TRAN$PORT TYCOON
20TH ANNIVERSARY

An exclusive interview with **Chris Sawyer** and the development team of **Transport Tycoon** mobile.
Chris Sawyer, Steve Clark, Jas Austin, Antonia McGuire, Laurence McDonald and Jacqui Lyons

▼ 1. How did you first get into programming and games?

Chris

I started to program little games at school. They had a Commodore PET 2001 and a Research Machines 380Z, and I started writing little BASIC games on those during the lunch hour just for fun. I enjoyed the programming and eventually I started programming the Pet in little bits of machine code. I saved up and finally bought myself a Camputers Lynx home computer and started programming it too, creating little games in BASIC and then in machine code, I just enjoyed programming. It was a fun hobby at the time.

Antonia

So this was in secondary school?

Chris

This was in secondary school, I would have been about 14, 15, about 4th year, 5th year of High School. Back then there weren't many home computers around. I didn't have my own one, the school had three, and it was quite a privilege to be able to go into the computer room and try and program these things.

▲ 2. How did you learn, back in those days? Was it books, teachers, magazines..?

Chris

There were a few magazines around. I bought a few books, probably bought a book about BASIC. When I started looking at machine code I probably bought a book about 6502 machine code and Z80 machine code. A lot of it was just trial and error, you just tried things and got them to work. There weren't a lot of books about programming at that time. I remember struggling with just basic things - you tried stuff, you had an idea that you wanted to do and you didn't know how to do it, you'd find ways to do it, and you gradually learnt how to program.

Jas

So they didn't actually teach programming at your school?

Chris

No, I think in my final year they had a class on BASIC programming, and it was so simplistic I knew it all already, and finished it in about 5 minutes. I was helping everybody else do it, it was really really basic stuff. I'd already moved well beyond that. but they did have a course on programming, which for mid 1980s was quite impressive.

Antonia

They didn't have any programming when I was in secondary school a few years later.

Steve

They had it when my brother went through, but when I was there 3 years later they'd stopped, and were teaching word processors instead.

Chris

I think they stopped shortly after I did it. It was something new then, and the teacher didn't know much about it, there wasn't a lot of interest in it.

Antonia

They're sort of coming back to that now, getting five year olds to code.

Chris

They are, I don't know much about it. I'd say it looks quite exciting, but I haven't actually seen what they're doing.

Steve

It would be exciting, they're starting to use things like Scratch which is drag and drop, so you're starting to learn something about programming, but a lot of schools think programming is HTML for a web page. And of course it is but it's not programming a language, it's laying out a page.

Chris

Do you think that's really limiting what they're thinking about programming?

Steve

I think it is, the scope's great for it but they've not got the skills really in teachers yet.

Chris

That's another thing, getting the expertise in there. Steve, how did you start programming yourself?

Steve

Me? It was on the Spectrum, got one for Christmas in 1983, got some games with it, and started from that. I liked the games, one of my uncles worked for ICL, so I had some understanding that computers could be programmed, and having been given that you've suddenly got a keyboard and built-in BASIC, and you can learn to program so by Boxing Day I was programming. Had a magazine, learnt to program from magazines, and try things out.

Jas

Typing in magazine listings, that how a lot of people started.

Steve

Always a good idea. And those lovely little Usborne books, "So many games for your Spectrum and BBC" or stuff like that.

Chris

I remember buying those. They didn't do many for the Memotech MTX series or Camputers Lynx. [laughs]

Jas

Jacqui

Missed market, do you reckon?

Steve

But yeah, still got them at home actually, was looking at them a few days ago. They stand you in good stead, you learn to program.

Chris

I bought issue one of Popular Computing Weekly. I've still got it!

Jacqui

That wasn't the one in which I advertised, with the tick list? It was "If you ticked 'don't know' on any of these then you need professional representation." And actually people did realise that they'd never even heard of half this stuff.

Steve

I think seeing it from the point of view of a schoolchild, it was very much frontier, and basically everyone was releasing stuff and selling it, and you're thinking "Great!", but who's making money, how are they making money, are they making a living out if it? It looks like fun, maybe I can do that? Being in school you don't actually think so far about it, but there's this world where no one seems to know what's going on but lots of games coming out of it to play.

▼ 3. What were you working on before Transport Tycoon? The games of the '80s and early '90s?

Chris

Between graduating from university and *Transport Tycoon* I was doing conversion work, so I was taking Amiga games and converting them to the PC. I did Elite Plus, Frontier Elite 2, Birds of Prey, Dino Dini's Goal, games like that, converting somebody else's game.

Antonia

Any of your own stuff in your spare time?

Chris

As you've seen I found a little old isometric game that I worked on. That's probably about it, though, apart from that I was quite happy on the conversions. I enjoyed the programming, it didn't matter that it was somebody else's game. I enjoyed the challenge of getting it all working and getting it all working fast enough, getting the best out of the PC which was quite a limiting machine - it didn't have a graphics co-processor and things like that. You were really having to push the main processor and the amount of memory you'd got to get the most out of it, and I just enjoyed that.

Jas

Quick side question - what did you study at university?

Chris

I did Computer Science and Microprocessor systems.

Jas

Oh, so it was vaguely related. [laughs]

Chris

It was software and hardware, and I enjoyed the software side of the course a lot. I thought that going for the course that combined the two would be better, because I'd find out how computers were actually built. I struggled a bit with the electronics but it was useful, I did learn a lot about how to get the best out of the software side by learning how the hardware side worked. But the software side was spot on, even useful with my games now: it's optimisation, it's sorting, it's algorithms. We learned machine code on several different processors, we learned lots of different languages. So what I learned with that that helped a lot with my games programming.

Jas

I wonder if that's a thing that gets lost nowadays. People don't understand the fundamentals of the machines that they're working on.

Chris

I do wonder that, I mean I don't know if there's similar courses any more. There are games design courses, but is that just teaching you to design a game? And not even programming it?

Jas

Yes, its mostly broader strokes.

Steve

I think you right when you're saying that at the hardware level it's a better insight, because what I'm thinking about whenever I'm programming is whatever the bit's doing.

Chris

If you've only learnt to program C I feel it's not as easy to get the best out of the machine. You can probably write some fantastic code, but you're never quite sure how well it's working under the hood.

Steve

The argument is that the equipment is fast enough and the program will optimise it.

Chris

You don't need to know. Which could be true, I don't know. But I always got a big buzz out of getting the best out of the machine, and machine code was the way to do that. And that's why I enjoyed machine code so much.

Steve

I know with Game Boy I liked to know what cycles were doing, spot for spot, where the cycle was. I'd imagine Jas was doing the same with Game Boy stuff.

Jas

Yeah. It was easier to work out back then, whereas a C function, who knows?

Steve

Though we still use profilers to see where things are actually going.

Chris

Which we didn't have back then, you literally had to add it all up.

▼ 4. It's the 20th anniversary of Transport Tycoon. We know what Chris was doing - making Transport Tycoon. What about the rest of you?

Steve

I was working on stuff on the SNES: presentations for Wolverine, Frankenstein, No Escape. Playing around with a 3D system called RenderMorphics, which evolved into Microsoft's Direct 3D retain mode, and playing around with a 3DO, which was an ARM based CD processing games console.

Chris

So were you really into the technical side of things?

Steve

Yes, I was always into the technical side, I had an Archimedes when I was still at school. I was always into ARM, which was why I got hired for Bits [Studios] in the first place because I could program ARM.

Chris

I wish I'd gone in that direction, because now I think being able to program in ARM machine code, it would be...

Steve

Very desirable. But there were 27 instructions, 16 cases, it doesn't take long to learn.

Chris

Yes. I've looked at it, it's a bit alien to me. [laughs]

Steve

Anyway, because I liked all that stuff I got thrown all the development stuff at Bits for that reason.

Antonia

Jas, what were you up to, 20 years ago?

Jas

I was working at Bits Studios. That would be at the end of the Game Boy stuff, I was doing a bunch of conversions, Spider-Man, Terminator 2, Alien 3, I think in 1994 I was working on Itchy and Scratchy on the Super Nintendo. It was the only Super Nintendo game I ever worked on, or the only one that ever got released. We were we using a 3D system called BRender, after that we were looking at releasing an affordable VR unit, but that never came off. We did end up releasing a game out of it called Nihilist, which was a 3D shoot-em-up, so that's what I was up to.

Antonia

Can any of you remember what you were playing around then? Anybody jump out and buy *Transport Tycoon*?

Steve

Honestly, no.

Chris

Do you actually remember the game from back then?

Jas

I would have played *Transport Tycoon*, because I've always been into construction type games. I don't remember playing it a massive amount, admittedly, but *Rollercoaster Tycoon* was one of my favourites. I played *Rollercoaster Tycoon 1* and *2* to death.

▼ 5. Where did the original concept for Transport Tycoon come from?

Chris

I really enjoyed *Sid Meier's Railroad Tycoon*, and I thought the gameplay side of Railroad Tycoon was fantastic. I enjoyed playing it, and I just started to think "Maybe I can take this a bit further." At the time I loved my isometric view point, Railroad Tycoon was just a map based thing and I thought maybe I could adapt my isometric code to show a map for a transport based game, I could have more modes of transport in there, it really interested me. I enjoyed trains, I thought it would be a challenge to simulate a world, that's how it sort of started. At the time I didn't think it was going to be called *Transport Tycoon*, for a while it was just called Chris Sawyer's Transport Game. I just did it in my spare time, I was working on conversions at the time, and just gradually built it up, enjoyed programming it, enjoyed playing it, that's how it started.

Antonia

So did the whole thing spring forth fully formed? Or was there one key concept - say, "this, but isometric" that was the driving force?

Chris

I think it was probably the isometric, and trying to take Railroad Tycoon a bit further, to have more modes of transport, and it just sort of gradually grew.

Jas

Were you playing other world builder games?

Chris

There wasn't a lot. Can you name some other ones that were actually around then? SimCity at the time was only a map based thing, and I hadn't actually played SimCity.

Jas

Yeah, it started off as a top down thing.

Steve

Was Theme Park later?

Chris

Yes, Theme Park was just before *Rollercoaster Tycoon*. Sid Meier had just done Civilisation, I tried that. I admired the game, but didn't enjoy playing it.

Jas

I was a big fan of Civ, but that was more of a strategic war game, basically, wasn't it?

Chris

Yes, it just didn't catch my imagination.

Steve

What was that isometric game where you had a sort of syndi- was it called Syndicate?

Jas

Yes [laughs]

Chris

No, I didn't play that either.

Jas

There was all the silly ones like Theme Hospital.

Chris

I played Theme Hospital, I actually really enjoyed that. I can't remember whether that came before...

Jas

I think Theme Hospital might have been later than Theme Park. But obviously that was very jokey.

Chris

I can't remember another map based strategy game that I actually enjoyed. The only other game I was playing around that time was Geoff Crammond's Formula One Grand Prix. I absolutely loved that. I'd spend hours just fine tuning, playing with the keyboard - I might have had a joystick, but it was just fine tuning and getting the last few tenths of a second round Monaco. That was really good. I can't play any of the modern car driving games, I just can't get the hang of them.

Laurence

There was Populous at that time.

Chris

I played Populous. I enjoyed that, I played it on the Amiga I think. I'd forgotten about that one. Lemmings as well, but that was probably a few years before.

Jas

What was the follow up to Populous..?

Laurence

Populous 2. [laughter]

Jas

The OTHER follow up to Populous! There was one that was a bit more strategic, I think, it didn't do quite so well. It wasn't isometric, it had a proper 3D map that you could spin round. It was another Molyneux game. Not Magic Carpet but they might have used the same graphic engine.

Laurence

Powermonger

Jas

Yes, Powermonger

Chris

I don't think I bought that, I read the reviews and thought it's not for me.

Steve

One game I was playing at around that time was Lost Vikings, on the SNES. Very good game. A puzzley, side-scrolly, spritey kind of game, you had to use 3 Vikings, swap between them. They each had a different ability - one could hit something, one could jump high...

Jas

That got a re-release on the Game Boy didn't it?

Steve

Yeah that was quite fun as well.

Jas

Lots of good stuff around at that time though.

▼ 6. Can you explain a little about x86 assembly and why some people are surprised that Chris programmed his games it?

Chris

That's a tricky one...

Jas

On a YouTube video you got called a "Wizard" for using assembler.

Chris

x86 processor assembler is when you are writing the actual instructions that the processor is processing, so you're basically just moving numbers around or adding numbers together and addressing memory. It's very, very, very simple tasks it's doing, but the processor is actually doing these instructions millions of times a second. Compared to a high level language where you write fewer instructions, instructions do more but it needs to be compiled into lower level assembly - I'm making a mess of this aren't I? [laughs]

Steve

I would still advocate programming in assembly if there's time every time. Because it's more direct. The difference is that you're telling the processor inside the machine exactly what to do. It will do exactly what you say, no more no less.

Jas

It's the lowest level you can code at.

Steve

You're giving it instructions in the only way it can understand.

Chris

It's talking to it in the language that it's actually using.

Jas

Ultimately a C compiler or a Java compiler is just turning your code into machine code.

Steve

But it's doing it in a way which is far less direct, so it will take many more processor cycles, many more instructions to the processor, to do what you're asking in a language like C or Java.

Jacqui

In those days, every single game you touched was machine code.

Chris

I learned C at university, C was around.

Steve

It wasn't used on home computers and certainly not for games because of the speed, but it was used in industrial applications, anything that had to be portable or just simply run. Portability was its main reason and still is. A high level language you can run them on anything that can be converted from that high level language to a local machine's abilities. Low level code is for one specific machine, it's not even the language because if your hardware is different the same program wouldn't run, though the same instructions were available.

Chris

I think C was starting to come into games, programming more generally, definitely by the time I was doing *Rollercoaster Tycoon*.

Steve

They were releasing development kits for the Sony PS1 around 1995, and they were very much driven towards you programming in C. Even the 3DO I was working on in '93 to '94, the American company 3DO wanted you to write in C, and I was the only one of their developers that I'm aware of that was writing in assembler. And that was upsetting them, because I was asking what the hardware calls were for doing such-and-such, and I was told there are no hardware calls, it's a C function, "But the C function, show me what it compiles to", and they did, and it was to the hardware call that I was asking them about.

▼ 7. We've covered this a bit already, but why assembly instead of a high level programming language?

Chris

I think back then it was necessary. It was something that you just had to do to get the computer to move things around the screen fast enough, or redraw the screen, or just do anything at a decent speed. I just naturally started writing in assembler, and I enjoyed the challenge. You could get absolutely the most possible out of the machine, and you could work out how many cycles each instruction used, you could optimise it, and I just started to think like that, so I've always written in assembler.

Jacqui

The other thing also that it's important to remember is the compaction. You were trying to get an awful lot of code on a very small amount of memory.

Chris

It's very, very compact. We were right on the limit, and it was the only way to get a game that was compact enough and ran fast enough. Even then we were struggling a bit, but it's just what you had to do to write a decent game back in those days.

▼ 8. We've got a couple of fans asking "How do you keep a project like that organised?"

Chris

You gradually learn how to use comments, and structure in the way that you program, to help you keep things organised. You have separate files for different parts of the game, for running the trains or for running the stations or simulating the landscape. You divided the code into sections, you keep lots of comments, you keep lots of notes. I gradually developed my own style for writing the code so that I could re-read it and understand what's going on. To me it was very straightforward, it didn't create a challenge. I developed it the way I needed to.

▼ 9. Can you remember what editor you used?

Chris

No [laughs]. I'm not sure because it pre-dates Windows. I think there was a text editor that came with Microsoft's Macro Assembler, but I'm not sure. It would have been a very basic text editor that I would have used for editing back then.

Jas

But the assembler was definitely..?

Chris

It was Microsoft Macro Assembler. It wouldn't have been 6-point-something, I probably started with version 4 or version 5, back in those days.

Steve

For what it's worth I was using Brief, I like Brief, it's a good editor. That and the editor that was built into PDS, which was Programmer Development System. A superb assembler and very robust editor.

Jas

I still remember how much easier my life got after switching over to PDS compared to what was before. It was so different. It went from half an hour of switching tapes to less than a second.

Steve

It kind of spoilt us actually. 20 years ago I could press a button and a second later I'd have the game fully assembled. Now I press a button and have to wait 2 minutes. But I can make a couple more cups of coffee so I'm happy.

▼ 10. How long was the development cycle from conception to release?

Chris

I reckon it was about a year, but on and off. I was working on the game quite a bit while I was still doing conversions, so that's during 1993. I wasn't really working on it full time until I finished Goal and Frontier Elite 2, which would have been towards the end of 1993. The game was published in November 1994, so it's probably about a year's worth of work, but spread over a year and a half, because I was working on other things at the same time.

Jas

We saw the little demo game you did beforehand, Chris Sawyer's Transport Game.

Chris

That is a very early version of *Transport Tycoon*.

Jas

Was that more like a proof of concept or did that code end up in the game?

Chris

That is actually what became *Transport Tycoon*. It gradually evolved - that was low resolution graphics, it was my own graphics, but the actual isometric system and a lot of the logic, probably for trains and things, is actually what became the published game.

Jas

I noticed it said 1993 on that one, so not that long until the actual *Transport Tycoon* came out.

Chris

It wasn't the version we took to publishers, I'd got the game to about 80% complete by the time we went to publishers with it, but I possibly showed it to Jacqui. I was doing it in my spare time. I think I was getting a bit bored, a bit frustrated with conversions at the time. I loved it at the beginning, but I think that having done so many of them, you're always working on somebody else's baby, I just thought "I'll try doing something of my own, this is what interests me." I was interested in trains, I thought Railroad Tycoon was fun, I thought "I can do something with this." Play around with it, see if something happens with it. And fortunately a few people thought it was a fun game as well.

Antonia

And there was nobody else working on the code?

Chris

No, just me.

Chris

I think around March 1994, Jacqui started showing the game to publishers.

Jacqui

But it was way before that that you'd actually worked for MicroProse, you did Elite Plus. Afterwards both Steve [Perry] and Paul [Hibbard] came to me and said "If this guy ever writes his own game let us know."

Chris

We nearly published the game through another publisher, and as Jacqui was saying MicroProse said "Ah, wait!, Chris hasn't been down to visit us," and so on, so I went down to visit MicroProse, and by the time I got back I though, "No, Microprose is the right company to publish this game."

Antonia

Any particular reason for that?

Chris

Maybe because they had Railroad Tycoon in their back catalogue, they had experience with that kind of game, I liked the people that I met there, which was important to me to be working with people who I felt I could work with. They just felt like the right company to do it and I think they had a pretty good vision for the game.

When I took the game to them there was still six months work left to do, and they did want to put their own mark on it. They had some ideas, some of those ideas we used and some of them we didn't. I had a very clear vision for what I wanted the game to be, and I had a really good idea of what was possible in the game, so although some of their ideas were probably actually really good I said "No, I can't do this, it's not actually going to work well in the game". It was mostly pretty positive, the people that we worked with there, John Broomhall who did the music, Steve Perry, they helped finish the game, basically,

Antonia

In what way?

Chris

With testing. They were coming up with suggestions - there were a few loose ends in the game where I actually asked them for help - what would happen when you win the game, things like that, and so they came up with suggestions for that. Some I took, some I didn't, and I think they helped form the game into a finished game, I certainly don't recall it being negative at all working with them.

Chris

Certainly up to the point where we approached MicroProse it was all self financed. I did get an advance but it wasn't a lot, I think I was pushing for a better royalty deal. Basically it was funded by myself, from the conversion work I'd done the previous years. For the graphics, I had a deal with Simon where he worked on the condition that when I got a publication deal, he would then get paid, so I never paid anything out for the graphics until the game went to MicroProse. It didn't cost me a lot apart from the time and work - six months, nine months worth of work.

Chris

Simon was doing some graphics for a friend of mine. I was looking for a graphic artist - I'd already put in my own graphics for this demo version of what became *Transport Tycoon*, and I realised that I needed decent graphics. My friend was doing an Amiga game, and Simon ended up doing graphics for that Amiga game. He was recommended to me, so I got in touch with Simon, paid for him to come up to Scotland, and he spent an afternoon looking at the game, and we agreed there and then that he would start supplying graphics for what would become *Transport Tycoon.* He had a good understanding of what I needed, he very quickly developed a style, the isometric style graphics, he turned out to be exactly who I needed to do my graphics.

Jas

Has he been back in touch since the mobile version's been out?

Chris

I am still in touch with him. He's now written a few games of his own - after he'd done all the graphics for my games he learned to program, so he's programmed a couple of iOS games. He's moved on a bit from the graphics, but I'm not quite sure what his ambitions are now. I know that the games that he's done, although they do look and play as a fun game, they're not making any money. The games are struggling, as I think are a lot of games on iOS.

John Broomhall was the in-house musician at MicroProse, so when I sold them *Transport Tycoon* he was the one who was tasked with supplying the music and also sourcing the sound effects, I think he outsourced the sound effects to somebody else, then he composed the music, so that's how I met John. He came up with the concept for the music himself; he played the game, he just felt that the jazz concept suited the game really well. I think he ran it by me and I said "Yeah, that's fine," I didn't have any particular thoughts about it myself, so he created 20-something original pieces of jazz music, which is quite incredible for a game back then, to have so much original music.

Antonia

John's been doing a lot of interviews recently where he goes into a lot of detail.

Read about John Broomhall's work on the original and remixed Transport Tycoon soundtracks here:

Gamasutra: John Broomhall's Blog - FULL CIRCLE: Videogame Music & All That Jazz

Top Score with Emily Reese, Episode #203: John Broomhall

IGM Interviews - John Broomhall (Transport Tycoon)

Chris

Yes, he's got a much clearer memory than me, I have to look it all up!

Antonia

So how did you work? You were working from home I assume, how did this work out collaborating with these people? How did you communicate?

Chris

It worked very well. Back then it was telephone calls and sticking floppy disks in the post. The post seemed to be more reliable than it is now. Simon would work all day on the graphics, he'd get a floppy disk into the post by 5:30, I'd receive it probably 8:30 in the morning the next day.

Antonia

Quicker than downloading it over whatever connection there was at the time.

Chris

You could get a modem, because I know that a couple of years before, I think working on Dino Dini's Goal, he actually lent me a modem so that he could send me files by modem, 9600 baud or something. I don't think I used any form of email - I possibly had an AOL account, I can't remember.

Steve

Around that time I had a CIX account, so it's possible.

Jas

I had one of those plug in modems that you pushed the phone into, for a little while.

Steve

Acoustic couplers. I had a more modern phone that wouldn't fit that.

Jas

But it was a right pain in the arse. You'd put it in and their mum would pick up the phone at the other end. "Hello?"

Chris

Around that time, everything was being sent by floppy disk, Sending stuff down to MicroProse, I'd send a floppy disk down in the last post. Usually they'd get it the next day.

Steve

That was happening at Bits around that time as well because you [Jas] were sending stuff in, or were you uploading to their very dodgy modem PC?

Jas

By the time I was working at Bits we had a proper system in place, but back in the Spectrum days it was all post, and if you needed something really desperately, you used to put it on a train. If you wanted same day delivery you used to take it down to the train station, it'd get put on a train and someone would pick it up at the other end.

Chris

I don't know whether it was *Transport Tycoon* or *Rollercoaster Tycoon*, I think it was *Transport Tycoon*, at some point we needed to get a Master Disk down there quicker than post would do it, and they flew somebody up and I met them at Glasgow Airport. Handed them a disk and they flew straight back again. I can't remember which game or when that was, it must have been before modems...

Jas

We took one of our games to the duplicating plant ourselves one time. We finished the game one evening, next day drove to the duplicating plant, got it duplicated, then literally waited one night, picked up a box of games and took them to the local shops. It was crazy.

Jacqui

God knows what bugs were in, the games at that point that probably had no QA!

Steve

Jason never has bugs! [laughs]

Chris

We didn't have a lot of testing with *Transport Tycoon*. By the time *Rollercoaster Tycoon* came out they did have a bit of a QA department, but with *Transport Tycoon* I think it was the producer and one or two other people at MicroProse just playing it for an hour or two and "Oh yeah, it'll do, it hasn't crashed yet." And me playing it as well. There probably were, and are, a lot of bugs in that game.

Jas

I still maintain this is why a lot of games back then were harder to play, because the playtesting was generally done by the people that made the games.

Chris

That's true, yes, they weren't getting a proper view from somebody who wasn't familiar with the game.

▼ 14. We've briefly touched on the text editor you used, were there any other notable tools? And what about Simon's equipment?

Chris

There's not a lot else I used, I used Microsoft Macro Assembler as the assembler. Simon created his graphics in Deluxe Paint on the Amiga - at the time I don't think he used any other tools. Latterly, with *Rollercoaster Tycoon* he used all sorts of graphical tools. We were fortunate that Deluxe Paint also ran on the PC so he could send me files that I could then load on the PC. I'd written some utilities that would convert those file formats to the file formats I needed for the game.

* John Broomhall has talked elsewhere about his tools, so we'll leave that to his own words. See the links in question 13.

▼ 15. Lot of the buildings in the game seems to be influenced by the location you were in at the time?

Chris

There's quite a few, it's much easier to do graphics when you've got something to base them on, and Simon chose to do a few things based on buildings he knew. I think his dad's bungalow is amongst the buildings there. My own bungalow was in there, I sent Simon a whole bunch of photographs of buildings in Glasgow, a lot of those ended up in the game. I think he found a few futuristic buildings in books that he had. A lot of the buildings were based on real things.

Antonia

Any particular favourites in there?

Chris

The Livingstone Tower in Glasgow, because that's part of the University of Strathclyde where I studied, that's one of my favourites.

▼ 16. And then later on you've got the more whimsical ones, the Martian graphics and Candy Land, what inspired that?

Chris

That came from brainstorming with Simon to see what he could do, and what would look good in the game. Something that would just look completely different and change the whole feel of the game. Just wild ideas, really, "What can we do?" I think we had a long meeting with MicroProse to come up with more different things we could put into the game, they came up with some interesting ideas, Simon and I came up with some interesting ideas, and we came up with some wacky graphics - bubbles blowing and all sorts of strange things like that - to make the game a bit more fun. I think we've got Scalextric tracks on the roads, it was in *Transport Tycoon Deluxe*, the World Editor one is the one that had Martian graphics.

▼ 17. Are there any features that you planned for Transport Tycoon and Transport Tycoon Deluxe that didn't get implemented?

Chris

There are actually a few things. I had ambitions to put things like dirty tricks, more detailed share dealing and taking over companies, and a lot of these features were dropped because I felt they just weren't going to work well in the game. I'd thought them through and could have done them, but they just didn't feel like they were going to work well enough, so they got dropped.

Antonia

Did anything get dropped due to technical restraints or time restraints?

Chris

I think my problem with those features was that I wanted to do them properly, and to do them properly would take so much programming, and maybe extra memory and things like that, and it just wasn't worth it to spend 4 or 5

months getting one of those features going when you could be doing other things with it, you could add more vehicles or whatever. They just got lowered down the priority and that's why they never got done.

Chris

Probably not a lot different. I might have had a clearer idea of what was possible in the game and I might have written the code a bit better, and I might have made it a bit more expandable, I don't know, but it's difficult to think of anything major I'd have done differently.

Chris

No, I never... back then games were turning over every 6 months or so, magazines would have new versions of games, and new games... I had no idea, maybe I thought if it was successful we'd have a sequel or something like that, but no I had no idea even 2 or 3 years down the road what would be happening with the game, let alone 20 years down the road.

Chris

There were a lot of things I wanted to do with the isometric system in *Transport Tycoon*, so I did rewrite a lot of it with a sequel to *Transport Tycoon* in mind - things like having multiple level roads and railways, and a more 3 dimensional data structure. It was written for *Transport Tycoon*, but in the end it turned out to be exactly what I needed for *Rollercoaster Tycoon*, it was adapted to become roller coasters on multiple levels and things like that.

Jas

It seems quite a shift going from quite a - the *Transport Tycoon* idea, I'm trying to think of the right word - it's quite in-depth and technical. I know *Rollercoaster Tycoon* is as well but *Rollercoaster Tycoon* is more fun and a much lighter game, I guess? I mean what made the move there?

Chris

Just personal interest I think. I never thought of it being a more light-hearted game as opposed to a technical game, I just thought "This is fun". I think I'd seen Theme Park, I quite enjoyed Theme Park. Again, I had this isometric system and I thought it'd be fantastic if I could get roller coasters to work in an isometric system, and then you could really see how they intertwine.

My vision for *Rollercoaster Tycoon* was based on a couple of pages in a book that I've still got (called "White Knuckle Ride" by Mark Wyatt), that's got two pictures of really big roller coasters on pages facing each other, one's a wooden roller coaster that's got an intricate structure and looked beautiful and so on, and then a steel roller coaster that had twists and turns and loops and corkscrews that were just going in and out of each other. And I just thought "I want to do that in an isometric view point", and it would be fun to see it all in action, and it would be fun to build it, and I think that's just what drew me in.

I think I had less idea of how *Rollercoaster Tycoon* would develop than with *Transport Tycoon*. With *Transport Tycoon* I had a set idea, "This is the kind of game I'll end up with," with *Rollercoaster Tycoon* it just started "Oh I want to get roller coasters going," and I got a few roller coasters going and I thought "Got to get the people going," and then the game started to evolve like that, and gradually developed into a full game.

Jas

So it starts off really as a coaster sim?

Chris

Yes, yeah, I just thought "I want to see these in action", see my isometric system cope with it. And it could, it developed, and at the time I thought "This is more interesting than *Transport Tycoon*". I think I'd been working on *Transport Tycoon* for too long, and roller coasters interested me a bit more.

Jas

You weren't consciously trying to appeal to a wider audience or anything like that? It was for yourself?

Chris

No, no, I just though "This is fun," maybe thought that a few other people somewhere, perhaps some mad roller coaster enthusiasts might buy a game like this. I think I mentioned to a few people I was thinking of doing a roller coaster based game and they were like "Nah, nah, you need to do *Transport Tycoon* ," so I was kind of working against the grain there. It's a little known fact, but I had a publication deal for *Transport Tycoon 2*, I had to actually buy myself out of it. I only remembered that recently.

Jas

And this was because by then you were so into doing *Rollercoaster Tycoon*?

Chris

Yes, I just decided I couldn't go through with *Transport Tycoon 2*. I had worked on this system, I'd upgraded the isometric system, I had little blocks moving around, block based tracks on multiple levels. It was all designed for *Transport Tycoon 2*, so I could have a more flexible system for trains, I mean much like what became Locomotion, and the current *Transport Tycoon*. But I'd just lost interest, and I thought "This is much more fun, I'm into roller coasters now! I want roller coasters going round the place."

Antonia

So they're both real-life interests, roller coasters and trains?

Chris

Yes. I've always been self-motivated, and if something really interests me I will work night and day on it, if it fascinates me I'll really put the work in. If I'm not interested I really, really struggle to keep focus. At the time I spent 2 or 3 years doing *Transport Tycoon* games, when the interest started to wane I just thought there's not much point in carrying on. The roller coaster interest started to come up and just went from there really.

Antonia

Do you do anything involving them in real life - transport museums, trainspotting, anything like that?

Chris

I definitely did when I was younger, I'm still interested in trains and transport and aircraft and so on, probably not as much as when I was young. With roller coasters I'm definitely still interested, what's my roller coaster count now? 600-something? I've ridden 656 different roller coasters around the world.

Jas

That's pretty impressive!

Steve

How many are there around the world? How many have you got to go?

Chris

I think in total there are over 3000. Trying to get them all is a bit tricky, because I've got most of the easy ones. I've probably only got about half the UK ones, and there's a lot of obscure little ones in little parks around the UK, I've probably got about half of the ones in the USA, I've got a small number in Europe, a small number in China. I've got a friend, she's just passed the thousand mark, she spends all her spare time travelling. There's a few other people I know that have got well over a thousand, but there's very few people that's got over 2000. You have to be very dedicated.

Jas

They're creating new ones all the time.

Chris

They are building new ones, yes. Apparently China has now got more roller coasters than any other country. It's really really growing over there. It's not just rubbish roller coasters either, they're actually spending money on really good quality American and European roller coasters. There's a mixture, there's a lot of rubbish there as well, and they have their own manufacturers who do rip-off clones of not very good European coasters. I think we've gone a bit off track now, what was the question..?

Antonia

Interests.

Chris

I think I've always written games on my own interests. Even going back to little isometric games, it was whatever interested me at the time. I find it quite difficult to write a game based on someone else's ideas. I think over the years I've had so many people suggest probably really good game design ideas to me, and my eyes glaze over.

Antonia

The framing is something that you're just not interested in?

Chris

Yes, and it's nothing to do with the quality of their ideas, it's just it need to be something that completely inspires me, and then I will go all out and do my best with it.

▼ 21. Can we talk about the sales of your games, in general? I think you've mentioned Transport Tycoon performed worse in America than in Europe.

Chris

I don't actually know the sales figures, but that's right, yes. I think it sold pretty well in the UK, I don't know if it ever made number one, but it was pretty high in the charts. We got really good reviews, 80%, 90% ,95%, it sold really well in the UK, it sold really well in Europe, didn't sell as well in America.

Steve

To be fair that's probably because America, at the time, was still very console based. they went through the '80s very much in terms of home console, home console, home console, crash, console, console.

Chris

It very well might have been.

Antonia

It seems American gamers didn't really have a Speccy or Commodore phase...

Steve

They had a computer maybe in a High School in their town that they might have access to, and they had a console at home.

Chris

Yes, yeah. What was the machine my neighbour had? That was an American one.

Steve

Computer or console?

Chris

It was a computer, although it had cartridges, it wasn't TRS it was something else.. Texas Instruments?

Steve

TI-99...

Chris

...99/4A, that was it. I used to go round to my neighbours to program there, TI-99/4A and that's an American machine, isn't it? You could program it in BASIC I think, but you couldn't do a lot in it.

Jas

Wasn't there an Atari computer as well that had like a flat keyboard?

Steve

Yeah that's a 3000XE [130XE] or something like that.

Jas

That had a cartridge slot as well.

Chris

I used to go into a computer shop in Glasgow regularly to sit and program the computers they had on display. There were other guys that did the same and I used to be in awe of what they were doing, they were making big flashy things go round the screen and I could just about print "Hello."

Steve

We used to pop in to Dixons on the way home from school and do various things to their computers, but... the content we'll avoid from here [laughs]

Antonia

I'm sure lots of people reading this did that themselves.

Chris

It's quite fun that the sales staff didn't really know what you were doing, you could disable parts of the computer or get it into an endless loop that they couldn't get out of.

▼ 22. Did RollerCoaster Tycoon follow the same sales patterns as Transport Tycoon?

Chris

No, it was actually very different, *Rollercoaster Tycoon* took off very much worldwide. It just seemed to capture people's imagination. I think we sold very well in UK, Europe, America, I can't remember the exact figures but I know we were number 2 overall for worldwide sales of PC games, I think the year after it came out. The only game that beat it was The Sims, so in terms of sales numbers it was the second highest selling game on the PC that year, which is quite impressive. It never really peaked much, I can't remember it being at number one for a long time, I think it ramped up slowly, and then it stayed at a high level for quite a long time - 6, 7, 8 months.

Jas

Rollercoaster Tycoon was one of the first games I remember more women playing. I recall my girlfriend at the time, she didn't play many computer games, but RollerCoaster Tycoon really captured her imagination.

Chris

I loved seeing the way different people played the game. It was fascinating for me, because I always played the game the same way, I was into the coasters and designing the coasters. You'd take it to somebody else and watch them, and they'd be so into planting the flowers and watching what people thought of the flower beds and things, or they'd be making sure the people had enough to eat and drink, or they'd be concentrating on one particular type

of ride that I'd never really enjoyed building.

That was fascinating for me, seeing something that I'd made and I thought people would play in a particular way, playing it in a different way and enjoying it, and mostly in a positive way as well. It was a positive game, it was rewarding people for building things carefully or making things look good or thinking about what they were doing. It wasn't rewarding you for destroying things.

Antonia

That's still very popular though!

Chris

It's still very popular, yes! People will always find ways of doing that in the game, but on the whole I think most people enjoyed the game because it was a positive game.

Jas

Maybe that's because so many games around that time were about destruction. It was refreshing to have something that wasn't.

Chris

Yes, we probably got a lot of good press and so on because of that. I know it went down well with parents I spoke to, "Glad that my son or daughter is playing your game and not one of these other games."

Antonia

Rollercoaster Tycoon's 20th anniversary is a while off, how many years?

Chris

1999 was when that was published. The original Transport Tycoon came out at the end of '94, middle of '95 was the World Editor, and end of '95 was *Transport Tycoon Deluxe*. Between the start of 1996 and probably midway through 1997, I have a complete blank about what I was doing, I think I was really, really struggling with trying to do a sequel to *Transport Tycoon*. And then that became *Rollercoaster Tycoon* and then it took off again. At the time Windows had come in, and I was struggling to get my head around Windows programming, DirectX, I was possibly even looking at C and so on, and I was struggling with losing interest in *Transport Tycoon*, but I don't know where that year and a half went.

Jas

We did the same thing with one project as well, we were just chasing technology all the time, going from DOS to Windows.

Steve

Which project was that?

Jas

Nomads, that never came out. And you'd just move on to a new system and something else would get introduced, 3D cards were coming in just about then as well, so you were having to support all those and there was no standard format yet.

Chris

And they didn't do what I wanted anyway, I was writing isometric games, I wanted to pixel push things.

Steve

It's still awkward to do that now although it's getting better with shaders, it can still be very tricky.

▼ 23. Do you ever regret letting go of the RollerCoaster Tycoon IP?

Chris

No, I think it was the right time to let somebody else put their stamp on it,
I'd done *RollerCoaster Tycoon 2*, I think I'd put everything I'd wanted to into the game, and for me to try to hold on to it and take it further when I didn't really have much vision for it going beyond then, I just thought it's not worth doing that, so that's why we licensed it.

Antonia

Was a condition of *Rollercoaster Tycoon 3* that it had to be 3D?

Chris

I wanted to let someone else decide, I didn't have any vision for the game, to take the game on to *RCT3*. It needed somebody else to take it further, and that's what Frontier did. I was quite happy to let them put their stamp on it. I knew they'd do a fantastic job, I knew they'd probably make it 3D, they had a lot of experience with 3D. I mean I had experience with 3D, I was working in projected 3D before I did *Transport Tycoon*, it was just personal choice that I used isometric. So no, I don't have any regrets, because I don't feel that I could have done the game justice. I think I needed to let go of it and let somebody else make something of it.

Jas

Did you play *Rollercoaster Tycoon 3* that much?

Chris

Not a lot, I played it enough to find out how the game worked, and to see how it compared with my versions of the game. I found it changed the flavour of the game a bit, and I always preferred my own version of the game, whether that's because I created it or whether... I always came back to *RCT2*, that's still my favourite version of the game. And that's taking nothing away from *RCT3* at all, it's a fantastic game, the projected 3D definitely adds something to the game, but maybe in some ways it also takes something away from the game. I haven't played it a lot but just enough to be familiar with it. What do you think of it? Did you play it?

Jas

Yes, I did play it at the time, it's hard to remember exactly what I thought back then. I certainly played *RCT2* far more, I put more hours into *RCT2* so clearly I enjoyed *RCT2* more than 3. One thing I do remember enjoying in the third one is expansion into water parks, and just the increased amount of various stuff you can build, I quite enjoyed that, but of course thinking about that it's nothing that couldn't have been done in *RCT2* anyway.

Chris

It could have been, but it would have needed tremendous resources. That's the other reason that I let the game go, that with the way things were going with game development, there was no way I could carry on doing a new version of the game, the way I was working: me doing the programming, running the project, one graphics artist - it needed a bigger team, and I couldn't work that way. I like to do all the programming, I like to know exactly what's going on.

When I went to see Frontier, they introduced me to a whole room full of people, there must have been 20, 22 people working in that room, they were all working on *Rollercoaster Tycoon*. I just thought "Crikey!", this is so different to me working at home with Simon Foster working a couple of hundred miles away at the end of the telephone. I couldn't have done that. I never saw myself working with a large team like that, it's just not what I do.

Antonia

Have you ever worked much with even one other programmer?

Chris

No, never. Apart from on the conversions where our tasks were quite separate, I've had a bit of help from a few other programmers. I mentioned that I struggled with learning the new technology in Windows, things like that, and eventually we brought in Joe Booth from FISH, who wrote me some code to interface with DirectX and Windows, so he did the stuff that I really didn't want to learn, but that's pretty much all the working I've done with other programmers. I've enjoyed working on my own and just controlling the whole thing and knowing exactly what's going on.

Steve

It's much easier. Sorry Jas.

Chris

Yeah! It's easier, you don't need to communicate with anybody else.

Steve

Don't give me that look Jason! I just meant any individual task is easier if you only have one.

Jas

Fine!

Chris

I appreciate how much more difficult it is when you do have more than one programmer, you've got a bit of workload involved in just communicating with each other and making sure that your stuff works with each other.

Steve

I think that because most of the stuff we work on is very segregated there's that very small crossover, but there's always going to be a crossover.

Chris

Yes, so you're not going to get two people's work out of two people, you're going to get one and a half people's work out of two people.

Steve

Maybe one and three quarters.

Jas

One point eight?

Steve

Towards two but not reaching.

Antonia

So who is the one and who's the point eight?

Steve

That's easy, I know what time I get up in the morning.

Jas

Just because my workday's a little bit offset from yours...

Chris

Simon and I used to work like that, I used to start 7 in the morning, I was always a morning person, I've had it by the middle of the afternoon.

Steve

I'm more or less like that as well.

Chris

Simon was the opposite, he'd get up at lunchtime, so we'd have these couple of hours in the middle of the day when we could actually talk to each other.

Antonia

It sounds familiar.

Chris

But that meant by the next morning he'd done a whole day's work! By that time I'd got his disks in the post in the morning, so it worked really well. But we couldn't have worked in the same room, it just wouldn't have worked because, well, he wouldn't have been there when I was there and so on. It worked better remotely.

▼ 24. Let's pretend there's a time machine in the basement. We grab an iPhone 6 with Transport Tycoon running on it and hop in the machine back to 1994, where you've just finished the original game, and we show you this thing...

Chris

I would have been gobsmacked. I wouldn't have had any idea of what type of technology would be around in 20 years, I would have been absolutely gobsmacked to think that a device so small can handle such a complex game with high resolution graphics, absolutely gobsmacked.

Antonia

I'm just trying to think what mobile phones were like back in '94...

Steve

I think '94 they were still quite chunky, but they at least didn't have the large battery pack. They were very much like the cordless phone you could get in the early 90s for home. Big bulky things with huge battery in.

▼ 25. What was the genesis of mobile Transport Tycoon?

Chris

I think Jacqui was the driving force.

Jacqui

I felt very strongly that it was a classic game, and I've always felt that it was a very tactile game, funnily enough. I thought a finger or a digit was the perfect tool for actually playing the game. So I managed, after much negotiation, to get back the rights - that was the first thing we had to do - and we did that without anything being in the frame, but once I got the rights back I did rather bully Chris...

Chris

She had the vision, and I didn't really have as much vision as Jacqui, but I very much agree with why Jacqui had that vision: the game really suits these platforms, it's a tactile platform, you've got the high resolution display. I think I wasn't quite sure how well it would work on a mobile phone but I could see it working on a tablet. Touchy-feely type interface.

▼ 26. We've covered how the original game was built in x86 assembly. How did that affect bringing it to iOS and Android?

Steve

Well, I'm fortunate in that I can understand x86 assembly, and I can program in C, and the iOS and Android device like being programmed in C. I had to work out what each of the routines Chris had written in assembly did, and work out how to get them to do them in C - but not too slowly.

Antonia

Do you wish he'd written it in C in the first place..?

Steve

No! I wholeheartedly agree it would not have run anything like half as well. It would be easier to move across platforms, definitely.

Jacqui

I remember having a conversation with Foo [Katan], and saying to him that the main problem we have here is that you can no longer find coders who read machine code, and the whole code is in machine code.

Steve

It's definitely a dying art, we're lucky because Jas has been in the industry far longer than me, and he knows code backwards - and forward sometimes.

Jas

Mostly forwards.

Steve

And I'm lucky because I learned simultaneously high level languages and low level, so in terms of what Foo had available at the time was Origin8, he still had people on the books who could do machine code. I kind of like the challenge of not letting computers defeat me. On the grounds that Chris managed to work out a way of doing it, and I managed to break that way so I had to fix it. I'm not going to let a computer tell me that I'm wrong.

Jas

That's something I would say, just in general, I don't know if fun is the right word but it was a fun project.

Steve

It was, it was satisfying.

Jas

It was a challenge, which in turn made it fun. And as we know most programmers enjoy challenge.

Steve

Nothing like a good puzzle to get me happy.

Antonia

Anything else specific to the mobile version, say the UI? Jas, you're the UI guy.

Jas

Yes, that provided its own unique challenges. [laughs]

Antonia

There's a lot of information to get on that little screen.

Jas

Yes, a lot of information, and just trying to modernise it enough, but not take away from the original game as well. The one thing that we really really didn't want to do was dumb the game down at all. A lot of the UI actually ended up being very close to the original game. And that was also because the original UI worked very very well.

Steve

You had a lot of functionality to get in, so it's organising it in a tablet or phone friendly way. You have a lot less space on some devices than others.

Chris

And you're going from a mouse based thing to touch and there's certain things that don't work well.

Antonia

There's a loss of precision there.

Steve

And the classic thing, the right click.

Jas

Yeah that was one of our things, not having a right click, not having a hover, and as Chris pointed out the precision, the PC had the minute precision of the mouse pointer, we didn't have that so we had to make various concessions there. On the whole I think it worked pretty well. Pulled it off.

▼ 27. Chris, how much involvement did you have in the mobile version?

Chris

I think at the beginning I was very much hands off, you guys can probably comment on what you remember. I wanted to remain distant, I think I became a bit more involved just because I wanted to make sure it was going to work properly. I felt I needed to talk to Steve to help him understand how bits of the code worked, just make sure that the game ended up with the same functionality that the PC game had, that it had the same depth and the same detail, to try and explain how the PC game worked. I wouldn't say I was all that involved, though.

Jas

I dunno, you got fairly involved in the UI side as well at some points.

Laurence

That was late on though.

Chris

Yeah, that was late on, just trying to make sure we didn't take too many shortcuts, trying to keep the functionality of the PC game and get the best out of the interface we've got. You're probably a better judge of how much involvement I ended up having. You probably did 99.9% of the work.

Steve

In terms of code, certainly some of the more intricate algorithms are easier explained in English than in x86, let's put it that way. The comments are there, the code's there, but some of the context needs...

Chris

It was never designed as something for somebody else to read, it was designed for me to read.

Jas

So it was more of a gradual thing, you getting more and more involved.

Chris

Yes, it wasn't what I really intended, I'd hoped that it would all go to plan and we'd just have a game to publish, but I think it needed a bit of my input just to keep it on track. I think none of us really quite knew what a mammoth task it was to convert it.

Antonia

Any particular mammoths that you'd like to bring up?

Steve

They were hairy and horrible! The really awkward ones were to do with depth sorting, because depth sorting isometric is theoretically straightforward, and practically not very straightforward.

Chris

It took quite a while for me to persuade you that the Chris Sawyer method of doing it is possibly the best method of doing it.

Steve

Something I heartily accept now. I don't think that my way was in any way better, just that the methods to doing it... there are difficulties to all methods, and Chris's are more complex but result in far better visuals. When you have an awful lot of graphics overlaying in one particular isometric world tile, you suddenly need an awful lot of extra knowledge of what's going on in there.

Jas

There were also hardware differences.

Steve

There is no pixel pushing, it's effectively doing it as lots and lots of sprites which is what Chris's system did, but Chris's system could access the sprites pixel by pixel, whereas the iOS device and the Android, they very much like their stuff as tiles, rectangles of graphic.

Chris

You had to come up with some pretty innovative ways of recolouring bitmaps in the end didn't you?

Steve

Yeah, that was actually pixel pushing to the background and un-pixel pushing afterwards. Again, we got that functionality in, it's something that modern hardware finds harder to do than old hardware. When you have restrictions for the number of bits in pixels and pallets, it was easier to do a lot of effects the game requires, than it is when you have 24 bit and 32 bit colour pixels.

Chris

It's quite frustrating when hardware, even modern age hardware, is limiting the way that you're doing games.

Steve

I do feel that a lot of the game relies on memory access to find data, information to do relevant tasks, for example trains running round the map need to find what track they're on, so on, what part of the route they're taking, and I'm fairly convince that though the memory in the system on the iPhone is faster, the access for each individual bit or byte of memory is slower, because you're having to go through so many more layers, rather than just telling the processor "That's the memory I want, what has it got in it?" You're having to go through layer after layer after layer before you're allowed to read it, and it's not quite aligned properly so you have to shuffle it a long a bit, then you've got the answer you want. So I think memory access is slower on modern devices.

Chris

I think you've had to do a fair bit of optimisation and writing extra code to get round these issues, haven't you?

Steve

Its either changing the database, which you can't do, or changing the way you access it. So, it works! And it works efficiently. Give me assembler any day...

▼ 28. What are your favourite and least favourite aspects of modern mobile platforms? What do you like and dislike about them specifically?

Chris

There's probably not a lot I dislike. I think as we were saying just now, its a bit frustrating that the graphic processors and so on are set up to do certain things really well, and if you want to do something different you're working against that, and it can be quite a challenge. But the good sides are that they are very powerful, they've got a fair bit of memory, the touchy interface is fantastic, the quality of the screen is fantastic. There's a lot of really really good things about them and I think they really suit the style of game of *Transport Tycoon* as well, it just feels right especially playing on a tablet.

▼ 29. We're coming to the end of these questions, so on to the future. Any interest in making another Transport Tycoon game for PC?

Chris

I'd never rule it out, but it's not something that interests me at the moment. I've never had much of a plan for what could happen with any of my games, so I don't know.

Jas

Have you thought of writing any new games for PC?

Chris

As I said earlier, I struggle with self motivation, and if something really captures my imagination I will put everything into it and do it, but at the moment there isn't a game subject that draws me in enough actually go ahead and throw myself at another project. It'd be nice to think that that might happen one day, it happened with *Transport Tycoon*, it happened with *Rollercoaster Tycoon*, could happen with a new game but I think without that inspiration and that self motivation there's not much point in me creating a new game. I'm happy to help out with *Transport Tycoon* and the odd thing here and there.

Jas

You touched on this briefly before, do you still get people approaching you with game ideas?

Chris

Yes, yes.

Jas

Even to this day?

Chris

Probably even more so this day, because they know I'm not very good on the ideas myself! They think "Oh you must be looking for some good ideas.". For one thing it's difficult to get inspired about someone else's idea, and another thing is, they might be good ideas, but I'm always thinking from the programming side, I'm thinking problems, I'm thinking "this is actually going to be a nightmare to try and program."

Jas

In isometric.

Chris

In isometric! [laughs] Yes. I've got very well meaning friends who will come up with what they think are fantastic ideas, but trying to actually make a game out of them... I think it's easy coming up with the ideas, it's difficult to actually see those ideas through, and actually make a really good game with them. With my games I've probably worked from the programming side upwards, and like got an isometric system, "What can I do with it?" I've probably never been that good on the game ideas, but maybe I've been fortunate that the systems that I've built on the isometric system have ended up being a good game.

Jas

I suppose as well they've primarily been sandboxy type games.

Chris

They have, yes, you don't need to have too much of a structure to the game.

Jas

A lot of the game is created by the player.

Chris

You give them a structure to work with and some rules to play by, and let them have the fun playing in that world.

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