Questionnaire prepared by Mark Reynolds and Mike Ryde

The BMG "Super" Red Special
Technical Detail from Greg Fryer

This document details Greg Fryer's response to an in depth questionnaire sent to him regarding the new BMG Red Special 'Super'.

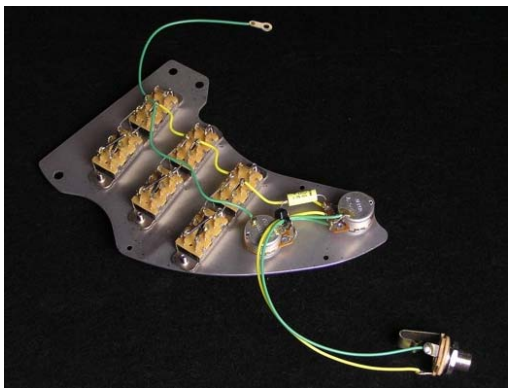
The questionnaire attempts to garner further detail (to that previously published) about the design, construction and thoughts behind the BMG Super Red Special.

Greg Fryer has taken time out from his busy work schedule to answer these questions and has given some in-depth answers.

Brian has also recently used the BMG Super at the Kharkov Freedom Square concert (Ukraine, 12th September 2008) during the Queen & Paul Rodgers concert. This questionnaire might explain some of the reasons as to why Brian has chosen to use this guitar on the current tour.

Q: Are the body, neck, headstock and scratch plate shapes as per the original guitar?
A: *Yes exactly as per Brian May's original Red Special.*

Q: Why does the Super have a mahogany body and an ebony fingerboard?



A*: The reason that we decided to pursue this method of construction was because after discussions we felt this would provide an extremely satisfactory sounding instrument but would not be nearly as expensive a process for manufacturing compared with using blockboard/oak/mahogany veneer and an oak fingerboard painted black.*

The BM Super guitar concept began in March 2007 with discussions in London between Brian May, Pete Malandrone, Barry Moorhouse and myself.

The objective of the BM Super was for it to be positioned between the affordable Korean made BMG guitar and the high end hand-made Andrew Guyton Red Special guitar. The BM Super was designed to be a high quality production model which also offered some unique quality handmade features such as the Kazutaka Ijuin BM knife edge tremolo tailpiece (which has a special tremolo arm identical in shape and spec to Brian's original), correct mounting of the 6 white pickup switches on an aluminium plate, replica control knobs, and the Adeson/Fryer Red Special replica pickups (kindly made under licence from Mr Barry Gibson of Burns London) which are exact replicas of the unique pickups in Brian May's Red Special guitar.

Q: Is the neck the same size as the original?
A: *Yes*

Q: Why has the design been altered to use a glued-on neck instead of the original bolted-on option?
A: *Because this is a more cost effective way to make a production model guitar. This method also gives added strength to the neck/body join.*

Q: What are the differences between the Super and the original Red Special cavities?
A: *There are some very minor differences in the control cavity on the right hand side, but overall the control cavity and the acoustic chamber on the left hand side of the body are extremely close to the original Red Special.*

Q: Is the tremolo system faithful to the original?
A: *Yes and as mentioned above the tremolo arm has been shaped to the exact curves of Brian's original tremolo arm from brass templates which I made from the original Red Special tremolo arm in 1998.*

Q: Can you explain the reasons for using the Wilkinson bridge?

A: *Cost factors are the reason that we are using the Wilkinson roller bridge - remembering that this instrument has been designed to fulfill a certain price range and that some compromises in manufacture have had to be made in order to meet that price. This is exactly the same situation that companies like Fender and Gibson and others face in their guitar ranges. The Wilkinson roller bridge is a very good bridge of its type, offers good adjustability and is 1/10th the price (or even less) of producing a custom version of Brian's roller bridge which is an expensive custom made piece of hardware to manufacture.*

Q: How have you designed the guitar to offer the right tonal characteristics of the original?

A: *Definitely and this was discussed at length with Brian, Pete, myself and Kazutaka Ijuin when we first began using one of Kazutaka's excellent Kz Junior guitars as a working test bench. We have since changed many aspects of the Kz Junior design so that the BM Super is considerably closer to Brian's original Red Special. Having said that we have designed the BM Super to offer exceptional quality at a mid level price that is between the Korean BMG and the Guyton guitars. If people want a guitar that doesn't have these slight compromises in materials then we would of course recommend that they buy the Andrew Guyton Red Special which is a superb instrument and although expensive, in my opinion offers very good value for money considering the extraordinary detail, accuracy and number of man hours that Andrew puts into each guitar's manufacture.*

Q: How close to the original guitar does the Super sound and how have you achieved that?
A: *After several months of trials both here in Australia and in UK during late 2007/early 2008, we believe that the BM Super is extremely close sound wise to Brian's Red Special.*

Q: Can you explain what is so special about exclusive Fryer / Adeson pick-up sets?

A: *Many things! To begin with, Brian's Neck position pickup is quite different in tone to any standard Burns Trisonic because he and his dad modified the pickup when they first fitted the Burns Tri-Sonic pickups to the Red Special (remembering that the guitar wasn't initially designed for these pickups).These changes to the neck pickup lowered the inductance and magnetic strength of it which thins out its sound in some ways and especially changes how the neck pickup sounds when combined with the other pickups (either in or out of phase).*
Doing this has also importantly created the sound of one of Brian's favourite pickup combinations: the Neck and Middle pickups together out of phase. Having the neck pickup in this changed way gives Brian's guitar the soaring shrill beautiful sounding harmonics that seem to leap out and soar when he solos with N & M out of phase. A standard Burns Tri-Sonic pickup will still be able to achieve a sound reasonably close to this but will not achieve all of the unique character that Brian's guitar has with this N

& M pickup combination because of the alterations that Brian and Harold made to the neck pickup.

There are also other important differences of construction between Brian's original Tri-Sonics and either modern or old Tri-Sonic pickups due to the peculiarities of the particular 1967 Burns Tri-Sonic pickups that Brian fortuitously purchased from Clifford Essex at the time.

Needless to say, since 2004 Adrian and I have run countless experiments with all sorts of variables in these pickups in an attempt to achieve a sound as close to Brian's original pickups as we can. These tests included variables in: magnet wire, turns counts, magnet strength and materials, coil wrapping materials, rubber insulation damping material, waxing methods, base plate steel thicknesses and plating materials etc. We believe that the Red Special replica pickup sets that Adrian is now making are as close as humanly possible to Brian May's original Burns Tri-Sonic pickups. These pickup sets are expensive to make compared to standard Tri-Sonics and are exclusively available only on the BM Super guitar and the Andrew Guyton guitar.

Q: What makes this guitar different from all the other models that have been available?

A: *The BM Super is a similar concept in many ways to the fine Guild BHM guitars of the early 1990s, but the BM Super has been taken several steps further and is superior in most areas and much more accurate overall to Brian's Red Special with its body, neck, scratchplate and headstock shapes. The BM Super also has the more accurate hardware of the tremolo tailpiece, tremolo cover plate, scratchplate, pickups, control knobs, aluminium switch plate, jack socket, pickup surrounds etc.*

Q: Will Brian be using a Super either to tour or record with?
A: *Yes Brian is using a BM Super on the Queen + Paul Rodgers 2008 European tour.*

Q: What changes were made to the production models after the prototypes were made?
A: *A: There were a number of changes that Brian and I requested, and several other alterations were put into place by Kazutaka Ijuin in order to accommodate these changes:*

1. *Fingerboard is now painted.*
2. *Polishing top side of tremolo main block*
3. *Neck/body angle was decreased slightly which brought bridge height a little closer to the body to be exactly the same as the Red Special.*
4. *Zero fret wire type changed to higher and narrower type.*
5. *Zero fret was moved towards the 1st fret a small amount from absolute zero. This is something that I have been doing on all my custom guitars since the late 1980s and have found that moving the zero point a certain distance improves the guitar's ability to play "in tune" within itself. This means playing better in tune either when playing different chord shapes across the neck, or when playing different chords/intervals up and down the neck or played to fixed constants such as an open A string - by this last example I mean longitudinally along the centreline of the neck.*

Background reasons for this change: in December 2005 when the badly worn zero fret on the Red Special was replaced by Andrew Guyton, what Brian, Andrew and I found was very interesting. We first made a new zero fret from Brian's original unused fretwire (that he had kept from his dad's workshop), but we found that the Red Special then did not play quite as well in tune within itself compared to before with its worn zero fret. The new "original" zero fret was set at the correct height relative to the 1st fret's height so the problem wasn't due to incorrect height. We then measured how far the worn zero fret had allowed the "leading edge" point of contact with the string to creep towards the 1st fret. This overall effect of the worn zero fret had been discussed by Brian and myself as far back as 1998 when we talked about it with Neville Marten from Guitarist magazine and compared it humorously to the Buzz Feiten compensation system.

To cut a long story short what we found, that worked best, was a new zero fret (made by Andrew) which gave the same leading edge point of contact as on Brian's original worn zero fret. The new zero fret was "handshaped" by Andrew out of larger fretwire stock and looked to me in profile like some of the airfoil/hydrofoil shapes I

used to make as an amateur sailmaker/boatbuilder many years ago in my competition sailing days. The zero fret was a VERY nice piece of skilled work by Andrew and removed the problem of the deep worn grooves in Brian's original zero fret which had been causing the Red Special's strings to bind and also tuning instability during the 2005 Queen + Paul Rodgers World Tour.

6. *Centreline position of the bridge, bridge pickup and middle pickup were changed.*

7. *Bridge pickup changed in construction slightly to closer reflect the Red Special's pickups sound.*

8. *Pickup heights changed slightly, and adjustment of pickup mount cavities depth.*

9. *Small adjustment of inner shape of pickups surrounds*

10. *Thicken truss rod cover material*

11. *More rounded edges for fingerboard and frets.*

12. *Adjust binding shape around neck joint/heel section.*

13. *Deeper pocket to mount bridge, plus holes to mount Pro bridge in future if required as upgrade.*

14. *Changes in screw positions for pickguard due to changes in bridge location position.*

15. *Changes in the top shape of fixing screws for control knobs*

16. *Different washer size for the jack to make it fit much better.*

17. *Serial number is now a decal type*

because stamping method did not work well enough.

18. *Body top mahogany is now bookmatched.*

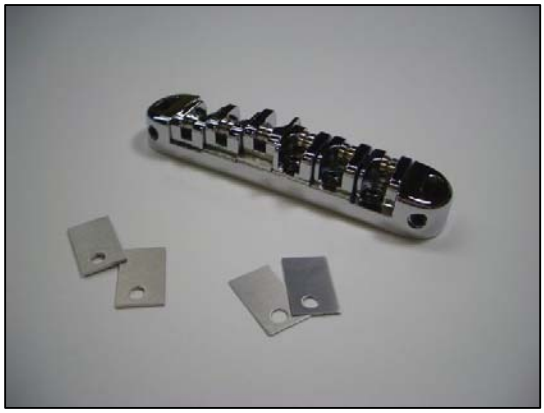
19. *Mahogany stain colouring of body and neck is now slightly less reddish by changing colour coordination.*

20. *Different shim shape and style for Wilkinson roller bridge saddles so that they are now sandwiched and held in place through downward pressure of grub screws (old type was glued to the underside of roller saddles).*

21. *Pickup surrounds: method of adhering these changed to a more aggressive adhesive used on the Fryer replicas.*

22. *Method of earthing tremolo tailpiece changed.*

The prototype BM Supers are extremely fine instruments and are excellent examples of the superb build quality of instruments from our design/production partner in Japan Kazutaka Ijuin, but after recently examining the first of the new production BM Super guitars I believe that Kazutaka Ijuin has excelled himself even further with these fine new production guitars.



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