

by Peter Marval

**A**t the end of every new year, pessimists and nay-sayers beat their gong of doom proclaiming the end of the world. While the end of the world may not come after Dec. 31, 1999, some businesses may come to a screeching halt when their computers go on strike. How can computers go on strike? The explanation is so simple that many people have great difficulty believing the problem is real. After December 31st 1999, computers won't know what year it is.

That's because computers were first programmed to store the date in the dd/mm/yy format. When Jan. 1, 2000 comes along, the information will be stored as 01/01/00. The computer will interpret the date as Jan. 1, 1900.

For example, if a computer were asked now to figure out the age of a person born in 1955, it subtracts 55 from 97, and comes up with 42. In the year 2000, the computer subtracts 55 from 00 and the answer becomes - 55 years old.

This could cause havoc with every type of interest calculation in every program, in every company, in every country around the world. Phone calls started just before the end of 1999 that carry over to 2000 could be billed as 52 million minutes long.

The problem affects more than just interest calculations. It affects all information based on time. When will your credit card expire? When will this drug no longer be safe? How long has that invoice been overdue? Onboard computers on aircrafts may prevent aircrafts from taking off because the computer will assume the aircraft is over due for maintenance by a hundred years. All of these calculations are based on dates, and if the computer does not know what date it is, then these calculations are no longer possible.

Bob Mornan, general manager for IBM Canada of the public sector in Ottawa, is in charge of making the federal government aware of the issue and their need to solve it in order to avoid catastrophe in the year 2000.

Mornan said the cost of remedying programs for the federal government was up in the air. "It could be a \$100 million, it could be a bil-

## DOOMSDAY just around the corner

lion and a half - we don't know."

In fact, estimated costs of converting application systems are about \$600 billion worldwide. The two most obvious questions which arise from this estimate are: How could programmers be so stupid? And, how difficult can it be to place two extra digits into a program?

First of all, back when computers first came out, storage space was extremely expensive, Mornan explained. By dropping the '19' off the year, companies saved millions of dollars. "Besides, the guys programming this stuff didn't expect their codes to be around in 30 to 40 years," added Mornan. Secondly, it is very common for most programs to have a hundred million lines of code to be sifted through. "There is a tremendous amount of work that has to be done, with a majority of the work involving testing and making sure different systems such as payroll and personnel can communicate with one another," Mornan explained. "A lot of people don't understand the problem and don't understand that they need to be solving the problem right now." He said time is running out for most businesses since financial systems typically plan out a budget for the next year. "Popular opinion is that your system better be converted for the year 2000 by Jan. 1, 1999" As of now, 35 per cent of North American businesses have addressed the issue in any significant manner, with Europe even further behind at 10 per cent.

IBM Canada has 150 people currently engaged in solving the problem and is looking to hire 600 more just for reprogramming lines of code. Six months ago, it was estimated that the cost of converting computer codes was \$1.10 per line of code. Now that figure is \$1.35, and with supply and demand on the increase, the cost is anticipated to climb to \$2.50 within the next year.

No one knows the full extent of the year 2000 problem or the chaos it promises to unleash. Still, it might be wise to avoid making any long distance telephone calls right before the end of the millennium - just to be on the safe side.

