bit basic but which give the necessary information clearly and concisely. We particularly liked the part which said that although the 2CV



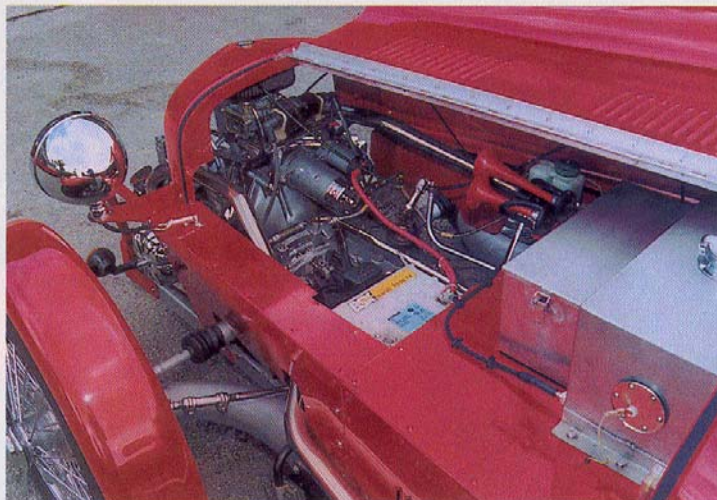


James Mather chats to Steve Hole on the technical aspects of the car

engine is utterly reliable, on starting it can sound like "a skeleton dancing inside a biscuit tin". We also appreciated John Wheatley's cartoons which grace the pages.

Climbing into the cockpit was simply a case of stepping over the low side but there is an option of doors for those who are less agile. Without the need for a central tunnel, the cockpit is roomy and uncluttered with bags of shoulder and bum room. However, the leg room in the demonstrator was limited by the rather thick backrest - with that removed, there was legroom for a six footer. It was explained to us that the upholsterer was more used to making cushions for Rollers than diminutive kitcars.

No special gizmos were fitted to the engine (with the exception of a Nikki carb.) or suspension but an anti-roll bar from an Ami had been installed. With an output of around 35bhp from 602cc, the performance is never going to be shattering, although there are plenty of go-faster bits to improve on this. Don't forget though, that this little



car weighs under 400 kilos and it has a low centre of gravity - so it performs much better than you might expect.

Acceleration is brisk and once rolling you can shift through the gears as quickly as the notchy gearbox will allow, although it does pay to keep the revs up and hold onto a gear rather than change prematurely. While the aeroscreens look the part, they do nothing to keep the wind out of your hair until the speedo climbs to around 40mph, when some sort of weird aerodynamics take over and much of the air seems to whistle over the top. Nevertheless, this is full-face motoring and at least goggles are recommended - but by the time you read this, a full windscreen will be available as an option.

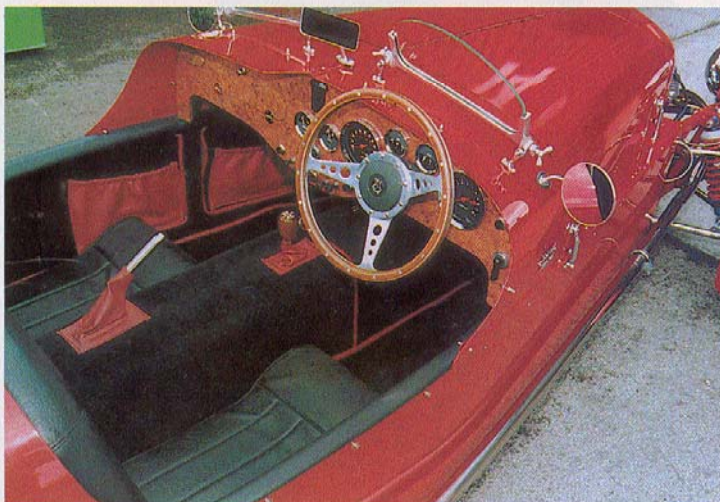
Thanks to that unconventional Citroen suspension, the ride is truly limousine-like. Those long arms and coil springs work with the dampers to

iron out the bumps in a most satisfactory manner. In addition to that, the car feels taut and solid with no rattles or squeaks and apart from the engine clatter, there isn't a lot of noise.

The first sharp right hander reminded us that it was a 2CV-based car we were driving and that the understeer can be quite formidable until you get used to it - it's a case of powering into the bend and lifting off before the apex. Also, the steering is a bit on the heavy side. Lowering the ride height to 5 ins. didn't help in this respect and there's talk of changing the roll bar for a stiffer one.

However, once you appreciate that you need to stop pussy-footing around and use a bit more muscle than you're used to with the company Escort, the car is great fun to drive. With the little engine revving like mad we made very respectable progress uphill and down dale through the country lanes. With two passengers and a bit of luggage, the 2CV motor had less than 600 kilo all-up weight to pull around, so it isn't surprising that it felt very peppy and not at all stressed.

Out on the moors, the CV3 wafted



along comfortably in top gear and it was easy to imagine what an ideal vehicle this would be to go cruising in. What's more it will do so on a cupful of petrol - well, over 50mpg, anyway. We expected to have to make allowances when assessing the handling and ride because we were driving a three-wheeler, but quite honestly we forgot all about that fact and treated the car just as we would have had it been an unconverted 2CV - it just seemed to be quicker and it didn't roll as much.

While on the subject of cost. Reckon on spending around £2000 to put a budget version on the road, although most people will spend around £4.5K to include a bit of chrome here and there, a nice set of wires, a custom wiring loom and some classy upholstery as in the demonstration car you see here. Because the car weighs less than 410kilo, it escapes the SVA and it's taxed as a motorcycle. If you really are talking about a low, low cost build, you can construct the CV3 from a set of detailed plans and drawings, including some full-size templates. The whole lot costs just £98 inclusive - wonderful value.

In many ways the BRA CV3 can be regarded as a traditional kitcar. It's inexpensive, it is designed for home construction, it uses a single donor car without high cost extras and it is great fun to drive - we also think it will be great fun to build - and it is highly individual.

We liked the car so much that we're giving one away. Well, that's not strictly true. BRA is giving one away in conjunction with ourselves and a few other benefactors namely North Wales Metal Finishers of Rhyl for the powder coated metal work, Quantum Sports Cars for the GRP mouldings and Simmal of Preston for the aluminium panels. All you need to do is to complete an entry form which will be found in the next issue of kit-car magazine's free Great Western Show guide, or complete a form which will be available at the show at Exeter on November 21 & 22. The draw is completely free and the winner will be drawn out of the hat at the show - and you don't even have to answer any silly questions to enter. See November issue of kit-car for more details. However, if you can't rely on your luck, go along to BRA and sample the CV3 for yourself.

SPECIFICATION:

ENGINE & GEARBOX:

Citroen 2CV/Dyane flat twin air-cooled engine and gearbox unit with fan and cowl removed.

CHASSIS/CHASSIS FRAME:

Citroen 'punt' chassis or after market item with MIG welded, jig built spaceframe body attached, in 25mm x16swg tubing. Clad in 16swg alloy sheet.

STEERING:

Modified Citroen column with addition of universal joints

SUSPENSION AND BRAKES:

Front: Citroen inboard discs and callipers, Citroen suspension arms and axle tube.

Rear: Modified trailing arm suspension converted to provide one rear wheel.

WHEELS:

Front - Citroen or 4j x 15 wire. Rear - Citroen 152 standard

KIT CONTENTS

Body frame with all alloy side panels cut to fit
GRP rear tail section, nosecone, and scuttle
Aluminium hinged bonnet with stainless steel hinge
Ignition coil mounting bracket
Steel fuel tank
Pedal box mounting brackets fitted
Spare wheel carrier fitted
Tail panel
Scuttle and steering column support frame fitted
Handbrake mounting plate fitted
Gear lever mounting bracket fitted
GRP cycle wings and stays
Headlamp brackets fitted
Seatbelt mountings fitted
Badge bar
Adapters for using 2CV headlamps - if required
Brackets fitted for use if using motor cycle stalk front indicators
Throttle return spring bracket
Modified single rear wheel
Modified steering column
Gear lever extension
Handbrake lever extension
Clutch cable adaptor
Modified fan pulley
BRA badge
BRA chassis plate
BRA key ring
Modification to rear trailing arms
Citroen steering column modification
Rear suspension eye bolts lengthened
Front hub uprights fitted with wing stay brackets
52 page build manual

WILL IT FIT YOUR GARAGE?

Length Overall	-	144"
Width Overall	-	62"
Height to top of screens	-	39"
Approx. Weight dry	-	400kilo
Wheelbase	-	94"
Track	-	52"

