VIDEO INTERVIEW TRANSCRIPT

Sawkins, John: transcript of a video interview (17-Nov-2016)

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Note: Video interviews are conducted following standard oral history methodology, and have received ethical approval (reference QMREC 0642). Video interview transcripts are edited only for clarity and factual accuracy. Related material has been deposited in the Wellcome Library.

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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.

[1]. SCHOOLBOY ELECTRONICS; APPRENTICESHIP AS TV ENGINEER

In the very early days of my sort of electronics stuff, okay, which really stems from a relationship with a chum of mine around the corner from Scouts. And Jack and I used to tinker with electronics in those days and one of the things we did was a system of earth resistance communication. So we used to shout at each other using earth resistance and audio amplifiers and we triumphed over about 50 yards, where we could actually manage to talk to each other, which was a huge achievement for us. And we were sort of, I don’t know, 13, 14, 15, something like that, okay, and that went on for a bit and we got bored of that. Jack wanted to develop a railway system with remote control. And when I say remote control, this was all within his loft, and that involved taking old TVs apart and pulling apart the deflection coils and ending up with hundreds of yards of this wire so that we could have the railway on one side of the room and a map of the railway on another side of the room. And Jack developed part razor blades, which were operated by the train wheels, such that they made contact every time a train wheel went over and allowed some lights to be lit on this map. And that was part of our first playing around with electronics. And that’s probably what introduced me to that. And then a chance conversation really took place between my mother and one of the patients at the GP surgery, where she was working. And they’d known each other for a long time and shared stories about their children and so on and so forth, and he just said to her one day, ‘Your lad’s leaving school. Does he fancy an apprenticeship?’

And she came home to me and she said, ‘How do you fancy an apprenticeship doing radios and TVs?’ I sort of said, ‘Hm, yes, okay,’ and that was the decision made. And I was interviewed by the little local company, as much as you could call it an interview, and they very graciously “took me on” and indentured me for five years, I think it was. And so I served them for five years and they very kindly sent me to what was then the Mid-Herts College of Further Education in Welwyn Garden City, and onto a course doing first of all radio, for two years, maybe three, which basically took me from being somebody who was quite intimidated by examinations and anything to do with that sort of thing, they’d taken me to a point where I suddenly thought, ‘I can do all of this.’ And that was a liberating experience for me. And I can’t remember anything about the exam, whether it was trivial or complex, but actually for me it was triumphal. So that was a huge step forward.

* 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.
[2]. APPLYING TO THE NIMR: BECOMING AN ELECTRONICS ENGINEER

I was with my first employer for something like 15 years. He decided that the business of TV and audio was changing and that he wanted to sell the business, and he did. He sold the business and that was brought up by the Thorn organisation and I became part of their organisation, and was with them for 2½ years. And the whole tenor of the business had changed then from something which was quite a nice, gentle, luxurious business to quite hardcore rental and I didn’t like it. I had in my head, in the back of my head, for a long time the possibility of doing something with prosthetics but it was only a whim. And I saw this advert in what was then a real newspaper, the local Barnet Press, for an electronics repair technician, or something to those effects, at the NIMR. I spoke to my beloved, I was then married, and we decided to have a go at it, so I did. I got called in for an interview. The interviewer was a man called Laurie Grant, who was running the instrument mechanical workshop downstairs, and after about 5 minutes he looked at me and he said, ‘I think you’re applying for the wrong job.’ I felt a bit crestfallen, I can assure you. ‘But hang on a moment.’ Anyway Laurie, to cut a long story short, went off and made a phone call. And then he said, ‘Right, come with me.’ So I was ushered upstairs, as I now realise, to meet Jon Marsh and was plonked in Jon’s office and he chatted to me.

And we spoke widely about Scouts and about bicycles, about the fact that I was a member of the local church, and the fact that I could repair videos. And he looked at me and he said, ‘Well, if you can repair videos you can do anything that we want here.’ And that was really the interview over, to be honest. I did have an official interview some time later but really the dye was cast by then, thankfully for me. And eventually I joined the NIMR on April Fool’s Day, 1981 actually. And that’s been a huge excitement for me. But the benefit of that, what was going on in the background there, was that I was introduced to the NIMR whilst my predecessor was still in post. So I had the huge privilege of working with a wonderful engineer called Trevor Holman who has long since died. Trevor served as a radio mechanic during the Second World War and was a highly intelligent elderly man, and I had the privilege of being introduced the NIMR by Trevor, who put me in touch with all the head technicians, all the people that made things work at the NIMR. That was a real privilege. Sadly Trevor has died since then. But that set me on course and being introduced to that strata of head technician was an enormous privilege. They didn’t really know me at all, they knew Trevor and took me on trust, and a lot of them took me under their wing and guided me, to be absolutely honest about it, and gave me an awful lot of information. And we went on from there. That was my introduction to the NIMR.

And when I joined the NIMR had, the engineering division was still doing its own research in those days, and during my time there it became, it moved from being a research department to being a service department; a significant change. And we lost quite a lot of the young research staff who were there when I first joined, which to me was a sad loss, but you know, that’s how it is. That’s the way it goes.

[3]. THE NIMR

I was born and raised in Barnet and the NIMR is in Mill Hill, which as the crow flies is about 4 miles. And, sadly, I had never heard about the NIMR, let along the MRC. Now, when I joined the NIMR there must have been somewhere between 600-700 staff working there, it was a major employer in the local area. But in truth I knew nothing about them. And I sadly knew nothing about what the MRC was doing on behalf of me and all the other people in England as far as health is concerned. I hope that that is going to change although I will say that to date a lot of my friends and people at home still have never heard of the Medical Research Council to this day, and wonder sometimes what I used to do and who I used to work for. Locally in Mill Hill, it was looked upon as you know ‘Those mad people at the top of the hill, those mad Professors,’ which is terribly sad. You know, they are lovely people, it’s a great place to work, I just would wish that our way of advertising ourselves, if you like propaganda, to get out there to witness to the amazing work. I recognise it’s difficult. Later on in my time there Mill Hill published a little booklet over several years called The Mill Hill Essays and they really were written for the general public to consume and to get to know some of the things going on. How successful that’s been, I don’t know. They’re still available but whether the internet will help, I hope it will, it certainly makes a big difference, it’s freely available, I think we should use
it, and I hope that the new Crick Institute will use those methods of telling people what we do; I think it’s important, I really do. Let’s face it, most of us are paying for it anyway so you know…

Okay so a lot of my time at the NIMR is sorting out problems. So yes, I can repair things, not necessarily always technology although very often associated with it. Sometimes one has to be diplomatic and go into the lab and explain to somebody, after you’ve understood what the situation is, that actually there isn’t a problem with the equipment, it’s the way you’re driving it, it’s what you’re expecting it to do, it’s how you’re operating it; those sort of things. So a little bit of diplomacy is required there. The technology has changed quite a lot over the years that we have been there. When I started it was substantially analogue technology. We had a valve tester in the workshop and we certainly didn’t have a valve tester when I retired. That faded away. We went through the whole phase of individual transistors, large-scale integration, and into microprocessors and so on and so forth. And those have made huge changes. The ability to repair down to an individual component level has been something which has moved substantially out of the remit of somebody who is like myself, it’s more specialised. And the ability to calibrate a piece of equipment also, which is very important in the lab, doing away with additional variables, is also very important. So needing to understand that and to advise as to whether yes, we can do something here, it’s a simple problem, we can overcome that, or I advise that you do this, that or the other, so going to a specialist. Maybe shortening the downtime of a piece of equipment is probably the main pressure. So nobody in a lab wants you to come and write a paper about a problem, they just want it solved. And achieving that the quickest way is very often the main nub.

I mentioned earlier on that I was taken on as an apprentice and I’ve spoken about the training at the college and the training in the workshop. But of course the whole environment that that was in was in a retail establishment, which was basically selling in the early days, radios and TVs. And that developed as technology developed and we used to do audio equipment and so on and so forth. But of course in that whole environment, the customer is always right. So our job was to serve the customer and look after their deeds. So when the next customer comes in that’s the person you’re most focused on; you have to look after that person. And whilst that may be galling to people, in fact it’s one of the aspects that I think I’ve probably learnt to carry forward. And I think, I hope, that that’s been appreciated at NIMR. I’ve certainly got lots of chums who have come from that environment who I think respect me for what I did, hopefully. But I certainly for me there are one or two characters at the NIMR who have very winning ways. One recognises that one is being manipulated because they want to achieve an end, but there’s no point in me getting cross about that sort of thing. The fact of the matter is that they actually have a problem they want solved, so they’ve come to me, they want a solution, give it to them. It’s great. And to be fair I have to set that against the fact that the MRC have been very good to me as an employer. They took me on, they’ve given me a very interesting career, and I’d say even more, a pleasant retirement frankly.

[4]. MAKING DEVICES; MAKING A DIFFERENCE

I think that the difficulty that I have personally is where pieces of equipment, right towards the end of my time, become driven substantially by software. And if something goes wrong with the software then, to be honest about it, the only person who can deal with that is the original manufacturer. And sometimes we have to update software on something like a power supply, an electrophoresis power supply. Those are huge changes from the original type of analogue devices that I was dealing with, and that’s a major change in the short time, 30 years that I’ve been there, from when I started with Trevor.

Yes, I’ve made one or two bits of equipment, which have been very simple, to be honest with you, which have made changes. Simple timing devices which have reduced the run time for lamps for microscopes, all those sorts of things which are very, very simple devices which have been put on to pieces of equipment, additions to, which have saved money. Simple addition to the devices which we use for anaesthetizing *Drosophila*. Simply making a device which, instead of the carbon dioxide which is used for anaesthetic for *Drosophila*, running constantly and therefore costing lots of money and lots of cylinders, simply putting the ability for the operator to use time. And that has been quite a substantial thing, I think, as far as that’s concerned.
I got to know a young student who was doing some early work on the photographing of foetal hearts, I think. And he was having a problem illuminating these cross sections sufficiently to make a good copy for his filing. Anyway we were talking one day and I went over to see what he was doing and he was concerned that he shouldn’t be throwing too much heat, the red end of the light spectrum, onto the sample because it would cause it to melt and be a problem with cutting. And he was trying to illuminate, I think, using the blue end of the spectrum because he couldn’t get enough light. Anyway I’m not very heavily into optics but I had remembered that a company called Schott who make microscope lights used to have built into all their systems an infrared filter. So I said, ‘I’m not sure I know what I’m talking about, but I do know a man who does,’ and I went and spoke to a colleague of mine, a chap called Rod Chillingworth and Rod came over and within an hour we had enormous amounts of light being thrown onto this young man’s samples. And we simply cobbled some of it together using what we had available and a big piece of glass, which would absorb the infrared, and his samples were fine. And that’s fairly typical of the sort of the thing which you could bump into. What was important there was actually, he was a cyclist and I was a cyclist and we used to chat about cycling and then we just got into the conversation about what he was doing, and I got interested and then we had the conversation, and then the chance conversation came along and we solved a problem. And, to be honest about it, I could expand that to conversations that happened at the bar at NIMR in the evening. You would see senior scientists having a huddle and sorting out problems and that sort of thing and I do think that the environment that allows you to have casual conversations, which can lead to productive conversations, actually is a very important thing. And I thoroughly enjoyed those exciting moments when we turned a corner, you know, serendipity way, because I repaired somebody’s puncture or something. That I think is quite exciting.

[5]. THINGS GOING WRONG & BEING OUT OF ONE’S DEPTH

Disasters, yes. There have been a few. We’ve managed to avoid most embarrassment. Going back a bit, okay, to when I was an apprentice, I still suffer for this day. Some school chums of mine who were doing, they were electricians and I was doing radios and TVs, taking a Morphy Richards toaster apart and having to go to them with this Morphy Richards toaster in pieces and taking it to them and saying, ‘Would you mind putting it together for me?’ And my dear old friend, who is now heading steadily towards 80, and I’ve now turned 70, he still tells me every time he sees me that I didn’t ever manage to put that Morphy Richards together. That’s the first thing.

At work I think I learnt a fairly steep learning curve when it comes to things like spectrophotometers, because I can remember one particular mass spectrophotometer made by Pye and I was expected to be the expert on this, this was after Trevor had retired, and going down there and diving inside this machine and after about a day and a half realising that I was totally out of my depth, and having to eat humble pie to a lady called Hilary Morgan, who was then the head technician of that department and explaining to Hilary that I was completely out of my depth. She was very charming about it but yes, had to deal with that and so did I. That’s one of the disasters but there have been several. Very few I hope to do with people. It’s mainly to do with being prepared to serve people, I think, is quite an important thing. People don’t want you to add problems to their already existing problems; they want solutions. And I think, I hope that’s what I’ve brought, both as far as people are concerned and as far as technology is concerned, I think.

[6]. CHANGES IN TECHNOLOGY: ELECTROMECHANICAL TO ELECTRONIC

One of the devices at Mill Hill, which I had to look after, it always makes me smile because I was entrusted to look after the Cobalt 60 source at the NIMR as far as repairs and maintenance and modifications were concerned, and spent quite a considerable time doing that in the early days.

So I can remember one weekend, when we had to do a complete strip down and that was largely the work of my colleague, Roger Hooper, but we had the huge privilege of having the original designer of the mechanics come over from Canada and we spent the whole weekend with him. And to see this elderly gentleman, as he was then, lovingly helping us restore the mechanics was really quite a joy. My point about
this is that I got quite involved with this device and had to do quite a bit of maintenance on it, and that was, to give you a feel for the change in technology, that was largely an electromechanical device. There was very little electronics involved in that. Most of the logic in that was to do with relays and all the problems that are associated with relay contacts etc., etc., etc. We had to do a full health and safety test on that and so we had to build test rigs for all those relays to find out what happened if so and so etc. etc. And that was quite a challenge to me. Nowadays of course the devices which are used for irradiating food and animals nowadays would be run by a small computer. There would be no electro mechanical devices involved in that because of the sheer failure rate of those things. And so from when I started there, we had valve testers, electromechanical devices in relays, to when I left, a lot of the stuff which was being done in an analogue way was now being done on a computer, so you could, you know, there was no need for chart paper or anything anymore because all those things were simply on screens. It was a total change throughout that 30 years. When I started there, there were monitoring devices on cold rooms and hot rooms which were circular bar charts, circular graphics. I’m sure you can remember those. And nowadays there would be none of that, it would be centrally logged and would be coming up on a computer somewhere in some maintenance office somewhere. So I think that’s a huge change that’s taken place in my career and of course you do away with a lot of that electro mechanical device, which has all the problems of movement and with consequentially the failure rate, which is much higher. That doesn’t say that the technology wasn’t beautiful, it was. But you know none of us nowadays rely on mechanical clocks. We have devices which are solid state.

[NIMROD: FIREWORKS]

NIMR had an organisation which was the staff organisation which was called NIMROD. And during my time there we had the NIMROD fireworks display. Two of my colleagues, Jon Marsh and Rod King, had been down to I think it was Payne’s who make fireworks, have training courses and they became officially sanctioned to allow them to use commercially available, large fireworks. So we’re talking about mortars which are the size of rugby balls or pineapples, and that was great fun. And the first fire, I was invited because I was part of Jon’s group, to be involved in setting this up and letting off the fireworks and that was huge fun. We had, just to excite ourselves, we had one or two misfires, which is quite exciting you know, when mortars are going off just above your head. It was great fun, we had a whale of a time, okay? And it’s toys for the boys. And I think probably the NIMR thoroughly enjoyed it as well actually but that was beside the point really. Anyway, we went on to develop this because running around with tapers and lighting the blue touch papers sequentially, it was quite exhausting; we were rushing all over the place. And so Jon, my old boss, thought of the idea of can we fire these electronically. So we did some experiments wrapping fuse wire around match heads and things and seeing if we could pass enough current through and ignite them. And we managed to do that. But you could also buy the proper fuses and whatever else if you could generate current. So Jon set to and built the NIMROD fire box, which was so called, which meant that we had the task of running miles and miles of wire to set up these fireworks. And that was huge fun and we could really do some very lovely sequential firings of fireworks. That was enormous fun.

One of my enduring memories of that was, when you went down to see the field the next day, over to the back of where we’d all been standing, it looked a bit like what I would imagine Agincourt would look like because there were thousands of these rocket sticks stuck in the ground. It must have been quite a sight at Agincourt but it was pretty impressive at the NIMR as well. And we had the most wonderful bonfires and some of the stuff which we used to ignite some of these bonfires we probably wouldn’t be allowed to do nowadays, but we did get rid of quite a lot of solvents, I can assure you.

[MRC BENEVOLENT FUND]

Back in the 1960s some members of the Medical Research Council became aware of one of their colleagues who was desperately ill and had to retire on medical grounds. And they also became aware that, in fact, he was going to become fairly impoverished because of this. They got themselves together and formed what is now known as the MRC Staff Benevolent Fund Association. That continues to this day. What that enabled them to do back in the 1960s was to give this person some money, a grant, which eased the situation for him there and then. I’ve had the privilege to be on that committee for a few years now and recognise that,
from time to time, people have problems. And part of the wonderful generosity of the staff of the Medical Research Council is that they thought about doing this and many of our staff contribute to it to this day, allowing our small committee to help in all sorts of ways. So it might be buying a wheelchair, buying a bed, providing a small quarterly grant, perhaps at Christmas to help some kids or something like that. We’ve even replaced a car. Those sort of things can make a large difference in people’s lives. We have very simple criteria. The criteria is do they work for the MRC? Are they a dependent of the person who worked for the MRC? And are they a case of need? And we make our decisions quite simply on those grounds. I would want to say to the people who work for the MRC thank you very much. It’s a huge privilege, I hope it continues to do the good work that it has been doing in the past. Thank you.

[9]. REFLECTIONS ON THE MRC: PAST & FUTURE

It seems to me that a lot of the major epidemics which effected my grandparents, and possibly my parents, have been dealt with very successfully by people such as the MRC. And it seems to me that finding solutions to some of the modern problems is becoming effectively for our society more and more expensive. What I hope that won’t do is cut off the accessibility to people like myself to get involved in that sort of task. Obviously there are going to be changes and obviously we’re going to need our best people involved in those processes of finding out the hows and whys. What I fear is that increasingly we may see that becoming less available or less open to access for people. That isn’t something I think is common to the Medical Research Council or indeed other research institutes.

Okay so I do hope that people from educational backgrounds such as myself will have the access to further education, higher education, which allows people to blossom and grow and to move into the sort of exciting field that I’ve had a privilege to dip my toes into. I hope that my very enjoyable working career has added to the sum total of man’s knowledge. I don’t know but I would love to see the MRC and the Francis Crick and what other institutions also being able to reach out in tangible ways, recognisable ways, to the public so that we know what’s going on and we understand what’s going on as best can be done because I think that would be very useful for all of us.

As someone coming from a similar background to myself I would dearly love to know that we have a tangible understanding of something which is as magnificent as Mill Hill, and it’s only four miles away from me. And the fact that I didn’t know that, yes I can take some part of the blame in that, yes my background etc. but really we need to know that people are doing what they’re doing. TV, the internet, I’m sure all those things can help enormously; they’ve very available, let’s use them.

[END OF TRANSCRIPT]

Further related resources: