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Not Just Another Discography!

Documenting Pathé's recording activity from 1897 to 1916 and beyond

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Introduction

Among the major pioneering companies in the field of commercially recorded music, Pathé remains the least well-documented one after more than a century, despite some brave attempts at discography, including Mike Langridge's three-volume work on British Pathés, Gilbert Humbert's and more recently Olivier Ciccoli's efforts to chart parts of the French catalogue, and of course Victor Girard's and Harold Barnes' seminal "Vertical-Cut Cylinders and Discs" which, despite its casting a rather wider net by including issues by Edison, Columbia, Bettini, Mapleson and other early makers, is remarkable and valuable as the first serious attempt to disentangle the seemingly unfathomable chaos of numbers and the apparent lack of chronological order that are easily noticed by anybody who has looked closely at more than a very small selection of these records, or of Pathé trade catalogues and supplements.

One major obstacle is of course that the original company paperwork belonging to the first 30 years of the company's existence, that is, until the introduction of electrical recording, is missing almost completely, and has been since the 1930s already, when everything to do with the earlier acoustic recording process was declared obsolete and worthless by the Board, and written off as a huge financial loss, to provide a substantial tax discount for the ailing company during the Depression. Metal parts, wax masters, machinery, and other assets were reportedly either sold for scrap or recycled internally, and once the physical content of the old archive and factory was gone, no need was felt to keep the ledgers, registers and logbooks detailing their former content and its history. For this reason, researchers today have to reconstruct the whole background from existing records and catalogues, only occasionally helped by surviving contracts and other fragments of correspondence, which however are but few and far between.

Any such attempt however, as Girard and Barnes quickly found out when they first tackled this formidable task almost sixty years ago, is waylaid by the very unusual ways and byways Pathé followed in producing, distributing and marketing their product, partially motivated by a desire to circumvent other inventors' patents, and resulting in a bewildering, somewhat sensationalist array of different physical media formats - brown and black wax cylinders in four different sizes, single- and double-sided center-start vertical-cut discs in six different diameters from 7 to 20 inches, and finally edge-start discs, both vertical- and lateral-cut, in at least four different diameters - and an even more amazing variety of numbers assigned to all of these incarnations of what were often multiple issues and reissues of similar material in a wide variety of countries covering major parts of Europe, Asia, North Africa, and the Americas.

The confusing variety of products was partly caused, or at least facilitated, by Pathé's unique method of making and processing their recordings. Since many, or most, of the particular problems for the discographer or archivist handling Pathé records are rooted in this peculiar manufacturing process, we will look at it in detail, to better understand the logic, or rather the apparent lack of logic, in the tangible results, that is, the actual records in our collections.

Pathé's process compared and contrasted with other early record manufacturers

Like most of the earliest manufacturers of commercial audio records, Pathé's original product were individually-recorded brown wax cylinders. The singers and musicians performed in front of an array of maybe half-a-dozen recording horns, resulting in half-a-dozen saleable cylinders per performance. To produce larger quantities, the same performance had to be repeated over and over. Understandably, few performers of any reputation agreed to do this tedious work, especially being offered a much smaller fee than they could earn by performing much more relaxedly for a paying audience, and Pathé, much like other cylinder makers of the mid-1890s, mostly relied on a small group of young and aspiring singers with sturdy voices and a talent for sight-reading, so that orders for all kinds of repertoire could be filled at short notice without much need for rehearsals. As one might expect, the earliest Pathé catalogues only list the titles of the available repertoire, while the performers are not named; the chief reason for this being of course that the allocation of certain titles to certain performers wasn't fixed. Anyone available with a somewhat suitable type of voice might be called upon doing a few "rounds" of whatever song, aria, comic monologue or other piece was ordered by customers.

This arrangement of course was not very satisfactory for anybody - there was no way of keeping either the technical or the artistic quality of the product constant, and the boring and exhausting routine audibly compromises the performances on many of these earliest cylinders. To relieve recording artists from the chore of repeating the same piece of music over and over, mechanical ways of copying the recorded sound from one cylinder to another were developed, and around 1899, Pathé (at this point, still using the same standard technology as Edison, Columbia, or Bettini) was able to make about 30 to 50 copies from one original recording. For the first time, they added a special list of celebrity recordings that were guaranteed to be by the artists named in that part of the catalogue, with each cylinder box adorned by a photograph of the performer, and (naturally) selling at a higher price than the standard repertoire which was still anonymous, and only slightly less hit-or-miss in musical quality than the older direct recordings had been.

By 1901, a process to mass-produce pre-recorded cylinders by moulding them, using a metal negative cast from a master record, had been perfected for large-scale commercial use, and after Edison's introduction of their "Gold Moulded" cylinders, all other major manufacturers followed suit within a year. Pathé switched from mechanical duplication to moulding in summer 1902, and it is at this point that they chose to do things different from the competition. All other manufacturers completely dispensed with the mechanical duplicating or "pantographing" process at this time and preferred to use new direct recordings as masters. Not so Pathé! The reason for their unique combination of the old and new processes has never been convincingly found out, it might have had to do mostly with the economy of distributing the same recording on the various different types of cylinders they were offering, without having to make (and pay) separate master recordings for each size.

Whatever the reason, we know for sure that they still made their master recordings as before, on the largest type of cylinder available - the "Céleste", five inches in diameter and eight inches long - and mechanically transferred the engraved sound waves from its grooves to that of another cylinder of any desired size, which was then in turn used as a production master, to cast a mould for mass-production of saleable cylinders. This extra step between making the original recording and mass-producing media for sale makes Pathé's moulded cylinders, and the discs that followed and eventually replaced them, unique in the acoustic era. And it might be

said that this technical detail also is at the bottom of the problems that discographers face when documenting any Pathé record issued between 1902 and 1927.

The most obvious change in the 1902 overhaul of the catalogue was that the new recordings for the moulded cylinders were cut at a nominal speed of 160rpm with a duration of just over two minutes, while the brown-wax versions had very variable speeds between 100 and 140 rpm and played for three minutes, sometimes even longer. This meant that new, shorter, takes of each and every title had to be prepared at the higher rpm speed. With a catalogue of several thousand titles, this was a major project, and it took most of the year 1902 to complete. It also introduced a habit soon to become typical with Pathé, namely an almost fanatic economy with master numbers. Whenever a title that had existed already in the brown-wax catalogue was remade, the new moulded version retained the old number. Now that in itself is nothing special; more remarkably is that the numbers of selections not remade by the new process were given to random new recordings, rather than adding the new titles at the end of the pre-existing catalogue. As a result, even the earliest catalogue of moulded Pathé cylinders does not proceed in chronological sequence, but instead we find remakes of established titles from the 1890s thoroughly mixed with new issues. We will see that this recycling of numbers continued for several decades.

At this point, I must draw attention to the fact that the performers associated with the new editions of 1902, now named in the catalogues, are not usually the same heard on earlier brown-wax cylinders sharing the same numbers for the same selections. Many discographers have mistakenly identified the early brown-wax cylinders with later catalogues listing the performers of the 1902 remakes, and certain absurdities persist in print, like recordings by Paul Aumonier being dated back to 1897, although in that year, Aumonier not only hadn't even started his studies to become a professional singer, but was still living in his hometown Chasselay, far away from Pathé's Parisian studio.

With all moulded Pathé cylinders, and all the discs they subsequently issued, up to and including their very first electric recordings of 1927, one must always remember that the existing copies are NOT galvanoplastic facsimiles of the master wax recording cut during the recording session itself, but facsimiles of second-generation production masters unrelated in time and place to the original session ("unrelated" except that they, logically, cannot precede the session itself). For this reason, several standard ways of identifying individual "takes" and establishing

the chronology of recording sessions, sometimes even the identity of the engineers who made the recordings, rules and methods that every discographer is familiar with from almost any other brand of pre-World War II phonograph records, fail completely with Pathé records. In many respects, Pathés need to be discographically considered not so much like garden-variety 78s, but more like modern LP records and CDs that also are derived in a similarly indirect way from master tapes or digital master recordings, with similarly little information about the recording sessions themselves to be gleaned from the finished product.

Splitting the mastering process into two distinct steps, as contrasted to the production master being recorded "direct-to-disc" or "direct-to-cylinder" in real time during the performance itself, has important consequences for the appearance of the resulting physical records:

1. Multiple copies and editions derived from the same performance (the same "take") may vary in all those physical aspects that are generally used by researchers to decide the identity, or rather the non-identity, of takes on conventional 78s. If the latter are noticeably different in physical dimension, playback speed, musical pitch, groove width, or sound volume, one can, as a rule of thumb, assume that the performance will be a different one. With Pathé, all of these parameters may change from one copy to another, and yet the performance is the same, because the different-looking and different-sounding copies were derived from the same track on the same Master Cylinder.

2. The opposite also holds true: Very similar looking copies of what is intentionally "the same" Pathé record - same diameter, same catalogue number, same titling - may, and in a sizeable number of known instances will, contain different performances, possibly from different sessions held in different years, with different accompaniments and musical arrangements, that are not clearly identified as such in anyway on the records themselves.

To put it briefly, Pathé records neither have matrix numbers, nor take numbers, most of them not even catalogue numbers, in the familiar senses that these technical terms have in 78rpm discography and cylinderography. Bluntly trying to shoehorn the various numbers found on Pathé cylinders and discs into the familiar categories is guaranteed to end in discographical nonsense. The question is, what IS the meaning behind those numbers that are, for the most part very plainly and clearly, seen on Pathé cylinders and discs? And how do these numbers

relate to their peculiar manufacturing process? We will have to look at the two stages - recording and pantographing - separately, to understand the markings on Pathé records better.

Stage One: Recording the Master-Cylinder

Pathé's recording engineers, in the studio or in the field, used so-called Master-Cylinders as recording media. A Master-Cylinder is nothing more or less than an oversized variety of the same sort of wax cylinders also used on Edison and other phonographs, and the top works of Pathé's recording lathe look very much like a blown-up Edison Triumph phonograph. In the early years, a cylinder size called "Céleste" was preferred, with the same diameter as an Edison "Concert" or Pathé "Stentor" cylinder, but roughly twice as long. At some point in the early 1910s, an even larger type called "Paradis" was introduced at the Paris studio, of similar length but approximately seven inches diameter. The larger cylinder gave less distortion and better frequency response at the same rotational speed, probably also more inertia to stabilize the rotation and suppress wow and flutter, at the disadvantage of being even bulkier and more difficult to transport than the Céleste. For this reason, the field-recording equipment employed by Pathé's engineers on their travels through Europe, Asia, and South America, as well as in local studios for example in New York and Berlin, continued to use Céleste masters.

The length of both Paradis and Céleste allowed recording about five minutes and a half of music at the standard speed of 160rpm, but the Paradis could be slowed down to 140 or even 120 rpm without any obvious loss of sound quality, to squeeze in another minute or two. In this fashion, the material for a double-sided disc could be recorded in one continuous take if desired - an obvious advantage when recording longer pieces of music, as the performers weren't forced to stop and restart in the middle of the piece. More often however, the remaining space after a recording of average duration was used for a second "backup" take of the same material. In the years 1906 to 1910, while both cylinders and discs were produced, they often recorded one short (2 minutes or less) and one longer (3 to 4 minutes) take on the same Master Cylinder, one for cylinders and small-diameter discs, the other for full-size discs. Occasionally - but not always - a production-master transferred from not from the beginning of a Master Cylinder but from a later section was marked "bis" ("twice" or "second") appearing as a suffix to the Master Cylinder number on the finished record.

Recording on a cylinder, rather than directly on a wax disc as all other disc manufacturers did, of course had the obvious advantages of all wax cylinder recording: A cylinder can be played back and listened to immediately without being fatally damaged in the process, by simply exchanging the recording diaphragm and stylus for a reproducer. If a recording is found unsatisfactory, one can easily shave the cylinder clean and use it over again, either for a new attempt, or for another unrelated recording at a later session. Pathé's engineers made extensive use of both features. The possibility of immediate playback in the performer's presence, together with the option to erase and re-use the cylinder, is the reason why we have practically no unissued takes, trial recordings, and test pressings from Pathé (unlike from other companies who had to process and press every master wax before they could listen to the recording and decide whether it was suitable for publication). At the same time, we have finally found the explanation why the numerical series of Master Cylinders does not behave like a conventional matrix number series, even if large parts of it superficially look like one: Whenever a recording was found wanting or defective, or simply outdated and no longer commercially useful, its Master Cylinder was shaved and re-used at some later session, while retaining its original number, which was thus allocated to the cylinder itself, and not to any particular recording it happened to carry at any one point in time. Sometimes such a re-use would simply result in a new take of the same selection, but more often, the new recording was of totally unrelated material. Over the years, this of course led to a complete breakdown of any original chronological order, as more and more of the earliest recordings were retired from the catalogue, their Master Cylinders erased, and the ancient master numbers used again for fresh recordings. In the oldest and most crowded part of the catalogue - French vocal recordings, allocated master numbers from 1 to 4,999 - certain numbers were used up to seven times between 1902 and 1925, and a strict numerical table of the series as it existed at the end of that period shows a chaotic jumble of recent, older, and a few ancient recordings in no discernible order. Sometimes whole batches of Master Cylinders were reused within a few years: Numbers beginning at 19,000 contained a collection of Gregorian Chants in the 1900 catalogue which must have been unsuccessful: None have ever been found by collectors, and the whole 19,000 block is found reallocated to Viennese recordings only four years later. Some British recordings in a 30,000 series and offered in 1902 disappeared just as quickly - by 1905, the same numbers (and probably the same batch of Master Cylinders) contained Dutch recordings.

At this point, our would-be discographer remembers that the documentation that undoubtedly existed at the time, charting the uses and re-uses of each Master Cylinder, is no longer

available, and he may be forgiven if he suffers an attack of despair and frustration, faced with the seemingly hopeless task of tracing each individual Master Cylinder's history through three decades. But is that task really hopeless? After all, there is another step in Pathé's process that we have not considered so far, one much more immediately linked to the record as a collectable and describable physical artefact.

Stage Two: Making the Production Master

All production masters for both cylinders and discs were made at Pathé's factory in Chatou near Paris, where the central archive of Master Cylinders was also located. All Master Cylinders recorded anywhere in the world were sent to Chatou for pantographing onto production masters. Only the US-American branch had their own local Master-to-disc transfer machines since about 1915, when the Great War made shipping Master Cylinders to Chatou and finished disc masters back to New York too risky and difficult. Pathé's US-American engineers were also the first to develop a pantographing machine that converted the vertical-cut (hill-and-dale) Master Cylinder recording into a lateral-cut (Berliner-type) groove on a disc that could then be processed in the familiar way and resulted in a standard "78" playable with a steel needle.

When the two-stage mastering process was introduced in 1902, with only cylinder masters of standard size being made at the very beginning, no more than one or maybe two per title, the only markings that the production masters carried were the Master Cylinder number (doubling as catalogue number), the title of the selection, and the brand name "Pathé", all neatly engraved on the cylinder surface, in the blank space following the end of the music, and thus moulded identically into each copy of the production master.

With a growing number of production masters, it became necessary however to identify them individually and not only by the number of the Master Cylinder, for the same reason that moulds, stampers and shells were individually marked by other manufacturers: Moulds and stampers wear out after a certain number of copies, and it was vital for the company to track the lifetime of each individual metal part, and, if needed, identify the source of any defective product quickly and unambiguously. To this effect, an additional number was added to new cylinder moulds beginning in early 1903: The transfer-serial number. Its original purpose is no longer

very relevant to collectors and discographers today, but it has gained another level of significance, one not recognized at all by Girard and Barnes, who flatly state in their pioneering discography that these numbers are of no discographical significance because all copies of any one title sharing the same Master Cylinder number contain the same performance anyway. We have already seen that this is not necessarily so.

The Chatou factory numbered each size of cylinder mould in a separate sequence - at the end of the cylinder production around 1910, the series of standard (Edison) sized moulds had grown to circa 33,500, Inter (in British parlance "Salon") cylinders counted slightly beyond 30,000, while the far less common Stentor ("Concert") and Céleste sizes totalled about 1,200 Stentor and less than 100 Céleste moulds. The truly beautiful thing for the researcher is that, unlike the Master Cylinder numbers with their problematic history of possibly being erased and re-used several times, and a rather complicated and ever-changing block numbering scheme by country and language, all cylinder moulds of one size were serially numbered in the order the Master-to-cylinder transfer jobs were done. Though obviously not running exactly synchronous with the sequence of recording sessions, this processing chronology becomes the key to tracing the undocumented changes in the content of each Master Cylinder. Each production master is a "snapshot" of the current content of the Master Cylinder, at the time it was sent to the factory to be transferred, and multiple such "snapshots" of the same Master Cylinder over the years can be put into chronological order by their transfer-serial numbers, allowing to estimate the point in time when an old recording was erased, and a new one substituted, on any master cylinder. Comparing a sufficient number of transfer-serial numbers with the recordings they belong to, and with recording and issue dates incidentally known or inferred from external sources (reviews, theatre schedules, performers' and engineers' itineraries and diaries, etc.), one can estimate the processing dates, and by proxy the recording dates for recordings of otherwise uncertain age, for instance, those not listed in any dated supplement or catalogue.

With the center-start discs that were first issued in the shape of unwieldy single-sided wax-coated plaster cakes in early 1906, quickly withdrawn because of technical problems, and finally established on the market as shellac pressings from late 1906 onwards, the transfer-serial numbers work even better than for the cylinders: Not only because the discs are much more easily found than the cylinders, but also because all sizes of disc masters share one common numerical-chronological series which therefore proceeds extremely quickly, reaching the 100,000 mark after only eight years. Beginning in 1914, the transfer-serial numbers start over at

1, with the last two digits of the year added in front: 99,999 is followed by (14) 1, the new sequence continuing with (15) 5,050 ff. and finally (16) 7,400 ff. while the production temporarily peters out because of wartime difficulties.

This is the only unbroken, straightforwardly chronological series of numbers found on any Pathé product before the late 1920s, and although it reflects the chronological order of processing the masters at Chatou rather than that of making the original recordings, it is invaluable as a proxy for the otherwise unknown, and often unknowable, recording dates: Each new recording went to the factory at least once, to be made into a production master, at a date reasonably close to the recording session itself. When more than one master exists for the same take, it is the lowest transfer-serial number that belongs to the earliest transfer and approximates the recording date most closely.

Assuming that the transfer laboratory was closed on Sundays, one arrives at a long-term average of no less than 40 Master-to-disc transfers having been made at Chatou every day, six days a week, between late 1905 and late 1913. With such a fast-moving series, the reconstruction of the chronology of processing dates can become surprisingly precise and robust, as two sessions only a few months apart will correspond to transfer-serial numbers differing by several thousands, easy to distinguish with little ambiguity. The remaining uncertainty is less than one month in either direction, except at the very beginning of the series when data is sparse, because only a small fraction of the earliest disc masters was actually used to make issued records, due to the persisting technical difficulties with the moulded wax discs laminated to a plaster base. With the change to the well-proven shellac pressing technology in 1906, both the production and our knowledge of it quickly pick up.

Sadly, with the remodeling of the Pathé catalogue as edge-start, paper-labelled discs in late 1916, Pathé seems to have stopped the serial numbering of each production master. At least, no transfer-serial numbers are visible on edge-start Pathés, and the described method for estimating production and recording dates no longer works for them. As the catalogue numbering system of the new type of record was somewhat more straightforward than that of the earlier type, this is however less fatal a problem than might be expected. Some exceptions in the form of alternative takes not clearly marked as such are known throughout the late 1910s and 1920s however.

The research of the transfer-serial numbers has only just begun one might say, though the state of knowledge I am reporting today has taken me three decades of assembling enough of these numbers to eventually discover the pattern and establish the chronology. Transfer-serial numbers are only found on actual copies of the records, they are not given in trade catalogues and, sadly, not in most printed discographies and archival databases either, as too many authors and archivists have been following Girard and Barnes' ill advice about the irrelevance of these numbers. The wrong assumption that all copies of the same title under the same Master Cylinder number always contain the same performance or "take", which also originated (in print) with Messrs. Girard and Barnes, has further reduced many discographies of Pathé sessions to mere lists of Master Cylinder numbers, lacking all information about the various physical formats in which individual records were current, and ignoring the possible, and often enough easily audible, existence of alternative takes.

The Pathé Label-Discography: What has been done and what still needs to be done

After looking at the most frequently misunderstood and ignored aspects of the peculiar numbering and cataloguing of Pathé moulded cylinders and center-start discs, let me conclude with some little statistics of the current state of my Pathé research, and an appeal:

To this date, I have identified and put into database format titles and performers for circa 67,100 performances recorded by Pathé using the acoustic process (1897 - 1927, worldwide)

Among these, circa

10,700 brown-wax cylinders,

13,600 moulded cylinders, and

43,100 etched-label center-start discs

were issued (many Master Cylinders appeared several times in several formats and diameters).

Looking at the transfer-serial numbers, I have documented

1,700 standard-size cylinder moulds (out of max. 34,000)

1,300 Inter/Salon-size cylinder moulds (out of max. 31,000)

50 Stentor and Céleste cylinder moulds (out of max. 1,300)

16,500 center-start disc stampers (out of max. 109,000)

In other words, I have still not identified
between 10,600 and 63,200 cylinder moulds, and
between 26,600 and 92,500 center-start disc stampers

As you see, chances are good that some of the missing ones might be lurking among the early Pathés in your collection, even if you might not consider yourself a specialist Pathé collector and have only at some point acquired a handful by chance, or as a curiosity to display in your music room - I gather that the huge 14- and 20-inch discs in particular, and the earliest wax-coated ones with their very decorative backplate, are very much in demand for this purpose.

Lists of all positively identified transfer-serial numbers, collated with their Master Cylinder numbers and disc/cylinder diameters, have been made available online at the following URLs:

<http://discography.phonomuseum.at/pathechecklists.htm>

Please take the time to compare your discs and cylinders with these lists, and report any missing items, or discrepancies/mistakes in the listed details, to help the reconstructed list of transfer-serial numbers grow. Thank you for supporting the project by doing so, and for your kind and patient attention listening to my talk!

Christian Zwarg, Berlin, October 2019

Checklists of Pathe Transfer Serial Numbers:

<http://discography.phonomuseum.at/pathechecklists.htm>