

*BURRELLE'S*



Arthur McNair of Carnegie Mellon University operated the Pittsburgh site of the three-way voice translation.

## Device translates voices, but this talk's not cheap

Associated Press

TOKYO — "Moshi-moshi," a Japanese researcher said, speaking into a microphone.

Eight seconds later, a computer in Pittsburgh gargled the translation: "Hello."

Thus did people and computers in Japan, Germany and the United States begin a global chat Thursday, the first international test of a system that transforms spoken words from one language into another without an interpreter.

The \$128 million computer has taken seven years to develop. It understands 1,500 words in Japanese, English and German, said researchers at Kyoto's Advanced Telecommunications Research Institute.

Japanese researchers talked Thursday for about 15 minutes with colleagues at Carnegie Mellon University in Pittsburgh, then with electronics giant Siemens AG in Munich, Germany.

The sentences were first recognized and translated by a computer

into written text, which was sent by modem through a telephone line. A voice synthesizer on the other end "spoke" the translated words.

"It was a success," said Shigeki Sagayama, head of speech-processing for Advanced Telecommunications. "It recognized and translated all of the conversation."

Researchers had agreed to talk about an imaginary conference, and likely phrases had been programmed into the computer.

Sagayama said automatic translation systems will be limited to particular kinds of conversations because errors increase dramatically as topics and vocabulary grow.

"The system might be used by car rental agencies or hotels for reservations when multilingual staff isn't available and the range of conversation isn't too broad," he said.

Sales of the new system are unlikely for 10 years because of the high costs — the system now uses four powerful computers — and because of the challenge of understanding ungrammatical "natural" speech, Sagayama said.