

## Curatorial > PROBES

In this section, RWM continues its line of programmes devoted to exploring the complex map of sound art from different points of view, organised into curatorial series.

Curated by Chris Cutler, **PROBES** takes Marshall McLuhan's conceptual contrapositions as a starting point to analyse and expose the search for a new sonic language made urgent after the collapse of tonality in the twentieth century. The series looks at the many probes and experiments that were launched in the last century in search of new musical resources, and a new aesthetic; for ways to make music adequate to a world transformed by disorientating technologies.

Curated by Chris Cutler

- PDF Contents:
- 01. Transcript
  - 02. Notes
  - 03. Links
  - 04. Acknowledgments
  - 05. Copyright note

At the start of the seventies, Chris Cutler co-founded **The Ottawa Music Company** – a 22-piece Rock composer's orchestra – before joining British experimental group **Henry Cow**, with whom he toured, recorded and worked in dance and theatre projects for the next eight years. Subsequently he co-founded a series of mixed national groups: **Art Bears**, **News from Babel**, **Cassiber**, **The (ec) Nudes**, **p53** and **The Science Group**, and was a permanent member of American bands **Pere Ubu**, **Hail** and **The Wooden Birds**. Outside a succession of special projects for stage, theatre, film and radio he still works consistently in successive projects with **Fred Frith**, **Zeena Parkins**, **Jon Rose**, **Tim Hodgkinson**, **David Thomas**, **Peter Blegvad**, **Daan Vandewalle**, **Ikue Mori**, **Lotte Anker**, **Stevan Tickmayer**, **Annie Gosfield** and spectralists **Iancu Dumitrescu** and **Ana Maria Avram**. He is a permanent member of **The Bad Boys** (Cage, Stockhausen, Fluxus &c.) **The Artaud Beats** and **The Artbears Songbook**, and turns up with the usual suspects in all the usual improvising contexts. As a soloist he has toured the world with his extended, electrified, kit.

Adjacent projects include commissioned works for radio, various live movie soundtracks, *Signe de Trois* for surround-sound projection, the daily year-long soundscape series *Out of the Blue Radio* for Resonance FM, and **p53** for Orchestra and Soloists.

He also founded and runs the independent label **ReR Megacorp** and the art distribution service **Gallery and Academic** and is author of the theoretical collection **File Under Popular** – as well as of numerous articles and papers published in 16 languages. [www.ccutler.com/ccutler](http://www.ccutler.com/ccutler)

# PROBES #28

In the late nineteenth century two facts conspired to change the face of music: the collapse of common-practice tonality (which overturned the certainties underpinning the world of art music), and the invention of a revolutionary new form of memory, sound recording (which redefined and greatly empowered the world of popular music). A tidal wave of probes and experiments into new musical resources and new organisational practices ploughed through both disciplines, bringing parts of each onto shared terrain before rolling on to underpin a new aesthetics able to follow sound and its manipulations beyond the narrow confines of 'music'. This series tries analytically to trace and explain these developments, and to show how, and why, both musical and post-musical genres take the forms they do. In **PROBES #28**, as new musical resources continue to expand, we follow the incorporation into new works of saws, sandpaper and power tools, artisans and knitting machines – and go on to investigate the repurposing of radios and gramophones as musical resources.

## 01. Transcript. Studio version

[Gregorio Paniagua, 'Anakrousis', 1978]

[Field recording]

The toolshed has long been a popular place, not only for instrument building but also instrument finding. In 1923, for instance, our old friend **Arseny Avraamov** was asked to write music for the interlude of a play that Eisenstein was staging at the **First Workers Theatre** in Moscow. The music was to accompany the building of a platform for the next act. Avraamov decided to use 'rhythmically and harmoniously,' as he wrote to a friend at the time, and 'with no embellishments', a grinding wheel, two files, sledge hammers, axes, a manual and a mechanical saw, hammers, logs, nails, planes and chains... Hammer and nails are also admirably deployed by the American sound artist **Douglas Henderson** in his 'Music for 100 Carpenters' – a performance piece for ten spatialised groups of workers. Each carpenter is given a hammer, two bags of large and small nails, a saw-horse and a piece of wood – as well as a crunchy apple in a lunchbox and a score with a timeline and instructions on it that determine exactly what is to be done and when. Here's an excerpt from the composer's recording of the premiere in the **Pierogi Gallery**, Brooklyn, in 2009.

[Douglas Henderson, 'Music for 100 Carpenters' (excerpts), 2009]

And here's the American composer **Leroy Anderson** again, with his charming tribute to the soft-shoe shuffle. This was written in 1954, for orchestra and sandpaper.

[Leroy Anderson, 'Sandpaper Ballet' (excerpts), 1954]

Sandpaper has had a long and honourable pedigree in music, although by the time Anderson wrote this piece, it had mostly been forgotten. In the early twentieth century, however, sandpaper would have been a standard part of every trap drummer's kit until sometime in the mid twenties, when it gave way to fly swatters – which, back then, were remarkably similar to today's wire brushes. So similar, in fact, that when the **Ludwig drum company** decided to copy the design and make what they called the *jazz stick* – which they advertised as a 'wire brush that folds into the handle' – they were immediately sued by the fly-swatter manufacturers for copyright infringement.

[Saw]

Then there's the saw. Saws, of course, have had a long history of use in folk ensembles and vaudeville going back at least 140 years. And I'm sure you all remember **Marlene Dietrich** was a celebrated saw-player – it was a prime feature in her **World War Two** mind-reading act<sup>1</sup>. A lot of film composers have used saws



[amiina]

as well, most famously Jack Nitzsche for the main title theme of Miloš Forman's *One Flew Over the Cuckoo's Nest*, in 1975.

**[Jack Nitzsche, 'One Flew Over the Cuckoo's Nest Opening Theme' (excerpt), 1975]**

And here's the Icelandic band amiina – four women who started out as a string quartet before slowly abandoning their classical repertoire to play on a wide variety of exotic, ancient, folk and occasionally electronic instruments instead. In this piece, 'Seoul' they use a glockenspiel, a gideon harp, a set of desk bells, a mini synthesiser – and a crosscut saw. I have chosen a live version of it, because it's slightly more fragile and affective than the one on record.

**[amiina. 'Seoul' (excerpt), 2007]**

And here's a rather different take on the old spasm band practice of makeshift instrument substitution. It's funny, but it's not just funny. This is Johann Sebastian Bach's 'Toccatà and Fugue in D Minor', played on a hand saw, a table saw, a hammer, several lengths of pipe, an anvil, a power planer and a drill press by the probably pseudonymous Woody Phillips – an American, conservatory trained, cellist who has, to date, made two CDs using only wood and metal-working tools.

**[Johann Sebastian Bach, 'Toccatà and Fugue in D Minor' (excerpt), 1685-1750, arr. Phillips, 1998]**

And here's a rather different take on power tools, drawn from a fortuitous recording of a concert made in Tuscaloosa, Alabama, in 1975, when a loose association of local bands got together to entertain their local community under the umbrella of the Raudelunas 'Pataphysical Revue. All the ensembles playing that night were pretty different – and pretty extraordinary – but the band who brought their power tools was The Captains of Industry.

**[The Captains of Industry, (excerpts), 1975]**

What else? Gathering dust now, but still ready to perform – a broken trouser press, and an old knitting machine – just like the one used in 2007 by the Czech architect and performer Ivan Palacký, whose concert instruments back then were an old dictaphone and an amplified single Dopleta 160 knitting machine. Here's the knitting machine in action.

**[Ivan Palacký, 'In the Knitting Mood' (excerpt), 2007]**

So let's close this chapter with the trouser press. This is robot-builder Roger Ruskin Spear's searing solo on the instrument, as featured on the eponymous track 'Trouser Press' – on the Bonzo Dog Doo-Dah Band's 1968 LP, *The Doughnut in Granny's Greenhouse*.

**[Bonzo Dog Doo-Dah Band, 'Trouser Press' (excerpt), 1968]**

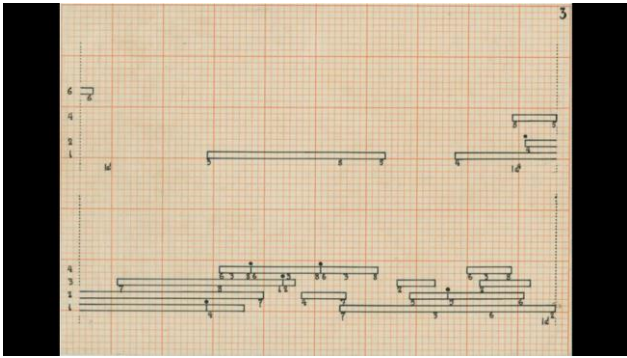
**[Field recording]**

Now we arrive at two rather more complicated household objects: the *radio* and the *record player*. Since we'll be hearing much more about them in future programmes, for now we'll just look at them narrowly in context.

The first documented instance of the phonograph being used as an instrument seems to have been in 1920 when the German composer Stefan Wolpe put eight of them on a stage at a dada soiree and had them simultaneously play different parts of Beethoven's 'Fifth', at various speeds. No recording was made, but it sounds like it must have been fun, so we've mocked one up for you.

**[Stefan Wolpe, dada event (reconstruction) (excerpt), 1920]**

Serious consideration of the productive possibilities of the phonograph, however, is usually tagged to 1922, when the polymath László Moholy-Nagy – then teaching at the Bauhaus in Weimar – published his short essay 'Produktion-Reproduktion' in the magazine, *De Stijl*. His suggestion was, that, by analyzing



[John Cage 'Imaginary Landscape No 5', 1952 (score)]

and understanding the relation of the groove to the sound, it should be possible to calculate and then manually engrave, entirely novel sounds directly into the surface of a disk – which could then be played back in the normal manner<sup>2</sup>. It was an idea that had, in fact, been raised in Berlin, twelve years earlier, by the critic Alexander Dillmann – and six years earlier in the Soviet Union by our old friend Arseny Avraamov, though neither suggestions made any mark in their time.

In the years that followed, however, there was considerable theorizing about writing for the phonograph from various sources, including Henry Cowell and Igor Stravinsky. Though still nothing was actually produced. A more modest use of the phonograph was probed, however, in 1924, when the Italian composer Ottorino Respighi wrote one into the third movement of his orchestral tone poem 'The Pines of Rome'. Though it did no more than play back the recorded sound of a nightingale, it was still the cause of considerable debate.

**[Ottorino Respighi, 'The Pines of Rome' (excerpt), 1924]**

Three years later, the German composer Kurt Weill wrote and recorded a tango specifically to be played back from an on-stage phonograph as part of his musical score for the comic opera 'Der Zar lässt sich photographieren' ('The Tsar Has his Photograph Taken'). In fact, a number of composers, including Darius Milhaud and George Antheil, were all known to be experimenting with phonographs at this time – though universally to no effect. In fact the only known works to have been produced as a result of all these words and experiments were those presented by two German composers, Paul Hindemith and Ernst Toch at the legendary New Music Berlin festival in 1930. These three works were written for, and presented on, phonograph records, possibly with live accompaniment – we don't know – and they worked for the most part with different recording-speeds and superimpositions. Hindemith's were believed to be lost until fairly recently – after it was discovered that they'd been offered to the Institute of Music Research in Berlin, who – unbelievably – refused to take them. It was only by sheer good luck that an employee at the Institute had the wit to understand their importance and made a private tape copy before the originals were handed over to a junk dealer. Here's a short excerpt from one of them, this is from Paul Hindemith's untitled *Trickaufnahmen*.

**[Paul Hindemith, 'Trickaufnahmen' (excerpt), 1930]**

This grammophonmusik, as Hindemith and Toch called it at the time, attracted some contemporary interest, but there was no follow-up from anybody until some nine years later, in America, when John Cage – who had just happened to be at the Berlin concert – introduced two vari-speed gramophones, playing test tones, into his 1939 composition 'Imaginary Landscape No. 1'. In the score Cage says that the work should be realized not as a performance, but as a radio broadcast or a recording. This version, by the Maelstrom Percussion Ensemble, successfully follows the second direction.

**[John Cage, 'Imaginary Landscape No. 1' (excerpt), 1939]**

Cage also used gramophones for his 1942 composition 'Credo in Us', which featured a piano, two percussionists and – either a gramophone or a radio. To the player of the gramophone, Cage suggests classical records as the most appropriate material: 'Dvořák, Beethoven, Sibelius or Shostakovich'. If the radio is played, then any station is acceptable, he says, except, in the event of a national emergency, news programmes.

**[John Cage, 'Credo in Us' (excerpt), 1942]**

In 1952, Cage composed 'Imaginary Landscape No. 5'<sup>3</sup>, a tape piece which has to be compiled from 'any 42 gramophone records'. For his own version, which was realised with the help of David Tudor and Louis and Bebe Baron, he used jazz records. Then there was '33 1/3', premiered in 1969 for which Cage required that twelve record players and 250 records be placed in a room with loudspeakers randomly distributed – and no chairs to sit on. When the public was admitted – and nothing happened – they eventually began to entertain themselves with the records and players. And finally, in 1960, in the groundbreaking 'Cartridge Music', Cage jettisoned records altogether, leaving only



[Milan Knížák, 'Composition No. 2', 'Composition No. 1', 'Composition No. 3' (excerpts), 1979]

the record-players – in fact, only the pick-ups at the end of the tone arms, which performers were instructed to use to amplify tiny objects and thereby to make the small, large and the inaudible audible. With this single instruction Cage pulled music into a world of sounds as alien to the ear as the revelations in Robert Hooke's 1665 'Micrographia' had been to the eye. The objects to be used are not specified by Cage, but performers have probed, amongst other things, pipe-cleaners, matches, paper clips, springs, feathers and wires. To perform the piece, each musician has to generate his or her own score by referring to twenty numbered sheets that are printed with irregular shapes. Any number of players can participate and, in this excerpt, taken from a gallery performance in 2015 by the Langham Research Centre, there are four of them.

**[John Cage, 'Cartridge Music' (excerpt), 1960]**

A faint musical footnote became a major headline in 1949, when a French radio engineer, Pierre Schaeffer, working in Paris, started to probe records and turntables in an unprecedentedly sophisticated way – his researches soon leading to the invention of what he called *musique concrète*. These were very deep probes indeed and led to the invention of many new techniques, not least that of the now canonic locked groove. Perhaps even more importantly *musique concrète* came with a theory and hundreds of major works attached, thereby establishing both an aesthetic and a vocabulary of techniques that are still very much in use today. This is another vast topic that we'll be taking a closer look at in another context, so, for now, I'll just place a marker – an excerpt from one of the earliest broadcast works, 'Étude aux chemins de fer', which was created with – and presented on – 78 RPM gramophone records, in Paris in 1948.

**[Pierre Schaeffer, 'Étude aux chemins de fer' (excerpts), 1948]**

From about 1963 onward, the Czech artist, co-founder of the AKTUAL group and director of Fluxus East, Milan Knížák, began to mutilate records and make composites out of them. His series, 'Destroyed Music', which was produced between 1963 and 1979, consisted of gramophone records that had been broken, sanded, burned or painted-on. Others had been cut-up, shuffled about and re-assembled with sticky tape. In 1979, a fellow fluxartist, Walter Marchetti, compiled and released a collection of recordings made from these records on an artist label in Rome. And four years later Knížák's best known work 'Broken Music' was released in a cassette edition in Köln – each cassette accompanied by a melted, gold-sprayed 7-inch single. Here's a snatch from 'Composition No. 2', taken from Marchetti's 1979 collection.

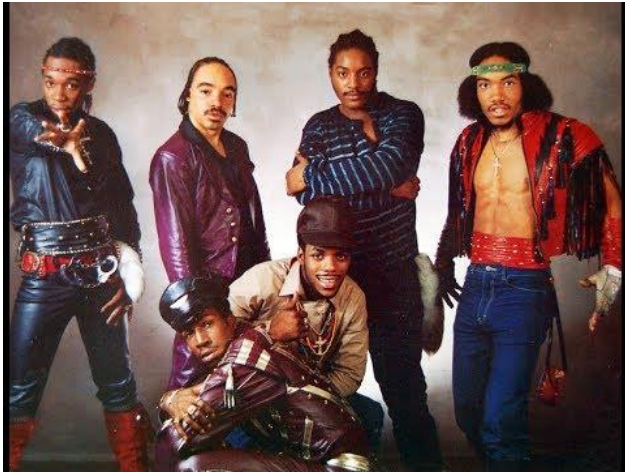
**[Milan Knížák, 'Composition No. 2', 'Composition No. 1', 'Composition No. 3' (excerpts), 1979]**

Although the Swiss-born artist, Christian Marclay, studied fine art, he first became known to the world in the early seventies as a turntable player on the experimental fringe of the New York Downtown music scene. Turntable playing was not something one did back then and Marclay was almost certainly the inspiration for every art turntablist that followed. This excerpt is taken from a 1988 release on which – using multiple turntables – he employs for each of the twelve tracks only records by a single artist – on this track, it's the exoticist Martin Denny<sup>4</sup>.

**[Christian Marclay, 'Martin Denny' (excerpt), 1987]**

Across town, quite independently, another extension of DJing was coming together in black dance venues. Moving from simply playing one record after another to linking them together – and finally to mixing them up – this community followed its own inexorable logic. It's generally agreed today that DJ Kool Herc invented the break in 1973 – that's where, using two identical records, the same phrase could be repeated in a loop, making it possible for other things to be flown in over the top. The break probably marks the beginning of a new way of thinking about DJing: a way of *making* music rather than *playing* it.

The basic technology had been around for a while, of course: Radio DJs – with their specialist needs – were already using customised turntables that were more sturdy and flexible than the domestic variety – and these soon found their way into the clubs. What followed was a reciprocal evolution, as turntable



[Grandmaster Flash and the Furious Five]

manufacturers responded to the needs of a larger and larger constituency of DJs and hip-hop bands. The tipping point came in 1981 with the release of the first commercial recording to be made with turntables alone. The DJ was Joseph Saddler, better known as Grandmaster Flash, and the record was effectively a live performance that used three turntables and a selection of records by other bands. The Grandmaster had none of the commercial sampling, pitch-shifting and switching gear DJs have today, and this record – whatever else it may be – is a hymn to hard work, problem solving, innovative thinking and years of practice. We take a lot for granted today because so much is so easy to delegate to machines. But imagine yourself at home with a few LPs, three turntables and a small mixer; how would you go about doing what Saddler does here – in real time – on ‘The Adventures of Grandmaster Flash on the Wheels of Steel’?

**[Grandmaster Flash and the Furious Five, ‘The Adventures of Grandmaster Flash on the Wheels of Steel’ (excerpts), 1981]**

Scratching, which involves moving the record to and fro in rhythm....

**[Example]**

....emerged somewhere along this line, although its exact provenance is still disputed. The most frequently retailed story is that Grand Wizard Theodore, interrupted by his mother in mid-practice, accidentally nudged the record under his hand and heard that scratching sound. But, on the other hand, it’s a sound that every radio DJ had been hearing in their headphones for decades as they silently cued-up records. Grandmaster Flash, when asked, said that Theodore had been his student and he wasn’t scratching then so – who knows? In any case, once it was out there, scratching became – in the way of such things – immediately contagious, with every DJ taking it up and using it in their own way. In no time, scratching had evolved a life of its own, and thrown off an impressive catalogue of named and identified moves. To give you some idea here’s just a couple of minutes from The Rock Steady DJs winning set at the Disco Mix Club World Championship in 1992. This happened out on the West Coast, where a similar but distinct DJ evolution had taken place, strongly influenced by the local Filipino community. If the East coast had pioneered the basic techniques, it was arguably on the West coast that they became integrated into a more self-conscious art form. In this short excerpt DJ Qbert, Mix Master Mike and DJ Apollo – using three turntables between them – divide up the roles of drum, bass and lead scratcher to mind-bending effect.

**[DJ Qbert, Mix Master Mike and DJ Apollo at the DMC World Championship final, 1992 (excerpt)]**

These techniques soon found their way into the rock end of jazz – Herbie Hancock, for instance, played an important part in popularising scratch techniques when, in 1982, after a long decline in his career, he made – or rather Bill Laswell made and Herbie added his part at the end – the mega-hit ‘Rockit’<sup>5</sup>. In no time, rock bands, pop acts, groups like Linkin Park and even the occasional metal band were signing up turntable players.

And in the contemporary music world, the first concerto for turntable was premiered in 1999, by the Canadian composer Nicole Lizée, whose ‘RPM: for Large Ensemble and Solo Turntablist’, is very specific about both the records and the techniques to be used by the turntablist, integrating the instrument fully into the ensemble, rather than flying it over the top. Lizée has continued to write for turntables since, with eleven works to date, exploring various combinations of instruments. Here is an excerpt from ‘RPM’.

**[Nicole Lizée, ‘RPM: for Large Ensemble and Solo Turntablist’ (excerpts), 1999]**

And here’s an excerpt from Gabriel Prokofiev’s more recent ‘Concerto for Turntables and Orchestra’. Gabriel does the DJing himself on this, rather pedestrian, recording.

**[Gabriel Prokofiev ‘Concerto for Turntables and Orchestra’ (excerpt), 2007]**

It was also John Cage who inducted domestic radios into the menagerie of music



[Karlheinz Stockhausen, 'Kurzwellen' (record cover)]

when in 1951 he scored his 'Imaginary Landscape No. 4' for 12 radios, 24 performers and a conductor. Each radio was assigned one person to tune into frequencies and another to control volume and timbre. The score itself specified only actions and durations. When asked 'why radios?', Cage told Richard Kostelanetz: 'There was a tendency through the whole twentieth century, from the futurists on, to use noises – anything that produced sound – as a musical instrument. It wasn't really a leap on my part; it was, rather, simply opening my ears to what was in the air. My thinking was that I didn't like the radio and that I *would* be able to like it if I used it in my work. That's the same kind of thinking we ascribe to the cave dwellers in their drawings of the frightening animals on the walls—that through making pictures of them they would come to terms with them.' At the work's premiere, Cage was still spared most of what he didn't like about radio – because by the time the concert started it was so late that there were hardly any stations still broadcasting: so the piece delivered mostly silence, a little static – and the occasional burst of sound.

The German composer, Karlheinz Stockhausen, made very different use of radio, which he explored in a number of compositions, the first of which was 'Kurzwellen', in 1968, for elektronium – that's an electronic instrument invented in the mid twentieth century to play in accordion orchestras – 2 tam-tams, amplified viola, piano, four shortwave radios and a sound mixer. The first important thing to note is that these were shortwave radios – and the shortwave environment is very different, sonically, from the medium wave used by Cage. Secondly, Stockhausen was much more interested in the sound *between* the stations than the sound on the stations. And thirdly, while Cage was indifferent to the *content* of the broadcasts, Stockhausen instructed his players to search for and select only materials that were suitable for improvisational transformation. In addition, I should say that the use of these particular sounds at that particular musical moment was inspired; since they are just effortlessly exquisite. I'll play a short excerpt from Stockhausen's own 1969 recording of the piece.

**[Karlheinz Stockhausen, 'Kurzwellen' (excerpt), 1968]**

**[Footsteps]**

A few years ago I took part in a performance of 'Kurzwellen', and I have to tell you that, tragically, it is no longer possible to approach the depth and richness of the original, because the shortwave environment has become so desperately impoverished. In the sixties it was – as you just heard – rich and dense; now it's feeble and thin – a tragic loss of great musical resource.

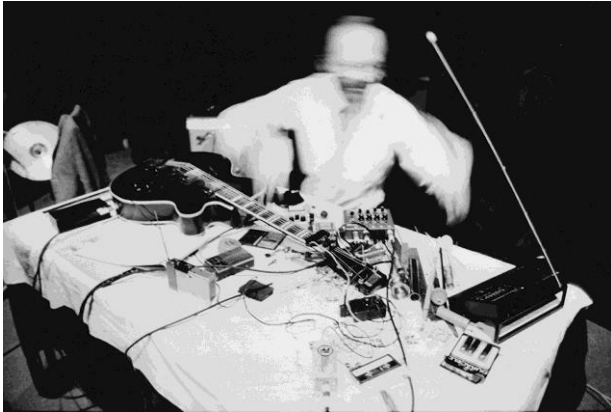
**[Footsteps]**

By the middle of the sixties, the British guitarist Keith Rowe, who was then part of the ensemble AMM – a collective that brought jazz exiles and contemporary composers together – had begun to use small transistor radios as part of his guitar set up. Rowe claimed John Cage and Marcel Duchamp as his inspiration, and approached the radio, he said, as a kind of objet trouvé, or readymade. Here he is in 'Later During a Flaming Riviera Sunset', taken from the first AMM recording, made in 1966.

**[AMM, 'Later During a Flaming Riviera Sunset' (excerpts), 1966]**

And in the early seventies, I remember seeing the German bass-player, Uli Trepte, with a metal rack he'd constructed to house several shortwave radios, which he used as his main instrument on a UK tour with the band Faust. Unhappily there seems to be no recording of this short-lived version of the band. But generally – in classical, improvisational and rock environments – the radio was approached for many years as a legitimate instrument, before it slowly faded from view.

I spoke earlier of the fatal impoverishment of the shortwave radio environment, which is eerily mirrored in the natural environment, as the sounds of insects, birds and other wildlife slowly dissipate and vanish. This will be the topic of our next programme – musical experiments conducted with the Three Kingdoms, starting with the animal kingdom.



[Keith Rowe's set up]

[The Animals, 'We Gotta Get Outta This Place' (excerpt), 1965]

[ICON]

- <sup>1</sup> I'm not making this up.
- <sup>2</sup> He amplified this notion a year later in *Der Sturm* with *New Forms in Music: Potentialities of the Phonograph*.
- <sup>3</sup> The score is a block-graph, in which each square equals three inches of tape. Eight tracks are made from the forty-two recordings. Amplitude and duration are specified but the selection of recordings to be used is not. Cage used the I-Ching to create the chart.
- <sup>4</sup> See also Probes 18
- <sup>5</sup> The DJ Laswell invited to play on it was Grandmixer D.ST

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## 02. Notes

### On length and edits.

The purpose of these programmes is to give some practical impression of the probes we discuss. This necessitates for the most part extracting short stretches of music from longer wholes, which, of course, compromises the integrity and disrupts the context inherent in the original works. I have also, on occasion, edited different sections of a longer work together, better to illustrate the points under discussion. So the examples played in the programmes should not be confused with the works themselves. Wherever the word (excerpt) appears after a title in the programme transcript, this indicates that what follows is an illustration, not a composition as it was conceived or intended. If something catches your ear, please do go back to the source.

### Notification

If you want to be notified when a new probe goes up, please mail [termegacorp@dial.pipex.com](mailto:termegacorp@dial.pipex.com) with subject: Probe Me.

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## 03. Acknowledgments

Special thanks to David Petts, Douglas Henderson, Christian Marclay, Martin Elste, Nicole Lizée, Jonas Vogensen, Bob Drake.

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