



FLIPPER 3

USER MANUAL

SCA Products
61 Ferringham Lane, Ferring, Worthing, West Sussex BN12 5LW

FOR THE AMSTRAD PCW

CONTENTS

HOW TO USE THIS MANUAL.....	3
BEFORE YOU START	4
TUTORIAL:	
GETTING STARTED	5
CHOOSING YOUR OWN SET-UP	8
MEMORY CONTROL	11
CHANGING YOUR MIND	15
SAVING DEFAULTS, SAVING ENVIRONMENTS	17
ERRORS.....	21

REFERENCE:

RELAUNCH	22
TRASH.....	22
LAUNCH	22
SAVE DEFAULTS.....	23
FLIPSAVE.....	23
FLIPLoad.....	23

APPENDICES:

A - WARNINGS.....	24
B - COMMON QUESTIONS	25

HOW TO USE THIS MANUAL

To many computer users, software manuals are like telephone directories: they're quite useful as reference works, but you wouldn't actually want to read one. Tempting though this approach may be, it really is a very poor way of getting to grips with Flipper 3. Quite simply, Flipper 3 isn't anything like other PCW programs so your computer "instincts" may well lead you astray. Even if you use and feel perfectly at home with earlier versions of Flipper, you may still find things very confusing without the manual to help.

If you're determined to work things out for yourself, you should at the very least make

sure that you read and understand Appendix A, "Warnings". However, you'll find the path much smoother if you simply work through the tutorial section of this manual. Taken together with the appendices and your disk's README files - README.LOC for Locoscript users, README.ASC for CP/M users - this should tell you all you need to know.

Once you've mastered the principles of Flipper 3, you can probably dispense with the manual for day-to-day use. If you are still unclear about any of Flipper 3's commands, the reference section should have all the information you need.

Flipper 3 software and manual
© 1991 Andy Wilton
© 1993 SCA Products

All software written in Z80 assembler using "RA",
Software Imperative's in-house development system.

All trademarks acknowledged

TUTORIAL

BEFORE YOU START

MAKE THAT BACKUP NOW!

Before you start working your way through this manual, it is absolutely vital that you make a backup copy of the relevant Flipper 3 master disk using either DISCKIT under CP/M, or Locoscript 3's "Disc copy" option.

You should already know how to do this from backing up the system disks supplied with your PCW.

It should be stressed that these are the only recommended ways of making a backup

copy of Flipper 3. Methods that work on a file-by-file basis (eg PIP) should not be used: as with CP/M and Locoscript 3 system disks, a Flipper 3 working disk contains special information that these methods won't copy.

Once you've finished backing up, put the original disk away in a safe place. From now on, the backup is referred to as your "working disk": this is the disk you should actually use from now on, going back to the original one only for a further copy if this one fails.

GETTING STARTED

Flipper 3 is an environment-switching tool. It splits an 8512, 9512 PCW10 or expanded 8256/9256 into two or more "environments" and lets you flip between them.

An environment is a complete machine-within-a-machine, consisting of a task - either the CP/M command line, a CP/M application, Locoscript 3, a Locoscript add-on program, or Software Imperative's FOREWORD - plus an M: drive and some crucial information about what state the task is in.

That last bit is the key to the whole exercise. When you flip from, say, Locoscript 3 to CP/M and back again, you'll find that Locoscript 3 is in exactly the same state as when you left it. If you flipped in the middle of editing a document - even if you were halfway through typing a word - that's where you'll be when you flip back. Locoscript 3 has been completely frozen in the meantime, whether you were away for a minute or an hour.

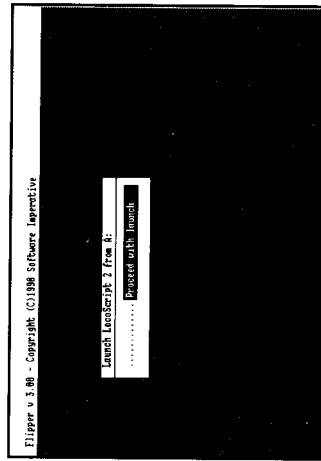
Let's get Flipper 3 booted up, so we can see this for ourselves. If you haven't already made yourself a Flipper 3 working disk following the instructions at the start of this manual, do so now.

LOCOSCRIPT & CP/M

The following example assumes that - like the vast majority of Flipper users - you are a Locoscript 2/3 user. If you don't have Locoscript 2/3, you may well find it instructive to follow the example on paper in any case. Don't try using Locoscript 1 instead: Flipper 3 only works with Locoscript v.2.16 or later.)

Switch your PCW on, and put your

Flipper 3 working disk into the A: drive. The screen will go black, and then grey/dark green, as different parts of Flipper 3 load from disk. Finally you'll get a screen display that looks like this:



Take the Flipper 3 working disk out of drive A:, and replace it with your normal Locoscript 3 start-of-day disk. When you've done this, hit the [ENTER] key. You'll see the screen go grey (or dark green) again, and you'll notice that the disk drive becomes active. This activity is simply Flipper 3 reading information from the Locoscript 3 disk.

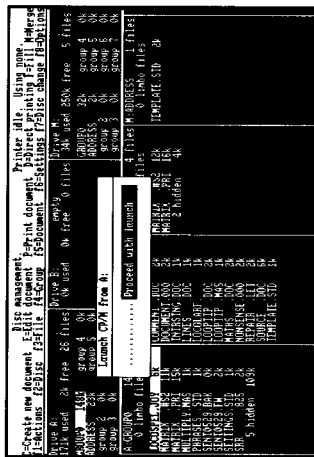
Once Flipper 3 has read all the information it needs, you'll notice the message "Launching..." appears in a bar across the top of the screen. There's a brief pause, and then the Locoscript 3 start-up screen appears. From here on, it's as if you'd switched the PCW on from cold and stuck your Locoscript 3 disk in straight away: the start-of-day sequence proceeds exactly as normal, ending up with the File Manager screen.

At this point you could be forgiven for thinking that Flipper 3 hadn't actually worked, and that you'd just booted Locoscript 3 as normal. There is almost no sign that anything unusual has happened: only the figures for used and free space on drive M: are out of the ordinary. (More about these a little later.)

In fact you haven't booted Locoscript 3: you've "launched" it as an environment. Flipper 3 is still hidden away in the machine and can be summoned up when needed, as we're about to see.

First, wait for the disk motor to stop running. Typically it'll keep going for 5 seconds or so after the File Manager screen comes up: you can hear it whirring away. Once it has stopped, take the Locoscript 3 start-of-day disk out of the A: drive, and hit [SHIFT]-[EXTRA]-[EXIT]. (That is, hold down the [SHIFT] and [EXTRA] keys and briefly hit [EXIT].)

This is the key sequence you'd normally use to reset your PCW. With Flipper 3 installed however, the result is quite different. You'll actually get a screen that looks like this:

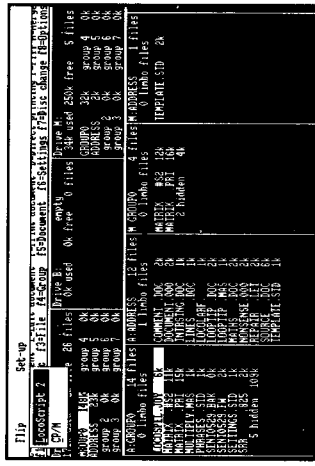


Now put a CP/M start-of-day disk in drive A: and hit [ENTER]. Once again you'll get a grey screen and some disk drive activity, followed by that "Launching..." message. This is then followed by the CP/M start-up screen. Depending on the start-of-day disk you chose, you may get an "A>" prompt with a cursor, or you may get various CP/M

screen with the message "Flipping..." in a band across the top. After a few seconds, the Locoscript 3 File Manager screen will reappear, exactly as it was when you first hit [SHIFT]-[EXTRA]-[EXIT]. Congratulations - you've just flipped!

Take a little time now to convince yourself that Locoscript 3 really is working properly: move the cursor around a bit, or hit [F7] to register a change of disks - you'll probably still have your CP/M start-of-day disk in the A: drive. (This isn't part of Flipper 3 use, but you'll probably find it reassuring.)

Once you're satisfied, check that the disk motor isn't running, and then hit [SHIFT]-[EXTRA]-[EXIT] to summon Flipper 3 up again. (You must always wait for the disk motor to stop before doing this: from now on it's assumed that you'll remember this.) Once again you'll see the bar and menu appear, like so:



Now we want to flip back to CP/M, completing our round trip. This time the highlight is in the wrong place. It's still positioned over "Locoscript 3", so hit down-cursor to move it onto the "CP/M" entry. Now hit [ENTER] and you'll get that "Flipping..." message again. After a few seconds you'll see the CP/M screen appear once more.

That's it for our first example: if you want to split your PCW half-and-half between Locoscript 3 and CP/M, you now know how to. A split like that won't suit a lot of people, however. The next chapter explains how to set Flipper 3 up differently.

BEFORE YOU GO ANY FURTHER

At this point, you may feel like leaving the manual for a while and actually using your newly-divided machine. This is fine, but there are a few restrictions you'll need to know about straight away:

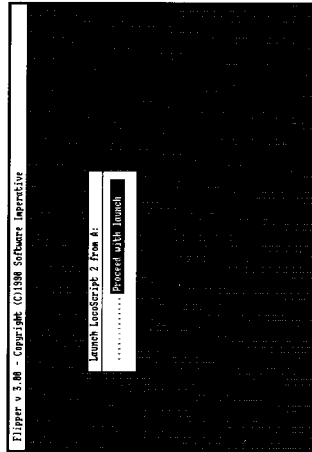
- 1: Don't flip while the disk motor is running.
- 2: Don't flip while the printer is active.
- 3: If you're using a hard disk drive, make sure you don't create or alter files on the same logical drive from different environments.
- 4: If you use a printer in one environment, you must reset it before using it in another environment.

If any of these sound like they might cause you problems, consult Appendix A, "Warnings", for further details.

CHOOSING YOUR OWN SET-UP

If you want more control over the way Flipper 3 divides your machine up, you'll need to know your way round menus and dialog boxes. Don't be put off by the sound of this. You got to grips with the "Flip" menu in the last chapter, and you'll find that Flipper 3's other list of options, the "Set-up" menu, works in exactly the same way. You've also met dialog boxes already, though you may not have recognised them at the time. Let's go back and take a look at one.

Switch your PCW on and put your Flipper 3 working disk in the A: drive. As before, you'll get a screen looking like this:

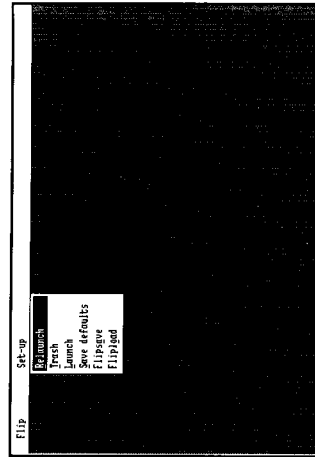


That light panel in the middle of the screen is a dialog box. It's called a "dialog box" because it's a way for Flipper 3 to give you information, and request instructions. In this case it's telling you "I plan to launch an environment from drive A:, and would like your approval". The highlighted "Proceed with launch" is the suggested answer: hit the [ENTER] key to select this, and Flipper 3 will go ahead and launch, as we saw in the last chapter.

Suppose we don't want to launch Locoscript 3 this time: how do we tell Flipper 3? Press the right-hand cursor key, and you'll see the suggested answer change to

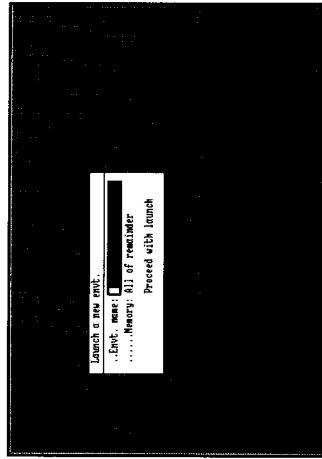
What you're looking at here is that initial grey screen, with a bar and "Flip" menu over the top. This time round there's only one entry, "<Nothing>", on the "Flip" menu. This is a dummy: if you try hitting [ENTER] to select it, you'll just get a beep to point out your mistake. You can't flip to anything yet, because you haven't actually launched anything.

Clearly the "Flip" menu is no use to us for the time being, so let's see what else is available. Press the right-hand cursor key and the "Flip" menu disappears. Slightly to the right a new menu, "Set-up", appears:



Where the "Flip" menu entries represented environments you could flip to, the "Set-up" entries are functions that alter the way Flipper 3 divides your PCW up.

For the time being we're only interested in the third entry, "Launch". Hit down-cursor twice to move the highlight onto "Launch", and then hit [ENTER] to select it. You'll now get a dialog box that looks like this:



This looks rather more complex than the simple proceed/abandon box we saw before, but it's really quite straightforward. The highlight starts off on the box's first option, "Name:". This option is simply a space for you to type in a name for the new environment you're launching. You can type anything you like, upper or lower case, up to 15 characters long: for now we'll be really boring and type "CP/M". Don't bother to hit [ENTER] or [RETURN] after you've done this. Just press the down-cursor key to move on.

Now the highlight should be on the second option, "Memory:". This is your chance to tell Flipper 3 how much memory it should give the new environment. It's a four-way choice. The first alternative, "All of remainder", wouldn't be very sensible here. After all, if we give all the PCW's spare memory to the first environment we launch, there'll be nothing left for any others. Splitting the PCW between one task is hardly going to impress your friends!

Press right-cursor once and you'll get the second alternative, "Half of remainder".

That's much more like it: select this alternative and Flipper 3 will launch the new environment in half of all spare memory, leaving the other half free for a second environment later on.

That's only two alternatives, and we learned earlier that "Memory:" was a four-way choice. If you press the right-cursor twice more, you'll see first "Fixed no. of blocks" and then "Fixed no. of K". These will come in handy later on but for now they're a bit too fiddly, so we'll stick with that "Half of remainder" alternative. (If you've been following this to the letter, you'll have to hit left-cursor twice to get it back on screen.)

Before you go any further, put a CP/M boot disk in the A: drive. Now hit [ENTER] and you'll see the highlight move down onto "Proceed with launch". This is like the option on the first dialog box you saw: it's just Flipper 3 checking that you really do want to go ahead.

This is a good opportunity for you to check that you've done everything right. If you want to change the name of the new environment, you can simply move the highlight back over it (using up-cursor) and make your alterations with the normal editing keys. If you want to change the amount of memory you're using for the new environment, you can move the highlight back over the "Memory:" option and alter the setting with left- and right-cursor presses. Or if you just want to abandon the launching process altogether, you can press right-cursor to select "Abandon launch" and hit [ENTER] to act on this.

Assuming you do actually want to go ahead with the launch (as in this case you do) and you've double-checked that you've put the right disk in the A: drive, you can hit [ENTER] a second time to start the launch process. As in last chapter's exercise, you'll see the screen go grey and the disk drive become active. The "Launching..." message follows, and finally you'll get the CP/M start-up screen. When you've reached the "A."

prompt and the disk motor has stopped, hit [SHIFT]-[EXTRA]-[EXIT] to call Flipper 3 up again.

This time, the "Flip" menu has a genuine option on it, "CP/M". This is the environment you've just launched. It appears on the menu as "CP/M" purely and simply because that's the name we picked earlier on. If you'd called it "Spreadsheet", "Kevin" or "Aardvark", that's the name you'd be looking at now. Flipper 3 really doesn't care what you call the environments you launch: the names are purely for your benefit, so you can remember which environment is which. (If you were feeling really perverse you could launch a CP/M environment called "Locoscript 3", or vice versa. Flipper 3 really doesn't pay attention.)

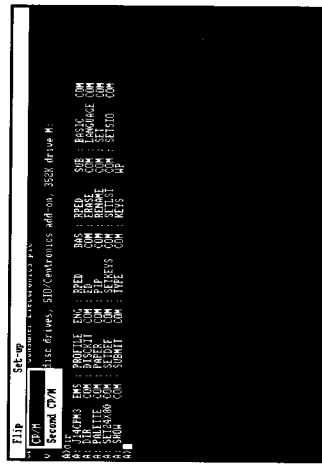
ENCORE!

Now we want to go through that launch process all over again, to create a second environment. Hit right-cursor to bring up the "Set-up" menu, and select "Launch" as before. When the dialog box comes up, type in "Second CP/M" as the name and change the memory setting to "All of remainder" using the left-cursor key. Check that you've still got that CP/M start-of-day disk in drive A.; hit [ENTER] to highlight the "Proceed with launch" option and then hit [ENTER] again to get things moving.

After the now-familiar launching process, you'll end up with a CP/M screen almost identical to the one from the first launch. The only difference you'll notice is the M: drive

part of the CP/M sign-on message: this time, M: gets 16K less memory. (We'll see the reason for this later.) For the purposes of this example it'd be handy to have a more obvious difference between the two CP/Ms you've launched. If you now type DIR and hit [RETURN], you'll produce a directory listing on the "Second CP/M" screen and thereby distinguish it from plain old "CP/M". In normal use of course, you'd be running different application programs on each side, so there'd be no trouble telling which one you were in at a glance.

If you now hit [SHIFT]-[EXTRA]-[EXIT], you'll see the bar and "Flip" menu reappear, like so:



Now the "Flip" menu offers the choice of two separate CP/M environments. Try flipping between them a few times just to reassure yourself that everything's working properly.

MEMORY CONTROL

In the last chapter we saw how to launch an environment using the "Set-up" menu, rather than relying on the automatic launch sequence of Chapter 1. We still haven't really taken charge of things yet: for complete control we'll need to use those last two memory options on the "Launch" box, "Fixed no. of blocks" and "Fixed no. of K". Let's take a look at these, making a note of some shortcuts along the way.

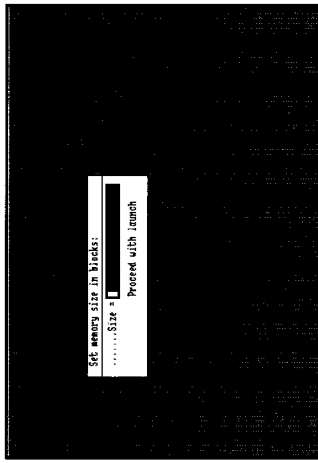
First you'll need to boot Flipper 3 up on your machine. Up till now we've done this by switching the PCW on and putting a Flipper 3 working disk in the A: drive. If your machine is already switched on from the previous example, there's a quicker way to do this: just put your working disk in drive A., and hit [SHIFT]-[EXTRA]-[STOP] to reset the machine. This is equivalent to hitting [SHIFT]-[EXTRA]-[EXIT] when Flipper 3 is not present.

You should now be looking at the "Launch Locoscript 3 ..." dialog box. We want to abandon at this point. You could just hit right-cursor to bring up the "Abandon launch" option and then hit [ENTER] to confirm this, but there's a quicker way: if you just hit the [CAN] key, Flipper 3 will abandon the launch without waiting for confirmation. This works from any option of any dialog box, so it's a handy thing to know about.

You should now be looking at the "<Nothing>" entry of the "Flip" menu. Hit right-cursor to bring up the "Set-up" menu. We now want to select "Launch". We don't need the cursor keys for this, however. By hitting the [L] key we can select the Launch function directly. The "L" of "Launch" is underlined to remind us of this. Each of the other menu entries can be

selected in the same way by hitting the underlined letter - "R" for "Relaunch", "T" for "Trash" etc.

You will now have the "Launch" dialog box up on screen. Type in "Small CP/M" for the name of the new environment, making sure that you include the semicolon. Then press down-cursor to highlight the "Memory" option, and hit right-cursor till the alternative "Fixed no. of blocks" comes up. Now hit [ENTER] twice. Instead of starting the "Launch" process, this will bring up another dialog box, like so:



Why the extra dialog box? Well, when you used "Launch" last chapter you picked either "All of remainder" or "Half of remainder" as your "Memory" setting. Both of these tell Flipper 3 exactly how much memory to launch the new environment in. This time you picked "Fixed no. of blocks": Flipper 3 still needs to know what fixed number you had in mind. That's what this dialog box is asking you.

Type in the number 12, and hit [ENTER]. Now check that you've got a CP/M boot disk in drive A.; and then hit [ENTER] again. This time, the launch process starts.

BUT WHAT'S A BLOCK?

Round about now, you're probably wondering what that number 12 actually meant. Well, a PCW's memory is divided up into blocks of 16K - that is, of around 16,000 characters each. When Flipper 3 launches a CP/M or Locoscript 3 environment, it takes a certain number of these 16K blocks from your PCW's total and sets them aside for the new environment to use. In this case, you told it to give "Small CP/M" 12 blocks - that's 12 x 16K = 192K of memory in all.

By now you should have CP/M's start-up screen in front of you and as you'll see, it only registers an M: drive of 48K - 3 blocks, in other words - leaving 9 blocks (144K) unaccounted for. (These "missing" blocks are in fact used by CP/M for its own purposes. Every CP/M environment takes up 9 blocks over and above however many it gives its M: drive, a point worth bearing in mind at "Launch" time.)

If you now hit [SHIFT]-[EXTRA]-[EXIT], you'll get the "Flip" menu with its single entry "Small CP/M". Notice that the "S" of "Small CP/M" is underlined. Remember how you actually typed the name as "Small CP/M"? Well, a semicolon in an environment name has a special meaning to Flipper 3. It means "underline the next letter when you display this name on the "Flip" menu", and since the next letter in this case was the "S", that's just what Flipper 3 has done here. Why is the underlining important? We'll see that in a moment.

First we want to launch another CP/M environment. Select the "Launch" function again and type in the name ";Big CP/M". (Once again, make sure you remember the semicolon.) Now highlight the "Memory:" option and change it to "All of remainder" using left-cursor. Check that there's a CP/M start-of-day disk in drive A.; hit [ENTER] twice and the launch process will start again.

When you reach the "Big CP/M" start-up screen, you'll see it is indeed a good deal larger than its predecessor. (On a plain 512K

PCW you'll have a 160K drive M.; and the figure will be correspondingly higher on expanded machines.) Now hit [SHIFT]-[EXTRA]-[EXIT], and take a look at the "Flip" menu. Notice how the "B" of "Big CP/M" is underlined: this is the semicolon at work again. The point of all this is that underlined letters on the "Flip" menu work just like the ones on the "Set-up" menu - they let you select entries directly.

For example, if you hit [S] now, you'll flip to "Small CP/M". Try this. When you reach "Small CP/M", hit [SHIFT]-[EXTRA]-[EXIT] again. Now press [B] and you'll flip back to "Big CP/M".

LAUNCHING MORE ENVIRONMENTS

So far we've only looked at set-ups which divide a PCW into two separate environments. If you've got a basic 512K PCW - this is probably as much as you'd want anyway. While CP/M can theoretically be

squeezed into as little as 10 blocks of memory, and you have 32 blocks in all, a set-up of three tiny CP/M environments would be of little practical value. (The situation is even worse than the figures would suggest: Flipper 3 itself occupies one 16K block of memory, so you've only got 31 free to launch environments in.)

Once you add extra memory in the form of an SCA Rampack, CT Rampport or whatever, the picture changes. On a 1024K machine you have 63 blocks (1008K) free, so you can easily fit in a good-sized Locoscript 3 and a couple of workable CP/M's. With larger machines than this, you might even decide to try a four- or five-way split. Flipper 3 can theoretically cope with up to eight environments at once, which should be enough for anyone.

There's no special procedure for launching more than two environments: you just use the same sort of techniques we've

already used in this chapter. Let's take a quick look at an example for a 1024K machine.

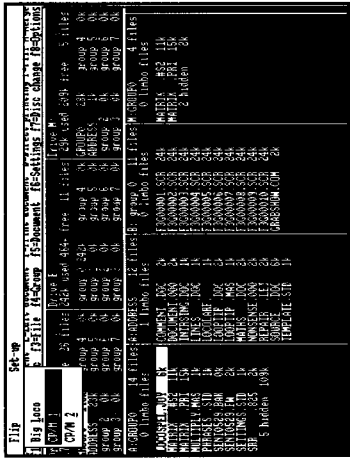
Suppose you want the sort of set-up we described earlier: a large Locoscript 3 and two small CP/Ms. Having booted Flipper 3, you hit [CAN] to stop the automatic launching process. Next you select "Launch..." from the "Set-up" menu, type in the name "Big ;Loco" and set "Memory:" to "Fixed no. of blocks". Pressing [ENTER] twice brings up the second dialog box. How much memory do you want to give Locoscript 3? Well, a whole (unexpanded) 8512 or 9512 has 32 blocks and we don't quite need that much memory, so we'll try 28 and see how that works out. (If you're a heavy user of extra fonts, printer drivers and user dictionaries, you might well lean the other way and allocate 36 blocks or so: it's up to you.) You now pop a Locoscript 3 start-of-day disk in A.; hit [ENTER] twice and watch the launching process.

From the Locoscript 3 File Manager screen you then hit [SHIFT]-[EXTRA]-[EXIT] to call up Flipper 3. Selecting "Launch" again, you type in the name "CP/M ;1" and set memory to "Half of remainder". You put a CP/M start-of-day disk in A.; hit [ENTER] twice, and the first of the CP/M environments launches.

Once you've reached the CP/M "A:" prompt you hit [SHIFT]-[EXTRA]-[EXIT], and select "Launch" one last time. You use the name "CP/M ;2" this time, set memory to "All of remainder" and hit [ENTER] twice (not forgetting to check that the CP/M disk is still in the A: drive, of course). This launches the third and final environment. When you now hit [SHIFT]-[EXTRA]-[EXIT], you'll see that the "Flip" menu has three choices on it. Hit [L] and you'll flip to "Big Loco", hit [1] and you'll flip to "CP/M 1", or hit [2] and you'll drop straight back into "CP/M 2".

This is very much the style you'll want to use when setting up four or more environments: launch the demanding ones first, setting their memory allocations using a

"Fixed no." option. You can then use "All of remainder", or "Half..." followed by "All..." to mop up the left-over blocks.



HOW MUCH IS ENOUGH?

Of course, the real problem is knowing how much memory an environment will need. You may know that CP/M always needs at least 10 blocks, while Locoscript 3 typically demands a minimum of 12 or 13, but in practice these figures won't normally be adequate.

Let's consider Locoscript 3 first. After the initial 12 or 13 blocks (192 or 208K) taken up by Locoscript 3 itself, memory is set aside for add-on programs like LocoFile and LocoMail. Typically these will take a block each. (Check your installation guide for details: remember, 1 block = 16K.) Remaining blocks are then used to form the M: drive. Files will be copied onto this during the start-up sequence. These may be printer drivers, dictionaries or other important parts of the Locoscript system, so you could be in trouble if the M: drive is too small to take them. (They can be very large: the main LocoSpell dictionary takes 10 blocks in its own right)

Even when you've allowed for all of these, that's not quite the whole story. Locoscript 3 uses the M: drive for temporary files during the editing of documents. If you want to edit a large document, you'll need plenty of free space on M:; if you're only planning to work on single-page letters on the

other hand, you can afford to tailor M: much more closely to the permanent files needed there.

The upshot of the above is that a full-blown, trouble-free Locoscript environment will demand a lot of memory - 30 blocks would not be over-generous. By trimming extras off your start-of-day disk you should be able to get down well below the 20-block mark, but this will mean sacrifices - Locospell is out for starters - and you'll still be pressed for space on a 512K machine. Set-ups with more than one Locoscript environment really are the preserve of expanded-memory machines.

The typical CP/M situation is a lot simpler. As mentioned above, CP/M takes 9 blocks for itself and forms an M: drive out of the remainder. Some CP/M applications don't care about the M: drive at all, and could theoretically run in a 10-block environment. The majority like to have some M: drive space available for frequently-used files or temporary storage, but this kind of

requirement is usually quite modest. A 16-block environment will generally be plenty here.

Not all applications are so docile, however. Two very popular titles, Mini Office and Microdesign II or III, both demand environments of at least 32 blocks (512K). If you give them less, they may very well overflow their quota and start using memory they aren't entitled to. This almost always crashes the machine. Sadly, this means that neither program will run under Flipper 3 on a 512K machine.

More surprisingly, some programs have maximum as well as minimum requirements. Older programs in particular may have problems using more than 32 blocks, and many CP/M programs start to misbehave once M: gets really large. You need to allocate 80 blocks (1280K) or so before this really becomes pronounced, so most users won't have to worry about it. To be boringly practical, most applications can't do anything useful with that much memory anyway.

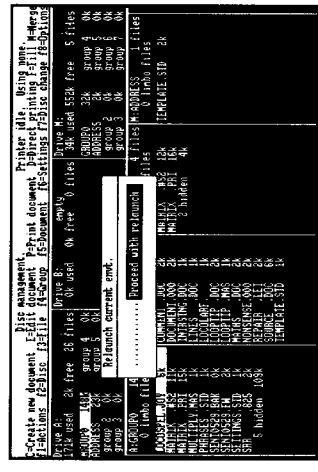
1 block = 16 K
2048 K = 128 blocks
Flipper 1 block

CHANGING YOUR MIND

If you've followed the manual carefully up till now, you should know how to set your machine up the way you want it at the start of a session. But what if you make a mistake in this process? What if you launch off the wrong disk? What if you divide memory up one way, and then find you actually need a different split? Flipper 3 makes provision for cases like these.

For example, suppose you try launching an environment called ";Huge CP/M", allocating it all remaining memory. You hit [ENTER] twice, watch the launch process, and then curse bitterly when the Locoscript 3 start-up sequence appears on the screen. Yes, you forgot to check which disk was in the A: drive before hitting [ENTER]. Now you'll have a huge Locoscript 3 which is (a) horribly misdescribed on the "Flip" menu and (b) surplus to requirements.

Don't worry - there's a Flipper 3 function designed for just such a situation. Hit [SHIFT]-[EXTRA]-[EXIT], move to the "Set-up" menu and select "Relaunch". You'll get a dialog box looking like this:



Now, if you take that Locoscript 3 start-of-day disk out of the A: drive, replace it with a CP/M one and hit [ENTER], Flipper 3 will launch

"Huge CP/M" again. It doesn't ask you for any "Launch"-type information first, because it's just re-using the name and memory size you used before.

The "Relaunch" function also comes in handy if you launch using the wrong version of Locoscript 3, say, or if you get things in such a mess that you'd normally just reboot the machine and start from scratch.

Rebooting has pretty drastic consequences for the Flipper 3 user, wiping out any other environments that may have been launched, but relaunching only affects the current environment - the one visible behind the Flipper 3 menus, that is.

TRASH

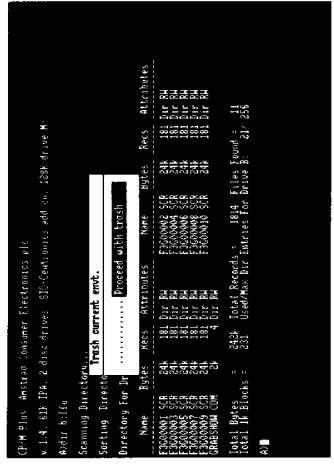
"Relaunch" is all very well, but it has its limitations. Because it uses the same name and memory allocation you specified in the original "Launch" box, "Relaunch" can't actually change the way you've set your machine up. On machines with more than 512K, that can be very restrictive indeed.

Say you have one big Locoscript 3 ("Big Loco") and two small CP/Ms ("CP/M 1", "CP/M 2") set up on a 1024K PCW. In normal Flipper 3 style, you launched the last of these using a memory setting of "All of remainder", so

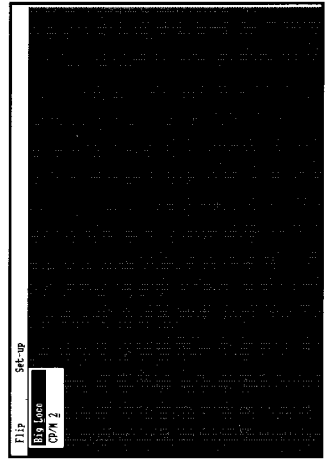
there's no free memory in the system. In the middle of editing a Locoscript 3 document, you flip to the "CP/M 1" environment. You want to run a database there, but when you try you discover the M: drive isn't large enough.

"CP/M 2" is free, but it's the same size as "CP/M 1" so the database won't run there either. What you really need is a CP/M as large as the two existing ones put together - but how do you get that, without completely rebooting the machine, and thereby losing your Locoscript 3 work?

The command you need is "Trash". If you summon Flipper 3 up by hitting [SHIFT]-[EXTRA]-[EXIT] from within "CP/M 1", and then select "Trash" from the "Set-up" menu, you'll get a dialog box like this:



This is purely a safety measure: like "Relaunch", "Trash" always operates on the current environment - the one you can see on screen - so it doesn't actually need you to tell it what you want trashed. Hit [ENTER] to confirm that you really did mean to select "Trash", and you'll wind up with a display like this:



You've now thrown "CP/M 1" away. It's completely gone: Flipper 3 no longer lists it on the "Flip" menu. The memory "CP/M 1" used to occupy is now free for re-use. You could launch a new environment in its place if you wanted, but that wouldn't get you very far: at most it'd only be the same size as "CP/M 1" and that was too small, remember?

SAVING DEFAULTS, SAVING ENVIRONMENTS

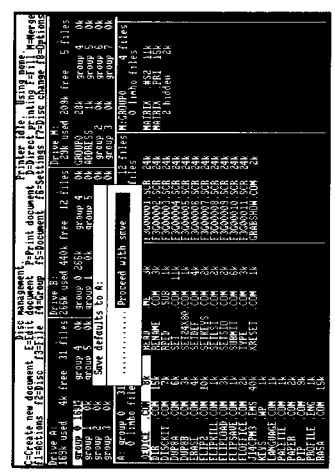
Before we go any further, one point really needs stressing. The manual so far has assumed that you're working with a duplicate of your Flipper 3 master disk, rather than the master disk itself. Human nature being what it is, many people read this kind of thing in manuals and then blithely continue working with the master disk. Most of the time, they'll get away with doing so. Barring a power cut or a freak disk fault you could easily have come this far without making a working copy, and not suffered as a result. For this next section, you really must have a working copy rather than the master. If you don't, you'll only have yourself to blame when you hit trouble.

With the skills you've learned so far, you should have no trouble working out the sort of set-up you want. If you don't fancy sitting down and planning things out on paper, "Trash" and "Launch" let you get there by trial and error. Eventually though, the chances are you'll settle on one set-up that suits your needs 99% of the time. The next thing to do is save this as the default set-up for your working copy.

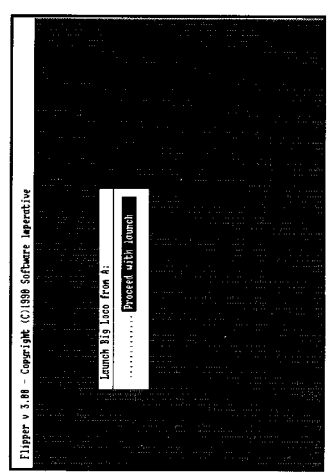
What does this mean, "default set-up"? Well, every time you've booted Flipper 3 from your working copy up till now, it's tried to launch an environment called "Locoscript 3" using half of your machine's memory, followed by one called "CP/M" using the remainder. Where that hasn't been what you wanted, you've had to hit [CAN] at the first dialog box. This half-and-half "Locoscript 3"/"CP/M" split is your working copy's "default set-up": that is, it's the way your working copy assumes you want things set-up, until you tell it otherwise.

Your object now is to replace this assumed set-up with your own "99% of the time" set-up, so that your working copy boots up trying to launch the environments you normally need.

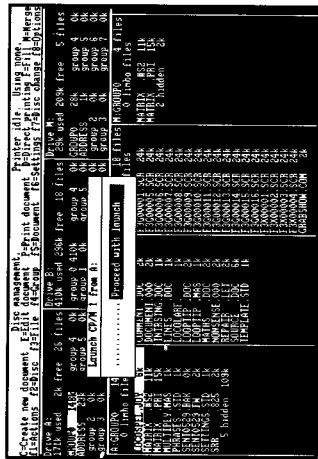
Let's suppose you've set your machine up with that "Big Loco", "CP/M 1", "CP/M 2" division from previous examples. To make this the new default set-up, put your working copy of Flipper 3 into drive A:, making sure that it is write-enabled (ie. that the write-protect holes are closed). Then select "Save defaults" from the set-up menu. You'll get a dialog box like this:



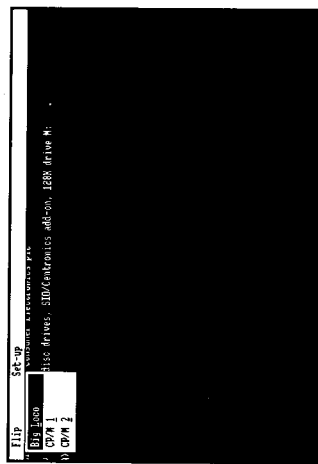
Hit [ENTER] and you'll see the A: drive become active very briefly. This activity is Flipper 3 writing the new default set-up to your working copy. If you now reboot your machine by hitting [SHIFT]-[EXTRA]-[STOP], you'll find that the opening screen now looks like this:



Notice the change of name? Flipper 3 is acting on your new default set-up. Put a Locoscript 3 start-of-day disk in A:, hit [ENTER] and "Big Loco" will launch. Once the File Manager has come up and the disk motor has stopped, hit [SHIFT]-[EXTRA]-[EXIT]. You'll now get a dialog box like this:



Put a CP/M start-of-day disk in drive A:, hit [ENTER] and "CP/M 1" will launch. Go through the same procedure again, and now "CP/M 2" will also launch. Once you've done all of this, you can hit [SHIFT]-[EXTRA]-[EXIT] one more time to get this display:

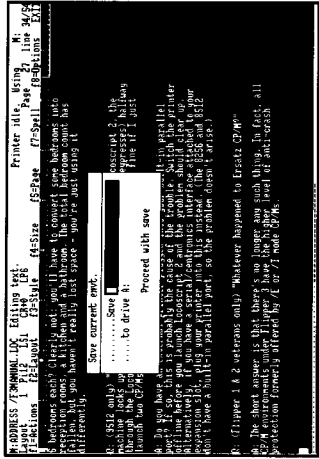


You've now got the exact set-up you wanted, without having to type any names or specify any memory allocations. This is what you'll get every time you boot off this working copy, unless you hit [CAN] instead of [ENTER] at that first dialog box.

You can change the default set-up as many times as you like, though repeatedly

be aware that it is aimed at the more experienced user. Flipsaving is not a mainstream part of what Flipper 3 does, and PCW novices would do well to give it a miss until they've found their feet.

Enough warnings: on with the example. From within "Big Loco" hit [SHIFT]-[EXTRA]-[EXIT], bring up the "Set-up" menu and select "Flipsave". You'll get a dialog-box like this:



The first option is a space for you to type in a filename. This is the name Flipper 3 will use to save "Big Loco" under. It can be any combination of upper-case letters and digits, up to a maximum of eight characters: if you type lower-case letters, they'll automatically come out as upper-case. For now, just type "BLSAVED", and hit down-cursor to select the second option. This is where you indicate whether Flipper 3 should save "Big Loco" on your machine's A: or B: drive.

In general, 8256 and 8512 owners won't be able to save on A: because there just isn't room on a CF-2 (180K) disk for an average-sized environment file. If you've got an 8256 with extra memory but no second drive, you're stymied at this point. Otherwise, select B: and read on. If you've got a 9512, A: is fine and so's B:, if you've got it fitted. (On all PCs, the choice is solely between A: and B: drives on the current Flipper 3. Unless the Flipper 3 README file says different, you can't "Flipsave" to a hard drive.)

Having made this choice, you should now put your chosen data disk in the appropriate

drive. This data disk will need a lot of free space - at least 2K more than the current environment takes up. In other words, if "Big Loco" takes up 560K you'll need at least 562K free on your data disk. It's best in fact to save on a completely blank disk, which you've formatted (under Diskit or Locoscript 3's File Manager) but never used. If you must break this guideline, make sure you don't use a disk you've saved Locoscript files on. (It's worth noting from the above that really large environments - anything much over 700K / 43 blocks - can't be saved at all, since no blank disk can have that much space free.)

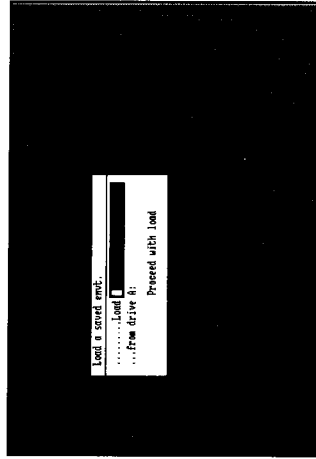
With all of this done - name typed, drive chosen, disk chosen, disk placed in drive - you're now ready to proceed. Hit [ENTER] twice, the dialog box disappears, and the saving process starts. It can take quite a while for Flipper 3 to save an environment - 45 seconds or a minute would be quite typical - and there's no "Flipsaving..." message on screen to comfort you. Don't worry: if all goes well, you'll presently get the bar and "Flip" menu back again, as if nothing had happened.

You can now check your data disk using CP/M's DIR command, the Locoscript 3 File Manager, or whatever equivalent you prefer. You should find a large file called BLSAVED.F3S in group 0 of your data disk. This is a disk copy of "Big Loco" frozen at the exact point you left it. Congratulations - you've saved an environment. But how are you going to get it back?

Let's pretend that you've left the machine for a few days. Take all the disks out of your machine, switch it off and leave it for 30 seconds or so. This will give the memory chips time to completely discharge, so there's no trace left of Flipper 3 or the environments set up under it. (This is so you'll know that the example has really worked - it's the PCW equivalent of a conjuror rolling his sleeves up.)

Now switch on again, boot up Flipper 3 and hit [CAN] at the first dialog box, so your left with a grey screen and "<Nothing>" on the

"Flip" menu. Now bring up the "Set-up" menu and select "Flipload". You'll get a dialog box like this:



The options here are just like the ones on the "Flipsave" dialog box. Type in "BLSAVED", select A: or B: as appropriate, and put your data disk in the chosen drive. Now hit [ENTER] twice, and you'll see the loading process start.

Almost at once, the screen will go completely blank. It will stay this way throughout the loading process. After 45 seconds, a minute, or however long this takes, you'll automatically flip into the loaded environment. If everything's gone to plan you should now be looking at the editing screen of "Big Loco", at the precise spot where you originally left off.

Now hit [SHIFT]-[EXTRA]-[EXIT] and you'll call up the "Flip" menu as usual. The point to note is the name of the environment: it is now called "BLSAVED" - the filename you chose - rather than "Big Loco".

PROBLEMS, PROBLEMS

If you follow this particular example through on your PCW, there's one point in particular that you'll have to watch. The new "BLSAVED" environment really is an exact, perfectly frozen copy of the original "Big Loco". It has no idea that any time has passed since you first hit [SHIFT]-[EXTRA]-[EXIT] and selected "Flipsave". Because of this, "BLSAVED" expects to find the machine still set up exactly as it was for "Big Loco", right down to the last

detail. This can have some nasty side effects for the unwary.

For example, suppose you created a document on drive A: and typed in a thousand words or so. With the document still open you then pressed [SHIFT]-[EXTRA]-[EXIT], went through the "Flipsave" procedure above, and finally switched the machine off. Now, a week later, you've booted up Flipper 3 and flopped "BLSAVED" as above. You type in another couple of sentences, hit [EXIT] and select "Finish editing". (For non-Locoscrypt people, this simply closes the document you're currently editing.) What happens?

Well, unless you've been careful or just plain lucky, Locoscrypt 3 will refuse to close the document. It'll tell you that you've changed the disk in A:, and insist that you either put the right disk back in or discard the whole of the document. No trouble, you say to yourself: I'll just figure out which disk I was working on, and pop it into the A: drive as instructed.

You could still get lucky at this point - you might be able to find the right disk and finish your editing session successfully - but there's a fair chance that the right disk just doesn't exist anymore. If you've altered the contents of that A: drive disk at all, eg. by creating or erasing files on it, Locoscrypt 3 may well not recognise it as the same disk. Then what do you do?

Clearly, the trick is not to get into this kind of situation in the first place. You could bag up the saved environment disk together with any other relevant data disks, and then put the whole package away somewhere safe. You could make it a rule not to flipsave while editing. Or you could simply do your editing on the M: drive which, being part of the environment, is saved as part of the BLSAVED.F3S file.

It's not just disks that can trip you up. If you add or remove interfaces between sessions, you can run into trouble that way. The moral is, think things through carefully if you want to keep flipsaved environments over any length of time.

ERRORS

In Flipper 3 use as in the rest of life, things don't always go as planned. Up till now we've assumed that you've made no mistakes at all, or at least that you've spotted them before selecting the "Proceed with..." option. This will not always be the case, of course.

In general, when trouble arises you'll get a dialog box on screen telling you what went wrong. Flipper 3 is a very tight fit in memory, so there isn't room for a lengthy explanatory message: you may have to do a bit of detective work to tell what caused the problem.

For example, the message "ERROR: Launch failed" could mean that the A: drive is empty, that the disk in A: is not a start-of-day disk, or that it is faulty in some way. The first two are easy enough to spot, but the third

may require the use of the Verify facilities of Diskit or Locoscrypt 3's File Manager: if you try this and get a "Missing address mark" message or similar, that'll be what tripped Flipper 3 up.

To take another example, neither "Save Defaults" nor "Flipsave" will work if the disk in question is write-protected. It's up to you to track that down as the source of the problem: "Flipsave" could just as well have run out of disk space, and either operation could fall foul of a disk fault, so check for these conditions as well.

Once you've understood the problem, you'll want to get rid of that "ERROR:..." dialog box. To do this, just hit [ENTER] or [CAN]. (The highlighted option isn't really an option at all: you have to abandon a procedure once an error has occurred.)

REFERENCE

RELAUNCH

This option restarts the current environment from scratch, using its present name and memory allocation.

TYPICAL USES:

You launch from a Locoscript 3 disk when you actually wanted a CP/M environment:

You launch a Locoscript 3 environment and then realise you've used the wrong start-of-day disk, so your favourite printer driver / user dictionary (or whatever) is missing:

You get an environment so messed up that, if it were the only thing running on the machine, you'd simply reset and boot up all over again - but now you have other environments in memory, and don't want to lose them.

OPTIONS:

None - just select from the menu, put the appropriate start-of-day disk in A:, and hit [RETURN].

ERRORS:

"Launch failed" - disk errors, no disk in A:, disk in A: isn't bootable - the original environment is trashed (see below).
 "No current environment" - a Relaunch following Trash or a failed Launch / Relaunch operation is an error.

TRASH

This option permanently discards the current environment, returning its memory allocation to the pool. After a Trash operation, FLIPPER 3 presents a blank ("grey") screen background until you next flip to (or launch) another environment. In this state, FLIPPER 3 doesn't consider any environment to be "current": if you try to Trash again, or perform any other "current environment" operation, you'll simply get an error box.

TYPICAL USE:

You no longer need two of the three small CP/M environments you originally launched, and would like to free the memory for a large Locoscript 3 environment instead.

OPTIONS:

None.

ERRORS:

"No current environment".

LAUNCH

This option launches a new environment, drawing the necessary memory from the pool.

saves you having to think of a number and divide by 16. It doesn't actually give you finer control over memory size. For technical reasons, you can only ever allocate whole blocks to an environment.)

ERRORS:

"Launch failed:" - disk errors, no disk in A:, disk in A: isn't bootable - the machine is left with a blank screen and no current environment, as if a Trash operation had taken place.
 "Insufficient memory:" - either there are too few memory blocks left in the pool, or the specified amount of memory is too little to launch an environment (or in very rare cases, both). You must allocate at least 10 blocks (160 K) to any environment, and Locoscript 3 generally needs more, it's best to allocate at least 12 in all cases just to be on the safe side, but FLIPPER 3 won't police this higher limit.

SAVE DEFAULTS

This option saves the names and memory allocations of all environments currently in use. They are saved to a working copy of FLIPPER 3 in place of the previous default settings, so that the next time you boot from the working copy, FLIPPER 3 will attempt to set the machine up as it currently is.

TYPICAL USE:

After much trashing and launching, you've finally settled on a set-up with two small CP/Ms called "Database" and "General CP/M" (16 blocks each), and a large Locoscript 3 environment called "Loco" (allocated all remaining memory). You'd like your machine set up this way every day from now on.

OPTIONS:

None - just put a working copy of FLIPPER 3 in drive A: (ensuring that it is write-enabled) and hit [RETURN].

ERRORS:

"Save failed" - disk errors, drive not ready, disk write-protected - the old default settings will remain in effect. NB FLIPPER 3 will not check whether the disk in A: really is a working copy. Saving to your master disk, or to a non-FLIPPER 3 disk, is very inadvisable.

FLIPSAVE

This option saves the current environment - the entire environment, M: drive and all - as a file on floppy disk. The file (which will be very large indeed) can subsequently be reloaded using the Flipload option below.

TYPICAL USE:

You're in the middle of a really complex piece of work, with the application program and its M: drive set up exactly as you want them, when you're called away. You'll be gone hours or even days, and the machine's running hot as it is, so you can't leave everything switched on - but you'll go mad if you have to go through all that setting up again.

OPTIONS:

Name: This is simply a space for the filename you want your environment saved under. As usual, this can be up to eight characters long. Only letters and digits are allowed: letters are automatically converted to upper case. The extension .F3S is added to this filename before the save process starts.

Drive: You can save the environment to either A: or, by pressing right-cursor once, B: - hard drives are not supported as yet, if your machine is an 8512, you'll almost certainly want to select B: on space grounds. Once you've made your choice, put a write-enabled disk in the appropriate drive and hit [RETURN] twice.

ERRORS:

"Save failed" - disk errors, drive not ready, disk write-protected. Typically the disk in question is full. FLIPPER 3 may leave a half-finished environment file on the disk in some cases: it's a good idea to erase this using the CP/M ERA command or the Locoscript 3 file manager. If the disk isn't full or write-protected, you should check if for faults using the Verify option of DISCKIT or the Locoscript 3 file manager.
 "No current environment" - speaks for itself.

FLIPLoad

This option loads an environment previously saved to floppy disk using Flipsave.

TYPICAL USE:

Reloading the complex application set-up saved in the Flipsave example above.

OPTIONS:

As for Flipsave.

Once you've set the options and hit [RETURN] twice, the screen will go blank for the duration of the loading process. Once the environment has loaded successfully, you will automatically flip to it.

ERRORS:

"Insufficient memory:" - you must have at least as many blocks of memory in the pool as were allocated to the environment when it was saved. Though Flipload is rather like Launch in some respects, you have no control over the environment's size.

"Load failed" - disk errors, drive not ready - a failed Flipload leaves the machine in a blank, post-Trash state.

NB: Flipload only works on .F3S files created by FLIPPER

3's Flipsave option. It cannot load files created by the FLIPSAVE.COM utilities of earlier FLIPPER versions. For safety's sake it's best to avoid using the extension .F3S for your own data files.

APPENDICES

A - WARNINGS

The following are important restrictions that you must observe while using Flipper 3 on your PCW, along with estimates of the likely outcome should you choose disregard them.

1: Don't flip while the disk motor is running.

Typically, breaking this rule won't actually have any ill effects, other than leaving the motor running unnecessarily for long periods of time, and consequently shortening its life expectancy a little. Theoretically it could crash your machine, but in practice it never seems to. (The term "crash" has nothing to do with physical damage: it simply means a loss of control severe enough that you are forced to switch your machine off. Apart from losing any work in progress, a crash causes no lasting harm.)

2: Don't flip while the printer is active.

Here, "the printer" referred to is the one that came with your PCW, ie the 8256/8512's dot matrix printer or the 9512's daisy-wheel. If you flip while this is active, you could theoretically crash your machine or even cause physical damage to the printer. In practice you'll usually just make a mess of the print-out, but most people find that bad enough in itself.

3: If you use a printer in one environment you must reset it before using it in another environment.

This restriction applies to the same printers as above. Once again, there's a theoretical possibility of crashing or physical damage if you fail to observe it. To be on the

safe side, you should reset the printer both before and after flipping. (To reset the printer under CP/M, hit [PTR] followed by [STOP]. Under Locoscript 3 you should hit [PTR] followed by [F1], and select "Reset printer" from the resulting menu.)

With "external" printers, things are slightly different. If you have a printer attached to the parallel port of a 9512, you may find it misbehaves (or even crashes your machine) if you try printing from two different environments. In general this will only happen if one of the environments is CP/M and the other is Locoscript 3. You may even get this effect if two different environments send printer initialisation strings on boot-up. For this reason, it's best to switch such a printer off-line before launching environments. (NB there is no risk of physical damage with parallel-port printers.)

None of the above applies to an external printer attached to the Centronics port of a serial-parallel interface. You can freely print to such a device from any combination of environments without risking a crash or physical damage. Indeed, once the PCW has finished sending a piece of text to a Centronics port printer you can flip straight away, without even waiting for the text to finish printing out. (In CP/M it's a job to know when the sending has finished, but in Locoscript 3 you'll get a "Printer idle" message.)

4: If you're using a hard disk drive, make sure you don't create or alter files on the same logical drive from different environments.

Suppose you have a Vortex hard drive partitioned as drives C:, D:, E: and F:, and that you split your machine between CP/M

(running a database) and Locoscript 3. You alter several data files on drive C:, and then create a new Locoscript 3 document also on the C: drive. When you come to use those database files again, you may well find they are corrupted (ie the database refuses to recognise them, or shows them to be full of meaningless rubbish). The problem is that CP/M and Locoscript 3 both tried to claim the same piece of blank C: drive to store information on, the result being that Locoscript 3 wrote its new document over the top of the altered database files.

Avoiding this sort of thing is simple: if you want to alter or create files on a hard disk from more than one environment, use different logical drives (ie C:, D: etc). If you'd set your database files up on C: and created the new Locoscript 3 document on D:, for example, there wouldn't have been a problem. NB the restriction only applies to creating or altering files: you can read a file (eg with Locoscript 3's "insert text" function) from any logical drive you want.

5: Always make backups of important data, including the Flipper 3 master disk. The programmer, publisher and retailer of Flipper 3 cannot be held liable for loss of or damage to data, software or hardware caused by it. (This does not affect your statutory rights.)

6: Don't rename the .EMS files on your start-of-day disks: Flipper 3 relies on Locomotive's file-naming conventions to distinguish between Locoscript 3 and CP/M.

B - COMMON QUESTIONS

Q: This manual only covers Locoscript 3 and CP/M. What about (for example) Money Manager?"

A: Often, people use CP/M without realising it. If you normally start an application program by switching your machine on and putting a program disk in drive A:, whereupon the application program runs automatically, it's very likely that the program disk in question is really a CP/M start-of-day disk. If you watch as the machine boots up, you should see the CP/M start-up message appear before the application program gets going. This is certainly true of a Money Manager working disk, and there are many other application programs that work the same way.

If you want to run such a program under Flipper 3 you can just follow the tutorial instructions for launching a CP/M environment, making sure that the CP/M start-of-day disk you use is the Money Manager (or whatever) working disk you'd normally boot off.

Q: "What about (for example) Batman?"

A: Most self-starting program disks are really CP/M start-of-day disks, but there are exceptions. These are self-contained programs that run without the aid of CP/M. Most programs in this category are games. Batman being a leading example. In general these programs expect to have the machine to themselves, and will not work with Flipper 3 at all. The one obvious exception is Foreword which, being a Software Imperative program, is able to make special provision for Flipper 3's presence.

Q: "The tutorial mentions machines with 512K, 1024K and so on, but my machine has 880K of memory. Where does it fit in?"

A: Your machine may well have an 880K M: drive under CP/M, but that's not the same thing as having 880K of memory. When CP/M boots up (or launches under Flipper 3), it sets 144K of memory aside for its own purposes, and then builds an M: drive out of the remainder. Working backwards, if you get an 880K M: drive under CP/M, your machine must really have 880K + 144K = 1024K of memory.

Locoscript 3 also does this trick of setting aside memory before it builds an M: drive, but the amount it sets aside varies from one start-of-day disk to another. Typically the figure will be a little over 200K.

Q: "When I boot up CP/M on its own I get a big M: drive, but when I boot Flipper 3 and split memory half-and-half between two lots of CP/M, the two M: drives are tiny - much less than half the normal one each. Where has the rest of my machine's memory gone?"

A: This is really the same as the previous question. Every time you boot up or launch a CP/M environment, you tie up 144K of memory that CP/M needs for its own purposes. If you boot CP/M on its own, you lose one lot of 144K. If you boot up Flipper 3 and launch two CP/M environments, you lose two lots of 144K. Flipper 3 itself ties up 16K, so in all you've got 160K less for use as M: drive memory, compared to booting CP/M on its own.

An analogy may help. Suppose you take a large house - with 12 bedrooms, let's say - and divide it into two maisonettes. Will these maisonettes have 6 bedrooms each? Clearly not: you'll have to convert some bedrooms into reception rooms, a kitchen and a bathroom. The total bedroom count has fallen, but you haven't really lost space - you're just using it differently.

Q: (9512 only) "When I try to launch CP/M followed by Locoscript 3, the machine locks up (ie freezes and refuses to respond to keypresses) halfway through the Locoscript 3 start-up sequence. Everything's fine if I just launch two CP/Ms however. What's wrong?"

A: Do you have an external printer plugged into your built-in parallel port? If so, this is probably the cause of the trouble. Switch the printer offline before you launch Locoscript 3 and the problem should clear up. Alternatively, if you have a serial/centronics interface attached to your expansion slot, plug your printer into this instead. (The 8256 and 8512 don't have a built-in parallel port, so the problem doesn't arise.)

Q: (Flipper 1 & 2 veterans only) "Whatever happened to Ersatz CP/M?"

A: The short answer is that there's no longer any such thing. In fact, all CP/M environments under Flipper 3 have the higher level of anti-crash protection formerly offered by /E or /T mode CP/Ms.