An abbreviated history of recording

(with particular reference to the organ)

From at least the 16th c onwards some musical automata, the barrel organ, and the orchestrion, played back mechanically-recorded performances which became increasingly convincing as the late 19th c and early 20th c approached. Engramelle, Dom Bédos de Celles and others drove the initiative for turning mechanically-created performances into convincing music from at least the 18th c onwards until, by the 19th c some of the people working in this media were veritable "artists in their own right". They knew the paradigms of the repertoire they worked with, and had the capacity of a performer to turn this into true performances.

1820: Gustaf Andersson (in Sweden) built a positive, now in the Sibelius Museum (FIN:), with an automatic player system and some "recorded" pieces.

1870s-1900: pioneers of acoustic recording; the cylinder

1877 American inventor Thomas A. Edison developed the "talking machine." As commercially offered, it could both record and reproduce sound using wax cylinders.

1887 Emile Berliner filed a US patent for a "Gramophone" (using discs instead of cylinders.)

1888-1894 cylinders were sold e.g. with readings by Tennyson, Browning. Brahms recorded one of his Hungarian rhapsodies. Josef Hofmann and Hans von Bülow recorded piano music.

1890- magnetic (wire) recording was first explored by Danish engineer Valdemar Poulsen.

1894 Charles and Émile Pathé established a record business near Paris. They issued cylinders. By 1904 catalogue listings were ca. 12,000 titles. Berliner began manufacturing his gramophones, founding the "Victor" firm. Their recordings (many novelty items) became popular, especially from coin-in-the-slot machines.

1897 the pianola was patented by E.S. Votey - originally a limited form of *Vorsetzer*

1900-1910: "78" era; piano roll-recordings

1900- the era of the first acoustic "78" recordings. The only known organ recordings were possibly player rolls made by Albert Schweitzer for Walcker's Organola. The Casson Company of New York were also involved in similar activity at about this time.

From 1902 a marked rise in public interest occurred, particularly with their recordings of Italian tenor, Enrico Caruso. The fortunes of Victor waxed.

1904: Welte's "Cabinet player", a reproducing piano without keyboard which bore the Mignon label, was first patented. The prototype was exhibited during late 1904 in Leipzig and became commercially available from early 1905. The *Vorsetzer* came on the market in 1908. Mignon was integrated into their upright pianos in 1909, and into their grand pianos from

1913. These paved the way to the *Philharmonie* and organ roll recordings.

By 1910 possibly 85 percent of recorded music was classical.

1910-20: the acoustic boom; birth of organ roll recordings

With the phonograph an early mass-media phenomenon was created, no longer just the province of the rich. The “78” (78 disk revolutions per minute) recording fully replaced the earlier wax cylinders and became entrenched as standard. Originally made from shellac - later synthetic thermoplastic resins gave better results with less “surface noise” - they came in 10-inch and 12-inch sizes, the largest of which were capable of durations extending to about $4^{1}/_{2}$ minutes.

1910-11: some very early organ roll recordings were made by some of Welte’s house organists e.g. Franz Philipp, Carl Hofner and Johannes Diebold

1912 the first organ roll recordings were made by Welte in Germany - now mainly the province of a highly affluent society. Some (rare) early gramophone recordings of organists were made in England and the first complete symphonies were recorded in Germany: Solo instrumentalists and opera singers followed with excerpts and potpourris.

1914-1919 phonograph sales quintupled. Original composition also began for player piano which sometimes attracted leading composers (Stravinsky, *Étude* for Pianola 1917). Later Hindemith (*Toccata* for mechanical piano 1926) and others, notably George Antheil (*Le Ballet mécanique*, 1926) and Conlon Nancarrow continued this genre of recorded music. Only two roll-composed works for mechanical organ are known: the experimental stage piece, "Triadischen Ballett" by Oskar Schlemmers (1888-1943) was revised by Hindemith in 1927 as "Suite für mechanische Orgel" but survives only in an early recording (available on CD) and "Studie" for mechanical organ by Ernst Toch (1887-1964) which appears to have been lost.

1917 The “Victor” label increased its sales with classical releases, especially popular from their collaboration with the Philadelphia Orchestra conducted by Leopold Stokowski.

All early commercial sound recording and reproduction to this point was achieved solely by acoustical means.

1920s: Electrical recording, broadcasting; roll recordings

From the early 1920s the vacuum-tube ("valve"), invented by Lee De Forest, paved the way for applications such as the amplifier and the record-cutting lathe. Microphones, earphones and loudspeakers now replaced the old needles and acoustical horns, while turntable drives shifted from the wind-up spring to the electric motor . The recording of "classical" music increased greatly but popular music and Jazz also established their places. American and German scientists developed Poulsen's earlier wire recording technology and researched the potential for magnetic tape as an alternative medium to wire.

1923 an optical system of sound recording was invented by De Forest - of special relevance to

sound films

From 1925 electrical recording quickly predominates

1926- radio broadcasting is introduced and music becomes far more freely available to all classes of society

1926-30 very early 78 organ recordings appear, made by W.G. Alcock, H.E. Darke, Bullock, Palmer, Roper, Marchant, G. Thalben-Ball. The most notable in England was Harry Goss-Custard.

1927 Edwin Lemare was contracted to record (78s) for the Victor Co. in the USA. The project was started, but abandoned on account of the recording organ's condition. 2 discs were issued: on one *Aloha Oe* and Lemare's own *Chant du Bonheur*, on the other his *Andantino* and Schumann's *Träumerei* (this latter was re-issued later in England.)

1928 (November) Louis Vierne made 78s at Paris, Notre Dame Cathedral

1928-32 Alfred Sittard - who had recorded on Welte rolls released from 1913 onwards - made some 78 recordings in Berlin (Alte Garnisonskirche) and Hamburg (Michaeliskirche). 6 of Sittard's recording titles are duplicated on both roll and disk (2 Bach, 3 Handel, 1 work of his own).

1929 (26th February) organist, Paul Mania, recorded with soprano, Lotte Lehmann, a number of arias, including Bach, Schubert, Schumann and Brahms.

Around 1930 in Germany Walter Fischer made 78s of Rheinberger and Händel organ concertos in an udientified location, but generally thought to be the Berliner Dom.

1930-1 Charles Tournemire made recordings at Paris, Saint Clôtilde.

From 1929 onwards the great economic depression threw the recording industry into serious decline: dance music recordings played on jukeboxes helped sustain a contracted market throughout the 1930s. The vogue of the player piano and player organ began to decline with this and the increasing popularity of the radio and phonograph, although player piano culture survived to a remarkable degree through mid- 20th century.

1945-1970: microgroove recordings; tape

after World War II magnetic systems were brought to full technological acceptability (the "tape recorder" era began and the use of wire declined). Similarly constant improvements in optical systems endowed motion pictures with ever higher quality sound.

1948 the "long-playing" record was first introduced (LP 33 1/3 revolutions per minute, for a time also a 45 rpm format); discs made of "vinyl" took over and the "78" quickly disappeared from production. Available maximum playing times increased to 20-25 minutes (about the maximum capacity of some of the rolls from 30 years earlier.)

1958 provision of two separate channels of recorded information in the one groove ushered in

the era of "binaural" (stereophonic) recording. This became standard.

The era of "hi-fi" particularly boosted organ disk recordings which had suffered badly from inadequate technology hitherto. This led to a notable increase in "complete" (e.g. Walcha playing Bach) works and comprehensive anthologies of organ music and organs.

Tape also was used for video recordings.

1970s Digital

1970s digital recording technology displaced analogue and took over the industry (quadraphonic and similar experiments followed but were mostly unsuccessful except in cinemas)

In late 20th century the player-piano concept was reinvented and applied e.g. Yamaha's "Disklavier" which offered self-recording, and selected performances by artists from Horowitz to Liberace.

1980s fully digital compact discs (CDs) were introduced; they dominated the market by the 1990s. Playing time increased to over an hour. Digital editing and mixing techniques also evolved to produce a highly-packaged sound quality.

By early 21st century DVDs had also become a factor in sound and video recording as well as mass information storage. Their playing time could now cope with almost any extended musical form, including videos of operas.

Revision of 25 June, 2011