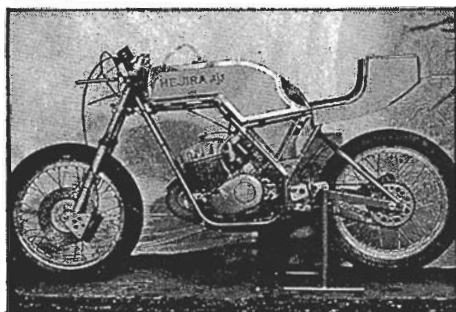




# HEJIRA 'fly like the wind'

In Arabic Hejira means 'fly like the wind'. Barry Hickmott investigates the facts behind one of Britain's smallest manufacturers.



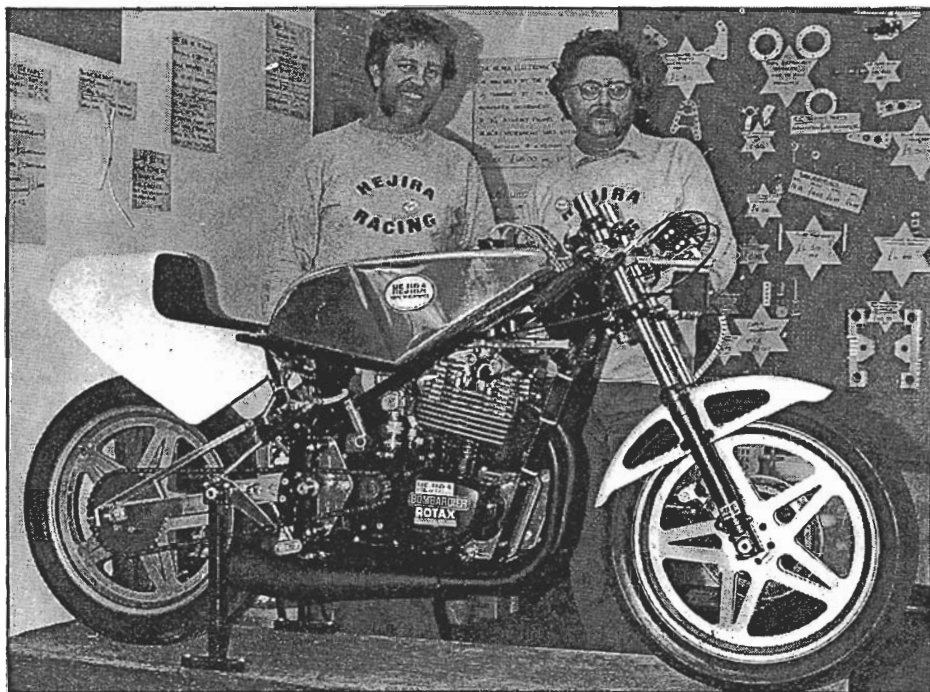
Even with Peter Inchley's help, the Starmaker motor wasn't enough

Some readers may question Hejira's right to be included in our series on British Racers. But in my opinion they have every bit as much right as DMW, Cotton or any of the other lesser known marques.

As single-cylinder racing motorcycles powered by Austrian Rotax engines, Hejira have recently constructed machines that hold their own in any company at Clubmans level. For these simple, but extremely effective bikes have captured several important club championships, including the coveted Bemsee awards. If you then begin to add all the Rotax twins, Ducati singles and twins, AJS Starmaker and finally Yamaha twins employed over the last decade, it will become obvious that Hejira have produced an amazing amount of different machinery and fully deserve to be recognised as a motorcycle manufacturer in their own right.

Our story commences some 20 years ago, when Derek Chittenden, a budding grasstrack competitor, was building another of those Triumph/BSA specials. But unlike the rest, Derek wanted a new and original name for his machine. Tribsa wasn't good enough, so he was reduced to some investigation work with a dictionary and up came *Hejira*, because this new name summed up all that Derek had been looking for.

Being a talented engineer with an endless obsession for frame building, Derek found himself during 1972 with enough work to go it alone. And so using the name Hejira formed his business venture that same year. Using his hard won motocross experience he soon adopted long travel cantilever suspension for tarmac racing use. One of his first customers was none



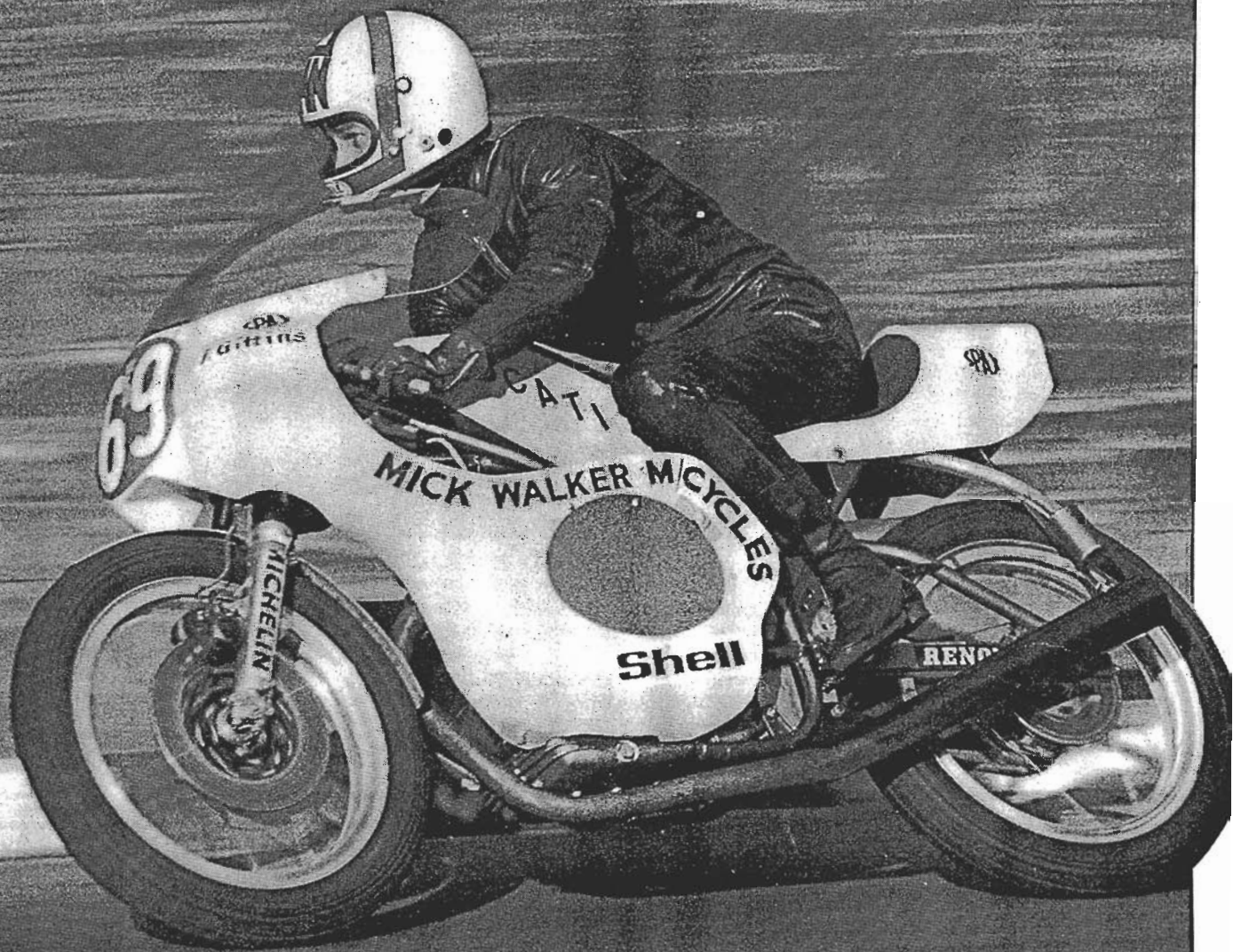
Derek Chittenden (left) and Danny Wilson with the interesting Rotax single

other than the Mick Walker sponsored Ducati rider, Ian Gittens. The Hejira tubular frame employed the Italian overhead cam single engine as a stressed member and came complete with box-section swingarm and a single shock rear suspension unit of Derek's own manufacture. This was soon followed by a batch of three AJS Starmaker engined racers in 1977 which made the name of Hejira more widely known.

Responding to the then new single cylinder class, Derek constructed each machine using a six-speed gearbox to do battle with the Vic Camp Suzukis and a host of Ducatis which ruled the roost at the time. Despite employing the talents of ex-Villiers/AJS development engineer Peter Inchley, the machines were never as successful as had been anticipated. Not that they didn't handle, it was just that they were not quick enough. This effort was not entirely wasted though, as they had caught the eye of Danny Wilson, who in 1978 approached Derek with the idea of a partnership deal. The advantage of this was

that it released Derek to concentrate on the design and manufacturing side of the business, whilst Danny's marketing and sales expertise could be used to capture new business.

One of the first fruits of this new team was a Suzuki 250 X7 engined Formula 3 racer. Although the new bike didn't have a fairy tale debut, it did come home a creditable third in the Formula 3 world championships that year, followed by a sixth in 1979. For another couple of seasons the team stayed with formula racing; but by now had moved up to the ultra competitive F2 class, with a Hejira framed Ducati Pantah. For 1983, Hejira selected Irish rider Steve Cull to ride the machine in the Isle of Man TT. At the end Cull finished in ninth place, but there was more to this than just the result. In practice Steve hadn't been off the leaderboard all week and was second only to world champion Tony Rutter. But, as they say, the best laid plans can be blown apart on race day, where after lapping at 106mph and lying in fourth spot, a last lap misfire slowed the unfortunate Cull to finish ninth. Just to

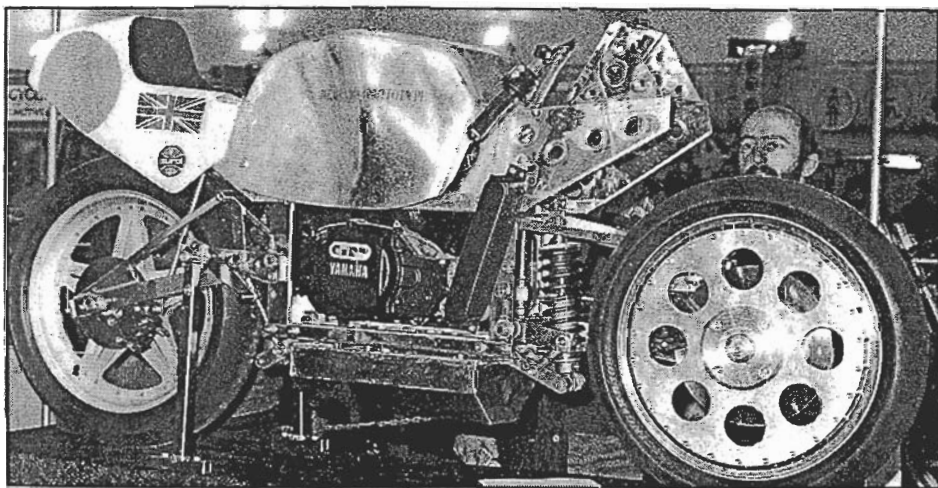


One of Hejira's first customers was Mick Walker sponsored Ducati rider Ian Gittens seen here at Union Mills during practice for the 1977 Manx

illustrate the handling properties of the Hejira frame, Steve Cull used a completely standard road going engine in practice and only a mildly tuned one in the race – a fact which rival Steve Wynne of Sports Motorcycles had at first refused to believe. However it was Ducati works rider Tony Rutter who finally made the Hejira team's day by saying that if he had one of their frames with his works engine, he could have gone even faster! As Danny said when I interviewed him, 'a good rider can make a bad chassis work but a good chassis will make a good rider even better'.

Following the F2 world championship trail over to his native Ulster, Steve Cull was fifth fastest in practice, but during the warm-up lap for the race a piston failure brought a premature end to such a promising start. Remember that high rev misfire? Well Danny finally concluded that the ignition box was to blame. Showing his engineers mind to the full he decided to find out just what was inside, and all that Danny found was about £3.50 worth of electronic components which anyone with half a brain could construct on his kitchen table!

Following more race track success, other people started to take notice of the small Buckinghamshire factory's efforts, notably Barry Hart of Barton Engineering. Barry



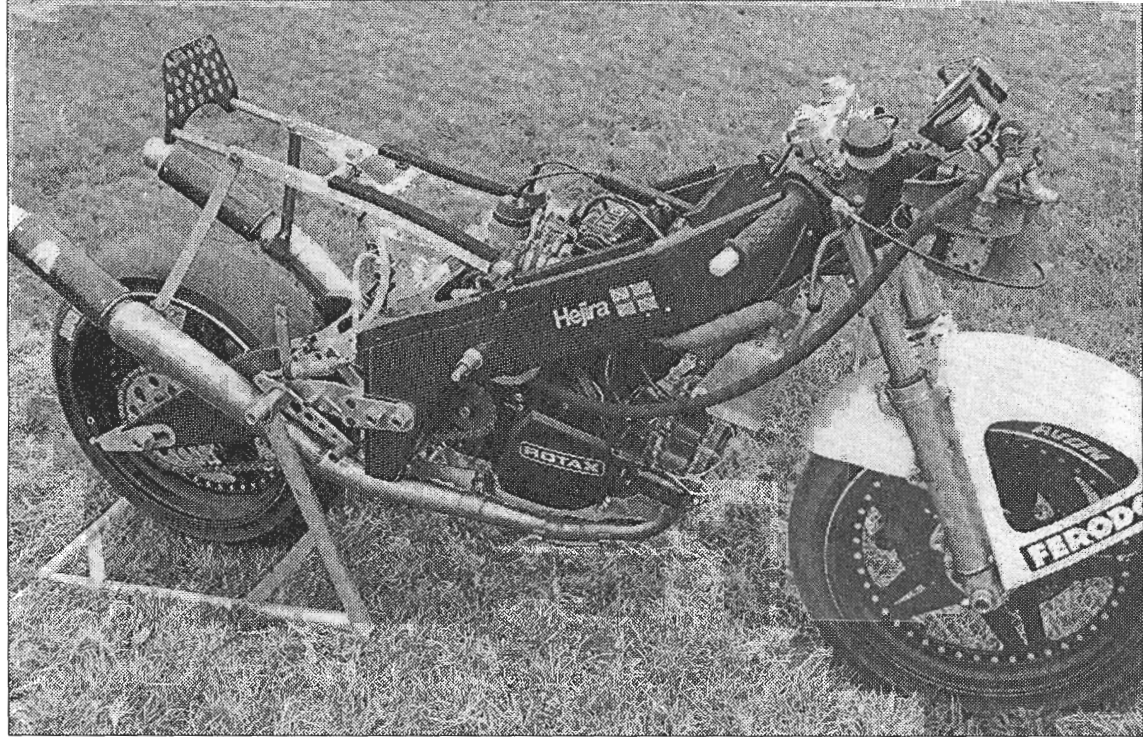
This Yamaha powered monocoque hub-centre steered Hejira prototype at the 1984 Road Racing Show

wanted to build his own 250/350 in-line twin. With the help of Rotax drawings, supplied by Danny, he did so very quickly. However, before a Hejira chassis could be made, Barry Hart was on the phone telling him of the Armstrong takeover of Barton Engineering.

A similar story can be related of an approach by the King's Lynn based Decorite team, which requested a chassis, and quickly, for their Rotax

twin. To meet this demand, Derek and Danny worked night and day for two days, at the end of which a complete sample machine had been built. This was taken as instructed to Silverstone but for reasons never disclosed the Decorite team failed to appear.

However, chalking up these expensive 'problems' to experience the Hejira partners manfully undaunted have not



A super-light composite frame features on Hejira's latest Rotax-powered single-cylinder race weapon

## Hejira about it

SPACE-age technology comes to singles racing with Hejira's carbon fibre-framed Rotax twin-cam racer.

The Buckingham-based special builders consulted a Formula One car racing constructor to help them build their super-light chassis.

The prototype weighs

25lbs less than a conventional steel frame, but further weight reductions are promised for production units.

Three different chassis are to be offered. These include versions that could house a Norton rotary engine or even a V4 500 two-stroke GP powerplant!

## S H O W

■ AN all-new Sound of Singles bike is to be launched at Ally Pally. The Shepherd-KTM is a fully race-tuned KTM 600 with a close-ratio gearbox and 44mm Mikuni carb which kicks out 70bhp. The L-beam chassis is made by JMC engineering for designer Terry Shepherd. Multi-adjustable Kayaba upside down forks, a White Power rear shock and Marvic wheels are standard on the bike that weighs in at a featherlight 20lbs. Titanium, aluminium and magnesium fasteners are used on the bike that costs £10,500.

■ JMC will show a light, deep-beam frame kit for Yamaha 500LCs plus a variety of chassis kits and rolling chassis.

■ A TWO-litre, V8 bike engine is to make its world debut at the show. Power-thirsty boffins at HS Performance grafted two FZR 1000 motors together using crankcases designed and made by themselves. The resulting lump — originally destined for car racing — weighs in at a puny 149lbs and pushes out close to 300bhp! The engine is only 19mm wider than a standard FZR unit. Harris will be involved in producing frames to house the engine for motor cycle sprint use.

■ A DUNLOP tyre deal for '93 is on offer to winners of the Clubmans' championship series from Mick Ward Racing. Ward is taking over as Dunlop's official race service crew at the popular race series. To be



# TEAM HRD

COPY OF A DISPLAY NOTICE FOR THE 1995 S.O.S. SHOW  
EUROPEAN SOUND OF SINGLES RACING

**THE HEJIRA CARBON FIBRE CHASSIS  
S.O.S. RACE MACHINE SHOWN HERE,  
FINISHED FIFTH IN THE INTERNATIONAL  
S.O.S. RACE AT HENGLO IN HOLLAND IN  
APRIL 1994. IT IS A DEVELOPMENT OF  
THE SUCCESSFUL STEEL RACE CHASSIS  
DESIGNED AND BUILT BY HEJIRA OVER  
EIGHTEEN YEARS. THE REASON BEING  
THAT STEEL AND CARBON FIBRE HAVE A  
SIMILAR MODULAS CHARACTERISTIC.  
THE CARBON CHASSIS COMPONENTS ARE  
INTERCHANGEABLE WITH THE STEEL IE:-  
THE CARBON SWINGING ARM WILL FIT  
INTO THE STEEL CHASSIS AND VICE  
VERSA. BOTH CHASSIS ARE MULTI  
ADJUSTABLE AND INCORPORATE ALL  
MAJOR SET UP PARAMETERS, MAKING  
THEM IDEAL FOR ALL CIRCUITS. HEJIRA  
PLAN TO INCREASE DEVELOPMENT OF  
CARBON COMPOSITES IN OTHER AREAS.  
PLEASE NOTE THE KUDOS WHEELS. OUR  
125 CHASSIS MOULDS HAVE BEEN  
COMPLETED AND WORK IS IN PROGRESS  
ON SUSPENSION AND ENGINE COM-  
PONENTS. THE TECHNOLOGY AND MAN-  
UFACTURE ARE BRITISH TO FORMULA  
ONE STANDARDS.**

# TRIUMPH LEADING RACE TO BUILD CARBON SWINGARM

**TRIUMPH** could beat Bimota in the race to use a carbon-fibre swingarm on a production machine.

The British firm is developing a carbon unit for its T595 superbike with Californian designer Paul Taylor.

Triumph's single-sided swingarm is now being built in the U.S. while Bimota's version is still on the drawing board.

Carbon-fibre swingarms have already been used successfully in GP racing.

Cagiva developed a carbon item for the 500cc rocket that John Kocinski took to third in the 1994 world championship.

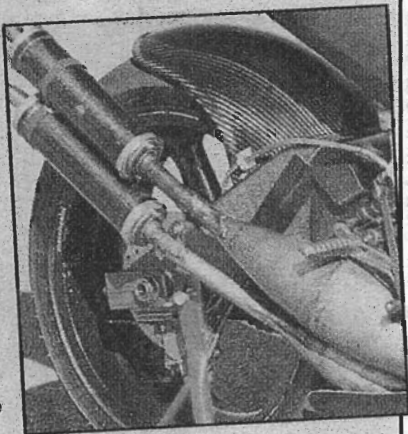
Carbon-fibre is around 30 times stiffer than aluminium of the same weight, so it's ideal for keeping the back wheel planted to the floor under enormous strains. Alloy swingarms are difficult to make strong enough for high-powered superbikes.

British-based carbon-fibre specialists Hejira Racing spokesman Derek

Chittenden said: "Carbon-fibre is the way to go in future. It outlasts steel and aluminium and if designed properly will not weaken through exposure to sunlight, salt or stone chips.

"But carbon swingarms will be a waste of time if they are not designed properly.

"Triumph and Bimota need to design totally new swingarms without relying on old designs - that's the only way they'll work."



■ CAGIVA CARBON: GP swingarm

# SNIPPETS

**STOLEN** — CBR600FM, H517 NOC, frame PC25 2003644, engine PC25E 2007267, Benetton colours from Birmingham on 5 Feb. Call 021 772 1166 or 021 766 6611 ext 2554.

**STOLEN** — CBR600FJ, E597 MVN, frame PC192100406, engine PC19E2104314, red/black, from Brandon, Co. Durham on 3 Feb. Call Durham Police on 091 3864222.

**INSURANCE** — long-established students' insurers Endsleigh Insurance (0242 258258) say they can see no justification for huge premium increases and will continue to offer cover at competitive prices for real people as well as students.

**FREE KAWASAKI LOCKS** — buyers of '92 model Kawasaki motocross or enduro competition bikes will each get a free lock, worth £43, from ABUS, Team Green's newest sponsor. If you've already bought your '92 bike you'll be sent details of how to apply.

**BE AN INSTRUCTOR** — Power SOM are offering tuition to those wishing to teach spotty



herberts how to ride bikes to CBT and part two standard. The course takes five days and costs £300, and you will need to have held a full bike licence for at least two years. Power School of Motoring, 47 Church Street, Werrington, Peterborough PE4 6QB (0733 571986).

**CARBON-FIBRE HEJIRA** — For 1992, Hejira will be campaigning a carbon-fibre-framed version of their Rotax-engined Sound of Singles racer (above). The bike, ridden by Martin Bartlett, weighs 120kg and gives 64bhp. Chassis kits will be available. Hejira Racing

Developments, Hillesdon Road, Gawcott, Nr Buckingham, Bucks MK18 4JF (0280 812152).

**RICH BASTARDS' CLUB** — the Professional and Executive Motorcyclists' Club is a country-wide group of chaps who go

for long rides out to expensive hotels, stay the night and then ride back again. If this is for you, contact Steven Bailey, 37 Daleham Mews, Belsize Park, London NW3 5DB (071 794 5879).

**MADMAN IN TWINS ASSAULT** — Neil Ludlow, fourth in the New Era Twins championship last year, is moving up to national level with an attempt at the Battle of the Twins on his almost completely bog standard GPZ500S. He will be competing against £20,000 Ducatis and other exotic machinery. Offers of money or messages of sympathy on 0386 831225.



# PANORAMA TECHNIQUE SoS A ASSEN



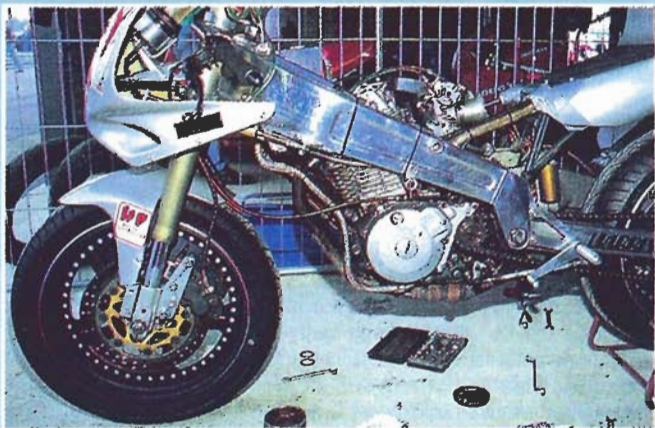
La moto du champion italien Luigi Dal Maso qui termine à la 8e place, utilise un châssis alu Moretti enserrant au plus près un moteur cinq soupapes de Yamaha XTZ 660 réalésé à 680 cm<sup>3</sup>, et des suspensions White-Power que l'on retrouve sur la majorité des autres machines.



Fabriquée en Angleterre et annoncée à 120 kg en ordre de marche, cette machine du team HRD adopte un cadre/bras oscillant carbone de marque Héjira et un Rotax 600 cm<sup>3</sup> de 66 ch. . Un châssis complet est facturé environ 55 000 F. Notez le réservoir additionnel d'huile sous le moteur.



Des Harris en veux-tu en voilà. Le constructeur des partie-cycles concurrentes des ROC en Grand Prix équipe bon nombre de teams SoS. La grise est à moteur Yamaha SRX dont la cylindrée est portée à 660 cm<sup>3</sup>. La bleu/blanc/rouge est mue par une mécanique de Suzuki DR 750 et termine 3e de la finale pilotée par le champion anglais David Morris. Admirez la propreté et la finition de ces machines.



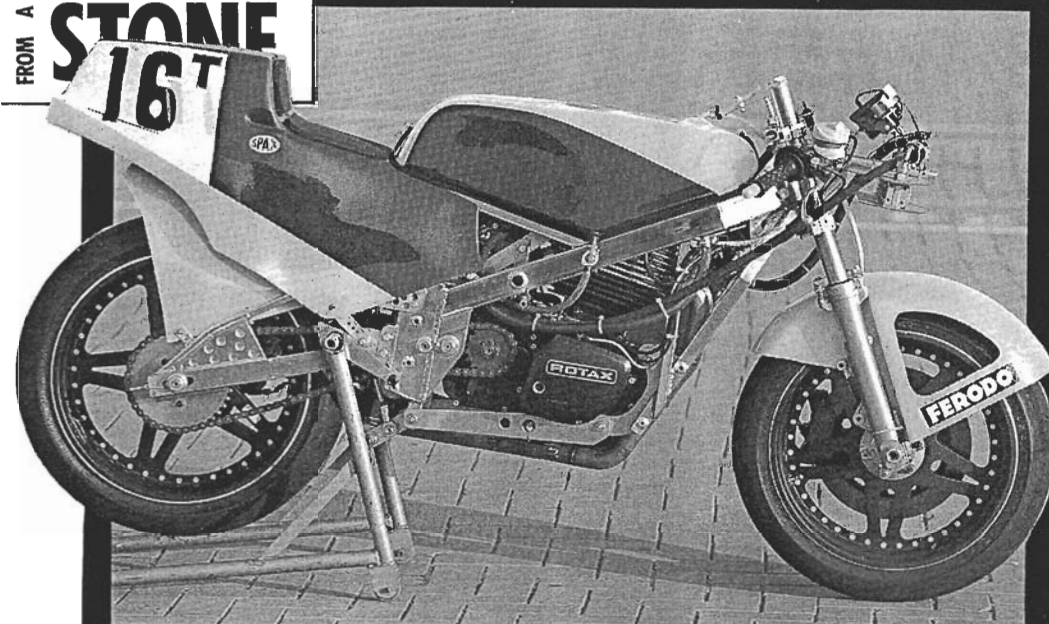
Autre grand spécialiste anglais de la partie-cycle, Tigcraft est largement représenté en SoS avec, à l'instar de Harris, différentes motorisations possibles. Dans sa robe rouge en partie ôtée et avec son numéro érotique, une Tigcraft Suzuki 800 DR, tandis que la version entièrement nue est propulsée par un moteur Yamaha XTZ 660 équipé d'un système d'injection électronique.











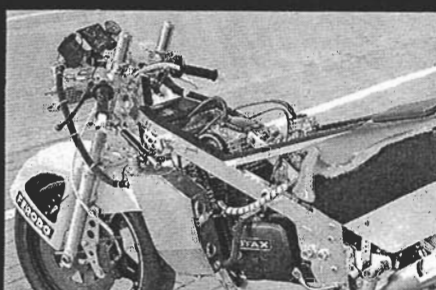
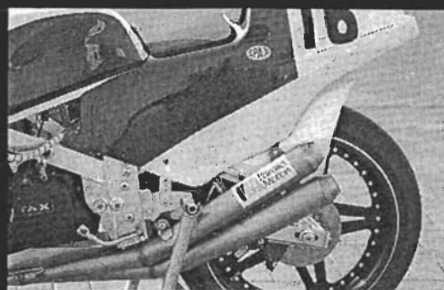
## HEJIRA 598

**Rider** — Steve Lanyman  
**Engine** — aircooled Rotax, four valve, single cam  
**Chassis** — Hejira steel cradle, adjustable wheelbase (52 1/4-54 1/2 in)  
**Front Tyre** — 130/60 17 Dunlop slick  
**Rear Tyre** — 160/60 17 Dunlop slick  
**Front Brake** — Hejira 300mm disc, Lockheed caliper  
**Rear Brake** — Hejira 195mm disc, Lockheed caliper  
**Front Suspension** — 38mm Marzocchi forks  
**Rear Suspension** — Spax shock  
**Output** — 60bhp at rear wheel (estimate)

This race was entered by the Hejira team mainly 'for fun'. They also brought along Stuart Harvey on his privately entered Hejira 500 — and proceeded to have a ball.

Steve Lanyman finished fourth and Stuart Harvey twelfth, although preparations seemed to be hampered by frequent trips to the supermarket for more crates of beer. They were the best prepared team in the paddock in this respect and always had one to spare for a thirsty journalist. Cheers lads.

The Hejira spec motor Rotax in the Hejira spec frame was consistently one of the fastest singles past the radar — 116.5mph.



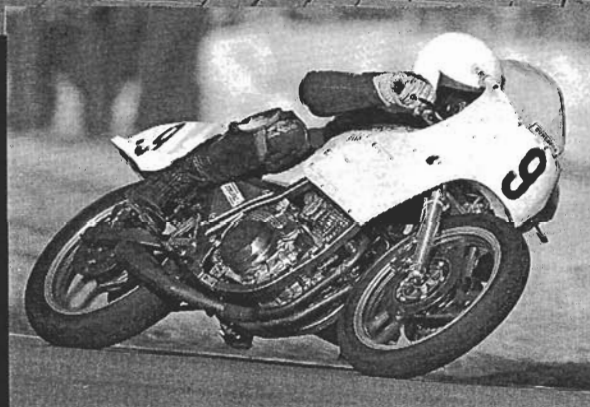
## YAMAHA SRX

**Rider** — John Laker  
**Engine** — SRX600 Yam  
**Chassis** — standard SRX with bracing around headstock and swing arm  
**Weight** — 293lb  
**Front Tyre** — Avon 110/70 18 AM22  
**Rear Tyre** — Avon 130/70 VB18 AM23  
**Front Brake** — standard (Goodridge hose)  
**Rear Brake** — standard  
**Front Suspension** — standard  
**Rear Suspension** — Hagon gas shocks

John Laker's budget special SRX must have been the best value for money 'racing' bike on the grid. Costing less than £2,000 including a season's tyres (two sets of Avons, track compound AM22/23). It finished joint fourth in the UK 'SOS' championship and fifth at Assen.

Unwilling to give away the exact specifications (would you?), all he would say was that it was "about 630cc" and had a compression ratio of "approximately 12:1". The bottom shelf of the engine has been left standard whilst the top half has standard cams and exhaust valves but enlarged inlet ports and a polished head — "My dad's mate makes false teeth and we borrowed his polisher over a weekend, did the head to our spec and returned it in time for him to start work on the Monday". A touch of the Dr Johns perhaps.

Top speed: "Nearly fast enough." My favourite bike there.



Red lorry, yellow lorry. John Laker's 'standard' SRX blitzed most of the opposition to finish fifth — on road tyres too. If only Yamaha had made them like this.



# FRAME & FORTUNE

## Reasons to build a special:

- It's a fun and rewarding hobby (for all the family)
- It can be cheaper than buying a new bike (but not necessarily)
- It can be a better bike than a new one (but not necessarily)
- It's easier than you think (but not necessarily)
- It's your bike more than a mass produced one
- It gives you an excuse to spend all your time in the garden shed and not suffer talking to the wife/girlfriend
- You can get it featured in PB and win undying fame
- Your name is John Bloor

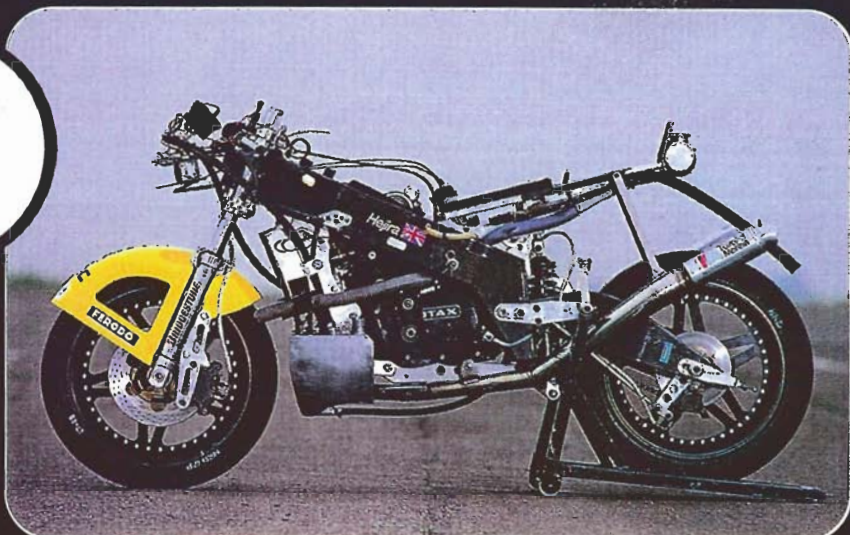
## Reasons not build a special:

- You're too lazy/haven't got the time/are a couch potato
- Jap frames are perfectly adequate, thank you
- You're too scared to pick up the phone and talk to people who know more than you do
- You're mechanically incompetent (not necessarily a disadvantage, this)
- You bought this magazine by mistake and really wanted Train Spotters Monthly

## NEXT MONTH

The smaller players in the frame game: who they are, where they are, what they cost and what they can do.

Below: Hejira's carbon fibre Rotax. In addition to the carbon fibre frame and swing arm seen here, Hejira are working on teardrop-shaped carbon fibre forks. The rider, we are reliably informed, will remain flesh and blood.



Right: Derek Chittenden, owner of the Hejira empire.



## Hejira

Contact: Derek Chittenden

Address: Manor Farm, Gawcott, Buckingham

Tel: 0280 812152 for price list

Premises: series of tatty farm buildings belie the high-tech race shop within. Workshop is more cluttered

Employees: none

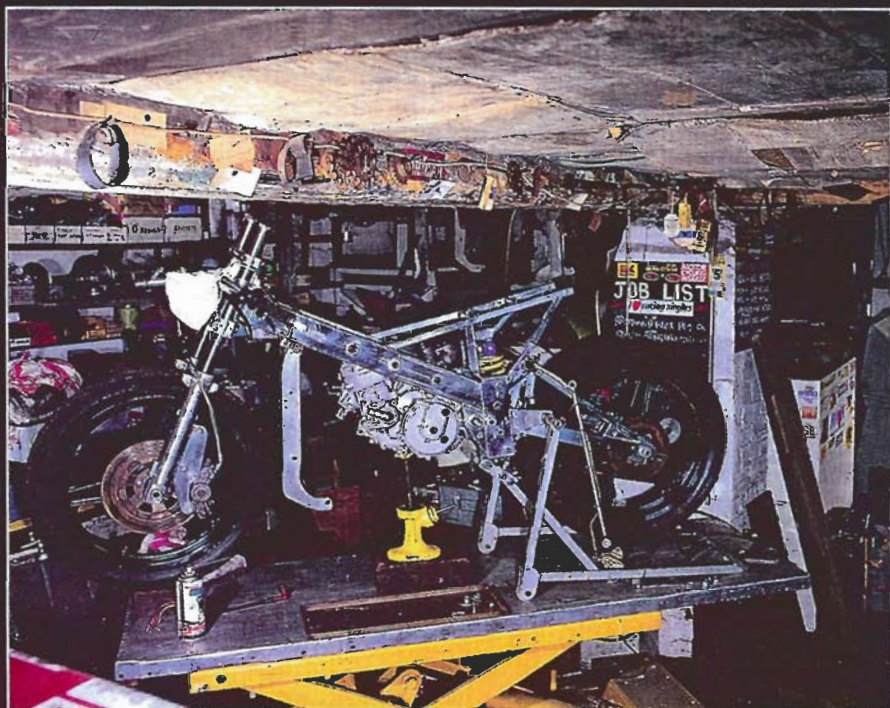
Coffee: Mellow Birds

Of the 23 steel twin spar frames Hejira built last year, three were for the road and the rest were used in various racing series. Derek says that most of the frames were for YPVs, but he also made eight steel tube perimeter frames for 1100s.

Hejira are best known for their work with carbon fibre materials — they competed in SOS racing last year with a carbon fibre-framed Rotax bike. A full description of their services is given in JR's carbon fibre feature in February's PB.

Like the other frame makers, Hejira will undertake any one-off engineering work from making footpegs to producing a complete bike. A Hejira frame kit includes their steel twin spar frame, swing arm and all brackets and mountings, and costs £1,885 for the road depending on spec. A complete frame kit for the road, which includes shock, tank, seat and fairing, will cost £2,757. Race kits cost £200 less.

Hejira also make petrol tanks, fairings and any other part you care to name.



Above: Hejira's steel, twin spar frame wrapped around a Yam single in Derek's cluttered workshop.



# High More

Life on this planet is based on carbon so someone was bound to find a good use for it sooner or later. Now you can make motorbikes from it and lose weight at the same time.

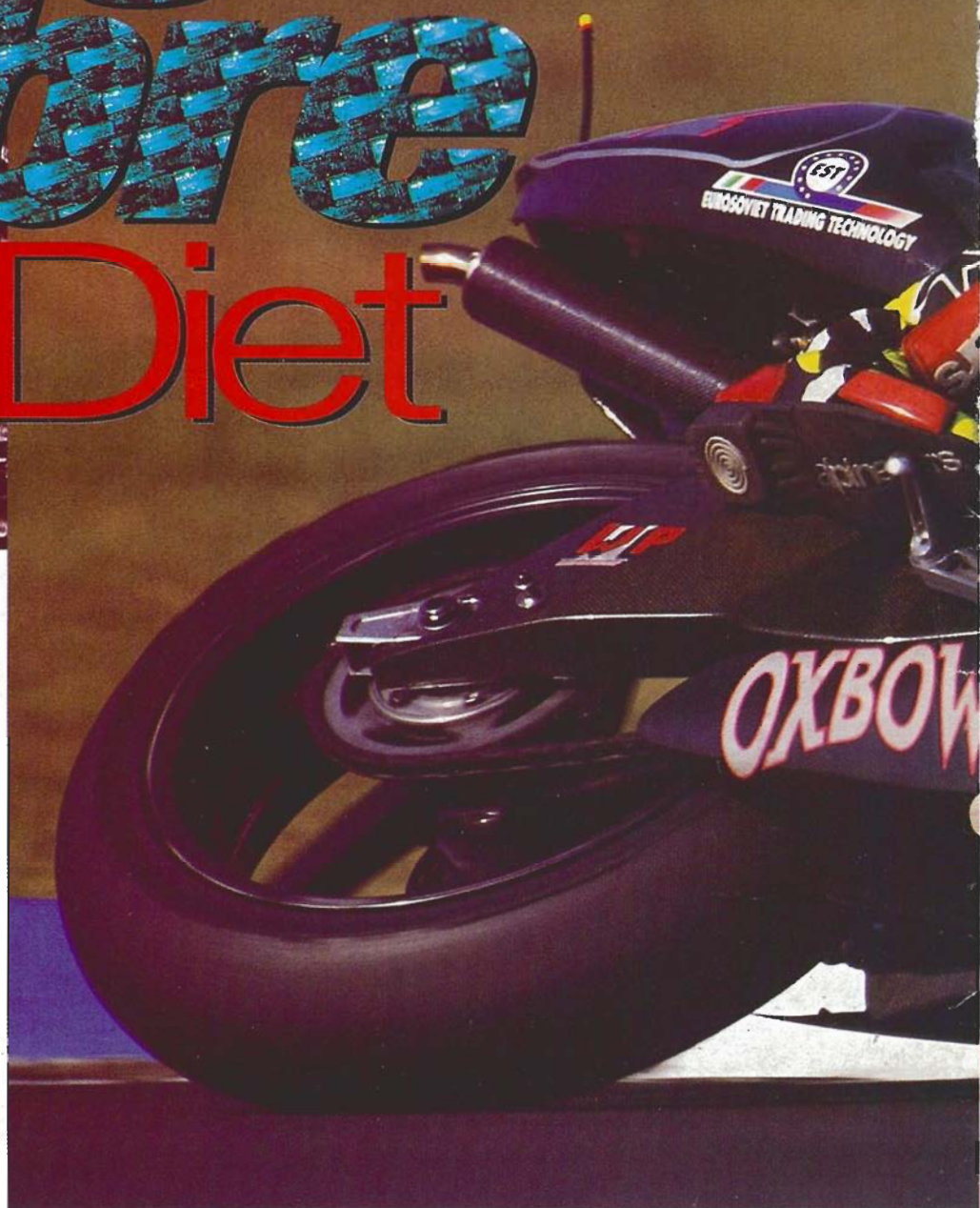
## Diet

**C**omposites go back a long way: wooden cart wheels with iron hoops shrunk over them probably qualify. Coach-built cars, metal skins stretched over wooden formers and early aircraft, whose fabric was doped tight across wooden bulkheads, both meet the dictionary definition of composites.

The engineering definition is more specialized. It involves different materials that are thoroughly mixed but still keep their own identities. Like pebble ballast in concrete. While the sand, cement and water dissolve irretrievably together, the pebbles, although bonded firmly into the material, remain pebbles.



▲ There's less scope for radical chassis in WSB but it didn't stop Foggy using PVM's composite wheel



The first composite used in vehicles was probably the woven fabric plies that reinforced rubber tyres. Here are two concepts: first a directional fibre or ply (which is very tough in one direction yet flimsy in others) and second, a very strong bond between two materials, both neatly demonstrated by plywood. Successive layers are glued together with the grain running across the previous layer's. The result is equally strong in all directions. More, its strength can be tailored by adding layers and by playing with the cross angle.

The same principles give all composites an advantage over straight materials.

The things we recognize as composites — glass fibre, carbon fibre, etc — also go back

a long way. The first was possibly a prototype fuselage for a 1941 Spitfire, made of resin reinforced by flax cloth. As with modern plastics, the parts were pushed into a mould under pressure and cured at high temperature. In those days they used a phenolic resin (called Aerolite) and the motive was to save on the aluminium alloy which was normally used for the aircraft skin.

Aero Research Ltd at Duxford had developed Aerolite, a urea-formaldehyde glue, for aircraft construction. It was used in the (wooden) de Havilland Mosquito. They went on to produce metal-to-metal adhesives, Aeroweb honeycomb, pre-impregnated fibre materials and honeycomb sandwich panels. During the '50s the





company became part of the massive Ciba Geigy organization. It's still at Duxford but now it's called Ciba Composites.

These days they're more likely to use a range of epoxy resins — although other types are still listed — because epoxies can be tailored to change the balance between shear strength, resistance to peeling, tensile strength and toughness. The material can be matched to the job.

The pre-impregnated sheets — called prepreps — made by Ciba contain glass, carbon or aramid (Kevlar) fibres with the right amount of resin. The fibres can be woven or unidirectional, and come in various thicknesses. Different materials can be combined in the same moulding.



▲ Grand prix bikes enjoy a continual flirtation with composites. At the moment it's in an extended foreplay stage. Sometimes the Prillers come out with carbon swing-arms, sometimes they don't

◀ Carbon needs hard points bonded in to pick up suspension loads and carry things like footrests



# High Fibre Diet

Glass is the cheapest and the heaviest. Carbon is the strongest, lightest and most expensive.

Aramids have good scuff resistance and come somewhere between glass and carbon in most other respects.

All are better than metals in fatigue strength and corrosion.

High strength to weight is the main thing on offer. To get an idea of the weight, carbon prepreg sheets range from 110 to 300 g/m<sup>2</sup>. The paper for our front cover weighs 135g/m<sup>2</sup> but it's a bit heavier once it's got the ink on it.

The tensile strength of carbon laminates ranges from 440 to 2700N/mm<sup>2</sup> and the density (weight) is between 1.45 and 1.80g/cm<sup>3</sup>. This compares to, say, cast aluminium alloys, with tensile strengths between 180 and 330N/mm<sup>2</sup> for densities of 2.6 to 2.85gm/cm<sup>3</sup>. Typically, you could achieve something like five times the strength of alloy with 70% of the weight — which implies you could have the same strength for only 14% of the weight.

As steels are about three times as strong as alloy and three times as heavy, the strength/weight ratios stay the same. For 70% of the weight of a steel component, carbon fibre could be about 50% stronger.

Things are never quite so simple. This is only tensile (pulling one end away from the other) strength. Laminates don't do so well when they are twisted or bent in a way that

tries to unpeel the layers. And the final weight is usually more than the density suggests because composites need 'hard points' — metal inserts or bushes — to carry loads without causing local damage, or to join them to load-bearing, metal parts. But the numbers give a clear picture of the potential on offer.

The next question is where to use it? Engine parts are limited because most of the epoxy resins can't be used at high temperatures. Some other resins will go high enough but aren't particularly tough. Ciba rates the materials on a scale according to how much impact it takes to delaminate the material and the load it will carry after such a blow. On a scale of 1 to 10, the best high temperature performers score 1 and 3.

However, some parts don't get particularly hot and many don't carry big loads. Wherever you see magnesium alloy engine covers, you could have carbon-fibre and three-quarters the weight.

Carbontek are working on a range of CBR600/900 covers, with YZF and ZXR to follow.

Bodywork is an easy option but, given that thin glass-fibre is already light and is the most likely thing to get damaged, carbon fibre doesn't save much weight and is expensive. Structural bodywork, ie the seat, makes more sense.

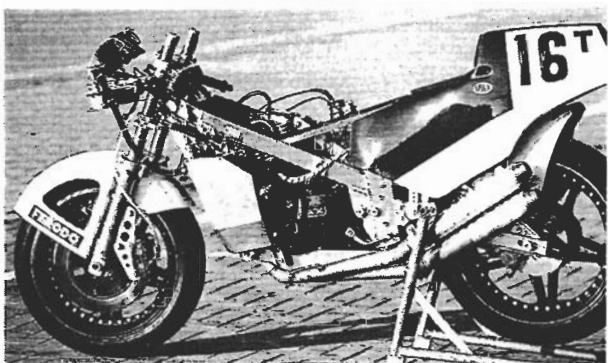
Frames, swing-arms and wheels make more sense still. It's easy to get the required strength so the rest of the design can concentrate on lightness and stiffness.

Lightness is critical to performance in all



▲▼ Hejira built their first carbon frame in 1991, using the same engine, running gear and geometry as their steel-framed racer. It meant that all parts were interchangeable and gave immediate, back-to-back comparisons. A simple test rig showed that the composite frame (below) was 20 times as stiff as the steel item





year's Hejira Racing Developments team with its carbon fibre frame.

Why carbon fibre you ask, and he's off again. With some people, the waffle cloaks ignorance or vagueness, but not here: "I'm a great believer in basics" he says, before filling you in on how suspension ought to work.

Important that; frames need to be stiff so the suspension can work properly he bubbles; the essence of his argument is that there's no point in building a frame that deforms and alters the attitude of bike and wheels. Good basic stuff.

Function over form is the unspoken motto; Derek's bikes have been criticised for being ugly. The wind-tunnel developed fibreglass he favours isn't beautiful, but it does its job. Nor are the welds on his steel frames works of art. Look at the frame of the 1605cc Hejira monster Harley he built for John McIntyre (*SuperBike* Oct '91) and you're struck by the apparent crudity of the steel box-section frame. Effective? Undoubtedly. Beautiful? Definitely not.

"Why bother with cosmetics when you're going to cover it with bodywork? My hero is the guy who designed the 350 Guzzi: 160mph from only 40bhp. He thought of everything, all the ploys to save weight, then he went mad with a V8." A worshipper at the altar of minimalism.

Derek admits that other frame builders have come close to perfecting aluminium frames, but says he never intended to go that way. "From 1983, it was always my plan to go from steel straight to carbon fibre." And he has.

The standard steel Hejira frame is a basically simple, but brutally stiff design using as many straight lines as possible, because straight is stronger than curved,





What happens to the marvellous "specials", product of hundreds of hours of loving toil, that appear at shows through the years? Like this 1605cc Hejira Harley that John McIntyre displayed at Ally Pally in 1990? (Mr McIntyre had scribed on the end of the polished crankcase a brief message: "Is there life after death? Fxxx with this bike and find out." A warning; or an invitation?)