Selecting a Laptop

by Joe Stoddard

One of the most common questions I receive from contractors is, "Should I buy a laptop (a.k.a. notebook computer) or a desktop computer?" Desktops may be less expensive and less tricky, but my vote is for the laptop — once you cut the cord, you'll never look back. However, there are trade-offs, pitfalls, and features you need to know about before taking the portable plunge.

Mobile Office Dangers

Have you ever seen the pickup truck ads with the "mobile office" in the front seat? Unless your truck is permanently parked in an air-conditioned garage, it's not quite that simple. If you've ever found tools in your toolbox vibrated into pieces just from riding around in your truck, you can guess what will happen to your new laptop. Temperature extremes, job-site dirt and moisture, and the bumps and bangs of life on the road can quickly take their toll. The technology manager of a top-200 construction company recently told me that the same notebook computer that will last two years with the salespeople in his company makes it about two months in the hands of a field supervisor.

Ruggedized or regular? One solution to the durability problem might be a "ruggedized" laptop. The Panasonic *Toughbook,* Xenocom *Rough Rider,* Dolch *NotePac,* and MiTAC *Getac* are a few that are built to take a licking and keep on ticking. Features like waterproof keyboards, shock-mounted hard drives, magnesium cases, and built-in wireless modems make them an alternative to conventional notebooks for rough job-site environments. The downside is fully ruggedized models are often way behind the technology curve, and can cost (and weigh) twice as much as conventional models. The other hitch: These computers are normally sold through only a handful of authorized resellers, making service and support more difficult (see "Sources of Supply," next page).

The case for the case. The ruggedized route definitely isn't for everyone, so the next best strategy is to protect your laptop with an excellent carrying case. Soft-sided bags and backpacks might be okay for business executives, but if you want your notebook computers to survive the job site a hard-sided flight-style case is the *only* way to go. Models from Zero-Halliburton, Anvil, and SCS offer protection no bag or soft-sided luggage can match. Good cases are investments that can span several generations of computers, so buy the best you can afford.

Stay with Name Brands

You'll never see a big corporation buying no-name notebook computers, and neither should you. Unlike desktop computers that can be built for speed alone, quality laptops balance performance with battery life and heat dissipation. Cheap no-name notebooks will often use regular desktop components instead of the lightweight, low-voltage mobile versions, and they are prone to run hot, causing unreliability. The top manufacturers purchased by Fortune 500 companies, as reported by DataQuest, are consistently Dell, Compaq, IBM, Toshiba, Hewlett-Packard, and Sony (in no particular order). You can make "Ford vs. Chevy" comparisons with any of them, but all are good starting points.

Return on investment (ROI) and warranty issues. A state-of-the-art laptop should give you 30 to 36 months of service — but only if it survives job-site punishment. A lower-end model will cost substantially less up-front, but could be technically obsolete in 18 to 24 months. Either way, the cost per year is about the same. A good strategy is to purchase "leftovers" or even factory re-conditioned machines for your rough-duty applications. In terms of warranty, if a keyboard wears out or an LCD cracks prematurely, the repair costs can easily outstrip the value of the machine, so whether you're planning a two-year, or three-year replacement schedule, be sure you have a bumper-to-bumper warranty for the entire time. IBM ranks high in that regard — I had a two-year-old ThinkPad with cracks in the case, broken hinges, and a worn-out keyboard. The computer was sent in for service under warranty and came back in a few days with all new components and no questions asked.

Going Shopping

So what should you look for when you go laptop shopping? Some features are definitely more important than others:

• *Display:* Don't cut corners here. You want a 13.3 inch or larger "active matrix" display, also known as thin-film transistor (TFT). What you *don't* want is a "dual-scan" screen (a.k.a. HCA, HPA, and other acronyms). Don't be fooled by what they look like in the store; dual-scan screens are nowhere near as bright as a TFT, making them impossible to use in sunlight (a common feature of a construction site), and they "ghost" images like an old rabbit-eared T.V., leaving them unusable for imaging work and CAD.

- **Processor:** For most users, there isn't that much difference between a plain-Jane 500MHz Celeron and an 800MHz speed-step Pentium III. So, if money is tight, don't be afraid of the less expensive processor choices. AMD (Advanced Micro Devices) is a good alternative to market leader Intel.

- **RAM:** 128MB (megabytes) is a good minimum for most users today but, within reason, you won't go wrong adding RAM (random access memory) to your notebook. After-market memory (Kingston, Crucial, Simple) is often much less expensive than name-brand, but be careful — some manufacturers will void your warranty if the RAM you install doesn't have their name silk-screened on it.

- **Hard drive:** If you're going to use your laptop to process digital photos, video clips, or even large CAD files, you'll need all the storage space you can get. 8GB (gigabytes) is the minimum I'd recommend for contractors — but buy the largest hard drive you can when you purchase your notebook — they're expensive to upgrade later. Laptop hard drives are always a performance bottleneck compared to their desktop cousins because they have to "spin up" to conserve battery power.

- **Swap or "option" bays:** Many higher-end machines have a versatile extra bay that can house a variety of drive media (CD, Zip, Floppy, CD-R, etc.), a spare battery, or even an extra hard drive. This is a feature worth having: Just be sure the devices you want, for instance a CD-Recordable drive, are actually available for that particular model.

- **Floppy drive:** Do you still use lots of floppy diskettes? If you do, look for a notebook computer that has a floppy drive built-in, or one you can install in an option bay.

- **Travel weight:** Most middle-of-the-road laptops weigh in at 5 to 7 lbs. travel weight — (that's computer, battery, and charger). Some contractors make the mistake of buying 10-lb. "desktop replacement" machines thinking they will be better suited for presentations or as a CAD workstation. Don't believe it. I know lots of salespeople who give presentations for a living, but I've yet to see one dragging a 10-lb. computer around in an airport. Lighter is better.

- **Docking stations:** Docking stations and "port replicators" make it easy to leave a full-sized keyboard, monitor, mouse and printer hooked up at your desk and simply drop the computer into it, rather than having to hook up half-a-dozen cables every time. The cost of a port replicator can vary from under $100 to nearly $1,000, depending on the model of laptop, so be sure to factor that in when comparing computer prices.

- **Ethernet:** It's a pretty good bet that any new laptop will have a built-in modem, but built-in Ethernet is not as common. An Ethernet adapter is essential for sharing a high-speed Internet connection at home or work, as well as hooking on to a conventional network.

- **PCMCIA:** Almost all notebooks on the market today are going to have at least one credit card-sized PCMCIA (PC card) slot for adding peripherals such as GPS, digital video cards, FireWire, and wireless modems as they become available.

- **USB:** Universal Serial Bus is quickly becoming the standard for hooking up digital still cameras, scanners, and printers, and can even serve as the connection for generic docking stations. Many high-end software programs also use a USB hardware device for security, so two USB ports are definitely better than one.

- **Video In/Out:** A video-out jack lets you feed the computer display to a regular T.V. set — very handy for presentations. Regular video-in lets you hook up an analog camcorder or video tape machine.

- **FireWire:** Last but not least, if you want to edit video clips from today's digital video camcorders, you'll also need a FireWire port (also known as IEEE 1394 or i.LINK). FireWire is 30 times faster than USB, so it also supports external hard drives. On the Mac side, Apple PowerBooks and iBooks have FireWire built in, and Sony is the FireWire leader on the PC side. For laptops without FireWire, you can add it with a PCMCIA card.

What About Handheld Computers?

Can a PalmPilot or a Windows PocketPC delay or eliminate the need for a "real" portable computer? In many cases, the answer is yes. If you have a capable desktop PC already fine-tuned, never need to take work home, and don't need to do computer presentations with clients, a PDA may be all you need to "go mobile." The current crop can handle an amazing number of mobile chores from keeping your schedule, data entry in the field, checking e-mail — even advanced project management. We'll look at your PDA options in a future *Computer Solutions* column.

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Sources of Supply

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