

\$ 2379

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Monster Tiger rebuild project – progress and plans

The notes cover the work done on the Monster since the final race of the year and also outline the intentions for the complete project.

The object is to return the car to its 1966 spec with Le Mans Tiger running gear, including the Bernard Unett rear axle location system. New Dunlop style wheels have been made and new front hubs. Rear hubs are in manufacture right now. The LM car style Girling brake callipers and disks have also been remanufactured.

The front crossmember is being fabricated to take the new hubs and disks plus some extra modifications. An MG midget steering rack has been fitted in a revised location. The upper and lower wishbones have been substantially strengthened. The spring towers have been revised to accommodate 5" springs which are a stock size in the US. Initial spring rate will be 650lbs/in from 8" free length springs. A new sway bar with proper bearings and longer arms has also been created. The crossmember is being constructed by Tom Hall of Modtiger Engineering, with liberal input from me.

There is a rebuilt 289 6 bolt engine which will be set up to run with Weber carburettors. The fuel system and throttle linkage will have to be replaced to deal with the new installation. Expected output is in excess of 400bhp.

The engine presently uses a RAM Assault Weapon 5.5" 3 plate button clutch, as fitted to the previous engine. However, the clutch will be changed as it is not directly compatible with the new gearbox. This is a T10 competition unit from Tex racing but it has non-Ford splines input and output so a different clutch is being sourced. It also requires a different bellhousing. Quartermaster Racing (who are part of the same group as Tex Racing) are putting together a package which includes bellhousing, clutch and flywheel, hydraulic throwout bearing, new starter motor, all the bolts and a new longer propshaft.

The present rear axle will have new halfshafts and a new crown wheel and pinion fitted. The LSD will be serviced. The Bernard Unett radius arms, floating springs and Watts linkage will be used to locate the rear axle. A new axle will be built but probably as a separate project. This will probably be a fully floating ends axle with some negative camber and toe-in to provide extra rear end stability.

Koni will provide new steel bodied double adjustable shock absorbers front and rear. This will help with suspension set up and fine adjustment.

Work carried out so far on this project and issues addressed:

1. Visit to Tom Hall November 16th for progress review. Steering rack mounts being tacked into position, discussed options for steering arms but need to mount hubs and disks first. Rose joints for steering and anti roll bar links now arrived. Unsprung weights recorded (for specifying spring and shock absorber setup. Agreed spring size and rate for starting point.
2. Nov 28th. Resolve a conflict with new hubs and stock stub axles. To shop where removed hub and stub axles from Thunderbolt – took all to Tom Halls. This requires some extra parts making for new stub axles so "LM hub" bearings will fit Tiger hubs. The parts from Thunderbolt are still at Tom's shop. Discussions about steering arms and mounting of brake callipers. Callipers do not bolt straight on.
3. Nov 29th. Prepare Monster ready for engine removal. Drain oil and water. Remove fan and belts, alternator. Disconnect fuel and HV electrics and remove coil. Remove catch tanks for oils and water. Remove front panels, oil cooler and radiator. Disconnect brakes and clutch and drain fluid. Make notes and mark fittings, wires, pipes etc.
4. Nov 30th. Remove engine with help of Sean and Travis (2 hours elapsed – 6 man hours). This is a messy job as several bits must be partially removed or left loose while engine comes out (complete with gearbox). Return car to shop. Start cleaning.
5. December 1st. Review state of shock absorber options. Cleaning! Split old engine and box and discover differences between old and new gearboxes (!)
6. December 2nd. More cleaning. Remove and sketch shock absorbers, investigate clutch options and spend time with catalogues. Document issues to fit new gearbox, and sketch propshaft faces etc.
7. December 7th. Sketch axle and suspension parts. Talk to Koni and Quartermaster about bits. Discuss progress with Tom Hall and agree to have him fabricate steering arms. Need to replace fuel pump and lines – neither are big enough – pump and bracket and filter removed, pump bracket needs to be replaced anyway.
8. December 8th. Document rest of axle bits, and shock absorbers. Discussions with Tom Hall. Take wheel and shock absorber to Tom. Remove broken halfshaft from axle and measure up.
9. December 9th. Tidy up, take photos, try and remember what I have forgotten.

The list of things to sort and do are (as far as I can tell) as follows:

Item	Description	Remarks
1	Get new bell housing, clutch, flywheel, clutch release bearing and starter motor	Quartermaster quoting
2	Sort out rear hubs and halfshafts and order new halfshafts	Supplier for halfshaft?
3	Sort mounts for rear calipers	Sean to fabricate?
4	Check and fit engine/gearbox together	
5	Install engine and gearbox	Sean to help
6	Sort out gearbox rear crossmember	Sean to fabricate?
7	Measure and define propshaft and order	Quartermaster
8	Sort transmission cover to fit new gearbox	Sheet metal boy down the road?
9	Fit new crossmember	Assume it is complete with hubs, brakes, shocks, etc.
10	Map out buy and fit fuel system, inc manifold, and lines and pressure gauge	
11	Sort throttle linkage	
12	Decide on alternator and brackets, buy and fit	
13	Fit oil block and pipes – replace and reposition filters	
14	Sort out Fuel pump and filters inc brackets and pipework	
15	Check on starter motor wiring and replace if necessary	
16	Fit new clutch pipe to new release bearing	
17	Refit rear axle and align	
18	Fit new Koni rear shocks	
19	Fit rear brake callipers and replace pipework	
20	Get tires on new Dunlop wheels	Same old Hoosiers?
21	Check steering and brake clearances	
22	Put it on its wheels	
23	Replace radiator, oil cooler, panels at front	
24	Complete plumbing and electrics jobs	
25	Fill with fluids and bleed –pressurise where needed	Oil, water, Gearbox, back axle, brakes, fuel
26	Run engine	Dan to be about?
27	Check systems for leaks	
28	Run round block to check clutch – gearbox	
29	Check temperatures	

Item	Description	Remarks
30	Set up and measure suspension movements	
31	Set shocks and anti roll bar	
32	Replace other panels	
33	Check instruments	
34	Ready to test!!	
35	Remove passenger seat	
35	During all this sort out and fit seat rails so drivers seat can be moved	

Things still to buy:

1. Bits from Quartermaster (awaiting quote)
2. Axle shafts for present rear axle
3. New bearings for axle
4. New brake calliper brackets for rear axle
5. Hydraulic line and fittings for brakes
6. Fuel pump, filter and rigid pipe
7. Fuel pipe and joints for carbs
8. Oil filter and bracket, possibly new pipes
9. Lagging for oil pipes near exhausts
10. Alternator and bracket
11. Fluids
12. Revised exhaust system for 105DB running?

There is still a bit to do.

Gordon
February 13th 2007

Sub
Date
From
To:

d Time

Dear

Attached is a report of the work done and the work to do on the Monster, an account of hours spent while on the trip, and invoices for Coronado, CSRG Infineon and the November - December visit. I hope it all make sense and if you have any queries please let me know.

Please note you have not been charged for any time spent preparing for Coronado and Infineon, nor is there any charges for hours spent since I have been back in the UK.

With love from

Gordon

and Santa Fe Trail
Santa Fe
New Mexico 87506 U.S.A

Item No	Quantity	Description	Cost
1	3	Days race support at Coronado October 8 th - 8 th @ £150 per day	£450.00
2		Additional expenses	
Paid in full with many thanks.			
Total			£450.00

22 Maltings Way
Great Barford
Beddford MK44 3LA

24th October 2006

Item No	Quantity	Description	Cost
1	3	Days race support at Coronado October 6 th – 8 th @ £150 per day	£450.00
2		Additional expenses: Paid in full with many thanks.	
		Total	£450.00

22 Maltings Way
Great Barford
Beddford MK44 3LA

24th October 2006

Item No	Quantity	Description	Cost
1	3	Days race support at CSRG meeting – Infineon Raceway October 13 th – 15 th @ £150 per day	£450.00
2		Additional expenses: Paid in full with many thanks.	
		Total	£450.00

CG Developments

22 Maltings Way
Great Barford
Bedford MK44 3LA

049
INVOICE: 06-046

24th October 2006

Item No	Quantity	Description	Cost
1	61	Hours work on preparing Monster Tiger for new engine/gearbox/front crossmember. Hours charged at \$39 per hour See report and summary for hours spent and tasks.	\$2379.00
2		Additional expenses:	
Total			\$2379.00

Date	Hours	Tasks
Nov 16		6 Visit to Tom Hall for progress review.
Nov 28		8.5 Resolve conflict with new hubs and stock stub axles. To shop - to Tom Halls.
Nov 29		8.5 Preparation for engine removal
Nov 30		8.5 Remove engine and box - start cleaning
Dec 01		8 Shocker options, cleaning, split engine - box
Dec 02		4 Cleaning, review clutch etc options, sketching and photographing
Dec 07		6 Discussions with suppliers, more sketches, still removing parts
Dec 08		7.5 Document parts, take stuff to Tom Hall rear axle bits
Dec 09		4 Tidy up pictures notes lists