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A kit-built locomotive

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THE TRIALS OF A LONG-DISTANCE KIT BUILDER...

Tony Sanders begins the fascinating tale of how he succeeded in building a locomotive from a kit in spite of the best efforts of two companies to frustrate him. This first part gives an overview of events over his first two years, and in subsequent instalments he will give us some further insight into problems encountered and their resolution.

Part 1

In January 2000, Winson were doing their hard sell with a wide range of prototype live steam model kits in 5" gauge including a Southern Loco, King Arthur. I met someone who had started to build a Winson Britannia and he had nothing but praise for them. At the Brighton Show that year they had a very impressive stand (or at least impressive to me!) and there was a Winson Britannia running in the Hall. The selling point was that it was easy to build with just a few hand tools necessary and no prior experience in model engineering. They also claimed that the kit could be made up in 150 to 200 hours which was a substantial reduction to the time for scratch building a loco. I thought this was just up my street and convinced me to sign up for a King Arthur kit.



I subsequently found that Winson's stand at Brighton had been full of temporarily assembled locos, none of which could run, and the Britannia which was running had been made by a professional loco builder who told me that he had substantially re-made the kit, otherwise it would never have run. As for tools, this was a joke and I had to invest in a wide range of tools, and as for experience, you jolly well had to pick this up as you went! I kept a record of the times I took and this was 500 hours on the kit and a further 250 hours painting it.

Winson gave a substantial discount if you paid up front which I was able to do, having just retired. For this you received monthly a kit of parts, there being 18 kits in all. It would include all the materials cut and finished with fixings attached to each component. Instead of drawings, there were exploded isometrics, each part being separately numbered with a complete listing of parts in the kit. There was a technical manager for whom I have nothing but praise, who was on the end of a phone and dealt with any query expeditiously. It was like a correspondence course. It is now called "distance learning". Ten people eventually signed up for the King Arthur kit and once this number was reached, the kits started to come each month.

Initially it was easy but I was not prepared for the problems which were to come. The first hurdle was the horns and the axle boxes. The tolerances worked against a perfect fit and I spent hours gradually filing them for a perfect fit. This was typical of their attitude: they relied on their customers to find out all the snags and not the other way round. They did not build a prototype to see if the whole would work. They appeared to be detail designing the kits just in advance of sending them out.

Kit Number 9 arrived in March 2001 and halfway so far so good. There had been problems but Winson were helping me out over the phone. Some parts had to be replaced but generally things had gone quite well. Disaster struck! Winson went bust! The next day the phone only gave a recorded message to address all queries to the Liquidator. Not sure how much they knew about model engineering! There were rumours that another company was interested in buying up the remains of Winson. Eventually, in August, the new company, Modelworks, made contact and kits started to roll out again in December. As I had paid by credit card, I got all my losses back plus the re-start and increase in price, levied by Modelworks. I had been very lucky.

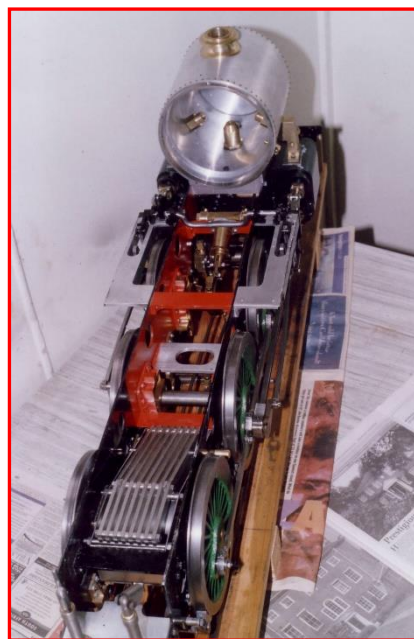
The first Modelworks kit to restart was the motion and things got pretty bad. There were so many things wrong it would be tedious to list them all. Winson had made the kit before going bust so Modelworks were on a learning curve as well. Even now the motion is not good and when I see Charles' work on his S15, I realise how bad it is. I took the chassis up to their factory where they put it on air. There were many faults but we eventually managed to get it working. After this it was a very hard slog with constant references to Modelworks for help. As nobody else was coming up with mistakes I got the impression I was on my own. Either the remaining nine kit builders were clever and were solving all the problems themselves, or they had abandoned making up the kit. I discovered later that the latter was generally the case.

Tony Sanders continues his tale of the struggle to build a working locomotive from a kit.

Part 2.

There were many things wrong with the kits and I was an absolute beginner, not just in loco building but in the basics of mechanical engineering, having been an OO gauge modeller for most of my life. These two aspects made the whole process very difficult, especially as the makers were at Daventry, a long distance away.

In June 2000 I received a large parcel containing the first kit; the main frames, and I opened it and spread out the contents with great excitement. To my inexperienced eyes it looked great and I assembled it "loose bolted" very quickly but my euphoria was soon halted when I found a stretcher was included in the kit but not shown on the drawings. The frames were drilled for a stretcher but not to suit the holes in the stretcher I had! So even at this simple stage I was having to drill and modify "with my simple tools". It got worse! The front bogie you would think was simple, but the bogie horns were all one sided and the specially made fixing bolt was too short. By this time Winson had set up an Email service which fortunately I was also on and they re-acted within 2 hours to complaints. Usually, the answer was we will make a new part and send it to you but this is very frustrating when you are so far away from the manufacturer. If they had made up a kit then they would have known these things before dispatching them to their customers. The tender frame was very straight forward to build but they spoilt even this by forgetting to send all the parts.



Kit No. 5 was where the trouble really started. The axle boxes had to be fitted to the horn blocks which were made as a single casting and therefore with a fixed inside dimension. As received did not fit at all and there was a significant difference between the two. I complained to Winson, quoting their claim that no separate machining was required. Their answer was that each was machined within the stated tolerance. Great, but they still did not fit. Conscious that the axle boxes had to be a good fit and not sloppy, and that the dimension between axles had to be accurate, I spent days filing each very carefully with constant attempts at fitting until I got a good fit. Subsequently I have been very happy with what I did, as the springing has been good and the coupling rods went on easily. Kit No. 5 was where I was introduced to Loctite 638 retaining compound. They recommended cleaning the steel axles with a solvent such as Vodka before applying the Loctite. Having a cupboard full of Polish Vodka, this seemed a good use for it. They recommended rotating the wheel to spread the Loctite and then placing the positioning pin. I was doing this in mid-winter when it was very cold so I moved into the kitchen where it was very hot. They had not warned me that the Loctite would set very quickly when hot, and very slowly when cold, so you can guess what happened. I did not have a forge so a set of half-stuck wheel sets had to be sent back to Daventry (at my cost!) to unstick them. After that I did all my Loctiting in the early morning with all the doors and windows open. If you think it was the Polish Vodka that did it – you are wrong! Kit No. 9 was the halfway point, but this is where it really became difficult and the words of the Winson publicity rang through my ears, "few tools, and no experience necessary!" This was the cylinders kit and my

first observation was that the piston valves were crude, made in brass and appeared unlikely to work. Subsequently Winson provided me with PTFE rings, which meant I had to take the valves apart to fix them, and since then they have been changed again. The piston valve liners had to be stuck into the cylinder block with Loctite, and had to be precisely fitted to suit the steam channels. I was nervous with Loctite, and I did numerous dry runs to gain confidence. I knew I had to balance between a good steam-proof joint as well as not getting the channels bunged-up with glue! About the only good thing which came out of the compression test was that I had got it about right (most other things were wrong). The next problem was getting the piston assemblies into the cylinder block, as they were very tight and involved many phone calls to Daventry to help me out. I do not know why, as "no experience was necessary". At this point Winson went bust! It was the 4th May 2001. The first I knew was from Andy Clark of Polly who rang me the night it happened. He had tried to sell me a Polly kit and clearly was interested in selling on his kits to any Winson customer. I also was approached by the man who ran the Britannia at Brighton and he thought he would be able to re-start making the kits which were outstanding. However early on rumours started from some of the Winson staff that a company called Modelworks were in serious discussions to take over all of the company including the stock of part-made kits. In December 2001, Kit No. 10 arrived and I was back in business.

Tony Sanders concludes the story of his epic battle with two kit manufacturers.

Part 3.

Earlier I described the problems I had encountered in building a Winson kit of a 5" gauge King Arthur up until the time they went bankrupt. At this point I was only halfway through receiving the monthly kits. Fortunately, a new company, Modelworks, bought up their stock and retained many of their key employees. In particular, their technical manager was still there in Daventry. I was battling with the motion, and as soon as I had finished this I had agreed with him that I would take the chassis to their works for a compressed air test. The problems had been numerous, and when I see Charles' work on the motion of his S15, I realise how bad mine was. They supplied a template to position the return rod crank pin which was totally wrong and I never got to the bottom as to what was the correct setting. The manager corrected it when we did the compressed air test. The weighshaft was bent incorrectly & I tried to correct it on my friend's lathe. What about the 'simple' tools I was only supposed to have? I had to send it back to Modelworks, but it is still not right, as the expansion link does not line up exactly each side. The linkage relied on grub screws set into holes, which were too large and led to the joint moving. I drilled these out and got longer grub screws and this seemed to work. Finally the expansion links do not go to the ends of the link, as the reach rod does not move them enough. In all a harrowing exercise, particularly for someone who was supposed to need no modelling experience! However, I took the chassis up to Daventry, but we could not get it to work. I left it there and returned two weeks time when the technical manager had got it to go. What he did I never will really know as he was not too forthcoming.

Next came the tender body and they supplied an Isocon filling kit which I did not think much of. So I soft soldered the joints and then in case there were any tiny holes, I used a bath sealant. It certainly seems to have done the trick. In this kit I first encountered copper pipe work. Modelworks supplied no drawings but gave only the two end positions of each pipe run. I had therefore to prepare my own drawings and work out how best they could be installed. As there were silver soldered nipples both ends and I did not have any silver soldering experience, I could not do what I imagine most modellers would do i.e. lay it from one end and then cut to suit the other end. I found it very difficult and some runs were almost impossible. Eventually, I did have to get some re-soldered. The next kit was the ash pan and grate and it was about this time that I joined the club and was persuaded to bring the chassis along for a Bits & Pieces evening. I should have joined the club earlier, but that is another story. It was very interesting to hear the comments from experienced club members. There was a difference of opinion: half felt the ash bars were too close whereas the rest felt they were about right. There was universal feeling that the ashpan and grate bars ought to be able to be dropped out and on another evening later a member gave details of how this could be done on a 4-6-0 loco. After I finished King Arthur, I took the boiler off and altered it so that the grate bars could be slipped out and the inside of the ash pan inspected.

Modelworks tested the boiler before dispatch but recommended that it should be tested independently at your own club, which Don Marshall and Alan Norman did and it passed. They also confirmed that it was a well-made boiler, which was a great plus. The final problems soon loomed and these proved to be some of the most difficult to solve. The dry rod, regulator valve and regulator rod all had to be fitted together within the confines of the dome, but there was too much slack and it was impossible to close the regulator off completely. It was more difficult than a local solution and Modelworks designer had to come in. I sat at Daventry while they came up with a solution, which they also manufactured and installed for me. So far, the regulator has been trouble-free. The reverser was a complete disaster, which along with the problems on the weighshaft

mentioned earlier meant that about everything was wrong with it. The reverser stand was too short and it was impossible to get sufficient throw. Modelworks cut two stands into two pieces and brazed them together to increase to produce a higher stand. The reach rod was 4mm too short, and a friend showed me how to tap out the length with a cold chisel on a steel plate. The reach rod deformed often as the weigh shaft was not good, and I eventually made a new reach rod out of much thicker steel. There were a number of smaller problems with the fitting out of the cab and the lubricators, but finally on the 23rd. of November 2003 it was finished and painted. It had taken 3 years and 4 months to build. Since then, there has been a battle to get it to work well, but that is another story. I thoroughly enjoyed building it but I cannot say it was a success.

As a static model I am very pleased but it has never steamed well and every time it has run, there has been a long list of things to change and improve. Maybe one day I will crack it! The lessons to be learnt from this experience; well, I should have joined the Club before I started because the expert advice I could have got could probably have avoided some or all of the weaknesses that are now in the model. As for the viability of companies like Winson and Modelworks: I do not believe a company can make money out of this type of kit manufacture. The time taken to scratch build a model shows that they cannot be marketed at an economic price. Also, the companies should be more honest about the amount of experience needed to make up such a kit. As for honesty, Winson relied on an equivalent of pyramid selling by taking deposits for future kits to fund the manufacture of kits sold previously, until it finally caught up with them. As for Modelworks, they tried to play it straight and look where it got them – bankruptcy