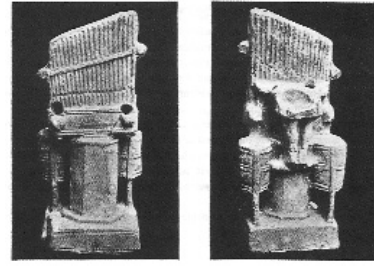


Technology Highlights in the History of Pianism

By George Litterst, Editor, with a lot of help from *Piano*, by David Crombie, published by Barnes & Noble Books



The Hydraulis, or Water Organ. Clay model found in ancient Carthage.

ca 900-1000
Two-octave, diatonic pipe organs

ca 1697
Pantaleon Hebenstreit produces a large, one-of-a-kind dulcimer, subsequently known as the *pantaleon*, which became a forerunner of the piano

ca 300 BCE
Hydraulis (water organ: early application of a keyboard-like device to a musical instrument)

ca 1404 Clavicordium (early clavichord)

ca 3,000 BCE Zither (early instrument consisting of strings stretched over bridges; strings were plucked or struck)

ca 900-1000 Hurdy-gurdy (string instrument with attached keyboard)

ca 1300
Three-octave, chromatic pipe organs; “short bass octave” design

ca 1397
Clavicembalum (early harpsichord)

ca 1406
Virginal

BCE

CE

1000

1500

ca 1700 Bartolomeo Cristofori’s first keyboard instrument based on an escapement action (alternately referred to as *arpicembalo che fa il piano e il forte* [a harpsichord that can play quietly and loudly] and *gravicembalo col piano e forte* [a harpsichord with soft and loud])

1732 Lodovico Giustin publishes the first known piece specifically written for the fortepiano

1747 Johann Sebastian Bach gives his blessing to a more refined piano by Gottfried Silbermann



Reproduction of Cristofori gravicembalo by Kawai



Clavichord

1722 Cristofori develops the *una corda* mechanism operated by a hand stop, enabling the instrument to play just one string instead of two strings

1735 First upright piano

ca 1742 First square piano

1736 Johann Sebastian Bach tests an early piano of Gottfried Silbermann and expresses criticism of the heavy action and weak treble

1753 Carl Philipp Emanuel Bach refers to piano technique in his treatise, *Essay on the True Art of Playing Keyboard Instruments*

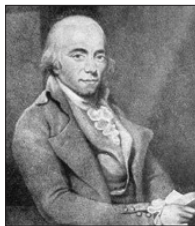
ca 1716 Gottlieb Schöter refines both an up-striking and a down-striking piano action

1700

1725

1750

1768 Johann Christian Bach gives the first solo piano performances in England



Clementi

1783 John Broadwood replaces the damper knee lever with a sustain pedal

ca 1800 Joseph Marie Jacquard develops an automated loom that is driven by punch cards; as an early form of computer, this invention subsequently influences the development of the player piano

1767 Piano used for accompaniment in recital for the first time in London

ca late 1770s
Keyboard music often published just for “Pianoforte”

1781 Wolfgang Amadeus Mozart and Muzio Clementi engage in a pianistic “duel” at the request of Emperor Joseph in Vienna



Mozart

1797 *Pianoforte*, the first magazine devoted to the piano, is published in London

ca 1760s
Keyboard music is often published for “Harpsichord or Pianoforte”

1773 First piano concert in New York

1794 John Broadwood extends the keyboard to six octaves

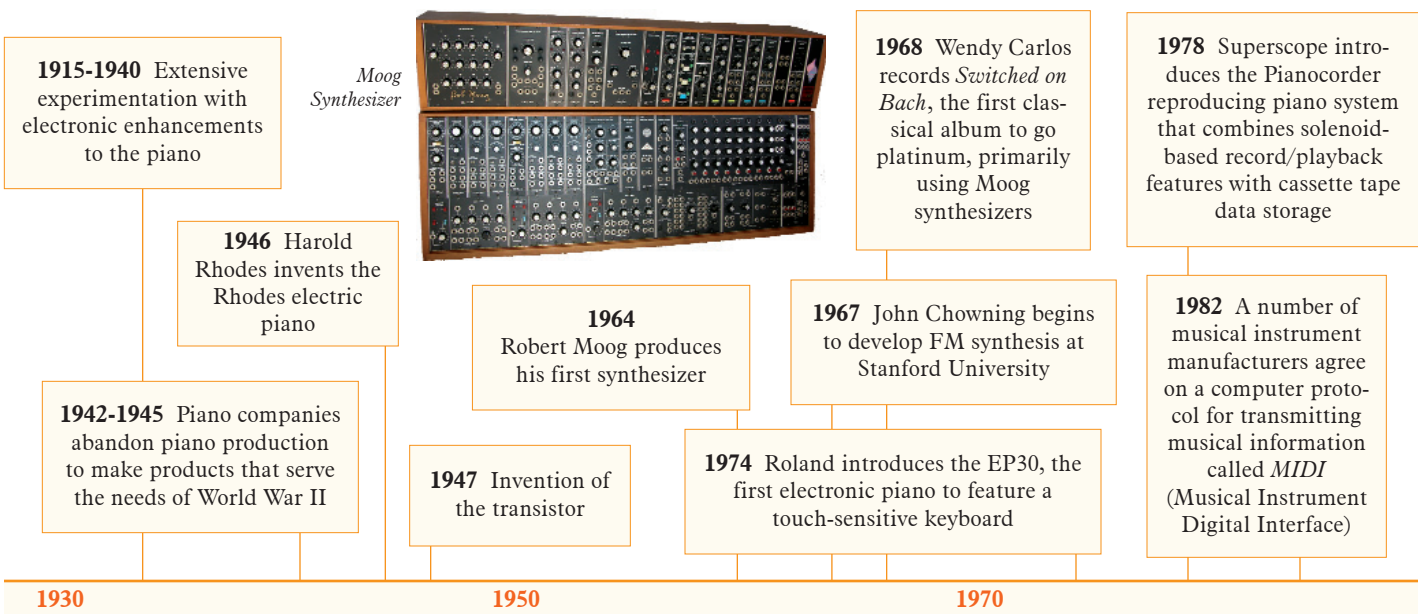
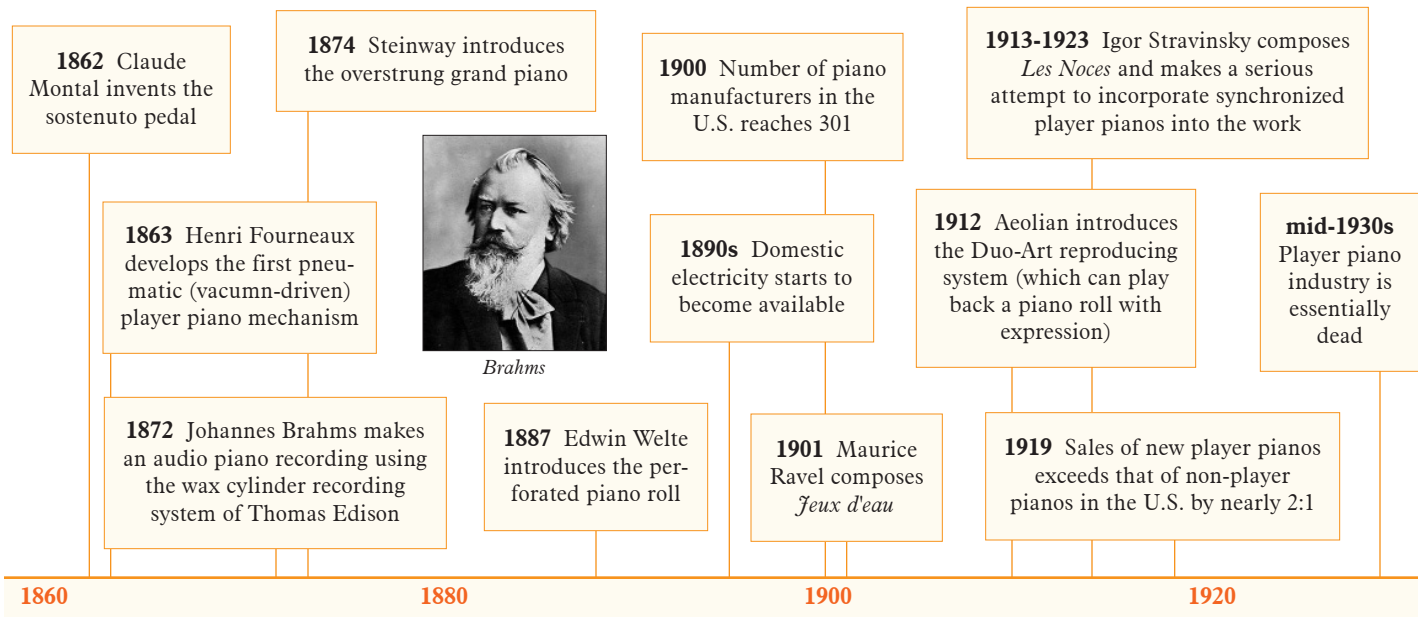
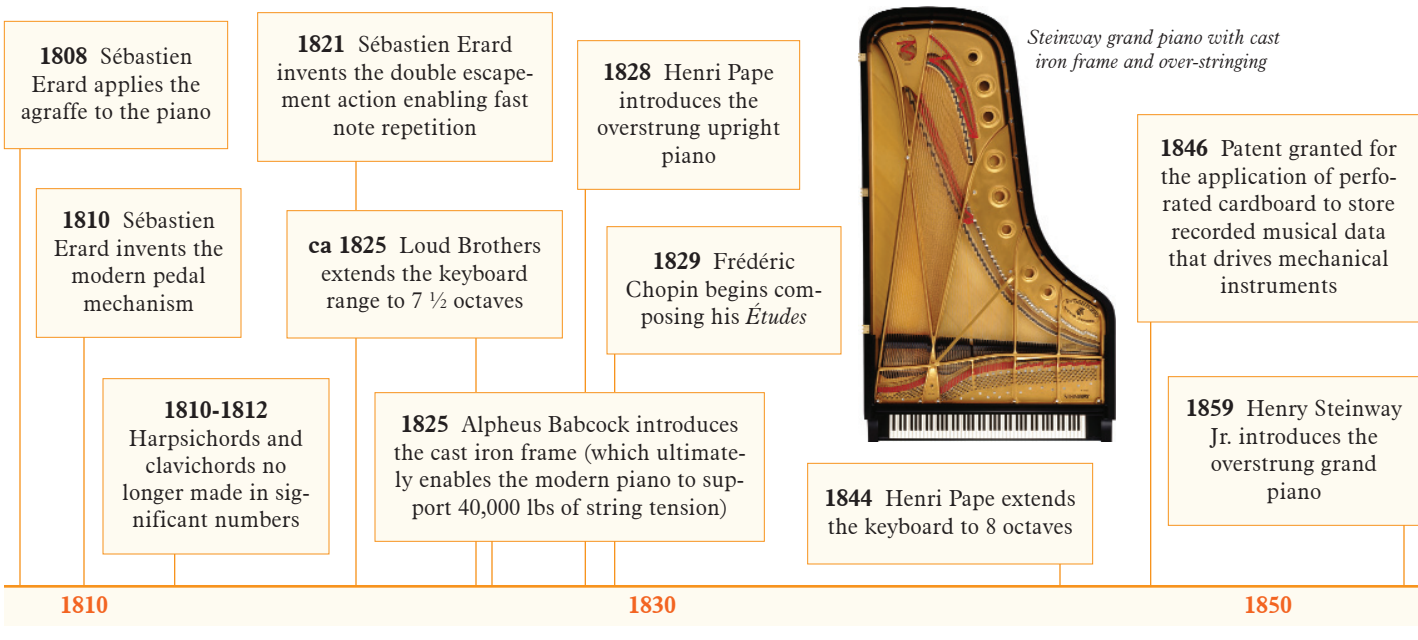
1797 William Rolfe and Samuel Davis introduce a janissary drum mechanism

ca early 1800s A variety of unusual pedals were added to many pianos to achieve harp-, bell-, bassoon-, and drum-like effects

1760

1780

1800



1983 Yamaha introduces the DX7 synthesizer based on FM synthesis



Yamaha DX7 Synthesizer

1991 A standard file format for storing MIDI files (called *Standard MIDI Files*) emerges



Early Disklavier Upright

1985 Boesendorfer introduces a prototype of its solenoid-based reproducing player piano, which was invented by Wayne Stahnke

1986 Paul Sheftel acquires a Roland MT-100 standalone MIDI recorder/player and begins creating MIDI accompaniments for piano teaching materials

1987 Yamaha introduces the Disklavier reproducing piano; Baldwin, QRS, and Piano-Disc (Mason & Hamlin) do the same in subsequent years

1991 Roland introduces the SC-55 Sound Canvas, the first General MIDI/General Standard tone module

1998 Keith Lockhart and the Boston Pops perform *Rhapsody in Blue*; George Gershwin makes a rare posthumous appearance, performing on the Disklavier

1980

1990

2000 TimeWarp Technologies introduces *Home Concert 2000*, the first commercial software program that features music notation display, score-following, and automatic page-turning when connected to a MIDI instrument



Sound Canvas

2004 Sales of new digital pianos exceed that of acoustic pianos in the U.S. (despite a resurgence of acoustic piano manufacturing in the 1990s)

2007 Following the closure of Yamaha's plant in Georgia, five piano manufacturers — Steinway, Baldwin (Gibson), Charles Walter, Astin-Weight, and Mason & Hamlin (PianoDisc) — continue to produce acoustic pianos the U.S.

2002 The International Piano-e-Competition uses the Internet, synchronized video, and Disklavier technology to enable a pianist on tour in Japan to participate as a juror for the competition as it took place in Minnesota

2006 Yamaha introduces the Remote Lesson feature for connecting multiple Disklaviers over the Internet for the purpose of long distance teaching and broadcasting of concerts

2000

2007

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