ASK

IBM keyboard history crash course

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Me!

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- Joined the hobby in August 2019
- Officially, website started to tackle lack of centralised and well-referenced hub for IBM keyboard info
- Main attractions include IBM part number database, the wiki, research articles and many reference pages
- Also moderate /r/ModelM and its Discord



IBM

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- Best known for the IBM PC and ThinkPad
- Inventions include ATMs, bar codes, dynamic RAM, hard drives, magnetic stripe cards, the relational database and various important semiconductor manufacturing techniques
- Built the Saturn V rocket instrument ring that helped take humanity to the Moon
- Today focus on consultancy, AI, supercomputers, quantum computers, and patent farming



Credits: Rama & Musée Bolo (CC BY-SA 2.0 FR)

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IBM keyboards

- IBM played a huge role in the development of the computer keyboard
- Generally, 6 major groups of pre-ruber dome IBM keyboards can be recognised
- "Keyboards" considered are ones that can be electrically separated from their host system
- Changes between the groups includes switches, materials and communication methods, usually trending towards lowering costs and simplifying production.

Early IBM



1910 - Hollerith (later IBM) 001 Mechanical Card Punch

Credits: Adafruit blog (fair dealing)



Early IBM



1931 - IBM Radiotype Credits: Columbia University (fair dealing)



What's coming...

Gen 1: contact bail keypunches

Gen 2: typewriter printer-keyboards

Gen 3: elastic diaphragm keyboards

Gen 4: IBM Model B

Gen 5: IBM Model F

Gen 6: IBM Model M





1949 - 1972: Generation 1, contact bail keypunches





Figure 4-55. Keyboard Permutation Unit – Bottom

1949 - IBM 024/026 Card Punch Keyboard

Credits: Ben Franske (CC BY-SA 4.0)

Contact bail system

Credits: IBM field engineering manual 225-3357-3 (fair dealing)



1949 - 1972: Generation 1, contact bail keypunches



1964 - IBM 029 Card Punch Keyboard

Credits: DVQ (CC BY 2.5)

Credits: listofoptions (permission to use given)



IBM Standard Modular System (SMS)



1963 - 1986: Generation 2, typewriter printer-keyboards



1971 - IBM Selectric II

Credits: Admiral Shark (CC BY-NC-SA 4.0)



"Golfball" typing element Credits: Scs (public domain)

1963 - 1986: Generation 2, typewriter printer-keyboards

1965 - IBM 2741 Communications Terminal

Credits: O. Nierstrasz (CC BY-SA 4.0)

Credits: M. Skøtt (CC BY-SA 2.0)

1965 - IBM 1130 Computing System Console

1963 - 1986: Generation 2, typewriter printer-keyboards

1970 - IBM 3215 Console Printer-Keyboard

Credits: IBM components description document GA24-3550-1 (fair dealing)

1969 - 1985: Generation 3, elastic diaphragm "wedge" keyboards

Figure 1-10A. Elastic Diaphragm Switch Asm. (EDS)

Elastic diaphragm membrane assembly

Credits: IBM theory-maintenance manual SY27-0073-1 (fair dealing)

Credits: F. Leva (CC BY-SA 4.0)

1969 - IBM 5496 Data Recorder Keyboard

1969 - IBM 2770 Control Keyboard

Credits: Computer History Archives Project (fair dealing)

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1972 - IBM 3066 Console Keyboard Credits: Newcastle University Historic Computing (fair dealing)

1971 - 1985: Generation 4, IBM Model B (aka, beam spring keyboards)

Beam spring module

Credits: Admiral Shark (CC BY-NC-SA 4.0)

Credits: snuci (public domain)

1972 - IBM 3275/3277 66-key Keyboard

1971 - 1985: Generation 4, IBM Model B (aka, beam spring keyboards)

Various Model Bs

Credits: Spitzak (CC BY-SA 4.0), TheMK#1822 (CC-BY-NC-SA), Museo de Informática (CC BY-SA 2.0) and WorthPoint (fair dealing)

1981 - 1996: Generation 5, IBM Model F

A buckling springs Credits: Shaddim (CC-BY-2.0)

1981 - IBM 5150 PC & 5160 PC/XT Keyboard (aka, "F/XT")

Credits: Admiral Shark (CC BY-NC-SA 4.0)

1981 - 1996: Generation 5, IBM Model F

Various Model Fs

Credits: WorthPoint (fair dealing), webwit (public domain), Ellipse @ modelfkeyboards.com (use with attribution), daedalus (permission requested & given) and Admiral Shark's Keyboards (CC BY-NC-SA 4.0)

Membrane buckling springs

Credits: Admiral Shark (CC BY-NC-SA 4.0)

1984 - IBM Wheelwriter 5 Keyboard Assembly

Credits: Admiral Shark (CC BY-NC-SA 4.0)

1984 - present: Generation 6, IBM Model M

IBM Enhanced Keyboard Credits: Admiral Shark (CC BY-NC-SA 4.0)

1984 - present: Generation 6, IBM Model M

Various classic Model Ms

Credits: snuci (public domain), Admiral Shark (CC BY-NC-SA 4.0)

Various numbered Model Ms

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Credits: WorthPoint (fair dealing), webwit (public domain), Admiral Shark (CC BY-NC-SA 4.0)

IBM buckling sleeves

Credits: Admiral Shark (CC BY-NC-SA 4.0)

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1991 - IBM PS/2 L40SX Credits: Uberman765 (donated photo)

Various buckling sleeve variants

Credits: Admiral Shark (CC BY-NC-SA 4.0)

Medium-tall M-e ~10mm diametre ~3mm key-travel Medium M6, M6-1 ~11mm diametre ~2.5mm key-travel Small M6, M6-1 ~6.8mm diametre ~2mm key-travel

Various buckling sleeve Model Ms Credits: Admiral Shark (CC BY-NC-SA 4.0)

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3 of the same keyboard, 3 decades, 3 different OEMs

Credits: Admiral Shark (CC BY-NC-SA 4.0)

End of an era

- 1991: IBM US keyboard manufacturing -> Lexmark
- 1996: Lexmark keyboard manufacturing -> Unicomp
- 2005: IBM Personal Computing Division -> Lenovo
- 2012: IBM Retail Store Solutions -> Toshiba TEC
- 2014: IBM x86 Server Business -> Lenovo

Post-IBM

Unicomp and TGCS keyboards Credits: Admiral Shark (CC BY-NC-SA 4.0)

