



LUCE

N1032

Army travels on its computers



U.S. Marines from the 1st Marine Expeditionary Force stand on their tanks as they wait out a sandstorm in the Kuwaiti desert south of Iraq on Feb. 3. Personnel computers used

by the U.S. military in the desert have to be able to withstand blowing sand, harsh temperatures and extremely rugged handling, unlike the PCs in homes and offices.

AP

U.S. military demands devices that can take a beating and survive

"If you were building these things into a commercial operating system, nobody would care," Binder said.

But in the field even little things can make a difference, such as simple fasteners so personnel can set up or take down a command post in 30 minutes.

"When you buy a system at the store you can take it home, sit down, and scratch your head while you read the instructions all day. If you're a soldier, there's no time for that," Binder said.

At a time when most of the computer-hardware industry is suffering from poor demand and price-cutting, these brawny computer products represent a bright spot for a network of defense contractors and their component suppliers. Venture Development Corp., a Natick market-research firm, expects the market for heavy-duty computers to grow 10 percent through 2007, to \$4.8 billion from \$3 billion last year.

Shipping and manufacturing companies are the largest buyers of heavy-duty handheld computers, but military sales represent the largest segment for producers of rugged laptops, sub-notebooks, and other portable PCs. One reason is that military customers are less price-sensitive than most consumers, technology executives say.

One of the Pentagon's largest suppliers of heavy-duty laptops is Panasonic Computer Solutions Co., in Secaucus, N.J., which says it expects to sell about \$90 million worth of its Toughbook line of laptop PCs to the U.S. military this year,

up from \$9 million in 1999.

Its products are roughly twice as expensive as comparable commercial laptops, but that hasn't held back sales, said Melissa Payton, Panasonic's business-development manager for federal sales.

"Reliability has suddenly become more important to the customer," Payton says.

Recent large orders to Panasonic include one from the Marine Corps, which wanted its Toughbooks painted black, not silver, to take to Afghanistan for what it would only describe as "a reconnaissance mission," Payton said. The Coast Guard also ordered a special batch designed to resist corrosion. Workers painted the computer cases with a salt-resistant paint, and stuck watertight extenders over the laptop's serial ports.

Traditionally, military users bought their computers according to strict specifications that were much different than civilian products. But in 1994 the Pentagon formally pressed the armed services to use more "commercial off-the-shelf" parts, to cut costs and to take advantage of rapid advances in private-sector computing power. Now most soldiers' computers carry familiar brand names.

Texas-based Dell Computer Corp., for instance, uses the term "Dell Deployable Solution" for the rugged configurations of its servers, printers and network switches used at locations such as Army airfields in Afghanistan. It also sells a \$100 heavy-duty case for transporting its standard notebook computers.

"Navy SEALs, Special Forces, they basically all want the same thing, to set up their network wherever they are, and bring their notebooks and plug them in," said Dean Kline, a spokesman for Dell's government sales.

Rugged PDAs will be next, says Ashok Jain, a Mitre Corp. technical adviser to the Army, though he doesn't expect these PDAs to see much action during a possible conflict with Iraq. A few were taken by units sent to Afghanistan, but large numbers aren't scheduled to be sent to combat units until the middle of this year. One of the first will be a version of the iPaq created by Talla-Tech Inc. of Florida and resold by General Dynamics known as the Joint Pocket-Sized Forward Entry Device, with software to allow it to direct artillery fire. It's built around Intel's new X-Scale chip; previous PDA processors weren't powerful enough to run military applications, said Jim English, Talla-Tech's marketing director.

Another supplier of ruggedized computer components is Mercury Computer Systems Inc. of Chelmsford, Mass., which builds electronics for larger prime contractors. In a workshop at the company's headquarters Randy Banton, Mercury's director of defense electronics, showed a visitor a series of tests its boards must survive depending on where they are placed.

For instance, the electronics carried aboard many military planes must survive stress equivalent to the pressure of being accelerated at seven times the force of the earth's gravity. But some Navy equipment is required to survive shocks of between 20 to 25 times gravity, the forces a submarine would face if it were being depth-charged. And the standards can be even higher for electronics aboard carrier-based aircraft that make harsh landings, up to 50 times gravity.

"You see some of these numbers and you wonder how the people survive," Banton said.