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AUDIO INTERVIEW TRANSCRIPT

Sawkins, John: transcript of an audio interview (17-Nov-2016)

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Sawkins, John: transcript of an audio interview (17-Nov-2016)*

Biography: Mr John Sawkins (b. 1946) was apprenticed to Russell Wood Radio & TV Retailer in 1962. After receiving his City & Guilds qualifications in Radio, Television and Colour TV (1962-1968) he worked in the domestic Radio & TV sector from 1968 to 1981, receiving his City & Guilds Digital Logic Techniques qualification in 1980. In 1981 he joined the NIMR Engineering Department (Electronics Section), where he remained until his retirement in May 2011.

TT: Tilli Tansey

JS: John Sawkins

TT: John, can you tell me a little bit about your family background, and when and where you were born?

JS: I was born in the same road that I still live in, in Barnet, 1946, 1st May. I think I was probably a just at the end of war celebration baby. My father was a baker and indeed he baked his way through the war at what I think was probably the very early days of the Middlesex asylum, which we all know as Shenley Hospital. Anyway, he was the baker there. It no longer exists. It was a huge, live-in mental hospital. It was like a village. Part of it still remains but it's now a housing estate. And he baked his way, as I say, through there, so my Ma told me, that he baked during the day and fire-watched during night. Anyway they were both in Barnet during the war so I was born there, I went to school there, both Foulds Junior School and the Elizabeth Allen Secondary Modern school, which I think probably was one of the schools set up for the poor of the borough in those days. I left school about 15, I fell into a job because of chance conversation between my mother and a patient at the GP surgery she was a secretary to. And basically she was asked, 'Would I like an apprenticeship?' so I was duly asked by my mum would I like an apprenticeship mending radios and televisions. Prior to that I had played with a friend of mine who has gone on to set up his own electronics company, and we used to faff around using a thing called earth resistance communication. Basically we had ancient radios but we used to use the audio stage and transmit into the ground, via large pieces of copper banged into the ground at a vast distance apart, we managed to talk to each other over about 50 yards, which we thought was a huge accomplishment.

TT: How old would you have been when you were doing that?

JS: Ah, 14, maybe 13. We were in the Scouts together. He was the patrol leader, I was his second, so Jack and I have known each other for a long time. He now runs a company called JTL Electronics, which stands for Jack the Lad Electronics.

TT: At that time what with post-war spares, and electronics and communications, lots of boys were getting very interested in taking things apart and building things. Were you one of those?

JS: We were constantly taking things apart, yet. There was an awful lot of ex-military junk around and ancient TVs and bits and pieces. One of the things which I created with Jack up in his loft was, Jack had the idea

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* Interview conducted by Professor Tilli Tansey, for the History of Modern Biomedicine Research Group, 17 November 2016, in the School of History, Queen Mary University of London. Transcribed by Mrs Debra Gee, and edited by Professor Tilli Tansey.

of making a remote controlled electric train set and this involved taking enormous lengths of wire out of what we know as deflector coils out of old cathode ray tubes. Jack would spend endless hours unravelling these things so that we could have this ability to have a map of the train, which was going round the train. Jack was doing most of this work, I was merely his side-kick. We had miles and miles and miles of this shellac covered wire, which enabled us to see where the train was and the wonderful invention by him was that he would have half razor blades, so that as the train went over the razor blade, the razor blade bent and touched the track and made a connection and our light would flash going around the map. Anyway that's what he did. We did that and the earth transmission was a product of ancient, old radios, which we would break into and use. Yes, that and scouting.

TT: Where did you get your radio kits from?

JS: Well, more latterly Lisle Street comes to mind, which no longer exists, which was a place where you could go and buy a whole lot of old ex-military junk and there was one, being still as innocent as the day is long, there was one incident down there where I was peering into this shop window and a policeman, fearing for me being dragged off by some wayward woman, came along and said, 'I think you should move along now, son, you've been here too long.' So he carefully shuffled me along Lisle Street towards the tube station, me little understanding what was going on really, to be absolutely honest about it.

TT: What you'd been rescued from?

JS: I'd been rescued from a fate worse than death, yes. [Laughter]. Probably I would have woken up a lot earlier in life but anyway. Yes, so we used to scrounge stuff, and jumble sales of course always were a good source of junk in those days, yes. And that was associated with Scouts as well. We used to collect enormous piles of rubbish for jumble sales.

TT: You've mentioned Scouts two or three times. That was also something that was important to you?

JS: Well, yes, it is. It was pretty important. It formed part of the interview, which I had latterly with Jon Marsh, in later days.

TT: This was an interview for a job?

JS: This was interview for the MRC, which is 1981 with Jon Marsh. And basically the interview with Jon Marsh hinged on did I ride a bicycle, could I repair it, was I in the Scouts? And then he realised I went to church and then he realised I could repair videos and basically said, 'Well, if you're doing all those things,' he said, 'You can do anything we want you to do here.'

TT: He's told me another story about your interview. We'll come onto that later.

JS: [Laughs]. Okay. Yes, so scouting is where, actually, it's where Dilly and I met, my wife, some time later. Dilly was running a cub pack with her sister and that's where we met and are still together to this day, thank goodness. It's 50 years in round figures.

TT: When did you join the Scouts?

JS: I was in Cubs when I was about seven, I think, and it went on from there. And probably taught me quite a lot of practical skills, which I would never have picked up otherwise. We'd do some crazy things. I think one of the enduring memories for me is waking up, suspended under the branches of a huge oak tree. We had literally tied ourselves into this oak tree and spent the night up there and we woke up and it was moving very gently in the breeze and it was just wonderful. What a wonderful experience. That and some of the camps that we did in Southern Ireland, where we were still drinking water out of streams and hand pumps and no electricity. It was very rural, very rural. Anyway, that was scouting.

TT: We're talking early to mid-1950s, was that a common thing to do, were most little boys Cubs and Scouts?

JS: Yes, I think so. Didn't ever get into Boys Brigade. I think it was just one of those things we did. Barnet was still a bit of a village, to be honest with you. And everybody was very local. The guy who was running the Cubs there lived 20 yards away, so we all knew each other. And it was all very innocent stuff. Some of the stuff that's been laid at the door of uniformed organisations of late breaks my heart frankly. I haven't experienced any of that. It was really quite an enjoyable experience and I hope that that continues to this day. Dilly and I retired from Scouting when we had our first child, which is 42 years ago. And I don't regret that. Somebody challenged me the other day whether we should go back and do some training. I don't know if I'll do that. At 70 I feel probably I'm a little bit out of touch with modern youth but my recently acquired grandson will probably correct that in time. We'll find out. Yes, Scouting was a large part of my upbringing. Schooling was something for me frankly which I found a lot of it went over my head. The three dimensional, practical things I found more accessible. I didn't really wake up as far as any of the finer skills are concerned. English, arithmetic, I won't say maths, until I went to college, which was a College of Further Education, and I had the privilege of having being involved in that through my apprenticeship. I can remember to this day the first time that I ever sat an exam and I was being obedient. We had been taught by our lecturers to read the paper before we did anything; an old fashioned piece of advice but I can remember to this day the first examination hall, which was in Welwyn Garden City, and sitting there reading the paper and for the first time in my life thinking, 'I can do all these.' That had never, ever been part of my experience and there was always a gripping fear. And that was liberating, that really was. And that was a sort of a turning point as far as anything mildly academic was concerned. And I romped through there. That was nearly six years at day release.

TT: Let's come back to that because your mother has this conversation with a patient in the practice about an apprenticeship. What was the apprenticeship about?

JS: I was one of the TV mechanics for a little local company, Russell Woods in New Barnet. The first proprietor, Arthur, long since dead, his son is still alive though of some age, had set up before the war a radio shop. When I joined them there was still the original lead-lined sink really, I suppose, where all the ancient accumulators used to be recharged, for the lead acid batteries for the old battery radios. And this was now in the 1960s I think, 1962, and they invited me for an interview, which I cannot recall at all but it was very, very relaxed. There was father and son standing there talking to me basically and they took Jack Taylor's advice, who was the man who had the conversation, and said, 'I think I can educate him or teach him.' Fortunately they signed me up so I got full indentures signed away and I wasn't allowed to set up a business after my apprenticeship within a mile and a half or something; there's a whole load of rules and regulations. But then they funded me through college. And I can still remember in the first few weeks sitting on one of the service benches, in the workshop, it wasn't a lot bigger than your office that I'm sitting in now (about 4.5 x 2.5 m) and there were two or three of us working in there, repairing TVs in those days. And I can remember sitting there thinking to myself, 'Why on earth are they paying me? I'm enjoying this so much; it's such fun.' Anyway, I soon learned about payment.

TT: There is a whole idea there about having a TV repaired. Could you say a little bit more about that actually worked? What did you do? Did you go to people's houses? Did you diagnose and then bring it back to your workshop?

JS: It's completely changed. This was probably in the pre-rental days so people were buying enormously expensive black and white one channel only, BBC only, TVs and some of these were enormous beasts, which were still going on, hanging on for grim death. But the reliability of TVs in those days was absolutely awful. There are some makes that come to my mind, which I won't mention now, but they were just the most appalling things. They had cardboard cabinets, they were awful. So much so that I sometimes joke that frankly we were in some houses more often than some of the people or their husbands were. The TVs were hopelessly unreliable, which gave birth to the rental business, because people were so fed up with constantly paying the repair bills. But yes, we used to go along to people's houses and diagnosed. And in

those days of course it was valves so we had this huge box of valves and various things and we would replace them and so on and so forth. One more eccentric request we had was a gentleman who lived in Hampstead and he had a thing called a radiogram, which was like a sideboard in size. And it had a turntable for records at one end, and a wireless receiver bit as well as the amplifier, so it was like a huge piece of furniture. And he'd fallen out with some programme on the BBC and was really indignant about paying a licence because you had to have a licence to receive radio. So he insisted that we would go along and take out the first two valves in the radio receiver section, so this is a mixer and local oscillator and the first IF valve, in order to prove that he couldn't receive radio signals just so he could keep his valued radiogram. I mean there were some very eccentric people.

I used to look after a guy called Norman Del Mar, who was an orchestral conductor, who died a few years ago now. He used to have turntables for records, which were made by a company called Goldring Lenco and the way the turntable used to spin in those days there was a motor, which used to turn a conical shaft and you can drive the idler wheel, which was that which transmitted the rotation from the cone to the turntable. You could drive the idler wheel up and down this cone to any position. Now there were fixed position for 33, 45, 78, but in fact what Norman Del Mar liked to do was to actually move the cone in a linear place until he found the pitch that he wanted to listen to. And I used to have to look after all his audio equipment in those days and we had lots of those sort of adventures. But yes, basically, we used to go around and repair them and if we couldn't then we'd bring them back to the workshop and do that. We repaired down to component level.

TT: When you say we repaired down to component level; that means you were repairing the components?

JS: Well, if you take individual components, capacitors, resistors, inductors, valves, transistors, in those days we would be replacing a faulty component, diagnosing why. In very early radios and TVs a common problem, because there were voltages inside a radio, we would know it as the HT (high tension) rail, which would be you know 200 or 150 volts as well as the LT (low tension) which was the heaters for valves. And very commonly there would be coupling capacitors, which would break down and valves would then become incorrectly biased and we'd have distortions. So those sorts of things were fairly common. So you had to do that and of course components nowadays are extraordinarily reliable compared to some of the early stuff, so capacitors were made out of wax paper. Stuff has changed dramatically. I think I probably mentioned in the meeting (Witness Seminar) that the reliability factor that came in killed the rental business completely because people buy comparatively cheap receivers now, radios and TVs. And they don't bother about it, they almost throw them away before they're worn out. So I think that's a huge change. And the same is true in laboratory equipment of course. It's staggeringly reliable.

TT: You really were in a very exciting area at the time. What did you think as you were busy learning all of these skills?

JS: Yes, it was very buzzy, exciting. Helpfully for me it was broken up into sections so we did radio, we did TV, we did colour TV, and fortunately for me, swallowing the whole thing in one go, to be frank about it, would have been too much for me. I certainly used to build various things so when, for instance, when Dilly turned 21, so we'd known each other for a couple of years then, I actually built her a record player. It's just something you wouldn't dream of doing nowadays. Most of us carry a better musical reproducer around on our phones, to be absolutely honest about it. So I built her a record player for her 21st birthday. I think for me one of the interesting sides to this also was in fact the human interaction. I did find that for most of the early stuff people were fairly easy-going about whether we had to take a TV away or not, or whether we needed to give them a loan set or something like that. But as the trade moved on, people became more dependent on the TVs and I found that quite an interesting thing. Having to persuade them that actually I must take this away and so on and so forth. So I did find dealing with the customers quite interesting as well as the technical side, to be honest about it. It's more of the whole thing.

For me, I think that for most of my early days it was dealing with what we would call analog technology, so

this is not digital electronics. Digital electronics was something I had to bone up on later, and I came to the MRC strictly speaking as an analog repairman, that's really where I stood. And it was Jon (Marsh) and others that encouraged me to go on and do further study for the digital side. When you're in retail, which is really what I was in, there's a very big emphasis on the customer being right, and one of the things that I think probably my colleagues at the NIMR liked of me was that as soon as, I know this sounds strange, as soon as you came through my workshop door or addressed me on the phone or called me, the instant reaction inside me, although I wouldn't let this out, was that actually it's my fault. Okay, so they had me trapped immediately because that would be my response. And I had been taught that in retail. As soon as the customer's there, it's your fault and you've got to get it sorted out. And I still carry that to this day. I still tug my forelock in obedience when I'm being addressed by people. So that's something I learnt. Yes.

I think that probably for the diversity of equipment and people, we were in a prime spot. If you drew a line between Hatfield and Hampstead on the A1, the Great North Road or something like that, to be honest about it, it's always been an affluent area. And where Russell Woods had placed themselves they were in a prime spot. So, until he sold the business, which would have been something like 1978, I think, to the rental company, Thorn, I think a very nice living had been made. What happened though, was that they had realised that the rental business was dying, once we started selling in those days, Japanese TVs, which we never saw coming back again, that was the writing on the wall. You couldn't make a lot of money out of that; it was a different business.

TT: Going back to your apprenticeship, the company pays you to do day release, they are training you, giving you on the job training, but you're also going to the college. Can you say a little bit more about your college? How did you view this, that you had to effectively go back to school? Did you see that as an opportunity?

JS: Yes, for me it was a huge opportunity. You know the immediate, it was 'Oh goodness me, what am I going to do here?' It was, in those days, an entirely male thing. It was a class of about a dozen, we were all addressed as Mr this, that and the other, and then it relaxed and we got to first name terms with the lecturers. One of the first lecturers that I met was an ex-RAF radar engineer. It didn't take us very long to realise that if we got him talking about his military exploits, we could get him to drift off [laughter]. That was naughty. What I learnt from those early days, from arriving there completely green. I do think that is an important thing to get over, and they coaxed us through. The starting point was at a very, very easy level. We were talking about very simple stuff and physics, if there was any, was really at a very low level. It was only extremely simple stuff, just to get us going, just to get us to understand the concepts of say, a flow of current, okay? What voltage difference would have on that flow of current within a given simple circuit - those sort of things. And they got that concept across to me and it's very much part of it. And it was divided up into various modules during the day, some of them were lectures, some were practical skills, that sort of thing. And even down to the mechanics of putting together, assembling and soldering, you know, we are talking a very practical way forward. I do think that was good. Whether that would be pooh-poohed today, I haven't the faintest idea.

I think to take somebody like myself and get me to write structured reports, which is what they did, in the third person, actually was quite remarkable. I can look back on it and see what I was doing but in those days the whole concept of that was completely foreign to me. And they would look through my fanatical spelling and deal with that but look at what I was doing, and what I will say in praise of them, not of me, is that for a couple of the years I was actually given awards as well as getting through the actual yearly examinations. Now that and the first exam, realising I could do it, were huge fillips to me. But that isn't to my praise, that's to theirs. I have to say that the guys, and it was a very male environment, the guys who got me to do that, took a lot of effort. It was slow, it was grinding. And then of course I came back into the workshops of the then older men, who were ex-military as well, by and large, and we made mistakes. They let me loose on pieces of equipment and then sorted it out. I still have good, close friends now who are in their 70s who were apprentice electricians in a shop, just a local shop. I can remember once taking a, in those days, Morphy Richards toaster apart to see if we could repair it. Well, shamefacedly, I had to put this all in a box one day and take it up to my two ex-school chums, who were apprentice electricians, and ask them if they would

put it together. Now still to this day, decades later, Stuart has not forgotten this and I haven't lived it down. But that was all part of it. I relished those days, they were hugely important to me. To get concepts across of a component such as a capacitor, such as a resistor, such as an inductor coil, and to teach me some of the simple maths that are involved in that, to me was a huge step. Going from what I consider a poor education to understanding those concepts, which are now very much part of, they're part of my blood, part of my being. And the concept of how and when they may fail you, and how they may fail you and how you may diagnose that sort of thing. I relished that, that was really good.

TT: How big was the company? Were there a number of other apprentices?

JS: Oh no, how big? No, I was the only apprentice at that time, one apprentice, two mechanics, two bosses, if you like. A father and son, various secretaries that came and went. That would probably be the only female. And the blokes in a workshop. The major recollection would be working in the workshop with two blokes who were smoking, so it was a bit like steering through fog. The fact that I haven't died since is quite miraculous but in those days cigarettes and smoking, it was just, that's what you did, everybody smoked.

TT: As you get to the end of your apprenticeship, John, what things were you thinking of? Were you thinking of how you would develop your career?

JS: That's interesting. You're making assumptions about me and my ambition. Most people who know me well would say that I have very little ambition, which is probably true as a blanket statement. I did toy with the idea of setting up my own business, that didn't last very long, I mean the toying with it. By the time that I got to the end of my apprenticeship I was seriously in love with my beloved and we were thinking long-term. I had pretty much free reign as a qualified engineer in those days so by then we were selling early colour TVs which was really quite exciting. Some of the more, what's the word, flashy hi-fi's were selling well. We were making a good living and so I had no real move in my head then. So my first employer I was with for 15 years, so we did six or seven years training and apprenticeship and then I became one of the guys and some of the guys left, some of them died, and I was then running the workshop. And that was good. I had an enormous amount of freedom, coming and going. During that time I got married and because the company was so small and homely for instance I had a car to run around in, I could virtually do whatever I liked. Obviously you know we were working but it was a huge amount of freedom. Dilly and I got married and set up home, bought our own first house. Dilly had worked for the Medical Research Council doing statistics but had moved to a local pharmacy then. So what had taken over a lot of my thinking in those days was actually we'd bough this house, which was in a deplorable state, and we were working on that. So that was taking up a lot of my thinking processes. We always had the opportunity to buy other bits of equipment from customers and things, so you know we all did little bits of dealing around the place, and that was just part of it. And the workload in the workshop frankly we were working very hard. I can remember when I think VAT changed or something, on rentals, there was some huge change, and we were driving around literally with pockets full of money taking deposits from customers who were wanting to transfer, I think they were transferring from rental to purchase or something, and there were huge sums of money involved, coming into the shop, which we were having to deal with.

I think one has to remember it is in retail and so I'm not just doing the technical stuff. There's a whole lot involved in this. We used to design and build custom-built audio systems into customers' houses. There is still one that comes to my mind this day when we had to put a hi-fi into a new swimming pool and I was crawling around in the false ceiling of the swimming pool, over the pool, we were having to suspend these loudspeakers in this false ceiling, and I don't know why I didn't end up in the pool in those days but we didn't. And that was quite an exciting scene. And then I think what was going on in the son's mind, in Peter's mind, was that stuff was becoming so reliable and I think that he got to an age where he wanted to continue his finance business and so he decided that he would sell the retail outlet, which he did, and we got swallowed up into the Thorn Group and I was only there for two and a half years, something like that, and I saw the local advert for the work at Mill Hill. Now, I have to confess that Mill Hill and Barnet are only separated by 4 miles as the crow flies, and sadly I had no idea that the MRC was there; none at all. And we're talking about a major employer within spitting distance of where I lived and I knew nothing about it.

But I think that was just, that's how they were. They didn't broadcast themselves, there was no placarding, 'This is where we are, this is what we do.' It just didn't happen. Anyway so here I am.

TT: People rented their TVs and then went into buying them. Did that make much difference to you when you were an apprentice and then when you were running the workshop?

JS: Yes, it did. But we didn't just do TVs. That was a huge piece of our business but to be fair the early colour TVs, which were the size of your desk nearly, they were what we call hybrids, so they were half-valve and half solid state or transistor, and they, fortunately for us, were staggeringly unreliable and also vastly expensive. So a lot of money I think was made in those days because of that factor, the unreliability factor keeps you going. They were nothing like the TVs of today. I think that the big change for me that happened there was that we were diversifying increasingly into the audio side. Again that was something which was, because of the location of where were placed, there were rich pickings and people wanted to be sold different stuff. That's still true to this day, you know. Within London you can buy very, very expensive audio equipment if you choose to do so. And that helped us, that kept us going. So we had that diversity. And I think probably the big change between the modern TV and those TVs, which I was used to mend, really took place at a time when I was not really in the business. So when I went to the Thorn company, which was hugely rental, what happened there was that I went from working for somebody who was working in the upper echelons shall we say of that business, to somebody who was working in what I call, forgive me saying this, the Woolworth's echelon of rented TV only. And that's why I didn't stay there very long. They were good to me as a big company can be but there was no niceness to it; it was more like pushing drugs. And that for me was just not satisfying. You couldn't give customer satisfaction properly and I had a growing notion that I wanted to do something which was more useful, if you want me to be honest about it. I had even thought of the idea of working with prosthetics, which never came true. But that was in the back of my head.

And if I'm absolutely honest, because I'm such a cautious guy, the thing that really motivated me to start looking around was the fact that it was becoming really something which I didn't like doing. And I happened upon the advert and then, bless her heart, my wife said, 'Look, you've got to go for this, it's an area you want to look at.' And, to be truthful, I hadn't got a clue what I was going for; there was a vague advert. Can I talk about the advert?

TT: Yes, please do. How old were you by this time?

JS: Thirty-something. I had one, perhaps two children by then. Yes, they were still babies. There was this advert in what was then a proper local newspaper requesting an electronics service engineer or so I thought. Anyway I sent off an application. And I was asked to go along for an interview and I met a man called Laurie Grant, and Laurie was running the mechanical engineering workshop. So we were chatting to each other and Laurie said to me, he said, 'I'm not sure you're here for the right job.' And in those days centrifuges, as you probably remember, Tilli, were vast mechanical devices which you needed two men and a decent tractor to move around. And they were required because of the forces involved, so on and so forth. So he said, 'We're looking for people to do mechanical engineering on centrifuges.' To be honest, I hadn't got a clue what a centrifuge was in those days. So he said, 'Just a moment,' and he made a phone call, and he had a conversation and he said, 'Come with me, come with me.' So I dutifully went with him and he sat me in front of Jon Marsh, who I'd never met before. And, to cut a long story short, Jon said, 'Hello. Trevor, who is in there, is retiring in 18 months time. What do you do?' And so this was not an interview, okay, this was Jon Marsh just being Jon Marsh. So we had this ongoing conversation about Boy Scouts and bicycles and the fact that I'm at church, because Jon will harp on about that because…

TT: He does.

JS: … of my work ethic, okay. I'm dutiful, okay.

TT: He thought you were a good bet.

JS: That's right. I do as I'm told. So we had this conversation, it rambled on, and he said, 'Well, I don't know what we can do about this,' and that was really the end of the conversation. So I went off, thank you very much. I went off and I honestly hadn't got a clue what was going on at this point. Went home and went back to mending TVs. And in due time we had another conversation and he had obviously fixed things with our then boss, Dennis Rothwell, and I was allowed the enormous privilege of having an 18 month swap-over with Trevor Holman before he left. You have no idea the benefits of that. We should do it more and more and more, because Trevor introduced me to all the old head technicians, that's what they were in those days, I got to know how things worked, I got to know the people, and it was just such a brilliant opportunity. Trevor was a dear man, a lovely man, he's dead sadly. I have a copy of his book, Trevor was in the RAF during the war, radio mechanic, based in the UK substantially looking after radios in bombers. He had a small book, which I don't know if you have a copy of, I have a copy anyway. And he was quite a character. A man who never seemed to have any money ever. I really don't understand it. Old fashioned, highly intelligent, won his way from poverty, got a scholarship to an old-fashioned grammar school, left grammar school, went into the RAF. One of that generation who were just very clever but suffered from not being able to go to university and so on and so forth. But a man who I owe quite a lot to. And he introduced me to laboratory technology which, to be frank about it, I hadn't even thought about up until the age of 35 or whatever I was. And that was brilliant.

And then I met people like Ian Mathison, oh gosh, loads of them. Sheila Lathwell. The list just goes on. Alan Brownstone, *etc.*, *etc.*, *etc.* Jack Coote, who were all very much hands-on technicians who happened to be running the lab but could do all the stuff that bucket science required of them in those days. And they were very bright people. These were really bright people. And they took me and they encouraged me and they taught me and they showed me how to conduct myself in laboratories and who to trust. When you're in a lab full of stuff, which you haven't got a clue what it is, you need to know that that person isn't going to lead you up the garden path. And all that stuff is totally vital. And I couldn't believe that I'd fallen on my feet. So 18 months with Trevor, and here I am now.

TT: The idea of an 18 month handover is astonishing.

JS: Tilli, unbelievable. Anyway, my thanks to Jon Marsh and to yes, all those involved in that. And so I came into this group of men and women who were towards the end of being a scientific department really, I now understand.

TT: So can you just explain what it was you joined. You joined the division of engineering?

JS: I joined the division of engineering, which was the electronics division of engineering. There is another part, so there are mechanical engineers, who make things and modify things, and they're basically instrument makers, highly talented men, they're doing mechanical things. The electronics section in those days was building and creating one-off pieces of technology for various departments around the institute and there was a team of two to three people who basically looked after centrifugation. That was really their main area. And now that has diversified a bit because centrifuges have changed and so on and so forth. I wasn't with centrifuges, I was placed amongst the electronics guys. And I suppose we were supposedly looking after the electronic instrumentation within the NIMR. The truth is that we could do whatever we liked and people would come to us with a request because something had gone wrong and we would fix it, or advise them how to get it fixed or whatever. They would ask us if we could make a little something or other, these were only simple technology, an adaptor or a lead, that sort of thing. And that slowly evolved. Historically Trevor had also looked after the audio amplifier in the Fletcher Hall for, I don't know, for years, I guess. That we took on as well and that developed into my looking after everything AV that there was in the Institute and you can well imagine how that blossomed and grew. So I was, we were doing that as well, as well as doing the instrumentation. But running alongside that is a whole load of technological change that's going on at the same time. So, when I first came into the NIMR, we were based in a building called Ronan Cottage, you probably know some of the history of Ronan Cottage.

TT: For the record could you say something?

JS: Well I'll try. I think the Ronan Foundation paid sums of money to the MRC in order for the animal facilities to be made and the original Head of the Biological Services, whose name escapes me at the moment…

TT: Short?

JS: Short. Doug Short lived in Ronan Cottage. It was his home and it was now taken over as part of the engineering department. So that's Ronan Cottage. I think that the main attraction for me being in Ronan Cottage was the fact that there were always reference points. If one didn't understand something you always had this group of people around, you've interviewed Andrew (Pinder) who was there in the early days, and other young electronics engineers, Steve White *etc.*, *etc.* And you could always chat, we were always talking to each other. There were always lunchtime natters and so on and so forth and if you didn't understand the concept of something that was easy. It was just a conversation. Running alongside the expansion of what we looked after was also the new technology. Now when I first came into Ronan Cottage we had valve testers. They didn't live that long because semi-conductors, large-scale integration *etc.*, *etc.*, was coming in at a rate of knots. For example, if you take a pH meter when I first went there, which was quite a substantial piece of equipment with valves in *etc.*, *etc.* A pH meter, by the time I had finished, became something much the size of a mobile phone, and throwaway. You could buy them very cheaply. That change in technology to some extent set some criteria as to whether it made economic sense to actually repair it because the next generation of the thing was going to become cheaper but actually probably expanding the possibilities of the use of that piece of equipment. So that's something you have to write into my history at the MRC.

And alongside that was the change in what you were doing because an example, when I first went there we used to, and still did, make simple pieces of equipment for electrophoresis, gel tanks *etc.*, which I don't have to explain very much about. They would have high voltage connections to them because electrophoresis in those early days required a lot of voltage to drive the proteins and whatever. Every connection there that was made was expensive. And we were continuing to use these expensive connectors, which were almost bespoke, and one of the things that dawned on me after a couple of years was, hang about, why are we doing this? And after about 18 months I had found a company which could make connectors, which were far more practical, we could buy lengths of lead which were already terminated and in real terms we turned something which cost £20 per connection or something like that, we could do that for coppers. And that's the sort of thing which I think was a tiny but an important contribution. And nowadays they are commonplace on anything to do with electrophoresis; everybody's doing it. It's what you do. And that sort of thing I think, but what was behind that was my retail experience. Do you really have to pay this much to do this? Whereas the motivation within science is, actually in those days money wasn't that important; it's much more important now. I got the impression at NIMR in my early days that there was no end to the budget. Those days have changed. But that's not entirely unhealthy, although I relished the ease with which we could deal with things. Some of it was wasteful, I think.

TT: Can we just come back to you starting at the MRC? You mentioned, almost in passing, that your wife had actually worked at the MRC? Did she work for NIMR?

JS: No. Dilly worked for Richard Doll of smoking and cancer. In London. Dilly was a statistician. And when I knew her she was working for Richard Doll and in those days he was working on cervical cancer. And Dilly used to go to various out clinics in Camden and various other places taking down stats. And it was my duty to go and meet her late at night and bring her home safely [laughs]. But Dilly had gone from Harrods when she left school, I think she'd gone to Lloyds Registry of Shipping, where she was doing torsional vibrations on the drive shafts, propeller drive shafts from large ships, and then she went from there to the MRC. So she's a brighter cookie than I.

TT: You knew about the MRC only in the context of her work as a statistician?

JS: Yes.

TT: You said earlier nobody knew about this huge employer. So what did you think when you got there, what did you think the function of NIMR was and how it fitted into MRC? Did you have any sense of that?

JS: No. Jon Marsh told me in the very early days that he thought that the MRC had been set up by HM Government, I think we're going back to the First World War and TB in order that, if there was an awkward question by government, the MRC were there and they could say, 'Excuse me, MRC, what can you tell me about this?' and the MRC would come back and give them a decent answer and off they would go. That's Jon's version. The truth is, I had no idea about what the MRC were doing. Obviously I've learnt in the last 30 years what they're up to but no, and to be fair, I still think the MRC is pretty invisible amongst most of the people that I talk to. And I think it's a great shame. We publish a whole load of things. Do I understand it? Yes, I do, because I think that a lot of the people I've met, senior scientists, and who I've spoken to at some length, they're very focussed. They're interested in their research. There are very few of them who are thinking, 'I should really be telling Joe Bloggs in the pub.' I remember when John Skehel was director, and they came up with a publication called, I think, *NIMR Essays*. And I can remember John coming down the corridor, John Skehel and I know each other, so we're sort of mates, okay. 'Sawks,' he said, 'I want you to take this home and take them to your local pub.' And he handed me a wadge of these things. And he's absolutely right, that's what we should be targeting. It's still a problem. Getting people to read something, it's a bit like press; if it was bad news it makes good publication, but it's good news and it doesn't make good reading. And I know that the NIMR used to have local open days but it didn't affect Barnet, which is only four miles away, so I do think that as much as it might offend us, there needs to be a publication exercise. The Crick seems to be doing something like that, I know the person now who is running the education side of that, bless her heart, Clare, and I hope that that works well, I really do. I want the Crick to function well. It may not be my cup of tea but that's irrelevant.

TT: When you joined John, you didn't necessarily have any idea that you were part of a medical research, that you might be advancing treatments or understanding of diseases, or understanding of health.

JS: No, none at all. That was slow dawning on me. And part of the slow dawning was the fact that the NIMR was such a cosmopolitan place. To this day, I can be walking down a corridor and all of a sudden an enormous pair of arms will come and engulf me, 'Sawks, Sawks!' and give me a great cuddle from the back, you know, and there's a huge liberty in that. That's something for me which I absolutely adore about those environments. Okay, it's such a mixed group of people. And you realise that the tentacles of the MRC are reaching out right across the world. My small involvement with the staff benevolent fund association teaches me that as well. It's very, very diverse. Hugely enjoyable.

I haven't sent you a CV. Well, you are talking to somebody who has never had a CV. Now I can remember that at some point early on in my time at MRC, they bought in self-appraisals, does that make sense? Well, asking me to appraise myself, that is just a very foreign concept because I'm worthless. That's in block capitals.

TT: You can see the psychiatrist later [laughs].

JS: I can. No, don't worry. I'm perfectly happy to do this, it isn't a problem, but you know underlying that's it "Sawkins = useless". I can remember being faced with one of these forms to fill in, and I thought, so I made a vague attempt. Andrew Pinder comes along, who is next door, and so we'd conversations through the wall. I'd shout and Andrew would respond. So he comes in, 'Let's have a look at this, Sawks.' He said, 'This isn't you, this isn't you, this isn't you, this isn't you.' Give me that form. So Andrew takes the form and makes off. Next day he comes back and he says, 'That's you.' So Andrew had filled in my first self-appraisal form for me and I read this and I said, 'This isn't me, Andrew.' 'Yes, it is, Sawks.' So that's the sort of thing, so people were still educating me, frankly.

TT: I should have asked Andrew for your CV? [Laughter].

JS: Yes you should have asked Andrew. You should have asked Andrew. No, no, don't do that, there are too many hidden secrets.

TT: You don't know what he said!

JS: Oh, bless his heart. The fact that the MRC was so huge was not something that I understood at all. And it was a slow dawning, frankly. I think that probably right from the time that I started there, there were changes taking place at the NIMR which although I didn't really understand then, I can now look back and I can say, 'Oh, they were huge changes.' And technology and technicians were not really the flavour of the month and haven't been for a long time. There's long been an opinion that, well if we need that, we can go and get it elsewhere, okay? Whatever opinion I have of that, that was the trend.

TT: And this is the early 1980s?

JS: Early to mid-1980s. There were peaks during that time where I thought 'Oh, this is refreshing,' but I think the slow trend was, I probably wasn't aware of that when it was going on, the fact that we transferred from being a scientific grouping doing our own research to being, the dirty word, a service section, probably to me didn't matter because service is pulling the forelock and doing what you're told to do. Most of the young talented engineers who were around me in those days slowly disappeared. Andrew went off to Norwich, Steve White and others went off and set up their own business and that trend has gone on, leaving some of the old stagers to cope as best we could. That sounds worse than it is. The coping was very well done. But big interesting projects, we didn't do those, not really anymore. Some big challenges that would come our way because the scientists in the lab probably didn't understand that this section had diminished but they still wanted to make the demands on us, so you had to deal with that. Analogue technologies was when I first came into it, and you suddenly realised that there are things called computers coming on the scene. The BBC computer, there were thousands of them at the NIMR, and they're now IBM desktops and so on and so forth and, which didn't really impinge on me very much, because I'm still ticking along repairing bits of equipment which are substantially analogue, you know… Various other departments are taking on looking after the computers. I can remember talking to a guy called Mick Errington once, who is in neurophys, and saying to him as I was kneeling in the corridor looking at this vast computer called a Mink, I said, 'Mick, there's a very, very powerful message here if John Sawkins is trying to repair a computer, you need to be thinking very carefully about how you replace this.' I was the last resort really, because these ancient computers were hanging on by the skin of their teeth. So we had this technology change, which is still going on, and by the 1990s I'm having to make decisions around that and other remits are expanding. NIMR has got more now than the Fletcher Hall seminar room to look after, dozens of seminar rooms, well when I left there were. And that sort of technology also is something which needs to be maintained, looked after and so on and so forth. The work in the labs also changes. The old fashioned head technician was a very informed person. They would sort out a lot of what I would call finger problems, you know techniques in labs. That generation of people have changed. So we're seeing that drift towards managers now, which are less hands on. I'm getting more requests now to go and sort out finger problems in labs and I'm having to learn what somebody's doing, why are you doing this? Because I don't understand what you're doing and you don't understand this bit of equipment, so I'm now having to learn and handhold at the same time. And then learning the diplomatic bit about when the penny drops in my head that they're doing something wrong so then I have to coax them into understanding that that, that's something else, which I think is coming in more for me now in the middle years. That aspect I think has probably won me more friends that enemies, to be brutally honest about it; bespoke little bits and pieces I think have also been quite helpful, modifications to pieces of equipment. Somebody needs a slightly different nuanced something, that sort of thing has been quite enjoyable to do.

TT: And at what stage would you have been involved? Did somebody come to you and say, 'I'm really trying to do such and such. Can you help?' Or would they say, 'Look, I've got this and it's not working,' and you would then say, 'Well actually perhaps if you just change such and such?'

JS: Yes, they're different. It depends on the relationship again. You see if you're coming to do a three-year PhD and you're a young student then I appear to be some old dragon, so you need to break that down, because I'm serving them, not the other way around. So if you're now a senior scientist, you know I'm just there to be used. That sounds very rude, they're all nice people. It's two entirely different situations and I'm there to serve both of them. And because some of the senior scientists have known me for so long, 'Sawks, come up and talk to me.' You know off I'd go. Whereas the young student is almost apologetic about something. And they're just different. But it wouldn't have helped if I was arrogant. There's no point. If I'm going to get in the way of the conversation, if my nose is put out of joint. I'm not going to mention names, but there are some wonderful senior scientists who would come along and stand at my door and regale me with stories and I knew that I was being manipulated.

TT: You said you wouldn't name any names, but I do want to know something about who did you work for, or enjoy working with, or particular projects. You've been there a long time, you've seen a lot of changes and you've come across a lot of people. You've already mentioned neurophysiology, were you involved with any particular departments, were you called on more by departments such as neurophysiology?

JS: Well, I guess physiology would naturally call you in more although they in later years tended to have their own technicians because, as you know, physiology is highly electronic. But I would get involved there. There was one enormous project, which the engineers were involved in, which was in the anechoic chamber, which was to do with sound mapping. So they built this enormous hoop with loudspeakers on, which was to do with three dimensional mapping of a, I think it was a rat brain or something, I forget now. But anyway, they built this enormous thing and we got involved with that. There were some interesting mechanical problems with that.

TT: Who was running that?

JS: I think it was, well it was certainly in Tim Bliss' neck of the woods.

TT: Neurophysiology was his neck of the woods but he didn't always work on sound.

JS: One was constantly going backwards and forwards looking at some of the rigs, which they had there because earth currents were a big problem. And getting people to understand that everything has to be bonded or, you know, not connected here, or you have to lift and earth there.

TT: I'm embarrassed to be listening to you - I've done all those things [laughs].

JS: You might well be aware, Tilli, okay, that sometimes you think, 'Actually, I need to throw some chicken bones on the floor here because I'm not quite sure I can understand exactly what's going on here myself either.' So yes, because earthing problems are a pain in the bottom to anybody who is doing that sort of thing. That sort of thing was a constant and then because of that, I think, and because of the immediacy of the requirement, a person who comes to my mind is Sukhvinder Dhanjal who was down in neurophysiology, a lovely young Sikh engineer, who has now moved to Canada. We became great pals. But Sukhvinder worked there all the time, basically sorting out those problems. And because he was there all the time learnt you know much of the problems and how to deal with them. There aren't many labs I haven't been into a lot of the time.

TT: It's very interesting doing these kinds of interviews, you can have people pass through the same institute at different times and it's completely different, you wouldn't believe that they were talking about the same place or the same people. You clearly have a very helpful kind of personality, you're very helpful, you have a wide range of skills, you can help people a great deal and you are willing to do that. Did you get overwhelmed by requests to do things? Did you get really silly trivial things to do?

JS: Yes, you do have to learn how to pick and you also, gallingly, have to learn to say, 'I can't do that.' Because what the person in the lab doesn't want is a potential failure to have an extended life. My job is to get rid of problems as expeditiously as possible. And sometimes I have to say, 'I can't do it, but I know a man who can.' So one of the things I did do was to build up relationships with manufacturers so I could phone let's say Leek Incubators, an old fashioned company up in Cambridge, and I could talk to the lad there, I can't remember his name at the moment. He even sent me a picture of his grandchildren, of his children. But I could phone him up and say, 'Hi, it's John here. Can I have a sensor?' 'Yes, John, it's in the post.' And we would sort out the problems later. So that sort of relationship where I've got a problem with so and so, can you advise me what I can do about it? Those sorts of relationships are very important and that isn't to do with technology, that is to do with thinking how can I solve this problem the quickest way? That's problem solving. And sometimes problem solving is more to do with how you approach the problem and it's wider than just mending electronics, it's in the lab. I can't remember the absolute details here but I can remember a young German student setting up an early photographic system, and he was struggling enormously to get enough light on the subject. And I went there and I was staring at this subject, and I'm not into this, and I'm not clever at this. I thought to myself, 'I don't know what you're doing here but why are you using UV? Why are you using blue light?' or something like that. And he said, 'Well, I don't want to warm up the sample.' And I said, 'Yes, but we can use IR filters on ordinary light.' So I then shot around to the man who does know everything about this, who I know at the NIMR, and I said, 'Would you come with me and chat to this man?' Well, within an hour what the student was doing had completely revolutionised because I thought, 'Well actually…' and [snaps fingers] it was done. Simply, I've picked that up from being at the NIMR, so we'd change the lighting system, the scheme of things, and all on a Meccano bits and pieces basis. And suddenly he's making huge strides. He had a misconception. There's no point in thinking, I'm not better than you, it's got nothing to do with that, it's to do with, we're both involved in this, let's sort it, and there's something exciting about that and I love that sort of thing.

I find that sort of venture quite rewarding, as well as you learn something as you're going along. Can you imagine me suddenly being faced with a spectrophotometer, which I was. So here I am, I don't even understand the concept of spectrophotometry, and there's this thing which is again the size of your desk, and it's not working. And I'm thinking, 'What on earth does this do?' I obviously know what a spectrophotometer is now. But in those early days I'm the expert, you see, and there's this poor person standing there and I'm the expert.

TT: I have been that poor person in my time.

JS: I'm going to have to blag my way through this, aren't I? [Laughter]. But within the confines of NIMR, very graciously allowing me to do that, you know, Tilli, that was a huge privilege. They were very understanding. That's not to say I was useless because I patently, obviously wasn't, and I could break things down into pieces of electronics which I did understand. But then I slowly would also build up what this thing is trying to do. I found myself telling somebody else the other day what it does and how it does it and so on and so forth. You are the only one, when you are in that moment. But now with the benefit of hindsight I recognise what an enormous privilege that was, what a really enormous privilege that was.

TT: That particular experience with the lights gave you an enormous amount of pleasure. What other examples are there?

JS: Oh silly things. These are very trivial examples but simply coming up with simple timing devices which allow people to not burn out deuterium lamps and stuff like that. You know deuterium lamps in the early days were horrendous devices which, they were a pain in the neck and they burnt out. They were in spectrophotometers, the UV light source. And people would leave them on over the weekend. That's really helpful, you know because everybody is using them now, aren't they? So just saying, 'Well, you know, I can do you timers of various types,' meant they simply would shut off at certain times of day. Those sorts of things would actually make huge changes to people's laboratories.

There's another thing with *Drosophila*, which Jean Paul Vincent and his lab used, and they anaesthetised *Drosophila* using carbon dioxide, I believe. You can tip out a whole load of *Drosophila* onto a little porous block, with carbon dioxide just drifting up through it and the *Drosophila* were away with the fairies, they were quite happy. But the big problem is that the kids don't turn the carbon dioxide off, so we're all busily working away in the lab and then we all go home and you know they've finished with the *Drosophila*, they've got rid of them, carbon dioxide is still coming out. So I simply made a thing which I called Fly Gas, which again was a little electronics timer which actually was commercially available, and I cobbled this thing together. So they could say, 'I'll have ten minutes of carbon dioxide,' and suddenly that made such an enormous difference to the number of cylinders you get through of carbon dioxide. It's just silly little things, which make a big difference.

TT: It's not trivial if it makes a big difference.

JS: To me, you know, that I think is trivial. Talking to somebody when they're about to give a lecture, this isn't electronics. So somebody's about to stand up in front of a hall full of their peers and talk to them, okay, maybe for the first time, and maybe they're a foreign visitor. I'm probably the last guy they see because I'm putting the microphone on them. Or if they're a lady I'm having to negotiate her cleavage with this clip-on microphone and talk to her so there's no point in being sheepish about those sorts of things. You have to go up and talk to them and say, 'I'll look after you,' that sort of thing. And I think actually a lot of people have been very helped by that, it's crazy to say.

TT: Having been on the other end, it's really nice when somebody does that.

JS: I'm up there, 'My name's John, I'll look after you.' I do think that sort of thing actually made a big difference. Technology has changed an enormous amount now. There were odd occasions when there would be still desired antique pieces of equipment. I don't know whether that was just because somebody loved them and wanted to keep them because they had a sort of a lucky blanket security by having that piece of equipment or they genuinely wanted to reduce the number of variables in an experiment, I can appreciate that. And then I would have to make "a something" for this piece of old equipment, which I've done on several occasions. So you just get on and do it. Cost effectively, ridiculous.

TT: You were talking earlier about connectors for electrophoresis for example, and you also talked about changes in equipment and technology. As things got less bespoke and more standardised, were you involved in purchase recommendations for example?

JS: People would talk to me sometimes but a lot of that, you know, is driven by the labs themselves. It's also influenced by people coming from elsewhere with techniques. So Bloggs may come in from America to work in the lab for a short time and then he or she's got this technique which is working on so and so, and they've got to have that one. And it's the variable again, isn't it? Whereas you know you could have done it in a bucket, to be honest about it. So sometimes they would talk to me. Safety guys would talk to me sometimes about various aspects. Retrospectively I was asked to examine the first attempt to build a zebra fish aquarium at the NIMR [laughs]. It had burnt down.

TT: The aquarium burnt down?

JS: Yes, this isn't just an aquarium, it's aquaria, perhaps I should say.

TT: I've been in the current one.

JS: You've been in the current one, yes. But the first attempt at that burnt down and they asked me to go and find out the reason why. Well, it was patently obvious the reason why, there were so many joint boxes that were completely overloaded. So I duly made a short report for the management and explained to them that we should go down a different route there. I'm not sure that I had that much influence. I think that probably the standardisation of connectors was something which went out from the NIMR into commercial areas,

and to be honest about it, Tilli, it's obvious. But out in the outside world, there was no way that commercially you would use those things because the modern installers and engineers you just wouldn't do it. That needed shaking up. And I think that's something which I suspect is going to happen in the Crick. It's got rid of a lot of that. I have to be honest, there was dead wood at the NIMR.

I can remember working on a piece of equipment which was, I think it's called a Cobalt 60, which was our big irradiation source. And there was a fairly major revamp, which I'd been involved in both electronically and mechanically, although I wasn't the mechanical engineer involved with that, I was involved because we had to look after the interlock. And we got involved with the Health and Safety Executive (HSE) on that one; that was really very interesting and I had to build from scratch a whole load of test equipment for that.

TT: Test equipment for safety purposes?

JS: Yes, you have to prove that, 'If so and so happens, then what?' This piece of equipment basically was an interlocking system, so that the idea was that you couldn't be in the room if you'd exposed the sources. We had to prove to the HSE that if any of the relays failed in any particular way, basically it was just a way of putting fault conditions in, for which I built a whole load of test equipment. And that was quite rewarding really because we worked quite hard on that one, to get that done, and we ended up receiving a letter of commendation. So I was quite pleased with the work there.

TT: Commendation from?

JS: HSE. Just because we could prove so much of the system. And the Cobalt 60 is no more, that's gone, buried in a wood somewhere in Canada, I think. Well, it used to be the Canadian Atomic Authority, and then Nordion took over, I think. But that piece of equipment, you've met Roger Hooper I think, Roger used to look after a lot of the mechanics on that, and he and I kind of held hands. That's now all been superseded by much more modern equipment, and I don't know whether that will continue at the Crick or not. I haven't the faintest idea. But that piece of equipment was quite important for both experimental irradiation and the sterilization of food for SPF (specific pathogen free) work of course, which was something which we had at NIMR. Working the SPF was a bit of a pain in the neck because of the showering in and out and we tried to minimise that as much as we could but eventually you'd have to go in and do something there.

TT: What did you do in the SPF suite?

JS: Communication, in the early days, was something which was down to me again. So they had two way autoclaves, didn't they, on the SPFs so you could autoclave something in and out through there, and there was a necessity for the people to be able to talk to each other. That was very simple stuff. For Health and Safety, I got involved in that on the SPF. And from time to time there are pieces of equipment within the SPF which get broken and they don't want to bring them out. So they have rudimentary tools in there so we would go in there and try to do our best, and we could manage some of it. On the outside of the SPF I built some x-ray room interlocking systems when they wanted to, I presume they were taking pictures, in those days, but to be honest about it I actually lost track of what they were actually doing with this equipment, having built this whole room up for them. But that's something else. Mainly I think it was probably health and safety and repairs.

TT: This is the local health and safety?

JS: Yes, it would go around visiting various places and we used to have to go in and out of various rooms and such like, and I was involved in that for quite a long time.

TT: When and how did you get involved in Health and Safety?

JS: It probably goes back to the day of PAT (portable appliance testing) when that first came in at the NIMR. In the very early days of that, there were some absolute howlers, pieces of equipment which really were

badly assembled. Some of the stuff was commercial, some of the stuff was homemade and that did actually bring to light a lot of stuff which really shouldn't have been out there working. And I think probably just because of a certain amount of electrical competence, they just needed somebody on board to check various things. The Safety Committee was something which had happened at NIMR for a long time; they've always had a Safety Committee, as far as I'm concerned.

TT: Can you remember approximately when you went on it? And how long were you on it?

JS: I think probably the 1990s. I can't say absolutely.

TT: Did you serve on any other NIMR committees? Were you involved with NIMROD or the Union?

JS: No, NIMROD only really on fireworks, that's Jon (Marsh) and Rod (King) and various others. And looking after NIMROD equipment as well. We did have a NIMROD bicycle section at one time, that's mainly because I cycled to work and various people would arrive at my doorstep at Ronan Cottage and say, 'Here John, my bike's not working,' or 'Can I borrow your pump?' So we did have a NIMROD bicycle section, we had some tools and stuff which would allow people to repair their defective bicycles. There were a lot of people who would cycle to work, still do. Yes, those poor souls are all going to have to jump on the Northern Line now, I suspect. Jon Marsh was heavily involved with the NIMROD side, particularly on the Christmas music and the Christmas children's party. That was a big thing. No, my involvement mainly was to do with fireworks so I was allowed, to take part in setting up and detonating and having a whale of a time with the two boys once they'd been to the training and got their necessary certificates. So that was huge fun, enormous amount of fun. And that sort of underlines some of the liberty at NIMR, so the nearest day to November 5th we would be absent for the afternoon doing whatever we did. And Jon has probably told you, eventually developed an electronic firing device for these fireworks, which was again a lot of huge fun. Jon and Rod I think went to Pains and did training, to allow fireworks to be let off.

TT: Pains?

JS: Firework manufacturer, which allowed them to use commercial fireworks, so we're talking about mortars the size of pineapples and rugby balls. And firing these for a big fireworks display was quite energetic because you had to rush around lighting all these things and setting them off. Anyway it transpired that they learnt that you could have electronic ignition for these things, so you could fire them off sequentially, which is what they do today. So we set about thinking about how we could do this and eventually Jon and various others got together and built this so-called electronic firing box, I don't know if Jon still has it, it's probably gone now, which enabled either sequential or specific firing of the fireworks. And we used to have to run these wires out, miles and miles and miles of wires, and they had detonators and so on and so forth. And we experimented with making our own. That proved very successful until the people who had the horses next door to the NIMR kicked up such a fuss that in fact we were forbade from having a fireworks display, but there you go, that's life. That's probably 2000, something like that, I guess. When NIMR had its 50th I think it was, I think it was the 50th celebration, yes, because it's just had its centenary, hasn't it, I believe? Yes, not Mill Hill…

TT: NIMR, yes. Mill Hill centenary would have been about '99, 2000.

JS: There was a pretty big fireworks display for that because that was done commercially, not us, I'm afraid.

TT: A lot changed in your time at Mill Hill and it's not just technology, it's experiences that you've had, that you've gained. I wondered whether you might just reflect on those changes you've seen over the 30-40 years at NIMR, and the changes particularly for you in your career?

JS: In the very early days there Jon encouraged me to do some evening study doing very early digital techniques, which I did, to give me some grasp of that area, which I did. And that was rewarding and added to my skill set. One of the odd things about my role and indeed Trevor's role, was that unusually we became known

by most people, which is not true for people like Jon, it's not true for a lot of people. And what enhanced that was we were going over the entire institute, making contact with people. What added to that to me was that the NIMR decided to have, I think they're called retreats nowadays, whereby they would take a number of scientists away to a venue for two days of seminars. They started that and it had a bit of a faltering start. I wasn't involved and then John Wills, who I had known and got to know at NIMR because he was part of Virology in those days, at that time was now John Skehel's second in command, as it were. And John came up to me and said one day, 'Sawks, would you come with us and look after the audio visual at a retreat?' I actually hadn't got a clue what he was talking about so I asked him to explain. And basically in those days we were using slide projectors, a bit foreign to me but none the less they're only slide projectors, and a microphone and so on and so forth. So I dutifully said, 'Yes.' Well, if you're in one of those intense environments for two days with senior members of staff, you pretty much get well-known and what I did after the first year and I did this for many years, was I took to wearing a very zany pair of braces so that people could always find me wherever they wanted me to be. And that's continued to this day.

I found that very much easier. They could target me and they could find me wherever I was, but basically for two days I was pulling the forelock again. And that did get me very well-known at the NIMR. That broke down a lot of barriers for me, so my accessibility to people was enhanced enormously due to those fairly intense days. So typically it would be Marilyn Brennan, John Wills and myself would go down the day before, set up the environment, set up the theatre, and the dinner.

TT: What kind of places were these held in?

JS: Universities. University venues. Warwick, Kent, UEA (University of East Anglia). We've been all over the place. And it was my job to make sure that the thing functioned as far as everything was concerned. I can remember being at Warwick up in the projection booth, I've never seen this before in my life, in those days it was 35 mm slide projectors, so I had to set up a slide loading room, all the checking facilities, that's how it was. And dual projection in those days, two projectors running and keeping it going. And I can remember this day, I'm up in the booth and it's going and it's working and suddenly watching the right hand side just sliding down. And it wasn't in the slide, it was the actual lens on the projector - the equipment at Warwick was so knackered, I couldn't believe it. Anyway, I jammed a cardboard box underneath and kept the thing going. Of course I had to attend the evening meals and such like and provide water the next day for the hangovers. I got to be very well known by a lot of people and I think that helped me in my function as far as repairing stuff is concerned, or advising or whatever. And the technological side to me was just part of what I did, and it's never been a huge burden to me. And there were always things which I couldn't repair. It's quite simple. Some of the stuff you can't because its calibration is set by the NPL (National Physical Laboratory) in West London. You can say, 'I can patch this up for you, what do you want me to do?' And if you're going to make a simple little junction or a coupling or a little adaptor or something like that, you can do that, that isn't a problem, that's something that's just run of the mill. You do that all the time. I think my accessibility was enhanced more than Trevor's and more than Jon's really because I had to do that front of house stuff at those two days seminars.

TT: I've known people in your position who have gone entirely the other way and their whole ambition is to make themselves inaccessible.

JS: That's just arrogance. The point is that it doesn't help anybody if the show doesn't work. I don't see anything in that. I see no benefit in it at all.

TT: We should close soon - are there any particular anecdotes, people or projects you want to add?

JS: Has John mentioned the fermented herring in Ronan Cottage?

TT: **How can I possibly say I don't want to hear that?**

JS: It was a Monday morning and I was first in. Opened the door to Ronan Cottage, go in, and immediately I

think it's a dead body. This is the whole of Ronan Cottage is absolutely foul. I really genuinely thought somebody had topped themselves. Well, thank God nobody had. What had happened, I think it was Ian Sutherland, had been to Norway and had brought back a can of this fermented herring to show people. And they'd left it opened in the Ronan Cottage fridge, and you have no idea, the smell was absolutely unbelievable.

TT: How long did it take you to clear the smell?

JS: It was disgusting; it was weeks. It was just unbelievable. I really genuinely thought one of our members of staff had killed themselves. I've never experienced anything like it in my life. It was just awful.

The other thing is kestrels. We had kestrels nesting on the roof and over a period of about ten days these babies would appear in the car park and I'd go outside and pick up these babies, walk back up inside the building and pop them back into their nest. Such a privilege. I mean these little beggars were flopping out the nest, landing on the ground, and I'd just pick them up, walk them back inside and stick them back in the nest again. Mum kestrel would stand there swearing at me and then get back and look after them. That sort of thing was delightful.

I do actually think that within a thriving working environment you can't always assume that everything works according to the plan and we have to accept that. That is just part of life, we all make mistakes, and we can always correct them, but there is a tendency nowadays to want to, in our society, to want to blame somebody. You know, it's your fault, you must pay, and well I'd be the first one to admit to making mistakes. I think, I can remember the first laser printer. There was one in the institute. I didn't know anything about it. There were dozens of typewriters and every so often the girls would have a problem with their golfballs or whatever it was and I'd go and help them out, or something had jammed or something, that's the sort of silly thing you do. And I think it was the director's secretary asked me, she said, 'John, my printer's not working.' Printer? What's going on? Didn't know anything. And I stared at this device and I hadn't the faintest idea how it worked. And you know it's bog standard stuff nowadays. And eventually ended up with a whole room which was just keeping early laser printers working. And I set up the whole repair section for them because they were desperate for these things, and it was silly, you know, why was I doing that? I don't know, just because I could. It's crazy. So I just said yes and got in touch with the company, and nowadays it's all done by contractors, thank the Lord, and rented in and properly done and sorted out. It's a piece of equipment you can't live without. But in those days everything stopped; it screeched to a halt.

TT: It's almost like the story you were telling about your early career with televisions, and the counselling almost you had to do when you had to take a television away. There are a lot of parallels.

JS: There are a lot of parallels, yes there are a lot of parallels. The technology I enjoy, I do enjoy it, but I enjoy the human beings much more.

TT: I deliberately don't ask much about personal life, but you've mentioned your wife and children and you've also mentioned things like the Boys Scouts and church. So you've had a very active and important other life, haven't you?

JS: Yes. I had the privilege of extending my working life to 65, which allowed me to basically retire on half of my salary, which is a huge privilege to do. But equally well I wanted, while I was still capable, to go and get on with life out of the MRC and I do think there's a danger of not doing that. So I decided 'That's what I'll do and I'm going to go and get on with it.' So we are both involved in the local church and have been for donkey's years, and will continue to do so, Dilly and I are both practicing Christians. The other stuff I'm involved with like the Staff Benevolent Fund is also a privilege. We can't fix lives but we can certainly help. And I hope that will continue to function. I think there are some interesting times ahead with the changes that you and I are aware of, so far as the MRC is concerned. Will it continue to exist *etc.*? We both get involved with other stuff around Barnet. Dilly probably, as we speak, is attending a fortnightly thing we call Refresh, so we cook breakfast for people. You know, that's fine, and it's good fun. It's great fun. And you

know just getting involved with people.

That's important to me. Also projects mainly to do with the fabric of the building more than anything else, so a couple of major projects, refurbishing, rebuilding, things like that. It's been good fun. You know, there have been some heart-stopping moments, but we've overcome that.

TT: We all have those. Is there anything else on your list you want to include?

JS: I don't think so, I don't think so. When I looked at this list I felt rather ashamed, because it's all to do with having a whale of a time, at least that's how I interpret it.

TT: Well, those are the stories we want to hear. If there's anything you've missed out about having a whale of a time, tell me now and get it on tape.

JS: Jamie Oliver's Dream School, I was involved with. Clare Davey who is now, I think Clare runs education down at the Crick now, so we knew each other from work, we'd done some bits and pieces together. She got involved in that. All sorts of celebrities giving lessons. To be honest about it, I'm not sure how successful it was really. These youngsters were, bless their hearts, some of them were chaotic, and there were all sorts of high powered people supposedly teaching them. There was a lesson done by Robert Winston using electrophoresis. And Clare and I were simply setting up this equipment and running it for him and doing it, so called experts again. I'm sure Clare is, but I'm certainly not. The equipment was set up and we did it and they filmed up as we made a lesson and it seemed to go.

TT: I think it's time for a spot of lunch. Thank you so much for your time John.

[END OF TRANSCRIPT]

Further related resources:

1. Overy C, Tansey E M (eds) (2016) *Technology, Techniques, and Technicians at the National Institute for Medical Research (NIMR) c.1960-c.2000*. Wellcome Witnesses to Contemporary Medicine, vol. 59. London: Queen Mary University of London.
2. Tansey E M (intvr); Tansey E M (ed) (2017) *Marsh, Jonathan: transcript of a video interview (14-Nov-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017196. London: Queen Mary University of London.
3. Tansey E M (intvr); Tansey E M (ed) (2017) *Pinder, Andrew: transcript of an audio interview (10-Nov-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017220. London: Queen Mary University of London.
4. Tansey E M (intvr); Tansey E M (ed) (2017) *Pinder, Andrew: transcript of a video interview (10-Nov-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017221. London: Queen Mary University of London.
5. Tansey E M (intvr); Tansey E M (ed) (2017) *Sawkins, John: transcript of a video interview (17-Nov-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017241. London: Queen Mary University of London.