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

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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

PROBES #34

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 #34 a sequence of new, purely electronic, instruments appear – amongst them (the) electrophon, kurbelspharophon, ondes Martenot, dynophone, croix sonore, pianorad, trautonium and mixtur trautonium – none having any obvious place in the existing vocabulary of musics. In parallel an alien aesthetic begins to redefine the parameters of 'musical' sound.

01. Transcript. Studio version

[Gregorio Paniagua, 'Anakrousis', 1978]

[Great organ of Notre-Dame, out of tune]

In 1911, a Bavarian schoolteacher, Jörg Mager, heard an out of tune organ and became a lifelong convert to microtonality. Rather than retune pianos or restrict himself to strings and voices he wanted to create a new instrument specifically tailored to produce the new frequencies he needed – and when he discovered valves and heterodyning, he knew he'd found an effective technology. His first prototype, completed in 1921, was the Electrophon, a simple monophonic instrument that was played with a calibrated lever marked out with exact microtonal pitch positions. Five years later he followed this with the Kurbelspharophon – a modified Electrophon that allowed individual notes to be clearly separated. When he presented this at the Donaueschingen Music Festival in 1926, the microtonal community came on board and this led directly to the formation of the Society for Electroacoustic Music.[1] In 1930 he launched the Partiturophon, an instrument specifically designed to facilitate the creation of unfamiliar timbres because, by this time, he had come to the view that in the pitch-timbre matrix, it was timbre that mattered most because pitch – to quote Arnold Schoenberg – was no more than 'timbre measured in one direction.'[2] But, where Schoenberg had approached the idea of what he called klangfarbenmelodie as a work of orchestration, Mager took the notion a great deal further and advocated the invention of entirely new tone-colours from scratch. And his methods to achieve this were visionary: first, he introduced electrical hi and lo-pass filters[3], pioneering what is now called subtractive synthesis and, second – and far more radical – he attached his loudspeaker drivers directly to iron sheets, glass plates, wooden panels, orchestral gongs and other resonant materials in search of ever more exotic timbres. By 1932, he was publishing articles about noise-music and patenting designs for the production of unpitched sounds and imitative effects – and not without an audience: for a decade, in Weimar Germany, Mager had been a celebrity: he led an institute, he proselytized publicly for electronic sounds and he produced microtonal music in concerts and for theatre – he was even commissioned to create the sound of the grail bells for Wagner's 'Parsifal' in the holy temple of Bayreuth. And yet, no repertoire appeared and no composers championed his instruments. More strangely perhaps, no recordings were made. I say strangely because by this time high quality electrical recording facilities were readily available and radio was ubiquitous. But Mager seems never to have considered documenting his work, the loss of which has left a permanent gap in the historical record, since his innovations were not only wide and unique but also fully integrated into Weimar culture.

[Jörg Mager and the Electrophon. Source: https://120years.net/wordpress/the-electrophon-spharaphon-partiturophon-and-the-kaleidophon1921-1930/]

By the early 1930s, as National Socialism gathered strength, his star began to dim until, by 1933, his far-too-radical musical ideas about noise, microtonality and klangfarbenmelodie – were no longer welcome in the new Germany. Also by then, Mager's musical philosophy had been sidelined by the more nazi-compliant ideas coming from the inventor Friedrich Trautwein, whose electronic Trautonium continued to be supported – at least so long as it remained safely tethered to non-degenerate Aryan music. Mager died in 1940 and, by the time the war was over, all of his instruments had disappeared, surviving today only as extra names in the long catalogue of hopeful monsters unaccountably gone extinct. An article published in 1940 in the 'Journal of Instrument Building' noted that there'd been '369 new musical instruments in ten years' – and concluded that, 'scarcely more than a dozen were viable [and] the rest are played, if [they are played] at all, by the inventors themselves.'

[The Order of Bobs, 'Sic Transit Gloria Mundi']

Of all Mager's pioneering work only one, very short, recording exists, preserved on the soundtrack of the very elusive 1936 mystery film *Stärker als Paragraphen* (*Stronger than Regulations*). It was almost impossible to source a copy of this, and I'm afraid the quality is pretty terrible. But it's all that's left of a once vital strand of electronic and cultural history.

[Jörg Mager, 'Stärker als Paragraphen', soundtrack (excerpt), 1936]

In 1927, just after Mager had launched his Kurbelspaerophon, the French electrical engineer, René Bertrand – with the active participation of Edgard Varèse – launched the Dynaphone – another monophonic, heterodyning instrument, controlled, like some of Mager's instruments with a pitch-dial and a volume switch. It spanned seven octaves and was designed to emulate a cello, flute, saxophone and French horn. Six of them featured in its 1928 premiere, 'Variations Caractéristiques', composed for the occasion by the somewhat elusive Ernest Fromaigeat but, since the score has been lost, it's impossible to resurrect the direction of his thinking. Arthur Honegger also scored one into his unrecorded ballet, 'Roses de Metal'. Also lost. And after that no new repertoire appeared – and no recordings were made.

Other heterodyning variants came and went, amongst them Nikolai Obukhov's Croix Sonore,[4] the Neo Violena, the Emicon, the Ondium Pecharde, the Aetherwellengeige, the Sonar and the Electronde – this last was essentially a Theremin to which, in 1929, the German inventor, Martin Taubman, had introduced a much-needed switch to enable clear note separation and staccato articulation.[5] For once there's a surviving newsreel clip, so we do know how this sounded.

[Martin Taubman, Electronde newsreel clip (excerpt), 1938]

But the most versatile, rounded and playable of the heterodyning valve instrument family – and the only one, apart from the Theremin, to survive and remain in regular use, was the Ondes Martenot, an instrument that, although based on the same technology as Termen's Aetherophone, emerged quite independently of it – and at more or less exactly the same time. Both men were cellists and both had been radio engineers in the Great War; and both were driven by deeply musical sensibilities. The first Ondes was played by hooking a finger through a ring that slid freely along a wire with a keyboard marked out below for visual pitch orientation. But by the mid 1930s, Martenot had introduced a seven-octave keyboard on which each key could be shifted laterally to bend the pitch by a semitone or – if articulated like a cello, to produce fast finger tremolo. The wire was still there, but now running under and along the keyboard, so performers had two separate means of articulation: a fixed-note keyboard and a sliding pitch string. The volume was controlled by pressure-sensitive intensity button housed in a small drawer to the left, and timbre could be modified using a series of built-in filters. In addition, Martenot gradually introduced several Mager-like prepared loudspeakers each producing its own highly distinctive timbre. There were three of them: the Metallique, introduced in 1932 – which replaced the loudspeaker diaphragm with a small gong.

[Nathalie Forget and Imsu Choi play Ondes Martenot and Metallique]

[René Bertrand's Dynaphone. Source: https://120years.net/wordpress/the-dynaphonerene-bertrandfrance1927/]

Then, in 1950, the Palme – which was fitted with 12 sympathetic strings – like a sitar – tuned to cover all 12 semitones of the octave.

[Nathalie Forget and Imsu Choi play Ondes Martenot and Palme]

And finally, in the 1980s came the Resonance – which had seven brass springs stretched in front of a loudspeaker and directly connected to its voice coil.

[Nathalie Forget and Imsu Choi play Ondes Martenot and Resonance]

So, although it was still monophonic, the Ondes was impressively flexible – and Martenot had specifically designed it to be both performer-friendly and orchestra compatible. He launched it at the Paris Opera in 1928 with the 'Poème Symphonique', an orchestra composition specially commissioned from the Greek composer Dimitrios Levidis, for which Martenot himself played the solo part. Unaccountably, this work, in spite of its obvious importance, has never been recorded. However, word of its success reached Leopold Stokowski in America who invited Martenot there to perform the work again with his Philadelphia orchestra. The Ondes had definitively arrived. Not long after that Edgar Varèse introduced two of them into the French premiere of his 'Ameriques' – and other composers began to write new works for it, including Honegger, Jolivet, Milhaud, Ibert, Koechlin and – pre-eminently – Olivier Messiaen, whose 'Trois Petites Liturgies' and 'Turangalîla-Symphonie' alone would have ensured its permanent survival. Maurice's sister, Ginette, also played a critical part in its acceptance, not only as the instrument's first virtuoso performer, but also as a tireless promoter, educator and commissioner of new repertoire.

Here's an excerpt from Messiaen's 'Turangalîla-Symphonie', the 'Chant D'Amour'.

[Olivier Messiaen, 'Chant D'Amour' (excerpt), 1948]

Film composers also liked the Ondes. A first responder was Arthur Honegger, who used one in his 1932 score for the French animation of Frans Masereel's classic graphic novel, *The Idea*. As far as I've been able to discover, this was the first time any electronics had been used in a western film score. The first ever credit though belongs to Dmitri Shostakovich, who'd called for a Theremin to depict a snowstorm in Trauberg and Kosintsev's 'Odna', the year before.[6] I will include that in the auxiliary to this programme but, for now, here's an excerpt from Honegger's score for 'L'Idée'.

[Arthur Honegger, soundtrack for Berthold Bartosch's 'L'Idée' (excerpt), 1932]

Since then there have been countless Hollywood scores; here's an excerpt, for instance, from Richard Rodney Bennett's soundtrack for Ken Russell's *Billion Dollar Brain*, in 1967.

[Richard Rodney Bennett, 'Anya', 1967]

Jonny Greenwood, guitarist of the British group Radiohead, has also made much use of the Ondes in his other life as a film composer – and the band has appeared with up to six of them on stage. Here's an excerpt from a short concert work Greenwood wrote for the London Sinfonietta, featuring two Ondes Martenot, in 1996.

[Jonny Greenwood, 'Smear' (excerpt), 1996]

Although the Ondes was never commercially produced, in the course of his life Maurice Martenot himself built some 350 of them, enough to keep on top of demand and showing in passing that mass-production is not a necessary key to acceptance. After Martenot's death, in 1980, several third parties continued to build variants and copies of Martenot's designs, as well – more importantly – as keeping the original instruments in good repair.

As I speak, the repertoire for the ondes has passed a thousand compositions and the instrument continues to find new adherents and new applications.[7] Here's Barry Gray's theme music for Gerry Anderson's 'Fireball XL5', from 1962.

[Barry Gray, 'Fireball XL5' title theme (excerpt), 1962]

[The Ondes Martenot. Source: en.wikipedia.org/wiki/Ondes_Martenot#/media/File:Ondes_martenot.jpg]

Another rare survivor, though more tenuously, was the Trautonium…

[Harald Genzmer, 'Concerto for Mixtur Trautonium and Orchestra' (excerpt), 1952]

First demonstrated in Germany in 1930 by its inventor Friedrich Trautwein, the Trautonium incorporated a number of new and modified features. The sound, for instance, was generated not from sine but sawtooth waves – which are richer in harmonics – and Trautwein shaped them using rotary controlled filters that were neither additive nor subtractive but worked through formant modulation. Formants are like natural acoustic spaces – they emphasise a particular cocktail of resonant frequencies that are native to the specific acoustics of a space – think of the mouth cavity and all the variations you can get from a single sound just by moving your lips, tongue and cheeks…

[Aaaeeeiiiooouuu]

Instead of a keyboard, the playing interface of the Trautonium was a wire that ran parallel to – and a few millimeters above – a metal strip. When you pressed the wire to the strip you completed a circuit and produced a note.[8] The strip itself was marked out with a keyboard, but only for orientation – the string offering a smooth glissando that could be interrupted anywhere along its length, like a violin. There was also a set of adjustable keys laid out above the wire that could be depressed to make pre-organised contacts at fixed pitch points. With some advice and assistance from the composer, violinist and viola-player, Paul Hindemith, this design was completed at the Berlin Academy in 1930. At the same time Hindemith introduced Trautwein to one of his students, Oskar Sala – who would in time become even more associated with the instrument than Trautwein himself. For its premiere, at the now legendary Neue Musik Berlin festival, in June 1930, Hindemith composed seven workmanlike miniatures for trios of Trautoniums – he chose trios because, as you will recall, these are monophonic instruments, so for any harmonies or counterpoint, extra keyboards are required. This is from the sixth miniature.

[Paul Hindemith, 'Des kleinen Elektromusikers Lieblinge' (excerpts), 1930. Performed by Oskar Sala (1977)]

Germany had by now become a European hotspot for electronic music; it had an established infrastructure of government funding, research institutes, radio laboratories and it hosted well attended festivals.[9] It was in this climate that the radio and electronics firm Telefunken decided, in 1933, to manufacture a simplified Trautonium, aimed at the domestic market. At the time, Telefunken's main product was radios and the Volkstrautonium was designed to plug directly into one of these, rather than needing a separate amplifier and speaker of its own. Although two hundred were made, only a handful were sold and, after four years, Telefunken abandoned the project. The Reich Radio Society quickly picked it up, commissioning yet another re-design from Oskar Sala, this time incorporating a second fingerboard – to support two-part polyphony – and far more sophisticated timbral controls which, for the first time in an electronic instrument, exploited sub-harmonics – those quasi-mythical beasts that mirror below the fundamental – the harmonics that are projected above it. It was for this model, the Radio Trautonium, that Hindemith composed his last work for the instrument. An era was coming to an end and Hindemith was soon – along with Schoenberg, Mahler, Webern, Berg, Stravinsky, Krenek and Kurt Weill – to be denounced by the new National Socialist government as a 'standard bearer of musical decay'[10] – meaning, presumably, works like this, the 'Langsames stück und Rondo, für Trautonium'.

[Paul Hindemith, 'Langsames stück und Rondo, für Trautonium' (excerpts),1935. Performed by Oskar Sala]

Fortunately, fascism always seems to bring out the best in people: Mager denounced Hindemith, Trautwein denounced Mager, Hindemith fled to Switzerland and Trautwein successfully argued the National Socialist case for the Trautonium – which was then accepted as an 'instrument of Steel Romanticism.'[11] In the meantime, the rather more apoltical Oskar Sala was doing concerts, lectures and radio performances in which he safely played a mixture of approved classical repertoire and healthy new German electro-music – little of which seems

[The Mixtur-Trautonium. Photo: Museumsinsulaner. Source: https://commons.wikimedia.org/wiki/File:Volkstrautonium_MIM.jpg]

to have survived today. When the war was over, Trautwein took a post in Düsseldorf and Sala made further improvements to the Trautonium, eventually unveiling, in 1952, his much-improved Mixtur-Trautonium. By this time, however, such instruments were making little impression on the coming generation of composers, who were looking for something far more radical, so it was left for Sala to find a personal niche for his instrument – mostly in soundtrack work for film and television. The one surviving legacy – and deservedly – being Sala's highly effective sound design for Alfred Hitchcock's *The Birds* – in which all the sounds and effects on the soundtrack – which has no formal score – were derived solely from the Mixtur-Trautonium[12].

[Oskar Sala, 'Crows/School, Birds Atllack/After Explosion, The End' (excerpts) 1963]

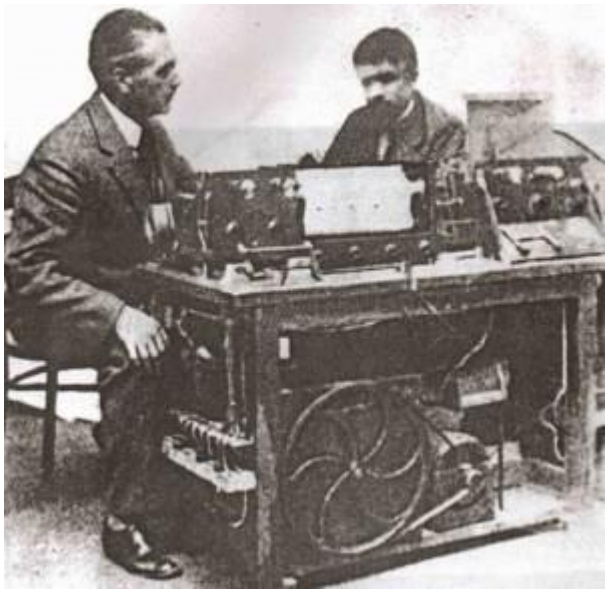
The Trautonium had very little other visible life.[13] Almost no new repertoire was written for it and Sala remained its only qualified exponent[14] until, one day, pretty much out of the blue, a guitarist in a punk band, Peter Pinchler, tried to contact Sala because he'd heard a Trautonium on a movie soundtrack and had been sufficiently intrigued to want to use one on a recording project he was planning. Sala declined to participate, but he took the time to show Pinchler around his instrument. Here and there, now and then, over the next decade, the two occasionally met, Pinchler watching and learning. After 15 years, he commissioned a Mixtur-Trautonium of his own and began to perform old repertoire in the hope of generating new interest in the instrument. This is him playing Harald Genzmer's 'Suite des Danses pour Instruments Électroniques', written in 1958.[15]

[Harald Genzmer, 'Suite des Danses pour Instruments Électroniques. Ostinato Accelerando' (excerpt) 1958, performed by Peter Pichler]

Until now, all the valve-based instruments we have looked at have been monophonic. The first polyphonic valve-based keyboard I could find, appeared in 1925, built from a design by Hugo Gernsback, the inventor and novelist now probably best remembered for being the publisher, in 1908, of the first radio and electronics magazine, 'Modern Electronics' and then again, in 1926, of the first science fiction magazine: *Amazing Stories*. Like most electronic instruments at the time, the Pianorad[16] was based on sine tones, but it was modular, dedicating a separate valve oscillator to each key of the two-octave keyboard and assigning each note to its own independent loudspeaker. Gernsback thought the speakers could be distributed around an auditorium[17] – in principle, creating a point source for each note, which is a very interesting idea – but his immediate intention was to connect the keyboard directly to a radio transmitter and dispense with any intermediary loudspeaker or microphone: 'The artist (…) plays the Pianorad in (…) absolute silence', he wrote, 'The radio audience, however, will enjoy the music, although no one in the studio can hear it.' He made regular broadcasts from his own radio station in New York[18] – usually accompanied by a violin or a piano – and although a full 88-note version was planned, it was never built because the studio was just too small. In the end, the instrument was never duplicated and its radical spatial possibilities were never explored. Then, in 1929, the station closed and the Pianorad was never heard again. A year later, Termen's own polyphonic keyboard, the Electric Harmonium, appeared. This too made no lasting impression. And there are no recordings of that either.

A year later, in 1930, Richard C. Hitchcock's polyphonic multi-valve Westinghouse Organ was installed in another radio station, in Pittsburg. This too had no ambition to be understood as a futuristic instrument; it was intended merely to simulate the familiar sounds of a traditional pipe organ electronically in order to achieve greater fidelity than was possible with the microphones of the day. Multiple valves were dedicated to each note, allowing individual timbres to be independently shaped by regulating the admixture of natural harmonics – exactly as Cahill's 200-ton Telharmonium had done, thirty-three years before.

Meanwhile, in France, the Coupleux-Givelet organ combined valve oscillators with a sound control system that employed punched paper tape to modulate pitch, volume, attack, envelope, tremolo and timbre – predating music computer systems by some 20 years.[19] This was not only the most ambitious of the one-valve-one-note keyboards, but also a straightforwardly commercial enterprise aimed directly at providing churches and radio stations with a small and relatively inexpensive substitute for the traditional pipe organ. The Coupleux-Givelet was a



[Armand Givelet & Edouard Coupleux at the paper-punch controls of the 'Givelet' c1932. Source: https://120years.net/wordpress/lorgue-des-ondesarmand-giveletfrance1933/]

runaway success and it looked, at last, as if a model for the mass acceptance of electronic instruments had finally been found in the unthreatening form of an affordable, mass-produced, polyphonic organ-substitute. It was a niche destined rapidly to expand – but the multiple-valve-per-note technology – although heroic and successful – was evolutionarily doomed. In the coming systems, valves would still be dedicated to amplification, but the sounds would be generated by tone-wheels.

[Joe Pantano, demo (excerpt)]

There were many tone-wheel organ probes that didn't make it – in 1927 there was the Canadian Robb Wave organ; two years later, the French Orgue des Ondes; a year after that, in Vienna, the Magneton and, in 1931, both the American Rangertone and the British Melotone – but the instrument that quietly normalised electronics for the masses – and set the pattern for the next thirty-five years – was the Hammond Organ. And that's the trail we'll be following in the next episode.

1 The following year both the Kurbelspharophon and the Theremin, with their respective inventors appeared together in a *Music in the Lives of the People* exhibition in Frankfurt; Theremin as a showman, Mager as an idealist, sparking short-lived debate among journalists there.
2 Arnold Schoenberg, *Theory of Harmony*, 1911
3 A technique originally discovered by Karl Willy Wagner at the Reich Office for Telegraph Technology. This is the only point in the film – which has no music soundtrack, only opening credit music – in which there is non-diegetic sound and, since records show that Mager's instrument was used, and since these sounds are not made by acoustic instruments, I am assuming this is it. But there are no credits. Another clue – the scene is one of delerium. Apologies for terrible quality, it was a stretch to get even this; the film is no longer available through any commercial channel, anywhere.
4 Nikolai Obukhov's *Croix Sonore* was in fact a Theremin but in the shape of a cross. See PROBES #33 Auxiliaries.
5 There was a foot switch to control overall volume and a hand switch to create individual notes from the continuous stream of melody being played by the other hand, separating the notes being played by brief silences (Thom Holmes).
6 https://www.youtube.com/watch?v=w4IMPIVIHDM. And it's possible this credit should be shared with some of Arseny Avraamov's cartoon soundtracks.
7 Fun fact: If you'd visited the Folies Bergère in the mid 1940s you may have heard Pierre Boulez, who had a job there, playing the Ondes Martenot.
8 Adopted by Trautwein from Bruno Helberger's 1929 Hellertion, and similar to the fingerboard Theremin cello.
9 On the 18th August 1933, Joseph Goebbels presided over the IFA 'Internationale Funkausstellung' (International Radio Exhibition) in Berlin which included concerts by the Das Orchester der Zukunft (the Future Orchestra) comprised of a Volkstrautonium (played by Oskar Sala), Bruno Helberger's Hellertion, Oskar Vierling's Elektrochord, Walther Nernst's Neo-Bechstein, various electric violins and cellos, and a Theremin.
10 At the *Entartete Musik* (degenerate music) exhibition, in Düsseldorf, in 1938.
11 He also helped design and test loudspeaker systems for party rallies and the 1936 Olympics, saying of 'mass rally music' that only electric instruments could match the scale required.
12 Alfred Hitchcock, Bernard Herrmann and Oskar Sala worked closely together on this soundtrack.
13 One was installed in the Cologne Electronic Music Studio in its beginnings, but soon gave way to more recent technologies.
14 Thom Holmes noted a collaboration with Remi Gassman (electronics), in 1961 and Heinrich Heine's 'Denk Ich An Deutschland' in 1966.
15 Genzmer, German composer and academic, had studied with Hindemith at the Hochschule für Musik Berlin in the late 1920s and was familiar with the Trautonium from its conception.
16 Evolved from his earlier and much simpler Staccatone of 1923.
17 Or a building.
18 On the 18th floor of the Roosevelt Hotel.
19 The technique of using punched paper 'programs' was not exploited until fifteen years later in the 1950's with the RCA Synthesiser.

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 pointsunder 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

[The Hammond Organ. Source: https://en.wikipedia.org/wiki/Hammond_organ#/media/File:Hammond_C2_pedalboards_(Supernatural).jpg]

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 rermegacorp@dial.pipex.com with subject: Probe Me.

03. Acknowledgments

With special thanks to onas Vognesen, Bob Drake, Nathalie Forget, Imsu Choi, Zeena Parkins, Nadia Ratsimandresy, David Kean, Julie Normal, Jean-Herve Peron and Peter Pinchler. And special thanks to Thom Holmes* for his oversight, suggestions, reading and fact-checking.

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