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COMPUTING on the RUN
by Norman Knapp

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THE EDITOR'S COLUMN.

SIG Night

was in my opinion very successful. The attendance was good and lively discussion groups were set up for wordprocessing, communications, games and languages. The wordprocessing group got off to a good start by presenting a demonstration of the use of AtariWriter. The language SIG discussed informally the merits and shortcomings of the various languages available for the Atari computers. If you have a problem or would like to learn more about what your Atari is capable of doing, come to the next SIG meeting April, 29, at State Savings and Loan in Worthington.

The language SIG will have a system set up to demonstrate the use of compiled languages. We will demonstrate the use of disk based language with separate editing, compilation, and assembly steps. We will try to answer such questions as why a programmer should consider using a compiled language (especially when Basic is so convenient) and the limitations of the various compiled languages available for the Atari computers.

"... a bit premature."

As Mark Twain was quoted when he read his obituary I'm retracting in a similar manner, my resignation this month as editor of our newsletter. Now I feel that I owe you an explanation.

Almost two years ago, a new editor was elected to replace Bill Eckert when he took on the presidency of ACE of Columbus. The new editor had too many irons in too many fires and could not bring out a single issue. A couple months after the new editor dropped out of ACE, I volunteered to edit the newsletter for a year and brought out my first issue in April, 1984. The situation has changed since then in that it now seems quite awkward to elect one officer in the spring and the rest in the fall. My apologies for the confusion this situation may have caused. The newsletter needs your contributions of articles and reviews.

by Norman Knapp

COMPUTING on the RUN
by Norman Knapp

The major drawback of the current Atari computers is that they are moved, with difficulty, from one location to another. Among the new machines announced by Atari is a portable. Not very much has been said about this computer, but my opinion is that it is a transportable model; you unplug it, move it to another location, and plug it in again, much like the Osbourne.

This sounds great if you want to take your 'job' home with you. This small aspect of the computer age may be a 'curse' in disguise. Your boss can keep you busy all day and then tell you at five p.m. that there is a spreadsheet calculation that just has to be his desk in the morning. All you have to do is lug your heavy Osbourne home, forget about any other plans you had for the evening, and spend your evening slaving away for the company getting that program to work.

It soon becomes apparent that the weight and the inability to use it 'in transit' are two disadvantages of the transportable computer. Smaller and lighter machines were brought onto the market which apparently satisfied these shortcomings of the transportable computers; the Radio Shack 100, the NEC 8201A, and the Epson HX-20. They have as a minimum a self contained power supply, a small display, and RS-232 port, 16K RAM, MicroSoft Basic, a word processing package, a telecommunications program, and a printer port. Some of these machines have a built-in micro cassette tape drive. All have the ability to store programs and files on cassette tapes. The original list price of these machines was in the \$800 to \$1000 range; add on options such as more memory (up to 64K), a printer, rechargeable power supply, and modem could easily double your investment. As a result, none of these lap computers sold very well, even when prices fell to the \$400 to \$500 range.

Some of the less desirable features of the first generation lap computers have been alleviated by the release of updated machines; mainly with more memory and a screen with more rows and columns. However, now the price is back up to about \$1000. Between the slack demand and the release of the updated machines, the older lap computers can be purchased for reasonable prices, if you shop around. When I saw a NEC-8201A for \$200, I just had to buy it. Why did I get it when the Knapp now has more computers than TV set?

I have a special application. I do a fair amount of research in archival libraries looking through large numbers of books, serial publications, and rolls of microfilm searching for small amounts of information, a paragraph or so at most, quite often only a sentence or phrase. In some libraries, duplication facilities are not self service or adjacent to the work areas. Some libraries will not permit copying of some items due to its poor condition. Unless you are using a microfilm reader with printing capability, obtaining copies of microfilm is time consuming. Handwritten

notes have to be worked over again at home on my Atari. If your handwriting is as poor as mine is, errors can creep into your work.

A lap computer would seem to be a viable solution to solving the problems given above, except for the need for external storage and of obtaining printed copies of files. Before I bought my NEC, I knew that an article on interfacing lap computers and the Atari system through the 850 interface had been published in Antic last year. That article is reprinted elsewhere in this issue. Read it for details of building the cable and for use of other lap computers.

Using the NEC lap computer is very simple. When you turn the power switch on, a menu of programs and files is displayed. Move the cursor to either Art (NEC's Microsoft Basic), Text (an editor), or Telcom (a telecommunications program) and then press the return key. If you chose Text, respond with a file name, key return, and then enter your text. When you're finished, turn off the NEC and go home. Then at your convenience, up load your files to the Atari system.

Turn off the NEC and the Atari interface before using the null modem to connect the RS-232 port of the NEC to port 1 of the interface. Bring in the RS232 handler machine language routine from disk and then Run AMODEM.BAS. Use the menu to select the 1200 baud rate, the ASCII mode (light translation), and the capture file specification. The capture file specification be P: or E: as well as a file name specification. Press the Option console key to put Amodem into the capture mode.

Turn on the NEC lap computer. Move the cursor to the Telcom menu option and press the return key. The status of Telcom is displayed followed by the Telcom prompt and the Stat and Term options. The Telcom status is displayed as a six character string which can be changed by selecting the Stat option. I'll refer you to the PC-8201A user's guide for details. You will need to set these parameters only once since Telcom boots up with latest version.

You will usually select the Term option which then displays several choices. To transfer a file to your Atari, select the Up option of Telcom and then respond with the name of the file to be transferred. Transfer takes place after pressing the return key. After file transfer is complete return to the Amodem menu and select the dump option to complete the job.

Text files may be transferred from the Atari system to the NEC, but I have not had an opportunity or need to do this. It should be possible to transfer ASCII Microsoft Basic programs, but to date I have not been successful.

A lap computer is not for everybody. I seen very little software marketed for the NEC or any other lap computer, so I can not see one as someone's only computer. If you have a specialized application like mine, it may be worth the investment.

References:

Robert Siegle, Bob Kahn, & the Antic Staff, 1984, ELECTRONIC NOTEBOOK: an Atari, a Cable, and a Lap-size Computer, Antic, Vol. 3, No., 3, pp. 45 to 47.

"PC-8201A User's Guide", NEC Home Electronics (U.S.A.), Inc., 1983.

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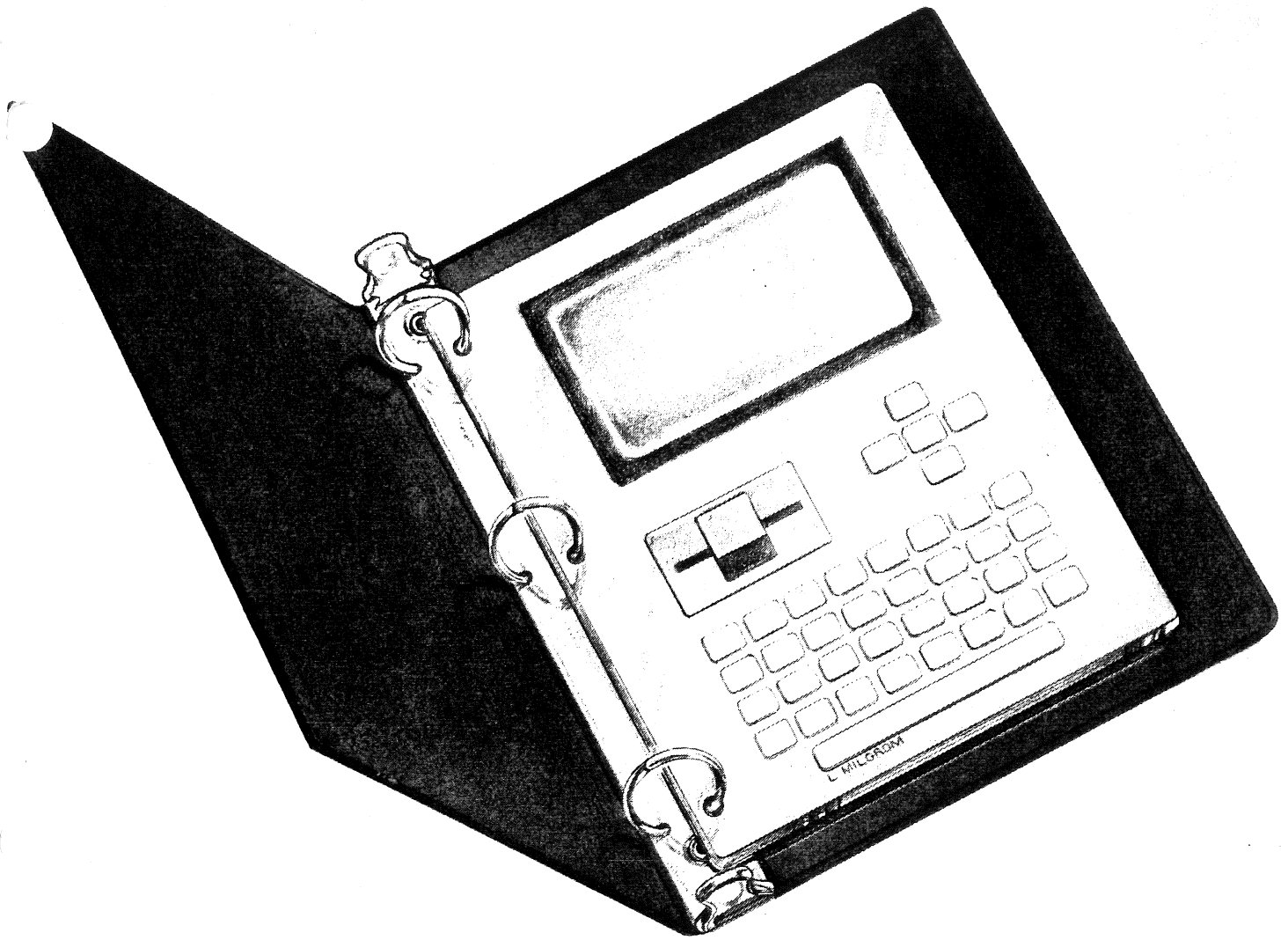
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ELECTRONIC NOTEBOOK

An Atari, a cable and a lap-size computer

by ROBERT SIEGLE, BOB KAHN & THE ANTIC STAFF

Notebook computers are the latest rage in the microcomputer world. These book-sized machines are very light and portable, yet feature large amounts of RAM, full-sized keyboards, built-in software, and much more. Because they hold every character in "non-volatile" memory, there is little drain on the computers' batteries. This keeps memory from being erased when the machines are switched off.

SYNOPSIS

This article discusses the transfer of data between "notebook" computers and Atari personal computers. An 850 Interface is required. For best results, you should use a commercial or machine-language terminal program that is capable of data transfer at rates up to 9600 baud for the Atari.

With a notebook computer, you can write or program anywhere — on a bus or plane, while sitting in the park, or even lying in bed. Later, you can transfer the file to your Atari to add some finishing touches. You can then print out the text or save it to disk or cassette.

At this time, there are three major notebook computers that retail for approximately \$795; Radio Shack's **Model 100**, the NEC **PC-8201A** and the

continued on next page

Epson HX-20.

It is already clear that many computer owners are buying one of these notebook models to use with their main machine. This article explains how to transfer files between a notebook computer and an Atari. The process is slightly different for each combination of machines, but the guiding principles are similar.

MAKING CONNECTIONS

The most obvious way to connect two computers is by phone line, using a modem on each end, supported by the appropriate terminal software. Of course, this requires two modems and two phone lines at the same location — a costly arrangement in the home environment. A direct connection is much more desirable.

BUILD YOUR OWN CABLE

All notebook computers have an RS-232C connector. RS-232C refers to an industry standard established to govern data communications. It determines the functions of the essential pins in a 25-pin connector intended for communications use. Table 1 identifies the eight RS-232C pin assignments involved in the connection we want to make. The Atari 850 Interface has four 9-pin serial ports. Port 1 (850SP1) is the most fully configured, and is the one we will use.

Note that both ports are female, so you will need a 25-pin male connector (DE-25), a 9-pin male connector (DB-9), and several feet of cable with at least eight wires in it. The pins are numbered from top to bottom and right to left as you face the female plugs, and left to right as you face the male plugs. Be careful to properly identify the male pins

and their corresponding wires while wiring.

Note that the significant differences involve pins 2, 3, 6 and 20 on the RS-232 side and pins 1, 3, 4 and 6 on the Interface side. Send goes to Receive, and vice versa. DTR goes to DSR and vice versa. Refer to the owner's manual of your non-Atari computer to verify these pin assignments in your particular case.

If you make this cable, you'll have what's referred to as a "null modem." It differs from the standard modem cable by virtue of the wiring crossover between pins 2 and 3 described above. Be sure to verify the wiring with an ohm meter before using it. Turn off each computer and the interface before connecting the cable.

Software takes care of everything else. On the Atari side, we use **TeleAtari** (Tronix), but **AMODEM**, a public domain program printed in this issue, will serve as well. Other communications programs should also work, but we have not tested them. As for the notebook computers, each has built-in communications software. The NEC and Radio Shack Model 100 feature **TELCOM**, and the Epson offers **SkiModem**.

BASIC PROCEDURES

The details vary, but in all cases you must complete the following steps:

- Connect the two computers with the null-modem cable.
- Power-up the computers and interface.
- Load the appropriate communications program into the Atari.
- Call up the communications program in the portable.
- Adjust the status of each com-

munications program to match the other.

- Set one of the computers to send (upload) and the other to receive (download).
- Transfer the file from one computer to the other.
- Save (or otherwise use) the received file.

"Translation" is a term you hear often in the context of Atari communications. It refers to several idiosyncrasies of the Atari that must be accommodated before communication with non-Atari computers is possible. "Light translation" converts the Atari end-of-line ([RETURN]) from decimal 155 to the standard ASCII value of 13 or vice versa. See the 850 Interface manual for further details.

The instructions for your terminal programs will guide you through the further formalities. The following are examples of our experiences.

EPSON HX-20

Load **TeleAtari** on the Atari and set the status for 4800 baud and no translation. The rest of the default parameters are fine. Set up the **Skimodem** program according to instructions. Use a value of 246 for x and 104 for y. If your baud rate of transfer is 300, use a value of 40 for y. Once **Skimodem** is running, the two computers can "talk" directly to each other; whatever you type on the Epson appears on the Atari's display, and vice versa. As long as each modem program is saving transmissions to its buffer (a special holding area in memory), you can save everything to disk or cassette later. If you use this method extensively, use 300 baud — we lost too many characters at 4800 baud.

To send text files from the Epson to the Atari, load your document into the **SkiWriter** program's memory *before* you load and execute **Skimodem**. We had no problem with transfers at 4800 baud. The main hitch with this technique is that you lose control characters (most notably linefeeds). Once you have the document in your word processor on the Atari, go through and add linefeeds and other control characters wherever this is necessary. It isn't much fun, but it beats retyping.

If you want to write BASIC programs

Table 1
Pin Assignments for RS-232C/850SP1 Connection

Pin	Description	Goes to 850 Pin
2	TxD—Transmit Data	4 Data In
3	RxD—Receive Data	3 Send Data
4	RTS—Request to Send	7 RTS Out
5	CTS—Transm. Auth.	8 CTS In
6	DSR—Data Set Ready	1 DTR Out
7	GND—Signal Ground	5 Sig. GND
8	DCD—Data Carr. Detect	2 Carr. Det. (CRX, In)
20	DTR—Data Carr. Ready	6 DSR In

for the Atari on the Epson, first reset some of the parameters on the Atari terminal program. Use 300 baud and light translation (to allow carriage returns to be translated from ASCII to the internal Atari code, ATASCII). Then type the following sequence of commands on the Epson:

```
OPEN "O", #1, "COM0:(28NID)"
[RETURN]
CLOSE #1 [RETURN]
LIST "COM0:" [RETURN]
```

These commands should be executed from within the program area holding the BASIC program you wish to transfer. The first two lines set the Epson's RS-232 port to match the Atari's terminal program; the third (to which you may add line ranges) actually lists the file to the Atari.

RADIO SHACK MODEL 100

Connect the computers with your cable. Then load and run your Atari terminal program. Set it to 9600 baud, full-duplex, and use default settings for the other parameters.

Next, select the TELCOM program from the Model 100's menu. The status line in the screen's upper-left corner should read:

```
8711E, 10 pps
```

This tells TELCOM that you want to communicate at 9600 baud with seven-bit word length, no parity, one stop bit, XON/XOFF enabled, and 10 pulses per second for auto-dialing. If TELCOM doesn't show these settings, press [F3] and type in the above string, followed by [ENTER] in response to the STATUS prompt. Now press [F4] to put TELCOM in terminal mode.

DATA TRANSFER: MODEL 100 TO ATARI

Set up your Atari terminal program to receive and activate the transmission. Next, press [F3] on the Model 100 to request Upload. TELCOM will then ask you for the name of the file you want to move. Type in the name, including the extender (e.g., MOVER.DO) and press [ENTER].

TELCOM next prompts you for line width. Press [ENTER] without typing anything else; otherwise, TELCOM in-

serts a linefeed after each line. As soon as you do this, the highlighted word "UP" appears above [F3] and data transfer begins. You should see the text appear on your monitor screen as soon as the Atari receives it. You won't see the text on the Model 100 screen.

Every time the Model 100 sends a carriage return, the cursor writes over the current line without skipping down to the next. Even though you lose data on the screen, the Atari receives everything in the file. However, it will be necessary later to edit the text file on the Atari.

DATA TRANSFER: NEC TO ATARI

To transfer text from the NEC to the Atari, first create a text file with the NEC's TEXT program. Then enter TELCOM. Since TELCOM is set up for 9600 baud, you needn't change any of the parameters. Load TELETALK on the Atari with the 850 connected and turned on. Follow directions to change TELETALK's baud rate to 9600. If you use a terminal program that allows you to set translation, set it to light translation. On the NEC, press [F5] to enter TERM. Next, press [F4] for Upload. At the prompt, type in the name of the file you wish to transfer. Transfer begins automatically after you enter the file name (if the file exists), and the text appears on the Atari screen. To save the text to a disk file, press [START], then [S] for Save text, and then type in a file name after the prompt 'D:' and press [RETURN].

DATA TRANSFER: ATARI TO NEC

To transfer text from the Atari to the NEC, it's best to use a terminal program on the Atari that offers the light translation option. This converts Atari EOL (155) to ASCII EOL (13), so the Atari's EOLs won't show up as carats throughout the text file on the NEC. Unfortunately, TELETALK doesn't let you change translation.

If you use TELETALK, set it for 9600 baud, and then go to the main menu and press [U] for Upload. Enter the file name at the prompt and wait for TELETALK to load the file. At the next prompt, press [RETURN] to return to the main menu. Enter TELECOM and set it for 9600 baud as above. Then enter TERM and press [F5] for downloading.

Type in a file name at the prompt. At this point, the word "Down" appears (over [F5] in inverse notation. Next, on the Atari, press [S] for Spool Text from the main menu. When the prompt 'D1:' appears, backspace to the 'D' and type R1: [RETURN]. Transfer will now take place.

If you use some other terminal program, make sure that translation is set to light. The normal Upload procedure (not the one described above, but the one described by the terminal program's documentation) should work for programs other than TELETALK.

If you have any problems with data transfer, try using a lower transfer rate, such as 4800 or 2400. Even 1200 is tolerable. Also make sure that both the Atari terminal program and TELCOM are set at the same transfer (baud) rate.

THE NEXT STEP IS UP TO YOU

The cable and procedures outlined in this article give you the opportunity to move into the world of notebook computers without leaving your Atari behind. We've covered the three major book-sized computers that are currently available. The next step is yours. Your Atari can be an integral part of your move into the realm of easily transportable computers. It can interface with all of the major products on the market today, and can provide benefits and features that no notebook computer can match. If you have an Atari, and a friend has an Epson, a NEC, or a Model 100 notebook computer, you can transfer files between the two computers and easily share your computer experiences. And this technique (with some modifications) can work with other kinds of computers as well. The opportunities are definitely out there; look into them — and let us know what you discover.

Robert Siegle is an associate professor of English at Virginia Tech. He uses his Atari 800 and an Epson HX-20 notebook computer to handle a number of research, writing and management projects. Bob Kahn works for Dorothy Derringer in the Learning Systems Group at Atari, Inc.



