

“What a smashing bloke he was!”
An interview with Dick Mills about Roberto Gerhard.

Royal Festival Hall, London, 16 May 2012

by

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Submitted as supporting material associated with the publication "García-Karman, Gregorio. "[*Roberto Gerhard's BBC Sound Compositions*](#)." In *The Roberto Gerhard Companion*, edited by Michael Russ and Monty Adkins. Aldershot (England): Ashgate, 2013.

In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

University of Huddersfield

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The following interview was held by the author (GK) with Dick Mills (DM). Mills is a veteran engineer at the Radiophonic Workshop who worked with Roberto Gerhard on several projects towards the end of the 1950s and the beginning of the 60s. The interview took place in the foyer of the Royal Festival Hall, London, 16 May 2012 (the concert venue in which Gerhard’s Symphony No. 3 “Collages” was premiered 51 years earlier, on 8 February 1961). The conversation revolves around Gerhard’s works involving manipulated tape produced in collaboration with the Radiophonic Workshop such as *Asylum Diary*, *Lament for the Death of a Bullfighter* (1959), Symphony No. 3 “Collages” (1960), and *The Anger of Achilles* (1963). It also touches upon general aspects of the working methods at the BBC in the early days of the Workshop. During the interview the author confronts Mills with historical photographs as well as recordings from Roberto Gerhard’s Tape Collection.



Dick Mills against the background of the Royal Festival Hall, London, 16 May 2012.

TRANSCRIPT

GK: How did you meet Roberto Gerhard?

DM: Strictly through the BBC. The first thing that we did with him was *Asylum Diary*, which was his own composition. We helped him with it. Then he did [Federico García] Lorca's poem [*Lament for the*] *Death of a Bullfighter*, that was great! And then he was commissioned to do this symphony, [Symphony No. 3] "Collages". He came along with a bundle of tapes. What we liked about him is that he understood recording techniques and recording problems. You know, where he lived in Madingley Road in Cambridge, it's on a trunk road, and the only time he could record safely or without any sort of interferences and extraneous noises was about three o' clock in the morning. Poor old **Poldi** [Gerhard], she was his recording engineer, and he, banging, bashing and crashing, and she was listening to it... I think that what he really came to the Workshop for was to put his composition into the order he wanted it. He had recorded all the ingredients and then he came to the Workshop and we put it together, mixed it and did everything, which was fine. And then came the actual day, the actual day when I said: "Roberto, who's going to play this tape?" So he said, "Well I cannot, I am the composer, I have to sit down at the front and look important. And you are the only person who knows this tape as well as I do." I said: "All right!" We hadn't realized the problems of doing it. At that time they thought it was just the question of putting four big loudspeakers. Have you seen pictures of the workshop, those that have been put up recently? (Figure 1)



Figure 1. The Radiophonic Workshop at Maida Vale Studios (1961), Room 12¹ (detail).

Copyright: BBC.

¹ Room 12 is the studio in which Dick Mills and Delia Derbyshire produced the *Doctor Who* signature theme.

DM: There were four of those [Mills points to the loudspeaker that can be seen in the back of Figure 1]. That's an LS 10 (i.e., Loudspeaker Unit 10).

GK: Where these developed by the BBC?

DM: Yes. There were four of those in the orchestra. They just stuck them on the stage here [Royal Festival Hall], and then in Maida Vale 1—the music studios in the BBC—they put them on the floor. This here is a TR90 EMI, transportable tape machine on wheels, which we played the tapes from (Figure 1, in the foreground). And we went down there [to rehearse at Maida Vale] and met **Rudolph Schwarz**. So off he goes. I push the button and you get the first [cue]. The back row of the fiddles got the giggles first. Then he went on and I think it was the second or the third piece that we played in. It's a bit “bed-springy” there's a lot of “*boing*”... The orchestra just collapsed. They all knew who I was, because the Workshop was just upstairs and we all saw each other in the canteen at lunchtime. So Rudolph comes over and says, “I must apologize for our unprofessionalism, but I have never heard anything like that before in my life!” We thought, “No, nor has anybody else, that's the whole point”. Then they started to take it seriously and we did the rehearsal.

GK: How much did you rehearse?

DM: A day, two perhaps. Then we came here for the performance. Orchestra, loudspeakers on the stage, **Rudolph Schwarz**, flying boxes (the projection boxes where people sit in on the side of the Hall)... We were in one of those, behind the conductor. He never gave us a cue, ever.

GK: How did that work?

DM: They gave me two tape machines in case the tape broke. I said, If the tape breaks, the tape breaks, I can't play two machines at the same time all the time. You've got to either trust it, and then if it stops, then you go back and do it again. I sat in the box with a tape machine—forget the other one—, next to me was a studio manager who did what you call the mixes/balances in recording studios. He had a score with the dynamic markings on. He would tell me to make it louder or softer as we went through.

GK: So there was no mixing console?

DM: No, not with us.

GK: The machine was connected directly with the loudspeakers on stage?

DM: Yeah. We didn't have a feed to the sound-mixing desk—that I know of. I don't know, *musique concrète* never seems to have a life of its own until it's played into an acoustic [space], so it had to be melded in the atmosphere with the orchestra.

GK: Absolutely!

DM: Along with the studio manager and me there was an announcer with a microphone, announcing before and after. And we were all in dinner jackets, just to play a tape machine!

GK: If this person was making an announcement before and after [Symphony No. 3] “Collages”, wasn't there a mixing desk?

DM: Oh, there is a proper audio mixing desk but they would have got the signal from the microphones hung in the hall. Well, that was OK. There wasn't any breakdown, except... (Have you read **Desmond [Briscoe]**'s book?) [In] any new work the audience is never quite sure when its finished, and this bloke shouted out “rubbish” in the little bit of silence, and [then] of course, everybody cheered and clapped. It's difficult to know whether they were clapping Roberto's work or the bloke who'd shout, “Rubbish!”

[...]

DM: It wasn't very successful from the production point of view. We didn't think it did Roberto any real justice. The loudspeakers were sort of inadequate, [they didn't provide] enough power. When we did it again in **The Beatles'** studio (at the EMI in Abbey Road, to do a studio recording of it)—which was sort of better I suppose—we had become a bit more familiar with it. And then, following that, we did it at the Promenade Concert under **Frederik Prausnitz**, who was obviously more interested in it than **Rudolph Schwarz**. I know **Rudolf Schwarz** is a professional conductor and he conducts what's put before him but he didn't seem to understand that you need, sort of, power from the loudspeakers. When we did the Albert Hall Proms, they had, what could you say, cinema-type PA system around the back of the orchestra. Big horn loudspeakers that really pushed it out (Figure 2).



Figure 2. General rehearsal of the Symphony No. 3 “Collages” at the Royal Albert Hall on 22 August 1967.² Photograph courtesy of Definitive Audio.

GK: Where they the BBC’s?

DM: No, I think they were commercial. But they were much better.

GK: How many loudspeakers were there?

DM: There was almost a continuous row right around. It sounded much better. The loudspeakers were just another load of instruments. The musicians took it very well, they were interested in it and they got to like it. And then (was it the quincentenary of **Christopher Columbus**?) they called me and said, “Look, do you want to play it again?” And I said, “Yes.” That was with **Andrew Davies**. At Maida Vale you have a staircase that goes down from reception to the big Maida Vale studio, and just around the corner is the conductor’s private green-room. I knocked on the door, “Come in!” and said, “Hello maestro,” “Hello Dick,” and I said, “What are we going to do about

² The specially prepared Vitavox loudspeaker assembly stands out at the back of the orchestra.

this thing?”, he said, “I’ve never conducted it before. Rumors are that you know more about it than anybody else.” So I said, “Well, I’ve played it three times, or whatever.”

GK: How many times?

DM: The one with the rehearsal at the BBC and the premiere here [the Royal Festival Hall]. Then there was one at Abbey Road for the HMV disk (was it **Peter Maxwell Davies** on the other side?) Then I did the Albert Hall with [**Frederik**] **Prausnitz**. And then they did it here in Queen Elizabeth Hall—the **Andrew Davies** one. So that was the fourth. I did come back here again, because they were doing it again for something else. I can’t remember who the orchestra was. And I rung up and said, “Could I have a listen?”

GK: You didn’t participate?

DM: No, I didn’t participate. By that time they had transferred the tape onto DVD, which I suppose was better than rewinding, because some of the tapes you had to wind on quick to get to the next *band*³...

GK: How was this the first time. Did you have a single reel with all the cues on it?

DM: Yeah. Reel-to-reel, 10.5 inch, 15 ips.

GK: In Gerhard’s collection you can find both the individual cues on 3.5 inch reels (Figure 3) and the whole tape again spliced together on a single 7.5 inch reel.

³ “*Band*”, the German word for “tape”, was the name that Gerhard gave in the score of Symphony No. 3 “Collages” to each of the tape cues.



Figure 3. Tape inserts ‘Band 5–9’ for the 1961 version of Symphony No. 3 “Collages.”⁴ Collection Roberto Gerhard, Cambridge University Library. Photograph by the author.

DM: He would have kept it on a 7.5 inch reel for space reasons, I should think, but in the Workshop library, there is probably a 10.5 inch metal spool.

GK: When it came to playing it, I imagine that the timings weren’t fixed because the orchestra could play faster or slower.

DM: Exactly.

GK: How did you deal with this in the performance?

DM: Well, if the orchestra got to the end of the cue, then I had to forward through. Because we put blanking splice [silent leader tape], we had to cue up the next one quick. There was usually plenty of time between the cues.

⁴ (Tape Collection Roberto Gerhard, CUL_OR01_Gerhard_030101–04).

GK: So you started the cue, faded in... Is that what we see here on the score (Figure 4)?

DM: Yeah. That's right. "Tape 1", that's me!

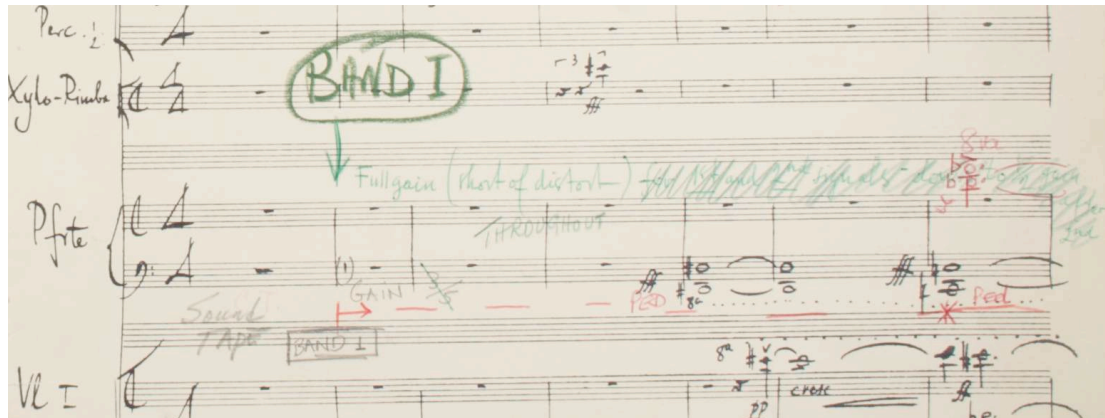


Figure 4. Sound diffusion score of Symphony No. 3 “Collages”, page 1 (detail). Source: Gerhard.10.144, Cambridge University Library.

GK: Is that your writing?

DM: No, no, that's Roberto's. I'm pretty sure ... [he doubts] ... doesn't look like ... well it might be. No, no, I wouldn't have called it “Band 1”, that's the thing. The frightening bit is right at the end, when you've got those, *padaan, padann...* cause they are all separate. Obviously you can't time them, you can't have them prefixed, because, as you say, the orchestra can vary. So that got very, very hectic at the end.

GK: This is a photo of the manuscript held in Cambridge. There are a lot of corrections in the dynamics and cue points of the tape in this copy.

DM: Is this the last—or the only—manuscript of it? Here he has called it sound tape, with a sort of crescendos or whatever...

GK: This is a copy. The original is in the Library of Congress. I was wondering about all these corrections in pencil, a few refer to corrections in the instruments' dynamics but they are mainly about the tape.

DM: He calls it “Full force” there, doesn't he?

GK: He graduates the level of the tape from 1 to 5. Here it says, “Full gain”...

DM: That's right. So that's what the studio manager was doing. I was the start-stop pit-mechanic.

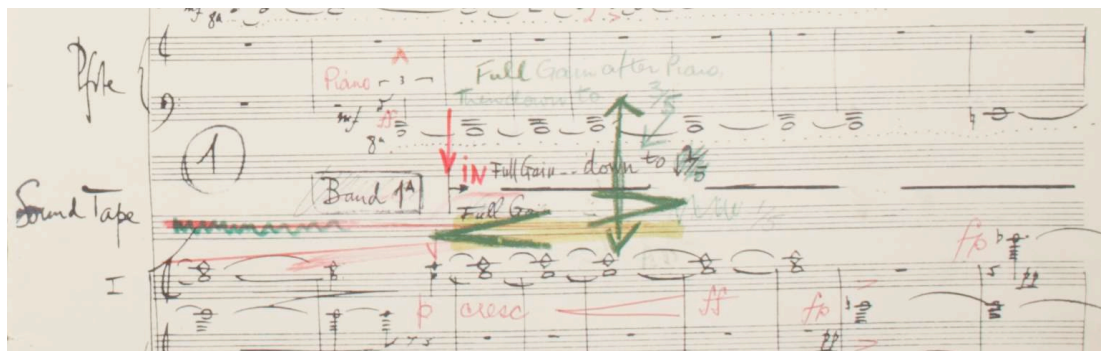


Figure 5. Sound diffusion score of Symphony No. 3 “Collages”, page 3 (detail). Source: Gerhard.10.144, Cambridge University Library.

GK: These annotations seem to have been added during rehearsals. On the next page there are more dynamic markings (Figure 5).

DM: But, you see, what he did at the rehearsal, the notes he made at the rehearsal would have been OK for the first performance. But then, in future ones, where we had different loudspeakers with different dynamics... then he may have to modify it. So it's not likely to be clear what some of these alterations refer to. Have you come across in your research, anything I've written, like a guide to performance? They did ask me to do one once, for the foreword. Did they produce a miniature score, you know, A5 size?

GK: There is a study score from Oxford University Press.⁵

⁵ These are Dick Mills' performance instructions printed at the end of OUP's study score of the symphony: "The importance cannot be over-stressed of using suitable loudspeakers and finding the optimal position of the tape recorder. The loudspeakers should be capable of producing enough power for the size of the concert hall, and should allow a certain volume to be 'in hand' if it is needed to maintain the musical balance between orchestra and tape; another consideration is that of providing enough 'spread' to the sound, and in this respect public address systems are recommended.

The position of the operator/performer has to be one of compromise. It is usual for this to be within the area of the orchestra where he can see, and be seen by the conductor. On the other hand he must also be in a position to hear the balance between his contribution and the rest of the orchestra. A further complication is that to avoid unnecessary lengths of cable being trailed through the orchestra to the

DM: Somebody did ask me and I thought long and hard about it. Particularly if I was presenting this as a concert piece, and I had control over everything, I would certainly have the loudspeakers in the orchestra. And I would certainly have the tape machine player in the orchestra. But then I thought, “No, suppose I had the tape machine out in front of the orchestra. Not like a concert pianist, not quite as good as that, but where I could sit and listen to the mix and do that adjustment according to the score. Or not me, the performer.”

GK: Who was the other performer?

DM: I have no idea.

GK: It wasn't a studio manager of the Radiophonic Workshop?

DM: No, no, no. When we did it at the Elizabeth Hall, the audio engineer there was a chap called **Campbell Hughes**. They did have an injection from the tape up to the desk as well as the acoustic [signal from the microphones], so that he could reinforce it if he needed. But I thought the ideal place really would be almost like a concert pianist, down near the conductor. **Andrew Davies** gave me cues. He looked up, “Are you ready?” You know, “Play!” Because I'm not a musician, I can just about follow the score. Playing it often enough with Roberto you familiarize yourself. What I used to do is when I got to the orchestra rehearsal I noticed where I was sitting in the

loudspeaker and loudspeaker points, he is usually situated to the rear, much nearer to the loudspeaker. This precludes the ideal position immediately in front of the conductor and between him and the orchestra.

Turning to the tape recorder itself, it should have a quick start time, be quiet in operation, and it is advantageous to be able to go to 'Spool' condition without going through the 'Stop' mode. This is clearly valuable as it permits the operator to set to the next band of sound quickly and await the next musical entry point with time to spare.

The levels indicated on the score are relative settings only, inasmuch as the overall loudness should be altered to suit local conditions.

The range of level indicated is from 0 to a maximum of 5.

During rehearsals it may be found that the leader tape between bands is too long, in which case a spool forward may be necessary; it may even be that the tape can be allowed to play on, but it is recommended that a 'Stop' is made wherever possible as this ensures that each 'entry' is made cleanly and in the correct place.”

orchestra and who was next to me, whether it was a percussionist or whatever, and I found his line and followed him.

GK: That was in the Royal Albert Hall, when you were sitting in the orchestra.

DM: Yes, I was right underneath **Sir Henry Wood's** statue (Figure 6). I was wondering if he was going to hit us, you know! Yeah, I put a lot of thought to how I would organize it so that the chap playing the tape, whoever it was, could hear what he was doing, as well as being under control of the conductor.



Figure 6. General rehearsal of the Symphony No. 3 “Collages” at the Royal Albert Hall on 22 August 1967 (detail). Dick Mills and David Cain sitting in front of the playback apparatus under the statue of Sir Henry Wood. Photograph courtesy of Definitive Audio.

GK: So the first time you and the studio manager were together in the flying box. Was he also on stage in the Albert Hall?

DM: I did have a chap from the Workshop with me, **David Caine**, who sat there and turned the pages of the script for me basically.

GK: Of the script?

DM: Of the score, rather. We had a copy.

GK: With your own annotations?

DM: No, with Roberto's.

GK: How about these annotations, these are handwritten additions to the score. He must have given you these as instructions too.

DM: Yes. We had a copy of the score, with Roberto's annotations on it. Whether, these are over one or several performances I am not sure.

GK: What happened with that score?

DM: Well it would have gone back with the rest of the parts to the registry.

GK: To Oxford University Press?

DM: No, the BBC would have copied all the parts out for the orchestra, wouldn't they? I would think so.

GK: And you had a full score.

DM: Yeah.

GK: Would that be at the BBC Written Archives Centre, Caversham?

DM: I should think so.

GK: Did your performance instructions also go to the BBC?

DM: I should think so; we never kept them. The only thing that we keep at the Workshop is a copy of whatever we produce.

GK: The final tape?

DM: Yes. And if we had made everything at the Workshop, we would probably keep much of the components as well. That's another story. Once the workshop got famous, people would ring up thinking we would offer a library service. So we thought, "Should we at some time try to catalogue our works in some sort of subjective fashion, not just as a list of commissions?" For instance, every time we do a commission, we actually categorize what it was made for, what sort of mood it had to give, and what sort of form it was in and things like this. **Brian Hodgson** and **Delia Derbyshire** came up with a very strange cataloguing system involving cards with perforations along the top. For instance, one category would say "Beautiful" another one would say "Horrific", one would say "Jazzy", and one would say "Tranquil". The

theory was you clicked out the categories you didn't want. Someone rang up for a sort of science fiction, beautiful, jazzy, whatever... "Please". You started knitting needles in and lifted them up and out would come all the commissions that had been made to fulfill those parameters.

GK: Did you recycle the materials?

DM: Well yes. We were a BBC service department and we could be asked by anybody—any program department within the BBC—to supply stuff. If somebody rings up and says, "Look, I want a rocket takeoff," there's no point in us taking a half a day or a day making a new one. This was fine, but it didn't work because we realized that you could play the same tape to six different people and it wouldn't have the same effect on them. If you didn't tell them what it was made for and let them make up their own minds, some people would say, "Yeah, that's horrible," and some people would say, "Isn't that nice!" The actual categorizing system just didn't work across the board, so we just had to rely on what it was made for, whom it was made for. Whether it was television, drama, radio, scores, education... and just file it in our library under that thing. So we got thousands of tapes locked away somewhere with all the details of what and when it was made, and who made it.

GK: I thought much of these materials had been lost. I heard **Mark Ayres** worked on the recovery of some of it.

DM: Actually I went out to dinner with him last night. Mark has nothing to do and never had anything to do with the Workshop! He came around to the Workshop as a schoolboy, when he was about thirteen. He loved it, that's what he wanted to do. Then later in life, he was commissioned by the BBC to do incidental music for *Dr. Who*, [through] which he came into contact with me. The BBC used many outside composers for *Dr. Who*, as well as using all of the in-house Radiophonic Workshop to do the music. Three of those guys, Marc, **Dominique Lynn** and a guy called **Keff McCulloch**—who now is in Australia—and I get together once a year for a dinner. And it was last night! We call it the Mozambique Dining Club.

GK: Why?

DM: Well, the first time we had it, we had a thoroughly good meal and a little bit of alcohol, and at the end of it **Keff McCulloch** said, "I've really enjoyed this, I'd go

almost anywhere for a meal like this with you guys... I'd even go to bloody Mozambique." So we said, right, "Mozambique Dining Club it is!"

DM: Mark set himself up really as a curator of the Radiophonic Workshop, and he heard that all our tapes were going to be thrown away, so he got hold of me and he said, "Look, you are the oldest surviving member of the Workshop, and you've probably got the best memory anyway. Will you come into the workshop and we will compress physically all the tapes, and we will get all the paperwork we can with each tape, and we will combine tapes?" You see, we might be asked to do a 10 second jingle, there's no point in keeping 10 seconds of tape on a spool that big, so we consolidated lots and lots of shows on a reel if they go on there. So we compressed the whole library. I don't know if you know Marc has done big database on the Radiophonic Workshop library. I can do you a copy or get him to send you one. I got his phone number somewhere... He set himself up as a curator of everything radiophonic.

GK: Was he involved in that movie about the Radiophonic Workshop?

DM: No. We've had several movies made about the Workshop. [*The*] *Same Trade as Mozart* [BBC2, 03/08/1969] was one of them, then there was another one only known by its project number, "10659" or something like that, that was conducted by one junior member of the Workshop, **John Gills**. He acted as a linkman. It actually showed commissions in progress. **Liz Parker** was doing music for a religious programme; I was doing something for schools' radio. (schools' radio would send out filmstrips, which they would put in their projectors, but their programme would come over the radio, as a schools' broadcast. The visual part of it was supplied in form of a filmstrip); **Peter Howe** was doing a music sequence about World War II; and **Roger Limb** was doing something else. The film kept cutting between various stages of work: the commissioning process, a little bit of us making the sounds or the music, and then the playback process to the customer, who thought it was good or he didn't and then we had to alter it, and then they showed a bit of the final programme as it was used. That was quite an interesting film.

GK: I recently came across one of the internal memos of the BBC by **Geoffrey Bridson** suggesting to make a film of Roberto working on *Lament for the Death of a*

Bullfighter at his studio in 14 Madingley Road for a cultural magazine of the BBC TV.

DM: You see all the time we worked with Roberto we were always working with Roberto's material. He didn't come to the Workshop and say, "Can we make this?" He would bring his material, and he may well say, "Could we filter this a bit or could we put acoustic [reverberation] on it?" and things.

GK: What was the first memory that you have of him?

DM: He was our oldest young composer. He was just young in heart. And when he died I was very upset about it and I wrote to **Poldi [Gerhard]**, and I said, "Poldi, you may not believe this but this is the easiest letter I've had to write. I know exactly what I want to say about Roberto and what he meant to me." It was just a natural thing to say how much we liked him and liked working with him, and there was no sort of, "We are desperately heart-broken," and all that. We were! And she was very good. You know she would come and sit in a rehearsal sometimes. "Hello Poldi!" I think she indulged him a bit, she helped him a lot—of course she did—and encouraged him, but I think behind his back she laughed a bit at it. "These funny sounds, why am I doing this at my age, an elderly lady?" We had lots of lovely laughs together. She was gorgeous. He took it all very seriously, but he had a good sense of humor. And of course being mad about England, you could have a joke with him in your own language. I mean my daughter is married to an American, and he just doesn't get certain bits of humor. We get him on London-rhyming-slang and he hasn't got the hang of that at all. [...]

DM: Let me get back to you how the Workshop started. The BBC didn't have tape machines till relatively late. I think it was about 1947 when they started coming in. When they did come in they were used as master recording machines in remote channels, but there was never a recording machine anywhere near a drama studio physically. It was always down... Anyway, they brought out these Ferrographs, which were about nearly the size of this table, but they were portable if you were strong enough. If you go to the picture of the workshop we saw before (Figure 7)...



Figure 7. Desmond Briscoe manipulating an open-reel tape recorder at the Radiophonic Workshop, May 1958. Copyright: BBC.

DM: Yes, that sort of thing. It might have been a Ferrograph or a Reflectograph. They started using Ferrographs as a rehearsal tool in drama studios. They would record the scenes and then they would get the actors in and said, “Listen to this,” and the actors say, “Yes,” and the producer would say, “I thought I wanted you to do it sort of a different way.” It was so the actors could hear their performance. Drama was a very difficult job to do, particularly because they all came off 78 [rpm] prerecorded disks. Each drama studio would have about eight of those because they only lasted 2,5 minutes, if you were doing a long scene you had to have two disks so that you could go from one to the other.

GK: Like a DJ.

DM: Exactly. Two machines would provide the background, wind or rain or whatever. Then if you wanted a carriage horse and carriage come up, that would be another record. If you wanted something else to happen that would be something else again.

GK: And they “performed” those records live?

DM: Yes, up and down.

GK: Did you mix with turntables yourself?

DM: No, not me. Now, what happened was that after the producer or the director had played the actor a prerecorded scene, that tape machine didn’t need to be used for anything else. So the studio manager that had to play all this records thought, “Where there is a big background needed, I can prerecord all that big background on tape. And then play that into the production instead of playing from disk.” So it became a sort of labor saver. And then they found out that if you mishandle a tape and allow it to feedback into the panel while you are recording it you get this sort of flutter echo or feedback, so they thought we could use that for any dream sequence when the actors talk and we want to put a very strange acoustic on it, we could use the tape machine to do that. Then it went from there to—only if we had another one of this tape machines we could do more stuff... Without being nasty, they made such a nuisance of themselves borrowing these portable tape machines to experiment with and not putting them back afterwards. The BBC said, “Let’s get rid of this idiot, give them a room somewhere where they can get it out of their system.” And that’s how the Radiophonic Workshop was setup! There’s another awful twist. Even back in the 50’s the BBC was very health conscious and they said this is an experimental department, we feel that somebody who is going to be exposed to experimental work and loud noises and peculiar sounds shouldn’t work there more than six months. Well, **Daphne [Oram]**, who was the real brains behind the Radiophonic Workshop, in association with **Desmond [Briscoe]**, she said, “This is my life’s ambition if you say I cannot work here longer than six months after you set this department up for me I’m going to leave.” So they said, “Goodbye Daphne,” so she left. Working with her in the Workshop was a close friend, a lady who was a technical operator who felt because Daphne had resigned, she ought to resign out of support. So that left a vacancy. I would join the BBC as a technical assistant. I was a recording engineer and a little

notice came up, “Anybody would like to help out in Maida Vale at the Radiophonic Workshop?” so I said, “Yes, I’ll have a go.” So I went there in 1958 and I stayed there.

GK: If the Radiophonic Workshop started on the 1st of April 1958.

DM: I joined in November.

GK: Do you remember your first project?

DM: Yes. I think they were doing *Quatermass and the Pit*, because as soon as I got there, the senior engineer, the old boy in the background in the photo [**Dicky Bird**] said, “Do you know how to record acetate disks?” I said, “Yes, I’ve been doing it at the broadcasting house for radio news and everything.” He said, “Good, here is the tape, we want 144 disks.” I said, “Thanks.” Because you see, acetate disks are very soft if they used one for rehearsal, then that wasn’t good enough quality for the final recording. So you had to do everything in duplicate. So I was cutting 144 disks in duplicate. And that is the paradox of the Workshop, it used tape to manipulate sounds, right? Most of the sounds came from pre-recorded disks to start with, we used tape to make them sound different but before they could be used by our customers we had to copy them back to disk again.

GK: That reminds me of the introduction of the *Bullfighter*, it crackles as if it had come off from a disk.

DM: By then our output would have gone onto tape. Did you read the story when **Desmond [Briscoe]** said, “What’s that lovely evocative crackling noise on the recordings?” Roberto said, “That’s the fire in the background.”⁶

GK: Is that referring to the *Bullfighter*? I thought that crackling was really acetate gramophone sound.

DM: I’m not sure.

GK: OK!

DM: You see, Roberto, like everybody, liked a happy accident. Serendipity!

⁶ In Desmond Briscoe’s book the anecdote of the crackling noise would seem to be connected to *Asylum Diary*.

GK: I want to show you some of the pictures of Roberto's studio. Were you ever in Madingley Road? Have you ever seen his studio?

DM: No, I've never seen anything. [I show him Gerhard's pictures working in his studio] Oh dear! Oh crumbs... Gregorio! Ah! What a smashing bloke he was!!



Figure 8. Roberto Gerhard working at his home studio, 14 Madingley Road, Cambridge. Photo: Cambridge University Library.

GK: Look at all those splices! (Figure 8)

DM: I know! He said he got the inspiration for [Symphony No. 3] "Collages" while flying back from the states, in an aircraft, 34.000 feet up. I have this feeling of [?] octaves.

[...]

DM: Is that a loop?

GK: I think it is posed.

DM: Yes, like we were. Oh, that's his studio (Figure 9).

GK: Those are TR 50 and Ferrograph reel-to-reel tape recorders.



Figure 9. Roberto Gerhard at his home studio, 14 Madingley Road, Cambridge. Photo: Cambridge University Library.

DM: Yes, yes! You see the workshop never had more than two tape machines of the same make for years. We only got redundant equipment. We had, have you heard of Reflectographs? They had a variable drive speed on a cone with a piece of string around. It wasn't 3.75, 7.5, 15 ips, it was variable. You never knew quite what speed you were playing so those machines would only be used for playback.

GK: The Radiophonic Workshop got their equipment from other departments. I think they only had £1900 at the beginning.

DM: Yes that's right. There was no money. And all the oscillators and audio generators were only ex-test equipment.

GK: Where would Roberto have got all those tape recorders from in 1958?

DM: I have no idea. I don't think he got a grant from anyone, did he? And he wasn't sponsored by anybody. I mean, **Daphne [Oram]** was sponsored by the Gulbenkian Foundation after she left the BBC, but I don't think Roberto was.

[...]

GK: Roberto always said that he worked with a shoestring piece of equipment, but these are semiprofessional devices, similar to what you had at the Workshop.

DM: Yes they are. But I would think he probably got this fairly new, rather than from a junk-shop.

GK: You don't think he could have got them through the BBC?

DM: I don't think so. You see, the BBC used to have a department called Redundant Equipment. I don't think it was allowed to sell equipment from there to any rival broadcasting company. I think they sold a lot of their tape machines to the Institute for the Blind, which made us laugh, "Yeah right, sell all that to the blind people because they don't know what they buy."

GK: Roberto seemed to be quite proficient technically.

DM: Yes, he was. He came with these tapes, and he understood that we understood what he was about. We didn't have to say, "Sit there and we will show you what we can do." He said, "Can you do this and shall we do that?"

GK: What did he ask for specifically?

DM: I think that, without being disrespectful in any way, our first job was probably to try and get him the best quality we could, because as you say that is semi-professional equipment. Well, that would have been as good as someone outside any broadcasting company could get. Some of it probably would have been recorded at 7.5 ips for economy reasons. So we would have used that as a component, but we would have mastered that onto 15 ips for quality. There was a certain amount of sanitizing.

GK: Did you work with him in *Asylum Diary*?

DM: I may have done. That's something that you should understand about the Workshop: we worked in pairs. There was a technical person and a studio manager, or

somebody from studio management. People from studio management were considered to be the creative side, the technical assistant was there to plug up the circuits or keep the machines in shape and sometimes contribute a little bit of input. It wasn't until fairly late when **Desmond Briscoe** realized that if he split the team up so that everybody worked solo, he could double the workforce, and then of course he would need double the studios. It was a bit of empire building on his part. It meant that the pressure on the person is indefinable. If you are working on a commission you could not be ill, because no one would be working with you to know how far you got, what your thought processes were. So people tended not to get ill until the show was finished, then they would collapse with a cold, headache, a migraine or whatever. It was a big responsibility.

GK: But if Roberto brought his own materials, what was the role of the studio manager?

DM: We were there to do Roberto's bidding—what he wanted us to do with his material. If he had brought components, he would say, "Could we mix these three together?" and we would do it and he would sit back and would become the director. He wouldn't actively do it.

GK: He never actively worked in the Workshop?

DM: No, not in the Workshop. He knew he could trust us, and he knew that we were quick enough to learn how he worked. If he says something like, "I want this a bit bigger," we knew basically how to get what he wants.

GK: Did you actually work on sound materials or was it mostly the final assembly?

DM: Well we would have treated any components separately to get it into the right quality. Or it might even have needed editing, which we would do for him. Roberto would have taken the role of artistic director, rather than at a practical level.

GK: I am going to play you some cues of *Asylum Diary*.

DM: OK. This was 1959, right?

GK: Yes, the beginning of 1959.

DM: I don't know who worked on it. I suppose I must have done, unless there was one of the studio managers... Were there any credits at the end or on the paperwork on it?

[I play a cue from *Asylum Diary*]

DM: That has obviously got some sort of treatment on it. I think that last bit might have been something sped up to make it quicker. And of course you couldn't increase the speed of anything without the pitch going up.

[I play another cue from *Asylum Diary*]

GK: Is that the Wobbulator?

DM: It sounds like it doesn't it? Coming down. You see, I don't think *Asylum Diary* was Roberto's original work. Was it original work, his sounds? Perhaps mixing both?

GK: In a letter to the BBC, Roberto claimed that he worked six weeks night and day on this composition. There was a heated discussion about the royalties.

[A further cue from *Asylum Diary* sounds]

GK: In all likelihood these are sounds that he took from libraries.

DM: Or he may have asked us to get bird songs, mightn't he? From the BBC Library.

[More sounds]

DM: Surface noise there, can you hear it?

GK: In the Gerhard collection you can find some of the ingredients and follow how he combined them.

DM: And of course he wouldn't have had any multi-track machines then.

GK: Would he have two machines playing and one recording?

DM: Yeah, and then start again. Or, I suppose, he could put components onto a separate track of a stereo tape, couldn't he? One component on one half and...

GK: That's interesting.

DM: It's called workarounds, isn't it?

GK: Let me show you something. This is a magnetic viewer; you can actually see what's on the tape.

DM: OK.

GK: Here we see a single track, which is occupying 2/3 of the tape.

DM: You see there is a subtle difference between twin-track and stereo. There is a bigger gap on the replay head. But that looks down the edge doesn't it?

GK: There is an amount of tape.

[...]

DM: I would think that at that time we would be delivering our final contribution on tape.

GK: Would the cues not have been played from disk?

DM: No, because at the time when I joined the BBC... [This is] how I met **Desmond [Briscoe]** for the first time. Do you remember that TR90 on a trolley? There was also another trolley mounted machine called an Ampex, and that was transportable for any drama studio who needed a tape machine [?]. On each shift there was someone who was responsible or proficient of using the transportable tape machine, whenever the drama studio needed it. One day this particular guy was sick, so they asked me to do it and I went up to the studio and there was **Desmond Briscoe** doing a science fiction drama, *Plot on the Moon*⁷, and he had all the radiophonic cues on a big 10 inch spool, which I played in to his direction. So by that time we would have had our output on tape.

GK: These must have played in time with a list of timings.

DM: With a script.

GK: Was there a script for *Lament for the Death of a Bullfighter*?

DM: I'm sure there would have been [**Federico García Lorca**'s words.

GK: What I find astonishing in this piece is the complexity of the assembly.

[I start to play *Lament for the Death of a Bullfighter* from the beginning]

DM: That's it, plucked piano, "At five in the afternoon." Now, this one, that was probably 1959... Did we assemble that at the Workshop? I can't remember.

["At five in the afternoon..."]

DM: That's it, lovely!

⁷ Broadcasted the 27.10.1958 <<http://www.suttonelms.org.uk/monday-play.html>>

GK: The synchronization is quite sophisticated.

DM: I would think they... we would have put that together at the Workshop.

GK: The timing of the accents is very careful.

DM: That would have been assembled at the Workshop.

GK: The internal records of the BBC would suggest that the final assembly was done in one or two days.

DM: Yes. How long was the piece?

GK: About thirteen minutes.

DM: Oh yes, we could have put that together in a day.

GK: I couldn't find in Gerhard's tape collection a recording with the tape part only.

DM: Roberto would probably have taken that back home.

GK: But it's not there, only the components.

DM: In that case what we need... What I'll do Gregorio when we get home, I'll run you a copy of that database. Because on there it usually says how many reels of tape there are left, and what they consist of.

GK: Where are these tapes?

DM: They are probably down at Caversahm. You know, the radiophonic compressed collection [I told you about]. That would be the only other place it could be.

GK: I reassembled the *Lament* without the voice, using the ingredients in Gerhard's Tape Collection. I would like to show you a screenshot of the Pro Tools session. The BBC commissioned this piece from Gerhard on the 21st of September 1959. Gerhard was given the recording of the voice of **Stephen Murray**. Do you remember that recording session?

DM: We wouldn't have done that. It would probably have done that at Broadcasting House, by **Geoffrey Bridson** if he was the director. That would become a component.

GK: Gerhard explains that the correspondence between tape and voice was sometimes calculated and sometimes the result of chance.

DM: Oh yes. And also where the mood took you. He performed.

GK: Do you think Gerhard would have done a lot of writing on paper to prepare for this?

DM: I don't think so. I think he would have made his annotations on the script, but...

GK: Do you think there could be notes of the assembly at the Radiophonic Workshop?

DM: No, not necessarily. We didn't keep a lot of them. We always said that what we did was not meant to be re-performable. The actual reference was always the final recording.

GK: Here you see a detail of my re-assembly of the piece (Figure 10).

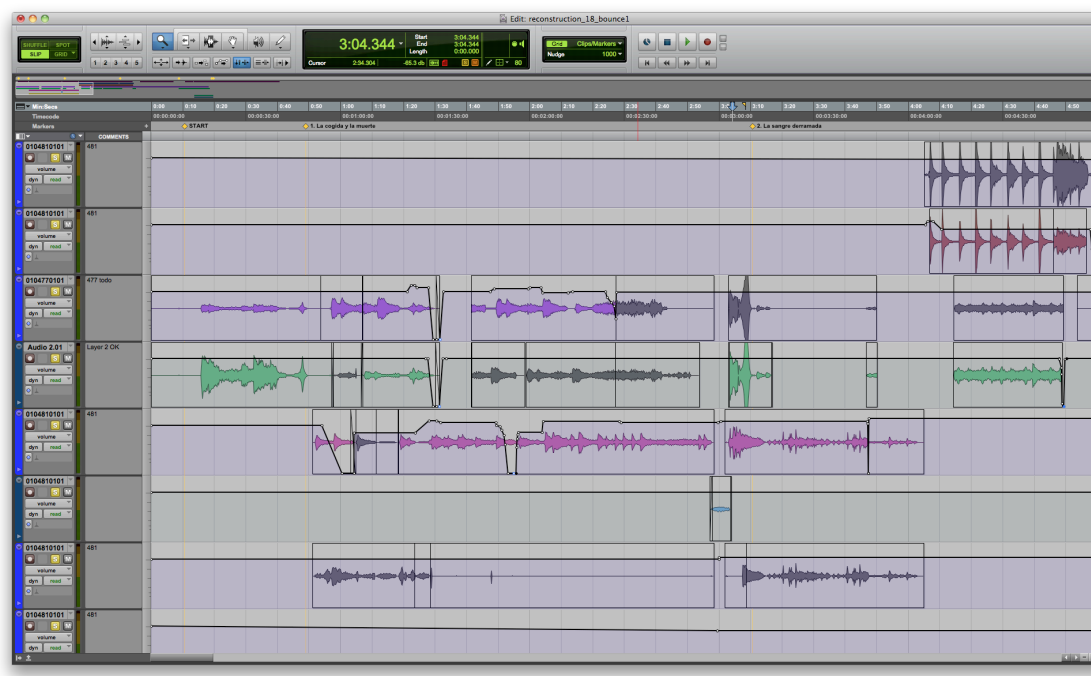


Figure 10. ProTools session of the reconstruction of Gerhard's *Lament for the Death of a Bullfighter* (detail). Illustration by the author.

DM: Oh dear! I wish we could have had that when we were doing it.

GK: For instance here you see two tapes, A and B. The first one (A) starts with the piano sounds and then it has a pause. Then there is a second tape (B), which has the bits that fit in the holes.

DM: We probably would have pre-mixed A and B before we put it together with the words. In the latter stages we would have used a 16-track tape machine, put the words

on in a similar way as if you were doing with the music. You put the percussion on first [track] and that becomes your timeline.

GK: But not then, because there were no multitrack tape recorders available at that time. That must have been an overdubbing process. These put together...

DM: ... first, and then played up against the words. How do you think they did the *Dr. Who* signature tune? No musical instruments at all. Every note was [spliced together]. Three tapes—the bass line, the melody and all the bits on the top—and then put the tapes on three machines and mix down onto one machine.

GK: How would you keep the synchronization of the tapes?

DM: “One, two, three, go!”

GK: To make the assembly you had to measure the splices.

DM: Oh yes. A crochet, a minimum and all that sort of things... Now, when **Delia Derbyshire** and I put it together—because **Ron Grainer** left us one sheet of manuscript paper—he came back and we played it to him. He said, “Did I write that?” We said, “Very nearly.” But when we first put it together there was a wrong note in it. Now, you can’t sit there watching three tape machines full of splices go through and be able to grab the wrong note easily. I said, “Delia, we are not thinking, come with me.” You don’t know the studios at Maida Vale, do you?

GK: No.

DM: It is a very long building. It used to be a roller-skating rink, so its got a very, very long corridor, and this *Dr. Who* theme didn’t last very long. [We took the] three reels of tape, unwind them along the corridor, start at the beginning looking at the splices... Where there was a splice out of sync in the three tracks visually, that was your wrong note.

GK: You didn’t use that as a standard method, did you?

DM: No that was just this wrong note. We picked it up just like that. It was very clever.

GK: This assembly of the *Lament* still puzzles me.

DM: Don’t forget that if you got a voice track you can take notes on a stopwatch. And then that bit there—where the gap is—that would probably be a timed piece of leader,

a piece of tape. He could make all these components up against the time scale of the speech. And then, were there was a gap, he would put a piece of blank leader tape. And then he could play these two tapes together and re-record them, and they would still be relatively right with the speech. He wouldn't just have played that and stopped the tape, and played that and stop the tape.

GK: [Pointing to a muted region in the Pro Tools session] This bit was in the original tape that I found but it is not part of the final piece. Probably in the assembly you decided you didn't want it. You probably cut it out and put a piece of leader.

DM: Yes. There was a lot of pre-fabrication, and then you'd sub-mix without too much overdubbing.

GK: Then you probably would listen to it and discuss how it worked.

DM: And then we would probably go through again and put dynamics in. You would sit there and there would be someone playing the tapes. By the time you get round to putting it together, you probably might have three tapes for practical reasons, or you might be able to get away with it with two. But you'd certainly start the words off and then you'd play the other two tapes in, and one of us, **Desmond [Briscoe]** probably or one of the other studio managers on attachment (cause we had people come from other departments working with us up to six months or a couple of years at a time), they would mix it. And then if we got to a point where it all broke down then we'd go back again and start again, and mix on from there, and then edit back. It was never done as a continuous pass.

GK: The person at the mixing desk must have had the timings when he should fade out or fade in.

DM: Or listen.

GK: Would you say it was improvised?

DM: I think **Desmond [Briscoe]** would say, "It was felt."

GK: Would Roberto do that?

DM: No, he would direct. He would say, "When it gets to there I want it faded steeply." I wouldn't put passed Roberto or any other person from outside that came to work with us would actually conduct it. He may well sit there listening and doing the dynamics as a conductor would to an orchestra. I mean we were... orchestral players!

GK: How many people would have been involved at this point?

DM: Probably three, Roberto, a studio manager and an engineer. A studio manager would be at the panel. The engineer probably would be playing in.

GK: This work was done in a single day.

DM: We might have had a fortnight or so beforehand with Roberto working, he didn't just come up and we do it. He would probably have been at the Workshop a few days beforehand.

GK: I think he was there only three days.

DM: That's remarkable in that case.

GK: Who would have done that?

DM: I think I can find out probably from **Mark [Ayres]**'s database. In 1959 that might be **Norman Bain** who was a drama studio manager, it might have been **Maddalena Fagandini** who was another drama studio manager, but I can find out.

GK: So you think there was a tape without voice in the *Bullfighter*.

DM: I would think so. Whether there is still a copy in the Workshop is dubious. We tended not to keep other peoples' materials.

GK: Were composers allowed to take the tapes with them?

DM: If it was an outside composer, yes. That was their copyright and it was their right to take the components with them. Not the final mix, what was then BBC property, but certainly what he brought he could take back.

GK: What about the intermediate tapes that were produced at the Workshop?

DM: That would have probably been kept first of all in our library. There would be a 15 ips spool, which has got 30 minutes of capacity of tape. The first ten minutes was the final thing, then there would be a big red leader. Whatever was after that would have been what we call "makeup"—the components. Whether that was kept in these sort of collaborative productions or not is dubious. Also when **Marc [Ayres]** and I were compressing the library to store it, you don't need a couple of hours of someone with the head inside the piano plucking the odd strings.

GK: These got disposed.

DM: Yes.⁸

[PAUSE]

GK: How different would have been working with Roberto from a *Dr. Who* production?

DM: I don't think it would be any different. I think he would throw himself into it with madness. I said earlier that we had people working with us from other departments of the BBC, usually studio managers. But we found the people that were the most fun to work with were the people that come in from the music department, serious music department, you know "classic" and that sort of stuff. You get them working on an [Eugène] Ionesco play for instance. Do you know *Rhinoceros*? Everybody gets turned gradually into a rhinoceros. Now, to see somebody who's spent their life with the restrictions of five lines and four spaces, and treble clefs and bass clefs, and bar lines and fixed tempi, to be suddenly given complete artistic freedom... Well, it's a revelation. You can see their mind sort of expanding. And then I asked several questions. I said, "You realize electronic music or sound composition is a free artistic form. How far do you want to take this freedom?" "Oh limitless," they say, "It's wonderful!" I said, "Right, I've got you. Suppose you are a painter, a guy comes up to you and says, 'I want you to paint me a picture,' and you say, 'Yes, what subject?' and he says, 'I don't mind.' 'Do you want it in oils? How big do you want it?' 'I don't care.'" I said, "Now you are stuck, because you don't know where the hell to start." I said, "So you've got to have discipline of some sort along the line somewhere." Fortunately in the Workshop we were always given a subject matter, but within that subject matter we could do whatever we liked. And the customer usually came to us because they didn't know what they wanted. They always used to say, "I know what I want when I hear it." And then they would come back (very much [like] when you go to a tailor for a suite you go back for a fitting, don't you?) and they listened to it and they said, "Yes, that works. Yes, I can understand that. No I don't like that at all. Could you make that a bit longer?"

GK: It was a creative work.

⁸ In a conversation with the author, Mark Ayres contradicted this assertion, claiming that everything had been kept.

DM: Oh yes. And I was a bit naughty sometimes, especially with one guy in the Drama Department. Because he was the director, he felt he had to say something. So what I used to do, I do everything what is said on the script, but I would put in a very unsuitable or poor contribution and I'd say to him, "I'm worried about this, I would value your judgment as a producer." And he'd say, "No, you are right, it's not suitable at all, but thank you for asking my opinion." And he would sit back and take whatever I sold him. But some people came to us with a very firm brief, we did a big piece for Radio 3 called *Rus*, it was the story of Russia, from Viking times up to space. And the guy who wrote it and conceived it **Michael Mason** he was a fanatic. He could imagine soundscapes... If we did a battle we worked with him on lots of historical things. If he did The Battle of Waterloo, he would want the right number of horses galloping along that way, and the cannons fire from there, and he was very precise. But other people came to us sometimes, and said, "I've got this programme, it wants something and I don't know what it is." And because they never come to you until it was right at the end of the production time, they didn't have anywhere to go after they come to us. It was a sellers market.

GK: That's the kind of work that you would do...

DM: ...as a service department. You see, things like the *Asylum Diary* or the *Bullfighter*, they were conceived using us from the start. We would be right there at the beginning, and then it was a joint collaborative thing all along.

GK: What other composers worked like that? **Tristram Cary**?

DM: Yes. **Tristram Cary** did that sort of thing.

GK: How would you compare both?

DM: They were very similar actually.

GK: They both composed incidental music for the BBC, had their own studios?

DM: Yes but also I was thinking in sound terms, output materials. They sounded quite similar. You know, spikey sort of stuff. They could both do lyrical as well. Because by this time we were getting quite famous, we had people come in, we had professor [Vladimir] Ussachevsky pop in, we had **Antal Dorati** pop in, **Matthias Scheiber** came in. Not necessarily to work with us but to appreciate what we were doing. There was a Radio 3 producer, called **Douglas Cleverdon**, he was an icon, he was such a

gentleman as well. He said to me, “I’m sorry, I’ve got somebody coming to see me at lunchtime, will that be all right?” I said, “Of course it will.” “Would it be all right if he has lunch with us in the canteen?” I said, “Yes.” So we were sitting in the canteen, and this little guy with a cape comes in. “Excuse me,” he says. Douglas grabs this bloke and he says, “Dick do you know John?” And he was **John Barbirolli**.⁹ They were just ordinary people. I like it when you respect each other’s position. There is a guy on the pictures blowing something —**Malcolm Clarke** — he was a bit insecure. We made a practice, that whenever we did something, wherever possible we would go to the drama studio, for instance, to direct the use of what we’ve made, because we would probably be more familiar with the whole thing than the guy who was doing the final mix. He felt he couldn’t do that unless he was paid more than the guy doing the mix. I said, “The bloke who is doing the mixing is in charge for that studio for that day’s work, you are just a component.” He didn’t say he was a star, but he said, “No if I’ve got to direct somebody I feel I ought to be paid more than the person I’m directing.”

GK: How was, for example, **Donald McWhinnie**?

DM: Oh terrific, there’s a picture of him on there. He was fine. We had a lot of those, authors like **Gilles Cooper**¹⁰ who were very inventive. There was another play we did centered around the Titanic. The theory was that the Titanic did not hit an iceberg, the iceberg had an engine in it and was driven at it. Once we got a reputation for being able to create non-normal atmospheres or treat speech differently, all these inventive writers started writing more and more peculiar drama. *Under the Loofah Tree*¹¹ is a daydream about a chap while he is having a bath. He said “I’m going to end it all,” and he tries to drown himself in the bath, and he said, “all my life flashed before me.” And we went back into sequence when he was at school, when he was going up with girls, and it all ended up, *bang, bang, bang*, on the bathroom door, and his wife says, “What are you doing in there?” And he says, “Just washing.” We could create another sort of universe if you like, because radio has got the best scenery in the world

⁹ Sir John Barbirolli (1899-1970), famous English conductor and cellist.

¹⁰ Giles Stannus Cooper (1918 - 1966), Anglo-Irish playwright and prolific radio dramatist that wrote over 60 scripts for BBC radio and TV.

¹¹ 1958 drama based on a hero that was terrified of the world outside the four walls of his bath, written by Giles Cooper.

because you provide it yourself, you don't have to look at like you are on a television. It was great getting in with these inventive people. We had a guy come down, **Bob Cobbing**, he did a thing called the alphabeta [sic] poetry¹². He would start off with the letter "A", it was either words beginning with "A" or... when he got to the "M" he decided he would do old Scottish names, McDonald, McPherson. So he had a great big list of all these Scottish names, and it was a stroke of genius, he wanted to back that with an appropriate sound, so he decided to go into the studio and hum. But he hummed the letter "MMMMM..." in different pitches, and he turned himself into a set of different bagpipe drones, which sounded Scottish anyway. There was this wonderful made up bagpipe sound over which he did all the Scottish names. And then there was another mad man, **Bryan Gysin**, he would get a piece of paper with words on, get a pair of scissors, cut it up into vertical strips and then interchange them and then read straight across. And that needed sounds to go behind as well; permuted poems that was. We did everything.

GK: I read an interview where you said that every member of the Workshop had a different sensibility and delivered something different, and that you specialized in sounds and waffly noises. Is that why you got well along with Roberto?

DM: Yes. I was what they call a sound designer, not a tunesmith. I was taught the piano when I was young. No, I went to piano lessons. It was funny, I could play all the right notes in the right order but [my teacher] never seemed to concentrate on the right time, and I never knew what the tune sounded like. It was weird. And she didn't believe in putting me in for exams. At the end of the lesson she said, "If you've got a piece of music you would like to play, bring it." I used to take music along, I got through it and I thought, "This doesn't sound like it should!" But she didn't seem to coach me to play it right.

GK: Do you regard your work at the Workshop as being a musical activity?

DM: Yes, I'm doing sound composition instead of music composition. Oh yes! The fact that I can follow a score helps, and I can appreciate light and shade and different colors... But seriously if you came along to the Workshop with a commission,

¹² *ABC of Sound*, and experiment in concrete poetry made at the Workshop. Other well known authors working in this field at the Workshop were Ernst Jandl, Brion Gysin, Bermange, Greenham... (Briscoe 1983, 114-126)

whatever it was, you could bring a play along or a poem or whatever, you could sit all of us down—six of us—and say, “I want you to do some work for this.” You would end up with six different offerings all of which would work according to the composer that made it. Each one would think what they did was suitable. They would probably be right, everybody would approach the commission from their own particular standpoint. A chap might want to turn it into a musical, **Paddy Kingsland**, **Malcolm Clarke** would probably turn it into a hairy sort of drama, I’d probably want to set it in spice or do it with comedy routine. Everybody would give you what they thought was required. But if the producer came along with definite views, “I see this as a drama or a music thing”, then you would be channeled to the right composer. It’s horses for courses.

GK: And you were channeled to work with Roberto for Symphony No. 3 “Collages”.

DM: Yes!

GK: You worked with him in the composition of the tape and in the performances.

DM: Yes.

GK: What did he bring with him?

DM: He would have brought all the components, wouldn’t he? Plus his ideas and score, and then we would sit down and work through it to produce a master tape, and insert tape. We turned ourselves into a solo instrument that happened to be a tape recording. You can’t describe it. It’s very difficult. I mean it’s an act of faith on Roberto’s part that we could do it.

GK: He must have had it in his head.

DM: Yes. He said, “I can’t play the tape, my fingers wouldn’t work quick enough for a start.” He said, “You’ve lived it with me.”

GK: How long did you work in the preparations of [Symphony No. 3] “Collages”?

DM: I wouldn’t have thought that it would have been a couple of weeks at the most.

GK: So he was at Maida Vale a couple of weeks working on the tape.

DM: Yes, I don’t know if he went home, or whether he stayed up in a hotel or with friends. That’s the sort of timescale. For instance, getting back to *Dr. Who*, in the old days we would work from a script and do sounds and send them away to Television

Center to be used. In the last few years we would go to the Television Center and see edited video of the half hour episode, we would make notes of what was happening on the screen and what the guy wanted us to do and then we would go up to Maida Vale and do it.

GK: What happened with those notes?

DM: Just on bits of paper.

GK: Were they kept? Wasn't there something like a folder for a project?

DM: No, the tape is its only witness. Then we would have ten days to do that. From seeing the video to going back to the Television Center to the dubbing session to put it together. And then I would go to that for the simple reason the sound supervisor would have recorded the studio action for *Dr. Who*, and then he wouldn't see that episode edited until we go to the final dubbing session. Now its no good in giving him a tape with all the sound cues if he didn't know where they were to be used. Me making the sounds and using that videotape as a guide to construct them and to play them and using a sequencer. The time code from the video actually ran the memory on the sequencer. So whatever I put on tape it was automatically locked at picture. So I would go to the Television Center with a master tape and say, "How do you want to do this? Shall I give the tape to your studio operator to play, in which case it is likely to take him three times to get it right or shall I play the tape because I know where they fit, and we'll be in the bar half an hour later." So I always played my own material when I went to the dubbing session.

GK: Where was the dubbing session done?

DM: In the TV Centre.

GK: Also the radio dubbings?

DM: No they were done in Broadcasting House.

GK: So if you had produced the ingredients you would go to the Broadcasting House.

DM: Yes, I would certainly supervise them.

GK: So, for instance, the final tape of the *Bullfighter* may have been put together with the voice in the Broadcasting House.

DM: Yes, that would be in the library, if they've kept it. The awful thing was that in the early days of television, [in the] final dubbing session they played the edited video tape from downstairs. The video came up to the dubbing suite, where you played tapes in, and if you got it wrong you had to go back and start at the beginning again. You actually did it live, which is very frightening.

GK: These are all cues for *Asylum Diary* (Figure 11).

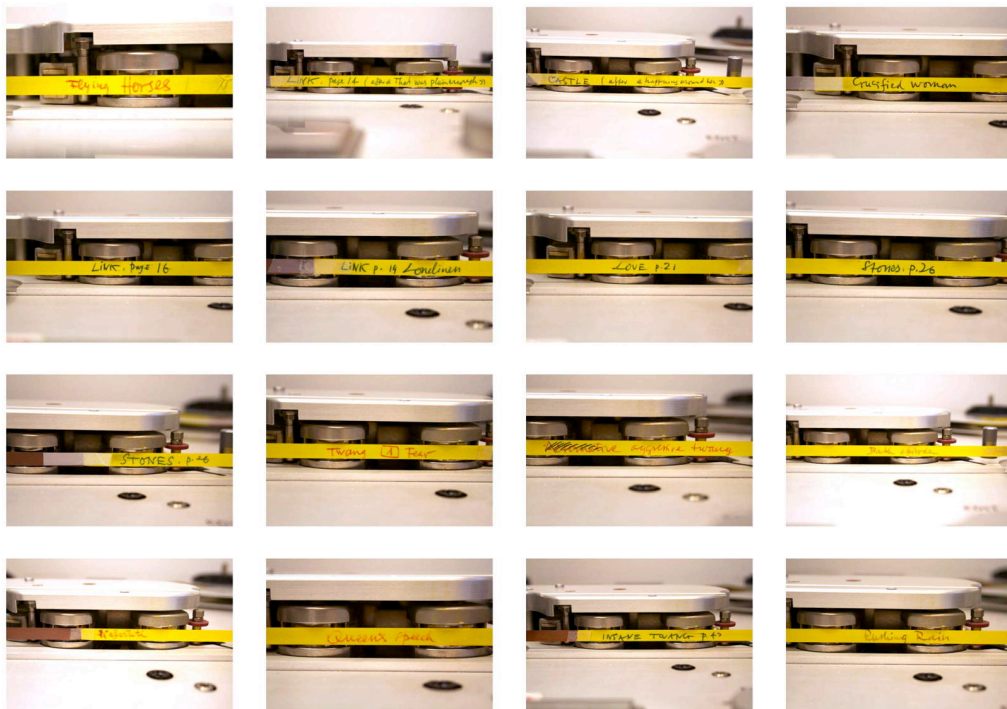


Figure 11. Roberto Gerhard's annotations on leader tape corresponding to different cues for *Asylum Diary* (1959). Illustration by the author.

DM: I don't remember much about *Asylum Diary*.

GK: Here we can read, "Flying horses" and the page number of the script written on the leader.

DM: Yes that is Roberto's writing. Good old BASF tape if I look at it.

GK: "Crucified woman, aggressive twang, Nefertiti, bath episode, queen's speech, insane twang..." Where did he get those names?

DM: Well you had to think of something. [...] You probably might have seen the long editing block at the Oramics exhibition (Figure 12). I made that. It didn't work. I wanted to do a long splice over about 18 inches to get a nice crossfade between sounds. It wouldn't work purely because the angle was so shallow that the razor blade just folded the tape underneath rather than cut it.



Figure 12. Editing block made by Dick Mills used at the Radiophonic Workshop. Source: “Oramics to Electronica” exhibition, Science Museum, London, 29.07.2011–31.12.2014. Photograph by the author.

GK: Did you do things like cutting out bits from the edge of the tape for controlling the dynamics?

DM: No. What we did... I was at a convention somewhere, where they had a French chap, what was his name? Was it not **Jacques Perrier** [sic]¹³? He was an old French guy who worked a lot with tape loops... This guy was sitting in the restaurant and he was holding up this loop of tape talking to the guy opposite. And I went over and he said, “I bet you don’t know what this is,” and I said, “How much do you want to bet?”

¹³ Pierre Schaeffer?

So he said, “Why?” So I introduced myself, he said, “Uh ok.” I said, “Why did you go to such lengths to put loads of little blank pieces of leader in?” (Because he put leader in in a feedback loop of tape, so that when he re-recorded on it he got an interrupted sound.) I said, “You didn’t need to put leaders in, you get methylated spirit you turn the tape over and you wipe the oxide off the tape.” “Now,” he tells me, “Why didn’t I think of that!” I said, “Just one of these things you try.”

GK: Did you do things like that?

DM: Yes but it was only a gimmick, it was only to see if we could do it.

GK: All those tricks will probably get forgotten.

DM: You know a Moebius strip? If you get a loop of tape and turn it over like that, if you do that with a recorded sound, the next time it comes round it plays through the thickness [of the tape] and it takes the top frequencies off. We tried that.

GK: Would it be a kind of delay that every time goes darker?

DM: Every time it got round it would go darker and then brighter. Just for fun! What was the other thing? A guy made a vibrato machine. He got a biscuit tin filled with sand to make it very heavy, on top of that he had a gramophone motor with a playback head on an arm. As the tape went passed it went like that... Did you ever come across a machine called a Tempo-phone?

GK: No.

DM: It was built as an attachment for the trolley TR90.

GK: Who built that?

DM: That was the trade name, Tempo-phone. It was commercial. What it did was allow you to alter the speed of a recording, playing the machine faster, without changing the pitch. Or you could change the pitch without altering the time length.

GK: I think **Pierre Schaeffer** had one of those.

DM: Probably. What it was was a rotating playback head, which had four playback heads on it. [...] We had a request from television opera program. They had these singers: four stars. One star—how can we put this delicately—was singing off key all the time. Which was handy. We put her onto the Tempo-phone, so we managed to

shift the pitch up and put her back. That was quite fun. This system was only good for the instant you set it up. [...]

GK: Before things like this arrived the possibilities were actually quite limited with the tape. You could play it faster, slower...

DM: ...backwards. There's another thing: echo. Suppose you wanted an alien speaking, so that words came out of a cloud. What you do, is to record what you want him to say, you turn that tape over, play it back and put reverberation on it and re-record it, then you take that recording and turn it over and play it and the reverberation starts after which comes the words.

GK: That's a good trick.

DM: As a musician you are familiar with a round or a canon—repeating things. OK [...]

DM: We were allowed to have a bit of fun with our own devices if we wanted to. Any experimentation we did usually took place within somebody else's program, but we could play a bit about. And we used to bring the odd vinyl of our collective silliness's. I did a sort of spacey background thing, and I got about two minutes in and I thought, "I don't know what I'm going to do for the next half," so I just turned it round the other way. You know ABBA.

GK: Who organized the time-schedule? Was it **Desmond [Briscoe]** who said, "We do this now"?

DM: He was in charge of the office; he was head of department. A commission would come in and he would look at it and think, "Who is best to do this?" There's no good in giving people something they couldn't cope with. So he would say, "I'll put you in touch with a composer," and he would do it.

GK: So he would set the teams up.

DM: Yes. Or in the latter days, when we were working on our own, he'd say, "Dick, I've got this bloke who wants to do a science fiction thing, are you OK to do it?"

GK: When did you start working on your own?

DM: It depends how long **William Hartnell** was *Dr. Who*, ‘cause I worked with **Bryan** [?] on the first episode or two of *Dr. Who* in 1963, so that must have started 1964-65.

GK: Do you remember a production called *The Anger of Achilles*?

DM: Now, that wasn’t **John Theocharis**. He did something called *Ag*, for Agamemnon, he nearly won the Prix d’ Italia.

GK: *The Anger of Achilles* won the Prix d’ Italia. It was Roberto’s music; he worked with **Delia** [Derbyshire].

DM: All right! [surprised] OK, yes.

GK: It was 1963. Would he have worked alone with **Delia** [Derbyshire]?

DM: Probably not. **Delia** [Derbyshire] was a lovely [?] but she got more satisfaction out of planning than actually doing. She got very excited about the logistics of doing it, but as the production went on and she was creating, her enthusiasm started [fading away], and it usually ended up with either me or another technical assistant, **John Harrison**, being drafted into getting this show finished.

GK: In my opinion the most creative works in the field of manipulated tape that Roberto did in collaboration with the Workshop, are *Asylum Diary*, *Bullfighter* and *Symphony No. 3 “Collages”*. But then, *The Anger of Achilles*, which won the Prix Italia, just has a few innocent sound effects.

DM: I would think it was **Delia** [Derbyshire] alone in that case, without much help from anybody else. We may have been drafted into finishing it off.

GK: It has a lot of instrumental cues, but there’s not a lot of sound design, just some background effects. It’s nothing like the *Bullfighter*.

DM: It’s got a lot of passion, hasn’t it? That was... 1959? I remember doing that... My father retired and he said I want to take the family away for a holiday. He said, “I think we’d go to Mallorca.” I said, “Why?” I said, “We’ve got kids five six and seven-ish, a beach is a beach, it doesn’t have to be abroad.” “No, I want to take you abroad.” Well, something must have happened to me during the *Bullfighter*, helping or being around. I said to him being around in Palma, “Come on, it’s a Sunday, should we go to the bullfight?” I was up to here with the *Bullfighter*, the whole thing, I was in there, I knew the guys with the lances — the *picadors* — I knew the reason

for that, I knew the *banderillas*, I was really living it. I don't find any problem with bullfighting at all; I think it is a magnificent spectacle.

GK: How did Roberto feel about the bullfight?

DM: I don't know I never really asked him. I think he liked it but probably felt he shouldn't because he wanted to be very English.

GK: Do you think that he rejected his Spanish origin?

DM: No. I don't think he did, not deep down. He couldn't lose his accent by that time. "You are nearly English Roberto," but I don't think you would find an Englishman as passionate as him. His passionate side was his Spanish roots, and then he came to England and felt passionately about England, but I don't think they were both the same. He was such a joyful bloke, I don't mean he was happy and laughing all the time, he was just lovely. Oh dear! I don't know what I would have done if it would have been my grandfather. It would have been wonderful. And **Poldi** [**Gerhard**] was lovely, she really was!

GK: Did you meet her during the rehearsals?

DM: She came from time to time.

GK: Was she always with him?

DM: No, not always.

GK: At the Radiophonic Workshop?

DM: No, no. She certainly came to the rehearsals at the Festival Hall, and things like that. She may have come to London with him, because I know he brought her to the Workshop once or twice. You know, everybody made a fuss of her.

GK: Why?

DM: She was lovely. Mom and Grandma'... she was always very, very pleased to see people. And thought probably, "Roberto was a bit of a..." well you know, "I indulge his funny way. God knows what he does down his shed, but it's all right."

GK: There are quite a few tapes where they are "in the shed" together...

DM: Oh yes, she was his recording engineer.

GK: She also played the accordion reasonably well.

DM: Oh, did she?

GK: Much incidental music has accordion in it. They improvised together also. You can hear them scratching pans in the kitchen...

DM: At three o'clock in the morning! I have a sixth sense of humor sometimes. You could start off with *Bullfighter* "At five in the afternoon" [deep voice] and then you could go "ding-bong-bing-bong" and **Poldi [Gerhard]** saying, "At three 'o'clock in the bloody morning!" Hahaha. Oh dear.

GK: I wonder the effect that the *Bullfighter* had on a listener in the late 50s. It is very "Shakespearean".

DM: And it's some poor devil's destiny isn't it? At five in the afternoon he is going to walk out there with his suit of lights on not actually knowing if he is going to come back on one piece.

[Dick Mills goes on telling about his vacation in Mallorca and his hobby of fish keeping]

GK: What is the connection between fish and sound?

DM: I always say that I keep fish because it is the quietest of hobbies. It's a complete difference to my day job.

GK: I think that **Poldi [Gerhard]** mentions on one occasion that Roberto got a recording of fish from an Australian friend, and that he used in a composition. I always thought it was a joke because fish don't make that much noise.

DM: Oh, they do! In the war, in the Caribbean, the American Navy got very worried because they were picking things on their sonar, which they thought it was attaching submarines, or turbines and it was a certain reef fish, which actually fibrillates his fins against his body and it produces a mating sound. Then we went through a phase where people were recording whale noises. Now, technically they are not fish, they are mammals. There were the songs of the whales. There was the old joke about that you can't record whales, their songs are too subsonic for us to hear and some idiot said "Don't worry we'll speed it up so we can hear it," which defeats the whole problem because the reason the whales are so subsonic is because the sound travels further. Somebody wanted to make a CD of whale song, but they were going to speed it up so that people could hear it.

GK: There's a whole field of bioacoustics that is still flourishing.

DM: We were doing something, and somebody came in and said, look I'm from some department of research and I want you to help me produce a tape for scientific research. I've worked out there's a certain frequency that the human body reacts to in a certain way. It's 8 Hz. So we said, "Great, what do you aim to do with this?" He said, "We're going to broadcast it and we want listeners to write in and tell us how it affected them." So I said, "OK, you are not going to get many answers, are you?" He said, "Why?" "Well," I said, "the average radio loudspeaker would be incapable of reproducing it." He hadn't thought about that one. They pick an idea and run with it, don't they?

[...]

GK: You really lived those pieces.

DM: Yes, yes. Roberto sat in the front row with his score, and you know, we caught up together afterwards and he said, "You didn't miss a beat," and I said, "Thank you."

GK: Roberto must have relied on your own creativity. You could probably change the dynamics of the tape during the performance.

DM: Yes, but having said that, the fact that we were sitting back in that flying box, meant we could adjust it so at least it came out of the loudspeakers.

GK: Why four? Was it the same signal on all four loudspeakers?

DM: Oh yes, it was just to disperse the sound across the orchestra, that's why the cinema Tannoy-type speakers at the Albert Hall worked much better. They hadn't understood, they just said, "Oh put some big loudspeakers in and turn them up." It was OK at EMI, because that wasn't particularly a huge auditorium.

GK: Do you remember how they recorded it?

DM: We never got to look behind the scenes. I would think they must have been recording multi-track. I must try to get a copy of that disk.

GK: I'll send you a copy.

DM: I'm sure I can cope with that. That would be very kind.

GK: I'd agree with you that the best recording is [Frederik] Prausnitz's.

DM: We felt that he was very much more interested in it as a piece than **Rudolph Schwarz** was.

GK: Have you heard other versions?

DM: I wasn't really impressed with the one I saw at the Royal Festival Hall, where they played it off a CD. I sat there and listened to it and there was no dynamics at all, but of course I don't know what they might have been doing back in the audio box.

GK: I would be very interested to bring that piece on the stage again.

DM: I think it should be performed using the loudspeakers as an instrument. I know they do multi-microphones balance, which I mean...

GK: Was the orchestra amplified?

DM: No, I wouldn't have thought so.

GK: Sorry, I thought you meant to say that there were microphones in the orchestra in the Albert Hall.

DM: Usually they just suspended a stereo pair for the whole thing.

GK: Just for the recording.

DM: Yes. You see these days there was always a big argument about the merits or not of multi-microphones. And I said, "What are you actually going to do if somebody writes a concerto for triangle?"

GK: It will come through all microphones.

DM: I said, "How are you going to do it? Are you going to have him behind a screen so that you only get him and then can you amplify and put dynamics on that?" I said, "Come on there's instruments which can't be regarded as a solo instrument. Lets face it, not really."

GK: Listening to some of the modern recordings of Symphony No. 3 "Collages" I realize that they are not aware of how seriously and engaged Gerhard took his work with the tape. They don't realize the tape was a solo part.

DM: Oh yes it was!

GK: The electronics in the live recording of the Albert Hall with **[Frederik] Prausnitz** is amazing.

DM: Oh yeah, go for it! The ending gets me every time, because Roberto wanted it wound up at the end. It is such a sort of crescendo and sustained thing, it leaves you exhausted at the end. It really does, “*ding-shuum-ding-shuummm!*”

GK: Do you remember that version that was played in the Albert Hall? Were you involved in producing the stereo version of the tape part for that concert?

DM: I expect **David Caine** and I would have done that. But that probably wasn't necessarily under Roberto's personal direction.

GK: There's some correspondence with [**Desmond**] **Briscoe** regarding that. Roberto apologizes for sending the tape to the Workshop so late, “I hope Dick can still fix in time.”

DM: That was one of the best things about **Desmond [Briscoe]**: he was a benign dictator. He didn't really care what hours you kept at the studio. If the work had to be finished it had to be finished. Similarly, you cannot as a composer guarantee to be creative between 9 and 5. For two reasons: you might not have an idea in your head, or you might have a head full of ideas but you come in and the equipment lets you down. So you've got to play it by ear. I always compare composing with surfing: all the time the wave is underneath you and it's going right, keep going until the wave runs out naturally.

GK: So there was no fixed schedule.

DM: No. You see, where I used to live, West London, I didn't see any point in joining the rush hour every morning and every evening. So in the end I would turn up at the Workshop about 10:30 in time for coffee. On the other hand I'd ring home and my wife would say, “How is it going?” “I think I'm on to a winner, everything is going fine, do you mind if I work into the evening?” And of course when I worked in the television center for dubbing sessions their day was from 10:30 in the morning till 10:30 in the evening so I couldn't go home earlier anyway. But I never took work home with me. If I wanted to hear something, why not stay at work and listen on the best equipment? Why replicate a Workshop at home? It's unfair with the rest of the household—“be quiet, daddy is listening.”

GK: Did you retire when the Workshop was closed?

DM: No. I retired in 1993, and it staggered on for about another three or four years. They gradually cut back. In the end they didn't know how to employ me, after *Dr. Who* finished. And they rebuilt my studio and turned it into an archiving type of studio where I was given old recordings from the BBC archives, putting them through a computer program (Sonic Solutions) to de-noise them, and re-record them back onto DVDs for the library. I don't mean our tapes, I mean the BBC disks. Archive disks of queen Victoria doing something, and all that. And then of course it occurred to the BBC that whilst I was a senior personnel on a very good salary, a young somebody just coming into the BBC with a much lower salary could do my job. Cause there was no creativity involved, you just put it on twiddle it until it sounded clean and then re-record it so they said to me, "Would you like to retire early?" I left the BBC when I was 57.



Figure 13. Dick Mills during the interview with the author at the Royal Festival Hall, London, 16 May 2012. Illustration by the author.

GK: How old were you when you started at the Radiophonic Workshop?

DM: 22.

GK: Amazing!

DM: That's the other thing. Because **Daphne [Oram]** was left out or left with the studio managers they thought they were very sensitive to noise, stress and all that. It all didn't apply to the engineers.

GK: Was that an excuse?

DM: They seemed to stick to it; they were fairly serious about it. But then **Desmond [Briscoe]** said, "This is absolute nonsense, for continuity of the department you can't swap everybody every six months." They may have got rid of her for other reasons, we don't know. It just seemed so awful that she should build her whole life towards this department and then be told she can't work there. But as I say, they didn't think that engineers were so sensitive as studio managers, so there was never any rapid turnover of engineers.

GK: They have a different brain structure.

DM: That's right. You know, delicate studio managers, they could remember to whistle a tune, but they mustn't use anything sharp like a razorblade.

GK: Did you get to work with **Daphne [Oram]**? Because you mentioned in another interview she was your radiophonic mother.

DM: No, because her leaving was the reason for me joining. We went down to her studio in Ken. Are you familiar with how beer is made?

GK: I live in Germany...

DM: Don't get me on that one. They pick the hops and they roast them and they dry them in what they call roast houses, which are big circular buildings with a conical roof. She bought one of those down in Kent and turned it into a studio. So we have a radiophonic coach trip one day to go and visit her. We said, "This is a funny room," she said "It's a brilliant room, a circular room, and because it used to hold the hops, the floor is bent over the weight of the hops over the years." She said, "This is a brilliant thing. If I drop anything on the floor I know immediately where it is, I go to the middle and pick it up." You've seen her photograph, she was very sort of, I won't say prim and proper but she had a bit of squeaky voice and very [?]. She didn't fit the picture of a composer really, but she certainly worked hard on that machine.

GK: It wasn't ready until after the Workshop...

DM. Oh, no.

GK: I was wondering that some sounds from the Oramics Machine sound like the ones that Roberto Gerhard used in the *Bullfighter*: low drone oscillator sounds...

DM: You see, one of our oscillators was the Murehead. They called it a decade oscillator because it only went in units of 10s, 100s, 1000s. Which made a very funny scale. The Wobulator was a continuous sweep oscillator but you could switch on the modulator, which made it go like a police siren. They used it when they were building studios to [measure] the acoustics. So all our stuff was test equipment. I can't think of the first sound source we had before the VCS3 came along. There was no commercially produced instrument. It was always what we could record over microphone by blowing it, twanging it or abusing our bodies. There was a melodica that had a keyboard on it and you just blew through.

GK: In his book about the Workshop **Louis Niebur** mentions a kind of organ that could make noises.

DM: Oh, the Muticolour Tone Organ. That was in Studio 3. And it had one of these sliders, like the touchpad on your computer, where you could do continuous chromatic slides on. It had a built-in single-string reverb unit.

GK: Did you use it at the Workshop?

DM: Yes, but only as a sound source not as a musical instrument.

GK: What kind of sounds did it make?

DM: [?] We went down there one day and it had a roll top lid and [?] we could do is to get your elbow underneath and go like that. So you could span several notes at once and it had this big resonance box. What you usually did was you banged around on the keys and then went away from it and recorded the resonance from the speakers. It was like a Leslie organ with tone wheels, with different stops. It was like a big commercial [instrument] one of those for light music orchestras.

GK: I thought they had built it on purpose. The music department built it because they were afraid of the Radiophonic Workshop, [**Louis**] **Niebur** writes.

DM: Electronic sounds, unless you do something with them, [...] they're sterile. We had a guy called **John Baker** who was on the staff. He did everything cutting up tapes. He would [record some sound] with a bottle put it on a loop and make different notes. Then he'd cut them all together. He was a jazz guy. He could play jazz like

nobody in business. He could edit with a jazz feel. If you give somebody a score, and you say, make this from these pieces of tape, they would go along and it would sound robotic. **John [Baker]** would come along and edit and there would be a bit of a swing to it. He could give it a bit of laxity.

GK: Purposely not being precise?

DM: Yes, he could build that in. The tragedy was he couldn't cope with any change. And he just couldn't take it with a synthesizer or a keyboard. He had to do it the old way. His ambition was to own a wool shop, but it had to be next-door to a pub. And he was very up tight, very buttoned up. We think he might have been gay. [...] He was a serious alcoholic in the end, so they sacked him. [...] Which was a pity because he could turn out music like nobody's business.

[The memory of the flash recorder is full and the recording stops unexpectedly. The conversation went on to talk about the "magic box" used to *stereoize* the tape for Symphony No. 3 "Collages", etc.]

(16062 words)

GGK