

THOUGH I've always freely revealed my background and interests to those who ask, some recent events highlighted the fact that I'd not done so to the readers of this column. So, here goes.

I've been employed as a member of the information systems department for BHP in Melbourne for over seven years. I started out cutting code in BASIC and Fortran on Data General mini-computers for the Mine Planning, Oil and Gas Exploration, and Minerals Exploration systems.

Later, systems support for Data General minis became my full-time role for some three years. The highlights of this period were the introduction of an X.25-based computer network, the move to the ADS/VS 32-bit virtual operating system, an office automation pilot, and a term as president of the Data General Users Group.

During the fourth quarter of 1982 I purchased my own IBM-PC, with the intention of implementing some software packages I'd designed. Instead, I ended up consulting for small businesses and writing articles for *Your Computer*. This was, and still is, done as Lloyd Borrett, private citizen. It has no connection with BHP. In March '83 I was appointed Personal Computer Co-ordinator for BHP Melbourne.

Late in '83 I stopped taking on consulting work to concentrate on two other projects. The first was starting the Melbourne PC User Group (MELB-PC). That group is now going strong. I currently serve as president and assist in the production of the group newsletter. Although MELB-PC is trying, and I believe succeeding, to carry out its activities in a professional and business-like manner, it's a non-profit user group like most others.

My second project was to start a mail order business, supplying hardware and software for IBM and compatible personal computers at discounted prices. That company, PC Connection Australia, is now becoming widely known but it remains only a part-time interest for me. The company's goal is to introduce some sanity to the pricing of PC products in Australia, and to provide a high level of technical support for a selected range of the excellent products available.

Some people have thought MELB-PC is a group for BHP employees, others have thought PC Connection Australia is a business arm of MELB-PC. I hope the above revelations will serve to clear up

such misconceptions. Now you also have facts to decide if I have a vested interest in any issue.

How Compatible Is Compatible?

The reports made by microcomputer industry observers on the COMDEX exhibition held late in 1983 all came to the same major conclusion: the IBM Personal Computer has become the de facto standard of the industry. When IBM introduced the PC in 1981, many companies began providing products for the new machine. Now there is a huge array of hardware and software for the PC. This has boosted sales of the PC, and as a result more companies have been induced to design and introduce more products.

At the same time, some firms have created a new market in PC compatibles. IBM's inability to manufacture enough product, and the newcomers being able to offer lower prices and portability, have been key factors in the success of the PC clones. Essentially, these sell because they are compatible with the IBM-PC and can use products designed for the IBM-PC. But how compatible is compatible?

There are levels of compatibility, and at present it seems a lot of advertising is playing on people's misconceptions, laziness and ignorance of this subject. A truly compatible machine would be illegal. It would be a physical and electronic copy of the IBM-PC. Already IBM has been successful in moving against Corona and others for various infringements.

There must be differences between an IBM-PC and a machine claimed to be compatible. Also, there must be differences between each of the so-called compatible machines. So in order to claim PC compatibility, the manufacturers vary their interpretation of the word compatible. Currently, it seems we have both illegal copies and machines which have nothing more in common with the IBM-PC than an Intel 8088 compatible chip in the enclosure.

Levels of PC Compatibility

Level 1: Media compatible. These are machines which have the ability to read and write disks in the formats used by the IBM-PC. The NEC APC, DEC Rainbow 100, Dot, Hewlett Packard HP-150, and Sirius are examples of machines which are not media compatible.

Level 2: Processor compatible. These machines use a microprocessor chip such as the eight-bit bus 8088 and

80188, or the 16-bit bus 8086, 80186, and 80286. If done properly, such substitutions need have little effect on compatibility. The more powerful chips can perform some operations faster, which may cause problems for some timing-sensitive software. The Apple Lisa, Olivetti M20, and DEC Professional 350 are not processor compatible.

Level 3: Operating system compatible. These are machines which support MS-DOS or IBM's variant, PC-DOS. Nearly all the software for the IBM-PC uses PC-DOS, with most also being made available under MS-DOS at a later date. Machines that offer only CP/M, CP/M-86, P-System, UNIX and other operating systems are not operating system compatible.

Level 4: Component compatible. These machines can use the add-on circuit boards designed for the IBM-PC. The Wang PC, Zenith Z-100, and TI Professional are not component compatible.

Level 5: Character set and keyboard compatible. Such machines display all the 256 character codes used by the IBM-PC and have keyboards which include the same keys as the IBM-PC.

Level 6: Video compatible. IBM-PC displays are memory-mapped. Video compatible machines must use the same video interface and memory addresses as used in the IBM-PC.

Level 7: System compatible. These machines duplicate the entire architecture of the IBM-PC. All I/O, RAM, ROM and other addresses, including the routines in BIOS and BASIC ROM, must reside at the same locations as in the IBM-PC.

Most successful PC clones fit into the third level. They use the same disk format, an 8088 or 8086 chip, and MS-DOS. Some, such as the COMPAQ, Columbia, Corona PC, Hyperion, Eagle PC and Chameleon, achieve higher levels. To meet Level 7 would incur the wrath of IBM.

The manufacturers' reasons for trying to emulate the IBM-PC are obvious. But before you choose a PC compatible you must sort out your own motives. Work out which software you need and what level of compatibility those software products require. Consider your requirement for add-on circuit boards and peripherals.

Simply calling a machine IBM-PC compatible unfortunately doesn't make it so. Be very careful of compatibility claims. □