



NEWSLETTER OF SYDTRUG INC.  
SYDNEY TRS-80/MS-DOS USERS' GROUP

P.O. BOX 75, PANANIA 2213  
AUSTRALIA

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MEETING ARRANGEMENTS:

\*\*\*\*\*  
\* Meetings will be held on SECOND and FOURTH Saturday \*  
\* afternoons each month commencing at 1:00 P.M. at the \*  
\* 1st Sefton Scout Hall, 2 Waldron Road, SEFTON \*  
\* \*  
\* Meetings this month will be: \*  
\* \*  
\* 10th of August - Annual General Meeting - 2:30 p.m. \*  
\* Come along and exercise your right to vote \*  
\* \*  
\* 24th of August - Special Interest Meeting \*  
\* \*  
\*\*\*\*\*

SYDTRUG Bulletin Board:

TRUG-86, the MS-DOS/TRS-80 Bulletin Board, (02) 790-5681

For full details see the Services page overleaf.

CREDIT CARDS:

We have the facility to charge your membership fees, or renewal fees to either BANKCARD, MASTERCARD or VISA. Additionally, purchases made on your behalf by the club may also be charged to your credit card. If you wish to use this service, please quote your card number, type of card, expiry date of card, and SIGN your request.

\*\*\*\*\*  
\*\* Subscription Renewals were \*\*  
\*\* due on 1st of July. \*\*  
\*\* \*  
\*\* For those who have already paid: Thank You for your \*\*  
\*\* promptness. \*\*  
\*\* \*  
\*\* For those who have not yet paid: You are only \*\*  
\*\* receiving this issue because it contains a proxy form \*\*  
\*\* for the annual general meeting. This is the last copy \*\*  
\*\* of SYDTRUG News you will be receiving until your fees \*\*  
\*\* are paid. The newsletter represents the largest item \*\*  
\*\* of group expenditure, and we cannot justify continuing \*\*  
\*\* to supply members who have not paid their fees. \*\*  
\*\* \*  
\*\* Members are reminded that membership DOES NOT LAPSE \*\*  
\*\* when fees are unpaid. Please extend us the courtesy \*\*  
\*\* of either paying your membership fees, or submitting \*\*  
\*\* your written resignation to the Secretary. \*\*  
\*\* \*  
\*\*\*\*\*

WHO'S WHO:

President	Denis J. PAGETT	772-4848
Vice President	Errol ROSSER	796-7646
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Hardware Co-ordinator	Errol ROSSER	796-7646
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Closing Dates for  
September 1991 Newsletter:

Hard Copy only - 3rd August 1991 -  
On Disk - 10th August 1991 -  
or Via Bulletin Board

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#### MEMBERSHIP FEES:

There is a **ONCE ONLY** joining fee of \$20, plus, for single membership, \$45 per standard financial year (July to June) or, for family membership (which includes all family members living at the same address), \$55 per standard financial year. These fees fall due on 1st July each year and are payable by Cash, Bankcard, Mastercard or Visa Card. They cover the cost of the monthly newsletter and admission to Saturday meetings, access to the bulletin board, access to the group library, and reinking of fabric printer ribbons.

#### Our NEWSLETTER ("SYDTRUG News"):

Distributed on a regular basis, includes group business information along with software and hardware articles and information from local and overseas sources. Contributions from members are always welcome. See below for advertisements.

**COST:** Included in your membership fee. Back issues available at \$2.00 ea plus postage (within Australia) \$0.70.

#### Other NEWSLETTERS:

We receive numerous exchange newsletters from similar groups both locally and from overseas. See the resume which appears regularly in "SYDTRUG News". Copies are available for borrowing from our Sefton meetings. You can also borrow by mail if you drop us a line including outgoing postage, as for back issues of "SYDTRUG News" shown above, one magazine at a time for one month.

#### DISKS:

The committee have located a new source of disks at new low prices. These prices are conditional upon purchasing in lots of 100. At this time the committee is not prepared to outlay group funds in purchasing bulk stocks of disks on members' behalf. However, if any member, or group of members acting cooperatively, wish to pay in advance for 100 or multiples of 100 of the same type and size of disk, the committee will arrange to purchase them on the members' behalf. Any member wishing to purchase less than 100 disks of any one type and size may pay in advance and, when orders have been received for 100 of the same type and size, the committee will arrange to purchase them. The new prices are as follows:

5.25 DS DD (360K)	0.50 each
5.25 DS HD (1.2M)	1.00 each
3.50 DS DD (720K)	1.00 each
3.50 DS HD (1.4M)	1.90 each

#### LIBRARY:

We maintain a library of interesting books, mainly at present on TRS-80 matters, along with most issues of "80-MICRO". There are a number of other magazines available as well as copies of some local computer magazines. These are available for borrowing from the group for one month at a time.

#### FABRIC RIBBON RE-INKING:

Most printer ribbons can be reinked quite successfully, so long as they have not been thrashed. There needs to be a reasonable fabric base to absorb the ink. **NOTE: Fabric ribbons only, We can not reink carbon film ribbons.** If given to the reinker person at meetings they will normally be ready at the same meeting of the next month. By mail, send them to the Group P.O. Box in a padded jiffy bag. Before you mail it, get it weighed and pop postage value of stamps into the bag before you seal it so that we can return it.

**COST:** This service is free to members, but postage and packing charges will apply where applicable.

#### SIGs (Special Interest Groups):

On the second meeting of the month we often have either hardware or software tutorials. If you can present an area of interest or can suggest something that you might like to learn about, please contact a committee member.

#### DISCLAIMER:

No Patent liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this publication, neither SYDTRUG Inc. nor its appointed office bearers assume any responsibility for errors or omissions. Neither is any liability assumed for damages arising from the use of any information contained herein. Any opinions expressed are those of the author concerned, and not necessarily those of the Group or its committee.

#### SOFTWARE:

##### MS-DOS Public Domain/Trial Ware:

We have an ever increasing range of MS-DOS Public Domain and Trial Ware disks from a number of sources. Watch the newsletter for details.

**COST:** The software is normally available on a 5.25 inch 360K disk format for a cost of \$5 plus postage and packaging if applicable. Alternatively the software can be supplied on a 3.5 inch 720K disk for an additional \$1.00. Two programs normally available on two 360K disks can be supplied on the one 3.5 inch disk format for the cost of two 360K disks plus \$1. The club charges a disk purchase price to cover the cost of the disk medium and the cost that SYDTRUG Inc. has to outlay to maintain the software library. Members have the option of picking the order up at a SYDTRUG meeting (provided the order is placed 5 days in advance) or having the disks posted to them in a disk mailer box.

The additional cost of postage and packaging will vary depending on the destination and the current charges are as shown:

1 - 5 disks:	Within Australia:	\$2.00
	Overseas Airmail:	\$5.00
6 - 10 disks:	Within Australia:	\$4.00
	Overseas Airmail:	\$10.00

##### TRS-80 Public Domain:

A huge range of TRS-80 Public Domain Software is available for Mod I/Sys 80 along with Mod III, 4/4P. See our catalogue disks for details, if you don't have them write and ask, including \$8.00 to cover disks and P/P. Be sure to let us know in what format you require the disks written.

**COST:** \$3.00 per disk, plus postage and packing as for MS-DOS disks above.

#### BULLETIN BOARD:

Our MS-DOS/TRS-80 BBS called TRUG-86, now up and running on (02) 790-5681, is still in the process of development. So please bear with us if it does not yet have all the bells and whistles which you may expect. All members of SYDTRUG Inc. will have access, while limited access is available to visitors.

Initially your password is your membership number, so it would be a good idea to log on and change your password to one which only you know.

The following formats are available:-

CCITT	V21 (300/300), V22 (1200/1200)
	V23 (1200/75) and V22 bis (2400/2400)
BELL	103 (300 FULL Duplex), 212 (1200/1200)
	2400 (2400 FULL Duplex)

All formats utilise 8 DATA bits, 1 STOP bit and NO Parity

You should set your Modem and/or software for "Originate", except for V23 (1200/75) which should be set for VIATEL or 1200 Receive/75 Transmit.

**COST:** This service is FREE to MEMBERS.

#### ADVERTISEMENTS:

Members may place "For Sale", "Exchange", or "Wanted" advertisements in "SYDTRUG News". There is no charge, but inclusion is dependent upon space being available. The editor reserves the right to amend advertisements as thought fit.

## NICADS

by Laurie KNIGHT

[Reprinted from the Newsletter of the Canberra Micro-80 Users' Group, 18 Callabonna Street, KALEEN ACT 2617, June 1991]

[SYDTRUG News Editor's Note: This article is the notes on a talk given by Laurie at a group meeting, and prepared for inclusion in their newsletter.]

Laurie opened by indicating that he proposed to talk on the practical experience he had accumulated over a number of years in using and experimenting with Nicads. To begin with, he spoke on the characteristics of single cells in order [to] aid understanding of the behaviour of cells in series, where most problems appeared to occur.

Nicads are commonly available as single cells of the same dimensions as carbon-zinc or alkaline equivalents as used in torches, transistor radios, toys etc. and can normally be used in place of these cells, as they have roughly the same energy content when fully charged.

Fresh carbon-zinc or equivalent cells have an initial open circuit voltage of 1.5 volts and this decreases under load and as they are discharged.

Nicads are rated at 1.2 or 1.25 volts with their capacity stated in Ampere Hours or Milliampere Hours (1 AH = 1000 mAh). Thus a 1000 mAh cell can be expected to deliver 100 mA to a load for 10 hours or its mathematical equivalent. The open circuit voltage of a freshly charged Nicad usually varies between 1.3 and 1.4 volts and this falls slowly during discharge and can be expected to remain above 1.2 volts under load until over 90% or more of the charge is used. At this point the voltage begins to fall rapidly and the cell is normally regarded as discharged when the voltage under load falls below 1.1 volts. When the load is removed it will be found that the open circuit voltage will quickly rise above 1.2 volts and this can be deceptive.

Nicads have a low internal resistance and at any point in their discharge cycle will deliver quite high currents. This useful feature also makes it practically impossible to determine their state of charge by direct meter measurement. Discharging the cells through a known load and recording the time taken for the voltage under load to fall to approximately 1.1 volts per cell provides the only practical means available to those outside laboratories to determine the state of charge. Fortunately semi-automatic dischargers are available or can be constructed from designs in electronic magazines. Electronics Australia has a design now available in kit form which works reliably. Laurie demonstrated a discharger built from a kitset.

Recharging is usually carried out with a mains powered charger providing a constant current of a value appropriate to the cell. The industry standard is to charge at a rate equal to the 10 hour discharge rate for a period of 12 to 16 hours (i.e. a 1000 mAh cell is charged at a constant current of 100 mA). The charge current recommended and charging period required are usually printed on the cell.

Having said all this, Laurie hastened to add that the Nicad cells are extremely rugged and can survive a fair amount of abuse and give years of useful service. Over-charging at high currents and over-discharging cells connected in series can quickly ruin cells or reduce their capacity to store charge.

Another characteristic of Nicads is termed self discharge which occurs much more rapidly than in equivalent dry cells. At temperatures below 25 degrees Celsius a Nicad cell can be expected to lose more than half its charge in about 90 days and be exhausted in 180 days. Self discharge occurs more rapidly as the storage temperature is raised. By comparison Alkaline cells now available (Energiser for example) claim to retain over 90% of their capacity when stored for three years.

A further characteristic sometimes exhibited by Nicads is often termed memory effect. This can occur when cells are subjected to repeated charge-discharge cycles over a small range of their full capacity. Cells so affected can stubbornly refuse to deliver more than the range which they appear to have "remembered". Fortunately, this effect is usually corrected by couple of full charge-discharge cycles.

Having established that single cells are useful and reliable in situations where common dry cells would be quickly discharged and that, given reasonable care, Nicads can be expected to give service

over many hundreds of charging cycles, Laurie moved on to the problems which can be experienced when cells are permanently connected in series and so arranged that access to individual cells is difficult or impossible.

Such a situation is now common, especially in laptop computers and the battery packs almost universally used in Video Camcorders, the latter packs usually being completely sealed with no access to individual cells.

Camcorder packs usually have voltage ratings of 6, 7.2 or 9.6 volts, indicating the presence of 5, 6 or 8 cells and the cameras are supplied with an automatic charger which switches off when a sensor detects a full charge condition. These chargers are also designed to charge the packs quite quickly, often in under 2 hours. The microprocessors within the cameras also detect voltage or current drop in the packs and automatically turn off the camera. Bearing in mind the remarks above on memory effects, a situation exists where trouble could be expected and has been experienced. Often the first indication of trouble is a drastic reduction in running time after recharging.

Noting this, a number of overseas camcorder magazines have been recommending that the packs be discharged below the point set by the camera before recharging. Some of these recommendations have been irresponsible, in that no mention is made of the need to monitor the lowest voltage being reached before discharging is stopped. Carried too far, a condition is reached where one or more cells is completely discharged, and the cells still containing charge force current through the discharged cells in the reverse direction. Nicad cells do not take kindly to this and, either fail completely or refuse to accept normal rates of charge, thus rendering the pack useless. At close to or more than \$100 a pack the owners are less than pleased.

Help appears to be at hand, in that the same magazines are now carrying a number of advertisements for automatic dischargers with built in safety monitors, and matching automatic slow chargers to prolong the life of the packs. As yet these are quite expensive.

Similar conditions can occur in any equipment using packs, and Laurie spoke of two problem packs he had encountered in Toshiba laptops. As these packs are only protected by shrink wrap plastic sleeves, it was possible to gain access to individual cells by careful use of a scalpel. In one pack (each pack containing 10 cells) it was found that two cells were dormant and refused to accept charge from the built in charger. In the second, three such cells were found. At over \$100 a pack a rescue operation was mounted and appears to have been successful. Only time will tell.

Experience has shown that when cells become dormant from reverse charging, they can sometimes be rescued by temporarily applying a higher voltage and current in the correct direction. Done carefully, this has often returned defective cells to service with a charge capacity not greatly reduced from that of their mates. In other cases, the cells have not responded or been able to retain a charge and must be scrapped.

In the Toshiba pack with two dormant cells, rescue by shock treatment was unsuccessful and the defective cells were individually replaced with similar sub-C type cells complete with solder lugs now available in packs of two at under \$12 from Tandy. After careful slow charging and discharging a couple of times, the pack appears OK.

In the pack with three dormant cells, shock treatment appears to have worked on all dormant cells and no replacements were necessary. Several slow charge and discharge cycles appeared to restore the pack, and only time will tell how much service life has been restored. The whole rescue operation was very time consuming due to the lengthy charge-discharge cycles, but may lead to the development of some worthwhile and economical routines.

In conclusion, Laurie stated that it is now well established that Nicads give a maximum service when subjected to deep charge-discharge cycles. I.E. discharge to approximately 1.1 volts per cell followed by a charge at the ten hour rate for 12 to 16 hours. Longer charging at this rate, although often stated to be harmless, can, if carried to excess, cause damage.

Where equipment is supplied with series packs and fast chargers as above, it would appear that periodic removal for a couple of deep discharge-charge cycles followed by a continuous charge at a very reduced rate could extend the life of the packs. Laurie is pursuing this aspect with particular interest in camcorder packs and intends to report on this at a later date.

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## COMPUTER VIRUSES and the COMPUTER USER - Part 3

by Uncredited

[This article is the third of a series which are subject of copyright by SME Systems, 22 Queen Street, MITCHAM VIC 3032, Phone (03) 874-3666. It is reproduced here with their kind permission.]

### 4.0 Anti Virus Safeguards

It is a fact of life that people become complacent, that computers are left idle for long periods of time and that the pressure of time and demands of modern life cause us to ignore safeguards. This all helps to leave us open to virus attack.

**To safeguard against virus attack a POLICY is essential.**

This policy is to be a standard operating procedure that computer users must follow to minimise the chance of virus attack.

The following are some reasons for, as well as some policies to help prevent, virus infection. Please note that in our opinion, the implementation of a policy which is reasonable and easily followed is the most effective means of virus protection. This allows the user to live with the policy and to continue to follow it. A policy that is onerous or requires too much effort will never be followed as well or all the time.

#### 4.1 The Need For a Policy

Any organisation that has computers must have a policy regarding computer viruses.

It is a fact of life that everybody nowadays has a "mate" in the computer industry that can "get me a copy of that program". It's not the copy of the program that's the problem, it is that the "mate's" computer may have a virus and can easily be corrupting the programs as they are being copied.

Another handy inroad for a virus is the secretary's son's program for picking tatts lotto numbers. This is an actual case of virus penetration into a computer using government office. The rule is that if there is a computer, there is a need for a policy.

Unless companies and individuals formulate an effective policy regarding the flow of programs and disks the chance of virus infection is quite great.

Here are presented two policies that have been adopted in the past by companies that have been attacked by viruses:

##### 4.1.1 Policy - 1. Total Ban on Incoming Disks.

This is a severe policy that stops any incoming disks. It is the author's view that this policy is too tight and doomed to failure because it will not be seen as "fair and reasonable" by the users.

###### Policy

1. No disk may be brought in unless authorised by senior management.
2. Only disks from recognised suppliers can be authorised.
3. All disk being passed between departments must be tested for viruses.
4. Any disk taken out from the company must not be returned unless it is authorised by senior management and checked for virus infection.
5. Every operator will check their computer for virus infection every xx days and keep a logbook of such checks.
6. In the event of infection, the operator shall label the computer as being infected and shut down the computer, then inform management. All disks used by that computer shall also be impounded as shall all adjacent computers. Spot checks shall be done on all computers in that department. A complete virus removal service shall then be instigated and the operator shall then be re-informed of virus prevention and detection techniques.

##### 4.1.2 Policy - 2. Test and Protect

This policy relies on operator education and following procedure. It will at first glance seem to be less secure but is a maintainable policy whereas a more strict policy is open to being

ignored because it is too difficult and time consuming to follow all the time.

1. Only disks that have been tested and found free of virus infection may be brought into the company/department.
2. Disks must have a green dot label attached with the name of the supplier, the name of the person who checked it and the date it was checked.
3. Every computer operator will test the computer for virus infection on a regular basis and keep a logbook of such checking. This shall be done every xx days.
4. All computers are to be used with a prevention program that traps virus activity before it can cause trouble. This program is to be initiated by the computer automatically on start up.
5. Self booting disks are to be tested on a computer specially set aside for this task OR NOT USED AT ALL.

### 4.2 Incoming Disks

There are some golden rules to operating your computer that you should know about and follow. These rules are the same as you would follow in other areas of everyday life such as purchasing goods or receiving services.

#### 4.2.1 Know Your Supplier

You should only accept and use disks that have a known track record. You would not hire a plumber with whom you were not confident, nor would you take your car to some unknown backyarder for service. In your every day life you depend on having some prior knowledge and some recourse in the event of a problem. Treat computer disks in the same way.

Disks that turn up in the mail without any prior warning are a cause for concern. This was highlighted in 1989 by the 'Aids' trojan program that attempted to extort money from hospitals and did cause some damage. It is interesting to note that the perpetrators of this crime were arrested and have been charged with quite a few criminal offences.

#### 4.2.2 Check Every Disk For Infection

Every disk that you receive should be tested for virus infection. REMEMBER to test the contents of any archive files before you pronounce a disk to be clean. Archive files can contain many subfiles and hence must be unarchived before they can be tested.

Testing disks applies equally to disks supplied from within the department as well as from "head office" and outside sources.

It is a known fact that the disk you do not test will be the infected one.

#### 4.2.3 Label Disks

Incoming disks should be labeled with the DATE of acquisition, from whom they came and the date they were tested.

You should be able to tell what program off what disk caused any problem. In the event of a problem you can contact your supplier and trace virus infection back to its source.

Nine out of ten people who have been virus infected say they have not had any new disks in the computer. This is quite obviously impossible; for a virus to get into the computer it must have been on a disk or in a program introduced into the computer at some time. Computer viruses are not "spontaneous" - they live in programs or hidden parts of the disk and must be carried into the computer in some manner.

What may have happened is that the virus has lain dormant for some weeks or months before becoming active, the user noticing it, and doing some real damage.

#### 4.2.4 Test On Separate Machines If Possible

Large organisations should be able to afford one computer that is set aside for testing incoming software. This should be the case for any organisation that relies on its computers, which is most small to medium to large companies now.



This computer can be a low cost low optioned machine but with up to date software for detection and prevention of viruses.

#### 4.3 Outgoing Disks

When you send out disks you are leaving yourself open to the very worrying accusation of spreading viruses unless you take some simple precautions. There has not yet been a case of civil action against a company spreading a computer virus but this will certainly change in the future. Unless you take very definite steps in protecting yourself then there is a good chance that you may be doing it now or in the future.

The publicity associated with some brand name companies unwittingly sending out computers and disks with viruses on them has, in the past, been very damning. The companies involved have had to back pedal and reassure their users that it can never happen again.

##### 4.3.1 Check For Infection

At a minimum you must test your computer for infection just before sending out any disks copied by it. This will at least ensure that your system is clean and behaving itself to some degree.

If you are using a bulk copying facility you should test the master AND AT LEAST random samples of the copies. This has been a problem in the past where the copying computer was restarted with a virus in it which caused many copies to be corrupted and then sent out to users.

##### 4.3.2 Write Protect

Write protect labels stop disks from being written to and hence stop a disk from being infected.

From a legal standpoint this is also important. If you sent out a disk that was not write protected and the customers machine is already infected then the first time (depending on the virus) your disk is used by the customer it is infected. In a court of law this may prove interesting if the customer claims that the disk caused loss of their data and hence a damage and a loss of money. Good luck.

In point of fact this has happened to SME systems a number of times already. In each case SME Systems have checked all the copies of the relevant disk on the shelf and no virus has been found. In every case the customer has admitted that their computer did have a virus "some time ago" and is not there now.

##### 4.3.3 Label All Disks

Put the date on the label. If you have a virus you can at least trace any disks by the date they may have been sent out. This can help to control damage done to other users.

You can also use the date to approximately determine the source of the virus.

##### 4.3.4 Keep Up To Date

The virus detection and protection programs are reissued every few months. It is up to the user to ensure that the latest programs are being used.

#### 5.0 Some Common Viruses

As these notes were being printed, the stoned and bouncing ball viruses were being reported by about one customer per day! These can all be detected with the SCAN program.

Those people wanting more information on virus attack are referred to any number of information sources, foremost of which are: the VIRLIST.TXT file from McAfee and Associates and the Virus Summary List from Patricia M Hoffman. Both of these are available from SME Public Domain.

The following viruses are the most common ones reported in Australia and account for well over 90% of the infections reported to date.

##### 5.1 Bouncing Ball (Ping Pong)

This is a boot virus. To catch this virus you must boot up on the floppy disk by placing it into drive A and pressing reset or Control-Alt-Delete. This virus is loaded into the computer when you switch it on or reboot by reading it off the infected hard disk.

This virus causes a small character, a "ball", to bounce around the screen at increasingly frequent intervals. This can drive you quite crazy as it is a very distracting thing.

This virus can be removed by "sys"ing the computer with a good boot disk or by using the VET disk.

##### 5.2 Stoned

This is also a boot virus, just the same as the bouncing ball virus. What happens with this variation is that it, like the ping pong virus, is incredibly infectious, attacking any diskette you put into the floppy drive. It will, after a dormant phase, cause your computer to say "Your computer is now stoned - legalise marijuana".

When you switch on the computer, this virus is instantly activated and working as it is loaded off the hard disk at boot time.

A nasty side effect of this virus is that it lives in the partition table and can quite easily severely damage your system. To get rid of it, you should use the VET disk. It is quite common for this virus to damage the programs on the floppy diskettes.

##### 5.3 Jerusalem-B

This is a program virus that lives at the end of programs. It is, again, very infectious. Once your computer has this virus in its memory any COM or EXE file will be infected. What this virus does is to modify the programs it infects and adds a small piece of code at the end that is actually the virus itself.

Programs can be disinfected with the CLEAN program but are best, if possible, erased and replaced with virus free backups.

This kind of virus would seem to have the fastest rate of growth in the computer virus arena because it does not require a disk boot. This type of virus is also the type that has some of the most damaging side effects such as lost files and data etc.

#### Treasurer's Report June 1991

by Gordon SYMONDS

##### INCOME:

Members' Subscriptions - 1991-1992:		1270.00
Members' Subscriptions - 1990-1991:		
New: Joining Fees	60.00	
Membership Fees	75.00	
		135.00
Members' Purchases:		
Public Domain Disks:		
MS-DOS	35.00	
Ribbon Reinking	2.00	
Provision for Postage	4.00	
		41.00
Donations		12.00
Bank Interest		46.65
<b>TOTAL INCOME</b>		<b>\$1504.65</b>

##### EXPENDITURE:

Purchases for Members:		
Blank Disks - 3.5"		19.50
Newsletter Expenses:		
Printing	160.00	
Sundry - Rubber bands	2.48	
		162.48
Consumables - Copy paper, Receipts		17.48
Meeting Rental		65.00
Bank and Government Fees		33.99
Sundry:		
Admin./Library	30.00	
Postage/Telephone	49.75	
Share H/w Sales	28.00	
		107.75
Capital Expenditure:		
Software		41.00
<b>TOTAL EXPENDITURE</b>		<b>\$447.20</b>

MS-DOS USER SUPPORTED SOFTWARE

by Peter WIGNELL

The next group of SYDTRUG Inc. MS-DOS software to be released for MS-DOS compatible computers is listed below. The software includes a selection of public domain and shareware/trial software. This software is available to members only.

Members may order the disks either by contacting the Secretary and placing your order by phone or by writing to the Secretary of SYDTRUG Inc. via the group's postal address.

SYDTRUG Inc. MS-DOS SOFTWARE  
P.O. Box 75  
PANANIA NSW 2213  
AUSTRALIA

The Secretary's phone number is listed on the front cover of this newsletter. A catalogue disk listing the complete MS-DOS software library is available from the secretary.

The software is normally available on a 5.25 inch 360K disk format for a cost of \$5 plus postage and packaging if applicable. Alternatively the software can be supplied on a 3.5 inch 720K disk for an additional \$1.00. Two programs normally available on two 360K disks can be supplied on the one 3.5 inch disk format for the cost of two 360K disks plus \$1. The club charges a disk purchase price to cover the cost of the disk medium and the cost that SYDTRUG Inc. has to outlay to maintain the software library. Members have the option of picking the order up at a SYDTRUG meeting (provided the order is placed 5 days in advance) or having the disks posted to them in a disk mailer box.

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	Overseas Airmail:	\$5.00
6 - 10 disks:	Within Australia:	\$4.00
	Overseas Airmail:	\$10.00

Many of the disks have their files archived to save space on the disk. If the files on the disk are archived, then, if there is sufficient space, the disk will include a program to dearchive the files. Most, but not all, of the disks contain documentation files for the programs.

DISCLAIMER

The programs are provided "as is", and they are without warranty of any kind that the programs on the disk(s) will work correctly in any or all situations. No liability shall be assumed by SYDTRUG Inc., its committee, or its officers, for direct or consequential damage caused by the use of this software.

REGISTRATION

Computer programs distributed as Shareware have not been placed in the Public Domain. They are copyright, and therefore if you are going to use the program you are required to pay a registration fee to the holder of the copyright. SYDTRUG Inc. encourages all members who purchase Shareware programs from our software library to complete the program registration if they are going to use the program.

ENGINEERING PROGRAMSCHART 1.4

CHART is an electrical engineering Smith Chart program for characterising transistor parameters, examining transmission lines, creating high frequency matching networks, adding impedance and admittance elements, and finding reflection coefficient and VSWR information. CHART supports Microsoft and compatible 2 and 3 button mice and has limited printer support -- Epson FX80 and IBM Proprinter support only. CHART requires a 256K EGA card (or VGA equivalent) but has primitive support for the occasional CGA user. A 640K+ AT or 386 machine is suggested. The user may customize options and save them in a configuration file.

Disks: SYD0136

DATABASE PROGRAMSPC-FILE

PC-FILE is an all-purpose database that can organize, manipulate, update and retrieve information. It's ideal for customer and address files, invoicing and billing, customized form letters, sales tracking and analysis, itemized lists, inventory and much more.

PC-FILE is an updated version of PC-FILE+ version 3.0 and PC-FILE:dB, and is packed with features, including:

Versatile report writer for fast and easy custom reports  
Graph line, pie, bar charts and more (Postscript output supported)  
Retrieve data from multiple databases  
Mailing labels are a snap  
dBase file compatibility. PC-FILE 5.0 reads and writes dBase files  
Customize up to five data entry screens, with up to 128 fields  
Telephone dialing and phone log  
Mouse support

Special Requirements: 416K RAM and a hard drive.

Disks: SYD138, SYD0139, SYD0140

EDUCATION PROGRAMSFLAGS

The flags of the nations of the world are powerful symbols. They represent in a concrete way the history, beliefs, and hopes of the people of each country. A nation's flag expresses the unity of its citizens, as well as the unique identity of that nation within the global community.

Because of this, flags become useful tools for understanding and appreciating the various cultures which make up our world. As this precious planet of ours continues to shrink in size, due to ever-advancing communications, such an understanding is vital for the future of all of humankind if we are to survive as a species of worth.

Special Requirements: The program requires a computer with at least 256K, operating with PC or MS-DOS 3.0 or greater, and a colour graphics monitor.

Disks: SYD0129

STOCK MARKET PROGRAMSOWL PERSONAL PORTFOLIO MANAGER 2.1

OWL PERSONAL PORTFOLIO MANAGER is a program that can manage and analyze investments and finances for individual investors. With this program you may keep a record of your security investment transactions and other assets and liabilities, and produce charts and reports to assist you with investment decisions, tax reporting, and loan applications.

From the data entered, the program can produce on-screen or printed reports on security transactions, dividend income, security performance rankings, portfolio status summaries, and net worth. You can even select which portfolios to include in a given report.

This program can display several charts and graphs on-screen for analysis. These include price/volume graphs with multiple moving averages, relative performance charts which show the price strength of a security relative to the overall market or other securities, and stock and index correlates. The correlation charts allow the user to see how much change in price of a security is influenced by the larger market index and helps pinpoint abnormal price changes known as breakout points.

OWL PERSONAL PORTFOLIO MANAGER has documentation which either can be printed or read screen-by-screen on the monitor. Also included on this disk is sample data to allow you to become familiar with the program without having to enter your own information.

Special Requirements: CGA, EGA, or Hercules graphics.

Disks: SYD0145

UTILITY PROGRAMSPC-DESKTEAM version 2.01

PC-DESKTEAM is an all-in-one utility/accessory program that can be called from within any program as well as from DOS. It includes the and alarm clock, calculator, calendar, selected DOS commands, notepad, phone dialer, printer control, typewriter mode, and a handy ASCII chart. It is menu driven, has help facilities, and runs as a stand alone program or memory-resident (with the ability to change the start key). This is a super alternative to SideKick and has more features, great documentation.

**Features:**

- Menu driven operation.
- On line help facilities.
- Memory resident or stand alone operation.
- Integrated printer control utility.
- Easy to use.

Special Requirements: None.

Disks: SYD0124

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WINDOWS APPLICATIONSMETZ WINDOW UTILITIES 9/90

Metz Window Utilities is a set of Shareware utilities which is meant to make operating in the Microsoft Windows environment a little easier.

**Programs on the disk include:**

- METZ DESKTOP MANAGER is a Microsoft Windows application designed to provide you with a friendly menuing system plus several utilities.
- METZ DESKTOP NAVIGATOR is a Microsoft Windows application designed to provide fast access to your drives, directories, and files. File and directory management functions are included as well.
- METZ PHONES is a Microsoft Windows application designed for maintaining lists of names, phone numbers, and addresses. If you have a Hayes compatible modem, Phones has the capability of dialing the phone for you.
- METZ DIALER is a popup, speed dialer which, when coupled with a Hayes compatible modem, provides a quick and convenient method of dialing phone numbers. A customizable pull down menu allows you add names and numbers you frequently call.
- METZ LOCK is a security application for MICROSOFT WINDOWS. Lock can be used to prevent unauthorised use of your system while unattended.
- METZ RUNNER is a utility which provides a quick method to run applications and files.
- METZ TIME is a pop-up digital date and time display which can be placed anywhere on the screen.
- METZ FREEMEM is a moveable, digital, display of free conventional and free expanded memory.

Special Requirements: Windows 2.x or 3.x

Disks: SYD0117

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COMMAND POST 7.0J

COMMAND POST is a powerful file manager and custom menu system for Microsoft Windows 3.0 that lets you tailor your Windows-based work stations to your needs and preferences. The Text-based nature of COMMAND POST preserves screen real estate, the batch file/basic -type language gives you unprecedented power in a Windows menu system.

COMMAND POST does a lot more than just make it easy for you to start programs. It helps you get your work done faster and safer by reducing tedious manual steps. A single COMMAND POST menu item can gather filenames and other information into list boxes for the user to choose from, perform arithmetic, parse strings, move and resize windows, read and write WIN.INI variables, read DOS environment variables, copy move and delete files and much more. With COMMAND POST you can turn a work station into a power station.

Special Requirements: Windows 3.0

Disks: SYD0118

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"PC-set" - IBM Characters  
On a TRS-80

by Uncredited

[Reprinted from "Nibbles & Scribbles", a newsletter published by Anitek Software Products, P.O. Box 361136, MELBOURNE FLORIDA 32936, UNITED STATES of AMERICA, Phone 1-407-259-9397, Fall '90]

Please Note all prices quoted are in American Dollars.]

Yes, it is true, you can have the best of both worlds - IBM-PC characters and TRS-80 characters on your TRS-80 Model 3, 4 or 4P. "PC-set" is a character ROM upgrade that installs inside your computer and gives your TRS-80 access to the entire set of characters found on IBM-PC compatible computers. Using LeScript's new line draw capabilities, you can create boxes, rule-line drawings, diagrams, bar charts, and grey scale shaded areas right on your screen and print them using the IBM character mode of your printer. A must for publishing flyers, forms, and display ads.

A TRS-80 equipped with "PC-set" is a must for use on electronic bulletin boards that use IBM-PC graphic characters in their message screens. "PC-set" is also great for displaying and printing many special characters and symbols not found in the regular TRS-80 character set.

"PC-set" can be used with other programs too. You can select between IBM-PC characters or the TRS-80 standard characters manually or through software control, so you can still run programs that use TRS-80 graphics characters. You'll love this valuable upgrade. "PC-set" comes complete with all the parts you need and takes only about an hour to install. "PC-set" is only \$39.95 for the Model 3 (26-1061) and non-gate-array Model 4 and 4P (26-1069 and 26-1080), and \$59.95 for the gate-array Model 4 and 4P (26-1069A, 26-1070 and 26-1080A).

Shipping and handling charges to Australia: \$6, plus \$6 for each item over \$50, plus \$3 for each item under \$50. For elsewhere, contact Anitek.

**["SYDTRUG News" Editor's Note:**

The newsletter from which this article has been reprinted, was forwarded to me by Anitek in response to a request for information on another product. Although the covering letter was dated December 17, 1990 there was no mention of any change in prices so they may still apply.

If any reader has installed one of these kits, or should install one in the future, we would dearly like some information on how it all worked out.]

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HELP NEEDED

It has come to our attention that the master copy of one of our TRS-80 Public Domain disks has a corrupted file. We believe that this file was corrupted when we first received it, but we sincerely hope that at least one of our readers has a copy which is uncorrupted.

The disk in question is PDBUSI14 and the particular file is called SUNRISE/BAS.

If you have a copy of this file, would you please try running it to see if it works correctly. If it does, then would you please arrange to let David Sutton, our TRS-80 P/D Software Librarian, have a copy to replace the corrupted one he is holding. In the event that an uncorrupted copy does not become available that file will be deleted from the master disk.

All members who have come across any instances of P/D files which are corrupted should advise the P/D Software Librarian concerned, so that steps may be taken to correct the file, if this is possible, otherwise to remove it from the master disk.

Members should realise that it is quite impractical for the Software Librarians to personally confirm that each and every file functions correctly. At best they can only be expected to confirm that the disk is readable. Considering the price members pay for their P/D software they should realise that there can be no guarantees given. All members buying P/D Software depend to some extent on other users of the software to report corrupted files etc. to prevent the continued distribution of unusable software.

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# SYDTRUG Inc. TRS-80 P/D Software

For the benefit of those readers who have not yet obtained the catalogue disks, it is intended that a listing of the files contained in the various TRS-80 Public domain disks will be published in "SYDTRUG News" over an extended period. The plan is, to present a number of disks each month, so that eventually all the disks will have been listed.

It should be noted that the CATALOGUE disks carry a minimum system which enables the user to insert them in the machine and then press the reset button. Then you just follow the instructions which appear on the screen. However, the disks which contain the P/D software DO NOT have any system. It is expected that the user will provide their own system.

The layout of the list should be as follows: Where a number of separate files relate to the same program, the principal file name will be lined up with the left margin while the names of the subsidiary files will be indented. Hopefully this will help to make the lists a little clearer. Your editor has, however, not actually worked with any of these disks so it is quite possible that errors have found their way into the compilation. If any reader is aware of any such errors please pass a message along and it will be noted in a later issue.

Unfortunately, in a great many instances, there is no indication of which machine or operating system is applicable to the particular files. Again, any positive feedback from members would be greatly appreciated, and will be noted in later issues.

Members are reminded that if they submit a reasonable review of a TRS-80 public domain library disk which is published in "SYDTRUG News" they will be entitled to a free P/D disk of their choice.

## PDGAME27 : Games

BACKPACK/BAS	Backpacking expedition
BACKPACK/INS	BACKPACK instructions
CHECKERS/BAS	Game of checkers
CONVOY/BAS	You're in charge of an army convoy
GOHOKU/BAS	Japanese five-in-a-row game
PINBALL/BAS	You can't tilt this pinball game
QUBIC/BAS	Variation of dice game
REALTREK/BAS	Star Trek variation
STARLANE/BAS	Keep trade lanes open from planet to planet
TROLGOLD/BAS	Can you find the troll's gold

## PDGAME28 : Games

DRAWPOKR/BAS	Play draw poker with the computer
GAMEPLAY/BAS	Eight games of chance and skill
LUNAREXP/BAS	Lunar lander & explorer
MEDIADV/BAS	Medieval adventure
POTATOES/BAS	The invading Space Potatoes are here
SALAMI/BAS	Rule the mythical kingdom
SCIFI/BAS	Science fiction episode
SLOT21/BAS	Slot machine variation
SPACEGAL/BAS	Space battle game
SPACTREK/BAS	Star Trek game variation
STARWAR1/BAS	Star Trek game variation
STUDPOKR/BAS	Play five-card stud poker

## PDGAME31 : Games

ANAGRAM/BAS	Word game
BOMBSQUAD/BAS	Defuse the bombs
FOKUL/BAS	Return to your space craft before the Fokuls
GUESS/BAS	Guess-the-number game
INBTWEEN/BAS	Another guess-the-number variation
KAMIKAZE/BAS	Go on a suicide mission
NEWPOWER/BAS	Control a nuclear power plant
OTHELLO2/BAS	Variation of this board game
PICARIA/BAS	Medieval adventure
POKER1/BAS	Can you bluff the TRS-80 at poker?
STARGEM/BAS	Find the lost Stargem
STRMUSIC/BAS	Music Creator
SUPFOKUL/BAS	Enhanced version of FOKUL
SWORDS/BAS	Fence with the computer
TARGET0/BAS	Word game
XWING/BAS	Pilot a rebel fighter against the Empire
XYRON6/BAS	Fly the Xyron space craft
YAHTZ/BAS	Variation of dice game

## PDGAME30 : Games

BSKTBALL/BAS	Computerized basketball (1-2 players)
CRYPTOSO/BAS	Solve cryptograms
FTBALL1/BAS	Use the computer as a grid iron
FTBALL2/BAS	Variation of computer football
GOLDMINE/BAS	Search an abandoned mine for gold
GOLF4/BAS	Play the computer 18 holes
HANGMAN5/BAS	Word guessing game
HORSEBET/BAS	Can you pick the ponies?
LIFETWO/BAS	Build the perfect world
MSTRMIND/BAS	Code breaking game
POOL/BAS	Play pool and improve your geometry skills
SLED/BAS	Jump the space sleds
TREK1113/BAS	Star Trek variation

## PDGAME32 : Games

AMAZE/BAS	Maze printout
BANDIT/BAS	Try to beat this slot machine
BIORYTHM/BAS	Biorythm printing program
BRICKS/BAS	Stop the brick before it breaks the window
COKE/BAS	The loser of this game has to buy the Cokes
DICE/BAS	Roll the dice and know when to stop
FIVECARD/BAS	Five-card poker game
JUSTLUCK/BAS	Version of Chuck-a-luck
MAGICSQ/BAS	Peg puzzle
MATCH/BAS	Don't remove the last match from the row
MUSIC/BAS	Music Maker Programs
NAUGHTS/BAS	Naughts and Crosses is British Tic-Tac-Toe
ORCONV/CMD	Convert Orchestra-80 files
ORCONV/DOC	Documentation for ORCONV/CMD
ORGAN/CMD	Organ simulation for Model I or III
ORGAN4/CMD	Organ simulation for Model4
PAR2/BAS	Golf game
PLUS1/BAS	Trace the paths
REVERSE/BAS	Reverse your list before the computer does
RISK/BAS	Version of board game
RNDWORDS/BAS	Word game
SOUNDA/BAS	Sound demo
SOUNDB/BAS	Sound demo
SOUNDC/BAS	Sound demo
SOUNDDB/BAS	Sound demo
TSOUND/BAS	Sound demo
TWENTY1/BAS	Variation of black jack
ULTRANIM/BAS	Version of Nim
VERBOTEN/BAS	Don't use the verboten words
WEAVER/BAS	Graphics demo
YATC/BAS	Dice game with the computer as judge

## PDGAME33 : Games

ATLANTIS/BAS	Explore the Lost Continent
BLNKSLAT/BAS	Use Blank Slate as your drawing board
DECICPHE/BAS	Decode secret messages
DOODLART/BAS	Doodle on the screen rather than paper
DRIVERL2/BAS	Test your driving skills
EMPIRE/BAS	Control your own world
FAKEOUT/BAS	Who can you bluff?
FORETELL/BAS	A fortune teller in your computer
KNOKOUT/BAS	Break through the walls
MATCHEM2/BAS	Match game
NEWSPHOT/BAS	Use your camera to catch the right view
RUSSIAN/BAS	Russian roulette
SNIPER/BAS	Get the sniper before he gets you
SOUTHPOL/BAS	Journey to the frozen continent

## PDGAME35 : Games

ACHILLES/BAS	Find and destroy the computer's control robot
BATTLESP/BAS	Battleship variation
CAMELBAK/BAS	Force your opponent to break the camel's back
GUNFIGHT/BAS	Two-player competition on Old West
KNOCKOUT/BAS	Rebound the ball against the wall
HATCH23/BAS	Don't choose the last match
MONSTER/BAS	Escape from the maze before you're found
PINBAL/BAS	Pinball simulation
SEIGE/BAS	Medieval simulation for one player
TTT/CMD	Tic-tac-toe
TTT/ASM	Assembly source file for TTT/CMD

## PDGAME29 : Games

ANROID/BAS	Play ancient game of nim with the androids
BASEBALL/BAS	Computerized baseball (1 or 2 players)
DOOMSDAY/BAS	Can you stop the destruction of earth?
FDRDOWNS/BAS	Bet on the ponies at FDR Downs
GYPSY/BAS	Computer tells your future
IMHOTEP/BAS	Become an Egyptian architect
JUMBLE1/BAS	Scramble words
LONESTAR/BAS	Adventure in the old West
MORSEPLY/BAS	Practice morse code
ODDIOUT/BAS	Elimination game
PBEKDRAW/BAS	Drawing board
ROACHRAC/BAS	Race roaches down the hall
SAVIOR/BAS	The human race needs a rescuer
SCISSORS/BAS	Game of rocks, scissors, paper
SHOOTGAL/BAS	Turn your TRS-80 into a rifle range
SKETCH/BAS	Sketch pad
STARBLAZ/BAS	Blaze across uncharted space
STARS/BAS	Elimination game
STINGRAY/BAS	Destroy the socialist empire
TIGERSHA/BAS	Navigate the Tiger Shark into battle
UNJUMBLE/BAS	Unscramble words
WHEEL/BAS	Roulette

## PDGAME34 : Games

CFLEET/BAS	Cross 32 parsecs of enemy space
CHICKEN/BAS	Legendary car challenge
DEATHRAC/BAS	Car accelerates with each spectator Killed
DECIPHER/BAS	Word puzzles with three levels of play
EXPLORE/BAS	Treasure hunt in the many-chambered cave
GALLERY2/BAS	Shooting gallery with nine skill levels
GOFISH/BAS	Relive your childhood with this old favorite
HYPERSPC/BAS	Destroy 20 ships in the enemy fleet
ISLATION/BAS	Isolate you opponent so he can no longer move
LABRINTH/BAS	You are King Minos's prisoner on Crete
MINEFLD/BAS	Trudge through a heavily mined field
MOONBASE/BAS	Opposing moon bases fight it out with nukes
NORETURN/BAS	Don't fall off the edge of the flat earth
RACERL2/BAS	Realistic simulation of a race for Level II
ROBOTWAR/BAS	Destroy the ever-producing enemy robots
SOCCER/BAS	Two players compete in a soccer game
SPECTARGT/BAS	Shoot it out in space
SUBATTLE/BAS	You're outnumbered four to one
TRIVIA/BAS	Challenging game for trivia buffs

## PDGAME36 : Games

CONCEN/BAS	Concentrate on the squares
FLIGHTSM/BAS	Flight simulation
FLIGHTDC/BAS	Basic doco for FLIGHTSM/BAS..Load and RUN
REACTOR/BAS	Graphic reactor simulation
MSTRMIND/NB	NEWBASIC game
WEEKDAYS/NB	NEWBASIC game
PHONETXT/BAS	Spell words with phone numbers
MAZE/CIM	M/L interface with MAZE/BAS....see MAZE/DOC
MAZE/ASM	Source for MAZE/CIM
MAZE/BAS	Basic interface with MAZE/CIM...see MAZE/DOC
MAZE/DOC	Doco for MAZE programmes
MAZEGEN/BAS	Maze generator...see MAZE/DOC
QUIK/BAS	Two player entrapment game
QUIK/ASM	Relocateable Keyboard routine for QUIK/BAS
QUIK/DOC	Doco for QUIK/ASM and QUIK/BAS
DIVISION/BAS	M4 game
DIVISION/DOC	Doco for DIVISION/BAS

**For Sale**

Members wishing to purchase MS-DOS type hardware should first contact:

**MICRO EXPRESS**

mention SYDTRUG Inc. and quote their membership number. They should be pleasantly surprised by the discounts available to members.

Voice Phone: (02) 484-6507 after 8:00 PM  
FAX: (02) 481-0236

**UPS vs SPS**

by UNCREDITED

[Reprinted from "Hawtug News", newsletter of the Hawaii Tandy Users Group, 366 Elelupe Road, HONOLULU HAWAII 96821, December 1990]

Next to software, power supplies are perhaps the next highly over-hyped commodity dealing with microcomputers. PC magazine calls it technobabble. To quote, "In their literature, the UPS [Uninterruptible Power Supply] companies bury you in brownouts, whip you with waveforms, and petrify you with power factors". Most of us simply purchase some sort of spike and surge protector and figure that's all that we need to protect our \$2,000 investment of metal, rust, plastic and silicon.

In general, you are probably not far from the truth. The standard PC today has a pretty robust power supply. In their study of backup power supplies, PC magazine reduced the line voltage to a variety of PCs. They noted that even under conditions below 100 volts the PCs chugged along blithely. [SYDTRUG News Editor's Note: We must remember that this article originated in the US of A where the nominal line voltage is 110.] In fact, none of them completely failed until the voltage dropped below 80 volts. At about 90 volts your monitor will start doing funny things but your computer will probably continue to play Tetris. PC Magazine dropped the voltage to 90 volts and ran several PCs for several days without any obvious problems such as overheating.

Assuming that you do have frequent interruptions in your power from your local Electric Power Company you may decide to wade through the technobabble and drop some hard earned dollars on a backup power supply. The first hurdle you have to overcome is that of deciding whether to buy an Uninterruptible Power Supply (UPS) or a Standby Power Supply (SPS).

Of course you have to navigate the claims of superiority by adherents of either sine or trapezoidal waves. UPS vendors take pride in describing how perfectly their equipment exudes its electrical power in sine waves. They would lead you to believe that their equipment outputs power that is even more sinusoidal than the one your local Electric Company provides. Probably true. However, it is also a fact that your standard PC probably couldn't care one herring bone.

The next point to hype is the switching time for these power supplies. Switching time refers to the pause between the time the power supply detects there is a break in electrical power and the time it starts to send power to your computer. Obviously, you want a power supply that starts sending electricity to your computer before it [the computer] starts to lose its precious memory.

Theoretically, UPS do not have a switching time. Power from your line is used to keep sealed batteries humming along so that they can provide power to your computer. So your computer is actually driven by the UPS batteries. If there is a break in the power from your local electrical company, or it falls below the acceptable level, an audible signal is usually transmitted by the UPS and it starts to power down your computer in an orderly fashion. The latter is controlled by a memory resident program that senses when the local power fails and starts to save your data and logs off your programs before turning your PC off. This whole process starts to occur, usually after about 10 minutes, or some time period that you have decided on.

Standby Power Supplies advertise switching times somewhere between 1 and 40 milliseconds. It would appear that the shorter the switching time the better the power supply. Only partially true. PC magazine interrupted the power to several PCs for as long as 100 milliseconds without causing a single failure.

Thus, unless you are a purist, an SPS with a switching time less than 25 milliseconds should be adequate for your common, run of the mill, PC. Some new design twists have emerged over the last few years. Emerson manufactures a UPS which uses a slot in your PC and allegedly provides full UPS protection. A memory resident software utility is also provided which allows for orderly powering down of your PC in the event of power failure.

A backup power supply for most PC operations will cost about \$400 minimum. As you start adding bells and whistles (perfect sine wave output, more elaborate utility software, beefier batteries, etc.) the technobabble starts to increase rapidly and your wallet starts to shed its weight just as rapidly.



## Compatibility With Your Compatible

by David FIELD

[Reprinted from "SVCS Journal", Newsletter of the Silicon Valley Computer Society, 2464 El Camino Real #190, SANTA CLARA CA 95128, US of A, December 1990, where it was reprinted from the Boston Computer Society's "PC Report", June 1990]

In this Survey I'll try to navigate through a sea of IBM compatible computers. Ports of call include: decoding the ads, deciding which machine will fit your needs, choosing where to buy, and learning what the small print really means.

### Short History

Less than a year after IBM produced its first PC in 1981, other manufacturers brought out computers that ran almost all the IBM standard programs. These machines, called clones or compatibles, gradually overtook sales of IBM machines, and then grew to be the biggest selling computers today. Three out of five computers sold are now compatibles, and with IBM's own machines, around 80 percent of computers can run the MS-DOS operating system, giving them access to thousands of programs.

As the market has increased, so has the number of makes, and now there are hundreds of brand names. Some of the "manufacturers" just put their nameplate on someone else's machine; others fit a few subassemblies into a case; but a few actually design and make their own machines. Mail-order firms can start up on a shoestring, and many people have made their fortunes.

### What's Available ?

Compatibles fall into three main groups -- PC or XT copies, AT copies, and 386 or 486 machines. The PC copies are updated versions of the original IBM machine, and they use the Intel 8088 processor chip. The AT copies use the 80286 chip, and the newer machines use Intel's 80386 and 80486 chips.

The difference between these three groups is in speed and capability. The AT copies are typically two to three times faster than the PC compatibles, and a typical 386 machine is two to three times as fast as an AT. These differences reflect the whole machine's speed in running everyday applications, not the speed of individual components.

Although almost every MS-DOS program will run on any compatible, the high-powered applications run best on the more powerful machines, and Lotus has announced two versions of 1-2-3: one for PC copies, and a more powerful version for 286 and 386 machines only. Although most people run MS-DOS, many are expected to switch to OS/2, the new operating system from Microsoft. This won't run on PC copies.

The key to understanding the ads is configuration. The bargain prices you see are not quite what they seem, for you have to buy more parts to make a fully functional computer. However, the configurations shown represent the equipment that's common to any set-up. You pick the extras to make the computer you want. Many ads now feature prices for ready to run machines.

### How Much to Spend

How much should you spend ? There are three rules: The law of diminishing returns applies, you get what you pay for, and the law of increasing returns applies -- all at the same time. For instance, if you want the last word in performance, you can spend \$500 extra and see little improvement. If you are adding RAM, you can pay the same amount for the first or the eighth megabyte.

Paying 40 percent more for a 286 computer over an XT can double your computing power. These price ratios are changing all the time, so a year from now a whole new set of rules will apply. Also, by the time you've paid for a printer and software, the extra money spent on the computer is an even smaller percentage of your budget.

### What's the Difference ?

As I've said, the easiest way to differentiate between models is the CPU chip: the 8088, 80286, or the 80386 and 80486. Each of these comes in more than one clock speed; higher speed means faster processing, but the speed of the entire computer will also depend on things like disk drives. Also, you can't compare one family of chips with another. The 286 runs five times faster than an 8088 at the same clock speed, the 386 is the same speed as an equivalent 286, and the 486 chip is twice as fast again.

The original 8088 machines had a clock speed of just under 5 MHz (short for MegaHertz, or millions of times a second). The current chips are twice as fast, at 10 MHz. 286 machines usually run

at 12, 16, or 20 MHz, and 386 chips come in 16, 20, 25, and 33 MHz speeds.

Faster chips cost more; they also require faster memory (measured in nanoseconds [ns] access time -- from slow 150ns to fast 80ns).

There's a special chip called the 386SX, which is set up to use the support chips of the 286 family (thus saving cost), but it will work with all 386-specific software. The 386SX only comes with a 16 MHz clock speed at present, but a 20 MHz version is on the way.

### Chips & Bench Marks

Three bench marks are used, but none of them have much value, as they are usually identical between chips of the same clock speed. The "Norton SI" gives the speed of the chip relative to the original 8088, which is rated 1. A typical 20 MHz 386 would be rated "Norton SI = 22.5". The "Landmark" speed is an indication of how fast the original 286 AT would have to be to compare with the model under test; the support chips of the newer machines are faster than before, so our 20 MHz machine would be rated "Landmark 27.3 MHz". Beware of vendors who try to sell you this as a "27 MHz machine".

Finally, a chip can be rated for "Millions of Instructions per Second", or MIPS. This 20 MHz 386 can process 3.57 MIPS. Special chips called "math coprocessors" speed up your chip. They have the same number as the processor except that they end in 7 (8087, 80287, 80387). They only work with a few programs that are designed to use them, and even then they only work on decimal math operations like multiplication, which may be a small part of the processor's job.

If you've decided on the chip and the clock speed, the next thing to consider is memory, or RAM. If you're running an 8088 machine, you'll probably be offered 640K, the maximum these machines will take. Some vendors offer 512K, which will run most applications. The upgrade to 640K is cheap. 286 and 386 machines must be ready to run the OS/2 operating system, and they are usually sold with one megabyte (1MB) of memory. This is enough to run MS-DOS, with some left over for those applications that need extended or expanded memory. When OS/2 applications arrive in quantity, you'll need around four megabytes to run many of them.

### Memory & Hard Disks

The memory must have fast enough access for faster chips; if the memory supplied is fast enough (which is usually the case), the machine will be advertised as having "Zero Wait States". If not, the processor chip will have to wait a clock cycle to get the next piece of information, which slows it down. The fastest processor chips can use a cache, a fast-access part of the memory, which contains 32K or 64K. This speeds up the chip some ten percent.

"Hard Disks" are now a lot cheaper than they were a few years ago. Typically, they'll store 40 megabytes (MB) and have access times of 28 milliseconds (ms), about ten times faster than a floppy disk. A 40 megabyte disk may seem like overkill (a fast typist would spend the best part of a work-year filling it up). However, some programs have two or three megabytes of code, and graphic applications need several megabytes to store their files. Some slower drives are around, with access times of 40 or 65ms. If your vendor doesn't quote an access speed, assume it's slow.

### "Video Screens"

Your next choice is the "video screen". There are several standards for these, but in all cases you'll need a monitor and the appropriate controller card (often sold together as a "video combo"). The cheapest black and white monitors are sold as "Hercules compatible". The least detailed colour is CGA (Colour Graphics Adaptor), an early IBM standard now almost extinct. Then comes EGA (Enhanced Graphics Adaptor), and finally, the most detailed colour picture of all, VGA (Video Graphics Array).

These colour standards vary in their clarity and also in the number of colours that they can show at one time. Offshoots of VGA include VGA mono (a black and white monitor that works with a VGA card), and a super VGA which is even more detailed. Other possible video choices include the one- or two-page monitors used in desktop publishing. The video standards are downward compatible -- if you have EGA and your program requires a minimum of CGA, then you can happily run it.

### Keyboards

Most keyboards have 101 keys, though some XT copies use the slightly more cumbersome 88-key design. There will usually be one "diskette drive", probably the 5.25 inch 1.2M type. XT copies have 5.25 inch 360K drives, and they will need two of these if there is no hard disk. Most 286 and 386 machines give you the option of a 3.5 inch 1.44M drive in place of or as well as the 5.25 inch drive. A 3.5

inch drive is probably only useful if you want to exchange files with a laptop.

### Desktop vs Tower

Many computer firms give you the option of different cases. For about \$50 extra you can buy a mini-tower case that sits on your desk and saves space. For \$200 more you can get a floor-mounted tower case that positively screams "power user". Or you could do what the rest of us do, and get a \$25 adaptor that lets you mount your case on its side.

Most of the other things in the advertisements are really "me-too" features. The disk drive controllers, the number of expansion slots, and many other features are so similar across all machines that they shouldn't concern you.

### Printers

The final part to make your system fully functional is a "printer". They start as noisy dot-matrix types -- the 9-pin models are cheap, but produce "computer-printer" output, unless you settle for their slow "near-letter-quality" mode. The 24-pin printers cost around 50 percent more, but can produce passable proportionally spaced type (the letter "m" prints wider than the letter "n", which in turn prints wider than an "l").

The big action these days is in laser printers. Now that some models are available for less than \$1,000, they are becoming a viable choice. If you want to do desktop publishing, then you must have one. They print sheets of paper at several times the speed of dot-matrix printers in blissful silence. The quality of output compares with typeset documents.

There are several accessories you might want for your system. A modem lets you connect your computer to the telephone line. You can send computer files to friends with similar equipment, or sign up for one of the commercial bulletin boards to receive games and public domain software. And, of course, there are the free bulletin boards. If you create quantities of files in the megabytes during the day, you can save time backing up by using a tape drive instead of dozens of floppies. If you like to play games, you'll probably want a joystick. Any kind of graphics program demands a mouse.

### What's Best For You?

What computer should you buy? It depends. Ask yourself these questions. Do I have a clear idea of what I want the computer to do? Do I want this machine to work hard with advanced software, or am I just interested in home or small business applications? Can I probably afford the same amount of money in say, five years to buy an up-to-date replacement? Will the computer be used in an environment with other computers? Is speed of operation vital? Is my budget really tight?

### 8088 Systems

Let's look at the different computers. The XT 8088 computers are slowly becoming less attractive. The basic configuration (processor, keyboard, and one diskette drive) sells for around \$500. (Watch out for manufacturers who sell you only the processor box as a "bare-bones" system. It may not even have disk drive controllers.) Remember, you'll need to add another diskette drive, a monitor, MS-DOS, and a printer. The minimum price for these extra items works out at around \$475, so the cheapest complete computer will cost you around \$1,000 -- without any software.

The 8088 machines are slow, and are beginning to be left behind as some new software doesn't work on them. However, you can't call a machine obsolete when it still runs tens of thousands of programs. If your needs are modest, your budget even smaller, and you have plenty of time to do your work, consider an 8088.

### 286 Systems

For \$200 more you can find a 286 machine running at 12 MHz, and this represents much better value. For a start it works around twice as fast -- and it will run OS/2. The diskette drive stores more than three times as much information as an 8088. If you didn't consider a hard drive for an 8088, it's almost a necessity for a 286. The cheapest hard disk -- a slow 20 megabyte drive -- will cost about \$225, but you'll save \$80 by not having to buy a second diskette drive. A full 286 system with this hard disk will cost around \$1350. For around \$350 you can choose a colour EGA monitor for these systems, but for the 286 and above, you'll probably want the \$450 VGA monitor. A 286 system will run the programs you're likely to need except the real cutting edge stuff -- if you just want a computer for home or small office, then this will do the job. It also won't be under powered for most of the software that will turn up in the next two or three years.

## TRS-80 Public Domain Software News

David SUTTON tells us that Shawn SYNSTRA has donated a program to our TRS-80 Public Domain Library. It is called "GRAVEDIG/CMD" and for more information about this, contact either David or Shawn. Perhaps one of our members would like to prepare a review for inclusion in "SYDTRUG News" (Hint! Hint!). Thank you Shawn for this generous gesture.

### TRS-80 Model 4 Users Please Note:

When you order P/D Software which is identified as being for Model I or Model III and you intend to use it on a Model 4, the computer MUST be in the Model III mode if you expect it to work correctly.

Any software written for Model I or Model III assumes the availability of certain code in ROM in the computer. While it is true that this is present in the desktop Model 4, it is normally only accessible in the Model 3 mode. With the Model 4P, it is necessary to load a file called MODEL4/III, or similar, as part of the boot-up procedure, as this version of the machine does not include the ROM.

Also very important, there are very significant differences between BASIC as supplied for the Models I and III and BASIC as supplied for the Model 4. In almost all cases BASIC programs written for Models I or III WILL NOT run in Model 4 mode

### For Sale

#### TRS-80 Model 4P Portable Computer

128K Main Memory, Two 40 trk, 5.25 DD internal disk drives  
One 80 trk DS DD (720K) external drive with case, power supply, cables etc.

7 Disk Operating Systems  
12 Disk programs with manuals (Group Packs)

30 disks with approx. over 600 programs

2 Complete Servicing and Repair manuals

4 Books

1 SKAI 130DT Dot Matrix printer with 3K buffer and cables.  
Friction or tractor.

The lot complete and ready to run: \$650 (Negotiable)

Contact Mark Williams - (046) 28-2622

### Worth Repeating

Sleep, riches and health, to be truly enjoyed, must be interrupted.  
-- Jean Paul Friedrich Richter

When a man declares, "I am sure of my wife", it means he is sure of his wife. But when a woman declares, "I am sure of my husband", it means she is sure of herself.  
-- Francis de Croisset

One ought every day to hear a little music, read a good poem, see a fine picture and, if possible, speak a few reasonable words.  
-- Goethe

Economists report that a university education adds many thousands to a man's lifetime income -- which he then spends sending his son to university.  
-- Bill Vaughan

Kids have it tough. Where they once used to walk to school and keep warm by running part of the way, now they stand and shiver waiting for the bus.  
-- Claude Eames

Science cannot solve the ultimate mystery of nature and that is because, in the last analysis, we ourselves are part of nature and therefore part of the mystery we are trying to solve. -- Max Plank

I am glad that I paid so little attention to good advice; had I abided by it I might have avoided some of my valuable mistakes.  
-- Gene Fowler

**FOR SALE - RS-232 Boards**

These are brand new, genuine Tandy, TRS-80 RS-232 boards which were obtained as a special deal when Tandy were clearing out TRS-80 stock.

They are designed to fit both Model III and Model 4

There are still a few left but this may well be your last opportunity to get one of these.

Catalogue Number - 26-1148

Price \$22 plus shipping charges where applicable.

For further information contact a committee member.

**Exchange Newsletters**

Some of what is included in our library. These newsletters may be borrowed by members. Members attending meetings at Sefton should see our Librarian. Other members may apply to our P.O. Box. Postage will, of course, be charged for those forwarded by mail.

**March 1991****"Adelaide Micro User News"**

Newsletter of the Adelaide Micro User Group  
G.P.O. Box 214, ADELAIDE S.A. 5001

Word Processing My Way - More personal opinions about Word processing:

The Good Word from 5000 Feet - In praise of audio tape recorders:

Spreadsheets - Some basic information:

A Brief Look Inside LeScript - A quick look at some of the inner workings:

A Maths Coprocessor for Your PC - Some words of wisdom:

The Respectable Sysop's Guide - Too true to be funny:

What To Do With the New System - Reprinted from "WNYTUG News":

Hard Disk Housekeeping - Reprinted from "The Voice of FCUG":

Word Processor Comparisons - A plug for the speed of ALLWRITE:

SuperScripsit Warning - Reprinted from "SMUG News":

Partitioned Data Sets - Reprinted from the "Canberra Micro-80 Newsletter":

BASIC Programming Hints - Reprinted from "Bits & Bytes".

**"LLIST"**

Newsletter of the Calgary Color Computer Club  
Box 22 STN."M", CALGARY. ALBERTA. T2P 2G9, CANADA.

For The Beginners - A regular column:

Stream Review - A review of a Hard Disk backup utility for the CoCo:

Computing with CHAD - First of a series on the principles behind operating systems:

We Get Questions - While mostly related to the CoCo, some of them are more general in nature.

**"The Voice of FCUG"**

Newsletter of The Fairfield County Computer Users Group  
14 Wakefield Road, WILTON CT 06897, US of A

GeoWorks Ensemble - About a Graphical User Interface which is said to contrast favourably with MicroSoft Windows:

Shadow RAM - Some discussion of memory usage in the IBM PC and its descendants:

[MS-JDOS 4.01 SHARE - An explanation of the reasons behind the DOS message "WARNING! SHARE should be loaded for large media.":

Bill's Bumbblings No. 61 - L.P. - A regular column on programming:

Notes from a Wandering FCUG Member - Really only of local interest.

**"HAWTUG NEWS"**

Newsletter of the Hawaii TRS-80 User Group,  
366 Elelupe Road, HONOLULU HAWAII 96821

386MAX5.0 - Comments on the writer's initial experience with this package from Qualitas Software:

Tandy's Smart Drives - Some comments and cautions about IDE drives:

CMOS - A very brief bit about the use of CMOS RAM in AT compatible computers.

**"Thuggery"**

Newsletter of The Hobart Users Group  
P.O. Box 420, MOONAH TASMANIA 7009

The President's Page - Two thirds of a page of local interest only:

Public Domain Library News - Also local interest only:

The Harp - A Telling Tale - A program to assist in pairing players for a chess tournament:

Happenings - Strictly local interest:

Getting the Most from ANSI.SYS - For users of MS-/PC-DOS.

**"National Capital Tandy Computer Users Group"**

Newsletter of the National Capital Tandy Computer Users Group  
P.O. Box 949, ARLINGTON VIRGINIA 22216, US of A

Express Check 4.4 - Review of a bookkeeping program:

The Insomniac Computer - Reprinted from "WNYTUG News":

Novice Nook #30 - Reprinted from "The Voice of FCUG":

Save Your Hard Disk Setup - Some valuable advice for MS-DOS users:

How a LAN Works - Very interesting general information:

Alleviate Eye Stress Caused by Computers - Reprinted from "WNYTUG News":

Grammatik Windows - A software review:

Windows Problem Solved - Reprinted from "WNYTUG News":

Magellan Version 2.0 - Overview of a highly acclaimed text retrieval program for MS-DOS:

Planperfect 5.0 - A spreadsheet from WordPerfect Corp.:

Macro Menu for WordPerfect 5.1 - Reprinted from "The Voice of FCUG".

**"MICROBITS"**

Newsletter of New Zealand TRS-80 Users Group,  
P.O. Box 19000, Auckland 7, New Zealand

[C Tutorial] Chapter 8 - Pointers.

**"The Interface"**

Newsletter of The San Gabriel Valley Tandy Users Group  
P.O. Box 6818, BURBANK CA 91510, US of A

Running CHKDSK - Some words of warning about the need to use the correct procedure with this MS-DOS program:

A Little Problem of Interfacing - An explanation of why the 5 Meg Radio Shack hard drive will not allow a real time clock (or certain other peripherals) to work satisfactorily if connected to the I/O bus of a Model 3 or a Model 4. And, more importantly, how to overcome the problem.

**"Bits & Bytes"**

Newsletter of the TRS-80 System 80 Computer Group  
41 Montclair Street, Aspley Qld. 4034

Try an 80 Track Double Sided Drive - About replacing an original drive from a Model 3 or 4 with two 3.5" drives:

Star NX-10 Printer Mode Utility - As printed in "SYDTRUG News":

A Rethink on the Future of Helpdisk - A package for Newdos80/86/90:

Disk Editor Assembler - A review of the program written by David GOBEN plus some patches to run it with Newdos:

Using a TEAC 1.2 Meg Drive - Assumably in a Model 3 or 4, it is not stated:

Printer Ribbons - Some general information about reinking and repacking.

**"WNYTUG News"**

Newsletter of Western New York Tandy Users Group  
172 Congress Street, BUFFALO NEW YORK 14213, US of A

Memory Anyone? - Information about various types and how they are currently being used:

Summing Up the Information Age - Interesting history of communication through the ages:

The Clipboard Computer Hype - A somewhat bemused overview of a new type of computer:

[MS-JDOS Through the Years - A summary of the various versions of MS/PC-DOS with notes on the changes as they developed.

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SYDTRUG INCORPORATED

The Secretary  
Sydtrug Inc.  
P.O. Box 75  
PANANIA NSW 2213

Appointment of Proxy  
(Rule 32(2))

I, .....  
(full name)

being a member of SYDTRUG INCORPORATED

hereby authorise the chairman of the Annual General Meeting to select a member of SYDTRUG INCORPORATED as my proxy to vote for me on my behalf at the Annual General meeting to be held on Saturday 10th August, 1991 and at any adjournment of that meeting.

My proxy is authorised to vote on the following resolutions:-

FOR      AGAINST

1. To confirm the minutes of the Special General Meeting.
2. To adopt the committee report.
3. To adopt the accounts.
4. Election of officers and ordinary committee members.

The following members have been nominated and have accepted nomination.

Office bearers as laid down in Rule 13:

President:	Denis J. Pagett,	incumbent.
Vice-President:	Thomas D. Foley,	new candidate.
Secretary:	Bruce A. Ramsay,	incumbent.
Treasurer:	Gordon E. Symonds,	incumbent.

also three ordinary members, as per Rule 13:

Hardware Coordinator:	Errol G. Rosser,	incumbent.
Membership Secretary:	Peter Wignell,	incumbent.
Newsletter Editor:	John H. Mercer,	incumbent.

Date ..... Membership Number .....  
(signature of member appointing proxy)

Note:- The proxy form must be received by the Secretary at the above address twenty-four (24) hours before the meeting to be valid.

