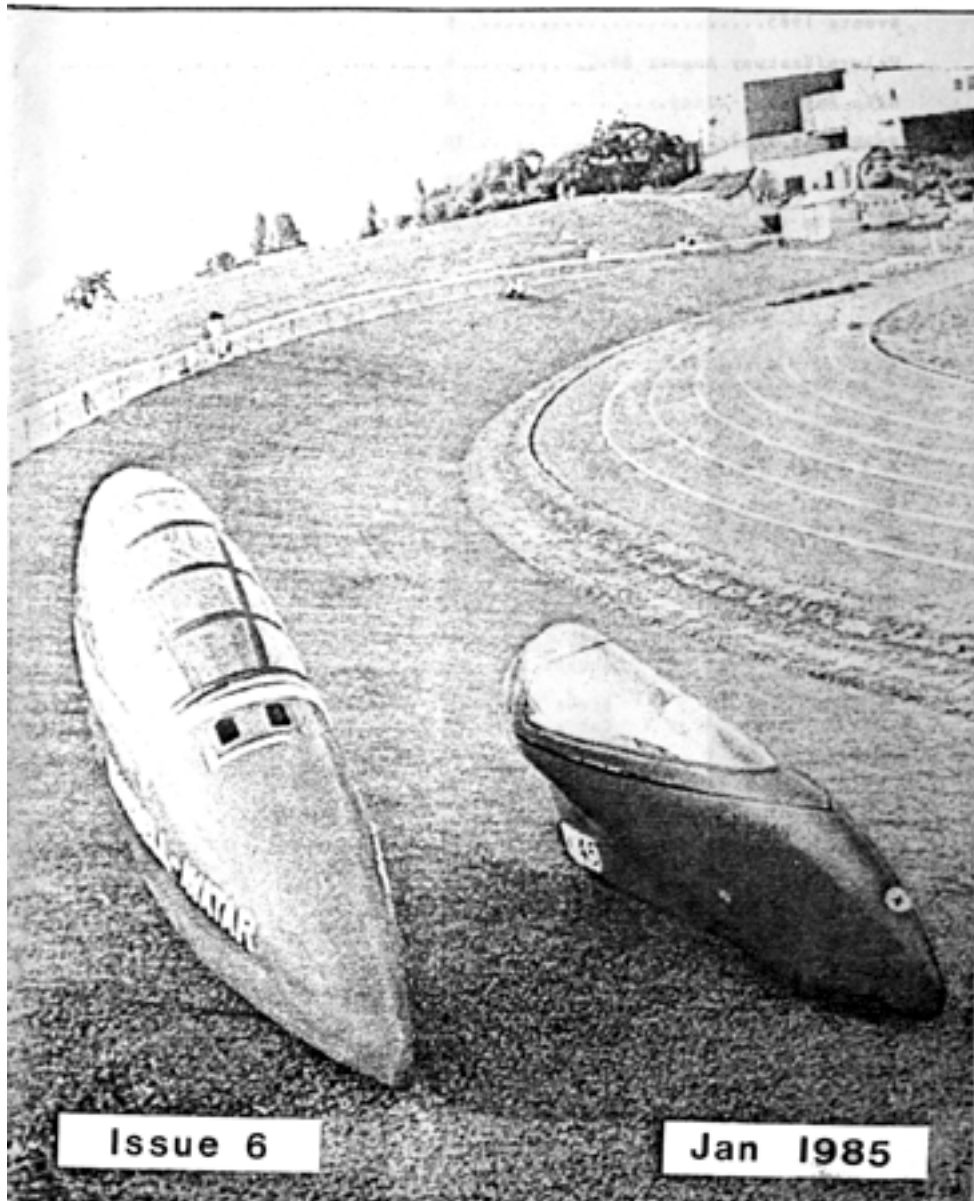




The British Human Power Club



Issue 6

Jan 1985

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Enclosures:- Subs Reminder

Letters for publication, controversial or otherwise are always welcome
- as are longer articles.

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O B J E C T I V E S

The British Human Power Club was formed to foster all aspects of human powered vehicles (air, land, water) for competitive, recreational and utility activities. To stimulate innovation in design and development in all spheres of HPV's and to promote and advertise the use of HPV's in a wide range of activities.

E D I T O R I A L

Did you see Mike Burrows chatting away on "Superstore" the other Saturday? And did you hear "Slasher" Slade* drop the 'Bean' and slide across the car park at Television Centre? Nice piece of publicity though, and handled sympathetically by John Craven.

We tried Steve out on the Bean for the local Christmas '10'. It wasn't too bad on the way out apart from the rain, but having dropped the Bean a couple of times at the turn, the wind got up and he packed it up at four miles from home in a cloud of steam. (He was probably the only one who wasn't numb with cold.)

* Hereinafter called Steve.

Practical Vehicle Rules

Your competition sub-committee has finalised the 1985 practical vehicle rules. These are included in this issue together with the preamble which gives some idea of the thinking behind the rules.

You will see that the electrically assisted vehicles are included as a class but that they are constrained by the same regulations as Sinclair. It will be fascinating to see if the Sinclair comes off. If it does, people will get used to seeing HPV like machines on the road in large numbers. We may need to have some fancy electronics to make sure they don't go more than 15mph battery assisted!!

Introduction to HPV's

My correspondence of the last year has led me to the conclusion that what is needed is an HPV booklet. This would serve two purposes.

1. Lighten my load.
2. Give us a work which we could send to schools and colleges to encourage the building of HPV's.

The following headings suggest themselves (not necessarily in order).

Introduction
 Bibliography
 Where to get it
 Practical Vehicle Regulations
 Details of Club
 Examples of types with pictures and explanation.
 Hints on construction

Suggestions welcomed.

Ed Roeters of the INPVA has most kindly sent me the American beginner's guide to HPV's. Very useful.

Bristol Cycle Show - 2,3,4th Nov.

The Club was represented at the Bristol Cycle Show in November. The Speedys of Mike Burrows and Richard Ballantine, the Hawker Hudspith, Peter Ross's Trice, the Bean and a couple of Pedalos were shown, and aroused a fair amount of interest on the Saturday - with Mike Burrows giving free rides round the stand. Sunday was overpowered by the glamour and balletic skills of the BMX boys.

However, we did pick up a couple of new members and I think Mike found another customer!

May I wish you all a happy new year with the hope that 1985 will provide us with another most enjoyable season.

.....

S T O P P R E S S

1. Herts Wheelers have invited us to have a go round Hertford Town Centre on Sunday April 21st. The event to be for paired tricycles and four-wheelers (no Beans or Bluebells! Shame!!). BCF licence not required. More details later.
 2. HPV Festival at Milton Keynes. There will be an air leap from a ramp 600mm high, the object of which is to see how far suitably winged vehicles remain aloft. Should be interesting.
 3. Peter Selby will have available copies of an extremely interesting 8-minute video of the Thamesmead event. Ten pounds is the suggested price. Contact Peter Selby on 01-852 0840.
 4. 1985 Subscriptions due. Please send your five pounds to Hon Treasurer, Steve Hudspith.
-

1985 EVENTS

<u>DATE</u>	<u>VENUE</u>	<u>ORGANISING SECRETARY</u>
Weekend May 25/26/27	Eastway/Welwyn The Eastway part of the programme to be in celebration of the 10th anniversary of the circuit's existence.	Mike Burrows
Sunday June 23rd	To be decided	John Kingsbury
Sunday* July 14th	M.I.R.A. (Nuneaton) in conjunction with the Battery Vehicle Society (BHPC to provide 200m timing gear)	Peter Ross
Sunday August 25th	Provisional - Imperial War Museum Duxford (near Cambridge) in conjunction with the B.V.S.	Peter Ross
Saturday August 31st	Sponsored Human Power Festival Milton Keynes	Peter Selby
Sunday Sept. 1st	LAND, AIR, WATER and the 1985 PRACTICAL HUMAN POWERED VEHICLE COMPETITION	
October	Possible Imperial College event	

* If the results here warrant, we will try to organise an attempt on the Kremer Prize in the cool calm autumn.

Each event will be open to all HPV's (singles, multiples, bikes, trikes and quads). Allocation of prizes will be at the discretion of the organiser and will be dependent on the number of entries to each category.

A total of three hundred pounds from club funds will be made available and shared between the organisers of the BHPC events.

WELWYN/EASTWAY August 18/19

We had an excellent weekend organised by Mike Burrows with generous help from Les Jordan. Mike supplied a selection of hand crafted mugs as prizes, a pleasing and novel idea with "firsts" and "unfirsts".

I have a video snippet of the Hewitson Kinesis rolling down the banking while he was waiting for his partner in the Madison event at Welwyn!

It was good to see the Bean giving Bluebell something to think about (we don't know yet how much faster the sawn down Indy Bluebell is.)

J.K.

RESULTS

Welwyn 84 18th August

One lap sprint

1.	D. Adamson	Bluebell	47	26.92
2.	N. Hewitson	Kinesis	8	28.85
3.	M. Kingsbury	Bean	45	29.74

4120m Pursuit

1.	D. Adamson	Bluebell		4.32.67
2.	M. Kingsbury	Bean		4.35.49
3.	A. FEGG	Speedy	19	5.15.94
4.	M. Burrows	Speedy	34	5.26.87
5.	N. Hewitson	Kinesis		6.00.32

Half Hour Madison

1.	D. Adamson/Piers Gaffney	Speedy	15
2.	M. Burrows/A. Hingley	Speedy	7
3.	A. Fegg/M. Bond	Pedalo	54

Quarter Hour Scratch Race

1. D. Adamson
2. M. Kingsbury
3. A. Fegg
4. M. Penfold '8'
5. M. Burrows

Eastway 19 August

One lap Sprint

1.	Doug Adamson	Bluebell	2.06.11
2.	Steve Slade	Bean	2.09.78
3.	Andy Fegg	Speedy	2.11.97

Five lap Le Mans Start

1. D. Adamson
2. S. Slade
3. A. Fegg
4. M. Burrows
5. B. Hingley

Half Hour Relay

1. D. Adanson/Gary Thompson
2. S. Slade/M. Bartlett
3. M. Burrows/M. Dixon
4. A. Hingley/M. Bond
5. A. Fegg/P. Ross

Bike UK Half Hour Handicap

1. D. Adanson
2. A. Fegg
3. M. Bartlett
4. M. Bond
5. G. Thompson

TAILPIECE

Thanks again to everyone for turning up to ride and to do most of the work that I should have done. I don't know what we would do without Lea Jordan's experience and even Slasher's beep beep (computer? ed.) came in handy!

First lesson learnt would seem to be do not ride in events you are trying to run. No. 2 try to get some sort of time scale worked out in advance. Three, do not try to run events during the holiday period. Four, all machines called Bluebell should carry a sack of cement around to even things up. Five, if we want any HPV track records, we must find a smoother track.

I hope you all enjoyed the event as much as I did, it seemed to go well. Maybe if we schedule for early next year, we could get a bigger field which would help cover costs.

Mike Burrows

I think we should probably charge a little more entry fee (ed.).

T W E L V E G O W E S T

A Pilgrimage to the Home of the HPV

By Mike Burrows

By virtue of a fortuitous series of events, 1984 saw three teams with the time and money for a trip to the USA for the IHPVA championships at Indianapolis - Speedys by virtue of the Canadian prize money, Poppy Flier courtesy of a generous sponsor and Bluebell by dint of Derek Headen's hard work, plus our roving reporter Richard Ballentine and "assistant".

The Bluebell and Speedy teams had arranged to travel as a group on Virgin Atlantic who had agreed to carry the machines free, and as they are just about the cheapest anyway, this seemed a good arrangement. Doug Adamson and I flew ahead to arrange transport. This ended up as a "U-Haul" trailer and a Lincoln, and although it seemed a little extravagant it is the cheapest way to carry six people and four HPV's on a 1,600 mile round trip. Also, while the Lincoln was the worst car I have ever driven, being without any sensation you are actually driving a car, this turns out to be its good point as after 500 miles a day you still had no sensation that you had driven a car. Poppy went in a similar way rooftopping the Flier and Richard flew.

We all arrived safe after a day and a half of fast food and motels for signing on where we could "buy" our sweat shirts and collect our Friends of the Earth inspired race numbers (cardboard).

Thursday morning saw Andy and I pedalling the Speedys into the town centre for a publicity parade. The natives were for the most part unimpressed, but there were no real problems except the size of the potholes. The centre of Indy was almost attractive with a nice paved shopping street and covered market, not actually pedestrianised you understand, just paved.

Afternoon and on to the famous raceway for practice. This really is a shrine to the car, marble slabs and all. It is however just what we needed, smooth as silk and two and a half miles round. Practice was just like always - tiring. In the evening we had a very interesting symposium with talks on the Flying Fish "water bike" and the Olympic bikes.

Friday morning bright and early (for some) and the event started in earnest with the 200m sprints. Most design types were represented, although faired bikes were to the fore, both in performance and numbers, and big multis almost missing except for the rebuilt Pegasus now with three wheels but still four riders being left to hold the fort with a respectable 53mph suggesting excellent mechanics.

Doug in Bluebell II was very unlucky, having a lot of chain problems and managed only one good run from four attempts, but at 55mph setting a new record for bikes and giving him the lead for 45 minutes until Lightning x2 did a 57. Poppy had a disappointing time of it. Dave Marsh did 48mph. Maybe they cut it in half one time too many.

The organisers had said there would be time for the faster machines to make attempts on the Du-Pont prize after the event proper. However as there were 99 entries and some 80 actual competitors there, with three minutes between their three runs, it does not need a "Spectrum" to arrive at 12 hours running time. As we only had eight hours on the track, this obviously could not be done.

Friday evening was at the Major Taylor (Famous black cyclist circa 1900) Velodrome for the 400m pursuit, plus a regular bike meet. This was the most enjoyable of all the events, and watching Fred Markham in Easy Racer break his own world record at 40mph hardly straying from the red line was inspiring. Doug got his own back when he took on a team of four cyclists and beat them by all but three laps.

Saturday was at Raceway Park and was fairly forgettable. The track was uninteresting and the racing dull and lacked variety. It was cold and we were all tired out. The evening's club meeting was even more forgettable.

Sunday was at Eagle Creek Park the best venue, a large wooded park with a circuit not unlike a long Eastway including an even worse corner! Andy enjoyed himself taking a third and fifth, Doug could only manage two fourth places being a bit under the weather from too much fast food and indifferent organisation.

Finally the commuter vehicle rally, and it was my turn to be depressed. After Canada it seemed the IHPVA was going to take this event seriously, instead it was just another "add-on". There was no static judging, the course was less than demanding, the rules either ridiculous (ie waterproof clothing counts as waterproof bodywork) or totally subjective. Speedys came first and thirteenth?? overall, while there was plenty of innovation from the builders (it would be nice to see more of Cole Dalton's "prone" in Human Power), the organisation seemed stale and the events lacked variety. All events were dominated by fast faired bikes and the whole emphasis of the event seemed to be on technology and little or none on enjoying what we are doing. The IHPVA also seems to be taking itself too seriously, forgetting maybe that all we are building is "bicycles with bodies". Hopefully the experience of Thamesmead will cause some re-thinking of objectives.

And finally, a word about the host country. There are obviously good and bad ways to see a country and I would hope that ten days of fast food and motels is about the worst. If it is not, I would suggest they ask for the blankets back.



The British Human Power Club

1985 PRACTICAL HUMAN POWER VEHICLE COMPETITION.

(Based on rules devised by Dennis Taves of Hull, Quebec.)

We are looking for a "better bike" (with any number of wheels) which will hold its own in today's traffic but which will improve on such things as weather protection, performance, braking, stability, visibility and comfort without losing too much of the bike's obvious convenience, low weight, low cost and handiness.

This will almost certainly involve compromises in one area or another and it may well be that there are as many types of practical vehicle as there are types of bikes.

EVALUATION

Events will be held which will set a balance between design, safety, construction and performance.

The overall winner will be the vehicle with the highest number of points.

CLASSES.

There will be three categories: (Prizes to be determined.)

1. Single rider vehicles
2. Multi rider vehicles
3. Electrically assisted vehicles which must comply with current regulations, i.e. 0.2 kw for bicycles and 0.25 kw for tricycles with power assistance up to a maximum of 15 mph and minimum of 12 mph. Minimum battery weight 9 Kg.

CONDITIONS

1. Each vehicle must be in the same physical condition throughout the competition, i.e. no parts, fairings etc may be removed or added.
2. All riders must wear protective headgear.
3. NO vehicle will be allowed to compete which is unable to signal its intentions to other road users by hand or flashers.
4. Entry fee - to be determined.

EVENTS SUMMARY.STATIC JUDGING. (40%) 300 points.

This will be performed by not less than two competent judges selected by the B.H.P.C. Each judge will examine and test each vehicle and award points in accordance with the criteria listed.

DRIVING TEST (30%) 225 points

A series of tests to demonstrate acceleration, manoeuvrability, carrying capacity and braking.

Scoring: In order to get a score in keeping with the performance of the vehicle rather than to its position in the results, the scoring will be as follows:

Fastest rider 225 points

$$\text{Others} - \frac{(\text{Fastest Time})^2}{(\text{Time})^2} \times 225 \text{ points}$$

This will mean (for instance) that a rider 10% slower than the fastest will score $0.9 \times 0.9 \times 225 = 182$ marks.

A rider who takes twice as long will score $0.5 \times 0.5 \times 225 = 56$ points.

SPEED TRIAL. (20%) 150 points

The purpose is to evaluate the high speed performance of the vehicle. The type of event will be determined by the venue and may be either a time trial, road race, or a 200 metre sprint with adequate run up.

Scoring will use the same formula as the driving test but with the maximum of 150 points to the fastest driver.

RALLY TOUR (10%) 75 points

This will be in the nature of a non competitive goodwill tour round the roads of the locality. This is to demonstrate the practical nature of the vehicles. The passage of the vehicles will be checked by marshalls.

Scoring: Successful completion - 75 points.

STATIC JUDGING300 POINTS

1. Appearance and finish 20
2. Ease of entry of rider
(Deduct 2 points for every 5 seconds over 20 seconds) 20
3. Lights
Effective lights front and rear with reflectors on all sides 20
4. Eye Height of rider above ground when seated in vehicle. Deduct 2 points for every inch below 36". 20
5. All round visibility by rider.
360° visibility to be demonstrated. 5 points for each 90° with or without rear view mirror(s) 20
6. Weather protection
Is the vehicle fully protected from driving rain or snow and tyre spray? Exposed head to be accepted in lieu of practical windscreen wiper or limited screenless area. (Weather protection to be integral part of vehicle construction). 20
7. Safety and protection in collision. Lack of sharp projecting edges liable to injure rider, pedestrian or other road user. 20
8. Visibility of vehicle
Is the vehicle visible to others? Brights colours etc. 20
9. Brakes
Are they effective and do the mechanisms and levers feel strong and secure. Is there an effective parking brake. 10
10. Comfort and ergonomics
Is the vehicle comfortable and are the pedals and controls convenient to use. 20
11. Suspension and road insulation.
Are there means of protecting the rider from road shock? 10
12. Baby or child.
Can a baby or child be carried safely in the vehicle. 10
13. Load.
Is there a secure compartment for the carriage of two 375g cornflake packets and a 5lb bag of potatoes. (Five points each) 15

- | | | |
|-----|---|----|
| 14. | <u>Smart clothes protection.</u>
Is the rider protected from oily chain or rear wheel spray. | 15 |
| 15. | <u>Warning device.</u>
Is there an effective bell or horn fitted? | 10 |
| 16. | <u>Locking.</u>
Shopping only 5 points.
Shopping and vehicle 10 points | 10 |
| 17. | <u>Repairability.</u>
Can punctures or other minor faults be repaired easily. | 10 |
| 18. | <u>Handiness.</u>
Is the vehicle convenient to park, store, take in lifts etc. | 10 |

DRIVING TEST (Against clock)225 POINTS

The course will depend on the venue.

The rider will have to perform the following:

1. Enter vehicle unaided.
2. Negotiate 20 bollards.
(+ 5 seconds for each bollard hit).
3. Cross step 1 metre x 1 metre x 50 mm.
(+ 10 seconds for each grounding).
4. Negotiate 360° clockwise turn on wet road.
5. Dash to 180° bollarded turn with 30ft turning circle.
(+ 5 seconds for each bollard hit).
6. Stop, exit vehicle, stow 3 items of shopping.
(+ 15 seconds for each item not stowed).
7. Enter vehicle and dash for line via 360° anticlockwise on wet road.
8. Brake astride finish line.
(+ 5 seconds for each metre before of after line).

ELECTRICALLY ASSISTED PEDAL CARS

This category has been included in the 1985 Practical Vehicle Rules. We decided to restrict the entry to vehicles which comply with the current "Sinclair" type regs, because to do anything else could possibly result in a high speed NPV with miniature battery and motor, which could out-perform any battery powered entry.

Below are what appear to be the relevant bits and pieces from the appropriate legislature (for which the BHPC cannot be held responsible!!)

Statutory Instrument No. 1168/1983

4. The requirements referred to in Regulation 3 above are that the vehicle shall:-

- (a) have a kerbside weight no exceeding-
 - (i) in the case of a bicycle, other than a tandem bicycle, 40 kilograms, and
 - (ii) in the case of a tandem bicycle and a tricycle, 60 kilograms;
- (b) be fitted with pedals by means of which it is capable of being propelled; and
- (c) be fitted with no motor other than an electric motor which-
 - (i) has a continuous rated output which, when installed in the vehicle with the nominal voltage supplied, does not exceed-
 - (A) in the case of a bicycle, other than a tandem bicycle, 0.2 kilowatts,
 - (B) in the case of a tandem bicycle and a tricycle, 0.25 kilowatts; and
 - (ii) cannot propel the vehicle when it is travelling at more than 15 miles per hour.

Tom King
Secretary of State for Transport.

1st July 1983.

Statutory Instrument No. 1176/1983

4. No person shall ride, or cause or permit to be ridden, on a road a pedal cycle to which the Electrically Assisted Pedal Cycles Regulations 1983 apply unless it is fitted with-

- (a) a plate securely fixed in a conspicuous and readily accessible position showing-
 - (i) The name of the manufacturer of the vehicle,
 - (ii) the nominal voltage of the battery (as defined in the 1971 British Standard) of the vehicle, and
 - (iii) the continuous rated output (as defined in the 1971 British Standard) of the motor of the vehicle.

- (b) braking systems which are so designed and constructed that-
- (i) in the case of a bicycle they comply with the standards specified in clause 6 of the 1981 British Standard, and
 - (ii) in the case of a tricycle they comply with standards no less than the standards of braking systems fitted to a bicycle which comply with clause 6 of the 1981 British Standard;
- (c) a battery which does not leak so as to be a source of danger; and
- (d) a device biased to the off position which allows power to come from the motor only when the device is operated so as to achieve that result.

Requirements as to a pedal cycle to which the Electrically Assisted Pedal Cycles Regulations 1983 do not apply.

60. No person shall ride, or cause or permit to be ridden, on a road a pedal cycle to which the Electrically Assisted Pedal Cycles Regulations 1983 do not apply unless it complies with such of the requirements specified in Regulation 7 or 8 as apply to it.

7.-(1) Save as provided in Regulations 8 and 9-

- (a) every pedal cycle shall be equipped with at least one braking system;
- (b) every bicycle or tricycle the height of the saddle of which is 635 millimeters or more and every cycle with four or more wheels shall
 - (i) if it is so constructed that one or more of the wheels is incapable of rotating independently of the pedals, be equipped with a braking system operating on the front wheel or, if it has more than one front wheel, on at least two front wheels;
 - (ii) if it is not so constructed that one or more of the wheels is incapable of rotating independently of the pedals, be equipped with two independent braking systems, one of which operates on the front wheel, or it is has more than one front wheel, on at least two front wheels, and the other of which operates on the rear wheel, or if it has more than one rear wheel, on at least two rear wheels.

(2) The reference in paragraph (1)(b) to the height of the saddle is a reference to the height above the ground of the part of the seating area of the saddle which is furthest from the ground when the cycle to which the saddle is attached is vertical and the saddle is raised to the fullest extent compatible with safety and the tyres on the wheels of the cycle are fully inflated.

Item 8 refers to manufactured before 1st August, 1984.

Do not sell any of these machines to the public unless you have read British Standard BS 6102!!

Peter Ross has had experience of driving battery assisted vehicles through London and reckons they are excellent for traffic work and for taking the slog out of hills. We'll get him to tell us of his experience in the next issue.

Where to get bits and pieces - by Peter Ross
Part 3

I am indebted to member Paul Craig for the following information:

NON-FERROUS METAL - J Smith & Sons (Clerkenwell) Ltd.

A place that does everything except carbon steel in all shapes and sizes, e.g tube, rod, bar (3 shapes), sheet, extrusions, sections and angles in most combinations with aluminium, bronze, copper, brass and stainless steel. They also offer a range of services, the most interesting being casting. The big plus is that they will cut you any size/quantity you like, the only restriction being that if you buy just one item it will cost you £2.50 minimum. They have a dozen or so addresses scattered around the country.

London address: 42-54 St John's Square, Clerkenwell
LONDON EC1P 1ER Phone 01-253 5937

It is a good idea to phone orders in advance as there are no prices in the catalogue.

TRANSPARENT PLASTICS - DIY Plastics Ltd.

This mail order company offers standard size sheets or cut to your requirements in thicknesses from 6 mm right down to 5 thou. (1) in materials such as polystyrene, acrylic, PVC, polyester, polycarbonate and polythene. They would no doubt be overjoyed to inundate you with their catalogue, samples, order forms, special offers etc but if you can't face all that they do have about 5 shops in towns mostly in the South, although the free catalogue is quite useful.

Address: Lynton Road, Cheyney Manor
SWINDON, Wilts SN2 2NP Phone 0793-615311

ROD ENDS - Industria Engineering Products

Now that Huco have ceased manufacture of their excellent plastic rod ends an alternative may be these people who are the importer/distributors for Askubal Heavy Duty rod ends (West German), and it would seem that they have no minimum order charge/quantity, (Paul bought just four). All housings are metal and bearing surfaces are various combinations of steel or bronze or PTFE. Diameter goes down to 5 mm and the cheapest are about £2. Their free catalogue contains lots of applications information, specs and formulae.

Address: Industria Engineering Products Ltd., Eskdale Road
Uxbridge, Middlesex UB8 2SL Phone Uxbridge 37971

REYNOLDS TUBES - The Holdsworth Co. Ltd.

For the price of an S.A.E. you too can have your very own Reynolds leaflet detailing tube weights, gauges and tensile strengths. Be sure to ask for the Holdsworth leaflet entitled "Made to Measure" as well, because this contains a "single Tube Stock List" giving some interesting plain gauge tubes in addition to those which go to make up conventional frame sets. These are all 531 or 501 and are available from

Heldsworthy. 753, which requires a special brazing technique, is only supplied to qualified frame builders approved by Reynolds.

Address: Oldsfield Road, LONDON SE20 8DE Tel 01-659 1811

Note by Peter Ross: Paul takes issue with me about the use of Reynolds tubing when I said in an earlier issue 'HPVs don't need "feel"'. He says he wants his HPV to feel light, and gives Dark Horse as an example of the use of 531.

531 is used on diamond frame bicycles because the steel has a higher tensile strength and the tubes can be thinner than tubes made from lower quality steel. Because the Young's Modulus of Elasticity is the same whether you use mild steel or high tensile steel a thinner wall tube will DELECT more than a thick wall tube for the same load. This characteristic of flexure of the frame gives it an ability to absorb road shocks, rather like a spring. This is especially noticeable with front forks in 531. This is known as the "feel", and has nothing to do with being heavy or light.

If you make your chassis with a thick gauge of 531 it will be a lot heavier than the same chassis made from a thinner gauge mild steel tube, as the builders of Dark Horse would be the first to acknowledge!

It is worth remembering that most of the really light diamond frames are made from double butted tube, made in exactly the right lengths for diamond frames. These tubes are relatively thick at each end where the joint takes place, and the thickness is reduced a few inches from each end to give a very thin wall thickness which would be too thin to braze.

The chances of finding double butted tube of exactly the right length to fabricate you HPV chassis must be very small. This means using the thinnest tube of constant thickness you can braze, which is about 20g. For most chassis frames a 20g mild steel tube will be strong enough, so why pay more for 531?

GAS SPRINGS - For damping

For catalogues, addresses and cheapo improvisations ring Paul on 01-733 6920 or write to 11 St Francis Road, LONDON SE22.

DEAL DRIVE

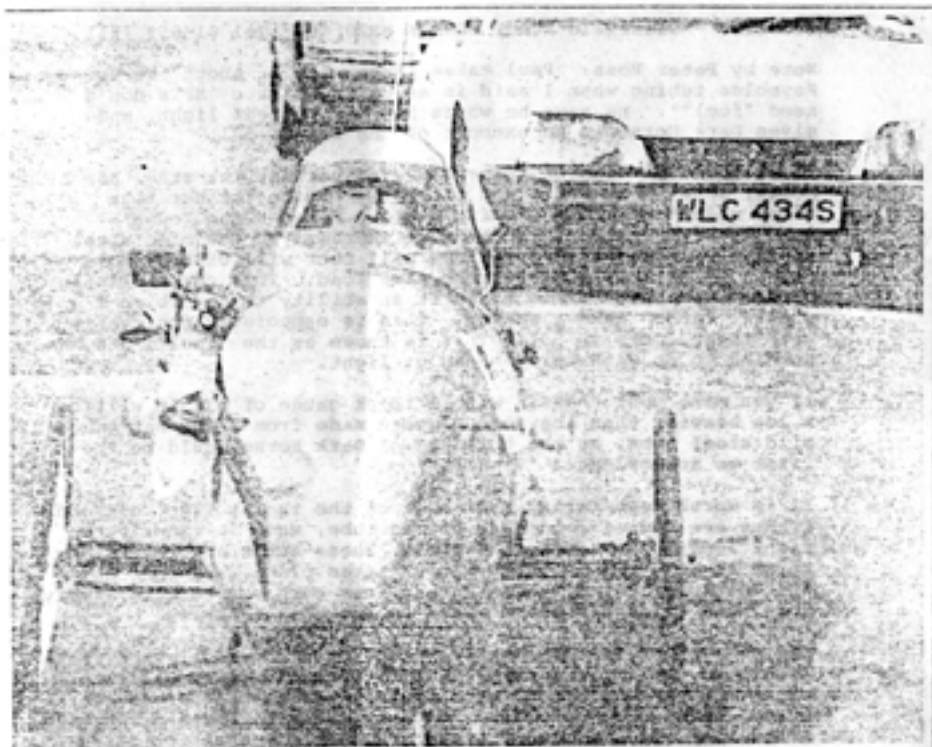
With a range from 26 to 54 teeth this could be interesting. DEAL expect the first ones to appear around Easter (last year it was the same, but they meant Easter 84!). The weight is 7 lb, but it is not clear what is included in this weight. The price includes cranks as well as the sprocket, so the cost could well be competitive. They are taking orders at £50 for a trial set. DEAL Drive International Ltd., Ketts House, Chandler's Ford, Eastleigh, Hants SO5 2PE. Tel 04215 4771.

LIGHT ALLOY HUB BRAKES

Sturmev Archer have just brought out a light alloy hub brake. Called the Elite there is a front, and two rear hubs, one with their 3 speed hub mand one for a derailleur. They are 70 mm dia and claim a performance better than their steel 90 mm brakes. Weight for front hub is 0.73 kgs.

TI Sturmev Archer, 0602-787761 (Sales Dept., Ruth Godden).

Homosexual vagrant



PETER ROSS — zipping round Chelsea in a Trice.

Round he goes in a trice

WHEN PETER Ross says he'll be there in a trice, he means it literally.

For the Trice is the name of a human-powered tricycle which he designed, built and pedals around Kensington and Chelsea.

The tricycle, which

has a fibre-glass body and stands three feet high, can do up to 34 mph.

It took Peter, 55, two months to build and cost him about £1,500.

The Trice does not have to be registered, taxed or insured and can be parked in bicycle

spaces.

Six-footer Peter says it is "extremely" comfortable — "like sitting in a garden chair."

As the tricycle is so low, it carries a three feet high aerial with an orange flag attached so motorists can spot it in traffic.

Although he has pedalled the 33 miles from his home in Marlow, Buckinghamshire, to work in Cromwell Road, Kensington, in the Trice, he prefers to commute in his more conventional company car.

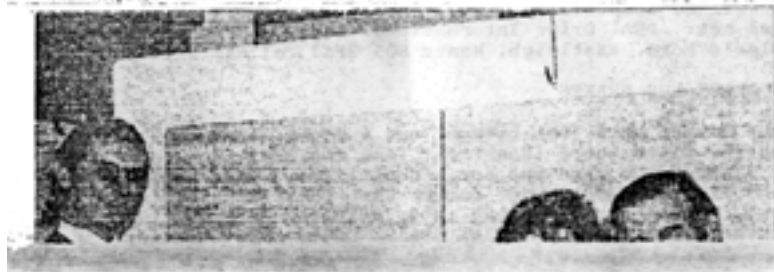
He is Greater London

regional co-ordinator for the Royal Jubilee and Prince's Trust youth business initiative based at the former West London air terminal.

Peter says he developed the Trice for people who would like to travel by bicycle but are put off by wet weather.

Another advantage he says, is that it is aerodynamically designed to go faster than an ordinary bicycle with the same amount of effort.

He has fitted an electric motor to the Trice but can only do 15 mph legally if he uses it.



NOTES

