

The Sound Of Effects

DICK MILLS: THE TSV INTERVIEW

DICK MILLS was an original staff member of the BBC Radiophonic Workshop, whose special sound design included uncredited effects on the classic 1958 SF thriller *Quatermass and the Pit*, Major Bloodnok's stomach for *The Goon Show*, and of course *Doctor Who*, for which he provided sound effects, credited and uncredited, from the original pilot episode in 1963 through to the final classic series story, *Survival*, in 1989.



CAROLINE CALLAGHAN and **ADAM MCGECHAN** sat down with the *Doctor Who* legend at the National Media Museum in Bradford, UK, to discuss his Radiophonic career.

TSV: How did you first join the Radiophonic Workshop?

Dick Mills: Well, Daphne Oram was my Radiophonic biological mother, so to speak. I was working at the BBC at the time. The Workshop had been set up, but the BBC were very worried about it. We're all very health and safety conscious nowadays, but back in 1958 they were equally worried — especially with people working in an experimental department, doing things where they didn't really know what they could or couldn't do — with strange noises. Would that affect their health? So the BBC told Daphne that she could only work there for three months. Daphne said, 'This department is my life's ambition, and if you say I can only work here for three months, I shall have to resign.' They insisted; so she resigned.

At the Workshop there were engineers as well as creative staff, and one of the engineers was a lady who was good friends with Daphne, that's why she wanted to work there. She felt because Daphne had resigned that she ought to resign as well, as a point of honour, which left a gap in the engineering support workshop. So they pinned a note on the notice board in our engineers' office asking if anybody would like to help out at the Radiophonic Workshop. I said 'Yes, I'll give it a go.' So I went over there, knocked on the door, and said 'Hello. I'm Dick Mills.'

Their response was: 'Oh, thank God for that! When we heard a certain Mr Mills was applying, and he was the only applicant, we thought "Oh dear, we don't really want him because he's a bit of a show off". But we're ever so glad it's *not* him and it's you instead.' So that got me in, in 1958!

I started as an engineering support artiste. We weren't expected to know about tunes and creative ideas. It was our job to make sure all the machines were working, ready to go for when inspiration struck the others. But later on we joined in, and eventually, of course, everybody got their own little studio so even the engineers could be trusted to do things. So that's how I got into the Workshop. If it wasn't for health and safety, I wouldn't be here!

TSV: So where did *Doctor Who* come in? How did the Radiophonic Workshop end up doing the theme tune?

DM: The Workshop was set up to produce sounds and music that couldn't be obtained by ordinary means. By "ordinary means", I mean by going to the sound effects library and saying 'Can I have a sound effect of something,' and they give you a disc with it on and that was it; or 'I need a bit of music to do this,' and they give you a mood music disc. The Workshop was set up, really — according to some cynics — to produce sounds that nobody liked, for plays that nobody could understand, which meant that they were BBC Radio Third Programme "mental torture" sort of programmes, or nightmare dream sequences that you just wouldn't be able to use everyday sounds for.

We had to manipulate everyday sounds to make them distorted, to make them nightmarish, or anything like that. We were in the market for making unheard-of sounds. Of course, with Doctor Who having a time and intergalactic storyline, they were going to come up against things that people hadn't seen before, and you can't have these things prowling about on screen not making any noise, so we had to get involved with the sound effects.

We went to meet producer Verity Lambert at the Ealing Film Studios where she was shooting something. She said that she was very pleased to have the Workshop on board. We'd done quite a lot of imaginative sound things for radio drama which she had heard. We did a programme about the Titanic, for example. Not many people know that the iceberg actually rammed the Titanic because it had an engine room built into it and was piloted! Which was a quirk of some writer's imagination, of course. We did weird and wonderful things like that.

We said 'Yes, we can do all the sounds for you. No problem.' Verity said she wasn't sure what to do about the signature tune. She said that she really wanted a good one. We said 'We happen to know somebody — we've just finishing working with Ron Grainer on something entirely different.' Now, in those days, Ron Grainer wrote the theme or signature tunes for many a successful series including *Maigret*, *Steptoe and Son* and *Comedy Playhouse*. If Ron did the theme, the theme was great. So Verity got in touch with Ron Grainer, and he said he'd do it.

He brought us one sheet of music and then promptly left for Portugal because the theory was that he had to work in brilliant sunshine for his eyes — that's a good excuse! So he went to Portugal, and after a fortnight Delia Derbyshire and I put the signature tune together. When Ron came back he said 'Did I write that?' and Delia replied 'Very nearly.' That's how the signature tune was born.

It says on the credits 'Music by Ron Grainer *and* the Radiophonic Workshop'. That made it sound as though the Radiophonic Workshop was a group that he was in charge of. But Ron never worked at the Workshop. He came to talk about things, but we did all the work and he either liked it or didn't.

Then of course we got tangled up with Dalek voices and all things like that. They wanted voice treatments, but — although we could produce wonderful voice treatments at the Workshop — they couldn't use the same treatment in the television studios when they recorded it as it wasn't portable or flexible enough. The director didn't want the actor's or actress's voice to be treated — however magnificent it was — and then played in as a tape insert, because that wouldn't have allowed the production to be flexible. So we came up with a device that just plugged into a microphone circuit — a separate microphone circuit — so that any sound going through that would come out sounding like

a Dalek. If a dog barked, it would have sounded like a Dalek dog! It was just in the microphone at the side of the stage. A lot of people didn't realise that the Dalek voices weren't made by the people inside paddling the Daleks, because they were too busy trundling along, working their sink plungers and switching their lights on and off. Whereas an actor on the side — such as Peter Hawkins or David Graham — could do the Dalek voices from the side as part of the cast, letting the guys in the Dalek machines run around doing what they had to do.

There was always a problem with voice treatments. We once spent a wonderful day working with Kismet Delgado, the wife of Roger Delgado. She was going to be the voice of the spider queen in the Pertwee adventure *Planet of the Spiders*. We produced a wonderful voice effect, but we couldn't transport the treatment to a live situation at Television Centre. But it gave the others enough of a taster of what we wanted her to sound like.

TSV: How was a sound commissioned? Did somebody come to you and say 'We want the sound of a sea-dwelling monster squelching about, what can you do'?

DM: We always got scripts ahead of production, which could be a good or a bad thing. It works both ways. If you read the script first, you get an idea of the storyline. You don't get a feeling for the size of the monsters, but you know roughly this thing is bright green and horrible, and you've got to do something with it. The only thing about working from a script is that, by the time it gets to the studio recording, the script editor might have thought that character is not really necessary and chop it out. You could have done two or three days work doing something that's not going to be used. But working from a script, and taping the sounds over that were played in as it was recorded, was the early way of doing it.

Later on, when it became a lot more post-production, I didn't do anything until the half-an-hour or three-quarters-of-an-hour episode was actually edited. I just watched the story, and then I knew what I had to do and for how long. The snag was that I had to do it much quicker because they'd all done their job. I probably had — between seeing the episode for the first time and actually turning up to put the sounds to the track — ten days an episode, which is fine for episode one of a new serial. For example, you've got to do the TARDIS take-off, you've got to do some monsters, and a planet atmosphere. There might not be too much action in the first episode. So whilst that's going on, they're rehearsing episode two. So you get 'We'd like you to come and see episode two', probably while you're halfway through doing episode one. So you go and see that. So when it's time to put episode one together, they're shooting episode three which they'd like you to go and see too. So there's constant overlapping. Then, because each story has a different director and a new camera team, they could be shooting the next one while you're still doing

the first four episodes. It's like this all the way up to the end of the run. You didn't really get ten days per episode.

Working from a video was much better than working from the script, because you could see things. For example, in Tom Baker's *Robot*, the robot was probably only about nine inches high, but when they shot it they made it fill the screen. It's magic what the camera can do. If I'd made a sound disproportionate to the size on the screen, I would have had to go and do it again. I always liked to go to the studios if there was a shooting going on as well. And that's another day out of my ten days.

TSV: Did the script specify what sound effect was needed?

DM: No. The only thing was I used to get fed up with guns going bang. I think it was in *The Happiness Patrol*, I wanted people to be killed by kindness. I wanted them to be overwhelmed with such ecstasy that they just died. The director said 'What do you mean?' I said 'I'd like these guns to shoot a sort of orgasm at people so that whatever their mental state it just overloaded their happiness level and they died. You don't need to be nasty about shooting them. If they're the Happiness Patrol, kill them with happiness!' But he said 'What are you going to do if one of your happiness shots misses and ricochets off the tunnel or something?' So I relented and said 'OK, we'll have a bang.' You tried to do something different, but they said 'No, I'm the director. My guns have got to go bang, whoosh, wallop, or zing'.

TSV: What's the most unusual sound you've been asked to create?

DM: I don't know. I used to take a pride in doing what you might call in football terms "off the ball" sounds, when everybody was looking at what was going on up the field. There was one with Colin Baker who was down in a tunnel somewhere, and they had a big pair of eyes looking at him that turned out to be a fly or moth, and he grabbed it and had it in his hands and said 'Oh look, there it goes.' When he said 'Look, there it goes,' I made a fluttering noise just by flipping the pages of a book. The little fly was trying to take off. I wasn't asked to do that. The director said 'That was a nice touch.'

I got known as Mr Swarfega for some time. I think it was in *The Sontaran Experiment* where Sarah Jane was trapped somewhere, and there was something green and nasty climbing up her leg. So I got a handful of that Swarfega gel, squelched it in my hands and recorded it. Now, that sounds fine. If you slow it down, it starts getting terrifying. If you slow it down even more, it starts getting obscene, so we didn't go that far. We kept it at the terrifying level. Of course, now, when I go to a talk, at the end of the talk they give me a tin of Swarfega!

I also had a policy that anything that was supposed to be alive had to have animal or real life sounds, whether it was slowed down dogs barking, or

squealing pigs, or chickens, or whatever — sounds that could be manipulated to get the animal-like noises. I wanted to do that with anything that was obviously alive. For anything that was mechanical or synthetic — robots, or ray guns, or horrible machines — they could be as mechanical as you liked. I mean torted up, obviously. I didn't want too many dustbin lids and kettles being banged together. They were always synthesised sounds rather than recorded natural sounds. I thought it was important to keep the difference.

With Malcolm Hulke's *The Sea Devils*, Malcolm Clarke, who did the music, and Brian Hodgson, who did the sounds, both used the big synthesiser at the Workshop. We were very fortunate at the Workshop that the Performing Rights Society allowed us to collect royalties on the music we produced. When it came to *The Sea Devils*, I think Brian probably got more money than he should have done because they credited half of Brian's sounds as music, and half of Malcolm's music was treated as sounds, because they both produced them from the same instrument. That's why I took the stand of separate sounds for different things.

TSV: Is there any sound that you were unable to achieve?

DM: Not really. We were in a very enviable position. Because we were a specialist department, we were on call to support any programme for the BBC. And I mean *any*. It wasn't just television or radio — our domestic channels. The overseas and world services could call upon us too. The publicity people could call us for sounds or music to go with the trade shows or things like that. Sometimes it was 'I need something to save this programme' or 'I need something special for this programme — call the Workshop.' They usually left it until reasonably late in production. By which time, if we did anything for them, they would have still been up their original gum tree if they didn't like it, so we were onto a seller's market really. It's strange. If someone came to the Workshop and said to each of the six of us 'Here's a script. I want you to do sounds and music for this. I'll be back next week to see what you've done' each of us would provide something that in itself would fit the bill. But they'd all be different. Liz Parker would do something totally different to Peter Howell, Paddy Kingsland would probably do a sort of rock concert version of it, Roger Limb would meander on the piano, and I'd make some sounds and waffly noises. Everybody would be happy about it, but nobody had actually specified anything. So, we were really quite good at satisfying a demand that nobody knew they had!

TSV: How closely did you work with the composers of the music, and was there any difference between external composers and those that worked at the workshop?

DM: Obviously, when we did *all* of it at the Workshop, we could have a much closer interconnection. For instance, Malcolm Clarke would stick his head in

and say 'You know when the Doctor's up that thing with this, that and the other — what are you doing for that?' I'd say 'I'm just doing that now. It sounds a bit like this.' He'd say 'Right, I'll get my music well away from your sound, or hope you haven't got one of your dirty great monster machines going there, because what am I writing music for if nobody is going to be able to hear it?' So, there was great interchange between us at the Workshop!

I had the same sort of thing with Dudley Simpson. Dudley was caught between two stools. We would both see the episode, we would both take copious notes, we'd both mark down when we had to do things. He would then go into the television music studios with five or six musicians and record the music. Then he would bring that tape to the Workshop and put extra electronic music lines on top. So the music he brought from the Television Centre was never the complete score. We had one or two tangles with the people at the Television Centre because Dudley wanted them to record it on separate tracks so we could rebalance it. 'No', they said 'Only a complete mix must go out of the television music studios.' We said 'It's not a complete mix because we haven't recorded the other instruments.' But they replied, 'No. What goes out must be a stereo mix.' So, Dudley just recorded the other tracks anyway. We remixed it with electronics.

Carey Blyton would record his own music with a saxophone jazz quartet. Geoffrey Burgon did his own music for *Terror of the Zygons*. Everybody usually turned up with their own final music. It was only when we started working with people like Dominic Glynn, Mark Ayres and Keff McCulloch that we still kept this interchange going, although they never needed our support to put extra electronic lines on like Dudley did. They fixed it all themselves. They turned up with their tape on the day, and I turned up with our tape on the day. I would say 'How are we going to do this, guys?' and they'd reply, 'What do you mean?' I'd say 'Look, it is going to take three attempts to get it right.' You see, what we would do first of all would be to lay all the backgrounds down for the different sort of planet atmospheres and things. Then we'd go through and put all the spot effects in, and then we'd put the music on at the end. I'd say 'You can either do it your way and we might end up with 'Oh, that's too late. Let's try it again.'" "Oh, that's too early". Because you haven't seen this edited video tape until today, whereas I've been living with it for ten days or so. I know exactly where to push the button so it works. If I play the tapes in, we'll get to the bar half an hour earlier. Deal?' 'Deal,' came the reply! So I put in the sounds and everybody was happy, which was great.

But getting back to your question, in the early days there was very *little* contact between the composers of the music, and Brian Hodgson or myself who were doing the sounds. Later on, when John Nathan-Turner said he wanted the Workshop to do everything, then that was the ideal, if you like. I don't think we had any interior battles like 'I was going to do something there.

I don't want your music,' or vice versa. Then, with Mark, Keff, Dominic, and the other latter day composers, we all fitted in very well.

TSV: Was there any time when there was a clash between music and special effects? I think there's a story about *The Greatest Show in the Galaxy*, which Mark Ayres worked on. There was a sequence where Sylvester McCoy is crawling through a tunnel, and you wanted a sound effect, and he wanted his music. And I think he won in the end.

DM: Oh yes, I'm sure he did. The music usually carries the day. What's a bang here or there? It's six of one and half a dozen of the other. There were one or two occasions when the director didn't like the music which the composer had done and we were called in instead.

TSV: Have you ever had the desire to do music yourself?

DM: No, not at all. I was taught the piano as a child but I wasn't one of the musicians. Roger Limb was a very accomplished piano player, so was John Baker. David Cain played guitar, Paddy Kingsland guitar, Peter Howell guitar, Liz Parker played the cello and the piano. They were all musically trained.

I've had my moments with the Symphony Orchestra, though, playing a tape in for Roberto Gerhard. He was commissioned by the BBC to write a symphony. He used to record natural sounds at three o'clock in the morning because that's the only time the lorries weren't going past his house in Cambridge. He'd twang bits of metal, kick things, hit things, pummel things, yell, and do stuff like that. He made a tape that was going to be a solo instrument in the BBC orchestra. He needed to get it into a broadcastable sequence. He was told to go the Workshop where we could put it together for him — which we did. But it was getting towards this concert at the Festival Hall, and I said 'Roberto, who is going to play this tape?' He said 'I can't. I'm the composer. I have to sit in the front row and look important.' I said 'Okay, so who's going to play it.' He said 'Well, you're the only person who knows as much about it as I do, so you're playing the tape.' Now, in the Festival Hall there's a stage up front, orchestra, audience, and then there are boxes way back, up here [indicates a great height]. We're in one of those. There are four loud speakers in the orchestra. The conductor never waved to us at all. He started conducting and we just played the tape in as we thought it ought to be. Dreadful. It was a modern piece of music, obviously, and at the end of every modern piece of music there's always a gap where the audience are never quite sure if it has finished or not. Into that gap some bloke shouted 'rubbish!' To this day, we don't know if the applause that followed was for the bloke shouting out 'rubbish' or for the piece of music!

Then they wanted to record it at HMV studios, so I went to Abbey Road to play the tape again. Then they wanted to do it at the Proms at the Albert Hall.

I did it again. Then, it was the Christopher Columbus quincentenary and they wanted some Spanish music. So they dug up Roberto Gerhard, who was Spanish but lived in Cambridge. 'Oh, we must have his Symphony Number 4 — Collage.' By which time I'd retired, so they rang me up 'Could you come to the Queen Elizabeth Hall and play the tape in for us?' So down I went. So I have had my musical moments!

TSV: Going back to *Doctor Who*, how did the technology and methods change? Reel-to-reel tape recorders at the start, I guess, and later computers?

DM: Oh no, we still used reel-to-reel tape recorders right up to the end. The only thing that really happened was, as you say, computers came in, and sequencers and memory that could be driven by the timecode from the video picture. That was wonderful because, supposing we had this gun battle going on, I could programme all my gun shots for the horrible guys, and for the good guys who probably had different weapons. I could also programme the hits or the ricochets onto a sequencer. I would play the video tape, and the timecode off that would run the memory, and that would trigger all the sounds off at the right time. But *Doctor Who* had gone into stereo by then so there would be guns over here, guns over there, and things like that. So then I could go through again and programme the positions — left, right, middle — and then I could go through once again and programme the volume for loud, very near, or quiet. I could do everything on the computer and I only had to do it once. Then it was just a question of readjusting the balance and so on. I could just do a complete mixed track and it would fit. That was very good. The problem was it gave you less and less time to do it.

But being able to sample things on the keyboard or memory was much better than sampling it on a piece of magnetic tape that you had to loop, and then you had to keep cutting it so you couldn't hear the join. Whereas, on the synthesiser or the sampling machine, you could get it up on the screen and watch the waveforms until they were exactly right, and then you wouldn't hear the join. Everything you did was related up and down the scale. It was always the same sort of sound, but it always bore a relation to itself, whether it was right down low or right up high. The only thing it couldn't do was time compensate — if you slow something down it gets longer, if you speed something up it gets shorter. We had a machine that was supposed to do that, but it wasn't very successful at it. Once the synthesisers came in with the computers, theoretically it got easier because it gave you so much more manipulative skill. But you still had to think of the sounds in the first place. What's artistic freedom? Let's say you're a painter. Someone asks 'Can you do me a picture please?' 'Yes. What do you want me to do a picture of? What colour? Oils or acrylic?' 'Don't mind.' 'What size?' 'It doesn't matter.' So you think 'What am I going to do?' You need some sort of guidelines.

Sometimes you'd think 'Must get this show on the road. I haven't got an idea. Let's throw some sounds together.' As soon as you throw sounds together, you know if they're going to be useful — right, or wrong. Once you've started, you now know if that's definitely what you *don't* want to do. You're able to narrow it down to the choices. You then come across something and think 'That would be good. I could develop that. I could create a family of those sounds, and that would do for that.' And gradually, you fill it in. So this absolute freedom — creative freedom — is a much more restricted thing than you think it is. You've got to give yourself a choice. It's the same with a bit of music. How long do you want it? Do you want it happy or sad, or whatever?

TSV: I don't know how familiar you are with the way they produce sounds on the new series of *Doctor Who*?

DM: Well, I've been trying to get down there. Everybody has said 'Yes, you must come down. Why haven't they asked you to come down and spend a day.' They haven't. I've no idea how they do it. It's much more music-driven. There seems to be very little special sound in it, unless they're drawing on the existing library — the common domain. I've done several discs for the BBC — effects of rocket ships landing, ray guns, etc — so they may sample those and put them all together. It may be me under a different name! I don't know how they do it. I'd love to find out. I've been onto Colin Teague, who directed *Last of the Time Lords*, when we did an event together in Gateshead. He said 'You must come down. Give me your card. I can ring somebody.' They said 'Of course it would be no problem for you to come down.' But it's just never happened.

TSV: So would you have liked to have been involved with the special sounds on the new series?

DM: You like to think so, but after... When did I retire? 1993. When did it come back?

TSV: 2005

DM: Twelve years is a long time. I think 'God, I used to do that!' I saw some video of the Workshop and I thought 'What the hell is that machine? What did I use that for?' It's not gone, but I'd be hard pushed to try and do it. Somebody had a mad idea of getting some people from the Workshop together in the Roundhouse in London, with bits of the old equipment that we used to use, and seeing if we could recreate something. You think 'No.' What people don't appreciate — or never stop to think about — is that we never sprung into action on our own behalf; it was always to satisfy a programme demand, which is why I find it very difficult to listen to some of our music just for its own sake. I always see our contribution as being applied to something else; whether it's a ballet, an action film, a cartoon, an educational

programme, it all makes sense as a whole. I can't disassociate my contribution from what was coming the other way, if you like.

People keep asking 'Were you inspired by Mr Stockhausen.' I reply 'No. Mr Stockhausen used to base his music on the square root of something not very big just for the sake of it. Or let me do a symphony on all the black notes, perhaps.' It's a lovely exercise — and it proves he can do it — but it wasn't somebody else saying 'It's got to fit this film', which is different. On the other hand, many composers probably can't get inspired until something triggers them off to apply their music to. For example, the other night we were watching the *Imagine* documentary about what love is. They had the guy on there who wrote all the lyrics for the Burt Bacharach songs. My wife said 'What do you reckon comes first, the music or the words?' I said 'Words, because words in a song, like poetry, have got a certain rhythm and the composer can make the music to phrase it nicely. Whereas if you've got a tune first, you've got to do 'June, moon, or honeymoon' to fit all that. I'm sure the words come first in most cases.'

TSV: One final question. Your career has been unusual, to say the least. How did people around you react to your day job?

DM: There was one thing I dreaded, and that was coming home at, say, half past six or whatever, and meeting my neighbour across the road. She was a lovely woman but she would have this habit of saying 'Hello. Have you had a good day at the office today?' I thought 'No, don't go there!' I'd say 'I don't work in an office.' 'No, but what have you been doing?' I'd think if I tell her I've been on a planet fighting some army of green spiders, she won't believe me, or, worse, she might ring the people up and get me carried away. There are some people who can't suspend disbelief, or can't believe that somebody has what is to them such a stupid job... 'Oh, stop mucking about. What have you really been doing?' There's no way I could tell her what I'd been doing at work!

I didn't ever really take the work home with me. I might think about it on the way home in the car, and think 'God, why didn't I do this or that?' Other people used to say to me 'I bet you've got a good hi-fi set up at home.' I said 'why?' 'You must do working for the BBC,' as though I'd stolen it and taken it home with me, or my standards were so high that I simply had to have it at home! I said 'No, I haven't. If I want to listen to any decent records, I can stay at work and listen.' I told them 'I've got a wife and growing family. I can't say "Quiet, Daddy is listening to this, researching something!" We've all got to live in the same house.' I have never taken my work home with me, but it helped my son, though, when he came up to university. When he was at home, he was very quiet, he kept in his room. I don't know what he did in his room! He went to university and suddenly he just happened to let slip that his dad worked on *Doctor Who* — and he got invited to all the parties after that!

My neighbour's husband was an accountant, but he hated his job. I said to him 'Accountancy is a skilled job — surely you must take pride in balancing the books.' I always came home thinking 'I've enjoyed myself today.' I've never not wanted to go into work. I might think 'Oh, I've got to spend twelve hours at the Television Centre putting this together tomorrow.' But I was in control of the situation because I knew where things had to go. It was good. I never knew what was coming through the door. That was part of the appeal of it for me.

Many thanks to Dick Mills and the National Media Museum, Bradford, UK. If you'd like to hear Dick's work for yourself, his special sounds can be heard on *every* classic series *Doctor Who* DVD!