HUSTLER

Journal of the kit car élite

no. 23

NEXT NEWSLETTER 1st OCTOBER 1989

21 Gloucester Rd.
TROWBRIDGE
Wilts. BA14 OAA
0225 769980

Hello everyone, looking forward to seeing lots of you at the Hustler AT Home. I hope this lovely weather lasts for a bit longer.

Many thanks for all the articles for the Newsletter. Please don't be discouraged if you don't see your contribution in print but I am keeping some back for next time. They will all be used in future Newsletters.
Please keep up the good work.

I have received a letter from someone in Holland, who intends to build himself a Wooden Hustler Six. I have sent him details of the club and a copy of this Newsletter.
He is intending to use Metro mechanics and is very interested in hearing from anyone on the following subjects:

1. How long does it take to build.
2. How much does it weigh.
3. How easy is it to fit larger capacity engines.

The address for those willing to correspond is;

C R & NM FRANKS
Hv Boeijenlaan 40
N.L. 2273 DB VOORBURG
The Netherlands.

I had a front wheel bearing problem last week on my Hustler, I duly had it changed complete with a reconditioned hub because the old one was scored. The following day I was happily bowling down the Motorway on the way to the beach, when 40 miles from home there was a horrible rumbling sound and yes you've guessed it, the new wheel bearing was broken in four places and the hub badly scored. Thank God for the RAC. Another wheel bearing and hub was fitted the next day and so far so good.

My Maxi conversion progresses in leaps and bounds and then long periods of inactivity. the engine is ready, the sub-frame has been cut and welded. The problemat the momentis the engine mountings. We have made up two complete sets up to now but are still not happy with them. But hopefully by the time you read this we will have had an experts opinion and we will continue with the task.

41 Clapton Approach
Wooburn Green
Bucks
HP10 0DW

25 April 1989

Dear Trevor & Members

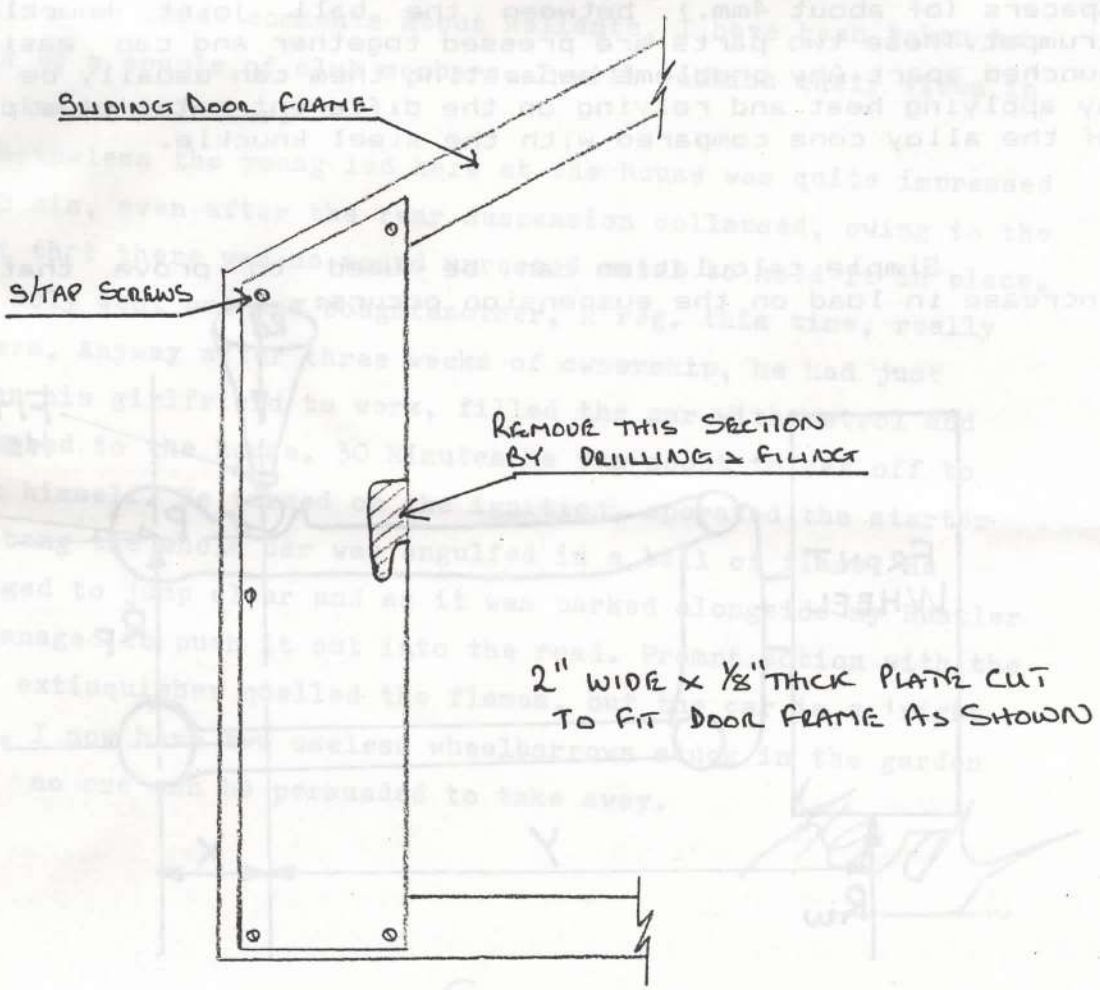
Firstly, could I say thanks to Ken Cox for pointing out the existence of Joy & King (amazing that it takes someone from Bedfordshire to tell me the firm I need is on my own doorstep!). Perhaps somebody can help me with another problem or two. I am writing this on the eve of the Kenilworth Show so perhaps I will leave them to another issue , hopefully I will find some answers tomorrow.

With reference to John Brazier's article in Newsletter No 17 on speedometer recalibration, which I found very usefull last week. I checked the Harriers speedo with 16 post to the mile method and found at an indicated 60 mph I was only doing 43mph ! Quite a large error considering the speedo was from the drivetrain donor. No wonder I thought the performance was good! A small point not mentioned, If you have a speedo of the correct TPM but do not like it's housing, I found it a simple matter to remove the mechanism from my Mini Clubman housing and fit it to the circular housing from an Austin 1300.

I have made a neat hook for the locks of the sliding glass doors. It is made from flat steel bar purchased from my local Wickes (sold as a fireplace lintel). For dimensions and fixing see sketch.

Regards,

Malcolm Smith



24 MONTROSE PARK,
BRISLINGTON,
BRISTOL,
BS4 4JF.
MARCH 1989.

SUSPENSION PROBLEMS?

Wheel spacers fitted to your wheels can cause many problems. Yes they do put extra load on wheel bearings and swivel joints but did you know that they can also lower your suspension and therefore reduce its travel?

Lowering of the suspension will occur on the front of all the B.M.C.(or whatever you wish to call them) donor cars as a consequence of fitting spacers.Even fitting 1275 or Cooper 'S' disc assemblies or wheels with greater than standard offset can cause all or some of the above mentioned problems.

There are a number of ways to avoid these problems when you increase your front track.

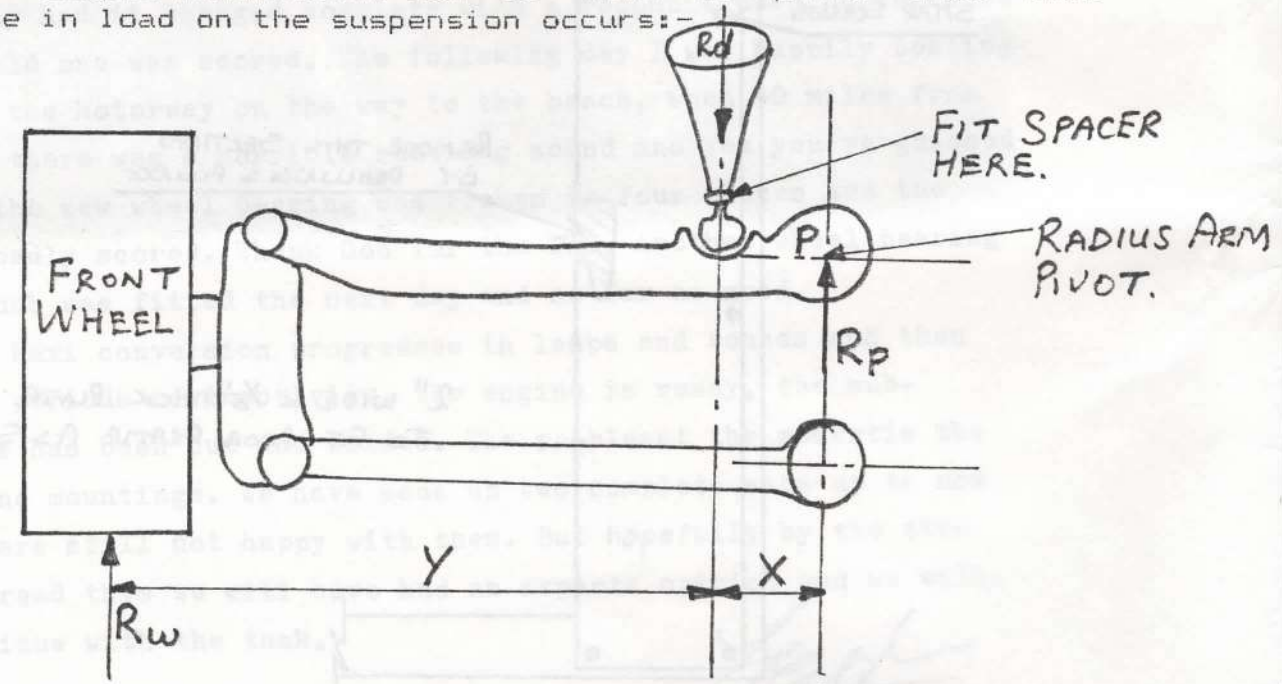
(1).Cut the subframe in half front to back about its centerline and insert spacer plates and weld in place.This is of course the most drastic method and does alter the subframe mounting bolt centers and would necessitate making spacers for the engine mounts and increasing the drive shaft lengths or fitting longer ones from another model e.g.Allegro.

(2).Reduce the weight of the front of the car compared with the standard Mini.With a fibreglass Hustler this would probably not be necessary.

(3).Fit heavier rate suspension doughnuts e.g.from a 10cwt Mini pickup (rear).

or (4).The solution I chose having fitted 1275 discs and larger offset wheels to an already heavy wooden 6 was to fit spacers (of about 4mm.) between the ball joint knuckle and trumpet.These two parts are pressed together and can easily be punched apart.Any problems separating them can usually be solved by applying heat and relying on the different rates of expansion of the alloy cone compared with the steel knuckle.

Simple calculation can be used to prove that this increase in load on the suspension occurs:-



If we take moments about P, the pivot point of the radius arm.

Clockwise moments = Anticlockwise moments.

(1). In original form (Y+X)Rw =X*Rd1

(2). In modified state {(Y+1)+X}Rw =X*Rd2
(with 1 inch spacers)

If we put some numbers in it makes life easier! Let us assume that Y=10 inches and X=1 inch.

(1). (10+1)Rw = 1Rd1
11Rw = Rd1

(2). {(10+1)+1}Rw = 1Rd2
12Rw = Rd2

Now since the load on the wheel Rw is constant (weight of the car has not appreciably changed) :-

The reaction on the doughnut has increased by :-

1/11 * 100/1%
=9% due to that 1 inch spacer. (assuming the values for X and Y.)

John E. Brazier.

RELIABLE RELIANTS

Since my terse comments about Reliants, I have been taken to task by a couple of club members. I will publish their views in a future newsletter.

Nevertheless the young lad here at the house was quite impressed with his, even after the rear suspension collapsed, owing to the fact that there was no sound unrusted metal to hold it in place. He duly went out and boughtanother, R reg. this time, really modern. Anyway after three weeks of ownership, he had just taken his girlfriend to work, filled the car with petrol and returned to the house. 30 Minutes he was about to set off to work himself. He turned on the ignition, operated the starter and bang the whole car was engulfed in a ball of flame. He managed to jump clear and as it was parked alongside my Hustler we managed to push it out into the road. Prompt action with the Fire extinquisher quelled the flames, but the car is a 'right off'. I now have two useless wheelbarrows stuck in the garden that no one can be persuaded to take away.

Geoff

17 Westonbirt Close
Greenhills
Worcester

Dear Trevor

At last I have Put pen to paper and will relate part of my Hustler Wooden Six story.

It is still sitting in the garage at the moment, but it is almost in a state to be able to get an MOT. There are two relevant pieces missing at the moment, some windscreen Washers and a number plate light. The Washers are the real problem, as I want to mount them on the Wiper Arm or blade a'la Peugeot 405 or Citroen BX. I'll get there in the end though.

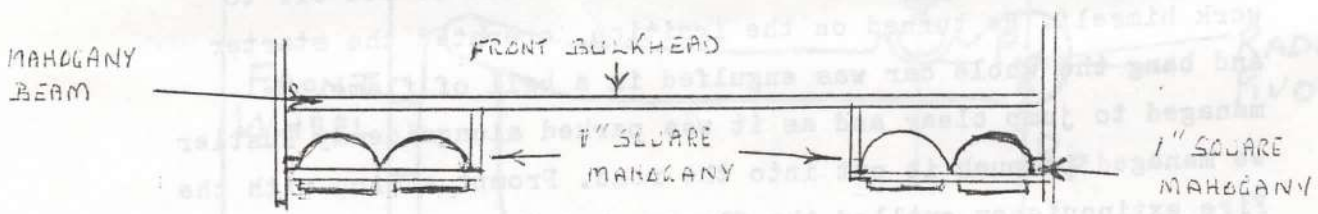
As seems the case with Wooden Hustlers, mine deviates from the original, The area I intended to change all along were the lights. I have always liked quad circular Headlamps and Capri Mk111 rear lights, so these have been fitted.

At the front, the flat panel that should be placed vertically has been missed off. This has left an area between the front of the car and the front bulkhead to mount some lights.

Firstly, I managed to obtain four headlamp bowls off a 1969 Rover 2000. They only needed a wire brush over and a coat of Hammerite. Now, how to fix these to the body? Using the plywood that should have gone on the front, Icut two rectangular panels large enough to hold the two headlamp bowls for each side. Fortunately my next door neighbour had a Viva with the same Headlamp arrangement, so I was able to crib measurements for distances from outside of the car etc.

Once I had cut holes in the panels so I could fix in the bowls, I offered up the pieces into the designated areas. As I planned, it all fitted OK. The outside edge of the panels was fixed to the mahogany beam that runs the length of the vehicle using 1" square mahogany strip. The inner edges were supported from the front bulkhead by lengths of 1" square mahogany.

The result looks like this from above.



The headlights that I used were the sealed beam units from the Rover 2000 on the inner two lights and a unit that matched what I wanted from a local electrical supplier. I needed a $5\frac{3}{4}$ "unit with sidelight and a Halogen bulb with dipped and main beam. I think it was originally destined

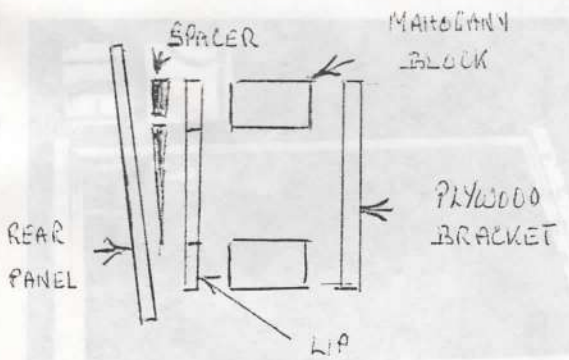
cont. over

for a volvo lorry. It was'nt cheap anyway. As I was using a standard Mini wiring loom I used relays for working the lights. It seemed safer.

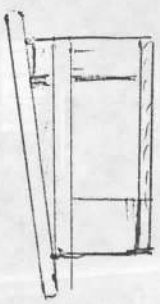
Now for the rear lights. These were somewhat more difficult to mount than the front ones due to mounting them into a panel rather than into an area of free space. However, this is basically what happened.

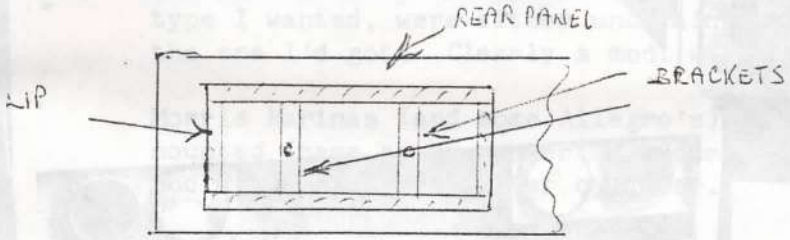
For the light units to be approximately flush when mounted, it was necessary to cut a rectangular hole in each end of the rear panel. This was just large enough for the light units to pass through. To stop the light unit falling through, a lip was constucted from approximately 1¼" wide strips of ½" Marine ply, fixed to the rear of the flat panel. A trial fit was then made to see what it looked like. The only problem that could be seen was that as the rear panel was angled downwards, the light units were the same. It was felt that the full effect of the lights would not be towards the following vehicle. To rectify this a ½" thick strip of plywood was placed between the panel and the wood making up thr lip at the top. A second fitting showed that this had the desired effect. This did leave an empty wedge shape under the vertical parts of the lip which was filled with a shaped piece of mahogany.

On a Capri, the light units are held in by two bolts passing through two vertical retaining bars, so I duplicated this in wood. This was reasonably easy to do, two lengths of 1" wide ½" thick marine ply were cut per light unit and spaced from the back of the lip by lengths of 1" square mahogany.

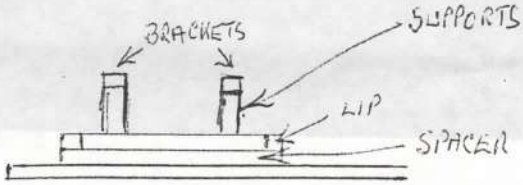


SIDE VIEW





REAR VIEW



TOP VIEW

cont over.

If anyone else is thinking of doing the same, there are a few points to bear in mind.

1 It took me approximately 15 hours to get the two light units mounted to my satisfaction. there was an amount of time to be accounted for in trial and error, but doing it a second time would not be much quicker.

2 It is an extremely tight fit. The light unit is nearly as tall as the panel and with the lip on the inside it takes up all of the room available.

3 Think it through before doing it. Two large holes in the rear panel are very difficult to hide.

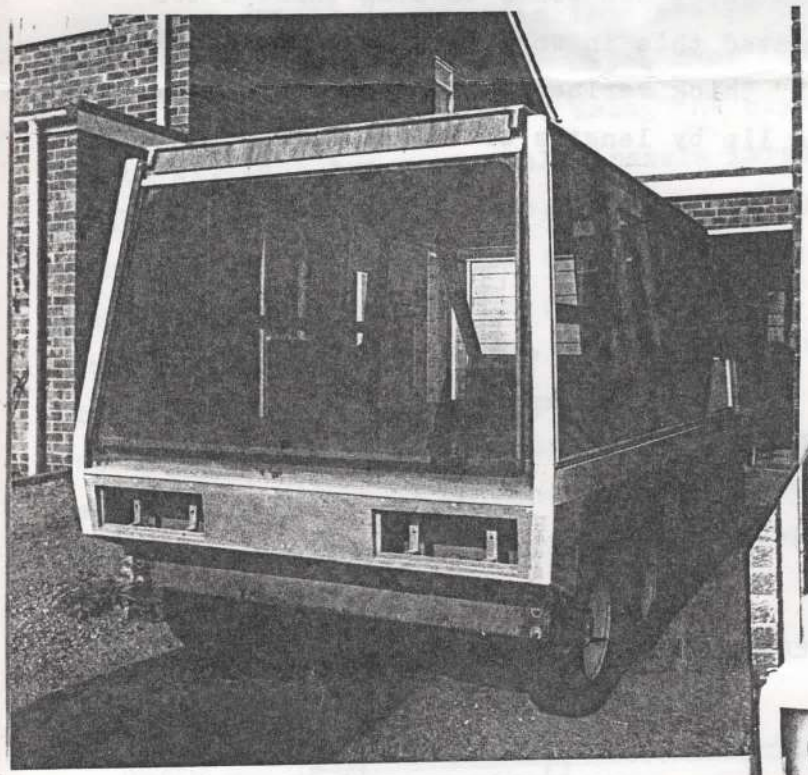
Other than that, all I can say about the rear lights is that they look perfect and I would do it again.

I have included a photo of each end of the car, but it may not be possible to reproduce them in the Magazine.

I think that is about enough for the moment. Hope to see you at Stonleigh and I will write with some more details of the changes I have made fairly soon.

Yours faithfully,

Lance A Wittenberg.

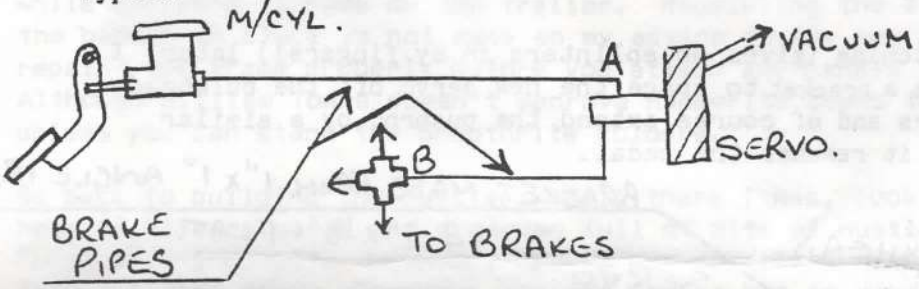


3 Lapwing Close
Kidderminster
Worcestershire
DY10 4JG
0562 754657

Dear Ali

You may remember a couple of N/L's ago, I regaled everyone with a description of our holiday last year on the Isle of Wight. You may also remember that in that article I related how I got a servo full of brake fluid, which later was sucked into the inlet manifold and enveloped the car behind in a cloud of smoke. As brake fluid has an octane rating of about 27 it also produced "pinking" you have never heard the like of before.

As a short-term measure I disconnected the brake lines from the servo and had plain hydraulic brakes. I could do this because the servo is of the fluid operated type as opposed to modern push-rod operated types.



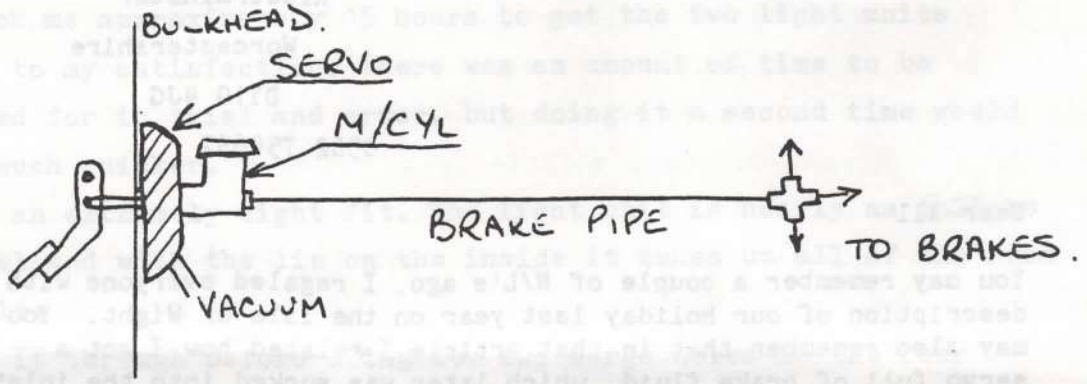
CONNECT PIPE 'A' STRAIGHT INTO 4WAY CONNECTOR AT 'B'

DISCONNECT VACUUM & PLUG END OF PIPE

This was only a temporary measure (where have I heard that before?) because to stop the car needed both feet on the brake pedal, at the same time as pulling on the steering wheel. The column is now so stretched that the wheel touches the roof!. No it doesn't - only kidding. Since it wouldn't have passed an M.O.T. in that condition I decided to do something about it.

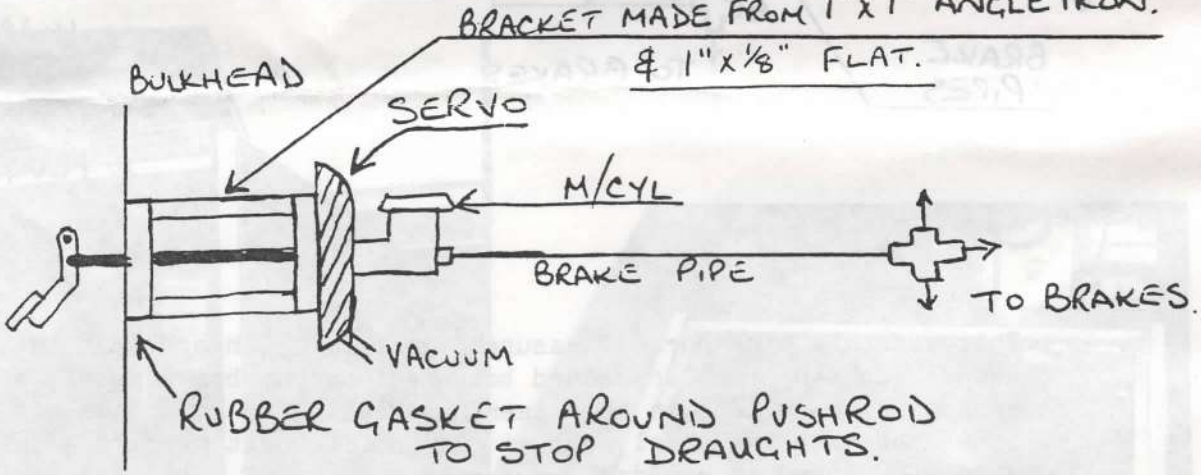
New servos are very expensive aren't they? Second hand ones, of the type I wanted, were either unobtainable or in the same condition as the one I'd got. Clearly a mod. was required.

Morris Marinas (and some Allegro's) have a servo which is bulkhead mounted (same as my master cylinders) and which has a common push rod with the brake master cylinder.



Problem solved! - No, not quite-the existing clutch master cylinder now is in the way because the new servo is bigger than the old master cylinder.

Much head scratching (gives me splinters in my fingers!) later, I decided to make a bracket to space the new servo off the bulkhead by some 7 inches and of course extend the pushrod by a similar amount so that it reaches the pedal.



I now have better brakes than I've ever had and the M.O.T. tester said the set-up was "O.K." - praise indeed! Only snag is the brakes are so good, one of the front ones is now whistling at me, so the next job is to cure that. If I grease the discs will that cure it? Any answers could appear in the next N/L if you care to write in, please!

(If Keith's barrage of abuse doesn't work - try politeness).

Stoneleigh was quite good weather-wise when we went on the Monday - turn-out was a bit disappointing though. Wooden outnumbering plastic again.

Hope everyone has a good Summer.

Regards Martin Guinan

Martin Guinan

Ridge End Fold
Marple
Stockport
SK6 7EX
061-449 8183

HUSTLER FORCE 5 - PART 2

Sorry about missing the last issue but I have an excuse as I broke my right arm and couldn't write. It was exciting to see feedback though, even if I seem to have upset the Allegro appreciation society in the form of Martin Guinan. If I'd known you were so keen I would have saved you the bodyshell and the funny steering wheel. I kept the badge as a souvenir myself. I have lots of sympathy with Bob Jayes as I also originally assumed the frame to be square and the right size. The top rail on the upper frame on mine was 12mm longer on one side than the other and it was also so narrow in the middle that the headliner wouldn't fit. I had to cut it in three places and weld bits in. The paint also was really only suitable to stop rust forming while carrying it home on the trailer. Repainting the steelwork with the panels in place is not easy so my advice to any new builders is to repaint the frame properly before you attach any panels to it. Although William Towns doesn't approve Hammerite seems to be favourite unless you can stand the Smoothrite colours.

So back to building the Hustler. Well there I was, looking at this heap of Allegro parts and a garden full of bits of Hustler thinking "what have I done?". However, having now committed myself by having laid out good money there was nothing for it but to make a start.

I decided on the easy bit first which was the rear. The Allegro uses a tubular crossmember assembly which bolts to the body near the trailing arm bearings. The pushrod end of the Hydrogas unit is also attached to this crossmember with the spherical end bearing against the body on a rubber pad about 18 inches further back. By carefully offering up the Hustler wheel arch mouldings it was possible to work out where the wheel should be and by good luck this meant that the whole rear suspension could be fastened in place by two simple angle brackets onto the Hustler frame where the two rear subframes should have met. This should be sufficiently rigid but to be on the safe side I have welded two diagonal braces between the central subframe support and the rear waistline frame. The rubber mounting pads are bolted to a new crosspiece which is in turn bolted to the Hustler frame. It sounds complex but is really very simple.

The front was more of a problem. I considered at first cutting the front of the Allegro off and bolting this in place as a sort of subframe but after removing the wings and doing some measuring I rejected it as impractical as it was all getting a bit floppy and was a very funny shape. I had originally intended to use an 1100 as a base and amongst the accumulation of bits I had acquired was a front subframe. Looking at the suspension arrangements of the two cars the geometry looked very similar and after careful measurement I concluded that as near as made no difference it was identical and so I decided

to use the 1100 subframe suitably modified. Now the main difference between the two is that the Allegro track is two inches wider than the 1100 but as I was using a physically wider engine I reckoned that the best way to proceed was to widen the subframe. So without further ado out came the trusty hacksaw and after cutting the subframe in two I welded two inches into it. This will still fit the Hustler frame with no problem. The engine mountings were more of a problem especially as the automatic version I had uses some rather nice small hydraulic damped engine mounts. Keith Sharpe tells me that if you use Maxi engine mounts the engine will mount straight in to a standard 1100 subframe. (All queries on this to him not me!) Some quite elaborate surgery was required but in the end in it went. The hydrogas units will fit into the turrets provided the top rings are removed from the subframe. I have retained the 1100 lower arms but used the Allegro upper ones but with the bearing end narrowed to fit the gap in the subframe. This looked a bit dodgy as the metalastic bush had also to be cut down but it has worked OK so far. I think that it would have been possible to use the 1100 upper arms but mine were so corroded as to be useless. The Allegro hub and disc units now fit with no problem.

The subframe ends up about 2 inches further forward on the chassis than the standard 1100 one would have done so the steering rack must be spaced out from the toeboard by the same amount and a box made in the floor to cater for the steering column joint. Failure to do this results in very funny steering geometry as I found out. I found the correct position by careful measuring on a neighbours Allegro but in approximate terms at straight ahead the drive shafts and steering arms should be parallel.

With front subframe and engine in place and rear suspension fitted I now had a rolling chassis which made life a lot easier. The Allegro exhaust system fits with a flexible extension piece let in but fitting the front pipe is not easy. The suspension pipes need extending and this can be done by either letting in a piece of 10mm tube or getting an extra pipe from the scrapyard and joining this to the one you already have. The originals seem to corrode through under the front of the car by the footwell. 10mm compression fitting can be used but have to be opened up slightly to get a good seal. This can be done either by careful drilling or getting them turned on a lathe. The olive can be expanded by rolling it.

That's as far as I am going at the moment. In the next Newsletter we will, if I get round to writing it, hear how I fitted the controls, radiator etc.

Malcol Asquith

Malcolm Asquith

CLUB SWEATSHIRTS.

1 **SIZES** *Chest or bust size in inches, 2" size steps*

1. Inches	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
2. Ladies' Bust						10	12	14	16	18	20	22	24	26	28
3. Men's Collar						13½	14	14½	15	15½	16	16½	17	17½	18
4. Children's Ages	2	4	6	8	10										

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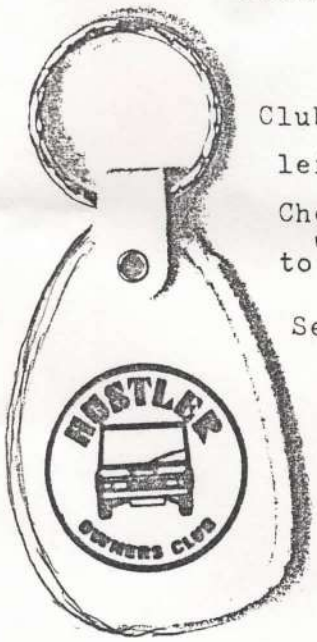

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