

Brief report on the IEEJ technical meeting on history of electrical engineering in May  
and activities of the Center of the History of Japanese Industrial Technology

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1. Technical Meeting on “History of Electrical Engineering”, IEE Japan, 2013-5-10

The meeting was held at IEE Japan office in Tokyo. The themes were railway systems and history of electrical engineering in general. The following eight papers were presented:

- K. Akita and Y. Hasegawa: History of COMTRAC - Development of Innovative Traffic Control System for Shinkansen-
- M. Shinbo: A joint design meeting for E. M. U. controller sponsored by JNR
- S. Arai: The report of railway culture in a local city in Japan
- A. Yamada: Early History of Japanese Personal Computers
- T. Shimizu: How exchange and sharing of information in the early days of computer usage were made in Japan
- M. Maejima, O. Kamei and R. Takayasu: A case study for the historical research of Japanese industrial technology with video archives
- T. Saito: A History of Protection System for DC Traction Sub-stations
- Y. Mochinaga and J. Ito: Technological progress on the feeding system of a.c. electric railway

COMTRAC (COMputer aided TRAffic control system) is a large scale command-and-control system, which was first introduced into Tokaido-Shinkansen bullet train in 1964. It became an essential system to support the punctual, stable and dependable Shinkansen.

Japanese electronic manufacturers started developing 8-bit microcomputer kits and personal computers in mid 1970s. They developed 16-bit personal computers in early 1980s which equipped the hardware for processing Japanese including Kanji.



NEC PC-9800, a popular Japanese 16-bit personal computer

2. Activities of the Center of the History of Japanese Industrial Technology, National Museum of Nature and Science (NMNS), Japan<sup>1, 2</sup>

Since 2002, the center conducts surveys and research on three key areas:

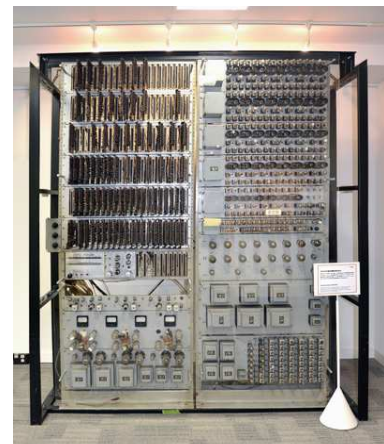
- 1) Surveys on whereabouts: Determining the location of materials that illustrate the development of Japan's industrial technology.
- 2) Research on the systemization of technologies: Clarifying the relationship society, culture, and the economy have with technological development.
- 3) Select and register important specimens from the history of science and technology in Japan: Preserving a disappearing national heritage.

Registered artifacts include following Japanese historical computers:

- Osaka University EDSAC-type vacuum tube computer and ENIAC-type arithmetic unit (1950s)
- HIPAC MK-1, the oldest Parametron computer in existence (1957)
- KT-Pilot, the first Japanese micro-programmed computer (1961)
- NEAC-2203 , the first Japanese mass-produced transistor computer (1961)
- FACOM 230-60, TTL IC computer (1968)
- MELCOM 81, the first Japanese “Office Computer” (small business computer) (1968)
- S810 and S820, supercomputers in early days (1982 and 1987)

(The manufacturing year of each artifact is listed in parentheses following the item.)

This year, the research on five technology areas including personal computers is conducted.



HITACHI HIPAC MK-1, the oldest Parametron computer in existence

#### Reference

1. <http://www.kahaku.go.jp/english/institution/sts/index.html>
2. A. Yamada; Technology heritage activities in Japan, Events & Sightings, IEEE Annals of History of Computing, Vol. 34, No. 4, pp. 83-85, 2012