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Train-making with the FT: Robert Winston

By Hester Lacey

The science professor and BBC presenter tells why the miniature trains he builds definitely aren't toys

Winston consults the intricate instructions: "The parts aren't well labelled. You get a mass of bits and pieces"

When Robert Winston's son, Joel, was three years old and an enthusiastic fan of *Thomas the Tank Engine*, he expressed a very decided wish to go and see "Tally Ann". His parents eventually deciphered this as Talyllyn, the preserved narrow-gauge railway at Tywyn in Wales, and duly headed off for a week. "We went on about six railways," recalls Lord Winston, who is professor of science and society and emeritus professor of fertility studies at Imperial College. "Was it indulgent? I don't know. My wife and I thought it was funny to have our holiday dictated by a three-year-old."

At home in London, Winston built his train-obsessed son a little narrow-gauge railway in the garden. "The excuse was Joel, but it was really for me," he says. Joel lost interest in trains by the time he was six, but his father did not – and now Winston has a further willing accomplice in the shape of Joel's son, Isaac. "He's three now and can operate the radio controls. He's a very intelligent little boy; he can speed the trains up, slow them down and

he doesn't crash them."

But Winston has moved on a long way from Thomas – and even beyond the well-known Hornby brand much loved by rail aficionados. His trains, as he points out, are not toys. Some are remote-controlled, others run on gas or alcohol, and they are serious working models, constructed from kits that can take months to put together. "If a boiler exploded, it would kill you," says their creator airily.

The green Owain Glyndŵr locomotive that gleams on the windowsill in the dining room is just one part of an extensive collection. "I have a whole lot more in the garage and I need to build some carriages. I need some British Rail rolling stock," says Winston. To the untutored eye, the Owain Glyndŵr looks like an impressively intricate piece of work, but "this one is relatively crudely made," says Winston. "I only built part of it."

It is trains such as the scale model of the Winston Churchill on his workbench that command real respect in model-making circles. The Winston Churchill, locomotive 34015, which pulled the prime minister's funeral train, was originally designed by master engineer and innovator Oliver Bulleid. "This one is very serious. It's a 1:32 scale, it weighs 2.5kg and can do the equivalent of 100mph," says Winston. "It is made very accurately. Its reversing gears are built on eccentrics [circular discs fixed to the axle] and take ages to put together."

The Winston Churchill, which is powered by alcohol, is authentic in every detail, from the technical features such as the miniature oil pump and cylinders to the tiny step that the driver would use to clamber into the cabin. It is probably, says Winston, sufficiently powerful to pull a person along. He unscrews his bottle of 100 per cent ethanol to release the pungent odour. "You can't buy it in the shops, I get it from my labs."

Winston shows off his favourite train to Hester Lacey: "This one is very serious."

The Winston Churchill originated with a Japanese company called Aster Hobby. "These Japanese engineers are model railway enthusiasts and make very, very finely engineered sets," says Winston. "After a while of doing this, I have great admiration for them."

Putting an Aster kit together is such a feat that completed models sell well to those who can't quite face the task themselves. Anyone who struggles with assembling an Ikea bookshelf should probably not consider an Aster train. The plans that Winston pulls out are simply that: diagrams of how the train fits together, with no instructions or guidelines. "The parts aren't well labelled. You get a mass of bits and pieces and you have to use your initiative and work out what's what," he says. "For example, this anonymous tube of stuff is a sealant or mastic that I've been using on the steam pipes."

As a biologist, it's very good to get to grips with how

As well as being fiendishly complicated to put together, the parts are also maddeningly tiny. "Having been a microsurgeon

engineers think helps," says Winston. His medical forceps are a boon when working on the fiddliest aspects of the task. His workbench is also home to an array of incredibly fine screwdrivers, spanners and files that make a nail file look gargantuan. The most microscopic of the screws are so delicate they have to be glued to the head of the screwdriver prior to insertion. "This is one of the bigger ones," says Winston of a minuscule piece of metal that measures 1.35mm across. "Nobody can vacuum in here except me, and I use a dustpan and brush first and sift through what I pick up."

Although the Winston Churchill is complete, there is a small tray of anonymous bits of metal that haven't found their place in the finished locomotive. Is this worrying? "Yes, probably, but you have to allow me a little latitude." The ultimate challenge, and Winston's next project, is to build a train that runs on coal. "Coal is a nightmare," says Winston. "It's constantly going out. You have to find a way to keep the draught going." Some models are designed to do just that, or the confident engineer can come up with their own adaptations. Coal power is the final touch of authenticity. "It will smell right and the smoke will be brown rather than white," explains Winston.

Winston exhibits one of the incredibly fine screwdrivers in his toolkit

There is, he says, more to building trains than creating a beautiful, functioning object. "For me as a biologist, it's very good to get to grips with how engineers think." To be honest, he says, although he still has an outside track that laps his garden, he's not so interested in actually running the trains once they are complete.

"People who run steam trains around their gardens are very focused. For me, most of the joy is the engineering puzzle, a very complicated jigsaw with a functional purpose, a way of getting to understand how engineers design and make complex material." This is, he adds, even a source of relaxation – until you drop the piece you can't fit in the hole. "It takes my mind off things I should be doing. Given my diary it may seem on the surface a ridiculous thing to do, but it's very good therapy."

With the heavy demands of that diary, when does he squeeze in this meticulous, high-concentration, high-performance relaxation? "Mainly at two o'clock in the morning."

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