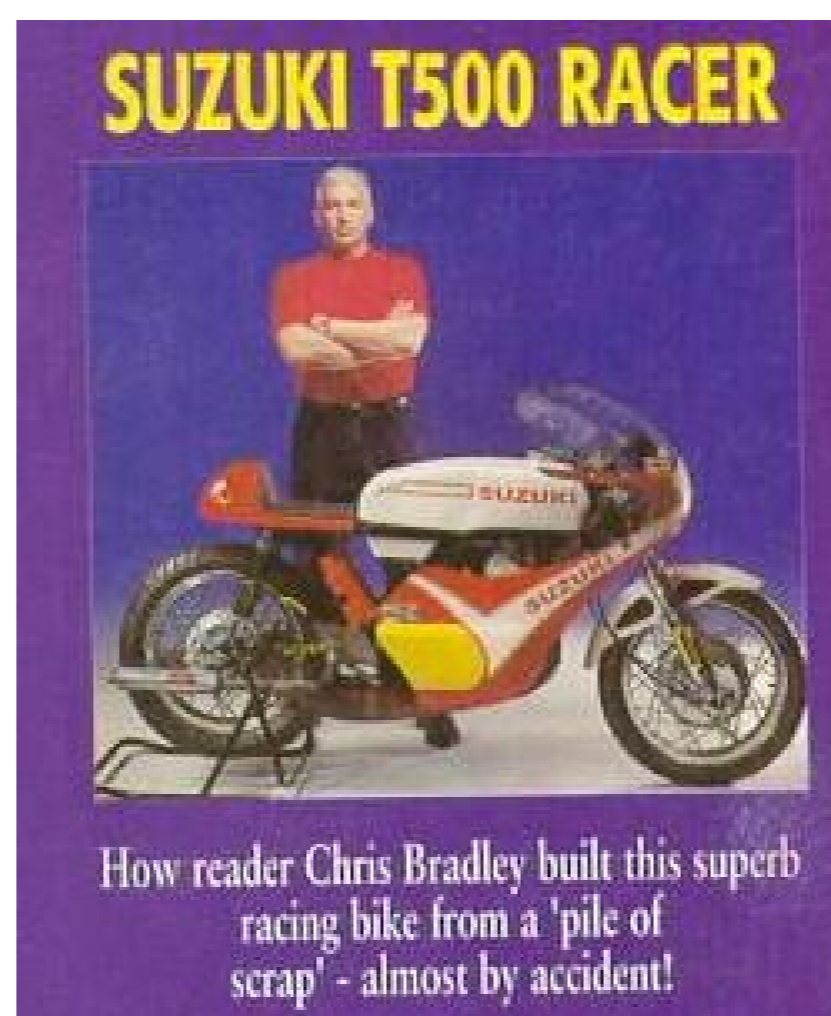




## SUZUKI 500 FANATICS Chris Bradley builds a T500 racer - Chapter 1

T500 SUZUKI. PROJECT- SERENDIPITY.

Chapter one



It was about August time 1976, I happened to notice a feature on the front cover of Classic Motorcycle Mechanics while scanning the magazine rack in my local supermarket.

The photo showed a rather mint Suzuki T500. I used to own one of these monster two strokes and always regretted selling it. Looking at the cover photo brought back a few memories, and I even considered the idea that it may even had been the very bike I had owned some nine years before. Not pondering over the image too long I continued on my way.



Chris's T500 and wife

I travel with my job and get to visit West Yorkshire about once a month. It is there I meet up with my friend Roger, usually for a meal at the Huddersfield Hotel where I stay over. Roger is a great engineer and can produce just about anything on his lathe, but also specialises in BMW's. Everything from Spline drives to exhaust threads and much more in the specialist (one off stuff).

One night while enjoying a meal together I happened to mention the magazine I saw on the news stand featuring the Suzuki. How I wished I had kept the one I had owned. I once rode it to the Isle of Man on a trip to visit relatives. It's not such a long trip for me really. Just over two hours from where I live in Tyne & Wear. But a great journey anyway.

I remembered also that at the time I had pondered the idea of putting the bike( albeit in superb condition) into a racing livery of the period. I knew that Crooks Suzuki used to race at the Island TT. And a T500 had won a production class one year. Being very ignorant about the racing world I had no idea about how to go about it, and very quickly gave up the thought. All of my enquiries fell on stony ground and in one call to Bran Bardsley I even managed to get myself branded a sexist. I asked a young lady who answered the phone if I could speak to one of the chaps who knew about Suzuki T500's. I will never forget the final words of the chap I spoke to- who said ( before putting the phone down on me) " She knows more about Suzuki T500's than you will ever know" "Goodbye" Obviously referring to the lady who answered the phone. There's a lot to be said about a man who sticks up for woman's liberty.

When I had finished rambling, Roger told me he knew of someone who was selling a Suzuki T500. I really wasn't interested because at the time I could not afford to buy the magazine never mind a bike. Anyway I had just gone completely overboard restoring a Yamaha TY250 trials bike. If the new owner reads this he will know what I mean !

Next day saw me working in the Halifax area where Roger has his workshop. I decided to call in for a brew and say hello to some friends at J.M.S Motorcycles.

While we talked, a motorcycle appeared and came to rest just outside the workshop doors. (Funny how motorcycles just appear!) Roger looks at me and says "T500" nodding towards the rider, now dismounted and heading this way.

Was this fate taking a hand in things ? I wondered.... We soon got onto the topic of T500's and it was confirmed that the said item was for sale. Well it must have been fate because I ended up the proud and surprised owner of a Suzuki T500. Actually what I ended up being the proud owner of was a pile of scrap. Or so I thought.





## SUZUKI 500 FANATICS Chris Bradley builds a T500 racer - Chapter 2

On arriving home I could see that the beast had been used as some kind of a race bike before. Hence half the bits I needed to build a whole bike were missing. In the interests of saving weight I guess. But there were plenty surplus bits. I tried to make some kind of order out of the boxes and tins of rusty gearbox parts and was disheartened to see how badly things had deteriorated.

### SUZUKI T500 RACER



Years of corrosion and rusty oil came from the crankcases and in the end I realised that a crank would have to be re-built. There were three pistons all of different sizes, five cylinder heads, two sets of barrels that needed a re-bore, two and half crankcases, two pairs of expansions, it went on. Too many of some parts, and some missing. I decided to shelve the idea for a rainy day, a very rainy day!

A couple of weeks later and I find myself looking at more stuff in the same magazine about T500's. Is this some kind of a revival or something? I wonder. I read an article about a comparison between a T500 and a pair of RD400 Yamaha's, all of which had been re-builds. The guy with the T500 was Alex Clapson, who turned out to be wheeling and dealing in T500 bits. What caught my eye in the photo's of Alex's bike were his expansion chambers. I had never noticed a pair of these on a bike before, they were Allspeeds.

I started to get idea's for building a special, and these would be just the ticket. So I rang the number given in the article and spoke to Alex. He later sent me a list of stuff he had, and we discussed a rough deal on the phone for the bits I needed.

I was able to do some swap's with Alex for all the stuff that I had surplus, and came away with a brand new pair of pistons and the Allspeed expansion boxes I had so admired on Alex's bike. That was to be the first of two trips I made to Swansea to see Alex, but there were to be many phone calls and letters to follow.

Given this new inspiration and enough bits to build a motor, the battle commenced. The crankshaft was re-built using new pins, seals and bearings. I was able to assemble a gearbox with all the bits I now had, and with the help of a Haynes manual I went to work. Roger built the crankshaft for me. The guys a genius.

The gearbox on the early T500's had a problem due to oil starvation to the fifth gear, causing pitting and severe wear. You won't believe this but mine was pitted with severe wear. You can't buy new gears, so I got round it by pressing the gear off the shaft, turning the shoulder down off the other side and then pressing it back on again the opposite way. I then had the gear Tig Welded on the inner side for good measure. Time will tell if it works or not. Roger did the turning down.

Engine built, I then started on the frame. I got a Dresda box section swinging arm off Alex but this turned out to be a bad move as it just would not fit the wheel and hub assembly. I tried to locate some side panels that I could use off other bikes, and a BMW seat cowl was adapted to take an oil tank. I have even got photographs of this but your not going to see them. Boy was this turning out to be some freak of a bike. .... I went to see Crooks Suzuki in Barrow in Furness.

Now here I am, looking at proper racing Suzuki's, and liking what I see. I told one of the guys there (Mike) what I was trying to do and expected to get laughed onto the street, but that was not the case at all. Everyone was so helpful and understanding, it was great.

They all seemed to have a great enthusiasm for Suzuki's especially the old ones, and this I found very refreshing. I asked question after question and was never made to feel a nuisance. And in doing so developed a desire to make my bike look like one of the racing Suzuki's that adorn the showroom on Crellin Street.

I was able to get all the new bits I needed from Crooks Suzuki and even some second hand spares I needed too. Not to mention the advice which I was to find invaluable.

In addition I was given two contacts. The first one was Peter Keyte, Custom Tank & Designs. And the second one was Tony Baker....Frame builder.

First I went to see Tony to ask if he would do the modifications to my frame. I explained that I wanted a bike that would look like a racing machine of the seventies but be used on the road. Talking to Tony (who by the way is a very successful outfit racer) made me realise that I was just buggaring about, and with his help and advice began to think about more serious issues. Tony had some great ideas and it turned out that he was very familiar with the geometry of the T500. I left my frame with Tony and continued in my thirst for more knowledge of racing machinery.

We heard on the grape vine that Lee Brothers, a motorcycle dealer in Hebdon Bridge was having a clear out, and was filling a skip outside the shop. Roger and I had to investigate. Boy was this a find. Among the boxes of levers, indicators, and a fair bit of rubbish too, I rescued Two Brand New rear brake cables for a Suzuki T500. A lovely pair of Tommaselli levers (New in a packet). And spare's I was able to do more swaps with, including a fist full of various cables.

Roger donated a pair of Dunstall Clip On's which he had lying around. Things were definitely on the move.





## SUZUKI 500 FANATICS

### Chris Bradley builds a T500 racer - Chapter 3

Over the next few weeks I started buying any magazines that had pictures of racing machines. I was studying how the rear set mounting brackets were fitted onto the frame. How does the fairing attach, what kind of wheels do I need. It was no good, I needed to go and look at some bikes.

By this time there were two questions in my mind that were already answered. 1) that the front brake was going to be a double twin leading shoe drum. Only one reason for this I am afraid to admit, and that is that I just love the look of the things. And 2) I was determined to use the original T500 2/stroke oil tank filler cap which has OIL stamped in the middle of it. We all have our little fetishes, and there's two of mine.

I heard that there was some motorcycle racing on at Croft Circuit which is about 30 minutes drive away. More importantly for me there was to be a classic event. Needless to say I went. Not just to watch the racing but to get round some of the machines in the paddock and see how they were put together. It was a dry day so I decided to go on my bike, a Yamaha GTS 1000. I thought I might blend in a bit better dressed in my bike gear. (who cares really) As I got just beyond the toll booth I scanned the area for something to look at. The first machine I could see looked like the sort of thing I was interested in so I made a bee line for it. As I got closer It seemed to appear a bit familiar. " No it couldn't be". I don't believe it. It bloody was ! What I later learned to be, a Spondon frame Suzuki T500. I tell you the hairs on the back of my neck just stood up. Is someone up there pulling strings for me or what ! It seemed the hand of fate had been played once more, but boy was this getting a bit spooky.

The rider of the Suzuki told me he was winning his class although he believed the engine was not in a high state of tune. He also told me that he had a couple of seasons racing without looking inside the motor once. This gave me great confidence in my own project and tempted me further towards the racing scene. One of the other riders a fella called Mark was very helpful and recommended that I use a Femsal ignition system on my motor if I can get one. He also told me of a chap in Australia who has a web site with loads of info about T500's. This I had to explore, and although I was not on the internet then, I am now.

What followed was to be a long and lasting relationship of exchanges between myself and a brilliant guy called Murray Barnard. TR500 motorcycle racer, and a hell of a writer.

This web site contains a feature called THE SUZUKI T500 FANATICS PAGE. Actually there is about 100 pages. Chapters on everything from the original launch of the Cobra and Titan to the Factory Racers. Pages on how to build a racer from a standard bike. What shocks to use, what tyres, what brakes, what everything. The definitive guide to building a Suzuki T500 Racer. Lots of photographs and loads of tuning data. The bizzo.

After several letters to and fro I was given even more help in filling in the blank spaces in my still ignorant brain. I even persuaded Murray to sell me the Femsal ignition he had once used on his TR500. Things were getting even more interesting.





## SUZUKI 500 FANATICS

### Chris Bradley builds a T500 racer - Chapter 4

Another trip to see Alex got me a pair of GT500 forks which would prove better than the older T500 ones. Then I went in search for some wheels.

Stafford bike show was coming up and I was told I would surely get fixed up with something there. I had never been to Stafford but I can honestly say it was the best day out ever. My pal had to drag me away at 4.30 just so we could get home at a reasonable time. And guess what? ...I got a superb pair of flanged alloy rims for £19 each. They were brand new shop soiled Yamaha rims already drilled but I gambled on the drillings being about right.. ( they were perfect).

Talking to Graham Boothby from TGA Racing one day got me the front brake I had wanted. Graham told me he had just brought five new GT750 front brakes in from France, which had been forgotten about. £250 got me the brake and twin lever, and the whole lot polished up real nice. I later got my fairing from TGA for £100. Its good quality and I can recommend it to anyone.

One of the first jobs was to junk the old cup & cone steering bearings and replace them with taper rollers. I came by a set of yokes with a good strong feel to them and about the right offset and width. (They could well be Suzuki) A little engineering saw them accept a pair of bearings and later I spent some time removing the excess weight from the bottom yoke which also improved the looks.

One evening totally out of the blue I received a call from a fellow called Mike Thomas. Mike was racing Honda K4's and was thinking of using a Suzuki T500 front brake on his Honda. It turned out he had been speaking to Alex Clapson who had told him I had one for sale. Mike was also working on restoring a Robinson 4ls front brake but it needed some real work to get it back to original. While we spoke Mike told me about a friend in Mid-Glamorgan who was also interested in T500 Suzuki's. Chap named Rob Greenhill. I never gave it another thought and then a couple of weeks later I received another phone call. ( Thank goodness) from Rob Greenhill. Motorcycle Racer and Engineer, also Expert on many things including T500 Suzuki's .

After several exchanges of kindness and urine taking Rob introduced me into the world of the Two Stroke Tuner. Everything from Graham Alexander Bells theory on expansion pipe lengths to machining the squish on cylinder heads. Rob is a real perfectionist and when he offered to make me some crankcase stuffers and machine my crankcases I wasn't going to say no. Later we got onto cylinder heads and how we needed to locate a welder who could fill up our combustion chambers with aluminium at a reasonable cost. My old mate Roger new just the man to do the work and so we commissioned him to weld my heads first, and then when Rob saw the work he sent me a pair of his heads to have the same done. Fitting crankcase stuffers is of course to replace the volume of any material removed when lightening a crankshaft. Embarrassed as I was, I had to ask Roger if he would do the job (again). He's a real mate and he agreed to lighten and rebuild my crank once more.

Squish heads increase the compression and combustion therefore making for more power. Extra weld on the topside of the head is required to retain the wall thickness and I hope will also add strength. I remember cracking a cylinder head when I owned my standard T500. It seems to be a common fault on this engine.

There has been some recent theories on the subject of crank stuffers. Some would say that they are not needed, and the signal from the engine and the expansion pipe dimensions control the power. Others say that only partial stuffing is required if you can get the volume in the crankcase exact. Wherever exact is. Me, I decided to go with the tried and tested, Rob made the stuffers and machined my crank cases to accept them.





## SUZUKI 500 FANATICS

### Chris Bradley builds a T500 racer - Chapter 5

On my next visit to Crooks Suzuki in Barrow another problem became apparent. As I chose to use 18" wheel rims the Allspeed expansion pipes would probably ground out. This had me really worried, I felt like every move I made had some kind of adverse action. Being a novice I was learning by my mistakes.

Crooks to the rescue. Les Trotter who was made famous last year when he entered a T500 in the Manx Classic held on the Isle of Man. Famous because the race which is for machines dated up to 1968 and is dominated by Manx Nortons and B.S.A's etc. and is not for the likes of a Japanese oil burner such as Les Trotters. However, Les, in association with Crooks Suzuki had proof that T500's were racing in 1967 and placed an entry for the race. It shook the Classic racing scene and created an uproar of protests from people involved in the Manx Norton industry. You see the T500 is just too bloody fast for a Manx Norton, (in the right hands) and there would have been a flood of T500's being built and entered for the race. So they banned it, but nice try anyway Les.

Where was I ? Oh yes. Les had decided to try a shorter swinging arm on his machine to improve handling. This would mean using different pipes to accommodate the back wheel. So I bought Les's old pipes and he got some new ones.

Alex Clapson took my - his-? Allspeeds back and every one was happy.

It was about this time I started thinking about a fuel and oil tank. Crooks were also putting something together by way of a Café Racer seat unit. Something that would fit onto a standard frame without modification for those not wishing to take out the hacksaw. It was a consideration at the time until I spoke to Peter Keyte.

The T500 motor can be run on pre - mix only, by making some modifications to the crankcases. Allowing fuel mix to access the outer main bearings. Because the lubrication system on the T500 is so good already, I decided to keep the oil pump and have a supply tank in the seat.

The oil system pumps oil to the barrels and outer main bearings. Oil from the bearings is then forced by a centrifugal thrower along a hole in the crank pins to feed the big ends. What could be better than that. Yes I decided to keep the oil pump and then I could also use the T500 standard oil tank filler cap too. (sad isn't it ).

I rang Peter Keyte and discussed with him my requirements, I also sent along some photo's of TR.500's I had down loaded off the internet. Courtesy of Murray Barnard.

Pete was well aware of what I needed, and able to offer me some good advice. In addition he had a frame for a T500, left him by Don Leeson, who was also building a T500 racer.... That's bloody handy I thought. Another Coincidence ? Pete also showed me a photo of a genuine TR500 that he had done some work on owned by a chap called Dave Evans which looked great. Pete could build me a seat and also include an oil tank, inside but separate. I got Roger to make me a threaded neck for the oil filler cap and that was that. I waited a couple of months for the bits from Peter and when they arrived. Well I was delighted.

Although the genuine TR500 racers had a huge screw on type filler cap I felt that a standard Monza cap would be more practical and safer. Peter agreed and I think it looks OK.

Once I had some body work the thing started to look like a motorbike.

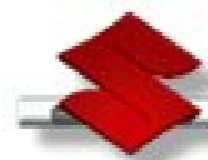
I set to work on some sheet aluminium and crafted myself a rear mudguard. Because the T500 frame is made from fairly thick pipe I was able to attach the mudguard with M5 round head socket screws, by drilling and tapping the frame.

I also managed to save some more weight off the top frame tubing when I was able to see where the seat would go. It really is a heavy lump, and needs to be trimmed wherever possible. More and more I could see a racing bike in the making.

The real tuning part of building a two stroke racer is what you do to the barrels, and the exhausts. Good advice would be to make changes to port timing in stages until you arrive at something you can manage.

As Murray Barnard had already done a hell of a lot of work studying this subject and has made the information available for us free, I decided to base my motor on something he had tried and tested, plus a little bit. I only hope I can ride the thing.

Spares for T500's are still relatively cheap so it doesn't do any harm to have a few pairs of barrels and experiment a bit with different dimensions.





## SUZUKI 500 FANATICS

### Chris Bradley builds a T500 racer - Chapter 6

If you can afford it a close ratio gearbox and straight cut primary gears are also an advantage. Murray's Web site has loads more info on this subject, and loads of great photographs.

Once I had all the components together I could begin assembly. It was important to bolt everything together before painting just in case something needed to be changed to fit.

I ordered my fairing from TGA racing and the front mudguard was ordered from MPS. TZ. Tank mounting rubbers and twistgrips came from Padgett's at Batley West York's, as did the final drive chain. Time came to plan a colour scheme.

I did like the colours of the original team Suzuki's and using Murray's Web Site I scanned the images until I came up with a scheme of red and white. ( very imaginative ) but effective.

Although I am a fair old hand with a spray gun I asked my pal Roy if we could paint in his garage as my wife is not keen on the smell of thinners. Nor is she keen on the over spray which once found its way upstairs and settled on the skirting boards.

We painted the frame first and graphics were ordered for the tank & fairing. I then matched the red paint to the graphics to make it look that bit more professional.

I made some rear set footrest brackets from Dural. A tip for anyone trying to cut this stuff is :- Use a jigsaw and the coarsest blade you can find. I use a Bosch and choose the yellow painted blades, together with some light oil for lubricant. This will turn an almost impossible task into a breeze.

Roger made me a stainless steel outer cable arrester for the rear brake, and I shortened the cable to fit. The brackets attach to the frame by two m8 bolts that screw into top hats which are tig welded into the frame tubing. The coils attach in a similar way near the headstock.

Footrests were also turned by Roger from aluminium and display some fine knurling. The rear brake and gear levers came from a set designed to fit a K series BMW I got second hand. I think they are available from M&P.

Crooks Suzuki supplied the front brake cables ( already shortened to accommodate the different handlebar height.

I decided to take advice from Murray on shocks and fitted Koni's. Tyres are Avon AM22 race compound. Again recommended by Murray.

A visit once again to the Stafford bike show in September 97 was a bit of a get together. Mike Thomas, Rob Greenhill, Alex Clapson, Martin Crooks and yours truly. Rob picked up a pair of barrels for £15 and also a pair of standard pistons for £35. and I got some 34mm racing Carb's which turned out to be a mistake. Some more advice. Never buy second hand carbs unless you know where they came from, and what they will cost to re-jet. I paid £80 and then spent another £70 for bits. A new pair already set up would have been £180.

Rob gave me the settings for his carb's which were confirmed as OK by Allens. If your interested.... Pilot jet 60 Main jet 250 Slides No.2 Needles 6D16 Needle jet - Q-O. The Factory Racers ran much leaner than this, but then they could afford to.

Perhaps next year we could increase the gatherings with other devotees of the T500. Les Trotter, Don Leeson, Dave Evans, and there must be more out there.

Just to finish the job off with a real touch of professionalism, my best friend of some thirty odd years Clive Dickinson, who is a top advertising photographer in Newcastle Upon Tyne, offered to do some studio shots of my bike. ( Image Photographic) ....WOW. A real nice way to compliment 18 months graft.

It has been a strange set of circumstances which have brought me to the present day. I have always believed that if you really want something to happen and apply all of your energies to it, then it will happen. Henry Ford once said " Whether you think you can, or whether you think you can't ...Your Right" But somehow I feel as if I have had some kind of guiding hand. Rob Greenhill suggested that I call the bike Serendipity. And you know I think I just might, when I find out what it means.

It has been a tremendous learning curve for me, and I have met some great people during this adventure, to whom I am eternally grateful.

All I have to do now is to learn to ride the thing and find some dosh to go racing. This will be the start of another learning curve for me, and perhaps the financial ruination of me too. However I am looking forward to the future and having some good fun.

Murray has just told me that Ray Battersby writer of " Team Suzuki" has recently been in touch with him. Also Frank Whiteway who won the production race at the Isle of Man in 1970 on a T500.

I think we may see a new era dawning for the T500 Suzuki, I built my TR Look alike for about £2,000 although I had a lot of help from friends. You can still build a budget racer for around that and get good performance at low maintenance costs. You never know! This could be the dawning of a T500 revival and with enough of them around perhaps a class race could be developed, and Les Trotter might get to ride a T500 around the TT circuit after all. Remember Henry Ford !

My thanks go to the following useful contacts.

Roger Bennett ... Engineer....Crank Rebuilds....Special Parts 01422 341862  
Rob Greenhill... Engineer...Stuffers..Heads.....Special Parts 01443 431198  
Tony Baker Engineer...Frame Builder....Special Parts 01768 881653  
Peter Keyte Fuel Tanks Seats (aluminium) 01386 554136  
Crooks Suzuki New & Used Suzuki Parts.....Advice 01229 822342  
Alex Clapson Suzuki parts T500....X7..... 01554 758145  
IMAGE Photographic ( Clive Dickinson) 0191 2688000

