blast from the past

PB Mustang Xi2 1/8th Rallycross Car

Boxy body and front bumper

The idea for this retro review came about after a visit to the Editors mansion The Ed' showed me a rather battered box that contained the majority of the parts to build the PB, and this was the car to have in 1986.

The Rallycross scene in the early 1980s was very different to today's situation. Most of the cars were, in standard form, quite crude. Typical cars were the Kyosho Land Jump and Thunder Tiger copies. Looking back now were so heavy and looked so ungainly one wonders how they got around a bumpy track without falling apart every few minutes.

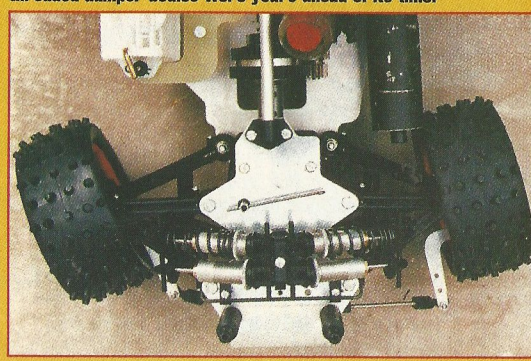
It was interesting to read in contemporary magazines of the era some of the reports. At many of the Continental meetings the rate of breakage of components was amazing. It must have cost a fortune to race those cars.

The hotshot driver of the time Pedro Martinez of Spain who won everything with a French Yankee car. The problem was the Spanish wonder car was pretty much a hand built prototype and bore little resemblance to the production Yankee!

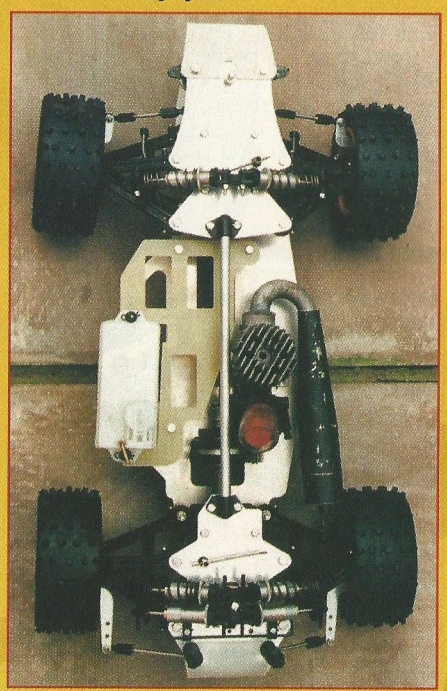
car was soundly thrashed by the Continental opposition. The Mustang was definitely the most technically advanced car of its era.

With four wheel drive which even then was essential for a winning car PB decided that most cars had an understeer problem. They would overcome the 'pushing' by steering the rear wheels as well as the fronts. A two-speed gearbox was considered desirable as well as the facility to be able to double up on the steering servos. A total of 6 dampers are used.

Rear damper details showing the two dampers with coil over and the two damper only set-ups. The threaded damper bodies were years ahead of its time.



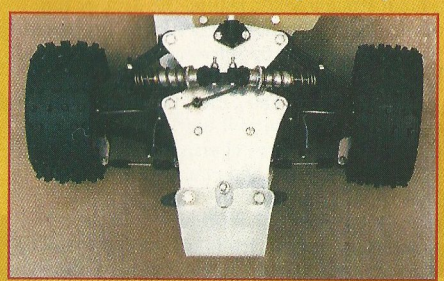
Compact layout of the Mustang with its unique four-wheel steering layout.



All British design

PB Racing in the mid 1980s was very much at the forefront of radio car technology. After a false start with an Italian import car, the Garbo, the Governor of PB - Keith Plestead decided that he could make a better car himself.

Along with Ace driver Paul Pagdin the results of their work won many races, including the British Grand Prix. Unfortunately when the lads took the Mustang to the bull rings of Europe the

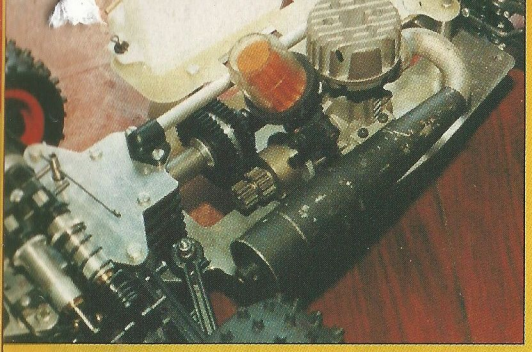


Front damper set up and protection bumper.

'the Governor of PB - Keith Plestead decided that he could make a better car himself.'

August 99

MEGAMIX REVIEW



Picco P21 rear exhaust engine and improvised silencer unit.

Build it

The instructions that come with the Mustang are almost non existent compared by current standards. A series of photographs and an exploded drawing is all I had to use to put the plot together. I found this car the most frustrating build up I have yet come across in many years of kit building. Things are not helped by the difficulty in obtaining parts for a car that has not been made for a long time.

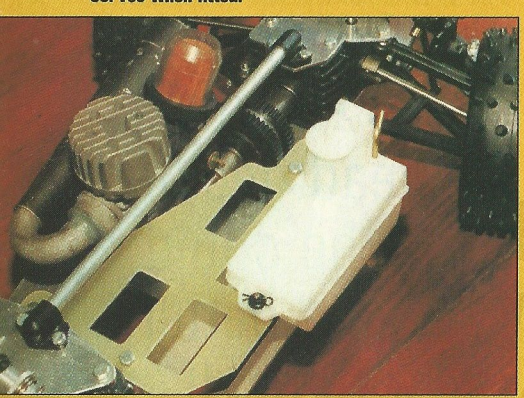
The complexity of the car for the task it was designed for is extraordinary.

A comprehensive knowledge of fitting techniques was essential to be able to build this car up.

The build up starts with the damper assembly this car uses six dampers. Two with coil over springs on the front axle. The rear axle is uniquely fitted with a pair of coil-overs and a pair of dampers with no springs. The damper bodies are fully threaded to allow precise adjustment of the spring pre-load. This feature was years ahead of its time. The dampers are very sturdy in construction. The lack of '0' ring seals on the bodies meant that PTFE tape had to be used to prevent leaks from the body end cap junction. I found that careful trimming of the damper pistons was required or the dampers locked up. The action when assembled is quite good.

The differentials construction is interesting. It reminds one of motorcycle cassette gearbox construction. The size of the steel bevel gears, ball races and output half shaft housings is quite staggering. Let alone 3.5cc of engine power these things would probably transmit the power of a 30cc engine. The housings are cleverly designed heavily ribbed interlocking plastic mouldings. When assembled they resemble nuclear blockhouses. The differentials are heavy duty spur geared type, which use steel

Fuel tank layout and radio tray using twin steering servos when fitted.



'these things would probably transmit the power of a 30cc engine'

pinions and hardened steel shafts. They are assembled inside turned alloy housings so should keep clean in use. The car uses a disc brake system on both front and rear axle assemblies. The brake discs are of stamped steel with aluminium alloy brake shoes. The reason for twin brakes is due to the use of a one way bearing fitted in the main propeller shaft.

Owing to the four-wheel steering arrangements the linkages are interesting to say the least. The front axle uses two servo savers and the rear axle a single unit. Great care has to be taken to ensure free movement of all the parts or the steering action will be impaired. I am surprised to find on a car of this weight that it uses 3 mm diameter track rods made from soft steel rod. The rear steering set looks very flimsy and a shunt up the rear of the car would cause chaos. I found trying to get the whole steering system to pivot freely a real pain. The chassis plate appears to be cut out from some form of hard aluminium alloy and most of the cars assemblies are attached to it.

The suspension arms are of a strange construction, which is unlike anything else seen by the author. They of thin section nylon with pressed in pivot balls. Numerous small self-tapping screws retain the balls. Owing to the vagueness of the photos it was very easy to get matters confused in this area of the build. I found when the pivot balls were inserted in the arms that the wheels would not rotate freely. I had to remove material to allow clearance for the wheels.

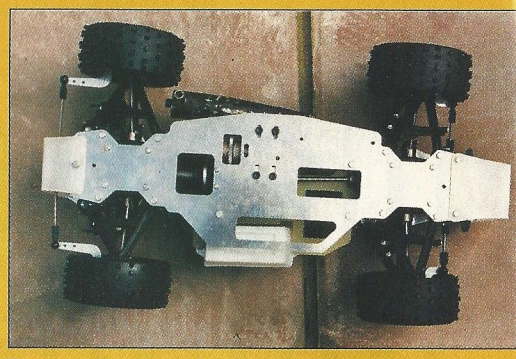
The car uses a two-speed gearbox - very much a forerunner of today's accepted systems. The gearbox required quite an amount of deburring and fettling to be sorted for use. It is interesting that PB decided to use a two speed gearbox on an off road car. The downside of a gearbox is the when the car leaves the ground the wretched thing changes up as the load on the engine reduces. On the same strength scale as the gearbox are the half shafts and axle blocks, they are very strong.

The front and rear roll bar fitment is far from clear in the instructions and I spent some times referring to contemporary articles about the car which helped somewhat.

The way the 4 dampers are attached to the rear chassis plate mount is odd. It appears that a plain straight shaft retains the damper top eye mounting lugs. They are in turn prevented from coming loose by some rubber tube retaining collars.

The fuel tank is the earlier version of the current flip top rapid fill unit. A pair of body clips retains it on the chassis mounting posts.

The delicate front and rear steering assemblies are partially protected by a pair of wrap around flat plastic sheet bumpers. My own experience with Rallycross cars was that the crashes were surprisingly violent and these



The underside showing the very tough chassis plate

protectors look rather inadequate.

The body shells fitted to the car never looked very sleek. They tended to be rather boxy and ugly. It is a pity someone like Protoform could not be persuaded to design something that looked the part.

Motive power

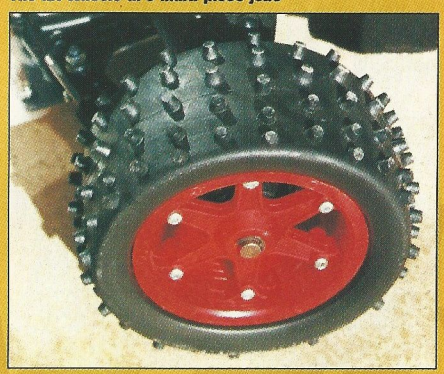
The cars intended engine fitment was to be either Picco or Nova Rossi. I had in the engine box a suitable Picco P21 rear exhaust engine. The PB Racing clutch assembly requires the clutch shoe ring to be cut into 2 halves. I cannot understand this. The shoes should come ready to fit without having to finish the manufacturing process. Nowadays the customer would never tolerate the amount of hand finishing required with this car. There were no engine mountings supplied with the kit. I found some suitable items in the bits box. The silencer and manifold was awkward, all the silencers I had were too long. I managed to obtain an old Picco silencer from Mike Billington. The manifold required a bit of improvising. I had an alloy U bend pipe and using Penny Epoxy joined it to a manifold collar.

Test drive?

At first the intention was to give the car a round then keep it as a museum piece. Owing to the lack of certain parts I has been decided to keep the car as a piece of model car history.

To summarise PB racing were bold to design the car in the first place. It is a pity that PB stopped developing the car in the late 1980s. Some of the people involved with racing the car took the expertise that they learned elsewhere. It is highly likely that the Kyosho Burns car was greatly improved by British design input learnt racing PB Mustangs. **RRCI**

The kit wheels are multi-piece jobs



August 99

MEGAMIX REVIEW