

**Here with the Latest  
on-line Scott  
Newsletter..**

**A bit of a different start this  
time but we assure  
our reader**

*(same joke as last time!)*

**that we will get back to the  
bikes shortly!!!!!!!**

**Till then read on!!!!!!!**

**Hummm!!!!!!!!!!**

**Ever fancied a Threesome!!!!!!!!!!!!!!  
(JOKE!!)**

Well Roger and I now have one each!!!!!!!!!!

*(It's our age you know!)*



*The Moss one!!*

*The Parkin one!!*



Details below. (Errr, Somewhere!!!!!!!!!!!!!!)

# Disclaimer!

The complete contents of this **social** newsletter are offered to all subscribers purely as a guide only and all subscribers agree to accept this newsletter on that understanding. Any article in this newsletter does not imply any endorsement or implication that the compilers agree with any opinion or services mentioned within it. All subscribers accept that they are wholly, and personally, responsible for checking that any services used are suitable and appropriate for their personal needs. Articles, and services, seen in this newsletter are on an “as is” basis and the compilers make no representations or warranties of any kind with respect to the contents and disclaims all such representations and warranties about the accuracy, completeness or suitability for any purpose of the information or related graphics within. Furthermore, whilst every reasonable effort is made to ensure the accuracy of information, it may contain technical or typographical errors. All liability of the compilers, howsoever arising, for any such inaccuracies or errors is expressly excluded to the fullest extent of the law. Once again, all subscribers, by downloading it. Are agreeing to accept this social newsletter on that basis.

**EJP**

[editorejp@live.co.uk](mailto:editorejp@live.co.uk)

## Repairs for frost damage to cylinder blocks.



It is a fairly common occurrence to be asked to rebuild an engine where the cylinder block has been damaged by cooling water without anti-freeze turning to ice, expanding and breaking the rear face of the barrel.

If the damage is not too severe and is just cracks, then this can be repaired by soft soldering, brazing or welding with iron filler rod. If the cracking is severe and widespread, then the best solution is to mill out a section until back to undamaged metal and make a patch that can be inserted. I think the Scott is greatly enhanced by a good radiator and a correctly finished barrel. The original iron barrels were polished and then painted with translucent magenta tinted varnish. In this case the polish shines through and gives a lustre that can not be replicated by a non-translucent paint. We therefore have two options for our repair. We can elect to repair by Soldering or brazing, but in this case we must use a non-translucent paint, as if a translucent finish was applied, then the solder or braze being of a different

colour can be clearly seen. If we need to get back to original, then we must repair with iron type weld metal and if a patch must be used, then this should be of iron. The barrel can then be polished and refinished exactly as original. So what are the differences? If we Solder or braze the damaged area, then there is no need to polish the barrel, but some local car body filler can be used to give a flat surface. These methods are the cheapest.



If the barrel is repaired by using iron welding, the barrel needs heating to a considerably higher temperature and the welding filler is more expensive. After this the barrel will need blast cleaning to remove the pre heating scale, then polishing and painting with translucent coating. All this makes the Iron repair route perhaps 50% more expensive, but the owner has the choice.

It is very important to realise that a good repair, whether by brazing or iron welding, can only be attained if the barrel is thoroughly and correctly pre

heated. I know my limitations and I trust and respect the true craftsmen who have the knowledge and experience to do these jobs successfully. For those with engine blocks which pre date the flyer models and have non water cooled heads to the blind barrels, then these must be completely stripped before welding or brazing as the gasket seals will not survive the pre heating operation. As regards Flyer types then obviously, water jackets and gaskets must be removed and the half compression valves removed as the heat will anneal the springs if left in situ.



**Roger Moss**

# Old Geezers Fun!!!!!!!!!!!!

(And why not!!!!!!!!!!!!)

It started with a call 4 weeks ago from Roger Moss asking if he could pop over (*500 miles!*) and borrow my Guzzi engined JZR 3 wheeler? "No problem!" I reply "But why don't you buy the one in my village?"

Roger was surprised that there was one available right here, However I "made enquiries" (*as the constabulary are wont to say*). And within 2 hours it was his!!!!!!!!

Now, I have a major love of resurrecting things (*No Religion here chaps!!*) as a thank you for Rogers help and advice over the years. So! The trike was towed home to my cottage. I loved it at first glance. *Marina later asked Roger "Did Ted find it on a tip?"*







However the game was afoot and 4 week's later "The Red Baron" rolled out of my workshop.

Why the "Red Baron" ??? ask the JZR Pilots Asssocation!! *"Wot larks eh Pip"* (Charles Dickens)

Anyway, got to "Fly!" Thought I heard a couple of Fokkers passing overhead. However, on reflection, maybe these Fokkers were Meschershmits!!

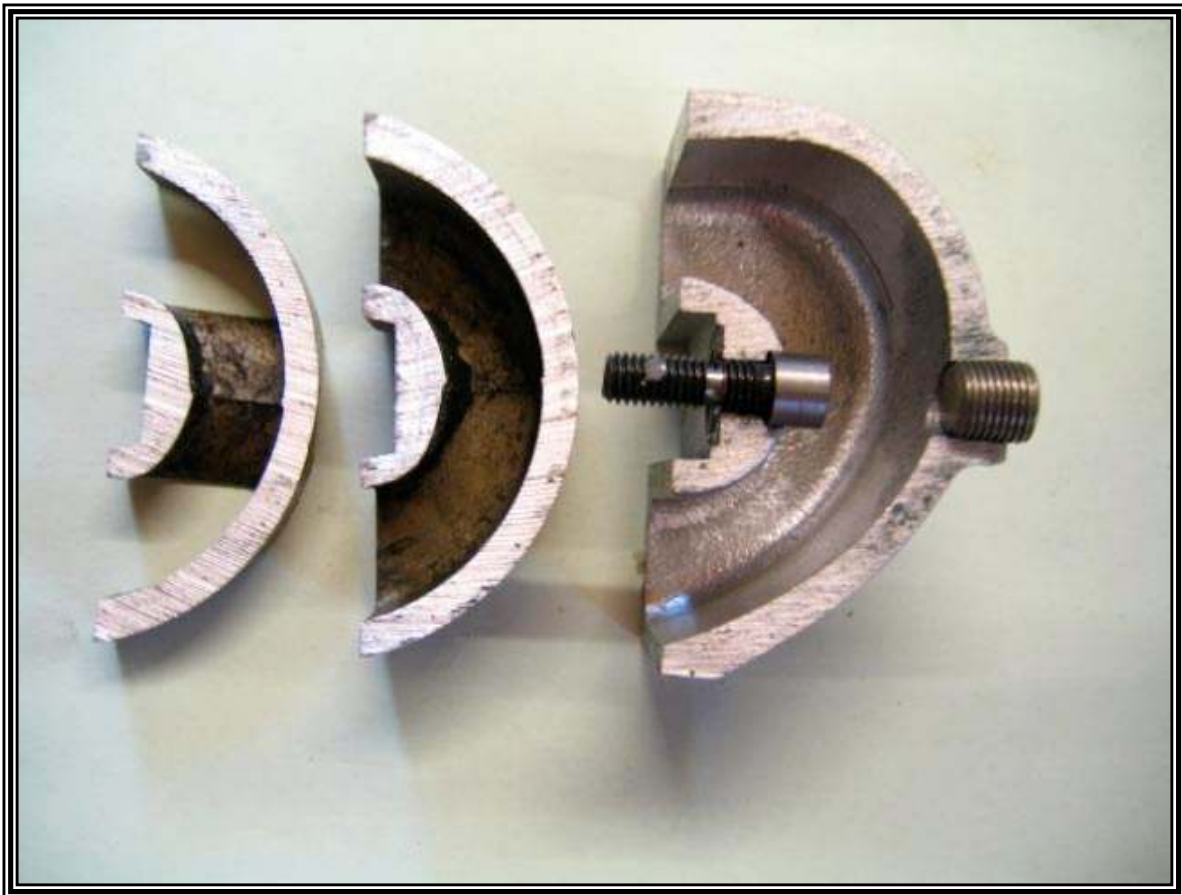
***Toodle Pip!***

EJP

**The “Almost Yowling Scott” in the  
backwoods!**

*NiceEh!!!!!!*





## Port covers

This is in answer to an enquiry to ask if the fitting of Moss Transfer Port Covers would bring an advantage to a standard engine. As usual, I got completely carried away so perhaps better to share the efforts I have taken more widely!

If our Transfer Port Covers are fitted to an unmodified Scott engine, there will be an improvement.

Looking at the system practically, I would expect the existing gas flow to be less impeded by the abrupt changes of direction that it is obliged to make, plus be squeezed down through more restricted passages as it goes through

either side of the bridge in the traditional transfer port covers.

I note that when Scott's produced the "Clubman's Special" model before WW2, one easily noted feature was that it had enlarged Transfer Port Covers.

As I remember these, they were larger but symmetrical, whereas my version is not symmetrical.

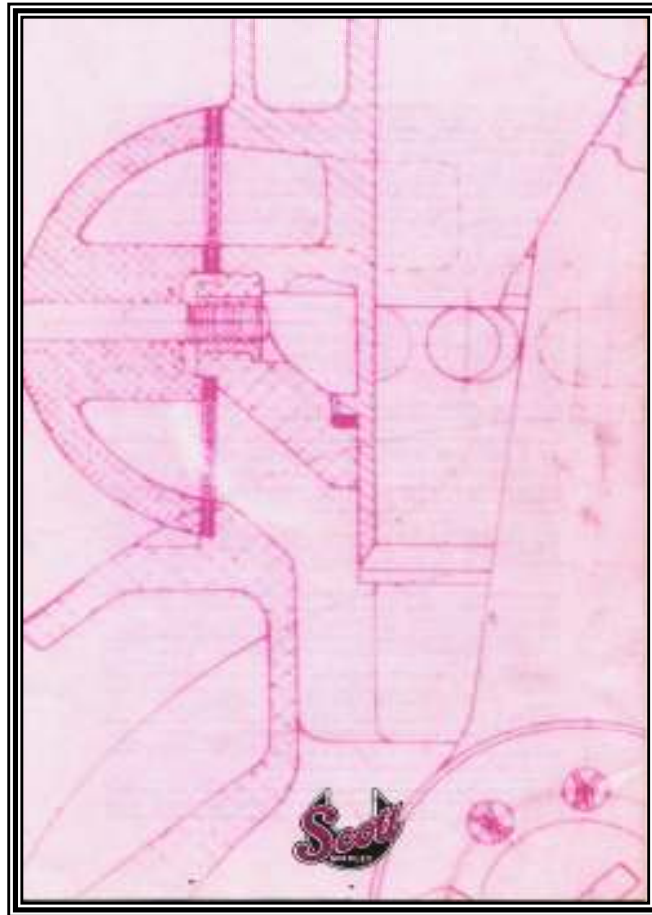
I suggest that you look at the rear cover of a copy of Yowl. I cannot be sure without checking if this has been changed in recent times, but it used to have part of a drawing which illustrated the Transfer Port Cover and its associated passages

From this you can clearly see that the direction that the gas flow needs to take as it enters the TPC is considerably different to the direction needed on exit

The fact that the Scott TCP is symmetrical has led to a compromise where nobody wins!

My TCP's are not symmetrical and have the entry at an angle that offers much less resistance to the free flow of the gas

As the gas passes through our TCP's, they are not suddenly obliged to separate into two smaller streams so as to negotiate the central internal bridge, within which the central holding down bolt is located.



In our case, the size and section of the duct remains constant, as there is no central bifurcation bridge and so, no additional obstructions are imposed on the gas flow. Finally we come to the conditions at the exit to the TCP. Here the contrast in the two versions is much more evident. If you look carefully at the drawing I mentioned on the back cover of Yowl, you will see that whereas the gas exits the TCP at an upward slope of about 40 degrees to the horizontal plane, it then must enter the transfer port duct in the cylinder barrel which in good examples as per the drawing, has a downward slope of about 6 degrees.

The gas flow must therefore make an abrupt transition of 46 degrees and you do not need a doctorate in fluid dynamics to appreciate that this is not helpful.

As I have quoted many times in trying to explain gas flow. The easiest way to appreciate the basic principles is to observe the activity of water flow in a brook or stream. I particularly like to look down from a bridge that crosses a

waterway and has supporting piers on the stream. The extent of disruption and deviation to the flow is clearly demonstrated. Of course we can remember epic floods where the pressure of the engorged water flow against a bridge has destroyed the bridge.

When I considered how to give the gas an easier passage from the crankcase to the cylinder barrel, the first consideration was to accept that entry and exit conditions were different and that logically, the design of an improved TCP should have entry and exit conditions that would best harmonised with the existing conditions of the crankcase and barrel. It was then but a small step to arrange a shape where the internal curvature of the TCP became progressively tighter so that at the exit, the flow should blend into the minus 6 degrees of the barrel duct. The gas then arrives at the entry point to the cylinder with the minimum of disruptive agitation and therefore, is also less likely to spill sideways around the sides of the piston deflector.

The result is that the amended TCP will therefore increase the efficiency of a standard engine.

I must add a further comment and expand on your question.

Please understand that the efficiency of the gas flow was studied for the entire engine and the efficiency of the inlet tract was far from ideal. If I rebuild an engine, then this is the first aspect that is given attention. If you cannot get enough gas into the engine, then this becomes your primary limitation.

Once the restrictions of the inlet tract are alleviated and you have your engine no longer asthmatic, but taking deeper breaths, then an increased volume of gas needs to progress via the TCP's, so the improvements here become all the more helpful. Having delivered a greater volume of gas into the cylinder for the piston to compress, then the actual pressure produced at top of stroke is greater. Forget all about compression ratios, as what matters is the volume of gas you can have to compress. The more gas you have, the higher the pressure, the quicker the combustion burn, you can retard your ignition timing setting, the more efficient your engine.

Please note that we have NOT changed any engine port timings and thus we have NOT changed the character of the engine. The objective is and always has been, to make a good engine even better.

If you are still interested in this stream of logic, I will throw in another factor for your interest. Look again at the drawing on the back cover of Yowl.

Look carefully at where the gas from the crank chamber must travel upwards until it must make a 45 degree left turn to enter the traditional TCP.

Not a happy condition and made more unfortunate by the obstruction of the barrel skirt extending down into the gas stream.

As regards the obstruction of the skirt, Scotts realised this problem and many later barrels have a cutaway at the rear for a width similar to the width of the entrance of the passage to the TCP. This helps, but we still have an abrupt left hand turn with all the losses this entails. What to do?

A helpful procedure is to make a port in the rear face of the piston. Gas is now able to flow upwards into the piston carrying with it the cooling and lubrication properties and then exit horizontally through the cut-out in the barrel skirt at that position where the existing gas stream is obliged to make a 45 degree LH turn. In my mind's eye, I often imagine two cars that have a collision at a road junction of similar layout. What would be the result? Well logically the combined energies and directions should lead to the combined masses to travel left at about 45 degrees. As the Japanese people say Ah So!

The provision of a port in the piston thus, cools the underside of the piston crown.

Lubricates and prolongs the life of the little end bearing.

Provides an extra gas stream horizontally that when it collides with the original vertical stream, changes the direction of the combined streams to enable the gas to enter the TCP with much less disruption and thus flow with greater efficiency. I can now hear that damned Meerkat advert saying "Simple" and then making that squeaking noise. It must be my age!

## Herewith a little ‘Whimsy’





# “Vincent to the North”

*E J Parkin*

© 1995 *Worldwide*

## Preparations.

Now then what about this North Cape trip?

I had been thinking about it for a while and had decided that a long run on the bike was just what I needed. Time to be on my own, time to think, time to review things. The outfit had acquitted itself well in England, was at last running well and reliably, confidence was returning to the Vincent household.

I bought a map.

Reckoning about 3000 miles for the complete trip. Not to North Cape, I couldn't wangle enough time off work, but a trip to the Arctic Circle. Northern Sweden, Stockholm and back through Denmark. Sounded good. The bike was serviced, new tyres purchased, new chain fitted, lots and lots of spares packed together with all the paraphernalia which one requires to maintain an acceptable life-style on the road. *Just because you are biking there is no need to degenerate into slovenliness. One does have standards you know.*

My standards insist on at least one good, well-cooked, meal at the end of the day. Preferably cooked by me.

To complete this trip will mean pressing on. I didn't mind that, it was what I wanted. With 10 days to go things are sorted, *goodness I've never been so organised*. Mostly it ends up like the dash to Cadwell, last minute decisions, last minute panics and problems, not this time matey!

Some friends know about the trip, I haven't broadcasted it in case we come unstuck with breakdowns or something, one doesn't like to be too much of a laughing stock.

## **Liz wants to come!**

This is a bit of a surprise, I hadn't thought that anyone would have a burning desire to sit on the back of an old motorbike for between 8 and 10 hours a day! I explained to her that this will be something of an endurance test and that she should think **very seriously** about her decision to accompany me.

She does think about it (J think!) and is still enthusiastic. "OK then if you are sure!" We make plans, leave the itinerary the same and Liz goes away to get some leave organised and to pack her stuff. One soft holdall was the limit. *She eventually arrived not only with the requisite holdall but also a fishing rod and a few board games, "In case we get bored!" I quietly wondered if she was entirely aware of what she had let herself in for.*

One week to go. I get an offer I can't refuse for the Honda so do a straight swap for a sporty Toyota car. The children love it!

It was now a full year since my 'domestic', the divorce was final and the dust had settled enough for the children to visit their mother in England and for me to have three weeks off! I ferry them over and drop in to see Liz on my return. "Make sure everything is all right"

## **Everything is far from all right!**

Liz hurdles, as in runs and jumps over obstacles for the works. She hits one, tears a ligament and is stretchered off to the hospital. Tricky business!

I visit, she still wants to go on the bike. On crutches if need be. We chat to the doctor who smiles when we tell him Liz is off on leave next week. He

laughs out loud when we say she is going to Norway, "To the Arctic Circle!" He falls on the floor in hysterics clutching his stomach, tears of merriment rolling down his face when we tell him we intend to travel by motorcycle and sidecar. His colleagues rush to his aid suspecting a heart attack. He wipes the tears from his eyes with a massive flowery handkerchief and, between bursts of giggling, says "We'll see!"

Accompanying me to the door of the ward he sniggers, "Come back again anytime, I haven't laughed that much for years. Good joke!"

I assured him that we are serious.

"Of course you are!" He assures me, so is he and that he is the doctor.

### **I get the message.**

So Liz exercises and on the day before our proposed departure we are ushered into the doctors surgery.

He huffs and puffs telling us about what could go wrong with her leg. *This guy studied suspense under Alfred Hitchcock, **get on with it!*** "OK you can go! But, exercise all the time."

We are relieved and run/hobble out of his office, Liz on crutches.

How many jokes do you think there are about girls on bikes with crutches? Well, I'll tell you. There are 52. We heard them all, in every possible combination and variation. It started immediately, 3 feet from the doctor's door. *"Hey, Liz! Be careful of your crutch on his motorbike!"*

# **Balls mate!**

**EJP**

# Worldwide Moss

None of us who enjoy owning and using our Scotts earned our living by such means. We each went one of the host of routes that constitute a diverse society. Speaking personally, I am always interested to learn about the careers of others and expand my knowledge accordingly. I suspect that I am not alone in being interested in my fellow human beings and so I will recount an episode from my working life that you possibly might find of interest. The industry in which I spent the majority of my working life, was to design and manufacture special production machine tools that were used by the likes of British Leyland, Ford and Jaguar for making engine and transmission components. We also made machines for the “White Goods” industry, such as Hotpoint, Hoover and Kenwood. There was also a little work for Rolls aero engines, but as this was a small percentage of the work required to keep 100 engineers occupied, then as British manufacturing industry went into decline, then so did orders with the inevitable result. It seems a little unreal to consider that the industrial culture that had brought us to eminence in the world, would evaporate like mist within the lifetime of one man.

However, less of my wanderings, let me return to our story. Our workshop was set up to make individual items or small numbers of bespoke components that were used to build our machines. As a young man I had soon noticed that when a man wished to secure a piece of metal to the table of his machine, he needed a clamp and a bolt to restrain it. The clamp then needed a piece of equal height to the work piece to act as a reaction element.

Jack, the machine operator generally had a box of old pieces of metal that he could stack up like Lego to make the height of the reaction tower he required. Unfortunately, life is not quite like that and lacking some pieces, a nearby colleague was approached. Hi Bill, How are you? How are the wife and kids? And, by the way, do you have a packing block of about two and a quarter inches high? If Bill did not have such a piece, then Fred was next in line, and so on. Now, we none of us want to deny a little human interaction, but the reality is that we only earn money to pay our overheads plus the

wages of Jack, Bill and Fred when the expensive machine tool is doing what it was bought to do. i.e. cutting metal.

I had found in the workshop an old set of aluminium pieces that could be fixed together to form these reaction towers. They had some limitations but if treated with reasonable care were effective and certainly saved non-productive time. At this point I had ordered two top quality new milling machines.

For those involved in engineering, these were both French machines being a Huron NU5 and a Gaston Dufour 624. Having committed a considerable sum to buy the machine tools and position measuring systems, we could not afford to have excessive non-productive time, so I phoned the makers of the "Packing block set" I had found. Hello, do you still make these sets I asked. "They're dear you know" came the reply. Yes I understand, but my question was, do you still make these? "Well yes but they're dear you know" Perhaps this was a special technique of "Negative Selling" that I had not come across before. Please tell me price and delivery and please, do not tell me again that they are dear, as this is for me to decide.

The man duly gave me a price and I told him I would be in contact later. Sure enough they were not cheap, but if you honestly considered the advantage of increased efficiency, then they would pay back the costs over a fairly short period. However, for what they were, the price was appreciable and as I was, at that time, a hands on works manager, then as I went about my work, I mentally costed out how much to make them ourselves. Given the small requirement of our plant, then I could not make them any cheaper, but in consideration, I realised that the design could be significantly improved to give a bigger range of sizes and make a more durable product that might be of interest to other similar companies. I ordered two sets from Mr "They're dear you know" and sketched out a revised design that was formally drawn out in our design dept.

This would have been about 1984 and at this time the best prices for engineering items were from Taiwan, as long as your product was a fairly rugged design without unduly demanding accuracy.

I drew out a comic book cartoon of how some machining aspects could be easily carried out and sent out for quotes from Taiwan, India and the People's Republic of China.

China was more structured in those days and I had a response from China North Industries, from whom I had a delegation who were pleased to offer from their extensive catalogue, multiple rocket launchers, which we knew as Stalin Organs, artillery pieces and copies of the good comrade Kalashnikov's rather excellent assault rifle, all at very attractive prices for which I thanked them but explained that we had no immediate use for these products.

I did order some sets of packing blocks to our design and then had to go to South Africa, where I visited about every seven months. One plant I visited was the ex-Ford plant at Port Elizabeth where ex pat Scottish engineer Charlie Shearer was plant manager. I told Charlie about this "Packing Block set" project and he said that his toolroom was not busy and could they make some for us? OK Charlie if the price is reasonable, so I issued an order. Then Charlie said "come with me" and took me to where there were a pair of Kearney and Trecker duplex production milling machines. To the unfamiliar, you put in the iron casting of a car engine cylinder block on to a platform on a railway.

The casting was clamped and the platform travelled between two milling cutters of about 24" diameter which produced both end faces at one operation. When it got to the opposite end, another milling unit came out from the side to produce a facing on the end. Charlie asked me the question "Can you make one of these"? I realised that he had not asked "Have you ever made one of these"?

In truth making milling machines of this ilk was considered a speciality of a few respected builders, such as the American companies Kearney and Trecker and Cincinatti, both who had UK plants. We had never built such a machine and the chance to prove we could do so was a golden opportunity.



Yes Charlie, we could build you a cracking machine with eleven inch nitrided quills and fifty hp motors each side. Then Charlie explained. He told me that Kearney and Trecker had for years had a well-liked technical representative named Ivan Savage but they had recently sacked him.

Anyone, Charlie explained, who can sack Ivan Savage is not going to get my order! I mused on how such contracts were decided. At the end of the day I went back to my hotel to write up my notes before packing to fly to Toyota at Durban next morning. During my packing, I received a phone call from Charlie Shearer.

Roger, is there anything you can give me that would be better than what Kearney and Trecker could give me. I realised that he would have to explain to his directors why he was proposing to award this significant contract to a company unknown as a producer of big milling machines, rather than the world renowned American multinational. At times like these you need the luck of the answer dropping straight out of the sky.

No problem Charlie quoth I. You know that for the sake of economy, the Kearney and Trecker machines have their main frames constructed from welded up heavy steel plates rather like constructing a tank. Now such construction has one drawback and that is that it “Rings” or rather there can be vibration that causes lines to be produced on the faces of the component it is milling.



For you Charlie, we will make a base as a one piece casting in grade 14 iron that is “Dead” as regards vibration and your production quality will be much better. But Roger, the costs of the pattern equipment will be prohibitive surely? No Charlie, we will make a pattern from polystyrene in one piece and it will be sacrificial and destroyed in the casting process. I returned with a contract for a big milling machine to the great astonishment of all and sat down with a top designer to lay out the basics, bearing in mind the time I had personally spent actually operating milling machines. Happy memories! See the pic, even I was impressed!

**Roger Moss** (*Crikey!!!!We are not worthy Roger!! Ted*)



Please note SUPPLIER LIST IS NOW ON THE FOLLOWING LINK.

<http://www.mossengineering.co.uk/newsletter/supplierlist2013.pdf>