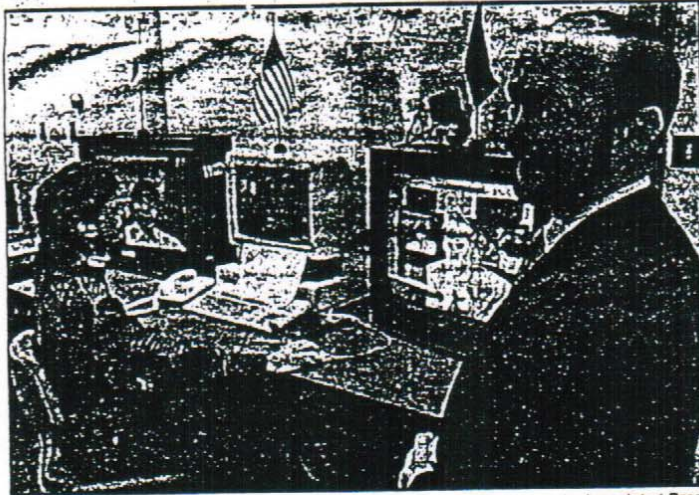Associated Press

Alexander Waibel (right) of Carnegie-Mellon University, examines equipment used in the computer phone translation project as technician Arthur McNair operates the system.

Phone project aims at language barrier

By ANDREW POLLACK
Of The New York Times

KYOTO, Japan — Dr. Toshiyuki Takezawa sat down at a bank of powerful computers here Thursday afternoon and spoke into a microphone. "Moshimoshi," he said.

Instantly, the computers whirred to life, furiously digesting and analyzing this morsel of Japanese speech. Twelve seconds later and half a world away, a computer in Pittsburgh spoke, conveying Takezawa's message in English. "Hello," it said, in its electronic voice.

Not as dramatic as Bell's first call to Watson, perhaps. But that simple greeting began what researchers here describe as the first public demonstration of an overseas telephone conversation's being automatically translated from one language to another.

Such a capability, which engineers call automatic interpreting telephony, has been a long-sought goal of researchers, who see it as a way of overcoming language barriers.

The day of being able to dial up anyone in the world and chat freely is probably two decades or more away, researchers say. But they think that by the end of this decade, interpreter telephones will be used for limited applications, such as making travel reservations.

"Today's experiment is just one tiny, tiny step," said Kohei Habara, executive vice president of the Advanced Telecommunications Research Institute International, the Japanese research center in Tokyo that conducted the demonstration. "But we think historically it's a very important one."

As the test showed, the systems are now very limited. Any system that requires 12 seconds to translate "hello" from one language to another (more complex utterances could take 20 seconds or longer) obviously needs improvement. But that will come with time and faster computers.

A much more fundamental problem with the test system is that conversation must be limited to a very narrow topic, in this case, registering for a conference. And the vocabulary is limited to between 500 and 700 words, to make it easier for the computers to recognize what was said.

While in Thursday's test the computer understood the sentence "It costs $200 per person," for instance, it would not have been able to handle a variation such as "That'll be two hundred bucks a head."

Moreover, the speakers had to use grammatical sentences. To keep the speakers within these unnatural boundaries, the conversations were scripted.

The computers, to their credit, understood sentences spoken at a normal or near normal pace and flawlessly translated such sentences as "The proceedings and the reception are included in the application fee."

Thursday's test was the result of an international collaboration involving Japan's ATR Institute, Carnegie Mellon University in Pittsburgh, and a team from the company Siemens AG and Karlsruhe University in Germany. The German team participated in the demonstration from Munich, where the German speaker celebrated the successful completion of the conversation by raising a beer stein.

Computer interpretation is of particular interest to the Japanese, who often have to do business in a language other than their own.