SUPER SNAPSHOT

OPERATING MANUAL

LMS TECHNOLOGIES

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INTRODUCTION

Congratulations and thank-you for your purchase of *SUPER SNAPSHOT*. To those of you who purchased this package as an update to a previous *SUPER SNAPSHOT*, welcome to version 4! Many hours of planning and design have gone into this product trying to ensure that it is as useful as possible to the end user. We have heard from many of our SNAPSHOT64 and *SUPER SNAPSHOT* customers and have taken into consideration all of the comments and suggestions that we have received. The result is *SUPER SNAPSHOT* V4.

We feel this cartridge represents a significant enhancement over previous versions and over what is available on the market today. We have strived to make this cartridge not only the best archiver on the market but to also make it an indispensable utility. To this end we have included along with the snapshot utility: a fast loading utility (TURBO DOS) ,a dos wedge, a screen dump utility, machine language monitor, utility menu, copier system, file management system, pre-programmed function keys plus many other useful utilities. With all of these features, there should be no reason for unplugging your cartridge. And this is only the beginning. That's right, future versions of the cartridge will include other valuable utilities. But where does that leave you since you have bought this version? The answer is....in a great spot. *SUPER SNAPSHOT*'s unique design allows it to be open ended. That means that you will be able to update to the latest version very easily and at a

very reasonable cost. More on this later.

For those of you who wish to skip the detailed instructions and whose only wish is to get going with your newest purchase, go to page 20 and the section called STARTING THE SNAPSHOT PROCESS. Once you have got the initial urge out of your system please read this manual thoroughly as it contains important information on the operations and capabilities of this cartridge.

SYSTEM REQUIREMENTS

SUPER SNAPSHOT requires a Commodore 64, 64C, SX 64, 128 or 128D (in the 64 mode) and will use the following drives; 1541, 1541C, 1571, 1581 or 1541 compatibles such as the FSD, Indus, Commander, MSD, etc.

PACKAGE CONTENTS

Your *SUPER SNAPSHOT* package should include the following: 1) *SUPER SNAPSHOT* cartridge, 2) instruction manual, 3) a warranty registration form and a *SUPER SNAPSHOT* SYSTEM DISK. PLEASE NOTE!! You MUST fill out your warranty registration form and return it in order to be informed of future upgrades.

We encourage you to make a backup of your system disk (both sides). It is unprotected and can be copied using any good copier such as the one supplied as part of this system. Put your original away and use the copy from now on.

SET UP PROCEDURE

With your computer turned OFF, very carefully insert *SUPER SNAPSHOT* into the cartridge port (with the computer facing you it is the furthest port to the right) with the label side up.

** **NOTE** ** Inserting the cartridge into the computer with the power turned on can be very hard on your computer and your pocket book, so make sure that your computer is turned off first. With the cartridge in place turn on your computer.

THE OPENING SCREEN

You will immediately notice a distinct difference in the opening screen (or at least you should). Displayed on the screen at this moment should be an options window with our copyright in the background. You will also notice a status line that tells you that TURBO DOS (our custom fast loader) is on. TURBO DOS is always active upon power up since we believe that you will always want to use it whenever possible.

At this point six options are shown to you. F1 is the beginning of the program backup procedure, F3 takes you to our DISK UTILITIES, F5 activates the EXTENDED LIFE module (more on this later), F7 will jump to basic with all features enabled and execute the auto-boot sequence. The DELETE key will exit to basic with all features enabled but will NOT execute the auto-boot sequence and F8 will exit to basic with all features turned off. See the section

titled BOOTSECTOR SUPPORT (p. 17) for
more details on the auto-boot feature.

DISK UTILITIES

If, from the opening screen, you
selected F3 you will be presented with
the DISK UTILITIES menu. From here you
have four choices and they are 1) FILE
UTILITIES, 2)DISK COPIER, 3) NIBBLER and
4) PARAMETER COPIER.

Selecting option 1 will present you
with our file copier menu. The file
copier supports 1 or 2 drives (devices 8,
9, 10 and 11) and the drives can be 1541,
1571 or 1581, any combination. This
means that you can, for example, copy
files from a 1541 to a 1581, including
partitions, or vice versa. All you have
to do is select which will be source and
which will be destination (by using the
F1/F2 and F3/F4 keys). If one of the
drives being used is a 1581, a second
menu will appear allowing you to pick the
source or destination directory. F5/F6
will allow you check the directories of
the source and destination drives
respectively. The copier detects which
drive(s) it is working with and
implements the appropriate transfer
routine(s) automatically. We have not
found any file copier that is as fast or
as flexible as this one. ** NOTE ** If
you have a 1571 drive and you wish to
make use of its increased storage
capacity, you must first send a special
command from basic BEFORE going to the
copier system. The command is >U0>M1.
This sets the 1571 into 1571 mode. Next
you must send the disk format command

(>N0:name,id). Now you are ready to go to the copier system. For further information on the 1571, see the section titled USING THE 1571 (p. 46) which appears later in this manual.

Pressing F7 will take you to the FILE UTILITIES MENU. The first thing to note is the DEVICE line. This tells you which drive that you will be working with. The following is a summary of the options available on this screen.

1. DIRECTORY - This will give you a directory listing of the current selected device (unit 8 is the default).

2. SOFTWIRE DEVICE NUMBER - This command is for those of you who wish to use two drives for file copying but only have two unit 8's. To use this option turn on ONLY THE DRIVE WHOSE NUMBER YOU WISH TO CHANGE. Press 2 and you will see the DEVICE number change from 8 to 9. Your drive is now identified as unit 9. Now turn on your other drive. You now have units 8 and 9 to work with.

3. RENAME FILES - Here is an easy way to change the name of any file(s). Press 3 and a directory of the current device will be given. Using the cursor keys and space bar, select the file(s) that you wish to rename. When all the desired files have been selected press return. The old name of the file(s) will be given and you simply type in the desired new name at the prompt.

4. SCRATCH FILES - The scratch feature follows the format used in the RENAME FILES option. Use the cursor keys and

space bar to select all files that you wish to delete. When the files have been selected press return.

F1/F2 - Pressing F1 or F2 allows you to select the DEVICE to be used in the FILE UTILITIES MENU. The default is unit 8 which means that all of the commands (scratching, renaming and softwire) will be directed to that drive. If you wish to access another drive (ie 9) then press F1. The on-screen DEVICE will change from 8 to 9. All subsequent commands will be sent to drive 9.

The second option in the DISK UTILITIES is the DISK COPIER. After selecting this option you will be prompted to place the SYSTEM DISK in the drive. Pressing RETURN will load the DISK COPIER MENU. From here simply select the desired drive setup.

Option three is the NIBBLER. We are proud to say that the nibbler supplied is none other than the SHOTGUN II. Many of you have probably heard of this excellent utility and we are sure that everyone will be very pleased with it. As with the disk copier option, you will be prompted to insert the SYSTEM DISK and press RETURN. When prompted select either the one or two drive version which will then load. Next a menu of user defined prompts will be displayed. Let's go through the options and features specific to each version.

SINGLE DRIVE VERSION:

1) Starting Track No. : Press 1 to enter the changes. Defaults to 01 but any

track number from 1 to 80 may be
selected.

2) Ending Track No. : Press 2 to enter
changes. Defaults to 35, but any track
number from 1 to 80 may be selected.
Please note that tracks 41-80 should only
be programmed while using a 1571
formatted disk. This copy is made
without actually flipping the disk.
Although you may select tracks
1-80, we suggest copying tracks 1-35 and
then tracks 41-75. This will save time
in most cases.

3) Density Detection: Defaults to OFF
and may be toggled ON by pressing the 3
key. (Don't use this feature unless you
suspect whole track non-standard density.
Superkit 1541 (tm) for example.)

4) Drive No.: Press 4 and select
08,09,10, or 11.

F1/F3: View Disk Directory of copy
drive.

C: Begin Copy process. Follow on screen
prompts.

RESTORE: You may abort the copy process
at any time by hitting RESTORE. If you
abort while the drive is active, we
suggest that you turn the drive off and
on again.

One drive copier hints and tips.

    We suggest you use default values
when copying any commercial program,
protected or not. If the copy fails, set
the end track to 40 and recopy. Be sure

to write protect the copy before attempting to test it. Some programs will fail if the write protect is missing. The Shotgun II contains our system for copying Rapidlok (tm) protected disks. This protection scheme is touchy, but we have had excellent results. If the copier prompts you to reinsert the Shotgun II while copying, it is going back to pick up the proper Rapidlok (tm) copier. Again, just follow on screen prompts. One final word on Rapidlok (tm) protection. If the copier has prompted you to reinsert the Shotgun II, you do have a Rapidlok (tm) protected disk. If your backup fails, attempt again but first be absolutely sure that ALL, and we mean ALL peripherals are disconnected from your system. Strip the system down to a keyboard, a monitor, and one disk drive. This also includes special copy cables, chips, and other such hardware. After a successful copy has been made, start adding a piece or two back to the system (at a time) until the problem has been identified. It may be as simple as a modem and as sneaky as a second drive on line but not even powered in. Companies known to use Rapidlok (tm) are: Accolade (tm), Avalon Hill (tm), Microprose (tm), Avantage (tm), Capcom (tm), and Dreamrider (tm). Others probably exist. Finally, we want you to know that it is normal for the system to reset to BASIC after copying Rapidlok (tm) protected titles. Take this opportunity to test your backup.

DUAL DRIVE COPIER: From the menu, the following options are available.

1) Same as one drive version.

2) Same as one drive version.

3) Same as one drive version.

4) Source drive: Defaults to 08 but may be changed to 9,10, or 11 by pressing 4 and keying in your change.

5) Destination Drive: Defaults to 09 but may be changed 8, 10, or 11 by pressing 5 and keying in your change.

F1/F3: View directory of source drive (F1) or destination (F3).

C: Same as one drive version.

Software Wire: From the main menu, you may change the device number of your drives through a software method. Hit S and follow on screen prompts.

In order to return to the *SUPER SNAPSHOT* main menu, hold down the Commodore key and press the button on the cartridge.

The PARAMETER COPIER is option 4 on the DISK UTILITIES menu. "What is a parameter?" you may ask. A parameter is a short routine that will make a minor adjustment to a disk so as to remove any protection routines. We have examined the market and in our opinion the KRACKER JAX parameter disks are the best of their type. For this reason we have made an arrangement with the KRACKER JAX people whereby they will offer a special parameter disk that will include parameters for only those programs that *SUPER SNAPSHOT* cannot completely copy.

Selecting 4 will bring up the usual prompt. After pressing RETURN the parameter menu will appear with a list of the titles supported. You may scroll up or down through the entire parameter selection. To the left of the titles is a display that will tell you what kind of copier is first required before running the parameter. NOTE: Custom Copier and nibbler refer to the same thing, SHOTGUN II.

As a final note, if you wish to exit from the DISK UTILITIES menu, simply press return.

THE DOS WEDGE

When you have exited to basic you will find that there is now a dos wedge present. We feel that this wedge is one of the best on the market and certainly the easiest to use.

The following is a list of the wedge commands and their description.

$ - gives you a listing of the directory without disturbing any programs that are in memory. (LOAD"$",8 and LIST)

/ - loads a basic program. (LOAD"filename",8)

% - loads a machine language program. (LOAD"filename",8,1)

<- saves a file (must be basic).

> or @ - takes the place of the OPEN15,8,15 and CLOSE15 command. For

example, if you wanted to initialize your drive you would simply type >I0. > will also report the status of the error channel (handy for those times when a program load stops and the drive light is blinking).

>#(n) - (where n is 8 to 11) changes the device that the computer will access. This means that if, for example, you have two drives (8 & 9) and you wish to work with drive 9 you simply have to send this command, >#9, and all dos wedge commands will be directed to number 9. You can go back to device 8 by typing >#8.

>FN0   - this is the command for our TURBO-FORMAT.   The syntax is FN0:name,id (using number 0 not the letter O). FOR THE 1541 ONLY!

>K - displays current setting of function keys.

>Kn - (where n is 0 to 8) displays setting of particular key.

>KD - disable function keys.

>KE - enable function keys.

>TD - disables TURBO DOS.

>TE - enables TURBO DOS.

>TV - displays the current ROM version.

>Q - disables the dos wedge.

These wedge commands have been simplified to the point where they make our wedge more convenient and easier to

use than those of our competitors. These refinements include the ability to list a selective directory (ie: $:P* would list only those programs on the disk that start with P). Another refinement is evident when you load from a directory listing. Our wedge reads only what is between quotes. You don't have to erase excess file size numbers. Pressing the space bar during a directory listing will pause the listing, pressing it again will resume the listing. Pressing the RUN/STOP key will terminate the listing.

Along with the above commands, *SUPER SNAPSHOT* also supports the BOOT and OLD commands. The OLD command will restore a basic program that has been eliminated due to a NEW command or a reset. The BOOT command will attempt to auto-boot the disk in the current drive. See BOOTSECTOR SUPPORT (p. 17) for more information on this command.

FUNCTION KEYS

As a measure of convenience, *SUPER SNAPSHOT* programs the function keys with a number of useful commands. They are:

- COMMODORE-RUN/STOP - absolute load and run of the first program on the disk. This key can also be used to load a specific program. To do so you would simply obtain a directory listing by using F3, cursor up to beside the desired file and then press COMMODORE-RUN/STOP. The load would be the same as typing LOAD"name",8,1.

- F1 - basic load of the first

program on the disk. This key can be
used much the same as COMMODORE-RUN/STOP
except that it loads as LOAD"name",8.

        - F2 - displays the current setting
of the function keys.

        - F3 - lists the directory of the
disk.

        - F4 - selective directory. This
allows you to obtain a listing of
specific files. For example, if you
wished to see a listing of only those
files that began with P, you would press
F4 and then P* and return.

        - F5 - RUN the basic program in
memory.

        - F6 - delete key. Pressing this
key will delete the next character to the
right.

        - F7 - LIST the basic program in
memory.

        - F8 - jump to the monitor (CODE
INSPECTOR).

        - F9 - (C= + F1) moves the cursor to
the bottom left of the screen.

        - F10 - (C= + F3) changes the border
color.

        - F11 - (C= + F5) changes the
background color.

    The programmed function keys are
meant to serve as a convenience. They
represent what we prefer for each key.

However, you are not constrained to these settings. You may change them anytime from basic by pressing >K or F2. This will give you a listing of the current settings. To change one simply cursor up to the desired key and type over the command sequence starting after the colon. When redefinig the keys, the left shift arrow serves as a return symbol. Keep in mind that these keys allow access to the drive only and so cannot be used for sending printer commands.

Please note that only keys 0 to 8 may be redefined. Keys 9, 10 and 11 are fixed and not subject to change by the user.

There are special symbols used when defining the function keys. They are:

```
<-    - carriage return
/ddd  - ascii value of decimal ddd
//    - single / literal (ascii 47
        or $2F)
/<-   - ascii "<-" (95 decimal or
        $5F)
```

SPECIALTY KEYS

Along with the function keys, several other keys have been assigned new commands. These include the COMMODORE key, CONTROL key, F7 and F8 (during power up). The following is a description of their new purposes.

- COMMODORE key - holding down this key and pressing the button on the cartridge anytime EXCEPT while in the *SUPER SNAPSHOT* menus or when the computer

has crashed, will perform a system reset (warm reset).

- CONTROL key - at any point outside of the *SUPER SNAPSHOT* menus, you go directly to the monitor by holding down the CONTROL key and pressing the button on the cartridge. This means anytime while in basic or from within a running program.

- F1 - holding down F1 during power up will exit you to basic with all of *SUPER SNAPSHOT*'S features enabled but the system will not perform the auto-boot sequence.

- F7 - pressing the F7 key during power up will take you directly to basic with all of *SUPER SNAPSHOT*'s features enabled. At the same time it will check the disk in the current drive for a boot sector and execute it if present.

- F8 - the same as DEL except all of *SUPER SNAPSHOT*'s features are disabled including the auto-boot.

TURBO DOS

TURBO DOS is the name of our program load enhancement. It supports fast load and fast save on the 1541 (and all compatibles), 1571 (in 1541 or 1571 mode) and the 1581. Load time on the 1541 and 1581 is speeded up by up to 15 times and saving is up to 7 times faster! TURBO DOS is also compatible with the vast majority of commercial software on the market today. Extensive testing has shown that it is as fast as any similar

utility (and faster than most) on the
market . TURBO DOS will work with any
drive that is 1541 compatible. It will
NOT work with an MSD and actually checks
to see if the drive present is an MSD and
if so automatically disables itself.

Occasionally you might find a program
that won't load with TURBO DOS present.
We have found that in most cases where
there is a compatibility conflict, the
problem generally lies with the function
keys. Disabling them (>KD) will usually
solve the problem. If the problem
persists, try turning off all of the
wedge and function key features by typing
>Q. If this does not cure the problem
then pressing F8 upon power-up will
disable all of TURBO DOS and thus
alleviate the problem. You can also
disable specifically the fast loader from
the wedge by typing >TD (disable TURBO
DOS). This way you can leave the wedge
and function keys active if it turns out
that the loader is the culprit.

We should point out here that not all
compatibility problems are due to *SUPER
SNAPSHOT*. There are actually software
programmers out there who implement
routines that specifically look for
cartridges. If there is a cartridge
present the program refuses to load!
What this boils down to is that these
programmers are attempting to prohibit
you from using screen dumps, sprite
killers or any of the other utilities
found on cartridges such as this. They
will try to justify this 'protection' by
saying that the archiver portion of the
cartridge worries them. Since these
programs generally can't be copied by

cartridges anyway (due to alternate communication routines, etc), their excuse just doesn't wash. They are just trying to be difficult. If you come across such a program, we encourage you to contact the company and voice your displeasure.

BOOTSECTOR SUPPORT

Your *SUPER SNAPSHOT* cartridge has a facility built in which, we feel, you will find very useful. You now have the option to make your favorite programs boot right from power-up, just like a Commodore 128! What's more, your 64 will now support the BOOT command.

This is how it works. On the SYSTEM DISK is a program called BOOTSECTOR MAKER. Simply load and run the file and you will be asked to insert your target disk and for the name of the program that you wish to auto-boot. Pressing RETURN will start the process. What will happen is that there will be a special command written to track 1, sector 0. When the process is finished the message "BOOTSECTOR INSTALLED!" will appear. From now on this disk will be auto-bootable. There is no reason to worry about the auto-boot process overwriting a sector that is in use as the program checks for this. Also, when the sector is modified by the BOOTSECTOR MAKER, the bam is updated to show that the sector is being used.

The auto-boot feature can be invoked in several ways. Pressing F7 from the opening screen will exit to basic and the

auto-boot sequence will be executed.
Issuing the BOOT command from basic will
cause the cartridge to attempt an auto-
boot. The third means of auto-booting is
designed for all those people running a
BBS on their 64. When the system is
powered up, an internal timer will count
down thirty seconds. If at the end of
that time there hasn't been a key
pressed, the system will automatically
exit to basic and attempt to auto-boot
the disk in the drive.

** PLEASE NOTE ** When using the auto-
boot feature, make sure that there is a
disk in the drive. If no disk is present
and you are using an older 1541, you will
here the infamous head knock associated
with these drives. As long as there is a
disk in the drive, the auto-boot sequence
WILL NOT CAUSE A HEAD KNOCK. The auto-
boot feature works with the 1541 (and
compatibles) and the 1581.

CAPABILITIES OF THE SNAPSHOT PROCESS

The archiver portion of *SUPER
SNAPSHOT* (accessed as option 1 in the
SUB-SYSTEM MENU) is the most effective
memory capture utility on the market
(domestic or foreign). It will produce a
working copy of any program that is
entirely memory resident. Even many
programs that load in files after the
program has begun can be successfully
backed up. However there are some
programs that cannot be copied 100%.
These programs include ones that are
dongle (key) protected; do a protection
check after the program has loaded and
started and programs that use the drive's

memory for protection or for alternate communication routines.

The programs that cannot be successfully backed up can be easily identified. Key protection is self evident. Programs that use the disk drive's memory are easily identified as well. To do so, load in the original program and when it has started turn your drive off and then on again. If the program crashes or locks up when it tries to access the disk (the drive will not come on at ALL) you can safely assume that it uses special routines that were placed in the drive's ram.

To determine whether the program is using a late protection check, make an unprotected copy of the original disk (using the fast copier included on the parameter disk). Load in the program using the original disk. When the load is completed and the drive has stopped spinning, replace the original with the copy. If the program crashes or refuses to accept the copy when it next accesses the drive, it indicates that there is a late protection check routine.

Until now, these types of programs could not be handled by a cartridge based copier. Our tests show that *SUPER SNAPSHOT* can still make backup copies of much of the software on the market today, however for those that it can't we have made provisions for through the *SUPER SNAPSHOT* SYSTEM DISK. The *SUPER SNAPSHOT* SYSTEM DISK disk is designed to keep you current by providing parameters for those "problem" programs. These parameters are produced by the KRACKER JAX team from

SOFTWARE SUPPORT INTERNATIONAL. Their
address is given elsewhere in this
manual.

STARTING THE SNAPSHOT PROCESS

The F1 option on the opening screen
is the first step in the SNAPSHOT
process. Selecting this option will
enable another window where you will be
asked to confirm your selection.
Pressing "Y" will preconfigure the
computer's memory with a pattern that
SUPER SNAPSHOT will recognize. This is
done so that *SUPER SNAPSHOT* will only
save that memory which is actually part
of the program being backed up and
therefore minimize the size of the files
that will be saved. This feature will be
used by you 99% of the time. However, it
is not necessary to preconfigure memory.
If you don't it only means that your
files will be larger. We offer the
option because we have found software
that actually looks for a pattern in
memory as part of a protection scheme
designed to defeat cartridge based
copiers.

After you have made your selection
you will be returned to the main menu
where you will choose to exit via the
DEL(ete) or F8 options (DEL most of the
time) to basic. Choosing F8 will take
you to the standard COMMODORE start up
screen with all of *SUPER SNAPSHOT*'s
features disabled. In this state the
cartridge is COMPLETELY invisible. Even
the computer can't see it. There are
some programs that check the cartridge
port as part of their protection scheme

so the invisibility option is very
important. Having now chosen DEL or F8
you would now load in the original
program.

SUB-SYSTEM MENU

When the program is finished loading,
press the button on the cartridge. The
SUB-SYSTEM MENU will now appear and the
status of TURBO DOS is given along with
the number of the drive being used (upper
right hand corner of the menu). If you
have two drives and you wish to save the
backup to drive 9 simply press SHIFT/3
(which is the # sign). The device
number shown will change to 9 and all
disk activity will be directed to 9. You
can go back to 8 by pressing "#" again.
If you are using one drive only, turn the
drive off and then on again. If the
program is using alternate communication
routines and you wish to save to device
9, you MUST first turn drive 8 off and
on.

Press 1 and you will be taken to the
snapshot screen. There you will be asked
for the desired name of the file. The
next prompt will be to insert the
destination disk and press return. The
program in memory will be saved into one
file including the boot. The only
exception is if the program cannot be
compacted to 202 blocks or less. In this
case the program will be saved as two
files, the first being relatively short
and the second considerably longer. The
reason for the two file save is that the
only loader that could load a file larger
than 202 blocks would be the one on *SUPER*

SNAPSHOT. In other words, the program would not load without *SUPER SNAPSHOT* installed.

You can return to any previous requester (clear back to the SUB-SYSTEM MENU) by erasing the suggested characters and pressing return.

Pressing any key will start the saving process. This process takes approximately 30 to 90 seconds and a message will appear to inform you when it is finished. Pressing any key will take you back to the SUB-SYSTEM MENU where you can resume the program or access any other of the cartridge features.

Choosing option 2 will take you to the SCREEN-COPY MENU, option 3 will take you to the machine language monitor, option 4 will take you to the SPRITE MONITOR, all of which are discussed elsewhere in this manual.

If it is necessary to check or work with your target disk, pressing 5 will send you to the UTILITY MENU (p. 39) where this can easily be accomplished. Selecting 6 will resume the program from its frozen state.

** **NOTE** ** There is an extra feature in the SUB-SYSTEM MENU that is not displayed on the screen. Pressing the letter 'T' will toggle TURBO DOS on or off. The result of pressing the key is shown at the top of the window. This is merely a convenience feature in that it will turn on our fast dos enabling you to fast save the program in memory if,for example, the program happened to turn the dos off

while loading.

EXTENDED LIFE AND SPRITE DISABLE/RE-ENABLE

As mentioned earlier, F5 on the
option screen executes the EXTENDED LIFE
routines. This option can be best
explained by the following example: You
are playing the toughest shoot-em up to
ever hit the market. After what seems to
be hours (and probably is) you make it to
level 99 only to find that you are down
to your last man. As soon as you lose
this one it's back to the beginning
again. What you do now is press the
cartridge button which will interrupt the
game (giving you a breather) and send you
to the SUB-SYSTEM MENU. Now press option
5 (RESUME EXECUTION) and continue to
play. Eventually it's curtains and the
game is over. The difference now is you
don't have to start over! Simply reset
your computer by using the Commodore key
and the cartridge button (do NOT turn it
off and on). When the opening screen
appears press F5 (EXTENDED LIFE) and you
are right back to level 99 where you were
just before you pressed the cartridge
button.

This may sound quite tricky but it
actually is just part of the SNAPSHOT
process. When you pressed the button,
all of the IO's and registers were copied
onto our cartridge ram. EXTENDED LIFE
simply reset all the registers to match
the image on the ram, similar to the
resume feature after the SNAPSHOT
process.

EXTENDED LIFE does work the majority

of the time but not all the time. For
example, it will not work if the program
loaded in a new file after you pressed
the cartridge button. If the background
of the screen changes, this also could
cause problems. The best thing to do is
to press the cartridge button each time
you progress a little further into the
game. Experimentation will soon teach
you when and where to use this handy
option.

Also built into *SUPER SNAPSHOT* is the
ability to disable sprite collisions. To
disable the sprites press the cartridge
button and select option 3 (monitor) from
the SUB-SYSTEM MENU. Using the sprite
disable commands you can kill sprite to
sprite collisions, sprite to background
collisions or both. After a sprite
command has been executed the message
- DONE will appear. Typing XM will exit
back to the SUB-SYSTEM MENU where option
6 (RESUME EXECUTION) will return you to
the game where you left from. If the
disabling was successful then the sprites
will pass through one another allowing
you to continue through the whole game
without losing a life. Often, however,
there will appear to be no effect from
the sprite disabling. This is because
what appeared to be sprites are actually
user defined characters or the programmer
may be using some other method besides
the VIC chip for detecting collisions.

We have also included a sprite re-
enable feature. This command will turn
on all sprites that you had previously
turned off.

The sprite commands are discussed

more fully in the section titled CODE
INSPECTOR V4 (page 28).

SCREEN-COPY V4

SCREEN-COPY is the name given to our
screen dump utility because what you get
with this option is just that! You can
get a screen dump of virtually anything
(graphic or text). This dump will work
with the Commodore 1525, Epson, Epson
compatibles, Commodore 801, Commodore 802
or Commodore 1526.

SCREEN-COPY is accessed through the
SUB-SYSTEM MENU (option 2). To use it,
load in your program and when the screen
that you wish to SCREEN-COPY appears
press the button on the cartridge. When
the SUB-SYSTEM MENU appears press option
2 and you enter the SCREEN-COPY system.

Although you can interrupt at
virtually any point it is best to do so
when there is no drive activity. If the
drive is busy when you interrupt, you
will get a SCREEN-COPY but the program
will likely crash when you resume. Also,
if the program happens to be using
alternate communication routines, you
will have to turn the drive off and on in
order to free up the serial bus.

Upon entering SCREEN-COPY you will
see that the type of screen being
displayed has been identified as being
one of five different types. They are 1)
standard bit mapped, 2) standard
character, 3) multi-color bit mapped, 4)
multi-color character or 5) text. You
will also be told how many sprites have

been enabled.

Next you are presented with four different save options along with the option to return to the SUB-SYSTEM MENU. ** NOTE ** Options that are shaded are not available because of the screen type being utilized. That means that if the screen that you wish to copy is standard bit-mapped or standard character (hi-res), you cannot save it to the disk drive as a KOALA PAINT file because KOALA PAINT uses multi-color screens.

Options 3 and 4 are disk drive dumps in KOALA PAINT and DOODLE format. The files that are saved can be loaded in using the appropriate drawing program. SUPER SNAPSHOT will automatically save the files in the proper format so that these drawing programs can load them in for you to play with.

Should you wish to dump the current screen to a printer by selecting option 2, you should first set the defaults which appear at the bottom of the SCREEN-COPY menu. The following is a brief description of the defaults:

- F1 - allows you to choose the appropriate printer type. The choices include 1525, 1526 and Epson. If you have a 1525 or compatible (such as the Gemini II) you should choose the 1525 setting. If, on the other hand, you are using an Epson or Epson compatible (such as a Panasonic 1092) you would choose the Epson setting. Commodore 1526 or 802 users would select the 1526 setting. You will notice that one of the printer options is called RAM. This refers to

printer drivers that are not installed on
the cartridge eprom. *SUPER SNAPSHOT* has
the ability to store custom printer
drivers on its' ram. In the future new
printer drivers will be posted on our
support BBS (p. 49) and will be available
for downloading.

- F2 - print sprite option. This
key will allow you to include or exclude
the sprites that were on the screen at
the time you interrupted.

- F3 - will print the screen with
the colors being opposite to what they
appear. Sometimes this option will
produce a more desirable screen dump.

- F5 - toggles between the three
screen sizes available. Small is
approximately 4.5 x 3.25; medium is 6.75
x 6.75 and large is 8.75 x 7.5 (which is
the exact screen size). Dimensions given
are those produced when using an Epson or
Epson compatible printer.

- F7 - is an option for 128 users
only. If you have a 128 you can kick it
into 2 megahertz mode (for printing) and
significantly decrease the print time.
Using this option will blank the screen
during printing.

- SP(ace) bar - toggles between the
SCREEN-COPY menu and the screen that is
to be printed.

There are several other features
built into SCREEN-COPY. Pressing any key
during printing will cause the printer to
stop at the end of the next line. You
will be asked if you wish to abort and

you will answer (Y)es or (N)o. Finally, with some interfaces, there occasionally is a problem accessing the printer. If this happens *SUPER SNAPSHOT* will inform you of the problem and ask you if you wish to (A)bort or (R)etry.

CODE INSPECTOR V4

Your new *SUPER SNAPSHOT* cartridge contains a very powerful machine language monitor which is accessed through the SUB-SYSTEM MENU (option 3). Its capabilities are a hacker's dream come true. Did you ever wish that you could find out what was going on inside a program as it was running? Well now you can! By pressing the button on the cartridge and going to the SUB-SYSTEM MENU (or alternatively holding down the CONTROL key and pressing the cartridge button when outside the *SUPER SNAPSHOT* system), you can enter into the monitor. There you will find the status of all the registers at the point when you pressed the cartridge button. You can tell what exactly was going on when you interrupted. And all this can be done without corrupting memory! That's right, you can take a look at what is going on, make a few changes and then resume the program with the only changes being the ones that you made. Now you can begin to see the potential of this utility!

We cannot attempt here to teach machine language and such is not our intent. Although the monitor is easy to use, a certain amount of machine language knowledge on the part of the user is necessary.

The following is a list of the commands supported by the monitor along with an example of their usage.

A - assemble   eg. A 2000 LDA#1

Assemble an instruction at $2000. The next address will be then displayed and be available for a further instruction.

BR - break vector   eg. BR

Sets break vector to enter monitor.

C - compare   eg. C 1000 2000 3000

Compare the memory from $1000 to $2000 with the memory starting at $3000. If there are any differences, the addresses of the differences will be listed.

D - disassemble   eg. D 2000 3000

Disassemble memory from $2000 to $3000 D alone will display 20 bytes past the last line disassembled.

F - fill memory   eg. F 1000 9000 FF

Fill memory from $1000 to $9000 with the byte FF. Any number of bytes may be used and may include ascii (if preceded by a "). If no byte is specified the default BB is used.

G - go   eg. G 9000

Load the registers with what was shown in the register display and start executing the code at $9000.

H - hunt   eg. H 3000 5000 FF

Hunt for the byte FF from memory location
$3000 to $5000. You may now specify an
ascii hunt by simply enclosing the ascii
portion in quotes.

        eg. H 2000 3000 "FRED"

You may also mix ascii and hex.

        eg. H 2000 3000 01 FF 00 "FRED"

The H command also allows a hunt for a
string of any length and may include
ascii, decimal and/or hex.

I - interpret   eg. I C000 D000

Interpret memory from $C000 to $D000.

IO - display IO registers eg. IO

Displays the status of the IO registers
at the point the program was interrupted.

L - load a file   eg. L "file",08
                       or LS "file",08

Load a file from device 8.   The S is
optional and signifies a slow load. This
is used for loading directly into the
snapshot image under any ROM
configuration.

M - memory display   eg. M 4000 5000

Display memory from $4000 to $5000.

O - output to device eg. O 4

Output can be to screen, printer or disk.

The default is 3,7 (screen). To output
to a printer the command would be O4.

R - register display eg. R

Display the contents of the various
registers. These contents will represent
the status at the time the program was
interrupted.

S - save a file eg. S "name",08,1000,2000
                 or SS "name",08,1000,2000

Saves a program called name which resided
from memory location $1000 to $2000 to
device 8. The second S is optional and
denotes a slow save and is used for
saving directly from the snapshot image
under any ROM configuration.

SP - disable SPrite collisions eg. SP

Disables both sprite to sprite and sprite
to background collisions.

SPB - disables only SPrite to Background
collisions.   eg. SPB

SPS - disable only SPrite to Sprite
collisions.   eg. SPS

SPR - re-enable all sprites turned off by
SP, SPB and SPS commands. eg. SPR

T - transfer memory eg. T 1000 2000 3000

Transfer memory from $1000 to $2000 to
$3000.   The transfer command allows
memory area overlap. For example you can
take a block of memory and move it up or
down by 1 byte.

X - exit   eg. X

With the X command, you will exit the way
you entered.

XB - exit   eg. XB

The XB command will exit you to basic no
matter how you entered the monitor.

XM - exit   eg. XM

Using the XM command will exit you to the
SUB-SYSTEM MENU irregardless of how you
entered.

: - memory modify   eg. :8000

Allows the direct modification of memory.
Input can be in hex or ascii (preceded by
the ")

; - register modify

Modify the contents of the registers.
Simply type over the relevant byte.

, - disassembly modify eg. ,8000

The disassembly can be modified by typing
over the desired byte.

- convert hex to decimal eg. #C000

Shows the decimal value of a hexadecimal
number. In our example, the figure +49152
would be returned.

#+ - convert decimal to hex eg. #+49152

Shows the hexadecimal equivalent of a
decimal value. In our example, the value

$C000 would be returned.

+ - used when entering locations in decimal. e.g. D +49152 would be the same as D C000.

$ - display disk directory. Same syntax as in the wedge.

* - IO modify. Gives you the ability to change the values displayed by the IO command. Simply type IO and then cursor up to the desired byte, make the appropriate change and press return.

@ - read drive error channel.

@#n - where n is a number from 8 to 11, determines the default device number. This follows the same conventions used in our wedge.

Several of the function keys have been assigned commands for use within the monitor. They are:

> F1 - moves cursor to bottom left of screen.

> F3 - gives directory of device 8.

> F5 - acts as delete key. It will delete the character beneath the cursor and move all succeeding characters on the current line one space to the left.

Along with the function keys, the monitor now enjoys full support of our dos wedge (with the exception of the fast format command).

There have been several special features, not seen in other monitors, built into CODE INSPECTOR V4. One that you will appreciate is the ability to omit leading zeroes. This means that if, for example, you wanted to display memory at 005F you need only type M 5F instead of M005F.

Another is the ability to enter POKES into memory through the monitor. For example if you wanted to POKE 53281,0 the equivalent monitor command would be :+53281 0. The colon is the memory modify command and the + converts the following decimal figures into hex.

The F (fill memory) and H (hunt for specified value) commands will default to BB (our memory pattern) if you do not specify a value.

The monitor can also be accessed through your machine language program by first entering the monitor via the SUB-SYSTEM MENU (or F8). Once in the monitor enter the set break vector command (BR). The message -DONE- will appear. Now you can exit back to BASIC by typing XB. From now on you can enter the monitor from within your machine language program through the BRK instruction.

There are many potential and varied uses for this utility. For example, in England it is very popular to make custom changes in programs to give indefinite lives, unlimited fire power, etc.

TRACK AND SECTOR EDITOR

Also included within the monitor is the ability to read and write sectors directly to and from a disk. This is accomplished using the following two commands:

> U1 - read a disk sector into memory. Syntax is U1 TT SS [3333].

> U2 - write a disk sector from memory. Syntax is U2 TT SS [333].

U1 and U2 together form a simple track and sector editor, but with the advantage that all monitor commands can be used to edit the sector (e.g. M, I, D, A, H...etc). The two numbers following U1 and U2 are the track and sector respectively. Remember that unless you prefix these numbers with a '+', they will be interpreted as being hexadecimal. For example the following are equivalent commands to read the first sector in the directory of a 1541 disk:

> U1 +18 +01 - read track 18, sector 1.

> U1 12 1 - read track 18 (=$12), sector 1.

If no optional address is specified, both U1 and U2 will default to address $C000 (ending at $C0FF). Any address may be specified as a third parameter.

A final note of caution! This is a powerful tool and as such it should be used carefully. We would suggest that if

you wish to experiment with sector manipulation, you do so on a backup disk.

DRIVE MONITOR

New to version 4 is the drive monitor. With this module you can now access, examine or modify drive memory. All the regular display commands that are associated with CODE INSPECTOR are now available in the drive monitor.

Drive memory is accessed with the following command:

> *8 - read and write to device 8. The number can be 8 to 11 depending on the device being accessed. Note that in keeping with our monitor conventions, input can be in hex or decimal. For example, *8 refers to drive 8, *9 refers to drive 9 but in order to access drives 10 or 11 the command would be *A (or *+10) or *B (or *+11).

> * - resets to computer memory.

Transferring a portion of drive memory to computer memory is accomplished by using the following syntax:

T 100 200 *3000

The * in front of the destination location informs the monitor that the intended location is computer memory. Sending computer memory to the drive would be similar except that the * would be in front of the first address.

The compare command can be used between the drive and computer's memory using the same conventions as the transfer command.

** NOTE ** Before attempting to transfer (or compare) drive memory with the computer's memory, you must first enable the drive memory access with the *n (where n is a number from 1 to 11).

SPRITE MONITOR

Option 4 of the SUB-SYSTEM MENU will take you into the SPRITE MONITOR. From there you can view all of the sprites that are resident in the current program starting with the active sprites.

All commands are displayed on the screen along with seven sprites. You will notice that the center sprite (hereafter referred to as the current sprite) is double size. The address shown is for that of the current sprite. This is to clearly show which sprite will be affected by the various commands that available to you at this time. The following is a brief description of the commands and their usage:

(F)orward - moves forward 64 bytes in memory. The sprites displayed will shift one position to the left with the leftmost sprite scrolling of the screen and a new sprite appearing at the furthest right.

(R)everse - same as Forward except the display moves back 64 bytes and the sprites shift to the right.

(M)ode - switches from hires to multicolor display. Some sprites are more easily viewed in this mode.

(L)oad - load a previously saved sprite from disk. This can be a sprite saved by the sprite monitor from another game or one generated by using the *SUPER SNAPSHOT* SPRITE EDITOR that is on your SYSTEM DISK. The new sprite loaded will replace the current sprite at the address specified on the screen.

(S)ave - save the current sprite to disk to be loaded into another game or to be edited with the SPRITE EDITOR.

(C)lear - removes the current sprite from memory.

(E)xit - takes you back to the SUB-SYSTEM MENU.

(D)evice - allows you to select the desired device to load or save to.

There are only a couple of other things to note here. When loading or saving sprites the prefix 'smon.' is given automatically. Using this prefix gives you an easy method of identifying sprite files in a directory listing as well as assuring compatibility with the SPRITE EDITOR. Lastly, the current Bank is shown on the display screen as well. This represents the video bank that is being accessed. The bank number will change as you scroll through memory and pass into a new bank.

UTILITY MENU

From the SUB-SYSTEM option 5 is the UTILITY MENU. From it option 1 allows you to set up for a new snapshot (fills memory with the snapshot pattern).

Option 2 of the utility menu allows you to determine the status of TURBO DOS (both load and save), the function keys and the wedge. At this point you can turn each one off or on individually by simply scrolling the cursor to the desired function and pressing the space bar. Your changes will be implemented once you exit back to the program.

Option 3 allows you to check the directory of the disk in the specified drive. You need a maximum of 271 free blocks to save a snapshotted program. Although we have never seen a program take up that much room, if you allow that much you will never run into a disk full error.

Choosing option 4 will allow you to send commands to the disk drive. You can do several things such as format the target disk, scratch files from the target disk, etc. The commands are similar to that of the wedge. You are presented with the ">" and only have to type "N0:name,id" to format a disk, for example.

Selecting option 5 in the UTILITY MENU will return you to the SUB-SYSTEM MENU.

SUPER SNAPSHOT SYSTEM DISK

As you are aware by now, the SYSTEM DISK contains our nibbler, disk copiers, parameter copier and BOOTSECTOR MAKER. Also included on the parameter disk is a slideshow demo (side two of the disk) and two TURBO*25 modules. The slideshow demo is just that. It is a slideshow that was produced using the *SUPER SNAPSHOT* SLIDESHOW CREATOR. It is available only from SOFTWARE SUPPORT INTERNATIONAL (US) and MARSHVIEW SOFTWARE (Canada). The cost is $19.95 plus shipping and handling. Twenty bucks never bought so much fun!!! For a unbiased opinion, check with Paul Hughes who is the GRAPHICS SYSOP on QUANTUM LINK. Address your questions to SYSOP PH.

The TURBO*25 modules are utilities that are designed to convert your SNAPSHOT single file saves into a format that will allow them to load at an incredible speed. The first module (TURBO*25 CONVERTER) will do the converting. Simply choose your source and destination drives, press continue and follow the prompts. The whole process takes about one minute. Only programs that have been saved as 1 or 2 files can be converted. ** NOTE ** This module works with 1541 and compatible drives.

The second module (TURBO*25 FILE UTILITIES) allows you to manipulate these special files. Since our TURBO*25 incorporates a non-standard format, regular dos commands will not work on them. For example, the regular scratch command will not erase this new type of

file so in order to remove a TURBO*25 file from a disk (without re-formatting) you must use the TURBO*25 SCRATCH option.

Also included on the utilities module is an option to install a disk based turbo loader. Simply select the INSTALL TURBOLOADER option and follow the prompts. This loader works best with files that have been converted to the TURBO*25 format. It will work with regular files but not as effectively as the cartridge based loader.

SPRITE EDITOR

Another handy utility included on the SYSTEM DISK is our SPRITE EDITOR. To use it just type /SS.SED and press return. When it has loaded in type RUN.

The SPRITE EDITOR is comprised of five separate menus all of which will help you to create your own custom sprites or modify those saved with the SPRITE MONITOR found on *SUPER SNAPSHOT*. You now can begin to appreciate the sophistication of this utility.

The following is a brief description of each of the five menus:

EDITOR MENU: This is the screen that first appears after the program has loaded. From here you can create your own custom sprites. The sprite is created by moving the cursor around the display area and flipping the bits on or off (using the fire button or space bar). The cursor can be controlled through a joystick in port two or through the

cursor arrows. Eight sprites can be displayed at all times on this screen.

The smaller box in the lower right part of the screen displays the information relevant to the current sprite. Most of the information is self evident with exception of the "Sens." line. This refers to the speed at which the cursor will move when controlled by a joystick. Increasing the sensitivity (C=+) will make the cursor move slower. Decreasing the sensitivity (C=-) will make the cursor move more quickly. **NOTE** The cursor moves at only one speed (normal) when controlled by the cursor keys.

HELP SCREEN: The HELP SCREEN is accessed by pressing the Commodore key and H at the same time. What appears is a menu which describes each of the options available in the EDITOR menu along with how to access the other menus in the system.

The options available under the heading "Commodore Keys" are accessed by holding down the Commodore key and pressing the indicated key.

DISK OPERATIONS MENU: From this menu you can load from or save to any drive device. The current sprite (the one in the work area of the EDITOR menu) is also displayed. Also from within this screen you can have the current sprite (the one in the work area of the EDITOR screen) saved to disk as DATA statements. The line numbers for the statements are 6000 and above. You can append these statements to an already existing basic

program, by using the APPEND command
available in the BASIC PLUS module
(p. 43), as long as your first program
has line numbers less than 6000.

When loading or saving sprites, the
prefix "smon." is automatically used.
Just type in the rest of the desired
sprite name. This prefix is used so as
to provide a convenient link with the
SPRITE MONITOR.

The Library command (D) will produce
a listing of all files on the disk that
have a prefix of "smon.".

COLOR MENU: The colors used in the
characters, background, foreground, etc.
can be altered using this screen.

ANIMATION MENU: This screen allows you
to animate any or all of the eight
sprites present on the EDITOR screen.
This allows you to more easily create
animation sequences by actually allowing
you to see how it will look.

BASIC PLUS

In response to the numerous requests
from our customers, we are happy to say
that SUPER SNAPSHOT now offers utilities
aimed at the basic programmer. These
utilities are in the form of new commands
designed to make programming in basic
easier and more enjoyable. To load BASIC
PLUS type /BAS.LOADER.

The following is the list of new
commands and their syntax.

COMMAND	**SYNTAX**

APPEND £AP

This command will add a second basic program to the one already in memory by "appending" it. You will be asked for the name of the file that you want to append. ** NOTE ** Make sure that the appended file has its lowest line number GREATER than the highest line number of the original program. Pressing only RETURN as the filename aborts the append.

AUTONUMBER £AU,ST,INC

Begins supplying line numbers automatically, from a specified starting line (ST) and line increment (INC). NOTE: Pressing £AU ONLY will use the following defaults: ST=100 and INC=10. Pressing RETURN by itself on a line terminates the function. Subsequent usage of the £AU will continue from the next logical line number.

AUTODATA £AD,ST,INC

As above, except that "DATA" is printed after each line number. To terminate the function, simply backspace over the word "DATA", and press RETURN.

DELETE £DE,ST-FIN

Deletes a range of lines from ST(art) to FIN(ish).

DUMP £DUMP

After breaking from a program, DUMP will list all variables and their values used in the program

KILL   £K

Disengages BASIC PLUS.

MENU   £MENU

Brings up the *SUPER SNAPSHOT* SUB-SYSTEM
MENU. Choosing 6 from that menu returns
you to the point where the menu command
was invoked.

MERGE   £MERGE

You will be prompted for the filename of
the program that you want merged with the
program in memory. This command does a
true merge! Repeated line numbers will
be overwritten. Pressing only RETURN as
the filename aborts the merge.

OLD   £OLD

Restores a newed program.

PRINTON   £PRN

Diverts output from printer to screen.

PRINTOFF   £PRO

Restores output to screen.

RENUM   £RE,ST-FIN,NST,INC

Renumbers a range of lines (ST-FIN) with
a specified new starting number (NST) and
increment (INC). Also, £RE,NST,INC is
permitted.

TRACEON   £TRN

Enables trace feature. Prints program

line numbers at top right of screen as program executes. Excellent for debugging.

TRACEOFF   £TRO

Disables trace feature.

USING THE 1571

The 1571 is a great drive but, in our opinion, very rarely used to its full potential. Everyone knows that, when working with a C128, it has double the storage capacity of the 1541 since it utilizes both sides of the disk. What many 1571 owners don't know is that this drive can be used in the 1571 mode while working with a C64. Since *SUPER SNAPSHOT* has a set of fast communication routines installed to work specifically with the 1571 mode we felt it wise to list the various modes of the 1571, how to access them and what the results are. All the commands will be given as if issued from BASIC using the wedge.

>U0>M1 - sets the 1571 to 1571 mode. Both sides of the disk are utilized with storage being 1328 blocks. *SUPER SNAPSHOT* uses 1571 routines in this mode.

>U0>M0 - sets the 1571 to 1541 mode (defaults to this mode when working with a C64). Only one side of the diskette is used with storage being 664 blocks. *SUPER SNAPSHOT* uses 1541 routines in this mode.

>U0>H0 - same as U0>M0

>U0>H1 - same as U0>M0 except that the OPPOSITE side of the disk is being accessed. *SUPER SNAPSHOT* uses 1541 routines in this mode.

In ALL of these modes *SUPER SNAPSHOT* utilizes fast load and fast save routines.

** **NOTE** ** If you wish to use the 1571 mode in the file copier you must first set the drive in 1571 mode by using the >U0>M1 command.

ROM UPDATES

As was mentioned at the beginning of this manual, *SUPER SNAPSHOT* is designed to be an open ended system. What this means is that as changes and additions are made to the program, previous buyers will be able to update to the latest version. Information on price and availability are available from both SOFTWARE SUPPORT INTERNATIONAL and MARSHVIEW SOFTWARE. Call or write to:

In Canada..
MARSHVIEW SOFTWARE
P.O. Box 1212
Sackville, New Brunswick
CANADA E0A 3C0
1-506-536-1809 (ORDERS and SUPPORT)

In the US..
SOFTWARE SUPPORT INTERNATIONAL
2700 NE Andresen Road, Suite D13
Vancouver, WA 98661
1-206-695-9648 (SUPPORT)
1-800-356-1179 (ORDERS)

When returning your *SUPER SNAPSHOT*
for an update, we would strongly suggest
that you use a PADDED envelope. It
provides adequate protection at a
reasonable cost.

** PLEASE REMEMBER TO SEND IN YOUR
WARRANTY REGISTRATION CARD. IT IS THE
ONLY WAY WE HAVE OF INFORMING YOU OF
UPDATES! **

BBS SUPPORT

We have expanded our support network
to include a 24 hour Bulletin Board
Sevice. This BBS is called ONLINE
SERVICES and it is available to our
customers. What this means is that *SUPER
SNAPSHOT* owners now have a direct link to
LMS Technologies. If you should have a
question, comment, suggestion, etc. you
can quickly and easily reach us at
anytime. Usually if you leave a message,
be it a question or whatever, there will
be a response within 2-3 days or sooner.

Also this board will allow us to
update and/or add modules and make them
available to our customers. We would
also encourage those of you that have
written any custom programs, or
discovered new uses that you feel enhance
SUPER SNAPSHOT, to share them with other
owners through the BBS. Simply upload
them to the system and we will forward
them to the public area. Full credit
will be given to those that contribute in
this way. Other uses could be advice for
archiving particular programs using the
CODE INSPECTOR. The possibilities are
endless.

This BBS is a commercial system (pay for use) but *SUPER SNAPSHOT* owners may access the board free of charge. It is NOT owned or operated by LMS Technologies. You may make full use of the LMS section for reading messages, uploading files, downloading files, etc. all for no charge. You may browse through the rest of the board, both personal and business sections, but you do not have access to all the features. If you would like to become a member of this board, there is a $10/year membership fee. Subscription information is available on the BBS.

The BBS operates 24 hours a day and can presently handle eight callers simultaneously. Settings are 8/N/1 and baud rates can be 300/1200/2400. The phone number is 1-506-458-2651. We look forward to hearing from you.

WHAT'S NEXT?

Although we think that you will agree when we say that there has been a lot put into this cartridge, there is more to come. We have a number of modules under development and in the future you can expect to see updates that will include more useful utilities. Those of you who have updated with us before know that when we update, it is a worthwhile enhancement.

If you have any suggestions for additions or improvements to our product please contact us (through the BBS or letter), it would be greatly appreciated.

Send your comments to:

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SUPER SNAPSHOT designed and written by Marcel LeBlanc and Ron Smith

SUPER SNAPSHOT board layout by Cadmi Microelectronics Ltd.

Software, hardware and manual (c) 1987,88 LMS TECHNOLOGIES LTD.

Thanks to the following people for their contributions to this product:

Richard Bond for the TURBO*25 system, single file save option and enhanced TURBO DOS for the 1541.

John Finaly for the help in adapting our TURBO DOS to European systems.

Mike Miller (author of the BIG BLUE READER for the C128...a great program!) for his suggestions on TURBO DOS improvements.

Steve Boyko for the SPRITE MONITOR and SPRITE EDITOR (and Nick MacDonald for beta-testing).

Mark Smith for the BASIC PLUS module.

...and last but not least, the people who have helped LMS keep rolling on; Andrew, Virginia, Carmen, Marylynn, Nick and Calvin.

A special thanks to the folks at Kracker Jax for the development of the *SUPER SNAPSHOT* parameter copier, disk copier and for their continued input and support.

LIMITED WARRANTY

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