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DUPLICATE PRESS CLIPPINGS

Rugged laptops

hit streets, deserts

SOLDIERS, POLICE USE
STURDY NEW DEVICES

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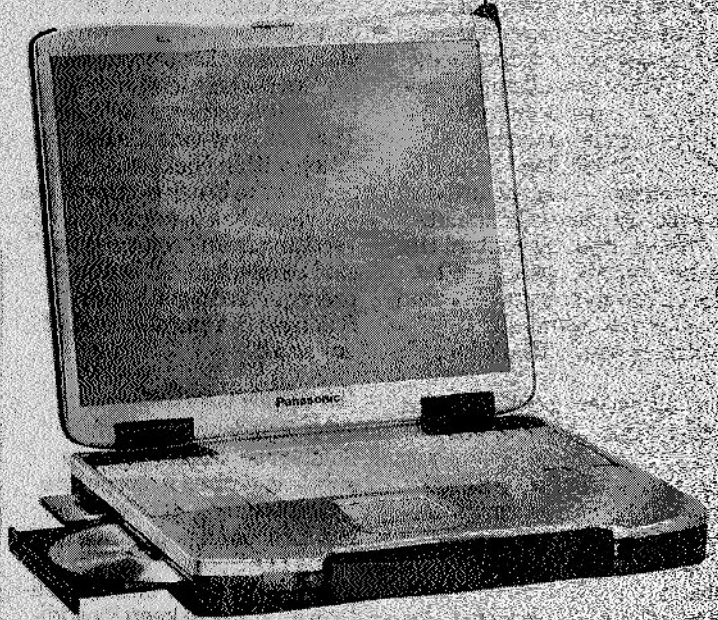
The average laptop owner isn't taking a computer on a sky-diving expedition or on a march through the middle of a desert. But soldiers gearing up for war in the Middle East are.

Panasonic has a line of rugged laptop computers that can withstand dust storms in Iraqi deserts, the banging around that comes with marches through rugged terrain and even impacts that follow jumps from military aircraft.

And just as the retail line of laptops has become smaller, lighter and more powerful, so has the line of Panasonic Toughbooks.

"When we introduced these in 1996, they were very big and heavy, weighing 10, 15, 20 pounds and costing \$15,000 to \$20,000," said Panasonic spokesman Jeff Ayars.

Today, some of the computers in the Toughbook line are down to eight pounds with a price tag of less than \$3,000.



PANASONIC

Panasonic's line of rugged laptop computers, called Toughbooks, can withstand dust storms and sky-diving impacts.

That's made them enticing to agencies beyond the military. The San Jose Police Department, for example, has

several hundred Toughbooks in use, Ayars said.

But what exactly makes these laptop computers able to

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— JEFF AYARS,
PANASONIC SPOKESMAN

withstand the rough-and-tumble treatment they get from cops and soldiers?

All of the LCD screens are protected by a magnesium alloy protectant that helps them withstand drops, he said.

"Replacing color LCDs are almost the same price as the notebook itself," Ayars said. "In a drop, that's one of the first things to go. There's cracks in the glass."

According to a report by market research firm IDC, drops are one of the leading causes of notebook damage. In drops, LCD screens and hard drives are two of the first components to be damaged.

The Toughbooks come equipped with shock-mounted hard drives to protect data. Ribbon connectors, instead of solder, are used to connect components to the computer's

motherboard, reducing the risk of pieces breaking inside. And ports and bay covers are sealed to protect against dust and water.

One notebook, the Toughbook 34, is used by Special Forces and U.S. Army Rangers who carry them in their knapsacks when they jump out of planes.

"A regular plastic notebook is not going to take the rigors of those demands," Ayars said.

The notebooks are painted with an anti-reflective color to keep them cool in extreme heat areas — such as a desert — and use special screens for use in bright sunlight.

What's most important about these notebook designs, Ayars said, is ensuring that the computers stay up and running whenever they're needed.

"In a mission critical situation, downtime can mean a loss of life," he said. "We can't afford downtimes."

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