Computer Bits

By Leslie Solomon

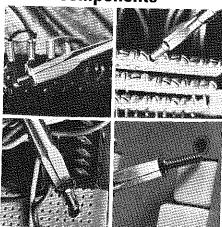## LANGUAGE TRANSLATION

MOST OF us remember the various times that Capt. Kirk, in "Star Trek," used a "universal language translator" to communicate with alien lifeforms. Well, such a vocal input/output system has not yet come along, but we are getting closer.

Within a period of three weeks, we had the opportunity to try out two "language translators"—the LK-3000 from Lexicon Corp. (8355 Executive Center Drive, Miami, FL 33166) and the M-100 from Craig Corp. (921 West Artesia Blvd, Compton, CA 90220). The translators are similar in operation though there are minor differences.

Both systems resemble pocket-size calculators and have alphanumeric keypads, and 16-digit multi-segment displays. The Lexicon uses LED's while the Craig uses fluorescent readouts.

These machines have English as their "base." In operation, an English word is entered on the keyboard, a switch is depressed and both the English and its equivalent in the other language appear in the display. It is also possible to enter the foreign language word and have the display give the English equivalent. Both are provided with about 1500 commonly used words (similar to those little travel books tourists carry), and both also contain 50 or so of the most frequently used phrases. Foreign languages include French, Spanish, Italian, Portugese, etc., with Japanese, Russian and others coming soon. If an expression is longer than the display, the words will scroll left to allow the message to pass along.

Both machines are provided with plug-in modules that are used to change languages, and are in the $225 category. They also provide simple calculator operations and can provide a "menu" of the data within their ROM's.
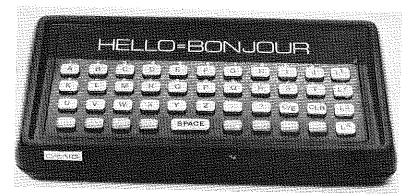
Electronically, both are basic computers in that they contain a processor, some RAM and have their language in ROM. The processor has the usual support circuitry and includes the 16 character display. The M-100, for example, uses a 3870 CPU, features 16K bits of internal ROM (carrying housekeeping and English), and can support 32K or 64K of plug-in ROM carrying the other language and data.

Everything is done in software (actually firmware) and both use proprietary programs. In both cases, the plug-in ROM will be sold over the counter. (Craig is asking $25 per language.)

Engineers for both companies refused to speculate on vocal input/output attachments for their devices, so we still have something to look forward to before we can join Kirk in his galactic conversations.
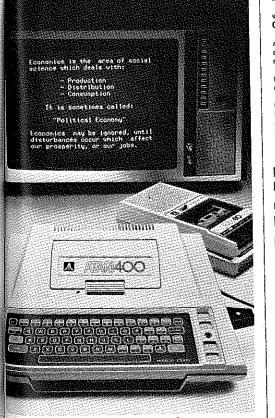
Atari Steps In. After several years of being one of the leaders in making arcade and home video games, Atari Inc. is now offering a pair of personal computers. One is the Atari-400 (approximately $500) using a 6502 CPU, 8K of RAM and 8K of ROM (expandable to 16K). The keyboard is a 57-key Monopanel with fingertip touch-contact points rather than mechanical keys. The system has upper and lower case, graphics and screen editing functions. Up to 40 characters on 24 lines can be displayed on a conventional TV. Up to 16 colors and 8 luminance levels are provided.

A built-in r-f modulator, set to either channel 2 or 3, conforms to the FCC Type-1 specifications. R-f radiation is kept down by using an extruded metal shield to cover the complete system (under a plastic cover). BASIC is provided. A special I/O connector allows interfacing to the several peripherals Atari intends to provide. Special input jacks, located under the keyboard on the front, allow use of game-playing controllers.

The Lexicon LK-3000 language translator uses LED readouts.

The Craig Model M-100 translator uses a 3870 CPU.

The Atari-400 personal computer uses a 6502 CPU, 8K of RM and 8K of ROM. Keyboard is a 56-key Monopanel with touch-control points.

The cassette player used with the system has no volume or tone controls, but does have a tape counter and pushbutton controls. It is also operated by the computer. Digital data is on one track, while audio is carried on the other. Data transmission is 300/600 baud, software controlled. Atari supplies a complete line of software, including many games.

The second system, the Atari-800 (approximately $1000), has all the electronic features of the 400 and comes with 8K of RAM plug-in expandable to 48K. It too comes with BASIC in ROM. This system can drive up to 4 disks and a printer. Soon to be available are an acoustic modem, a direct telephone adapter, an ac controller, a light pen, voice synthesizer and recognition, and a music synthesizer. Atari also supports this system with a full line of software (interchangable with the 400). Languages include BASIC and DISK BASIC, with other languages under consideration. They also hope to have an assembler, disassembler and text editor.

Each of the plug-in modules (RAM and operating system) is protected by a plastic enclosure. Details of the 44-pin bus were not available.

The keyboard features 57 full-stroke mechanical keys and four separate function keys. It too has a built-in modulator. Besides its built-in speaker, the 800 also provides TV sound.

The 40-column printer uses dot matrix and standard paper rolls and ribbons. It handles 40 characters per second and one line per second. It contains its own processor. The 800 can handle up to four disks simultaneously. The disk system uses standard 5½" diskettes with 92K per side and also contains its own processor. The various peripherals are "daisy chain" coupled to the single output connector.

TRS-80 S100 Adapter.
The 8100, an S100 bus adapter motherboard, plugs into the TRS-80 via a ribbon cable. The 8100 also features 6 slots and card guides, and a second TRS-80 connector allows other TRS-80 devices to be connected at the same time. The new motherboard has optional on-board circuitry and sockets for 16K of dynamic RAM, I/O interfaces for serial and parallel I/O both RS232 and 20-mA loop and an 8-bit parallel I/O port. The basic unit, including the S100 bus interface, one edge connector/card guide set, and manual is $185 per kit and $245 assembled. Five connectors/card guides are $45 as a kit, $75 assembled. The RAM

support option (less RAM's) is $45 kit and $75 assembled, while the I/O option is $85 kit, $115 assembled. HUH Electronics, 1429 Maple St., San Mateo, CA 94402 (Tel: 415-573-7359).

Apple Robot.
If you have an Apple II, the addition of ROBOT 1, will enable you to control a battery-powered car merely by speaking the words "forward," "reverse," "stop," "left," "right," and "straight". The ROBOT 1 plugs into an Apple slot, and the accompanying program is run. The speech system uses the Heuristics Model 20A Speechlab. The radio link is effective to about 300 feet. The system comes with car, radio-link controller, Apple II peripheral card, preprogrammed demonstration tape and instruction manual. Heuristics, Inc., 900 San Antonio Rd, Los Altos, CA 94022 (Tel: 415-948-2542).

New Computer Clubs.
An 1802 user group is now in operation in Finland. Contact: J. E. Nystrom, Ulvilantie 2 C 27, SF-00350 Helsinki 35, Finland.

A new Canadian club has also been reported. Contact: West Coast Computer Society, POB 4476, Vancouver, B.C., Canada V6B 3Z8. ◇