

The late Don Hewitt with his Sprint Special (courtesy of Armin Fischer Photography)

Many greetings to our
reader!!!!!!!!!! (Joke!)

Herewith the latest
Scott Newsletter.

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EJP

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The Richard Moss Racing Scott.



Now running on Dope! (For our more modern readers “Dope” is a generic term used in Vintage racing to denote Alcohol fuel and not a somewhat different substance!)

Just thought that I would make that clear! Hey! Far Out Huh!!!!!!!!!! (Joke)

Roger tells me that it goes “Bloody well!” and runs cooler with its Speedway radiator. Hum! This is making me think about my own bike now! Rats! I thought that I had finished the development on it but Roger says that he is still developing his!!

EJP



I'll try and twist Richard's arm to get some riding impressions on it for later in the year.



Jig Grinding cups

Thursday Jan 17th and I decided to finish earlier than usual, as I had overcome a problem and did not want to start another job on a cold frosty evening. I have an ex yacht Danish Refleks diesel heater in the workshop fed by a petrol tank from a 1939 Triumph Tiger 100 that I used to race, but now have given to son Richard. I decided to fit a different tank to save the original from damage, as, when I started racing, I had a habit of falling off! I have for several years used Dickies Redhawk padded overalls in winter as you can work in temperatures down to 10 degrees C without feeling too cold.

The Refleks heater will keep the temperature at about 13 C without consuming too much expensive diesel fuel. So what have I been doing? I have two crankcases that needed new cups and I had hoped that if I made the cups accurately and bored the case accurately, then it might be possible to fit the cups without resorting to sub contracting them to David Holder to grind on his big grinding machine.

David's father Matt used this horizontal Heald machine to grind all the main bearing cups of the Birmingham Scott engines. I had wanted to be able to replace cups in house and so it was a disappointment to find that the difference in surrounding wall stiffness of the case around the cups resulted in the cups being compressed slightly out of round.

The ovality was between 0.001" and 0.0015" and this was not good enough for me. I had previously tried to use a jig grinding attachment on my horizontal Kearns S type Optimetric boring machine, but despite my best efforts, I had not managed to achieve better than 0.0011" ovality. I have two cases that had already had new cups fitted, one for Steven Scullion in New Zealand and one for Marco Prenner in Austria. I needed to just skim these cup bores to restore roundness to 0.0004" or better.

I realised that this job needed to be done vertically so the "Droop" you would get when trying to use the equipment horizontally, was eliminated. Unfortunately my Thiel 158 small jigmil did not have space to mount the equipment without removing the worktable. I had not wanted to do this as it

takes time and refitting must be done with great care so to achieve accuracy, as it is often used to jig bore rod small end bushes.

OK, I have a problem and it will not solve itself by looking at it, so off with the normal worktable.

When I first came to Fox Cottage, I realised that I had better cater for old age, in that we become less able to carry heavy loads. I first built a floor at eaves level so as to have an attic space for storage and insulation. As I had to fix extra cross beams, I under slung some heavy duty track made for suspending barn doors with one run each side. I then bought a length of Demag light crane beam with a trolley. Suspended from the trolley is a box section beam with a pulley at the top and a robust caravan winch at the bottom. Fit some 2 ton climbing rope and a hook and Hey Presto, we have an overhead travelling crane covering the entire machine shop.

This is very convenient for loading heavy items, which are quite beyond one or even two men to lift. Using this facility, it was easy to remove the machine normal table to leave exposed the vertical mounting face. Next take a fixture plate of 30mm thick aluminium on the Thiel 162 five axis jigmill and make a sub plate that will fix to the front of the 158 and accept the existing steel location plate fixture to which the case attaches as it would to a cylinder barrel. Mount it all up and then attend to the machining part.

I generally use the high precision jig boring head on the 158 and in this we put a Wohlhaupter UPA3 offset jig boring head and under this, an elderly Bonham and Turner air driven jig grinding attachment.

Nobody likes producing abrasive dust near quality machine tools, so we have to give attention to this. I have a very large industrial vacuum unit that I was given by a company when they no longer had use for it. If you are interested why, it was because I supplied them as part of tooling on Haas CNC machines to remove all cutting swarf as part of the process. The equipment comprises a BVC 5.5kw side channel exhauster and a large interceptor and it is generally used to quickly remove cutting swarf from work pieces and machine tools.

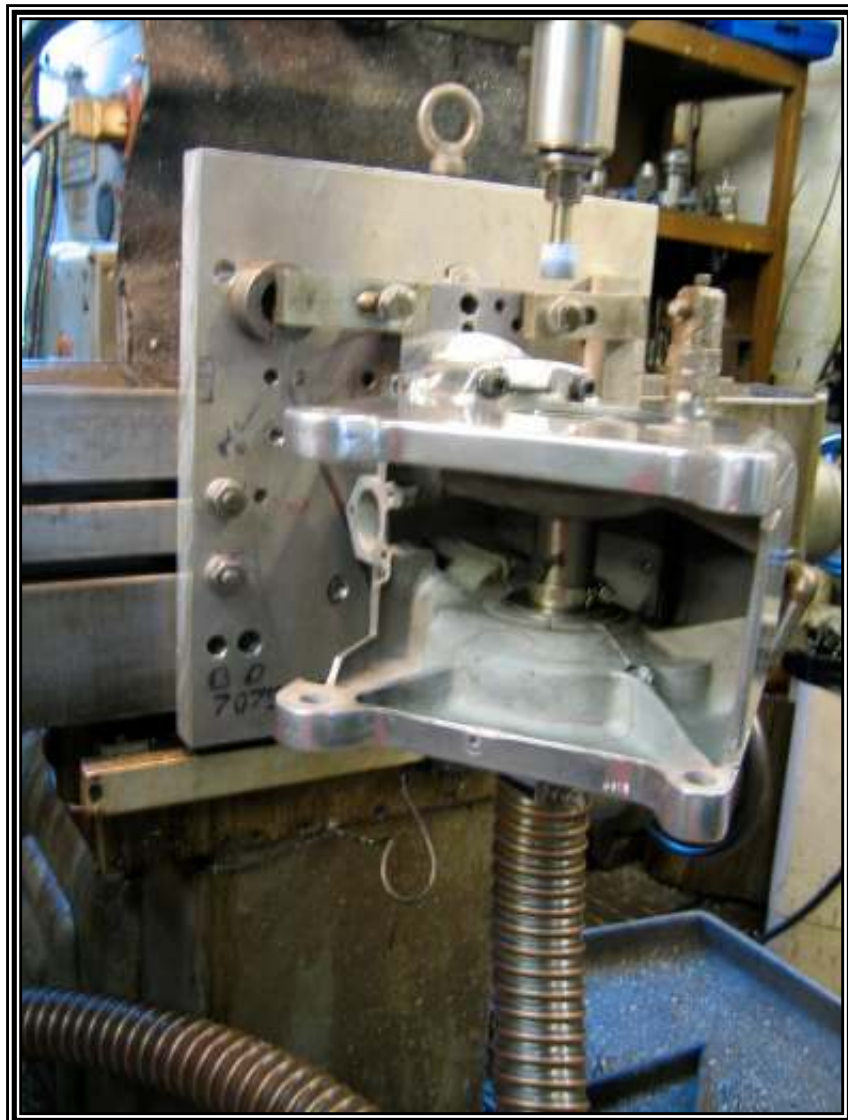
We only are productive when we cut metal and so anything that reduces non productive time cleaning is helpful. We take a pipe that will pass through the centre hole in the cups and pass it through the opposite side to that we

are working on and feed it through until it is half way through the centre bore in the top cup. We fix it in this position and connect a big vacuum hose to the rear of the tube.

Now when we jig grind the bore, the vacuum will pull all dust and swarf down the centre of the cup to the vacuum system interceptor

Next rig up a diamond dressing tool and a clocking attachment to centralise on the existing cup bore.

I do so hope that this will give me an acceptable result after all this work, but I believe that a job is either right or wrong and try to avoid compromises at all costs.



Result. I ground both cups to restore roundness and have measured ovality of only 0.0001”

Roger is a happy boy (Boy at 72?)

This reminds me of an anecdote. Back in the early 1980’s, our old family company designed and manufactured a suite of machines to carry out operations on two types of Perkins tractor engine cylinder heads for South Africa.



They were well pleased with the machines and on a visit, I was invited by the Managing Director Harmut Beckerts to take lunch with him.

When I told this to a divisional manager, I was told that this was impossible, as Mr Beckerts never saw suppliers.

The invite was checked and confirmed and I duly dined in royal style with the great and the good, but I carefully avoided any mention of machine tools.



The Moss Production Line

After the lunch we walked out into the sunny cloudless South African sunshine and Mr Beckerts looked down on me and said “We are quite pleased with your machines. We think they are rather good”

At this moment, the Devil entered unto me and looking up at him I replied “ You know, it is not important what you think of our machines, it only matters what I think of them.

If they are good enough for me, they are definitely good enough for you” His face became a mask and I thought, Roger, whatever possessed you to say that when we had won a two million pound order. Then his face cracked and he laughed heartily and clapped me on the back.

I became known as the man who loved his machines. I wrote a piece to recommend they opened a training school for engineers, which they did and I offered to give a talk on Scott motorcycles and they started an industrial society with this as its inaugural meeting.Ok let’s see how many of you find this sort of thing of interest. If you love it or hate it, I would appreciate some feedback to roger@mossengineering.co.uk to guide me. If anyone wants pics or info on cranes or machine tools, then just ask.

Roger Moss

Scott Record Attempt



Some years ago when my son Richard was working with me, we used to have a visit from Titch Allen about every month. Titch was, as ever, full of enthusiasm and could talk the hind leg off a donkey. Richard filmed some of these visits and I am sure that these films might be of interest in the future to younger members .

Titch had a special affection for Scotts and he tested my TT Replica now owned by Ted Parkin in his second book of Vintage Road Tests. Titch was always urging me to set a new speed record for a Scott.

He explained that the famous 101 mph recorded at Borham Wood with two men a distance apart with a stop watch waving handkerchiefs to signify when the rider passed, was not a method to inspire confidence. Surely I could do better and prove there was life in the old Scott yet, he said. I decided that I could not disappoint him, but realised that serious record attempts were carried out with streamlining.



If I was to have a serious attempt, I needed a dustbin fairing at least. At that time, the most famous dustbin fairing was that adorning the front of George Brown's Vincent Nero. I had bought fairings before from Sprint Manufacturing in Wiltshire for my Laverda, so they were my first port of call. I was in luck, as they had a mould taken from the Nero dustbin fairing. As told to me the history was something like this. In the years immediately after WW2, we still had an extensive aircraft industry and motorcycle enthusiasts who worked in the industry could be very helpful.

It seems like the Nero Fairing was hand beaten in the De Havilland plant unofficially, or what we call "A Foreigner" The bit I like is where it ended up being tested in the companies wind tunnel on night shift! Ah those golden days of yore! I ordered my copy fairing in GRP and started to work out how to adapt it to my Scott.

I next considered if it was possible to extract more power from the engine. There are no books on tuning for a Day cycle two stroke engine and although some general principles written for the Schneule two stroke engine are helpful, when it comes to the gas flow in the cylinder head, you are on your own.

I had observed the clear visual evidence that the combustion in the space over the exhaust slope of the piston was a lot faster and hotter than that over the inlet slope. Dear old Alfred, bless him, knew all about this more than 100 years ago and had a special magneto made by Bosch to fire two spark plugs at different times, one in the inlet slope and one over the exhaust slope. I was making my own heads with the shape of the piston crown and decided to cut in a track to give a flame path from the exhaust side to the inlet side of the head. The hope was that this would fire the inlet side of the charge earlier and the whole combustion process would take a shorter time. It is quite obvious that any combustion that raises temperature and thus exerts pressure on the piston, will try to push it downwards.

If this pressure is exerted before the piston is at Top Dead Centre, then the effect will be to try and push the engine in reverse. The problem is basically that if you fire the charge at TDC, then the fire can take so long to propagate that the piston has already moved too far down the bore and thus the volume above it is large. If the volume is large, then the pressure applied to the piston crown is correspondingly smaller. All engine designers seek to have the burn as short as possible, so that when finding the optimum point to ignite the charge, there will be as little time as possible spent before TDC. You can look at it like a set of old fashioned weighing scales. Whatever amount of power is applied negatively before TDC will have to be balanced by deducting the same amount of force generated on the plus side of TDC to cancel out the losses. This power is therefore lost to us. However, back to the plot ---

From memory I was using a mild resonant exhaust system that had been

kindly given to me by George Silk. He told me that it was made in accordance with calcs. By Gordon Blair of QUB. Although I have always done the majority of setting adjustments at the track from direct riding experience, I had taken the bike to David Holmes to be tested on his Heenen and Froude water brake dyno. To my great satisfaction, his test confirmed that my settings were correct. The test showed an output at the rear wheel of 35.4 bhp. My head modifications were done after this.

At an April Stafford Show, I was introduced to a young Japanese man, Daiji Ikarashi who was trying to gain knowledge of British Classic Motorcycles. He asked if he could work with me and learn a little about Scotts. I explained that unlike most British Bikes, this was not an assembly job using off the shelf parts, but really an engineering tool room job to make parts including bearings and as such, to do it properly, it was a job for an engineer rather than a mechanic.



He persisted so he joined us for a few weeks. You could not have wished for a more diligent and meticulous young man, but it is difficult enough to try and rebuild a quality engine if you are reasonably quick to a price acceptable to the owner, but is impossible if the operations take much longer than expected. How could I afford to pay him a living wage? While he was with us, I asked him to complete the fitting up of the George Brown dustbin fairing and he made a very good job of it. I booked to take the bike to Woodbridge where I could do a flying kilo, with the hope of equalling or surpassing the famous Vincent 128 mph speed.

Unfortunately the bike was not running as hoped and was only measured at 114mph, but at least it was an officially timed speed and the fastest speed ever recorded by a Scott to my knowledge. We later found that my head modifications were not successful and the bike was only recording 30 bhp at the rear wheel. I then had a new exhaust system made according to the formula suggested by Gordon Jennings and made by Alan Muggleston. This was a true work of art and we took it to David Holmes to test on his H&F dyno

It made 41.9 bhp at the rear wheel which David calculated from his records to give the bike a capability with the dustbin fairing of 135 mph.

Immediately afterwards was a Festival of 1000 bikes at which Pete Gagan from Canada had asked to ride the bike and had a man to film the event.

When you start changing exhaust systems, then everything is changed and it can take many frustrating hours to get everything re set. It would take too long to explain it all in this piece, but if I am asked, I will write a piece about the effects of using a resonant exhaust in a future edition. To my absolute mortification, at the Festival, the bike was very hard to start and Pete had difficulty to keep the engine running round the slow hairpin. Pete had his run for the cameras, but the bike was lame. We went home with our tails between our legs and stripped the engine. Oh yes, the new exhaust had unlocked considerably more power, but it would seem that on the final run on the dyno, the heat had got too much and a minor seizure had occurred.

It was not bad enough to notice, but it was bad enough to smear aluminium from the top of the skirt over the single rings I use and keep them fast.

What did I do? A slight increase in piston clearance and taper. A

considerably bigger main jet. A modified needle. Octane booster in the fuel. Ignition retarded to 21 degrees before TDC. By the feel of it, I would guess that we have about 43 bhp at the rear wheel now which should equate to about 45 bhp at the crank. Perhaps enough for 137mph with the fairing, but I tell you honestly that it scared me and Richard said he would like to try.

Dave Holmes expressed the opinion that it would be possible to get 50 bhp from the engine and I agree, but it would need time and money I do not have. The bike has had many modifications and I fully understand the criticism that "It is not a proper Scott" It has, however been an invaluable test bed for internal design modifications that significantly make a good bike into an outstanding one. Having finally got power, handling, road holding and brakes into one very reliable package, I have no mood at present to push the boundaries further. I have promised myself that the next project, given I first clear some customer engines, is to build a copy sports engine for my Silk Scott. If it goes like the racer with the Spondon frame, it will be a cracker!

In addition, Son Richards bike has a top engine and is a beautiful and original single down tube model with that lovely optional nickel plated tank.

So we have two Scotts. One my own bike that if not original, has garnered respectability as a well-known special, and Richards "Sprint Special" lookalike from a single down tube tourer, that is a superfast original.

We must never stop trying I suppose!

Roger Moss

Vincent to the North

© EJParkin 1995

Rebuild.

Geilenkirchen.

Time slowed. Life settled down, relationships became less frantic and one day, while popping into the cellar for a bottle of wine, I stumbled over the sad remains of the Vin. "Bloody heap, give it away soon." Slam! Went the door.

Hang on didn't I once talk about rebuilding it! Nah, couldn't have been me!

Perhaps there is a perverseness in human nature, which bucks against things being too easy. The thought came again. I found myself thinking about the Vincent. After all those problems with it, all that swearing, being late for appointments, hassle and unreliability. No I didn't think so.

The Americans have a saying for this it's called "Having a Burr up your Ass." Whatever it was it wouldn't go away.

The Vin languished in the cellar, not saying very much. Now and again the odd drop of oil would drip from the gearbox and dust slowly settled on the cycle parts. Until all a casual observer saw was a heap of old, strange shaped, bits of junk. *Shame to leave it in this condition. Suppose I could always paint the tank up. Not that I have any intention of riding it!. Maybe put some sort of Mural on the side. That should upset the purists!*

So, against all common sense, there I was up to my ears in a rebuild deep in the heart of the Bundesrepublik.

I dismantled the bike, bought a copy of the workshop manual and set to.

I won't bore you all with the details of the rebuild, suffice it to say that 3 months later a complete bike sat in the cellar with a Star Wars Mural on the tank, 13" car rims shod with radial tyres, a Suzuki disc brake system on the front forks and a car alternator tacked on the drive side of the engine. The rather lopsided appearance this gave to the bike didn't bother me as the bike was destined to be a racing cum touring sidecar outfit.

Now, this being a rather special kind of bike it needed to be launched on to the roads of West Germany with a bit of panache, a bit of a do. So taking a leaf out of my Danish friends book I organised a "Coming out of the cellar party"

An aside.

Since I had spent 12yrs as part of a couple I had lots of married friends. These I found, within a very short time, started to distance themselves from me as soon as I became single. A threat to their wives perhaps? Or did I have something that might be catching, like common sense. Whatever it was (and I still feel it was motivated by fear) my 'friends' appeared less and less. There is a Catch 22 situation here. Married friends feel threatened by a single person and single people are wary of someone who has come out of a long term relationship. Therefore, the chances of broadening your circle of acquaintances within your immediate group become rather limited.

I found the answer to be simple, if somewhat drastic. I stopped inviting people I knew round and didn't issue any invitations about the coming out party to any of my old friends. The word sneaked out of course and people who really were interested in the Vincent project and me as a person found their way to Geilenkirchen. A thoughtful and enlightening way to sift the populace!

Back to the party!

A huge success!

We even carried the bike out of the cellar and got it to run, very illegally, on the road outside the flat. My neighbours weren't impressed. It was a quiet Sunday afternoon and a 1950's Vincent on open exhaust pipes is not music

to everyone's ears. We compromised after a couple of runs for photographs and repaired to the flat to toast our success in Rhienhessen Gutes Domtal.

A cheeky little wine, I was amused by its audacity.

I had earlier bought a touring GRP sidecar, a Watsonian Palma, and this was fixed to the bike.

It was a strange feeling to be back on the old Vincent after all this time. There were of course no similarities with the Honda, but it felt good.

I tentatively tried a run up the road, not bad! Longer runs followed until after a couple of weeks I started running it to work. It was the late spring, balmy days stretched before me and after work I used to detour through Holland. One memorable evening we took a lengthy run through Belgium and the Ardenne, magical motorcycling countryside!

Back to the story.

Earlier in the year I had sent for the regulations for the Vincent Owners Club High Speed Trial to be held at Cadwell Park, Lincolnshire. My application had been accepted for the sidecar races and indeed here I stood with a fully rebuilt outfit, a reasonably competent rider but no passenger.

I started dropping subtle hints at work.

No response.

A couple of nibbles I quickly reeled in but after a look at some action photographs and my reluctant admittance that I did not have any **actual** racing experience these potential passengers beat a hasty retreat.

Time was rapidly marching on, I had 3 weeks in which to find someone or I would be at Cadwell as a spectator.

One day Liz showed a tentative interest!

Liz was twenty-two, tall, slim, athletic and full of humour and charm. I can't understand why I hadn't thought of her before!

I thought the best approach would be to explain the subject over a quiet dinner. That way Liz would, hopefully, be constrained by her surroundings and the reactions and hysterical laughter wouldn't be so bad. A table at the local restaurant was booked, I gathered together all my photographs. Rehearsed the spiel and scrubbed all the lingering traces of oil from my cut and bruised hands (almost like old times again) before picking her up.

Olde worlde restaurant.

We sit down, order the meal and a bottle of wine. I prepare to speak. "Don't even think of trying to talk me into passengering with you on the Vincent" says Liz.

I was shocked.

"When do we start practising and who is paying for this dinner?"

I was even more shocked.

"Saturday OK? and I am!"

"That's fine, my treat next time. Now, what do I need, how much will it cost and where do I get the racing licence from!"

Unbelievable! Straight talking, down to earth, practical questions. What a pleasant change from all the evasion, half-truths and manipulation I had been used to.

The wine arrived.

"Cheers" I toasted.

"And **Don't** crash!" she said.

Cadwell Park.

England.

We lost.

By 2 feet.

There was no way we could make up the distance. We tried our best.

The motorbikes and sidecars trickled back to the paddock, all tired, hot, thirsty and drained with the physical effort. Two massive mugs of hot tea cooled our body temperatures, which, together with a welcome cooling breeze bought back a semblance of normality and humour.

Liz, "I said don't crash! Remember!"

"OK, OK nobody's perfect"

She was sponging the oil from her leathers, her boots were hung over the handlebars, gloves and helmet stuffed into the nose of the sidecar.

We had trained on the way to Cadwell and were lucky to be here at all. The charging circuit had been playing up on the way over and although I had effected a repair the problem remained. Humour still ruled however and we had acquitted ourselves well on our first road race meeting.

We had stayed at my friend Barbara's house at Newark on the way up getting to know the bike and training on the country lanes. Barb thought we were mad to be doing this at all but as usual supported us in our efforts. She had even bought the family to cheer us on, we appreciated it and were looking forward to a quick blast back to her house for one of her famous evening meals.

This had to be a quick trip to the UK as time off work was a rare commodity these days and we were intending to catch the Sunday evening ferry from

Dover, getting us back to Germany in the early hours of Monday morning. So no time to hang around.

We had enjoyed the weekend, were sorry to leave our newfound racing buddies but food and ferry wait for no man and our stomachs were calling us to Newark.

Sunday morning dawns dismal and grey, it's raining. Actually it's not raining it's throwing it down! We chat for a while to give it a chance to ease off. No good, it is as heavy as ever so we reluctantly head off home.

The A1. Within 10 minutes we are both wet through from spray being thrown up by overtaking cars and things are indeed grim. Plod on, fill up with petrol, and keep going. Not much conversation from the passenger department as the roundabout by Peterborough looms.

I sweep towards it, a car is on the roundabout, "My priority" I think. *Living in Germany you know*. Bang! Yes it did hurt, no we weren't damaged and the bike was all right. The driver turns out to be an off duty policeman, who is loud in his complaints! Quite rightly so.

Names and addresses are exchanged, more gloom and doom. Will we catch the ferry now?

We certainly did! The rain eased, traffic slackened and we raced along, using the techniques learnt that weekend, down the A1. Into London, screaming through the Dartford tunnel the engine throbbing with power the sound reverberating off the tunnel walls. We blast back into the open air and continue to Dover.

Made it with 20 minutes to spare! Easy!

Sleep beckons, exhaustion sets in and we dream our way over the channel. Belgium passes, a quick skip through Holland, drop Liz off and back in bed by 4 am. Nice one!

I am at work by eight.

Two weeks later a letter from the Chief Constable of Leicestershire tells me I am a **very** bad boy but they will not prosecute.

Lucky eh!

EJP

Scott Kite Forks

From: Brian Marshall yowl1@hotmail.com

As with most Scott history, the kite-shaped forks are a bit of an evolving thing:- The first ones came out at the end of 1926, with the first duplex-framed Flying Squirrels, and they had straight tubes in both the top and bottom sections. A few failures occurred, especially in heavy sidecar usage, and so somewhere in early 1928, they were beefed-up by putting taper tubing in the bottom section only, retaining straight tubes in the top section. A few failures still occurred, and so at the end of 1928, when the first TT Replicas were made, the forks were again strengthened, with taper tubing top and bottom. These were also used on the 1929 Flying Squirrel Deluxe, whilst the 1929 Flying Squirrel Tourer had Webb forks.



My photos of the 1928 'works' Isle-of-Man TT machines, of which eight were built, (two, maybe three, for the Sidecar TT Race, which was cancelled, and six for the Senior TT), show a mixture of the two later types of fork, so I think it is fairly safe to say that the final version was first used on the 1928 works bikes, before being fitted to the first TT Replicas.

There are other variations with these forks, apart from the type of tubing ! The works machines had a bronze rather than iron top crown, and the bronze items are occasionally seen on early TT Replicas too. The shape of that top crown also varied, as the top part of it, where the Andre steering damper fits, are wedge-shaped on works bikes and some early TT Replicas, and the later iron ones have a rounded shape to them.

Still more variations occur with the lugs for fitting the Bentley and Draper 'stabilisers', as if you ordered a bike from new with the B&D stabilisers, the mounting lugs were brazed onto the fork legs. If not so ordered there would be no mounting points, and so, if you 'retro-fitted' the stabilisers, they would come with fittings to clamp them in place.

That is all I can think of at the moment !!!

Brian



Barry's Scott

Hi Roger I thought you might like to see a picture or 2 of my 1929 Flying Squirrel to which you so helpfully supplied piston blanks and advice.



The picture below of me with the palm trees was taken just after I had returned from riding the full TT course in August last year.

I was running it in of couse. After a bit of mag trouble (fingers crossed) it runs fine.

Regards Barry Lain From: Barry [mailto:barrylain@btinternet.com]



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