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The aims of the Institute
A small number of pianola owners and musicians have been concerned for some time at the unnatural break between the world of music rolls and the world of music. Few members of the musical public know much about player pianos, and the Institute aims to bring about a better understanding and appreciation of the instrument in a number of ways.

The Institute publishes a regular journal, puts on public concerts, and has plans for a lending library of rolls, a travelling exhibition, and in addition a roll and information archive, with a small collection of player pianos for listening and study purposes.

The Pianola Institute will endeavour to preserve, research and document the pianola's history, to improve the instrument's present standing, and by the commissioning of new compositions, to ensure that it remains an important musical force for the future.

The directors of the Institute are:

Louis Cyr, Keith Daniels, Mike Davies, Denis Hall, Rex Lawson, Claire L'Enfant.

It is possible to support the work of the Institute by joining the Friends of the Pianola Institute. The Friends subscription includes a copy of the journal. Membership enquiries should be sent to Mike Davies, 70, Blackheath Park, London, SE3 0ET U.K.

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EDITORIAL

It was with great sadness that we learned of the death of Conlon Nancarrow, the distinguished composer, and patron of the Pianola Institute. Nancarrow died last August at the age of 84 at his home in Mexico City. A jazz trumpeter before he turned to composition, Nancarrow was fascinated throughout his life by the complex relationships that resulted when competing rhythms were set against each other. His best-known works, more than 50 Studies for the player piano dazzle the ear with their competing metres and melodies that draw on a huge range of sources from blues to Spanish music. Born in Arkansas in 1912, he studied at the Cincinnati College Conservatory of Music. In 1936 he went to Spain with the Abraham Lincoln Brigade to fight against Franco, and when he returned to the US, he lived in New York working as a composer, and as a critic for the magazine Modern Music. In 1940, the US government refused to renew his passport because of his outspoken socialist views, and he moved to Mexico City. Soon after his arrival there, he bought two Ampico player pianos, which he modified by covering their hammers with leather and steel straps in order to make their attacks sharper. For four decades he composed directly (and exclusively) on to piano rolls. With the renewed interest in his music that began in the 1970s, and grew in the 80s, he reconsidered his attitude to live music, and began to accept commissions for piano, chamber and orchestral works. Charles Amirkhanian’s memoir recalls a man of high principle and an inspiring musician.

Denis Hall’s article on the Duo-Art piano details the processes by which the rolls were recorded, edited and finally approved by the artists. It also assesses how successful the rolls and pianos were in reproducing the performances recorded. It pulls together a wealth of detailed material on the subject, clarifying much that has been obscure, and clearing away several myths. Read in conjunction with the work of Patrick Handscombe and Rex Lawson, previously published in this journal, and elsewhere, a clearer picture of Aeolian’s Duo-Art activities is emerging.

We are also very pleased to publish Lionel Salter’s article on Granados, the first such detailed comparison of Granados’ recordings of his own work from the various sources available.

During the course of this year, the Institute plans to launch its own website. The site will provide information about the Institute, the Friends of the Institute, forthcoming concerts and events, together with features on the history of the pianola, and music for the pianola. We plan to make abstracts of journal articles available, together with the contents lists of past and present issues. We hope that the site will enable us to make the work of the Institute known to a wider audience of people interested in the music of the pianola, and the composers who have written and are writing for it, and to establish a dialogue with current and future readers of the journal.
Correction:

In Pianola Journal no.9 we published a personal memoir of Shura Cherkassky by Robert Taylor. We apologise for the fact that the photograph on the first page of that article has no caption. The photograph shows Shura Cherkassky with Abram Chasins and his wife, Constance Keene. Chasins was a pupil of Josef Hofmann, and made a considerable mark as a composer. Constance Keene was best known as a pianist who made a number of distinguished recordings, particularly of the music of Rachmaninov. They both had distinguished concert careers, and also gave two piano recitals together.
Duo-Art Piano Rolls: a description of their production and an assessment of their performance

Denis Hall

Note: This article complements Rex Lawson’s article Duo-Art Roll Speeds and Recording Methods first published in the Player Piano Group Bulletin No. 139 of July 1996.

INTRODUCTION

Duo-Art pianos and rolls were manufactured in America and England. This article aims to detail the processes by which the rolls were recorded, edited and finally approved by the artist, at which stage they were ready for production. It also assesses how successful the rolls and pianos were in reproducing the performances recorded. The variations in Duo-Art player actions obviously impinge on the way the rolls were edited, and so reference is made to the specifications of the pianos at various times in so far as they seem likely to have affected the rolls.

The Duo-Art Pianola received its first press release in the autumn of 1913 but was not officially launched by the Aeolian Company in New York until April 1914.
The Duo-Art system is an amalgamation of a number of patents held by Aeolian dating back to 1901, culminating in what is a virtually complete mechanism, patent 13,715,700 of 1913; Aeolian never patented the final system. For a description of its development and operation, see Pianola Journal no. 6, ‘A Ramble on the Duo-Art Theme’ by Patrick Handscombe. The reader should also be familiar with the basic working of the Duo-Art system as described in the Duo-Art Service Manuals published by Aeolian.

SPECIFICATIONS OF THE INSTRUMENTS
The Duo-Art Pianola, as the instrument was first named, was manufactured in the American factories of the Aeolian Company, probably at their new purpose-built location at Garwood, New Jersey, and one may take it that production was well under way by April 1914. Pianolas fitted with the Duo-Art action continued to be built at Aeolian’s factory at Garwood until its sale in 1932, when production on a smaller scale was transferred to East Rochester, New York, the site of the American Piano Company’s activities, following the consolidation of the production of the Duo-Art and Ampico instruments. By that time, Aeolian-American, as it was then known, was in a financially precarious state, and we find instruments where Ampico parts are used in Duo-Art pianos just to get the hybrids completed and ready for sale. Production ceased altogether by the beginning of the Second World War.

Aeolian in Britain had its factory at Hayes, Middlesex, from 1910, but does not seem to have built Duo-Art pianos until after the First World War. Those pianos which were sold outside North America prior to then were almost certainly manufactured at Garwood and exported. The earliest British Duo-Art instruments followed the design of the American ones with one or two slight differences which did not affect their performance. From 1923 on, however, the British pianos were fitted with actions designed and built at Hayes which were significantly different from the American instruments.

INSTALLATIONS PRE-1920
Once production settled down, say from early 1915, grands were fitted with an 88 note stack with three decks of graduated pneumatics. These were 1 3/8” wide and 6 1/2”, 6” and 5 1/2” in length, the largest in the bass. Light return springs were fitted to the hinges of the pneumatics on the entire stack early on, and later from the middle of the piano to the top of the treble. Cross valves were installed, initially with a travel of 1/16”.

The Duo-Art expression box had two regulators measuring 9” by 4” with a 4” span. Two identical regulator springs, 1/2” diameter and .055” guage wire were fitted. This unit comprised only the regulators, knife valves, spill and accordions. The Theme secondary and flap valves were housed in a separate unit on these early instruments.
The sustaining pedal arrangement with a pneumatic to raise the dampers remained standard throughout the production life of the Duo-Art. The soft pedal on grands, however, in the earliest instruments was a muffler rail, but this was very quickly dropped on Aeolian-built instruments (Weber and Steck) in favour of the usual half-blow arrangement. The muffler rail continued a little longer on Steinways, until c1919 when they modified their piano action to enable a continuous hammer rail to be fitted which actuated the half-blow soft pedal. The pump was housed in separate cabinet and was the 6-feeder (steamboat) type.

AMERICAN PRACTICE
The classic later American grand had a smaller, redesigned stack with 80 playing notes covering the Duo-Art scale instead of the previous 88 note stack. Striker pneumatics measured 1 3/8” wide and 5”, 4 1/2” and 4” long, thus retaining the graduated sizes. Return springs were fitted to the striker pneumatic hinges from a few notes into the middle size up to the top. Cheaper pianos had the same size of pneumatics throughout. Some pianos had round valves and other a redesigned slightly larger cross valve. Valve travel was standardised at 1/32”.

The expression box was made more compact and incorporated the Theme secondary/flap valves unit into the main box. The regulator pneumatics measured 8 1/4” by 3 1/4” with a span of 3 1/4”. Most significantly, a .055” wire gauge spring was fitted to the Theme regulator and a weaker .049” gauge spring to the Accompaniment.

Fitting different springs to the regulators was an important change which affected the performance of the pianos. With identical springs, when correctly set up, the Theme minimum setting would be just above the Accompaniment zero and below Accompaniment power 1. The Theme and Accompaniment powers would interleave all the way up to full power. With different strengths of springs, the Theme and Accompaniment build-up curves would assume different profiles, the Theme pulling away from the Accompaniment from quite low powers. The subjective result would be more delicate accompaniment figures, and melody/accented notes standing out more distinctly than on a piano fitted with identical strengths of springs on both regulators. A crash valve was soon fitted to this style of expression box.

A later (c1928) change was the introduction of a small bleed to atmosphere in the Theme regulator chamber. Its main purpose was to stabilise the suction level in the Theme side of the expression system when it was not being signalled; in a really airtight piano, the tendency would be for the level to creep up. The fact that it was not introduced until so late means that most rolls were edited without it. In practice it does not make much difference to the operation of a piano, but in certain circumstances, its effect can be heard. Occasionally, at the end of a musical phrase, a Theme ‘snake-bite’ will appear without any Theme dynamic coding.
On a piano without the bleed, the Themed note will stand out from the accompaniment because there is a residual higher suction level retained in the system from a previous high-level coding. On a piano with the bleed, the melody note will be lost if the higher suction level has been released, aided by the bleed. In the former case, the roll will make musical sense; in the latter, the listener is left wondering why the piano has failed to bring out the appropriate note.

In these later pianos, a 17" (or sometimes 15") 4-feeder rotary pump was fitted under the piano, obviating the need for the bulky 6-feeder pump cabinet. On all American pianos, the pump was connected directly to the expression box, the spill on the expression box relieving the strain on the pump when the piano was turned on but not playing. The full pump tension was available to the Duo-Art action once power 10 dynamic was reached and the spill closed off.

American upright pianos were fitted with an expression box with regulators 9" by 4" by 4" and two identical .055" springs, based on the pre-1919 grand box. These were retained throughout production even after the grand style had been changed. Stacks generally had round valves, the more expensive models having graduated pneumatics, and the rest all the same size.

BRITISH PRACTICE

The British Aeolian Company published a catalogue in August 1922 which featured the 'new Duo-Art models'.

About that time, or a little before, the Hayes factory started to manufacture Duo-Art actions. Pianos of that vintage are very similar to their American counterparts, with grands having the 88 note stack, large expression box, and a separate Theme secondary box and 6-feeder pump. Differences were minor - the adjustment for minimum setting was a T-bar rather than the worm gear and locking screw fitted in America. The half-blow pneumatic was placed at the bass end of the piano beside the sustaining pedal pneumatic below the soundboard, rather than to the left of the spool box. The tracking ears were always controlled by valves instead of the cut-off pouches later fitted to American instruments. About 1923, the four-port system of tracking was introduced in Britain; patent restrictions in America precluded New York from using it. Generally, however, the differences were small, and British and American pianos would have performed in a very similar fashion.

The British and American upright installations were identical at that period.

About 1923, the pneumatic sizes of the top of the range grand stack were reduced following the American lead, with dimensions of 1 3/8" wide and four graduated lengths - 5 1/4", 4 3/4", 4 1/4" and 3 7/8"; these stacks played 80 notes. No springs were fitted to the hinges, and cross valves were abandoned in favour of round valves. There does not seem to have been the standardisation of valve travel which was a feature of American pianos. British instruments have been recorded with valve travel as great as .070" down to a more normal .030".
The 'Pianola' Piano
New 'Duo-Art' Model

The feature which distinguishes the New 'Duo Art' Model from the regular 'Pianola' Piano, is its reproducing action.

Through the medium of a new self-governed pneumatic action, and specially prepared music-rolls, the actual performances of leading pianists are faultlessly reproduced, with all the charm, spirit and individuality of the original rendition. Every slightest variation of tempo, every subtle tone-shade, every nuance, every elusive rubato is reproduced with absolute fidelity.

A new invention in connection with expression control, which is the result of several years of exhaustive study and experiment, has made it possible for The Aeolian Company, Ltd., to offer in The 'Pianola' Piano, New 'Duo-Art' Model a "reproducing piano," artistically on a par with the high standard of its other instruments, at a price little in excess of that of an ordinary 'Pianola' Piano.

Reproducing or "autograph" pianos are not entirely novel. They have heretofore attracted attention, however, more because of their promising possibilities than by reason of their artistic value as accurate records of pianistic performances.

From these the 'Pianola' Piano, New 'Duo-Art' Model differs as radically as The 'Pianola' Piano itself differs from the so-called player-pianos, which its success has brought upon the market. The musicians who have heard this new Piano and have recorded their performances for it, are unmeasured in their enthusiastic praises of its extraordinary and unapproached powers for faithful reproduction.

ELECTRIC OR FOOT OPERATED.

The 'Pianola' Piano (New 'Duo-Art' Model) may be obtained either electrically driven or fitted with pedals to be operated by the feet as in the ordinary 'Pianola' Piano. An Automatic Control is fitted in the electric models so that they need no personal attention after starting. The instrument may be set either to stop after re-rolling at the end of the piece or to repeat ad lib.

Extract from the British Aeolian Company piano catalogue of August 1922

and almost anything in between! The travel is always consistent within a stack.

The pedal-electric model of Duo-Art was introduced in Britain which necessitated some alterations to the expression box. The British engineers took the opportunity to redesign the installation so that the complete action, including the rotary pump, could be fitted within the cases of both grand and upright pianos. The expression box was reduced in size from the earlier model, but not as much as in America, and flap valves and Theme secondaries were
incorporated in the one unit. The regulator pneumatics measured 9" by 3 3/8" and had a span of 4". The reduction in width was probably a purely practical decision so that the expression box could be turned through 90 degrees and mounted sideways in upright pianos. There were far more upright pianos than grands produced at Hayes and so this was an important consideration. The box was never neatly fitted in grands. Both Theme and Accompaniment regulator springs were the same, usually .059", although other strengths were sometimes supplied. The small bleed to the Theme regulator chamber to unload residual suction was usually included.

All British pianos with the pedal-electric box (even if they are straight electric installations) have a spill permanently in operation between the pump and the expression box. This is sometimes just a felt-covered hole with an adjustment slide to allow a permanent bleed, but more usually an external knife valve or flap controlled by a pneumatic and spring. The thinking behind this was to provide a rudimentary volume control and coincidentally give a more even suction supply to the expression system. The crash valve was never fitted to the British instruments.

In general terms then, the performance of British pianos should be characterised by the build-up of powers interleaving right up to power 15 as on the early instruments (and thus differing from the American models with their different strengths of regulator springs), and perhaps a slightly better controlled performance at the lowest dynamic levels, helped by the steadier suction supply. The overall dynamic range was probably slightly smaller. That there were differences in the performance of British and American pianos is evidenced both by the technical staff (W. Creary Woods) and the artists (Bauer and Lamond).

RECORING AND EDITING THE ROLLS

Until 1912, Aeolian did not produce what we now call 'hand-played' rolls but preferred to issue metronomically cut rolls marked up with their patented 'Metrostyle' line. This line was generally traced in red ink, and when used in conjunction with an Aeolian Pianola, gave a guide to the interpretation of the music. To be effective, it relied on a fair degree of skill on the part of the pianist to create the correct dynamics, and a Pianola with a perfectly adjusted Tempo control. By the early teens of this century, other roll manufacturers were putting out rolls of recorded performances of pianists where the player pianist had only to set the Tempo control at the beginning of the piece, and tempo variations and phrasing cut into the roll reproduced the performance as far as note placement of the original performance was concerned. Aeolian responded to the hand-played roll with its 'Metro-Art' catalogue. Heavily featured in this series were the German pianist Egon Pütz for the classical repertoire, and Felix Arndt for light classical and popular music.

In the manufacture of a reproducing piano roll, there are two separate
processes, 1) the recording of note placements and 2) the recording and creation of the dynamics. With the introduction of the Duo-Art, Aeolian had the need immediately for a catalogue of such rolls to offer with its new instrument.

In February 1924, Reginald Reynolds, the British Duo-Art recording producer succinctly described the note recording process (5):

‘In a secluded room stands a Weber grand piano, in tone and in outward appearance not different from the usual model, nor does the touch betray the magic power beneath the keys. Upon closer inspection the secret is partially revealed by the electric cable which can be seen coming from beneath the instrument; and if it were possible to trace this back into the piano, there would be found 160 wires, half of them leading to specially devised contacts under the keys, the remainder running to positions near the point where the hammers strike the strings, while the cable itself passes through the wall of the room, coming out into a sound-proof chamber, in which is installed the amazing mechanism that constitutes the Duo-Art recording apparatus. Here the other ends of the wires are attached to electro-magnets, which operate the punches in the powerful perforating machine, each punch corresponding with each key of the piano. The pianist plays - the punches perforate - the record is produced!’

Although Reynolds refers to the Duo-Art recording apparatus, he manages to avoid any reference as to how the all important dynamics were added. For the other part of the process we may turn to W. Creary Woods, the American classical Duo-Art recording producer. In a letter dated 15 April 1960, he recalled his involvement in the Duo-Art in those early days around 1913-14 (6):

‘There were several inventions on the Pianola that made it easy to obtain good musical effects. Through these inventions the Duo-Art mechanism was developed. During this period the company developed a Recording Piano and a machine that would cut the perforations in the paper roll simultaneously while the artist played. This was a great improvement over the old method of arranging all the music on a paper stencil and cutting it by hand. As I was in the experimental department about the time the Duo-Art Piano was ready for public sale, the Company wanted me to prepare some of the Records for the Duo-Art with the artists’ assistance. This meant editing the rolls for the Duo-Art mechanism, which was quite a task, since it was something entirely new. However, it wasn’t too long before I had a library of about 50 rolls ready for the catalogue.

‘During this time I found a much simpler way, and that was to cut the expression into the rolls as the artist played. It saved much time and improved the expression in the rolls.’

Woods amplified this last paragraph in an interview published in the July 1967 issue of the American magazine, High Fidelity:

‘The artist played at the recording piano while I sat at my desk. As he played, I traced his dynamics and phrasing, using a series of dials built into my
Harold Samuel recording for the Duo-Art in London
with Reginald Reynolds at the desk

desk with a musical score, previously prepared by the artist, before me. A series
of wires ran from my desk to the recording device. When the performance was
over the roll was ready immediately for playing. Of course, my tracings were
never completely accurate, no matter how many times the artist and I had gone
over his conception of the piece beforehand. So we would spend long hours
together, playing the roll over and over, changing inaccuracies in my dynamic
indications, that could not be reproduced, and erasing the pianist's mistakes."

Here then, we have the complete process in the words of two classical Duo-Art
recording producers.

The recording perforator referred to by Reynolds punched at a constant
frequency of about 3500 per minute. The roll pull-through mechanism was set at
the notional speed for the production roll (in the case of Duo-Art generally
between 6 and 10 feet per minute). The punches of the recording perforator ran
at a fixed frequency, and the roll was pulled through on to a take-up spool, which
revolved at a constant number of revolutions per minute. As the paper wound
on to the take-up spool, its diameter increased, pulling the roll through the
recording perforator at an increasing speed. The number of punches per inch on
the roll therefore decreased as the roll progressed. When this 'Original' roll was
taken from the perforator, it contained a record of the notes as played by the pianist, the initial dynamic tracing perforations, and the use of the sustaining and soft pedals. The 160 wires mentioned by Reynolds refer to 2 for each of the 80 notes of the piano reproduced by the Duo-Art system.

These first rolls described by Woods were Metro-Art hand played rolls to which were added dynamic codings. As they had all been made by in-house

Fig 1: Roll 5506 I Know a Lovely Garden (d’Herdelot) played by Arndt.
Heavily edited ex Metro-Art roll
pianists within the two or three previous years, it would have been easy for Woods to consult them when it came to creating the dynamics. Rolls manufactured in this way may be recognised by the use of extended perforations which are peculiar to Metro-Art rolls. There are about 40 rolls of this type.

Fig 2: Roll 5521 Etude Op. 10 no.1, (Chopin) played by Zadora. Early original Duo-Art recording
Within the first 50 Duo-Art rolls issued one finds a different style of note perforations starting to appear; these signify the beginnings of original recordings for the Duo-Art with dynamics traced as the pianist played. The type of desk to which Woods refers continued to be used throughout the period of Duo-Art classical recording, and may be seen in numerous photographs of both Woods and Reynolds with recording artists. Its most obvious features were two large dials operating over an arc of about 60 degrees. The Duo-Art system used the bottom and top four playing notes of the 88 note scale to register the dynamic coding, and the dials were wired in to the recording perforating machine to give rough Accompaniment and Theme dynamics. The other features of the desk were two pedals operated by the producer. The use of these pedals has not been described by Woods or Reynolds, but it seems almost certain that they made it possible to register Theme ‘snake bites’, the Duo-Art’s means of accenting, as the pianist played. There is evidence that the pedals ceased to be used in later years. They must, however, have been in operation for a roll to be playable as soon as the performance was over, as Woods describes. The basic soundness of the design of this desk, which was used even for the very best of the rolls dating from the late twenties, is a great credit to the early development staff in Aeolian’s experimental department. It must have taken considerable skill to operate the dials on the desk successfully in that only two people seem to have been entrusted with their use - Woods in America, and Reynolds in England.

The earliest rolls, mostly of light salon music, show that an immense amount of care was taken in their production, but the musical results can be quite crude, due, one suspects, to the inexperience of Woods and his colleagues in their grasp of how to make the Duo-Art reproducing action produce the results they were trying to achieve. While the rolls use the full dynamic coding of the system, too much use is made of the middle range of dynamics. One wonders if Woods at that early time looked on the scale in a linear fashion, regarding power zero as pp, 8 as mf, and 15 as ff, whereas quite soon he came to realize that powers 4 or 5 would produce an adequate mf. We do not know what time constraints were put on the editors to produce a catalogue of rolls; this may be another factor which worked against them achieving better results. The Metro-Art rolls used had the pianists’ playing rigidly ‘tidied up’ (see Fig 8), taking the resulting Duo-Art record yet another step further away from its source. By the time these rolls had been fully edited, they were hardly accurate reproductions of the artists’ original phrasing.

The introduction of direct recording with dynamics traced as the pianist played marks a step forward, although there is no great corresponding improvement in the quality of reproduction. Nevertheless, although note placements were heavily edited, much more of the original performance was left untouched. The dynamic coding assumes a different appearance, with rapid changes being registered as Woods moved the dials. A feature of these early rolls is the use of only the Accompaniment dynamics for complete passages of music where there is no melody line; it was found that quite fast changes in level could be achieved in that way.
Fig 3: Roll 5595 Spinning Song (Mendelssohn) played by Volavy, showing extensive use of Accompaniment dynamics only

With the introduction of the new process, Aeolian evidently felt confident in inviting some established artists to record, the earliest being Ganz, Scharwenka and Zadora. These more artistic performances undoubtedly formed the basis for improved rolls. Even if the dynamics were not very subtle, at least the note placements were more convincing, a noticeable change from some of the erratic efforts at the beginning.

Once the use of the recording desk had been established, Duo-Art classical recording became a matter of refining rather than undergoing any basic change in method. The time spent by Woods with the artists in editing the rolls must
have been extremely lengthy, but an essential part of the manufacturing process. The more interest the pianist took in the editing process, the greater the likelihood a successful recording would result. Those advertisements of the early period showing the pianist and Woods working at an upright Duo-Art piano must have been good publicity and given the owners of the pianos confidence in

An Interview on the DUO ART Pianola with Leopold Godowsky

LEOPOLD GODOWSKY

is admittedly one of the foremost pianists of the age — one, too, of the greatest piano-teachers in the higher realms of musical education and a composer for the piano who has contributed largely to the technical and musical development of the instrument. Appointed by the Emperor of Austria, Director of the famous K. K. Meisterschule in Vienna — Europe’s leading finishing institution for concert pianists, he held this important post for over five years prior to the outbreak of the present war. This appointment is always made by the Emperor personally, and is the highest honor of its kind that can be bestowed upon a musician.

When there are who are primarily great as executive artists — but there they halt. Few, indeed, can impart their art to others — possess the power to pass on, as it were, the divine affluence of their genius, to inspire, to teach.

Such a man, however, is the great pianist Godowsky. Himself, one of the first artists of his time, he is yet perhaps one of the greatest piano-teachers of all time. And this you feel in the very presence of the man.

I shall not readily forget the occasion when I met him first. He was playing Chopin’s immortal Fantasie in F minor, and it became a radiant and yet a solemn joy under his expressive and authoritative hands.

I saw him as he heard that performance reproduced a week later — shade by shade, and touch by touch — all so true to his feeling and to the highest impulses of his art.

For a while he sat silent as if adjusting himself to the tremendous import of what he had heard.

And then he spoke.

"It is truly a remarkable experience," he said at length, "to hear the Duo-Art mirror in every essential quality of tone and expression the Fantasie as I played it a week ago! To think this same performance will be heard in thousands of homes, years hence — just as I played it at Aeolian Hall!"

"Why, it would be inconceivable if I had not actually experienced this marvel of hearing myself play — if I had not recog-
"Then the reproducing piano represents, in your opinion, something of an epoch in interpretative pianoforte playing? I enquired.

"Your phrase suggests it very well," said the great musician. "The Duo-Art Pianola occupies, to my mind, somewhat the same relation to pianism that the printing press does to literature. It brings the noblest rendition of individual pianism to the homes of the millions. It distributes broadcast the results of the musical talent and genius of our time."

"Then it will actually be a factor in musical education?"

"A great factor," he replied. "Greater, perhaps, than we can now estimate."

"Think," he went on—"of the tremendous educational stimulus of the instrument. Think of the child, or the student, able to hear repeatedly some transcendent interpretation and thereby acquire refined taste and superior knowledge of music. Think of the music teachers themselves who will increase their information through the reproductions of superior pianism."

"Yes—by this instrument the creative art is put on a permanent basis as composition itself. And for it, as for other truly artistic types of modern instruments, it is an artist, must have the greatest respect."

"The true measure of the value of its accomplishment to the cause of highest music is now at last beginning to be realized by the musicians themselves—who in the infancy of modern-instrument development, perhaps, were somewhat skeptical. But such an instrument as this leaves prejudice defenseless."

I have read this interview in print and it is a true and authoritative statement of my opinions.

The Duo-Art Pianola is obtainable in the following well-known pianos—the STEINWAY, the STECK, the STROUD and the famous WEBER. Its prices range from $750 upwards.

The Aeolian Company
AEOILIAN HALL, NEW YORK CITY

Godowsky with W. Creasy Woods editing a Duo-Art roll in New York

the validity of the rolls. The coding patterns on the rolls of this period are often elaborate and sometimes not immediately logical to the eye, which would suggest that only those alterations from what Woods had traced which were necessary to improve the result were changed; otherwise the roll went into production, warts and all.

About the end of 1915 or the beginning of 1916, one notices a definite change in the dynamic coding patterns. They became simpler, with quite long stretches of the same powers.
Fig 4: Roll 5736 Waldesrauchen (Liszt) played by Donohue, showing simplified dynamic coding
This would suggest a change in the method of editing. Instead of taking the 'Original' roll from the recording perforator, putting it on a piano and making alterations, the editor was foregoing many of his subtle changes in favour of almost completely recoding the dynamics to give a more broad-brush result - a smooth but bland interpretation which would be unobjectionable to the casual listener, but which failed to reproduce all the small individual features of the artist's performance of which the Duo-Art was quite capable. The great advantage of this new method would have been the speed with which a roll could be made ready for production, provided always that the artist could be persuaded to endorse the result. Bearing in mind the quality of disc recordings of piano music at that time, and how they would have sounded on contemporary record players, one can perhaps excuse the pianists for accepting less than what might have been achieved, always remembering that these rolls certainly are an improvement on what had gone before. Another point of some significance is that by that time there is even less evidence of tampering with note placements. The rolls show slight unevennesses in the starts of chords, and less than perfect scale passages, sure signs of the pianist's playing being left relatively untouched. For the remainder of the teens, the simplified pattern of dynamic coding continued, but with an increasing amount of detail either being retained from the original tracings, or else subsequently being added at the instigation of the artist or the editor. Either way, the quality of the rolls improved steadily. Rolls from the late teens give a good impression of the pianist's playing, even if slightly lacking in the finer points of detail.

Around 1920, what was to be the final method of roll editing was introduced. Many examples are to be seen at IPAM (a). The 'Original' recording was made in the established way, with Woods working at his desk tracing the pianist's dynamics at the same time as the note recording was being produced. After that, however, a new stage was introduced. The 'Original' was then worked on by a member of the Aeolian staff (other than Woods) who interpreted Woods' tracings and marked blocks of dynamics. These constitute a rationalisation of the rapidly changing tracings. The Theme 'snake bites' which used to be inserted as the pianist played were now added by the editor; it seems likely that the use of the pedals on the recording desk had proved to be unsatisfactory. There are signs too of the soft pedal being added from time to time in addition to where the pianist had applied it, a technique which could give quieter playing without the risk of the reproducing piano dropping notes. At this stage also, slight adjustments to note placings and corrections of mistakes were made. At least five editors signed or initialled these rolls: Parkyn; Betts; A.F.L. (or A.J.L.); W.C.W (W. Creary Woods); Dave.

The marked-up 'Original' was then sent to the factory and a stencil and trial made in accordance with the instructions which could then be further edited and played to the artist. Further trials as necessary would be made until a version
acceptable to the artist was achieved. At that point, the roll would be autographed and it was then ready for publication.

Such editing is not as cavalier as it may seem, as the replaying of a performance is very much dependent on the exact placing of the notes, and with Duo-Art, we do not know exactly at what point in the piano action the measurements were taken. We have only Reynolds’ article quoted above and the following reference
in a letter dated 9 July 1923 from Woods to Reynolds (5):

‘I suggested some changes in our recording piano which have been a decided improvement. The rolls sound more natural and certainly there have been many less wrong notes to eliminate. It has also improved the touch of the recording piano so that it now plays like the ordinary piano without the recording action and makes no noise. This has been done by eliminating the second contact which is up close to the springs [strings?] and also the relays which are in connection with the recording machine. These changes could be made in your piano without much trouble and if it is agreeable to your Company in London... The heaviness of touch has been entirely eliminated and this has been very gratifying to the artists who have made rolls.’

It is possible that this modification was not made to the London recording piano as the late Gordon Iles reminisces that that instrument was ‘a Weber grand with, I recall, a slightly irregular touch.’

It is thus quite probable for some roughnesses to have been introduced in the recording process which needed to be corrected. The subsequent process to make production copies from the ‘Original’ also introduced compromises in accuracy, and once again slight adjustments of note placings could be made to minimise errors. The standard punch feed of the duplicating perforator was 21 increments to the inch, later refined to 31 1/2 to the inch, a resolution of better than 1/50 of a second at speed 80 (8 feet per minute), improving as the roll progressed. The editing of rolls by way of altering note placings may be looked on as a means of getting the pneumatic reproducing action accurately to reproduce what the pianist played rather than putting a gloss on substandard technique.

This method of roll editing was the one continued in America until Duo-Art classical roll production ceased in April 1932. Given the technology available at that time, it was cost effective and resulted in a product which achieved the results sought by the artists with the minimum of movement of mechanical parts of the expression mechanism, an advantage in reducing extraneous noise while the piano played.

Up to 1920, all Duo-Art rolls were recorded and edited in America. To cater for the market supplied by the British arm of the company, American Duo-Art masters were sent to Hayes and production copies with Orchestrelle Company leaders were punched there. Duo-Art rolls at that time were designed to be perforated at a frequency of 21 increments to the inch, unlike the normal Pianola rolls which used smaller step rates. The Orchestrelle Company did not have the correct perforator, and so punched the earliest copies of Duo-Art rolls at 23.5 increments to the inch, thus shortening the rolls by about 11%. The tempo marking at the beginning of these rolls is adjusted to give the correct playing speed. In time, a perforator with the correct pull-through was installed.

In 1919 Reginald Reynolds went to America to learn how to operate the
machinery to record Duo-Art rolls in anticipation of the important ‘O—’ series which would be published in England. In the autumn of 1920 Mr Volare of Aeolian in America was on holiday in England and is known to have visited Aeolian Hall in London and given advice on the recording of Duo-Art rolls, and also on the installation of the Duo-Art action in pianos; up to that time any Duo-Art instruments had been imported from America. The earliest ‘O—’ rolls were issued at the end of 1920.

The British rolls bear a remarkable family resemblance to the second phase of American issues, i.e., rapidly changing dynamic codes including some which have no influence on the music at that moment. For whatever reason, Reynolds, once back in the UK, preferred to return to the system of taking the ‘Original’ roll

Fig 6: Roll O91 Etude Romantique (Chaminade). Example of typical British Duo-Art roll
from the recording perforator and listening to it, adding and deleting expression perforations and altering note placements until the roll sounded as he wanted on his auditioning piano. The big disadvantage of this method was the time required to produce the finished roll. It was probably for this reason that spurious dynamic perforations were not removed if they did not interfere with the music. We know that John Ireland, the composer, had to return several times to Aeolian Hall to hear further trials of his rolls, and felt that what had seemed a generous payment for his playing turned out to be anything but! The advantage was a more intimate involvement with the performance as it was painstakingly refined phrase by phrase until the particular piano on which Reynolds was working reproduced exactly what he was aiming for; Katharine Goodson, for example, wrote to Reynolds saying how pleased she was with her rolls of the Schumann Fantasy, Op. 17 (O234-6).

Reynolds evidently became aware that some of his early roll editing left some room for improvement, particularly in his coding of the quietest passages, and when the opportunity came to improve it with the issue of the British AudioGraphic series of reissues from 1926 on, he made some slight alterations which make these versions less prone to fail.

**INTERVENTION IN EDITING**

‘There ain’t no such thing as a hand-played roll’. (J. Lawrence Cook)

The success of any reproducing piano roll is largely dependent on the quality of the editing. The technology to record note placements on to a paper roll has existed since the very early years of this century, but that task is only the first step on a very long road which ends with the production of the most refined of reproducing rolls. But at what point does refinement become obtrusive intervention?

Aeolian’s Metro-Art series of rolls was its first essay into recorded performances. These hand-played rolls were very heavily edited by way of extended perforations. These do not necessarily interfere with the playing back of the performance, although they do affect the appearance of the roll. The main reason for this technique was to overcome the indifferent operation of the automatic sustaining pedal often found on foot operated player pianos, and by extending note perforations a more precise effect of the use of the pedal could be obtained. It was a device used by Ampico with great success until the mid-1920s, although Aeolian soon dropped it from their roll productions. What was much more serious was their practice of ‘tidying up’ the recordings. Chords, unless they were definitely arpeggios or broken chords, would be altered to start at exactly the same time. Scales and trills would be made inhumanly even. During this period, this practice was carried out by Aeolian to the extent that it definitely blunted the artist’s individuality.
Fig 7: Roll 5517  L’Ondine (Chaminade) played by Ganz showing extended perforations taken from Metro-Art original
Fig 8: Roll 5534 Mazurka Op. 16 no.2 (Scharwenka) played by composer, showing note placements ‘tidied up’

When it came to the preparation of the first Duo-Art rolls, Woods had to edit the Metro-Art rolls and add dynamic coding to operate the Duo-Art mechanism, and he tells us that he did it with the assistance of the artists. In one way or another, this was how all reproducing piano rolls were made. No system could
record dynamics automatically straight on to the edges of the rolls - they always had to be added, or, in the case of Duo-Art, the initial tracings substantially altered. The earliest rolls were very erratic, due largely to Woods' inexperience in manipulating the coding to achieve the desired musical effect.

Fig 9: Metro-Art roll 200704 *Barcarolle* (Moszkowski) played by Pütz.
An interesting and inexplicable quirk took place between the conversion of the hand-played Metro-Art roll to Duo-Art. Some of the extended note perforations were cut back without corresponding adjustments to the sustaining pedal perforations being made. This gives a crude, choppy effect to the playing. The roll editors must have heard this, and one cannot understand how they would have found it acceptable. An example is roll 200704 (Metro-Art) and 5532 (Duo-Art),
Barcarolle (Moszkowski), played by Egon Pütz.

While the forty or so Metro-Art rolls were being converted in anticipation of a Duo-Art catalogue, Aeolian had developed their recording desk, and new direct recordings for the Duo-Art started to be made.

Although Woods was able to trace the pianist's dynamics roughly, it was still necessary for the artist to spend long hours with Woods, or one of his colleagues, in reworking the coding to produce an acceptable roll. At that time, the aim was to produce a record roll of the artist's performance.

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**The Medium Of a New Musical Art**

**An Interview with HAROLD BAUER on the Duo-Art Pianola**

HAROLD BAUER stands today in the very forefront of the world's greatest pianists. But he is more than an artist. One cannot be in his presence a moment without realizing the strength, the intellect, the keen analytical insight of the man. Bauer is a big man mentally. The world-wide pre-eminence he has achieved in musical art is the inevitable result of a great genius coupled with a great mind.

It is the instrument of a new musical art! Mr. Bauer arose slowly from his chair as he gave this answer to a question I had put. He went on thoughtfully, choosing his words unhastily.

"I am intensely interested in the Duo-Art Pianola. I am spending much time and effort with it."

"Do you know what work I was engaged in when you were admitted?" He turned and took from the top of the Pianola which stood against the wall a music-roll. As he drew it out I saw that there were cryptic blue and red pencil-marks and annotations opposite many of the perforations.

"This roll," he said, "is a very wonderful record of the Chopin Valse, Opus 37, as I played it a few days ago upon the Duo-Art Recording Piano. Placed in this reproducing Duo-Art Pianola, it duplicates my performance with remarkable precision."

"And I have been sitting here playing the roll a few bars at a time—going over it most carefully—changing here the length of a note, there the strength of a tone—an accent."

"When I first began recording for the Duo-Art, it was the reproducing of my playing that was interesting to me. Now it is the correcting—the 'working-up' of the record, so to speak. Do you see? For the first time I stand aside and impersonally listen to my own playing. I am both critic and artist, Artist, because I can build—improve on the performance."

"Never before has this been possible in the same way. It is wonderful. I am like the sculptor. He views his clay model before him. He steps forward, changes here, refines there."

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1916
"The comparison is perfect. This instrument materializes the hitherto transient and intangible work of art—the pianist's performance."

"I can listen to myself playing. I can hear my performance as a whole. I can repeat a single passage again and again. And I can change what I wish. I can remodel and refine."

"Do you comprehend? It is a new art. When I finally sign the record-roll it is more than simply my playing. It is my carefully considered artistic conception of the music. As such, it is preserved—a new and wonderful form of musical creation."

He drew a tobacco-case from his pocket and rolled himself a cigarette. Bauer is a man of vigorous mental calibre and like big men in more prosaic callings, inclined strongly towards conservatism. His unexpected enthusiasm and earnestness were therefore all the more significant.

"You consider, then," I asked, "that the Duo-Art is an instrument of real and prime importance to music?"

"Unqualifiedly yes," he answered. "The interesting and authoritative records by all the masters of the piano forte cannot but make it so."

"And its effect upon musical taste?"

"A magnificent one," he spoke with emphasis. "It will develop a taste for the best in music. For it provides an opportunity to hear interpretations by the great musical artists of the world—an opportunity, I say, for the millions who live today, and the generations of the future to become intimately acquainted with the most wonderful art the piano forte is capable of."

"The public is extremely sensitive to music in this country," he continued. "During the sixteen years I have been coming here, I have watched and realized an extraordinary progress."

"Unquestionably it has been due largely to the influence of such instruments as the Pianola. These have been teaching musical appreciation. Most people crave means for expressing their personality. Music is one of the most desirable means and the Pianola furnishes a truly wonderful medium."

"I have known The Aeolian Company for many years—have always been an admirer of their ideals. And certainly the Duo-Art Pianola is a fitting climax to the really great Aeolian contributions to the art of music. Its value is almost incalculable. This is obvious. Need anyone be told that a piano of the very finest musical quality, which furnishes everyone a means of musical expression and which, in addition, reproduces the best aesthetic conceptions of the world’s leading artists, is a great instrument?—a wonderful innovation?"

I have read the above tomorrow in print and find it an accurate report.

Harold Bauer
date

What is the Duo-Art Pianola?
The Duo-Art Pianola is the greatest—the most wonderful piano the world has ever known.

In the first place it is a magnificent piano, unequalled in tone, in action, in physical beauty. Secondly, it is an improved Pianola—a "player piano" for you to play with ordinary Pianola music-rolls. As such, it infinitely surpasses anything hitherto known among instruments of this type. And greatest of all—it is a Reproducing Piano of truly miraculous power. By means of special music-rolls, made by pianists while playing a wonderful recording piano, it reproduces their actual performances with absolute fidelity. Every phrase, every nuance, every subtle shade of tone and tempo, every touch of foot to pedal, is reproduced.

Bauer has made rolls for this instrument; Gabriotti, with whom he has done; so has Busoni, Saint-Saens, Godowsky, Granados, Friedberg, Schelling, Laparra, Grainger, Carreno, and scores of other famous musicians.

To possess the Duo-Art Pianola is to command the greatest talent of the world—to be able to hear in your own home as often as you will, the most glorious music of the world, played for you by the world's most famous artists.

The Duo-Art Pianola is obtainable in the Steinway Piano, the Bechstein Piano, the Broad Piano, or the famous Weber Piano—Grands as well as Uprights. Prices range from $750 upwards.

There are Aeolian representatives in every principal city—a post card will bring promptly the address of the one nearest you. Go to his store and hear this newest and most remarkable Pianola demonstrated.

An Interesting Booklet, "Bringing to You the Message of Great Music," Sent Upon Request

THE AEOLIAN COMPANY
AEOLIAN HALL, NEW YORK

Harold Bauer writing about his Duo-Art rolls

In 1916, Harold Bauer, the pianist who probably more than any other took the Duo-Art seriously, gave an interview to Aeolian. In it, he introduced a new concept. He said:

"When I first began recording for the Duo-Art, it was the reproducing of my playing that was interesting to me. Now it is the correcting - the 'working up' of the record, so to speak. Do you see? For the first time, I stand aside and unpersonally listen to my own playing. I am both critic and artist. Artist because I can build - improve on the performance.

'Never before has this been possible in the same way. It is wonderful. I am like the sculptor. He views his clay model before him. He steps forward, changes here, refines there.
‘The comparison is perfect. This instrument materialises the hitherto
transient and intangible work of art - the pianist’s performance.

I can listen to myself playing. I can hear my performance as a whole and
I can repeat a single passage again and again. And I can change what I wish.
I can remodel and refine.

‘Do you comprehend? It is a new art. When I finally sign the record roll
it is more than simply my playing. It is my carefully considered artistic conception
of the music. As such, it is preserved - a new and wonderful form of musical
creation.’

This may well be the first occasion in the history of recorded sound of a
performer conceiving the idea of not merely making a record of a performance,
but of his ideal interpretation, and using mechanical technology to achieve it. In
our days of tape and digital editing, what Bauer describes is normal practice, but
in 1916 it was quite novel, and would not become a possibility within the
medium of gramophone recording for another thirty years or more. For the first
time, intentional intervention by the performer reared its ugly head.

To what extent may Bauer’s approach compromise the value of the roll, and to
what extent may it be considered legitimate? The most important point to be
borne in mind is that a reproducing piano roll is based on one complete
performance. It was only on extremely rare occasions that more than one play-
through was used, and when that happened, it is very obvious. Technically it
was only possible to make changes to details. Even if a pianist wanted to alter
the concept of a phrase, he could not do this in isolation; it would then affect the
following phrase, and so on. There would be no end to such monkeying about.
In any event, it was almost impossible to lengthen or shorten a roll, even by a
fraction of an inch, once it had been recorded; that was not an option given to the
pianist. Bauer, in the interview quoted above, also states:

‘And I have been sitting here playing the roll a few bars at a time - going
over it most carefully - changing here the length of a note, there the strength of a
tone - an accent.’

These are the sort of technical slips in playing which any artist would be
pleased to have the opportunity to take a second look at, rather than a
fundamental change in approach.

During the 1920s, the process of editing did become more and more refined,
resulting in some memorable rolls which can rival the immediacy of the best disc
recordings, but of course with the immeasurable advantage of the listener
experiencing the presence of a real piano, and not a reproduction through a
loudspeaker.

Once editing had been mastered, there would be the temptation to take the
process a step too far.

Woods in his letter of 6 November 1922 to A.J. Mason in London (see note 11)
gives instructions to alter note placings in a Pachmann roll:
‘...and other places where notes and chords may come in either too soon or too late. While it is true that the pianist may record the roll exactly as it is duplicated, some of these things are very bad musically, and should be corrected, if not by the artist, by Mr Reynolds.’

Also, some of the rolls of Paderewski seem to the author to fail to communicate the distinct personality of his playing. There are some rolls by him at IPAM on which Woods has written to the effect that the left and right hands should be brought together wherever possible; on another occasion,
'Paderewski likes to have it sound smooth even though he did not play it that way'. The editors appear to have been only too ready to oblige, and the result is to lose the feel of his playing. We also know that Paderewski did not become too involved in the editing of his rolls. Ganz, for one, did some of the work. The result is that we have superb rolls like the Mazurka Op. 24/4, Chopin, (roll 6566) and Reflets dans l'eau, Debussy, (roll 7186) and comparative disappointments such as the Nocturne Op. 37/2, Chopin, (roll 6847) and the Scherzo No. 3 Op.39, Chopin, (roll 7160).

Grainger and Hofmann were both very interested in the Duo-Art. Grainger's involvement in the Pianola started in pre-Duo-Art days with his two special arrangements of folk song settings - Shepherd's Hey and Molly on the Shore. These two rolls are among the most imaginative special Pianola arrangements ever to have been made, utilising the freedom provided without falling into the trap of making the texture too thick. (The score of Shepherd's Hey was published in Pianola Journal no. 3.) Aeolian tempted Grainger away from the foot-operated instrument to the Duo-Art as early as 1915, and he then stayed loyal to the latter until the end of the 20s. Most of his work for the Duo-Art consists of standard repertoire, either solo or duets. There is one exception however - Gum Suckers March (roll 6059). The roll leader states that this a duet played by Grainger himself and Lotte Hough: however the arrangement goes beyond what is humanly possible into the realms of the special arrangement. The originality is quite splendid, and on a par with the two Pianola arrangements referred to above. Intervention by this artist in the arranging and editing process can only be warmly applauded. Grainger was known to have had a hand in editing his own Duo-Art rolls; to what extent the work was his, and how much was done by the Aeolian staff we do not know, but the partnership resulted in a series of very truthful and highly enjoyable rolls.

As well as being one of the greatest pianists of his time, Hofmann was also an inventor with a string of patents to his name, including one to record the Duo-Art dynamics of a pianist as he played. It seems unlikely that this was ever used in the production of Duo-Art rolls. Hofmann joined the roster of Duo-Art artists in 1919 and during the next 10 years recorded a fine series of rolls. He is known to have been involved in editing his rolls, and for the most part they reflect strongly the style of his playing which we can hear from his discs made during the same period.

In contrast to Grainger and Hofmann, Robert Armbruster, the man responsible for salon and light classical music recording for the Duo-Art claimed no knowledge of the technicalities of the system or of editing \(^9\). Yet in spite of this, he made many exceptionally fine rolls, every bit as musical and natural as Bauer, Grainger and Hofmann. It patently was not necessary to be involved in the process to make a good roll.
What does seem to have mattered was to take sufficient time to ensure that the roll was not published until it sounded correct. In support of this, we have a letter from Bauer to Woods. Writing from Paris on 16 June 1922 (10), he raises a number of points regarding roll editing including the following:

'I heard several rolls played when I was there [in London] two weeks ago, and found most of them good, with the exception of the Busoni records, which are all poor. The principal reason for this, however, is I believe that he made no corrections whatever himself [i.e. he did not involve himself in the editing process] and as his readings are liable to certain eccentricities, it has simply happened that the person who tried to reproduce his special characteristics from memory, failed.'

These rolls of the Chopin Preludes heard today are certainly inconsistent. Given the eccentricities to which Bauer refers, the dynamic coding and use of the sustaining pedal would have to have been very carefully edited to make convincing performances. As it is, they appear erratic, almost certainly for the reasons given by Bauer. They are among the earliest of the British series, and as a set, particularly without Busoni's help, they must have appeared a monumental editing task to the inexperienced Reynolds. To what extent they are failures must for the present remain an unanswered question. The one Prelude which appears on disc as well as roll (no. 7 in A) is remarkably similar in both versions. Busoni plays it twice, bringing out different features in the music on each occasion. The emphasis of the melody at the beginning of the repeat is clearly there, as is the accenting of the first chord in bar 12. The treatment of the alto line from bars 4 to 10 is not so obvious on the roll although the dynamic coding shows that Reynolds was aware of what Busoni had played even if he did not translate the effect successfully to the roll. Nonetheless, the similarities are very marked; the two performances are quite clearly by the same pianist. There is further evidence that the rolls may actually be better than we have given them credit for from an (unnamed) pupil of Busoni who contributed an article on these rolls for the Player Piano Supplement of the November 1924 issue of Gramophone magazine in which he wrote:

'It was with the greatest interest, not I confess, unmingled with apprehension, that I prepared to hear the rolls which Busoni had made for the Duo-Art reproducing pianoforte. I may say quite frankly that I was amazed beyond measure. These rolls are not merely reproductions - they are Busoni himself. The most important contribution, of course, is the magnificent series of the complete book of the Chopin Preludes.'

He singles out numbers 17, 23, and 24 as suitable introductions to the set. In the light of this evidence, perhaps we need to listen again more sympathetically and with fewer preconceived ideas as to how the music should be played rather than write off what are, in Bauer's opinion, failures. Curiously though, Reynolds had considerable second thoughts about no. 24, as discussed below.
So far, only that editing intended to facilitate the accurate reproduction of the pianist’s intentions when he approved the roll has been considered. An interesting further intervention by the editor exists in the British ‘AudioGraphic’ series of rolls. These were about 330 reissues of rolls from the American and British classical lists. They appeared in three types - the Student edition, the Popular edition, and the Children’s series. Many of the titles were duplicated between at least two of the three types, e.g. roll 5771 (Chopin Nocturne op. 9, no. 2 played by Godowsky) also appeared as D89 in the Student edition and D667 in the Popular version.
THE PRESENT PIECE DESCRIBED

The Valse Mignonne justifies its title both by its technique, which does not exceed moderate difficulty, and by its expressive purport, or descriptive aim. It is a Waltz of childhood, of little girls and boys trying their steps. The erudite musician here comes within reach of children, but he does not forget his skill, and, if he conceals it, an attentive listener will easily recognise it in the ingenious development of the themes, in this or that harmony, imitation or counterpoint, in the general composition of the piece, its opening and its ending—both far from scholastic—and its mode of writing, which at times suggests the organ. At first a few shy steps, half tripping, half holding back: the dancers are assembling. Then the Waltz draws them on its light-footed couples, careful at first to keep time. The dance becomes more fanciful, and presently more affectionate, but this is a mere suggestion. The couples meet and part without confusion, gaily but with good behaviour. The dance is not unduly prolonged. The children's thoughts are wandering elsewhere, to some other game. The merry band takes flight.

(Translated by Edward Evans)

THE ART OF SAINT-SAËNS

The features of Saint-Saëns are familiar: a regular brow, the sad eyes of a thinker, like Descartes, an imperious nose, a bitter mouth.

The art of Saint-Saëns is, above all, penetrated with logic, admirably deduced. In this it is classical. Form is its essential element. This pessimist, who lived only because life was a duty, sees in art naught but the highest form of distraction. He is a dilettante. None asserts, more loudly than he, the theory of 'Art for Art's sake'. This uncompromising attitude had a certain grandeur at a time when the fashion had set for music of symbolic, philosophic, or religious tendency, and when musical Romanticism was at its height.

In early life his disillusioned soul was attracted to certain Biblical subjects, which he treated with a melancholy splendour. That is where one probes the depth of his genius, and perhaps the despair that says it. But he often assumes the mask of irony, and, without ever reaching serenity or true joy, he amuses himself with a thousand fancies in which pleasure has a share. He compensates himself for the gravity of his reflections by the light-heartedness of his recreations.

SAINT-SAËNS' 'VALSE MIGNONNE'

Like Mozart, Camille Saint-Saëns was an 'infant prodigy'. He refused to learn the silly little pieces which are usually considered suitable for beginners. He declared that the bass 'did not sing enough'.

When ten years old he gave his first concert, at the Salle Pleyel in Paris. At eighteen he composed his first Symphony. He competed for the Prix de Rome more than once, but he never received an award. He did not lose courage. He had faith in his own powers.

He was not only a musician. Early in life he became interested in literature (he wrote poems), in science (especially astronomy), in painting (he painted in water-colours as opportunity offered), and in philosophy.

The Opera Samson and Delilah, produced in Paris in 1890, made him world-famous.

He had been a delicate child, and at one time thought himself threatened with consumption. For many years he suffered from excessive nervousness. Yet in old age he was extraordinarily robust. He divided his time between France, the East, and the Canary Islands. He felt the need of movement.

He died suddenly at Algiers, on December 16th, 1921, in his eighty-seventh year.
They were elaborately produced with long leaders printed with biographical notes about the composers and descriptions of the music. Very fine wood block illustrations were commissioned to depict aspects of the music. What is fascinating, however, to this study is that all the rolls were re-examined for this reissue programme, and the pedalling and dynamic coding, and even note lengths, were sometimes altered.

Since these were the products of the British company, one must assume that Reynolds would have been heavily involved. The main object of the exercise seems to have been to check that the dynamic coding of the very quiet notes and chords which might have been in danger of failing on the original issue of the roll was adequate to ensure reliable playing, and if not, then a slight increase in the Accompaniment level was incorporated. The sustaining pedal on British pianos did not clear as quickly as on American models, and possible reasons for this are discussed below. Because of this, care was taken to lengthen pedal bridges as deemed necessary by the editor. Much of it appears eminently practical to produce a reliable roll in the light of several more years' experience. On a smaller number of rolls, however, the opportunity has been taken to re-edit the dynamic coding substantially, sometimes altering the interpretation in a major way. An example of this is Chopin Prelude no. 24 played by Busoni. This first appeared as roll O40 in 1921, and later (in 1926) as part of D69. The dynamic coding in the later version has been very substantially reworked to produce a more obviously logical performance, but of course whether it is nearer what Busoni intended we cannot know. Misguidedly, too, on this particular roll, the indicated speed has been increased from the 90 on the roll O40 to 110 on D69. Most of the other rolls in the set play at speed 90; one must assume that the editors later naively thought they might make the roll more exciting by hearing it played faster.

Whatever one thinks of the result of these revised versions, perhaps it may be taken as a tacit admission by Reynolds that some of his earliest essays in editing left room for improvement.

It was not just British rolls which received such treatment for the AudioGraphic reissues. Roll 5771, an early American issue of May 1916 was recoded, including use of the half-blow (soft pedal). While the two versions are audibly similar, the later one has lost one or two crudely executed themeing effects, and the use of the soft pedal enables the accompaniment to play more smoothly.

This series of rolls demonstrates that Reynolds in London apparently had no qualms about altering rolls to make them sound 'better', even if on occasions he was moving a step further away from what the artist had approved at the time of the first issue. Since most of the rolls in the AudioGraphic series are not rare, the interested listener may hear both versions and make his own decision as to which he prefers. Woods, too on occasions, was not above altering performances where he thought it necessary.

Editing played a vital part in the production of a reproducing piano roll. Inevitably there is a subjective element introduced, and it must have been one of
Fig 12: Roll O40 Prelude Op.28 no. 24 (Chopin) played by Busoni.
Original version of roll issued in 1921
Fig 13: AudioGraphic roll D69 Prelude Op. 28 no.24 played by Busoni. Reissue of 1926 showing revised dynamic coding, but some note recording as in Fig 14
the responsibilities of Woods (and Reynolds in London) to guide the artist as to how far he should go in altering a performance. The Duo-Art producer too would have had his own ideas as to how the rolls should sound, and an element of his personality also enters into the equation. Fortunately both Woods and Reynolds were fine musicians as well as being technically fluent in their particular specialised field.

THE COMPARATIVE PERFORMANCES OF AMERICAN AND BRITISH DUO-ART PIANOS AND ROLLS

In spite of the variations between the American and British pianos, and the different methods of roll editing employed between New York and London, the overall Duo-Art system was fundamentally the same. It would therefore seem reasonable to assume that any Duo-Art roll would perform in a similar fashion on any Duo-Art piano. However this was not the case, and it is fascinating to read contemporary correspondence between informed people, and to try and draw conclusions as to why this should have been so.

Bauer, in his autobiography, Harold Bauer -His Book (1948) writes:

‘The final result was always somewhat discouraging in spite of all this trouble, for the reason that the dynamics set to produce certain effects on the piano which was being used for such editorial purposes, varied when the record was played on another piano. This was due to minute differences in quality of tone, and in resistance within the action, and there was no way of overcoming the difficulty.’

So even at the time Duo-Art rolls were being made, Bauer was aware that a roll would not sound exactly the same on two pianos, even when the more consistent, reliable American recording techniques were being used. But he does imply that when care was taken with the editing, on the piano used for editing, the effects he wanted could be obtained. It is hardly surprising that when one considers rolls emanating from America and Britain there should be differences. There is evidence of this both from recording artists and from Aeolian’s own staff.

In the letter to Woods dated 16 June 1922 cited above, Bauer writes from Paris:

‘I am very curious to see if I shall be able to do work which will be satisfactory for both Europe and America, for there of course is the difficulty which has been hitherto encountered. I was particularly struck by Cyril Scott’s records, which he corrected in London and revised in New York. I heard the two rolls (of the same piece) and in my opinion there can be no question that admitting the New York version to sound better in New York, the original London version undoubtedly sounds better in London.

‘This is very curious and interesting and I shall try to examine very carefully wherein this difference lies. One thing I have already noticed. In the American regulation of the soft pedal, the hammers are brought closer to the
strings than over here, so that soft pedal effects will produce more difference in New York than in London. I have examined a number of upright pianos and feel fairly sure that I am not mistaken, but it might be well for you to compare measurements. I shall let you know of anything further which strikes me. I am rather inclined to think that as public taste in piano tone here is different from prevailing standards in America, your dynamics will frequently prove too high to give the best results on instruments regulated for the greater lightness and brilliancy which has always characterised European pianos.

Bauer expresses his opinion in subjective terms - those of a musician rather than a technician, although he was well able to edit his own rolls, something he had involved himself in since 1915.

Woods raises the incompatibility with the London organisation in his letter of 6 November 1922 to Mr Mason:

‘In regard to the London Duo-Art rolls not playing properly on our instruments, this might be due to any change in the construction of the London instruments, such as pneumatics being of one size for the player action, whereas the Steinway Duo-Arts have three sizes; or a change in the regulation of the accordion dynamics. Should these be the same on the London instruments as on ours, then it must be a difference in regulation as the general impression of the [London] roll is that it plays too softly and some chords and notes do not play at all.

‘As an example, I am sending you the Nocturne Op. 15, no. 2 played by de Pachmann. In this roll I have indicated several of the pedal bridges which are too long, several places where notes do not play and other places where notes and chords may come in either too soon or too late. While it is true that the pianist may record the roll exactly as it is duplicated, some of these things are very bad musically, and should be corrected if not by the artist, by Mr Reynolds. The pedal is short throughout the piece, and on the whole it sounds very choppy. I have not changed the dynamics except to indicate a few places which were too loud and others which do not play.

‘I would suggest that Mr Reynolds compare our roll of the same Nocturne, no. 6162 played by Arthur Rubinstein. This will give him an idea of our pedal effects and dynamics. The effect of the accompaniment in this roll is that it plays very softly on our instrument.’

Some six months later, Woods is still not satisfied. In a letter to Reynolds dated 7 May 1923 we read:

‘The records you have been making in London, for some reason do not play well on our pianos. By that I mean that certain notes and chords do not sound or play at all and the pedal bridge in many instances is too long. Mr Bauer heard some of your rolls when he returned and said that they did not sound at all the same here as they did in London. I should think that this would mean that your instruments are adjusted on a little higher dynamic level than ours. Mr
Lamond, who did some work with me a short time ago, heard two or three of his London records which he had finished with you. He said they played much better in London than on my piano."

It is frustrating some 75 years on just to read of rolls sounding 'better' in London than in New York and vice versa without a fuller explanation. Presumably Woods and Reynolds would have quizzed Bauer and Lamond to be more specific and while their answers are not documented, we can glean much from the correspondence. It all draws attention to the apparent incompatibility of the American and British Duo-Art products without Woods being able to hit upon a reason. One suggestion is a difference in construction of the pianos, but he was not able to identify the particular part of the Duo-Art action which was at the root of the problem.

At the time of this correspondence (the end of 1922 and the following few months), British pianos were still being manufactured to the early American pattern with the same .055" gauge springs being fitted to both Theme and Accompaniment regulators on the large expression box. However sometime between the end of 1921 and mid 1922, America had changed to the later expression box on grands with the smaller regulators and, significantly, Theme and Accompaniment springs of .055" and .049" gauges respectively. As Woods was not involved in British technical developments, it would probably not have occurred to him a) that his piano differed from Reynolds', or b) that the British technical people did not know about the different Theme and Accompaniment springs. He therefore did not mention these points, and it would not be the first or last time that technical boffins failed to communicate with A & R men! The fact that the new British pedal-electric style of expression box (introduced in 1923) retained identical regulator springs rather confirms this lack of communication since, if the British technical team had been aware of the change, they would surely have incorporated it. It is an alteration which would certainly have made their lives easier in that it makes the adjustment of the Accompaniment side of the expression system less critical (fewer customer complaints!) and more subtle accompaniment figurations easier to obtain. They would have lost the theoretical interleaving of powers throughout the dynamic range, but since the Americans had foregone that and they were issuing most of the rolls, it would have been sensible to fall in line. It is much more likely that the Americans just did not communicate with the British.

What can be deduced to support this theory? Woods in the letter dated 6 November 1922 (see note 11) writes:

'Should these [i.e. the construction and regulation of the pianos] be the same on the London instruments as on ours, then it must be a difference in regulation as the general impression of the [London] roll is that it plays too softly and some chords and notes do not play at all'.

In the letter dated 7 May 1923 (see note 12), he expresses the same feelings:
‘...I mean that certain notes and chords do not sound or play at all...I should think that this would mean that your instruments are adjusted on a little higher dynamic level than ours.’

This is exactly the effect that a roll edited on a piano with both regulator springs the same strength and played back on an instrument where the Accompaniment spring is weaker would have - the piano would appear to play too softly, particularly in the subtle pp to mp range; above that the differences would be less noticeable. A corollary is that the balance between Theme and Accompaniment would be distorted.

Bauer suggests that American rolls had dynamic codes too high to suit British pianos with their ‘greater lightness and brilliancy’ of tone. The effect of the stronger spring on the Accompaniment regulator on the British piano would be to produce a louder result even if both pianos (as distinct from the Duo-Art action) were the same. All the Accompaniment in Duo-Art terminology, i.e., the overall level of the music, would be too loud.

The different setting of the half-blow also commented on by Bauer would have made a slight difference, but that was most likely just another red herring, the real reason being the different strengths of regulator spring on the expression box. On any given American roll, later American grands would sound quieter and more subtle than the British pianos.

There were other less fundamental differences between British and American instruments, but the overwhelming conclusion one must come to is that from the time the Americans started to fit the later style of expression box, sometime around the end of 1921 right to the end of the Duo-Art’s active life, American grands and British instruments were no longer entirely compatible.

The crash valve was introduced in America in the early 20s. Its function was to allow full pump suction to the stack when Theme power 15 was coded, bypassing the controlling knife valves and regulators. Woods considered it unnecessary for all normal situations (letter of 7 May 1923 - see note 12):

‘In regard to the crash valve, I have always been against using this on our regular instruments. It was put on two or three concert instruments at my suggestion and proved very satisfactory, but in using ordinary rolls on an instrument equipped with this device, the effect is very bad. This valve was put on the Aeolian Grand piano with a motora as there did not seem to be enough power for the high numbers and possibly the effect was all right on these instruments, but on our other pianos which have either the box bellows or the rotary bellows, an instrument has enough power at 15 without this device. It has not been definitely decided to discontinue using it on the grand pianos as yet. The crash valve is not used on any upright pianos. I certainly would not recommend its use on any of the instruments manufactured in London’.

It did survive, but only on American grands. None of the British pianos were fitted with it. Rolls edited after the introduction of the crash valve show little
difference from the earlier ones, although Theme power 15 may be used a little more sparingly. British rolls do use Theme power 15 rather more frequently, indicating that at that dynamic level, Reynolds expected his piano still to play in a controlled way.

Woods makes reference to sustaining pedal bridges being too long, i.e. the pedal perforations are too short, on British rolls. This is a common failing, although not a consistent one. Examples occur where pedalling is sometimes well managed, and then too short on the same roll. I think one must come to the conclusion that Reynolds was working on the assumption that the sustaining pedal on most British pianos was rather slow to clear. This is a weakness on many British upright Duo-Arts, and there was a much higher percentage of uprights to grands in Britain compared with America, where grands predominated. It was then perhaps sensible for Reynolds to edit his rolls as he did, although British grands do not suffer in the same way, so that the top of the range instruments would not play the rolls to the best advantage. Reynolds even went so far as to make alterations to the masters of American Duo-Art rolls when they were issued in Britain. For example, see Reynolds' instruction on a test copy of roll 521 (Tchaikovsky Symphony no. 5, played by Lamond). Note also Reynolds' opinion of the interpretation!

It seems strange that so much trouble was taken to degrade the rolls rather than correct the weakness in the design of the pianos. One theory is that Reynolds was much more enthusiastic about the foot-operated Pianola than the full electric Duo-Art, and was keen to make the rolls play well on the pedal Duo-Art pianos, which were sold in large numbers in Britain. On these, the sustaining pedal would not clear as promptly since they did not have as strong a return spring on the pedal pneumatic as the electric Duo-Art instruments.

Woods mentions one other specific point in his letter of 7 May 1923 - the use of Accompaniment dynamic power 2 operating whenever the soft pedal was applied. He writes:

'In regard to the power 2 dynamic being connected automatically with the soft pedal, it has been definitely decided to eliminate this device from all future instruments.'

This is a nasty expedient occasionally encountered on British pianos which was fitted to ensure that notes would not miss when an instrument was called on to play quietly. In addition to achieving this, it could also result in the balance between Theme and Accompaniment being affected; for example if power 1 and the soft pedal were signalled, the result would be Accompaniment power 3, which would alter the relationship between a melody and its accompaniment, as well as generally coarsening the overall effect.

On American rolls, the half-blow is sometimes used to enable the Duo-Art piano to play quietly with certainty where the recording artist merely played very lightly but without the soft pedal. The half-blow is used more frequently than would be the case with a live pianist. As all Duo-Art instruments (after the
Fig 14 Roll 521 Symphony no. 5 (Tchaikowsky) played by Lamond, showing instructions by Reynolds to alter an American roll for issue in Britain.

Note also Reynolds’ opinion of the performance!

very earliest grands) incorporated a half-blown, this is a legitimate use of the expression system. (As a matter of interest, those late American grands which were fitted with a key-shift soft pedal, were equipped with a half-blown as well). From examination of British rolls, it would seem that Reynolds did not code the soft pedal unless the pianist used it. This method makes for greater demands on the evenness of the piano and player actions to play these rolls successfully, and accounts for the use of very low powers, even zero level, to achieve quiet playing. Such low powers are encountered far more frequently on British rolls than on those emanating from America.
There was always a difference between the British and American way of editing Duo-Art rolls. In America, after the ‘Original’ roll was produced when the artist played, it was subjected to a rationalisation of the coding by an editor, and blocks of codes were marked up in pencil. At the same time, indications to correct wrong notes and adjust note placements were given. It was also the time to notate the ‘snake-bites’ for the Duo-Art themeing, and indicate additional soft pedal perforations over and above what the artist recorded. All this was done away from the auditioning piano.

In contrast, once Reynolds in London had the ‘Original’ roll (produced in the same way as in America), he listened to it on his auditioning piano, making adjustments to note placements and dynamic coding by the use of a single hand punch and black sticky tape until the interpretation sounded as he wanted. The sustaining pedal perforations were shortened on occasions to compensate for the slower operating speed of the British pianos. The performance of the particular instrument used therefore becomes of paramount importance, and anyone who has worked on Duo-Art pianos knows that no two are exactly alike. Any slight deviation from a text book instrument could unwittingly have been used by Reynolds. For example, from time to time, one comes across dynamic coding on the London rolls which ought to make notes or chords fail if the piano is set up exactly to meet the capacity tests in the Test Roll.

An instance of this appears in roll O41 (Debussy, Prelude/Murdoch) where a 7 note chord is signalled with Accompaniment dynamic power 1; at least power 2, or even 3, would be the text book requirement. As Reynolds obviously liked to reproduce the soft effects of the artists’ playing, this becomes extremely important. Some justification for this practice might have been that both in America and in Britain, the service engineers were notorious for setting up the pianos with too high a minimum level; there were far less customer complaints if a piano played too loudly than if it missed notes in quiet passages. It is much more likely that his piano just coped by the skin of its teeth - and sounded marvellous!

Woods’ comparison of the two versions of the Nocturne Op 15/2 (Chopin), one by Rubinstein (roll 6162) and the other by de Pachmann (roll O13), also highlights the different approach to editing. Whereas the accompaniment on roll 6162 uses continuous powers (1 and 2 much of the time), roll O13 is characterised by the intermittent bursts of coding which are such a feature of the British rolls. Nevertheless, given a piano in which the player action is in tip-top condition, the de Pachmann roll only fails completely on one or two occasions. It is not a good example of a Reynolds roll, and Woods is well justified in his criticisms of it. The middle section too is disappointing, and Woods’ description of it as ‘choppy’ is very fair. Some chords are crudely accented, and others too soft. Pachmann by 1920 was an eccentric pianist and it would not have been easy to capture his style. However not all Pachmann’s rolls are poor.
Fig 15: Roll O35 Prelude Op. 28 no. 16 (Chopin) played by Busoni, showing editing on stencil by Reginald Reynolds
Fig 16: Roll O41 La cathédrale engloutie (Debussy) played by Murdoch showing 7-note chord coded with dynamic power

A propos Pachmann, there exists a short British Aeolian publicity film depicting him recording a roll for the Duo-Art. It opens with him being escorted by Reynolds into the recording studio and being seated at a large Weber grand. Pachmann plays, and almost immediately he finishes, Reynolds appears with a Duo-Art roll apparently just having been recorded. The scene fades to an upright Weber Duo-Art piano on which Reynolds places the roll. The piano is switched on, and at one point Pachmann asks for a correction to be made. Reynolds carries this out by sticking a small piece of tape over the offending hole, and Pachmann expresses his satisfaction. The film, which lasts for just over four minutes, closes
with Pachmann autographing the finished roll. It must date from around 1921-2.

To sum up then, the Americans were aiming to produce a roll which could give a good performance on what one might call a generic Duo-Art piano; Reynolds on the other hand sought to reproduce as nearly as possible the note placements and dynamics of the artists' playing on the specific piano he was using, with all its quirks and individual characteristics.

Finally, there was the subjective input of the editors, stemming from the different personalities of Woods' team in America, and that of Reynolds in London. The character of the roll editor is stamped all over any reproducing piano roll if one is prepared to look and listen for it. American and British Duo-Art rolls display different strengths and weaknesses, but at their best, they both paint vivid portraits of the playing of the artists when played back on the instrument for which they were intended.

THE ACCURACY OF DUO-ART RECORDINGS

One very sensible thing which the late Gordon Iles said is that a Duo-Art recording should be looked on as a portrait of the artist rather than a photograph. A portrait, being an interpretation of the subject, may well reveal more of his personality than a photograph taken in the cold light of day.

Anyone who has studied the mechanisms of any of the reproducing piano systems of the early part of this century must acknowledge that they all have some limitations which preclude them from playing back a performance completely accurately. It has to be by the use of clever editing of the rolls that the illusion can be created. Note placements must be accurate both in terms of pitch and timing. In addition, to quote Patrick Handscombe, the piano must have 'the ability to emulate accurately - or at least convincingly - the recording pianist's dynamics'. Fortunately we are able to check whether the roll manufacturers were able to achieve what they claimed.

The majority of great pianists (and many of the lesser ones) of the first thirty years of this century made recordings both for the gramophone and the reproducing piano. Duo-Art, being one of the major piano roll systems, was able to sign up its fair share of artists including Paderewski, Josef Hofmann, Percy Grainger and Harold Bauer. In all, something in the region of 2500 classical rolls were issued and there are a great many instances where a disc and a piano roll were made of the same item. The 78 rpm disc could not be edited or otherwise tampered with, and so may be taken as a reasonably accurate reproduction of an interpretation to which the piano roll may be compared.

Paderewski, Duo-Art's most important pianist, made a long series of disc recordings between 1911 and 1938. One version of each title recorded (in some instances he made more than one recording) is available on Pearl CDs. Of his Duo-Art rolls one may single out The Maiden's Wish (Chopin/Liszt),
The *Nocturne Ragusa* (Schelling) and *Reflets dans l’eau* (Debussy) as instantly being recognisably the same pianist as on disc. The phrasing, dynamic effects and pedalling are identical. Only the subtlest of his tone colouring is missing. Harold Bauer’s discs are currently available on Biddulph CDs. Bauer’s rolls are particularly interesting because of his close participation in the editing process. Not only can one compare particular titles such as his version of *Jesu, Joy of Man’s Desiring* (Bach/Bauer), a very different arrangement from the well-known Myra Hess recording, or his own *Barberini’s Minuet*, or, more substantially, Schumann’s *Novelette*, Op. 21/2; his general style is unmistakable in the many titles he recorded for the Duo-Art which did not appear on disc. His singing treatment of melody lines, with the left hand not quite together with the right, and his forthright playing of rhythmic passages come through very distinctly. The Brazilian pianist, Guiomar Novaes made a few Victor discs in the 20s during the same period she recorded for the Duo-Art. Her discs are currently available on a Music and Arts CD. Eleven titles were duplicated on disc and roll. The Victor discs of Ossip Gabrilowitsch are available on a VAI CD; his roll and disc recordings of his own *Melodie* Op. 8 are an example of just how close the Duo-Art could get to reproducing even the tone colouring of an artist.

In listening to a Duo-Art piano working well one becomes aware of two things, 1) that a number of rolls by the same artist display a similarity of style just as do 78 rpm recordings by the same pianist; and 2) rolls by different artists sound quite different from each other. The criticism that there is a bland homogeneity between all piano roll recordings is just not true. The evidence that the Duo-Art could give a convincing reproduction of an interpretation is clearly there for anyone who takes the trouble to listen carefully.

**RECOLLECTIONS OF THE LATE GORDON ILES**

In May 1961, Gordon Iles wrote a letter to Gerald Stonehill (13), giving a résumé of his connections with the Aeolian Company throughout his life. Included in this was his description of how Duo-Art rolls were produced in England. At about the same time he gave an interview to Denis Gueroult as part of a BBC radio programme called ‘The Great Piano Roll Mystery’ (14). This was a programme devoted to an assessment of the reproducing piano, and Gordon Iles’ contribution was to describe in considerable detail his recollections of the making of Duo-Art rolls.

While Iles had at his disposal a Duo-Art piano during his university days ‘for experimental purposes’ and was at that stage ‘going to the Bond Street studio to make recordings in connection with various experiments mainly in connection with improvements in Themodist’, he does not say that he was involved with the day-to-day Duo-Art recording of the commercial artists. After he came down from Cambridge, which would have been about 1933, he worked full time for Aeolian for about six months engaged in experiments largely devoted to the
compressing of the pneumatic action into the smallest possible space and various forms of alternative Duo-Art actions. This period was some time after classical Duo-Art recording had to all intents and purposes ceased. The point of quoting these paragraphs is that at no time does he claim to have been working directly with Reynolds in regular Duo-Art recording, nor did he contribute to the development of the Duo-Art recording process as has been implied subsequently. Nevertheless he must have frequented Aeolian Hall in Bond Street, and his descriptions should be considered.

In both the letter and the interview, Iles is quite specific in his recollections of the processes used by Aeolian in London to manufacture Duo-Art rolls. Some corroborate our knowledge from other sources; the remainder are very suspect. His memory of the ‘direct perforation’ at Bond Street, and Reynolds’ operations at the desk fitted with the dials fully accord with what we know from elsewhere.

His claim that ‘a gramophone record was made in the case of important recordings so that it could be referred to when the dynamics etc. were afterwards arranged and cut in by hand’ is unique to him and is not substantiated anywhere else. Robert Armbruster does not recall disc recordings being made in America (see note 9). If one were to undertake the production of new reproducing piano rolls today when portable high quality recording equipment is readily available, this would seem a logical thing to do. At that time however, it would have been very unlikely for the following reasons:

1. Prior to 1925 (the period when much of Duo-Art classical recording was done) and the introduction of electrical disc recording, acoustic horns, cutting lathes and waxes would have been used. The process of going from the wax through to the playable pressing was slow and cumbersome, and was not particularly reliable. It was not uncommon for a recording to be lost by even the large disc recording companies like HMV or Victor. Not a practical proposition.

2. Any artist of stature would already have been under exclusive contract to a disc recording company which would have precluded Aeolian from making anything other than a piano roll recording.

3. One of the great advantages of the piano roll recording was that it was not limited to the 4 1/2 minute duration of the 78 rpm record side. Any major work could not easily have been recorded at the same time as the piano roll.

4. What is probably the main reason - that no disc special pressings of such recordings have survived. If such discs ever existed, surely at least one would have turned up somewhere.

Much of the repertoire on reproducing piano rolls is duplicated on commercial discs, particularly the shorter pieces, and any sensible roll editor would probably have made a point of buying a copy of the disc to refer to. When rolls and discs of the same items exist, the similarities are so striking as to speak for themselves.

It should be noted that the Aeolian Company had its own disc record label, Vocalion, and in Britain at least, it recorded some of its Duo-Art artists on 78s. Claudio Arrau was one such pianist, although the titles he recorded on roll and
disc are not the same. Jean Marie Darré also recorded, and one of her titles, the Mendelssohn Prelude Op. 104/3 appeared on Vocalion disc 02989 and Duo-Art roll O90. Both performances date from late 1922/early 1923.

Another unique claim by Iles is the idea that Aeolian measured key speeds as a way of determining dynamics. In the BBC interview, he stated that in addition to the note record being made by the pianist there was a means of measuring key speeds in order to record dynamics. As each note was played, two marks were made on a separate sheet of paper, and since the key speed was directly related to the loudness of the note, a quiet note would register with the two marks being a certain distance apart, but a loud note would show the two marks almost together. Perhaps this was something he was experimenting with, but if British production rolls had been edited using a more sophisticated system of arriving at the dynamic powers, one would expect at some point to see a difference in the appearance of the coding patterns; in fact even the latest rolls do not show any significant change. Some such system was in place in the late 20s at the Ampico studios where they measured hammer speeds, but there is no evidence extant that anything of this nature was ever used by Aeolian. This in no way implies that the Duo-Art rolls are inferior to Ampico; the input of the roll editor/producer is what really matters. A record of key speeds/hammer speeds was regarded only as an aid to producing the finished roll more quickly.

Iles mentions a second way of obtaining an original recording which was available at the factory at Hayes. It could record note placements, but did not wind the recorded roll onto a take-up spool. A roll made on that machine would therefore not have had the necessary accelerations built in for a classical recording (see Rex Lawson’s article). It is probable that dance rolls were recorded in this way. Dance rolls, while being attributed to artists, are characterised by having the same number of perforations per bar from beginning to end.

Gordon Iles was the last surviving Aeolian employee still actively engaged in roll production, and it is a great pity that one must doubt some of the claims he made regarding Duo-Art recording. He was on the fringe of the Company’s activities during the 20s, perhaps making his memory lapses excusable. On two major points, those of making a gramophone recording, and of measuring key speeds, there is no surviving evidence.
ACKNOWLEDGEMENTS

I should particularly like to thank Patrick Handscombe, Rex Lawson and Jeffrey Morgan for their part in making this article possible. We have had long, interesting and informative discussions about the Duo-Art over a number of years, with valuable material freely being made available. During this time, I believe the truth about our subject has been sifted from the myths.

Yvonne Hinde Smith, Dick Howe, Donald Manildi of IPAM, Harry Stephenson, and Gerald Stonehill have also made valuable contributions, and I thank them most heartily.

NOTES

1. The Piano and Organ Purchaser's Guide for 1919
2. Player Piano Supplement to February 1924 issue of The Gramophone
3. Letter dated 15 April 1960 from W. Creary Woods, then Director of the Delaware School of Music to a Mr Sanders; copy in possession of Jeffrey Morgan
4. The W. Creary Woods roll collection at the International Piano Archives at the University of Maryland
5. Letter dated 9 July 1923 from W. Creary Woods to Reginald Reynolds; copy in possession of Jeffrey Morgan
6. British Aeolian magazine of December 1920
7. Conversation with Geoffrey Higgins of Bristol, who was a John Ireland pupil
8. Correspondence in possession of Yvonne Hinde Smith, younger daughter of Reginald Reynolds
10. Letter dated 16 June 1922 from Bauer to Woods; reprinted in Player Piano Group Bulletin no. 79
11. Letter dated 6 November 1922 from Woods to Mr A. J. Mason, Aeolian Company, London; copy in possession of Jeffrey Morgan
12. Letter dated 7 May 1923 from Woods to Reynolds; copy now in the possession of Jeffrey Morgan
14. 'The Great Piano Roll Mystery' was broadcast on 24 December 1962 and has been transcribed in Player Piano Group Bulletin no 145
Granados as a Pianist

Lionel Salter

Present-day pianists tackling the works of Enrique Granados often find themselves on the horns of a dilemma: if they treat them with a good deal of flexibility and expressive rubato they risk losing the basic pulse and shape and producing a maudlin effect: if they take the printed text too literally they can miss the music's Schumannesque romanticism and be accused of being prosaic. In the circumstances it would seem entirely logical to seek guidance by studying the composer's own performances, and fortunately a number of his recordings are extant. Leaving aside the nine titles on the now virtually undiscoverable Hupfeld piano rolls and the eight on Pleyela (which cannot be considered proper reproducing rolls as no dynamics were cut into them), there exist four Odeon 78 rpm discs from 1912, nine Welte Mignon rolls from about the same time, and ten Duo-Art rolls made in 1915/16 when Granados was in New York for the première of the operatic version of his *Goyescas*. The following table gives details of these.

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1) EMI CDC 7 54826-2 (CD) and Video Arts VAIA/IPA 1001 (CD)
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3) KLIJAVIER KD 135 (LP)
4) RECORDED TREASURES 669 (LP)
5) EVEREST X 909 (LP)
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Granados was a very considerable pianist (as the virtuoso demands of the original keyboard Goyescas make clear) and had an impeccable pianistic pedigree back to Liszt: he had studied with Juan Bautista Pujol, whose teacher had been Liszt’s Mallorcan pupil Pedro Tintorer. (In turn the successful academy which Granados founded in Barcelona passed, on his death, to his pupil Frank Marshall -- best remembered now as accompanying Conchita Supervia -- and thence to his pupil Alicia de Larrocha, so that the tradition is kept alive.) The Welte Mignon rolls of Goyescas movements in particular, with their Lisztian complexities, bear witness to his keyboard facility, behind which a keen musical sensibility is always perceptible.

But there are problems in adopting him as a model. The published texts of his music are notoriously inexact (especially in matters of accidentals), but even so his performances frequently depart, sometimes seriously, from what he had written: in the Spanish dances particularly he seems to have been either relying on a fallible memory or -- since the divergences are much the same in the various recordings -- indulging in a composer’s licence to have second thoughts about works already in print. Then there is the big question of the recordings. As the Odeon discs could not have been edited, they must stand as accurate representations of his playing. The Welte Mignon rolls (to which I have been listening on excellent reproductions made by Ken Caswell in Austin, Texas, on a large Feurich upright) are very convincing in matters of speed, dynamics, articulation and pedalling, and give the impression of real performances. But the Duo-Art (heard on a piano owned by Denis Hall or on a Klavier LP transfer using a Steinway B grand) are much less satisfactory, often eccentric or jerky in rhythm and unreliable in matters of dynamics. It should be remembered, however, that their technicians were fairly inexperienced (the system had been initiated only a year previously, whereas Welte Mignon had been in operation for seven years). One might have suspected that Granados had not had the opportunity of approving these rolls before he left the USA on his ill-fated return to Europe, had not a Duo-Art advertisement claimed that he had listened to his El Pelele, denied that there was ‘even the slightest suggestion’ of anything mechanical in the reproduced performance, and declared that it was ‘so truthful, so lifelike, so exact a replica of my very touch that my pupils...could detect no difference’.

If that is so, the discrepancies between what he wrote and what he played need to be considered. They are far too numerous for them all to be listed here, but for the benefit of Granados students the most important will now be mentioned. For ease of reference, from here on O = Odeon, WM = Welte Mignon, and DA = Duo-Art. Beginning with the Spanish dances, what is listed (even in Larry Sitsky’s The Classical Reproducing Piano) as no.1, Minueto, is nothing of the kind, nor is DA correct in calling it (as does the G.Schirmer/Chester printed copy) the first of the Spanish dances. It does not belong to the set of twelve at all but is the quite separate Danza lenta. It should begin sempre ppp, but the level of the melody,
when it enters in bar 10, has misguidedy been boosted: curiously enough, the Everest transfer preserves the correct dynamics, although Everest recordings have been criticised as having been made on a poorly regulated piano. Granados pulls the rhythm about: the final two quavers of b.16 become almost two crotchets; but the most striking distortion occurs in the little copla that appears four times in the piece (b.26-27, 33-34, 51-52, 59-69), written as: \[\text{not shown}\] but played as: \[\text{not shown}\]. He adds a trill on the first D of b.14 and one in b.45 to the first (alto) F. The quavers in b.49-51 are duplicated in the lower voice. At b.62 he makes a very long pause and then interprets *molto ad lib as largo*, starting the *ppp* two beats earlier than marked; his G natural in the turn is presumably a slip. The B flat at the start of b.64 is unfortunately missing.

The problem with Spanish dance no.2, *Oriental*, is to secure satisfactory balance between the hands. DA crudely over-emphasises the melody line, which the Everest transfer avoids doing but allows the LH quavers to be too prominent. Three bars before the *Lento assai* (and at the end of the piece) Granados adds a bass D on the 3rd beat: a recording fault produces a double-stroke on the following C minor chord. There is much rubato in the central section (a big *rit.* in its 6th bar, for instance), and in its 12th bar the G in the RH falls on the second quaver, not the third. The *una corda* effect is ignored, nor are the dynamics any softer. 5 bars before the reprise (in which 16 bars are cut) the second B is played an octave higher.

With *Spanish dance* no.5, Andaluza, the most popular of the set, there are two recordings to compare -- neither, it must be admitted, as plausible as the recording by Granados's 'grand-pupil' Larrocha. WM starts quietly after the two introductory bars. In both versions the off-beat 'chuck-chucks' are haphazardly formed and inserted (in DA decidedly jerkily), and ties between notes are generally ignored, as are the printed dynamics in the *Andante* section: the three-note upbeat to the theme is nearly always hurried. A quick mordent is added to the fourth melody note of b.7, and a big *allargando* made in the 3/8 bar (on whose first appearance only, in DA, A D is added to the first two chords, making an inappropriate G major triad). In the *Andante's* 7th and 23rd bars a B is inserted on the third beat, and in its 19th there is a slight change of harmony. 11 bars from the end, the second bass B is moved forward to the second quaver.

For *Spanish dance* no.7, Valenciana, we have three options. The printed text contains many errors, but Granados's performances also show many deviations from it, although he mainly follows its initial direction of *Allegro airoso*. The first variant is that in bars 4 and 6 (and the later parallels) the treble B becomes a dotted minim. The two-semiquaver figures in b.8-10 are turned into three, as in b.26-28, though as everywhere played as a triplet; WM (but not the others) here makes a huge crescendo; in b.32-35 the figure is reduced to single chords. The melodic outline of b.11 is made to conform with that of b.17. In DA (though not elsewhere) the two-bar interjection is taken very much more slowly. The off-beat
chords in b.29 and 39 are, instead, played on the beat. A big surprise is the ff treatment of b.44, marked pp (there is also a crescendo instead of a dim. molto in b.75); and Granados does not play the second-beat chords in b.54-55 an octave higher as marked, nor does he, two bars before the return to Tempo I. He changes detail, omitting the RH semiquavers, two bars before the poco piu moto, and carelessly plays an extra beat before the rapid run-up to the high D. The alternating octaves just before the reprise of the G major opening are continued for a further bar; in this reprise O cuts 56 bars and goes straight to the coda (played Largo rather than Andante in DA), whose last seven bars are changed in all the recordings.

It is strange that Spanish dance n.10 is entitled Triste, since in neither the music itself nor the composer’s performances is there any suggestion of sadness except in the brief central section. The opening emerges in strict time in O and WM, more irregularly in DA, properly p in WM but not O. In all the recordings the little passage in b.7-9 is repeated and then cut in 11-13. The text suffers extensive mauling: there are cuts of b.25-27, 36-42, 53-55, 80-84, 93-98 (95-98 in O and WM), and b.58-62 (57-59 in WM) are completely changed. In O the first bar of the Andante is changed from a 2/4 to a 3/4: it also makes no ff-pp in b.68 nor ppp-fff in the final bars. About the note C in b.70 there is a difference of opinion: it is C sharp in DA, a more convincing C natural in O and WM. DA (only) inserts a comma before the last eight bars. The last line of the piece undergoes some variation: WM places the LH chords on the second beat rather than the first, DA arpeggiates them, but after instead of on the beat, and inserts a f low G before the last chord; O adds an extra final chord.

In the four extremely demanding Goyescas pieces, in which Granados’s impressive pianistic prowess becomes evident, two follow the text closely and two take it more or less as a basis for his fantasy. The first, Los Requiebros (whose two themes were taken from Blas de Laserna’s famous Tirana del Tripli), is treated very freely, underlining the capriciousness of the lover’s ‘sweet-talk’. Indications are exaggerated -- for example, b.3-4 are not just accel. but are played presto, the following phrase is indeed molto a piacere, reverting to tempo only at b.13, and dynamic contrasts are very strong. Granados does not observe his own marking of a tempo two bars before the Poco piu animato, nor bother with the turn in its 7th bar. There is great brilliance in the big surges of the Con anima section, with its great swirls of notes, but a reluctance to accept the in tempo tranquillo indication before the Tonadilla, which is much altered, a shorter passage being substituted for b.149-209 (i.e. 11th bar of the Tonadilla to 8 before teneramente e calmato). At the 14th bar of the Tonadilla’s final appearance (con gallarda) there is a subito piano; and there are then two cuts, each of two bars: 329-330 (meno mosso) and 337-338 (poco ad lib). But the overall impression of this roll is entirely convincing.

Coloquio en la reja begins somewhat unpromisingly, being free but, at the same time, stiff (the bass certainly not imitating a guitar, as the score asks), with
Granados autographing a Duo-Art roll

awkward accents on the third beat of bars 2 and 4; but as the motion picks up, interpretation becomes increasingly convincing. There are a few altered dynamics -- a sudden ff at b.23, a f instead of p at b.158 (liberamente), but otherwise there are but minor divergences from the text, and nearly all indications are fully observed. Granados's clarity and accuracy in the piece's complex texture are very notable. The Fandango de candil, however, stands out as the finest and most rewarding of all the composer's recordings (besides remaining faithful to the score). In view of the piece's explicit dance character, he keeps the rhythm steady and crisp, and altogether this is a dazzling performance, admirably reproduced.

It is therefore all the more disappointing that the most celebrated of the Goyescas, La maja y el ruiseñor, is presented cloyingly sentimentally -- a self-indulgent wallow -- in the WM version, and lumpily phrased, with harsh tone, in the DA. From the profusion of indications in almost every bar after page 1 it is evident that much rubato is intended, but things are carried to extremes, with numerous tenutos, in a tempo that (at least on the WM roll) is basically lento, not andante. DA observes the printed rhythm in b.5 although WM smooths it out into even quavers; it also fills in the gap between the B and G in b.11 with an inserted A. A turn is added to the C in b.14, and the last demi-semi in b.15 should be A natural. In b.30 WM but not DA has a trill on the first alto D sharp and a bass F sharp on the last quaver. In DA b.33 becomes adagio, and in the following bar the bass D is played on, not after, the beat in WM. From then on, the four-demisemiquaver figure is consistently played : An important change is that of the RH D sharp to D natural in b.39. Though rall. is marked in b.45, Granados does the exact reverse and makes a big accelerando. In WM the
quavers in b.52 leading up to the E are doubled at the octave. WM has six, DA five, nightingale skirts instead of the printed four at b.71; both recordings have five instead of four at b.75; and in WM the last arpeggio in b.78 ends on the top B. A real shock is experienced in DA when the second chord in b.80 is changed from F sharp minor to major.

The extra Goyesca, El Pelele, which so delighted the composer, is indeed the most persuasive of the DA rolls, brilliant and strongly rhythmic, though it does not begin p after the declamatory opening. The RH part in b.26 is played an octave lower, and an extra beat is played in b.48, making it a 4/4 bar. At b.56 Granados makes a subito p, and at b.75 adds a mordent to the first F. Notice a change of rhythm at b.77, \( \frac{2}{3} \) \( \frac{4}{3} \) instead of \( \frac{4}{3} \) \( \frac{4}{3} \). At b.110 he repeats the next four bars but changes the end of 113, then cutting to 118.

The opposite pole from the virtuosity of the Goyescas is occupied by the simple, charming and totally un-Spanish sequence of Valses poéticos whose descent from Schumann is patent. Taking full advantage of a composer's privilege, the LH part almost throughout is little more than a paraphrase; and waltzes 3, 4 and 5 are all supplied with unmarked da capo sections (as well as 7, which is so marked). At the end of the 2/4 introduction the descending run is in semiquavers throughout, not changing to quavers as written and completely disregarding the rall. instruction; and the chords of the last four bars are divided. The metre then changes to 3/4 for the waltz sequence. In no.1 's penultimate bar the low E arrives on the second beat, not the third: in no.2 there is no high F in b.27, the B in b.33 should be a natural, and there is no momentary F minor (no A flats) in b.39. Waltz no.3 is played molto rubato; at b.15 the first bass note becomes F, not D, making a first inversion chord, and in the second bar before the key-change a low A is added on the third beat (the second in the da capo). In bars 3 and 11 of no.4 the E should be a natural. The middle (minor) section of no.5 is played presto and rather messily: the final bar of the piece is rounded off with a high B. Somehow Granados gets four beats into b.7 of the haunting no.6: he also excises bar 32 (the C sharp dotted minim). No.7 is badly scrambled, and after an interposed lead-in the envoi, a 6/8 presto, is a mad rush until a very long pause on the low E; then comes a new lead-in to the reprise of no.1, in which, however, a 32-bar cut is made.

Granados is reported to have been fond of improvising for hours, but the examples that have been recorded were, frankly, scarcely worth preserving. That on El Pelele (on O.) is a rather undistinguished affair and, most exceptionally, contains some obvious wrong notes. That on the Jota valenciana (on DA) is heavy-handed, overlong and unimaginative. The Rêverie, also on DA, is a scrappy, inconsequential ramble with some refined delicacy of touch but a climax that gets heated over nothing, and is interesting only as, reportedly, including themes for his next work that was never to be composed. The transcription of the uninteresting Maria del Carmen prelude is presented with well contrasted
dynamics, but the fortés are rather brutal. (The preliminary tryout of this opera before its Madrid première in 1898 was notable for Casals' first appearance as a conductor.) Very interesting, as well as being played with sparkling lucidity, neatness and lightness, is the very free adaptation of a Scarlatti sonata in B flat (Kk 190, L 250). The earliest copies give no speed indication, but Granados's adoption of Velocemente is undoubtedly correct. He makes two one-bar cuts; and in the second half, which unfortunately he does not repeat, he manages to lose half a bar in a repeated figure. In WM he rather untidily bangs the first-half cadence, which he does not do on O., but there the first-half repeat seems to have caught him out with an unready LH.

It will have become clear by now that Granados's performances, often arresting and exciting, were highly individual and cannot be given a blanket endorsement as guides to follow -- it is noteworthy that even Larrocha only occasionally adopts his emendations and generally adheres to the printed texts. This merely confirms the principle that copying another person's interpretations, even a composer's, is ultimately always unsatisfactory. So today's pianists need to form their own judgments about how to play this music: here we must content ourselves with admiring a redoubtable artist.

Note:

As we go to press, we learn that a new critical edition of Granados' piano music by Douglas Riva and Alicia de Larrocha is in course of preparation.
Busoni

One of his pupils

The following article first appeared in the Player Piano Supplement to the Gramophone of November 1924. Intriguingly the author did not reveal his name, and at this late stage, there is little likelihood of it ever coming to light. Busoni’s Duo-Art recording of the Chaconne was released in November 1925, a year after this article was written.

There are some performers whom one hears at concerts, and elsewhere, of whom one says: “He plays well; but his technique is not as good as it might be.” There are others who fill the average amateur with boundless admiration. “What a marvellous technique,” he exclaims as the scales and arpeggios pour out in endless profusion, "how I wish I could play like that!” There are a very few others, of whose technique one never thinks at all, until one reflects on the performance after it is finished. Everything is subordinated to the ideal of art and beauty. There is no display, no parade of facility, no undignified playing to the gallery; one is held enchained by the fetters of nobility and beauty of sound which bind one, as it were, to the artist who is creating them. Among this little company Ferrucio Busoni stood out in a unique position. As a pianist pure and simple he was surpassed by none within his generation, and rivalled by few. Cortot and Harold Bauer perhaps equalled him in brilliance, Paderewski in sheer sensuous beauty of tone, Hofmann in perfectly controlled technique. But Busoni was something much more than a pianist. He was a deeply philosophical, immensely intellectual thinker. There was something colossal about his mind, and about his playing. In listening to him one had the impression of gazing up at the great walls of some rocky fortress, beautiful in colour, strong in outline, but standing out from its surroundings in impregnable and lonely grandeur.

To hear him play one of the later sonatas of Beethoven was a most moving and indeed unforgettable experience. Nothing was ever taken for granted. You had the most amazing sense of being taken on some tremendous adventure. The excitement which I used to feel during his performance of these works was quite unlike anything I have ever experienced. The Sonata in A flat, Op.110, usually so wandering and incoherent, became in his hands a perfect and close-knit whole. His Chopin-playing was considered by many people to be unduly eccentric. But I believe it was chiefly owing to unfamiliarity, and not to well-founded distaste, that people spoke in this way. Chopin, in his hands, lost his vapidness and langour, and became an immensely powerful and spiritual teacher. The results which Busoni, with his great mass of intellectual force, extracted from music which is usually treated as merely poetical, if not actually “pretty” were to me most fascinating. Not that his playing was ever arid or pedantic; it was indeed full of the greatest brilliancy and imagery. But there was something more, and that was what gave Busoni his reputation.

It was with the greatest interest, not I confess, unmingled with apprehension,
that I prepared to hear the rolls which Busoni had made for the Duo-Art reproducing pianoforte. I may say quite frankly that I was amazed beyond measure. These rolls are not merely reproductions - they are Busoni himself. The most important contribution, of course, is the magnificent series of the complete book of the Chopin Preludes. This runs on to thirteen rolls. They are not cheap, being 16s. or 18s. each, but for anyone who owns a Duo-Art they are the most desirable possession he could have. More especially are they suitable for him who has just bought his Duo-Art, who is making his first real entry into the magic world of music, who finds the scene around him a little strange and perhaps formidable, and needs a helping hand till he finds his sense of security. The Chopin Preludes are a very rare combination; they are great music and they are very short. You can never have a feeling of mental exhaustion after hearing a Chopin Prelude - it is not long enough. Yet they must be well played. Many of them are extremely difficult. You have in these rolls the guidance of one of the greatest pianists of all time; he can make the music tremendously important, tremendously deep, and yet beautiful, attractive and easy. There is none of that feeling of effort which so often obscures the ordinary pianist's interpretation; the technique is so perfect that you do not notice it.

You may, of course, get all the rolls at once from a library, but I should not recommend this; you may get musical indigestion. The best thing is to start with three; buy them if you can, but if not, hire them. I should recommend No.17 in A flat, No.23 in F, and No.24 in D minor. The first is often represented as a French soldier taking leave of his family and wife before the battle of Waterloo, the boom of the guns sounding dully in the distance. As such it is one of the most moving pieces of programme-music in the world. No.23 is delightfully light and merry. No.24 is probably the finest of all. It was Busoni's own favourite, and indeed it suited his playing particularly well. Chopin never rose to grander heights than in this prelude, which is almost Beethovenian in its rugged strength and majesty. There is none of the languid ladykiller here; it is great music from beginning to end. After you have come to know these, try and collect the others. You will never regret buying them.

For those who like fireworks, a magnificent example will be found in Busoni's rendering of Liszt's E major Polonaise (No.2). This is Liszt at his very best. It is gorgeous without being gaudy; there is, if I may so put it, a great deal of gilt on an extremely well-made gingerbread. One does not feel the same lack of body as one so often finds in his music. The Cadenza is slightly altered by Busoni, but certainly for the better. Feux Follets is a good rattling piece clothed with the usual Liszt Christmas tree decorations. La Campanella is a work which I personally cannot bear. The piercing treble notes which go on and on remind me of the sensation of going under chloroform, when one hears a long, high, singing note before one loses consciousness. Apart from this, the rolls are magnificent, and I cordially recommend them to all.
Busoni made some superb arrangements of Bach's works. Of these, the Chaconne is one of the best, and may be obtained on the Aeolian Metrostyle, or, better, on the Blüthner Animatic rolls recorded by Gottfried Galston. There are eight of the Bach-Busoni arrangements in the Animatic catalogue, and I recommend every pianola-owner to procure some of these rolls, which may be played on any 88-note instrument. Particularly fine are the Chromatic Fantasia and Fugue, played by Backhaus, and the Toccata, Adagio, and Fugue, played by Busoni himself. They are published by Blüthner and Co., Wigmore Street, W.

I regret I have been unable to hear the Steinway-Welte rolls of Busoni, but I hope to do so in the future.
Like his exact contemporary John Cage, Conlon Nancarrow loved serious conversation, whether on subjects musical, political, philosophical or aesthetic. Like Cage, too, Nancarrow was possessed of a genuinely charismatic, dazzling smile. When I remember either of them sitting nearby, it is the face of their benevolence which lives on and calls to mind their genuine wish to have their music understood and appreciated, in spite of the apparent difficulties of doing so.

Though his existence was not well-known to the music world during the time he wrote his early and mid-period masterpieces (1945-1980), Nancarrow’s vision of a new polytemporal (as opposed to merely polymetrical) music thrived in a self-made environment filled with a love of learning. Books, records, periodicals and conversation with the poet George Oppen, the painter Juan O’Gorman, and other non-composers fed him intellectually during his long residency in Mexico from 1940 to his death on August 10, 1997. His ongoing and abiding interest in Igor Stravinsky and his music over these years was evident not only from the bulk of material in his library but the persistence of the subject in his conversations with friends. Each new book on the subject would be discussed the moment it was available. It’s indeed fitting that in death Nancarrow’s work will reside alongside his idols’ in the prestigious archive of the Sacher Foundation in Basel, Switzerland.

Though Nancarrow’s influences included classical Indian music, Earl Fatha’
Hines, West African polyrhythms, the writings of Henry Cowell, the prepared piano of John Cage, and his studies with Roger Sessions, Walter Piston and Nicolas Slonimsky, the bellwether by which he measured the provocation his music would produce and the standards by which he would continuously develop his musical language, owed most to the continuous evolution provided by Stravinsky's example. Like the Russian master, Nancarrow is a true 20th Century original, who periodically reinvented himself through a series of stylistic changes that make his entire oeuvre worthy of ongoing study.

Not only did he proceed without early encouragement, but, freed from financial necessities in his early career, Nancarrow succeeded in redefining the limits of compositional expression. He solved Herculean problems of polytemporal measurement, giving his scores a brilliance both audible and accessible. And he expanded our ability to produce and experience numerous individual musical lines, bringing down barriers with study after remarkable study.

That his life was inexorably altered by his political commitment only makes his story more timeless, more fascinating, more impressive.

In person, Nancarrow was one of the greatest inspirations imaginable. His conversations were filled with enthusiasm for life, and for making it better. Though privileged in private life, he vigorously opposed exploitation and greed and was a consistent voice for justice for those less fortunate.

On the musical side, his intolerance of background music was well-known to his personal acquaintances. Music was for listening to, and if it appeared on a home stereo system, he would caution everyone to stop talking and pay attention. Or turn it off. If it were his choice, he ate only in restaurants which eschewed background music. The same was true where he purchased his groceries—a large farmer's market of vendor stalls, each offering the freshest and best of a particular food—with no Muzak.

Hearing his piano rolls in his bunker-like studio was, for fellow composers, a near-religious experience. On second thought, it was a religious experience. In place of vaulted ceilings and stained glass windows, the listener was surrounded by an equally dizzying myriad of books and periodicals on music which would be the envy of most librarians. And the blast of sonority which emerged out of his 1927 Ampico reproducing pianos was as startling and overwhelming as any of the great church organs of Europe, inspiring wonder even after repeated visits.

Though he had little fame during his most productive years compositionally speaking, Nancarrow lived to receive international acknowledgement of his contributions. The appearances in the U.S. and Europe were a great source of comfort and vindication for years of deprivation and hard work. Most importantly, he lived the life he cared to live, contributing politically in his youth and aesthetically in his middle and elder years, in a way which only can be admired for its integrity and strength. More than many figures of his generation,
his musical legacy, so relevant to present concerns of computer- AND conventionally-composed works of the present, continues to inspire thoughtful re-hearings.

Like John Cage, he is greatly missed, yet closer to us than ever before.

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Rolling Down To Rio!

Purcell Room recital, London, 26 September 1997, Rex Lawson and Denis Hall, pianolas Sylvia Blake (mezzo contralto)

Wendy Hiscocks (with additions from Roy Howat)

This Purcell Room party (so it felt), featuring both pianola and reproducing piano, was a special celebration for the (approximate) centenary of the player piano (What? nothing from Her Majesty?). It was both an informative and an entertaining look into the world of reproducing pianos and pianolas. For those who had not heard (or seen) a quality reproducing piano in action, it's astonishing to hear the wealth of music recorded by some of the best pianists early this century, and how they played.

This formed the first half of the concert, a selection of artists’ recordings on Duo-art rolls from the 19-teens through the ’20s. To hear these played back on a fine Steinway (bar a passing gremlin in a bass damper) was a treat. I was very taken by the difference in tone and dynamic shading of the various performances, ranging from the beefy sonorities of Guiomar Novaes to Josef Hofmann’s lithe velocity. Hofmann’s light repeated notes in Moszkowski’s delicious Caprice Espagnol worked marvellously, much better in fact than José Iturbi’s in Albéniz’s Seguidillas. Even Hofmann, though, couldn’t steal the limelight from Novaes in what was not only her party piece but is now a period piece, Gottschalk’s almost Jurassic Grande Fantaisie Triomphale sur l’Hymne National Brésilien. This was a tour-de-force of stamina, with long strings of trills that left us breathless at not only how she sustained them but passed them so smoothly from hand to hand (as she must have, to cope with the music’s other simultaneous demands in both hands). Along with Hofmann’s roll, this showed the Duo-Art at its very best. The most poignant item must be Granados playing an unpublished Réverie-Improvisation just weeks before his untimely death by drowning in 1916—though I was surprised by the lack of rhythmic bite in both of his rolls played here.

It was even possible to gain a feel of the physical presence of the individual artists, and it’s easy to understand why pianists early this century preferred recording on rolls to the early gramophone. We also sampled a wealth of composition and performance from the turn of the century that would now be lost but for rolls. It was a delight to hear, beside such known performers as Arrau and Rubinstein (the latter in the Ritual Falla Dance), great women virtuosi otherwise forgotten, not only Novaes but also Teresa Carreño and Adela Verne—the former sounding brilliant but a bit stiff, I thought, the latter delightfully unenglish in three Cuban Dances by Cervantes.

In came the movers at the interval (bearing a remarkable resemblance to the
first half's two compères); out went the Duo-Art push-up, to be replaced by a pianola push-up at each of the two pianos. Our compères now became the artists, since now only the musical notes were provided on the rolls, leaving the performer to control speed and dynamics through foot and hand levers. If you think that sounds easy, you need a hands-on experience of these machines (as I have had) to appreciate the degree of alertness, co-ordination and sensitivity required.

Never is this more so than when accompanying, and it was another tour-de-force, this time from Rex Lawson, to accompany mezzo-contralto Sylvia Clarke live in the wittily sensuous *Cinco Canciones Negras* of Xavier Montsalvatge (the only composer of the evening still alive, after Conlon Nancarrow's death just some weeks before). This was beautiful accompanying and ensemble by any pianistic standards. Although Sylvia Clarke's voice was lacking in a wide range of tone and her use of vibrato a little too predictable, there was a husky, even smoky quality to her voice in the lower register which I felt was particularly well suited to the text and the music.

Before that Rex Lawson gave a fine performance of Chabrier's *España*, though the sizzling energy of this work would have been more exciting without a few small added *ritardandi*, especially at the end (listen to the electrifying results of Beecham's old recording, where if anything he speeds up the final chords). Coming after the first half, this displayed one curiosity—especially in this fiery piece—in that the piano pushup seemed unable to deliver as much power as the Duo-Art. It certainly wasn't lack of energy on Rex Lawson's part.

This choice of piece had other interesting implications. Before orchestrating the piece, Chabrier famously used to bowl over his friends (and wreck their pianos) with his solo renditions of *España*, a version he sadly never committed to paper (perhaps his piano-owning friends stopped him). A piano reduction was issued after Chabrier's death by his conductor friend Camille Chevillard (the roll we heard was based on this), but it lies awkwardly under the hand. No problem, though, for pianola, and am I right in thinking I heard a few more of Chabrier's orchestral twiddles and counterpoints than are printed in Chevillard's score? What Chabrier did leave was a wonderful 2-piano arrangement, and I'd suggest that the pianola roll version could benefit even more from using this. Two pianolas might also make up the volume (Chabrier loved explosive contrasts of volume, something nearly all his music exploits). For next time, how about a roll of his spine-tingling *Fête polonaise* from *Le roi malgré lui*? His own duet version of *Joyeuse marche* would make good pianola, too.

Denis Hall continued a fascinating mix of music with his performance of Stravinsky's *Etude pour pianola* (alias *Madrid*), in which one can hear not only shades of *Petrushka* and *The Rite of Spring* but also a clear affinity with Ravel's *Frontispice*. This supports Rex Lawson's argument (see The Pianola Journal no. 2) that *Frontispice* was a pianola piece all along. Stravinsky's 'pianolistic' influence from this Etude can
also be heard in Goossens's *Rhythmic Dance* for pianola—a piece which, like *Frontispiece*, has survived in the concert repertoire in two-piano form.

Conlon Nancarrow's *Studies for Player Piano* were an education in the compositional possibilities for player piano. Jazz-influenced, and obviously unacknowledged forerunners of the minimalist movement, Nancarrow's works were full of energy and contrapuntal complexities that often multiplied to form a monumental sheet of sound. Rex Lawson obviously enjoyed the physical demands of such punchy works and gave them a stunning performance.

The show (one can really call it that) ended by literally 'rolling' us down to Rio with the two outer movements from Milhaud's Brazil-inspired *Scaramouche*. Having performed this on two pianos, I can appreciate the extra challenge of ensemble on pianolas. Not only was this achieved with panache, but it was a delight to see the performers' obvious enjoyment in performing together. The informal presentation-cum-commentary throughout the evening was extremely interesting and much appreciated.
Contributors

Charles Amirkhanian is a composer known internationally for his text-sound and electroacoustic compositions. Most recently, the Ensemble InterContemporain performed four of his works in Paris, and his CD Walking Tune was released by Starkland Records. He is currently composing for Westdeutscher Rundfunk an extended electroacoustic tape piece honouring the centenary of the player piano and utilising a Kurzweil keyboard sampler to manipulate recordings of historical rolls from the collections of Denis Hall and Rex Lawson, made at Dulwich College in July 1997 on a Bösendorfer Imperial grand with a pianola operated by Mr Lawson. He first met Conlon Nancarrow at the age of 24 in June 1969 at the composer’s home studio in Mexico City. Later that year, over Radio VPRO in the Netherlands, Amirkhanian produced the first broadcasts in America and Europe devoted to in-depth looks at Nancarrow’s music. In 1977 and 1986 he produced two recording sessions of Nancarrow’s complete player piano studies for LPs from 1750 Arch records (US) and CDs for Wergo Schallplatten (Germany) respectively.

Denis Hall has for many years been an enthusiast of historic performance recordings both on piano roll and disc and in making them accessible to present-day music lovers. He has involved himself in the restoration and preparation of reproducing pianos for concerts and recordings and in the transfer of 78 rpm recordings to master tape for LP and CD reissue.

Wendy Hiscock was born in Australia, and began to play piano as a young child and then took up composition in her teens. Although she is now mostly known as a composer of songs, piano, and chamber music, like Poulenc, she enjoys a second career as a pianist, especially in duo with her husband, Roy Howat, and has a special sympathy for the French repertoire.

Lionel Salter is a writer, broadcaster, composer and conductor, who during the course of a distinguished career has held many important BBC appointments, notably as Head of Music Productions for television and as Deputy Controller of Music. He has published many books on music, has contributed regularly to the Gramophone, and has made singing translations of well over a hundred operas. As Vice-chairman of the Iberian and Latin American Music Society he has a particular specialism in Spanish music, and he also retains a lively interest in player pianos, having introduced concerts of reproducing piano music at London’s South Bank, and written and presented a series of broadcasts entitled ‘The Piano Roll’ on the BBC World Service.