

Shedding some light (on the matter)

Three lightpens reviewed by Bohdan Buciak

The lightpen is yet another peripheral home computer buffs are being invited to add to their 'wanted' list. The device detects a point of light on a screen and either changes the display or inputs information from it to the computer. But it's becoming popular in the home – not just for drawing and game-playing, but for programmers to extend the range of their work.

The DAMS Pixstik

We'll start with the Dams lightpen (or the Pixstik, from Dams subsidiary Computapix), with its drawing cartridge. The latest version is claimed to be "Greatly improved" – a preliminary pinch of salt there, but it turned out to be quite true. It comes in two versions; for the Vic and the 64. Both come with a plug-in cartridge, a weighty sheet of instructions and an even weightier £25 price-tag. So lets plug one in.

We acquired the 64 version – which is simpler itself to use. The program loads immediately, as you'd expect from a cartridge, and you're ready to draw as soon as you've plugged the pen into the first games port.

One small gripe here; Dams might have used more flexible cable. The pen's plug is pretty large and it doesn't fit the port very securely. Pulling on the cable only adds to the problem.

Quick draw

The drawing functions and choice of 16 colour blocks are displayed permanently on the screen, as well as x (horizontal) and y (vertical) coordinates. This is sensible as it lets you select drawing and colour options quickly and easily.

That's done by pointing the pen to the appropriate spot and hitting a shift key. You're helped by a tepee-like spot which indicates the pen's position

anywhere on the working area of the screen. The coordinate display is also a sensible feature – but more about that later.

Apart from selecting drawing colours, you can change the colour of both the screen and the border. The manual recommends a light colour for the screen as this increases the pen's performance. You're given a choice of three 'pens', which overcome the problem of colours merging when they overlap. You choose a different pen to draw inside an area already filled with colour.

Shaping up

You're given a reasonable variety of standard drawing functions: line, triangle, rectangle, circle and ellipse. All shapes are quick and easy to draw. To draw a circle, for example, you need plot only the centre and a point on the circumference. Shapes can be either filled with colour or left as line drawings. Lines can be thin or drawn with larger blocks. There's also a 'paint' mode which you use freeshoot to get a speeded effect.

But the freeshoot mode proper is of next to no real use because the pen won't remain steady for long enough to give you a reasonable degree of accuracy. That's why you're given the choice of shapes; they're produced mainly through software rather than manual control. Without them, you'd soon get bored and frustrated. But even they can't be produced with pinpoint accuracy.

Time for a few home truths. Firstly, a really stable lightpen hasn't yet been produced for home computers. It's not all the manufacturer's fault; there are technological and computer limitations too. On top of that, the television set may not produce a bright enough image for the pen to read; dark colours don't emit enough light. Then there's static which builds up due to both the screen and pen tip, making the pen difficult to control.

Dams has properly realised these limitations. So it has added a couple of features that compensate for the pen's lack of real drawing ability. They're called Bounce and Animate, and



both of them use the pen's rather clever memory ability.

Dams has provided four memories for the pen. By going into Command mode (F7), you can store and recall four separate drawings. When you've secured the first picture in memory, you can use the Clear function to clear the screen and produce another picture.

When you've got a maximum of four pictures stored, you can use either Bounce or Animate to display them in sequence at half second intervals. Animate will display the four 'screens' in a 0-1-2-3 sequence, while Bounce works in the same way but bi-directionally. If you've coordinated your four pictures, the effects can be quite stunning. The manual very usefully gives you a blow-by-blow example to give you the general idea. This is where the x/y coordinate display becomes useful as it helps you calculate positions more accurately. But, as you'll know by now, it's virtually impossible to make the pen stay on a particular set of coordinates. You can even save your creation on tape or disk for future display. But be warned; we

need disk and found the Commodore drive took a long time to load and save. Obviously that depends on the complexity of your drawing but it does mean that using tape would be too slow and tedious.

Summing up Dams

The Dams Pixstik is easy for non-computer folk to use and its manual is good. But it will frustrate the more creative amongst you because it fitters and shakes so much. Of course, you may want to use the pen in other ways (£25 is a great deal to pay for a mere drawing pen). Dams has realised that, and has begun producing games cassettes for the pen. These are already available for the Vic and 64, Think, The Fox Terrier and Melody. You could buy them separately at £5 each; or you can take advantage of a package that gives you the lot (pen, drawing cartridge, three games) for £29.95 (we can't say anything about the games until we get them for review). Make your own mind up about the price.

Under review:	Dams lightpen (for Vic and 64)
Supplier:	Dams Office Equipment Rinkby Industrial Estate Liverpool L3 7UR 051-648 7111
Summary:	Good drawing facilities, but limited scope for freeshoot work. Good manual. Only small range of games available.
Price:	£25 (games cassettes £5 each)

REVIEW

The Stack lightpen

Let's move on to the Stack lightpen, which already has ten games available for it - but no painting software (Stack tells us that's coming in January). The pen isn't cheap either; it also costs £25. So what do you get for the money?

Again, we acquired the 64 version - which comes with an eight-page manual and a free game on cassette. The manual is fairly basic but useful; it gives a concise description of how a lightpen works, followed by two short programs for setting up the working area of the screen and displaying the x/y coordinates.

If you're grasped at that (it's all a little unerving for a complete beginner) you then confront the touch control on the pen, followed by a program that lets you put a coloured square at will on the screen. That's as far as the manual takes you - not very far. The rest is uncharted waters.

One useful point about the manual is that it shows you how to calibrate your pen for a particular television; that should steady the jitter a little. The idea behind this was to allow you to alter x and y values in the program listing of Stack's games to improve the pen's performance. That would have proved a tricky task for many people. So Stack has wisely built an automatic pen calibration feature into all the lightpen games. You can point the pen to the calibration spot on the screen until the thank-you message appears.

Despite this facility, Stack's pen was probably as jittery as the one from Data. It was slightly easier to handle though; instead of pressing the shift key, contact is made on the pen itself - by two touch-sensitive metal rings.

Drawing the line

According to Stack most people don't want to use lightpens for drawing. It's backing up that perception with lots of games tapes. Another reason is that

Under review:	Stack lightpen (for Vic and 64)
Supplier:	Stack Computers Services 250-258 Bootle Road Bootle, Merseyside L20 8LN 051-933 5011
Summary:	Wide range of games. Only few games use lightpen's features to the full. 'Painter' software available soon. Basic but concise manual.
Price:	£25 (games cassettes £5 each)

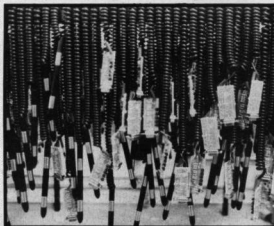


Stack has apparently realised present lightpen technology won't let you draw very well anyway - and that seems to us like sound thinking.

With its emphasis on game-playing, you'd expect some pretty good examples for the lightpen. But the free game included in the package, Concentration, probably won't make you feel your money's been well spent. It's the well-known turn-cards-over-e-

member-them-make-them-pairs game. And a pack of real cards comes a little cheaper.

The same goes for a few more of the games Stack's made available (they cost £5 each): games like Orbits, Draughts and Seek and Destroy. They're all well known and probably easier, more enjoyable and much less expensive to play with pen, paper and plastic. Admittedly, Stack offers some good visual and sound effects; but it does



make you wonder why they bothered.

More fun and games

A few games, like Simon, are more impressive and actually make good use of the lightpen as a pointing device (when it decides to behave). Lost in the Labyrinth also uses the pen in this way. It's an eccentric game though, and probably not to everyone's taste - though it certainly has more lasting value than some of the offerings already mentioned.



Another good and more intelligent game is Crossword Twister. This again uses the lightpen to the full and displays some brilliant effects, like letters drifting down the screen into the square you've chosen on the cross word.

Leaving content aside, Stack must be congratulated on its overall games presentation.

There's ample on-screen instructions and all the games play marvellous music. On some, that's the best feature. Seek and Destroy, for example, gives you a baroque-ish rendering of the Dambusters theme - very appropriate, very odd.

Stack says it is continually developing games for the lightpen - which is encouraging if you've bought one and wondered whether it was all worth it. The earliest games, though, are frankly boring on average, and they don't really justify a lightpen at all. More recent offerings are much better and, hopefully, will continue to improve.

But if you don't like playing games or drawing you could certainly incorporate the Stack pen into programming. Despite the lack of in-depth explanation in the manual, an experienced programmer should have no real trouble.

The Datapen

But maybe you don't like drawing or game-playing? Maybe you want a down-to-earth pen that should be cheaper because it doesn't incorporate unwanted facilities. That sounds very logical, but wrong—at present.

The new Datapen won't let you draw marvellous pictures instantly or play games. Of course, it wasn't designed to do those things. But it still costs £25. Ah, perhaps it's more stable than the rest? Wrong again.

But that needs qualifying, so read on. Datapen sent us both Vic and 64 versions of its pen; and very stylish it is too. It looks rather like a surgical implement—the others just look like pens.

We tried the Vic's pen, which comes with a tiny introductory manual and a cassette tape full of introductory programs. The pen has a built-in switch and a LED lamp which lights up when the pen's pointing at the screen.

(What value that has escaped us.) The manual doesn't tell you a great deal, and what it does say is repeated for other home computers. So there's not as much information as you thought. Was it too much trouble to produce a dedicated manual? It does cover the basics, though: a little program that demonstrates the switch, another one that reads x,y coordinates, a tiny section on stability of position and higher resolution. Those last bits will probably help most people and the rest isn't particularly useful by itself. For £25, you'd expect a great deal more in the way of explanation.

Simple symbols

But the pen can be useful for the less experienced via the accompanying tape. The first program, Symbol Draw, lets you use all the symbols and characters the Vic can produce. But at least, you can draw only pretty patterns.

The next program, Medium Resolution Draw, supposedly lets you draw freehand in blocks a quarter the size of a low-res graphics block. But it doesn't work very well at all.

The erase facility works just as badly. You draw the same block with Erase mode on—which sounds simple, but the block won't disappear unless you're exactly on target. Since the pen leaves no image on the screen, there's no way of telling exactly where you are—most frustrating. One function that does work well is saving and loading from tape, if that's any consolation—and it probably won't be.

Generally, the Datapen was

just as unstable as the other pens. To improve stability Datapen supplies a tiny rubber ring that can be inserted into the tip of the pen. But that cuts down the amount of light entering it so you need to turn the TV's brightness up—very unpleasant for the eyes.

The 64's version

In fact, the pen labelled for the 64 seemed to work better than the Vic's pen—they look identical anyway. Datapen's Commodore 64 version is a slight improvement (perhaps dead old Vic doesn't get along with lightpens). At the time of writing, the supplier hadn't yet got down to producing the equivalent of the Vic version's introductory program but it did come with what amounts to a manual on tape. That's a nice idea and it works pretty well.

The on-screen information itself helps you get to grips with reading x,y coordinates

and using the Datapen's switch. When you've mastered that, you've given a little demonstration of aptitude assessment and an indication of which part of the program it's located. So you can list the whole program and work out exactly what's going on.

But that's as far as it goes. You're directed to the 64's manual for more info on aptitude. In particular, again, for the price, you'd expect Datapen to provide much more in the way of sound practical guidance.

Conclusions

To sum up, if you're buying a pen for programming purposes you're going to be left pretty much to your own devices (as it were). Neither the Slack or the Datapen will give more than basic help—but perhaps that's all you need?

For the drawing enthusiast, the Dams pen provides scope (albeit limited) for creativity.

Games players? Well, Slack's offerings started out on a low key but they're getting better and should improve in time. Lightpens are still rather expensive and still don't really merit the price tag.

Manufacturers make announcements about continued improvements, more advanced technology etc. but lightpens are still limited by their frustrating and sporadic 'shakes'. As data input or pointing devices, they work very well. But for more sophisticated applications, they're all still rather limited.

Under review:	Datapen (for Vic and 64)
Supplier:	Datapen Microtechnology 39 Kingsdore Road Overton, Hants RG25 3JB 0256 770488
Summary:	Vic version has limited drawing ability. Freehand mode virtually useless. Manual sparse and unhelpful. No games cartridges available. Slightly improved 64 version.
Price:	£25

Still to be reviewed: lightpens from Alphatronic and Stonechip.