

Computer column

At last, a slick new laptop machine that doesn't omit special features and power for the sake of portability is about to make a roaring debut. The Dauphin LapPRO-286 is a late contender into the 80286 laptop computer sweepstakes but this machine has more capabilities and enough appeal to stand firm among its competitors. Ironically, this aggressively priced, LapPRO-286 machine, isn't an offspring of one of the corporate computer giants but is being offered by Dauphin Technology Inc., 1125 E. St. Charles Road, Lombard, IL 60148, (312) 627-4004.

I always believed there would be a computer such as the LapPRO-286 computer someday. It would have the flexibility, connectivity and portability to operate in virtually any computing environment and be available at an affordable price. "Someday" is here much sooner than I expected. The LapPRO-286 provides an uncommonly powerful combination of features you won't find in any other laptop computer in its price range. It combines the performance of desk-top computers with the flexibility of a laptop with a unique power supply that takes portability to the limit. This laptop computer doesn't need a desk and brings its power along, wherever you go. At last an 80286, battery-powered laptop with a built-in hard disk all contained in a very functional package. You can now get the performance of a full size desk-top machine in a briefcase size.

The LapPRO-286 is unique in that it is assembled by Dauphin Technologies in the United States. The power supply is Dauphin's own design, but is manufactured in Taiwan as is the case and motherboard. The hard disk drives are from the American company Conner Peripherals. The floppy drives and LCD are from Japan.

The unit I tested came standard with 1MB (real 640KB extended 384KB) of RAM "random-access memory" and is expandable to a maximum of 4MB. It has a 40-megabyte hard disk drive (a 20-megabyte hard disk and even a 100-megabyte unit will be available), a single 1.44-meg 3.5-inch floppy disk drive, backlit monochrome LCD screen, battery pack or AC operation, a parallel and serial port - a configuration with a list price of \$3,495. The 20-Meg unit will list for \$3,145 and the 100-Meg will be about \$4,295. Dauphin bundles setup software, diagnostics, MS-DOS 3.3 and GW-Basic and a

reset any of these dip switches from the factory setting.

I found the system to be extremely simple to set up. The setup instructions accurately matched the hardware I received. The hard drive was already formatted and the unit was ready to plug in and use, so I had the system up and running in a few minutes. No troubleshooting instructions, error messages or maintenance tips were provided in the manual which I feel is an area that could be improved.

The power supply of the LapPRO-286 is most immediately noticeable for its four power options that cover every possible need. It automatically adjusts to 110V, 220V, 12V auto/boat, or internal 12V battery pack. It also automatically adjusts to 50 or 60 hertz cycles. The battery pack is designed to last for 90 minutes with full use of back-lighting and hard disk. I found this to be more than adequate. A battery low light will illuminate approximately five minutes before the battery pack runs out and the computer automatically shuts off. This is sufficient time to save your data or if an A/C outlet is handy I found you can simply plug into the A/C line and continue operation. I didn't find any need to power down first and I didn't loose any data during the process. It takes approximately eight hours to fully charge the battery and charging will automatically stop when the battery is fully charged. You simply plug the computer into an A/C outlet to charge but the computer must be turned off and can't be used during battery charge.

There are two power cord connectors at the rear of the computer: a three pronged A/C power cord and a single hole 12V auto/boat cigarette lighter source. LapPRO-286 comes with a standard 12 volt lead acid battery pack. If the charge is down to 50 percent or less, the computer will not be able to power up because start-up requires a high surge of current. The only solution is to carry a fully charged back-up battery for boot up or I found you could boot up on A/C and then continue operation on battery. This A/C boot up procedure isn't covered in the manual but seems to work without any problems.

A nice bonus of the power supply is that it will automatically switch to battery operation during a loss of A/C power. I found this switch-over time is sufficiently fast to prevent any data loss during a

and EL keys. These embedded keys are activated by pressing the FUNCTION key which is not a lock key. The Scroll Lock Key also serves as the BREAK function; press Shift + Scroll Lock to activate. The key marked HD has been reserved for future use and was not functional in the unit I reviewed.

The front panel contains all controls and they are easy to view and use. Five readout indicator lights in the upper left hand corner of the keyboard show system activity. These indicate Battery Low, Hard-Disk Drive use, Scroll Lock, Caps Lock and Num Lock. Next to the indicator lights is the screen contrast control. An easy to reach, power On/Off switch is located on the left rear of the LapPRO. During initial boot-up you can press ESC to bypass memory test and press Del to run setup or diagnostics. The case is solid and all external switches and buttons are sturdy.

The LapPRO-286 is not a light or small laptop machine, weighing in at a hefty 13 lbs. without battery pack and 16.5 lbs. with. Its size is approximately 16 x 13 x 3-inch. It contains all the marks of careful design and construction and is a comfortable system to use.

The external connectors located on the rear of the computer include a 25-pin serial port COM1 and a 9-pin serial port COM2; and a 25-pin Centronics parallel port.

A full size AT expansion bus that enables you to connect an external expansion chassis, and can hold expansion cards or peripherals, and is located on the left side of the computer. This expansion bus is a full size powered standard 16-bit expansion bus connector. It is accessed by unlatching and removing the plastic cover from the bottom of the computer. The expansion chassis will be available as an option.

The LapPRO-286 motherboard is not designed to use Intel's 80C286, the newer CMOS "complimentary metal oxide semiconductor" version of Intel's 80286 chip. The 80C286 wasn't available until recently. The CMOS chips run cooler — allowing more crowded, compact designs without overheating — and take as little as one-tenth the power of conventional circuitry. A LapPRO-386 version will be available soon that will take advantage of CMOS technology.

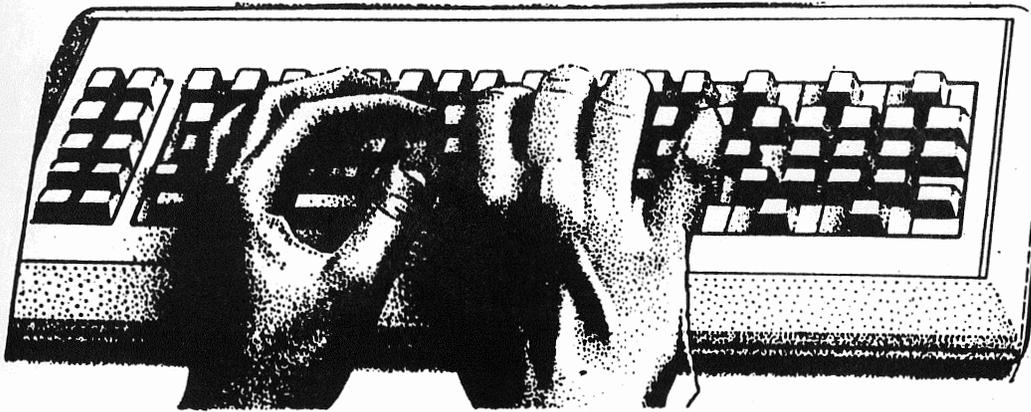
The one 3.5-inch floppy disk drive supports both 1.44 MB and 720 KB formats. The standard hard disk has a 40 MB formatted storage capacity with an average access time of 28 milliseconds (ms). The Data transfer Rate is 546.0 KB/sec; track to track seek is 6.0 ms. Other features include hard disk performance type 42, 981 cylinder, 5 read/write heads, 2 discs, 17 sectors per track, 42 MB and L-zone 981.

Repairs can be handled either through authorized dealers or through Dauphin directly. Dauphin Technology Inc. warrants that all products manufactured by it are free of defects in material and workmanship for a period of one year from date of original purchase. If a problem develops with your computer during the warranty period, first contact your Dauphin Technology dealer. If the problem is not handled to your satisfaction, then write or call Dauphin direct. You must notify Dauphin in advance when returning products. Dauphin will also provide a non-toll-free technical support line.

The Dauphin had no difficulty running any of the programs in my software compatibility test suite. The LapPRO runs at 12 and 6 Mhz. Combining these tests with dual processing speed capabilities earns the LapPRO an excellent score in the software compatibility category.

Although the LapPRO-286 is significantly cheaper than similarly configured laptop computers from the major players in the laptop market, the Dauphin is markedly sophisticated. Its an 80286 machine that features a competitive price tag, high-quality workmanship, a choice of 20, 40, or 100 Meg. hard drives, backlit screen, a very unique power supply and many other attractive standard features not found in many other laptop computers. The Dauphin list price is roughly \$2,000 less than the other machines in its class. The LapPRO-286 is a real computer that can handle real-world workloads. Now you can be just as productive on the road as you are in the office. All in all, I consider this laptop computer an excellent value.

(Note: Martell, a retired Army warrant officer, is a Springs resident and president of the MicroUsers Group.)



complete well-written 70-page manual of essential operator information with each unit.

For the uninitiated, the documentation includes step-by-step hard disk formatting and set up procedure. The experienced computer user need only follow the section, an "Introduction For the Experienced Users." This covers several proprietary functions of the LapPRO-286 that you should be familiar with before you begin working with the computer. A handy listing and description of the location and function of dip switches is provided. The four easy to access dip switches are located at the rear of the computer. Switch one controls the graphics mode of the screen, Hercules or CGA mode; switch two changes memory configuration from extended (EXT) to expanded (EMS); switch three changes address location of the expanded memory from OOE8H to OO98H; switch four controls the CPU clock speed 6 or 12 Mhz. There was no need to

power outage. I actually pulled the A/C plug during line cord operation and it automatically switched to the internal battery without any data loss.

The excellent screen is a highly readable supertwist, non-glare, backlit LCD "liquid crystal display," 80 characters by 25 lines, with a screen size of 8.95 x 5.67 x 10-inch. It contains both Hercules mode 720 x 350 or CGA mode 640 x 200. An external monitor port for either a Hercules monochrome or CGA monitor is provided on the rear of the computer. The admirable LCD backlit screen can be read from several feet away in virtually any light. Backlighting of the computer screen can be turned "on" and "off" with the keyboard strokes; Func + Alt + EL simultaneously. The screen intensity can also be controlled with a front panel screen contrast control.

The LapPRO-286 keyboard has 75 AT-compatible keys that include a separate numeric keypad. This includes 12 embedded function keys, embedded HD