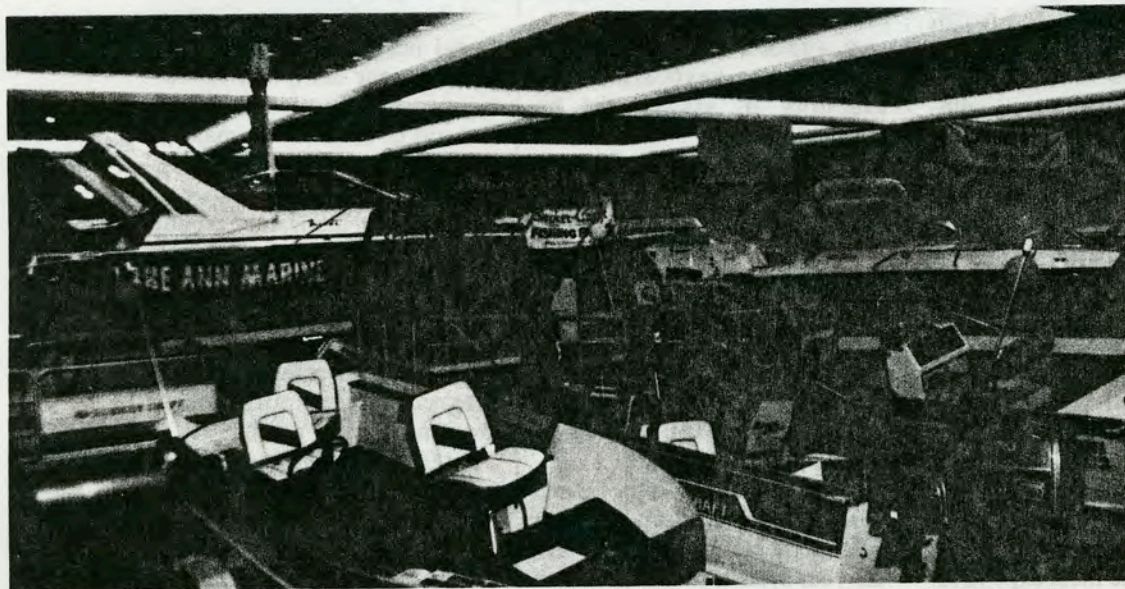


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Pictured above are some of the nearly 100 boats on display at the Grand Traverse Marine Dealers Association Boat Show held recently at the Grand Traverse Resort. Nearly 8,000 persons attended the 4-day show, which was produced and managed by the Traverse City Area Chamber of Commerce for the Association. The show occupied approximately 35,000 sq. ft. of exhibit space, and was quickly sold out. Thirty-five exhibitors participated.

Protecting Your Computer System Investment

Christopher Morton

Our dealer has talked with the hardware vendor who blames the software. Our software vendor says it's the hardware. Both claim their products have been proven in the marketplace, but for us it's proven to be a problem. The last vendor we would have ever suspected was the electric utility company." —

"Desktop Setting Requires Flawless Power," COMPUTER & SOFTWARE NEWS; May 23, 1988.

Crossover Technologies experienced similar problems soon after we moved into our new offices. Continuous voltage fluctuations were enough to send our PCs into an advanced state of confusion. Being suspicious, we called in an electrical contractor to monitor the power supplied by the local utility for a week. After reviewing the

results, we installed line voltage conditioners which solved the problem immediately. Going far beyond the protection afforded by surge protectors, conditioners "smooth out" AC voltages and prolong the operating life of computer equipment, we learned. A line conditioner also contains surge suppression circuitry, eliminating the need for separate electrical protection devices.

Quoting from the same article: "Contaminated power lines are most likely the cause of hardware failures. As the microcomputer brings the power of the mainframe to the desktop, imperfect power can be the cause of many system problems. Unscheduled system crashes, data loss and intermittent errors become familiar problems. Money and time are lost trying to identify these ghosts. These processing applications require a greater degree of power protection."

During the early 1970s, IBM and Bell Laboratories concluded that power problems sufficient to interrupt computer operations occur on an average of twice a week, with outages accounting for less than 5% of the occur-

rences. Because 25% of the problems are created within the building itself, the office represents one of the most challenging environments in which computers might operate. It is essential to isolate critical data installations from all types of power line disturbances, including the sags, surges and transients that represent 95% of system failures.

Although most computer retailers know enough to recommend the purchase of a surge protector, these devices alone are not sufficient to ward off failures caused by continual voltage fluctuations that can destroy a hard-disk in no time. A practical solution would be the addition of a power line conditioner or voltage regulator.

Line voltage conditioners, as well as battery-operated uninterruptible power supplies (UPS) are available in varying capacities. Requiring no special installation, they cost between \$130 to \$340. Considering that the retail price of a replacement hard disk is \$750 on up (not including downtime and the cost of data recovery), this is a small investment for a bit of self-insurance.

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Some do's and don'ts on how to avoid serious damage to your computer.



Static control: Integrated circuits are sensitive to static damage, with the threshold of sensitivity being lower than 100 volts. Virtually any body movement in the office, such as simply walking across the room, can create a charge of from 5,000 to 10,000 volts. Touching the monitor at that point, without first grounding out the built-up static, can send the charge straight through to the computer and cause significant damage.

"The damage may occur anytime in the life of individual components, or circuit boards. Touching the device is not even necessary to cause damage – it occurs when the device is introduced to a voltage field. Static damage can be either total catastrophic failure or gradual degradation, which is not only the most common form of static damage, it is the most expensive. McDonnell Douglas Corporation has determined 90% of all static damage occurs as degradation, with failure occurring at any time. Static control is no longer a luxury, it is a requirement." – From a speech by a 3M Company representative.

The simplest and least expensive methods of doing this are the following:

- Periodically wipe the monitor and keyboard with a staticide cleaning pad. A box of pads costs \$5.25.

- Attach a \$20 static-control strip to your keyboard. Upon touching it, static will be grounded out.

- If the computer room has nylon carpeting, spray it with diluted fabric softener.

Other problem areas: During winter months, many employees use electric heaters under their desk, with little thought given to plugging these devices into the same outlet as the computer. **DON'T DO THIS!** Your computer system will suffer extensive damages over a prolonged period if operated under these conditions. Similarly, don't operate your system on the same line as the following: photocopiers, furnaces, hot water heaters, refrigerators, coffee pots, hot pads, vacuum cleaners, shop equipment, or any other device that has an irregular current draw (motors) or heating coil. Crossover recommends install-

ing dedicated AC lines that are to be used strictly for computer equipment, and will visit your site to make recommendations regarding the prolonged life of your computer system investment.

Adequate insurance: Conventional business insurance may protect your computer investment against the usual theft, fire, and acts of God, but the majority of policies don't cover unexplained failures that can cost hundreds or thousands of dollars. Specialized computer insurance policies are available that not only cover catastrophic failures and prolonged degradation of system components, but also cover transportation of equipment. A policy for a \$15,000 system is less than \$130 annually, with the average premium being about half that cost. Most PC magazines carried by bookstores carry advertising for these insurance companies and experience shows that they are quick to process their claims. ♦

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